



NATIONAL HIGHWAYS AUTHORITY OF INDIA

(MINISTRY OF ROAD TRANSPORT & HIGHWAYS,
GOVERNMENT OF INDIA)

**BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY
FROM END OF PINJORE BYPASS- NALAGARH SECTION
(KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE
OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE**

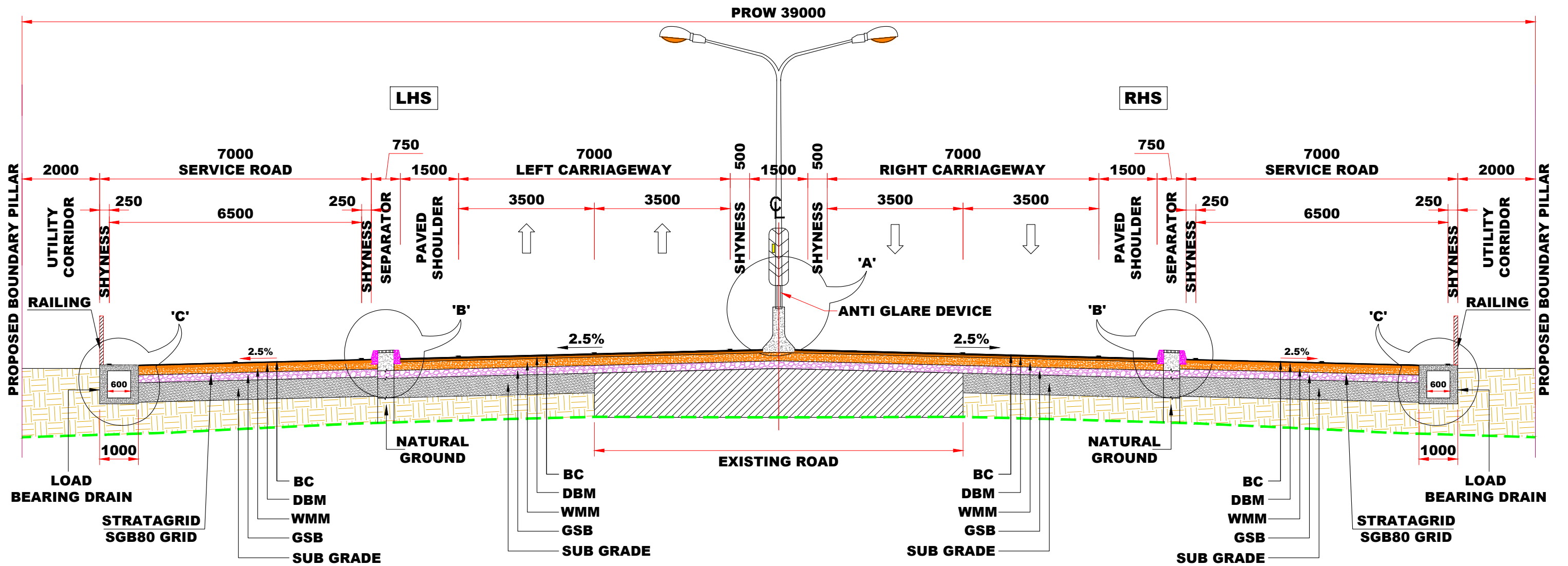
HIGHWAY DRAWING

FROM CH. 4+200 TO CH. 34+500

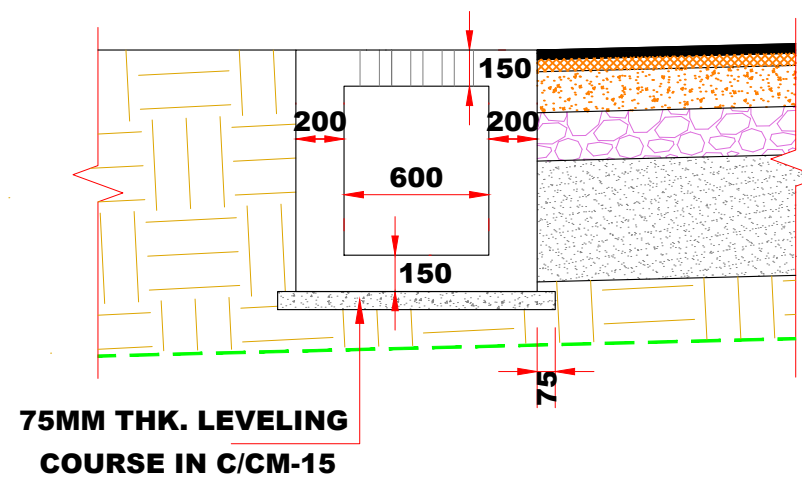
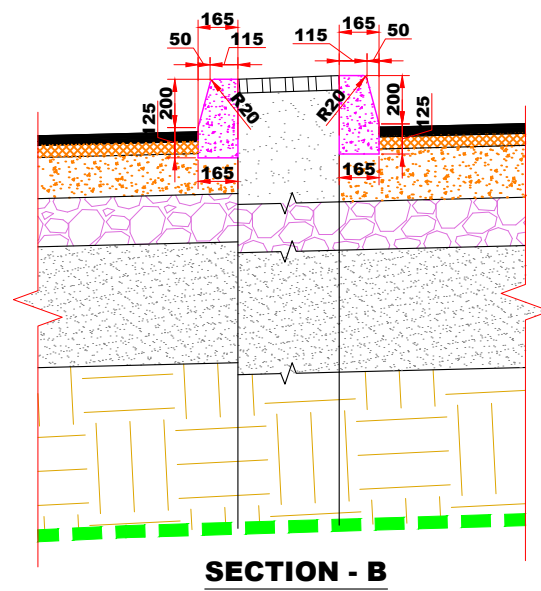
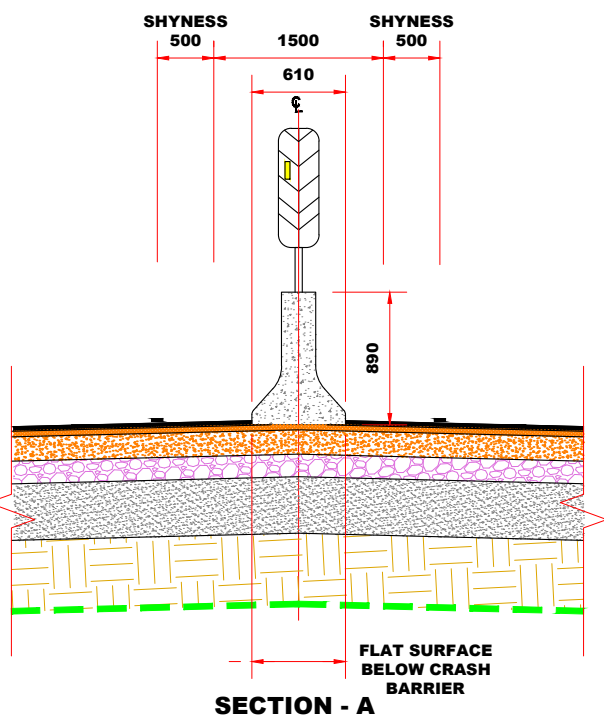
(SEPTEMBER, 2025)

KEY PLAN

TYPICAL CROSS SECTION



TCS: 1
WIDENING IN BUILD UP AREA WITH SERVICE ROAD



CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



Chaitanya Projects Consultancy Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-

BALANCE WORK FOR FOUR LANING OF THE PROJECT
HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH
SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A)
IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON
THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

TYPICAL CROSS SECTION
TCS-1

DRAWING No :

NHAI/CPC/FDPR/TCS/

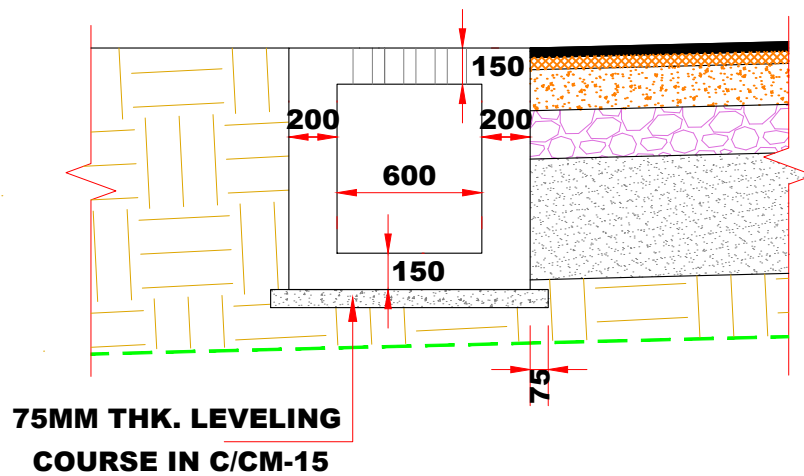
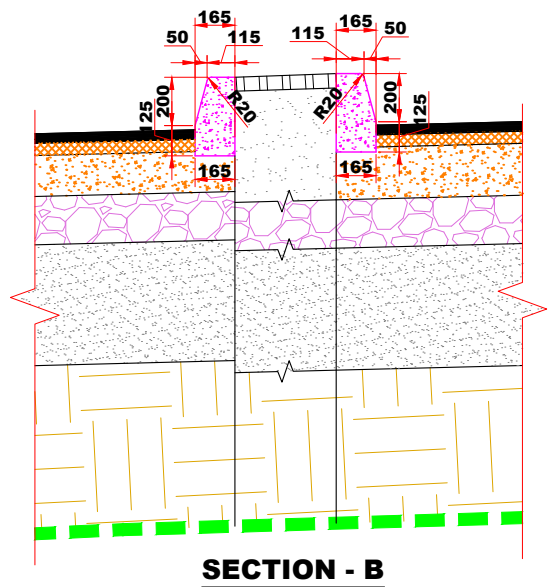
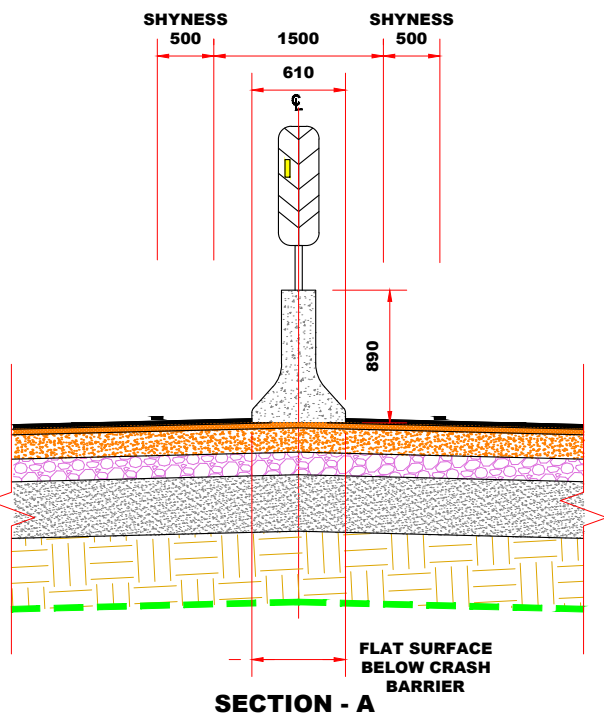
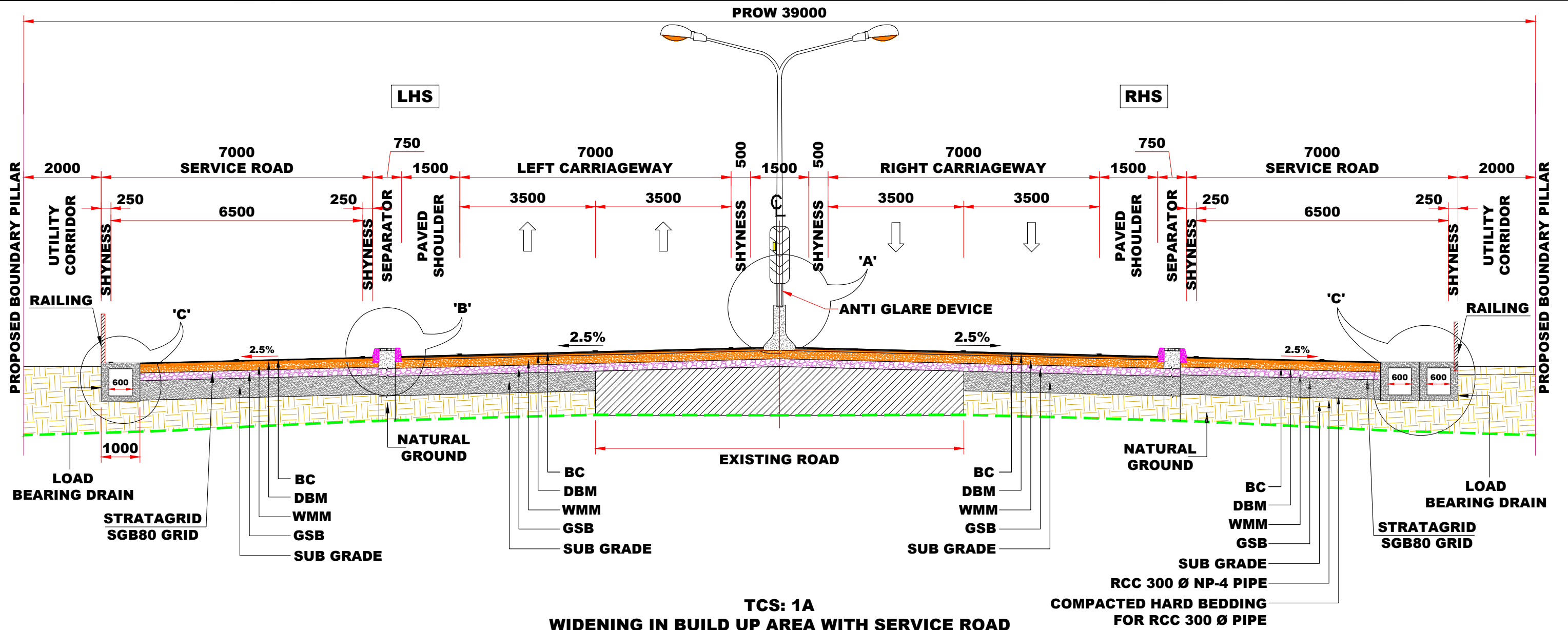
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DATE : SEPTEMBER - 2025

Revision: **R1**

PREPARED BY DESIGNED BY CHECKED BY APPROVED BY

P.SINGH R.RAGHUVANSHI S.GUPTA S.K.SINHA



CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



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SECTOR-4, VAISHALI, GHAZIABAD
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IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON
THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

TYPICAL CROSS SECTION
TCS-1A

DRAWING No :

NHAI/CPC/FDPR/TCS/

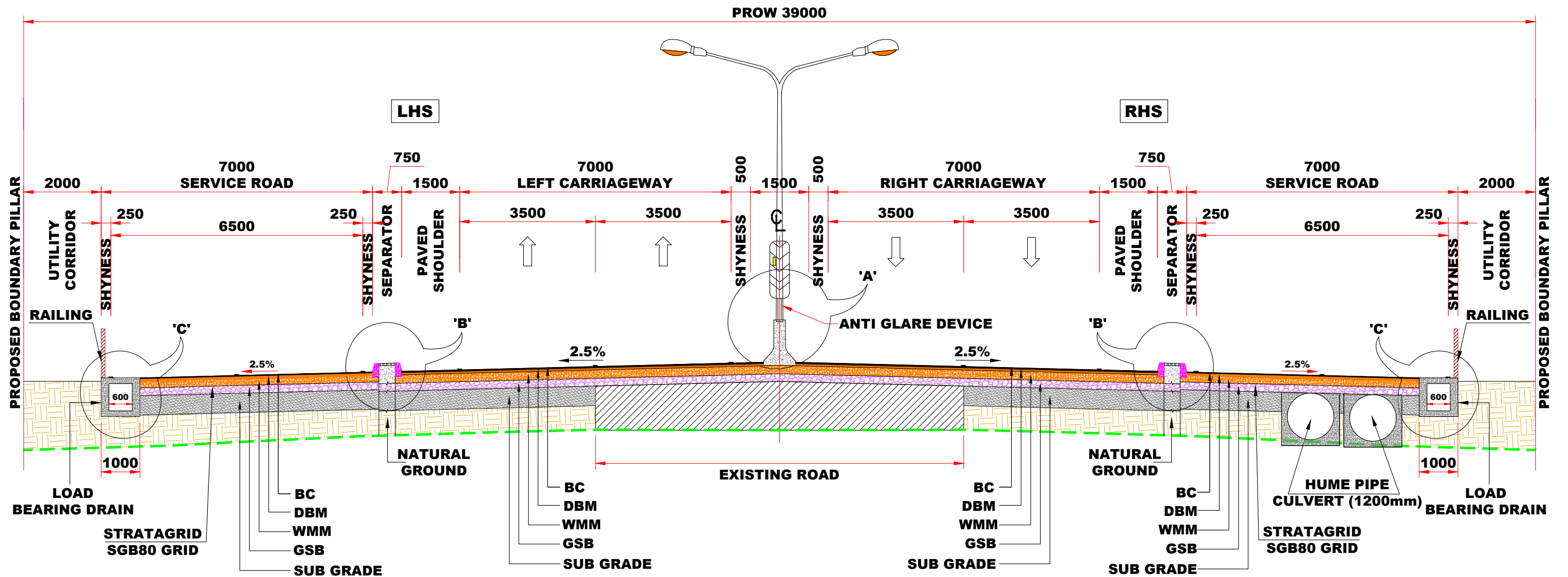
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DATE : SEPTEMBER - 2025

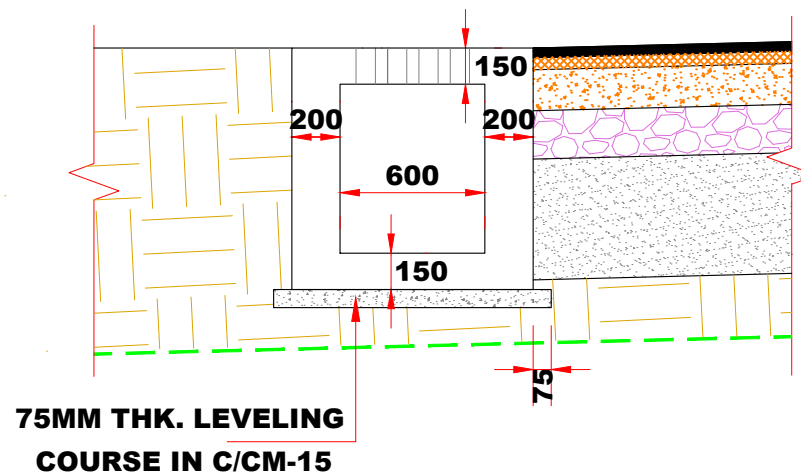
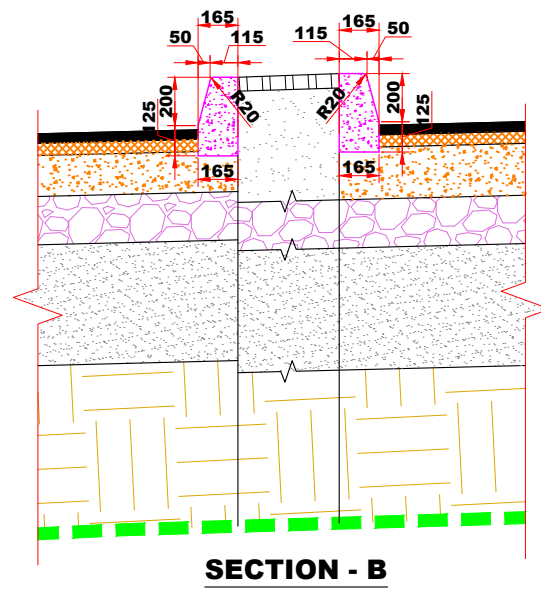
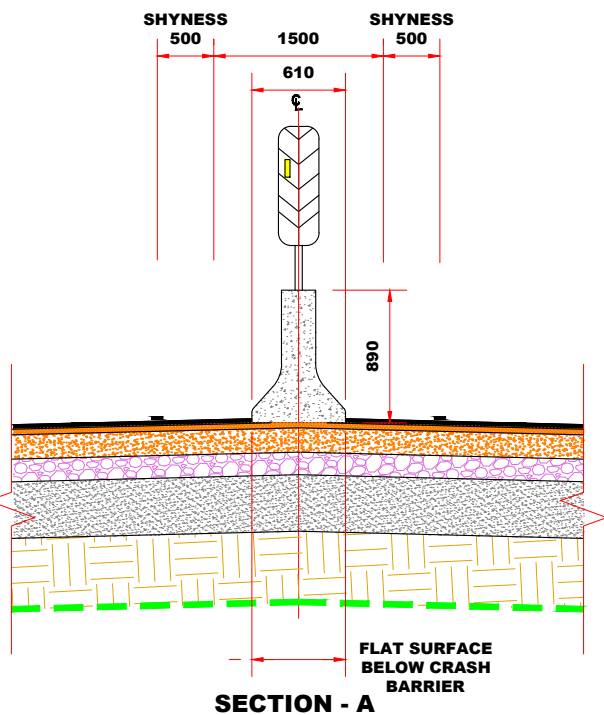
Revision: R1



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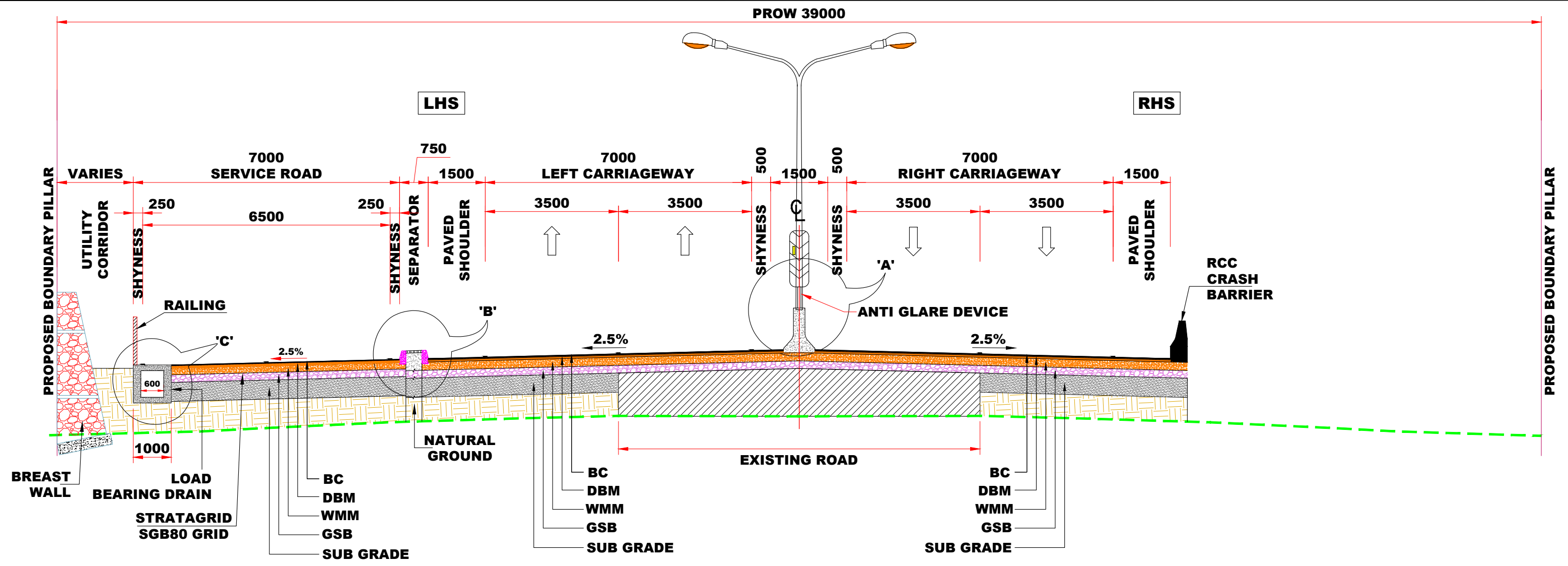
P.SINGH R.RAGHUVANSHI S.GUPTA S.K.SINHA



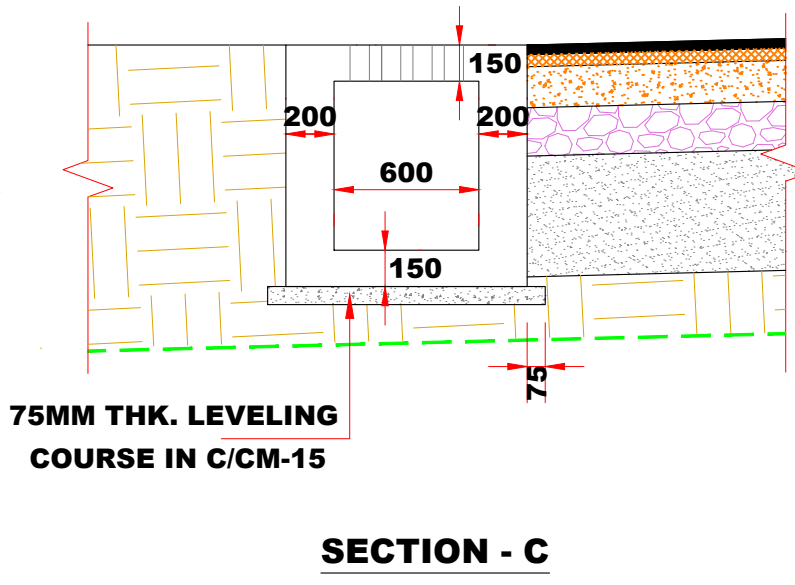
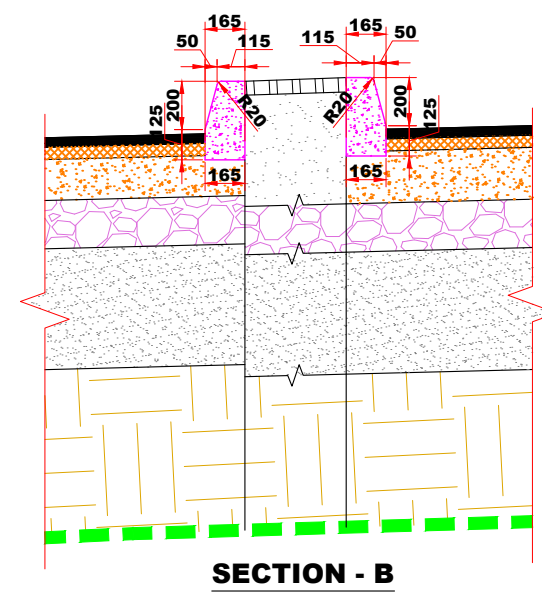
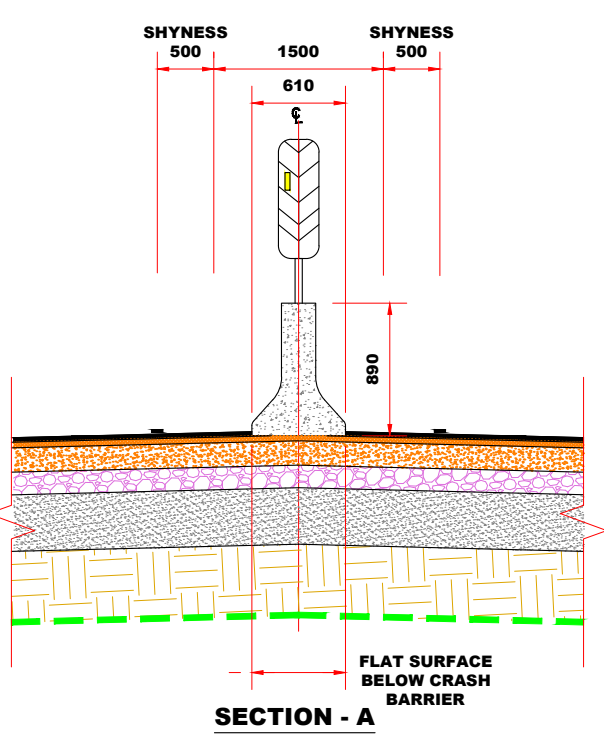
TCS: 1B
WIDENING IN BUILD UP AREA WITH SERVICE ROAD WITH 2 HPC IN RHS





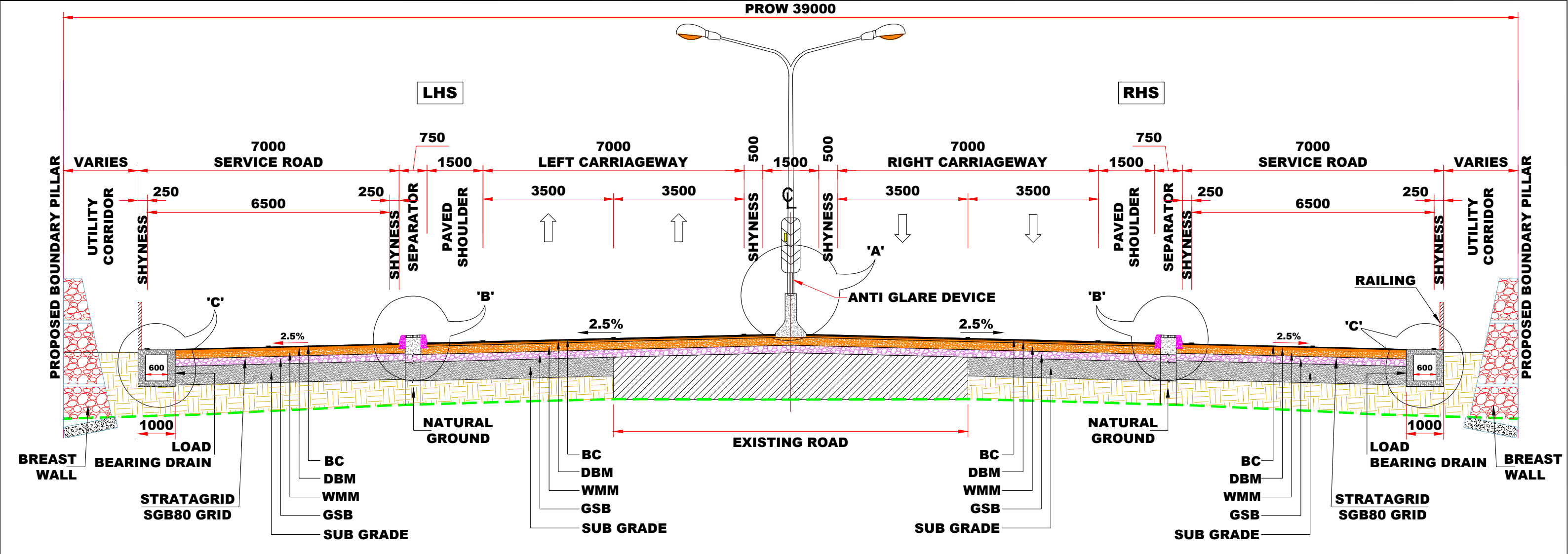
<div>CLIENT:-</div> <div><div>National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)</div></div>	<div>CONSULTANT:-</div> <div><div>Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472</div></div>	<div>PROJECT:-</div> <div>BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE</div>	<div>SCALE :-</div> <div>AS SHOWN</div>	<div>DWG TITLE:-</div> <div>TYPICAL CROSS SECTION TCS-1B</div>	<div>DRAWING No : NHAI/CPC/FDPR/TCS/</div> <div>(3)</div> <div>DATE : SEPTEMBER - 2025</div> <div>Revision: R1</div> <div>PREPARED BY: P.SINGH</div> <div>DESIGNED BY: R.RAGHUVANSHI</div> <div>CHECKED BY: S.GUPTA</div> <div>APPROVED BY: S.K.SINHA</div>
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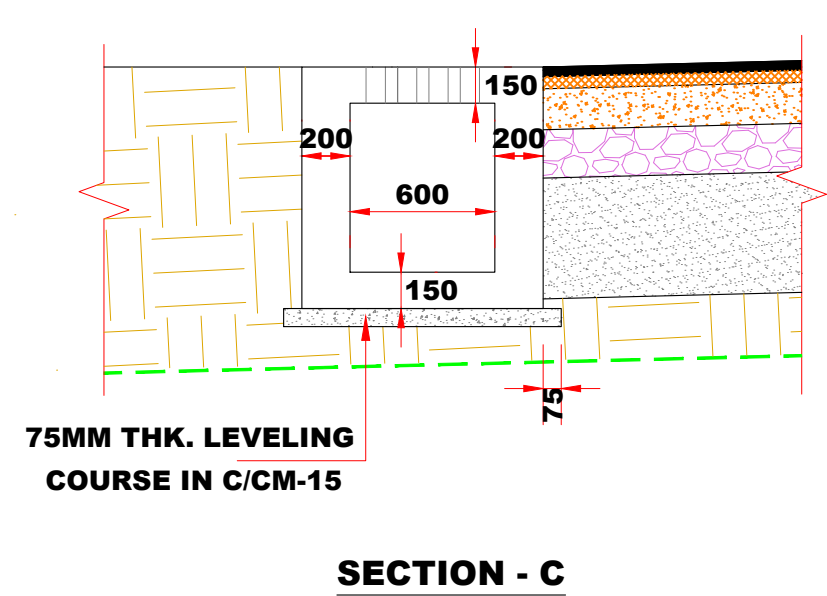
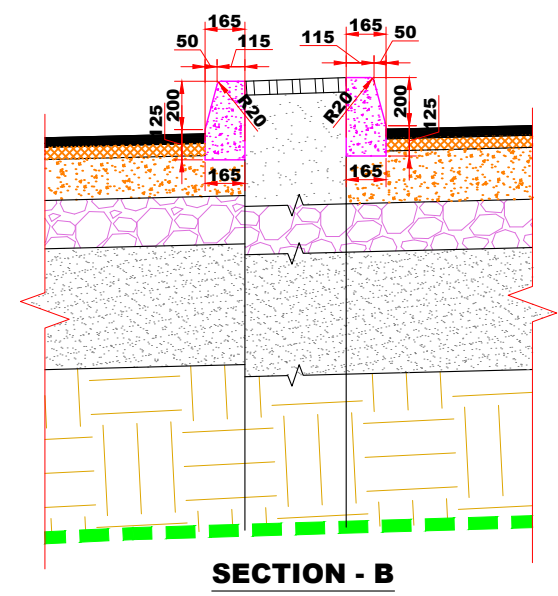
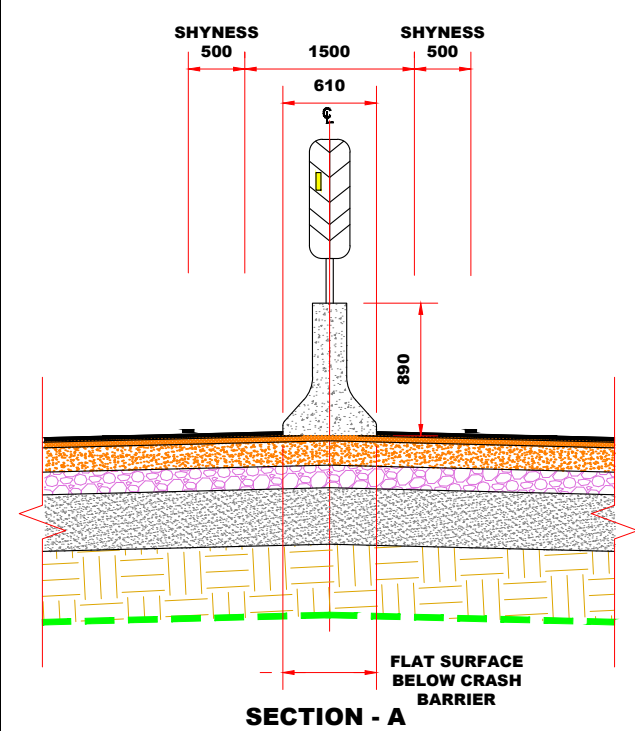
TCS: 1C
WIDENING IN BUILD UP AREA WITH SERVICE
ROAD ON LHS NEAR NALA





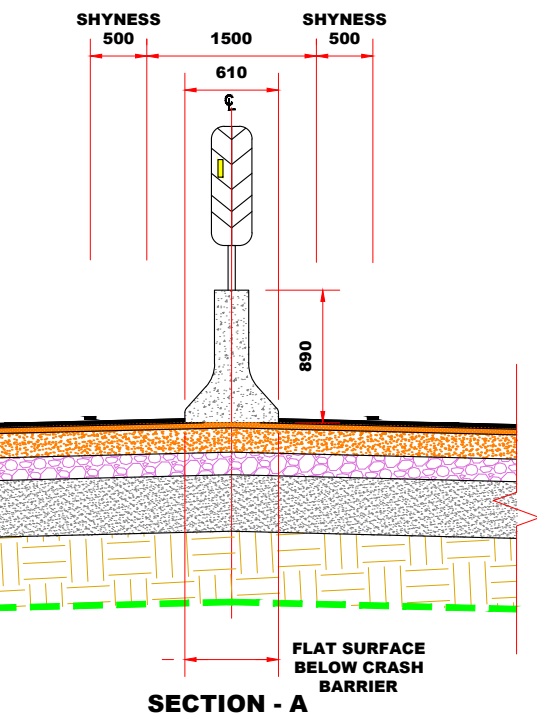
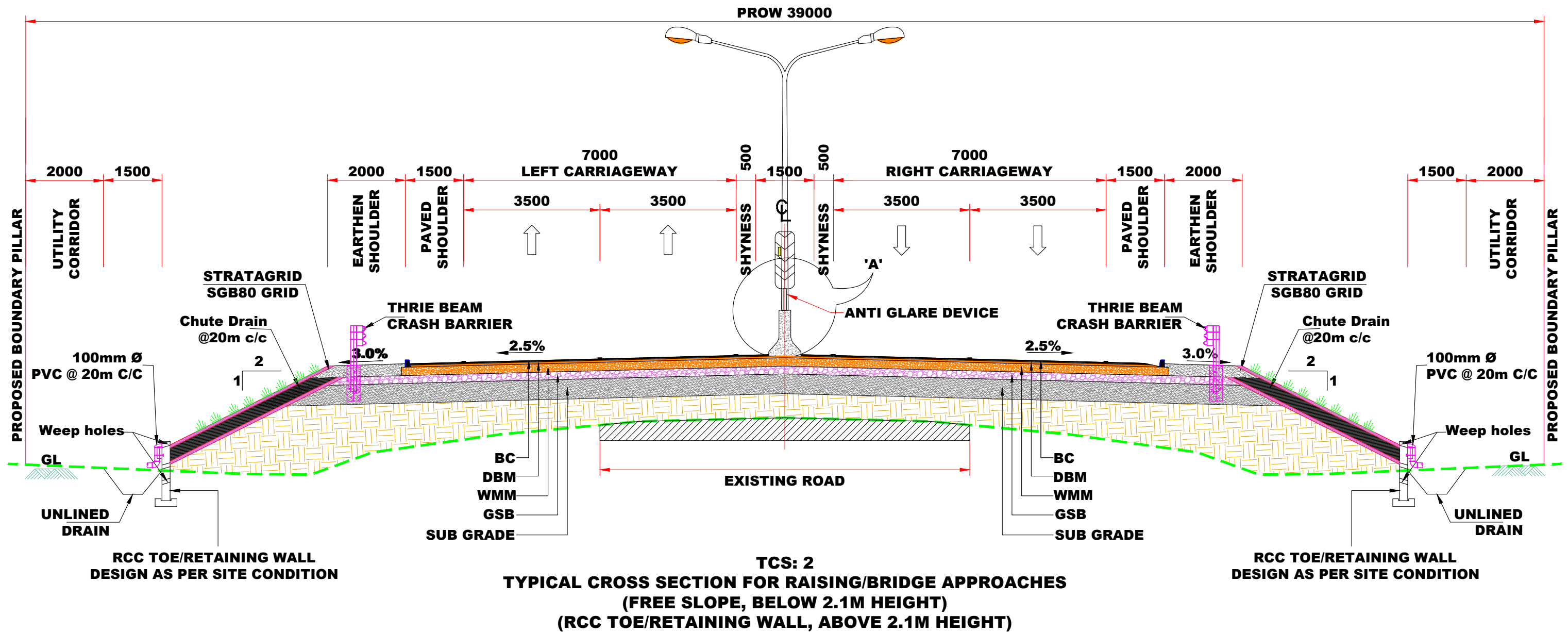
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								PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY
								P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA





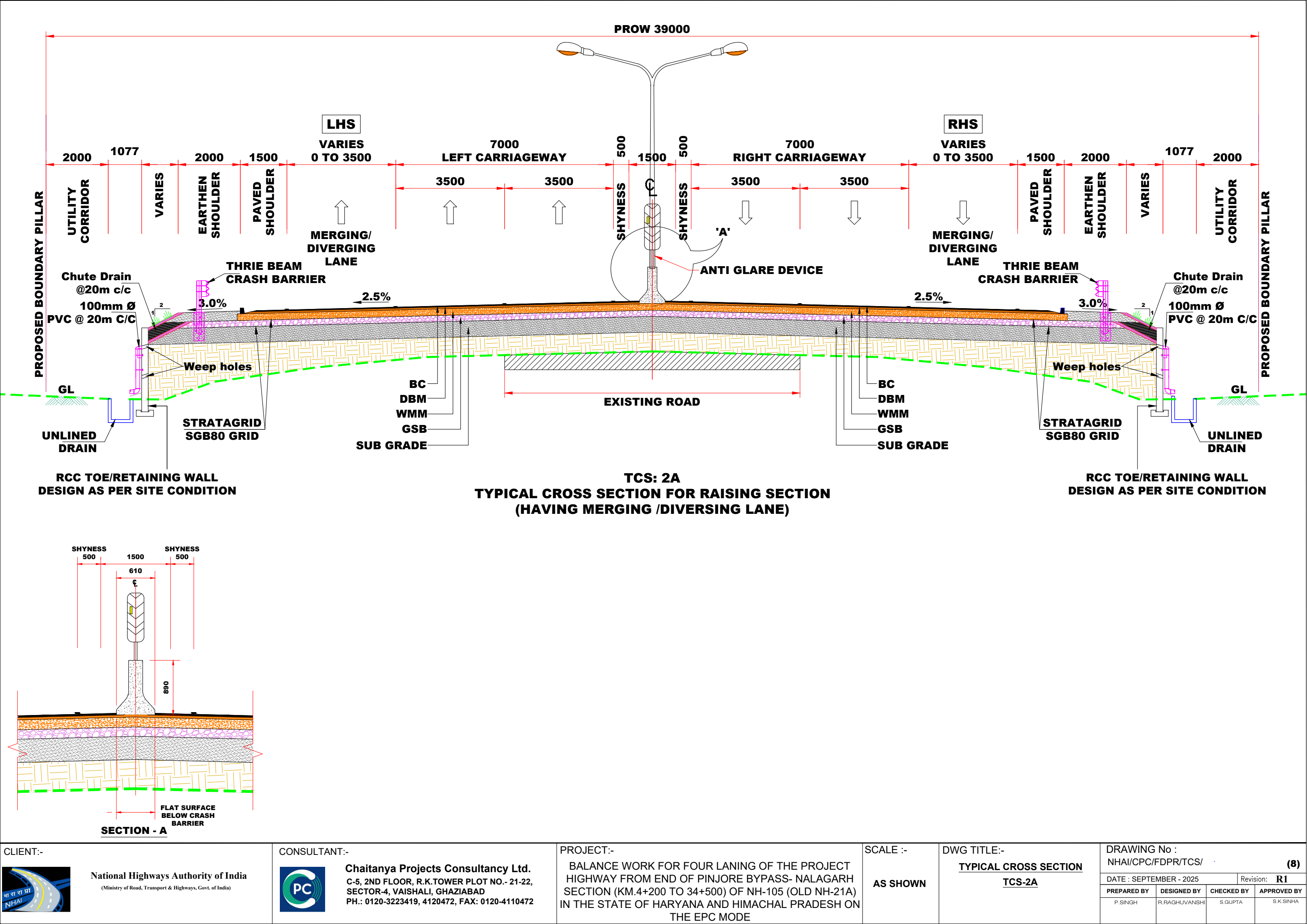
TCS: 1E
WIDENING IN BUILD UP AREA WITH SERVICE
ROAD AND BREAST WALL BHS

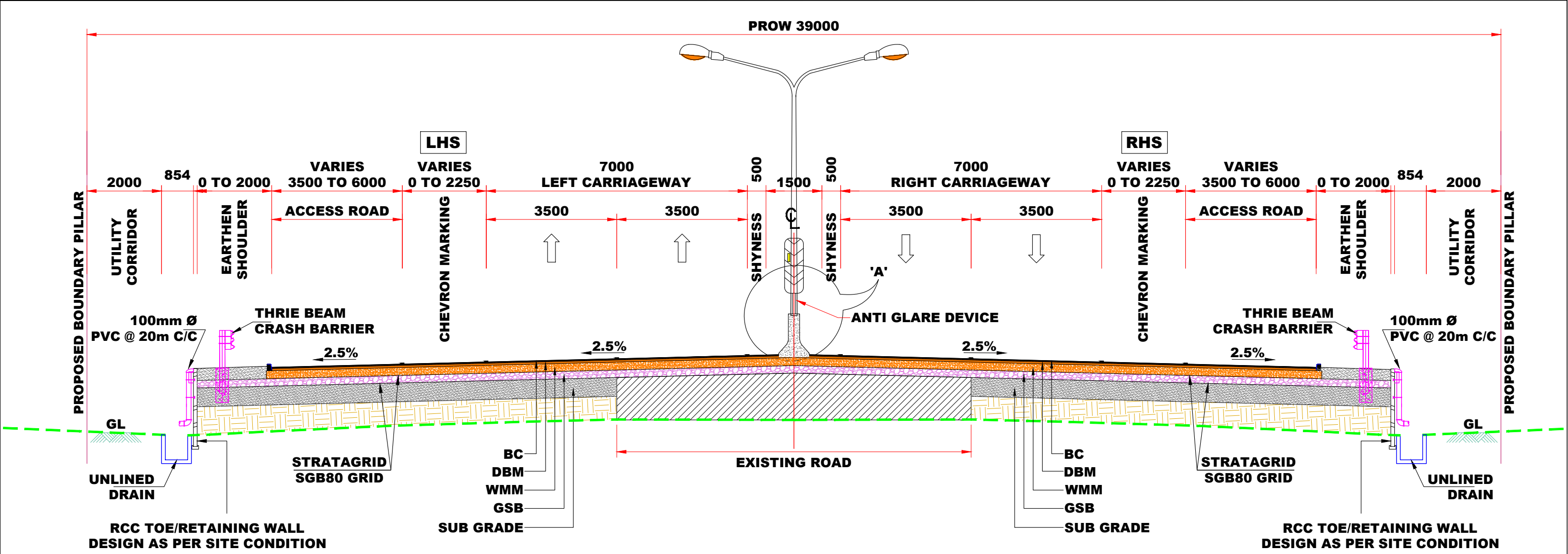


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 National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)		 Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472		BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE		AS SHOWN		<u>TYPICAL CROSS SECTION</u> <u>TCS-1E</u>		(6)			
										DATE : SEPTEMBER - 2025			Revision: R1
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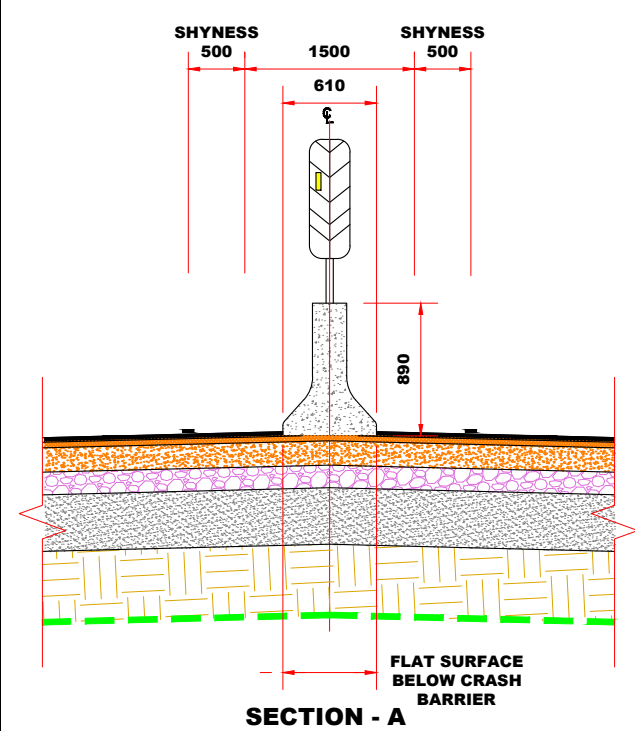




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PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY																
P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA																

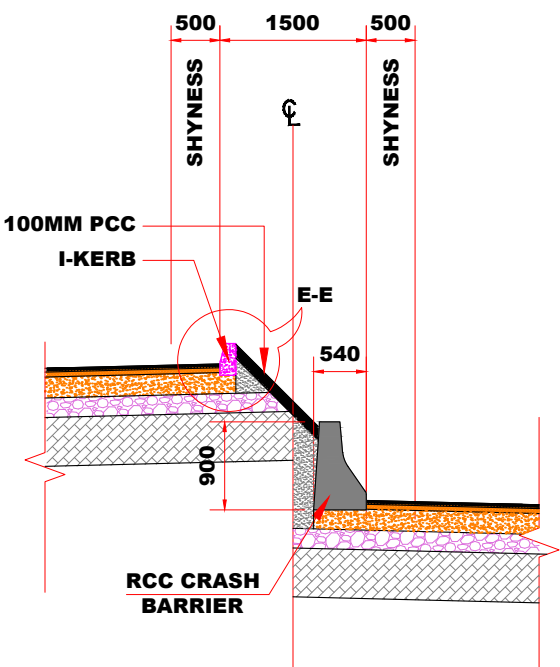
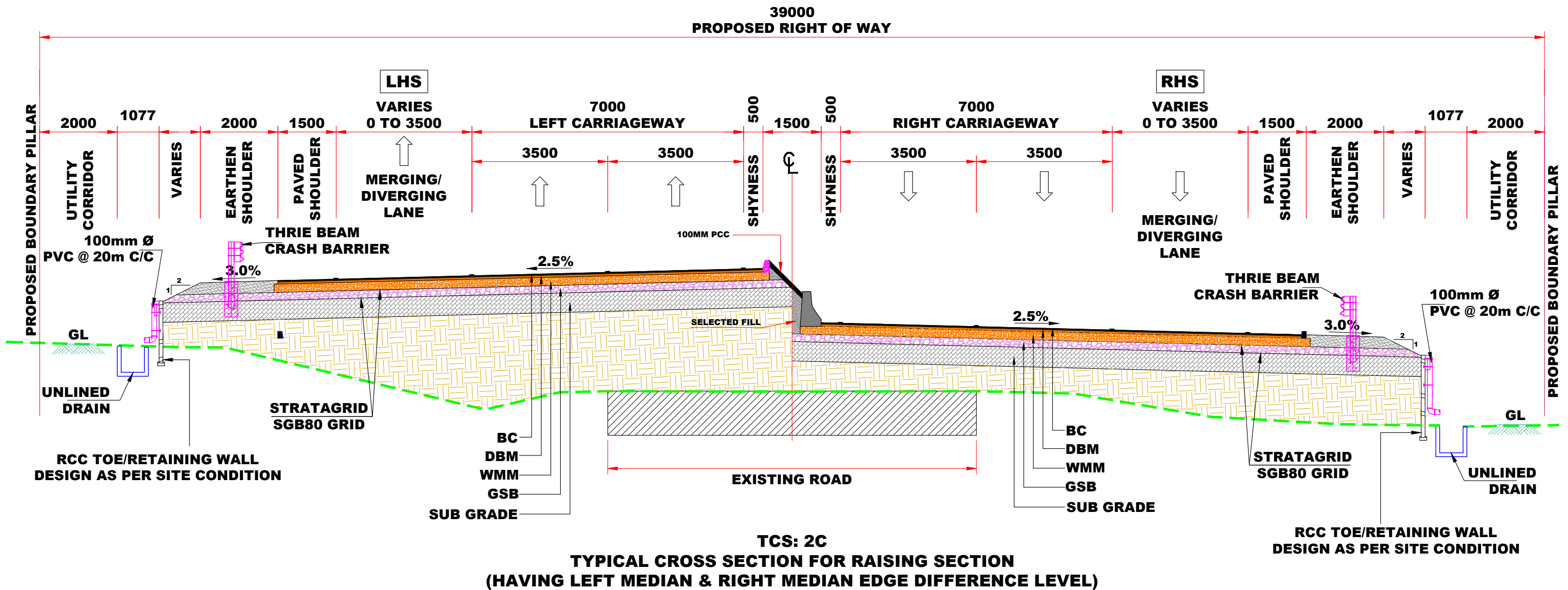




TCS: 2B
TYPICAL CROSS SECTION HAVING VARYING PORTION OF ACCESS ROAD
(CONNECTING SERVICE ROAD WITH MAIN ALIGNMENT)



CLIENT:- <div><div>National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)</div></div>		CONSULTANT:- <div><div>Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472</div></div>		PROJECT:- BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE		SCALE :- AS SHOWN	DWG TITLE:- TYPICAL CROSS SECTION TCS-2B	DRAWING No : NHAI/CPC/FDPR/TCS/ (9) DATE : SEPTEMBER - 2025 Revision: R1 <table><tr><td>PREPARED BY</td><td>DESIGNED BY</td><td>CHECKED BY</td><td>APPROVED BY</td></tr><tr><td>P.SINGH</td><td>R.RAGHUVANSHI</td><td>S.GUPTA</td><td>S.K.SINHA</td></tr></table>				PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY	P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA
PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY																
P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA																



SECTION - E

CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



Chaitanya Projects Consultancy Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
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IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON
THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

TYPICAL CROSS SECTION
TCS-2C

DRAWING No :
NHAI/CPC/FDPR/TCS/

(10)

DATE : SEPTEMBER - 2025

Revision: R1

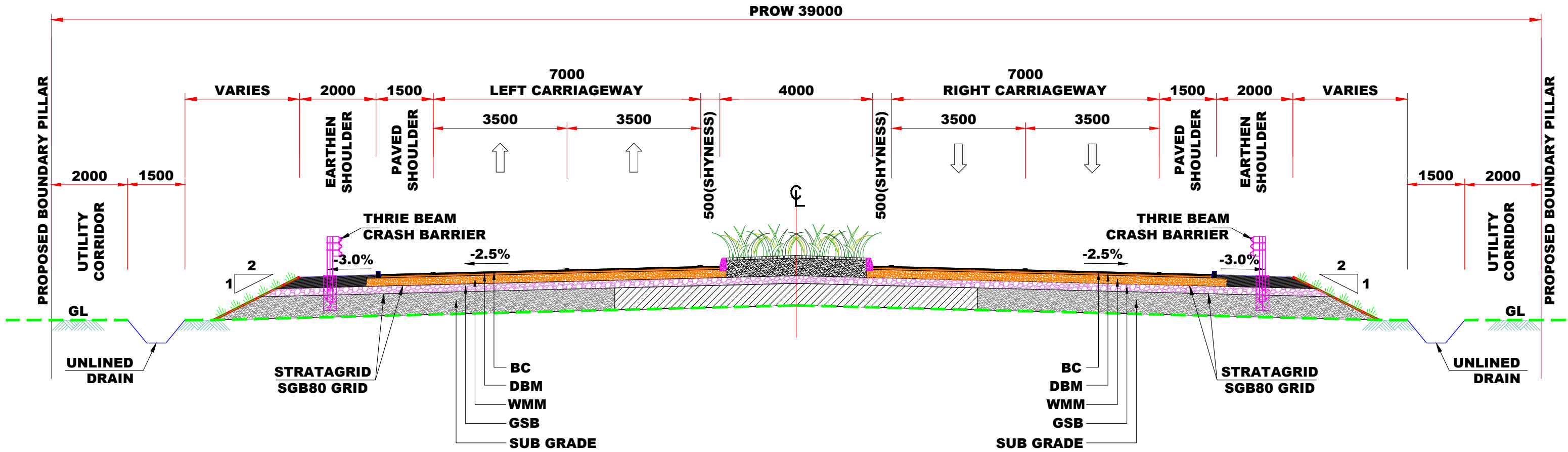
PREPARED BY DESIGNED BY CHECKED BY APPROVED BY

P.SINGH

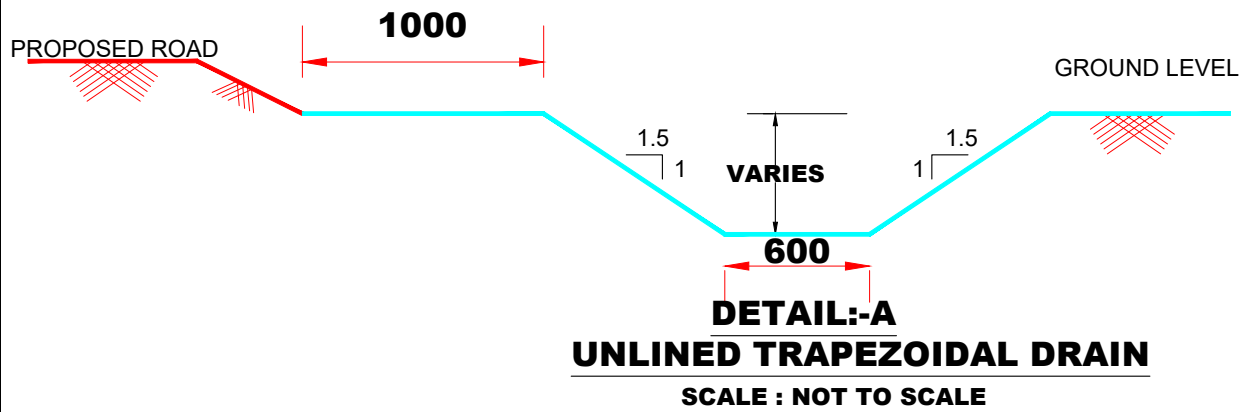
R.RAGHUVANSHI

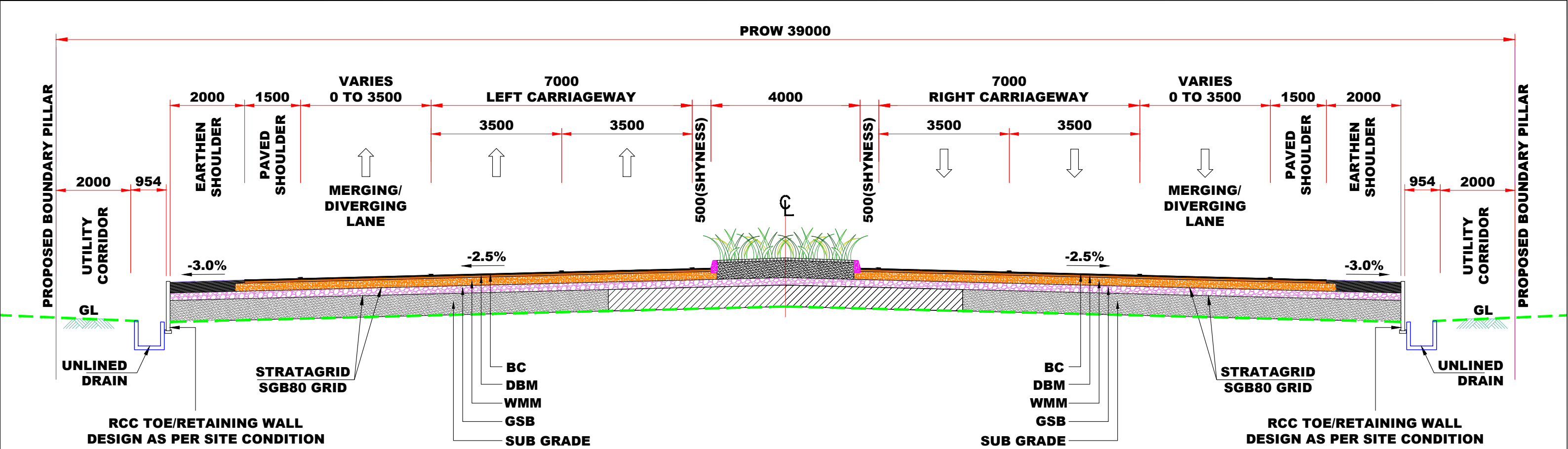
S.GUPTA

S.K.SINHA





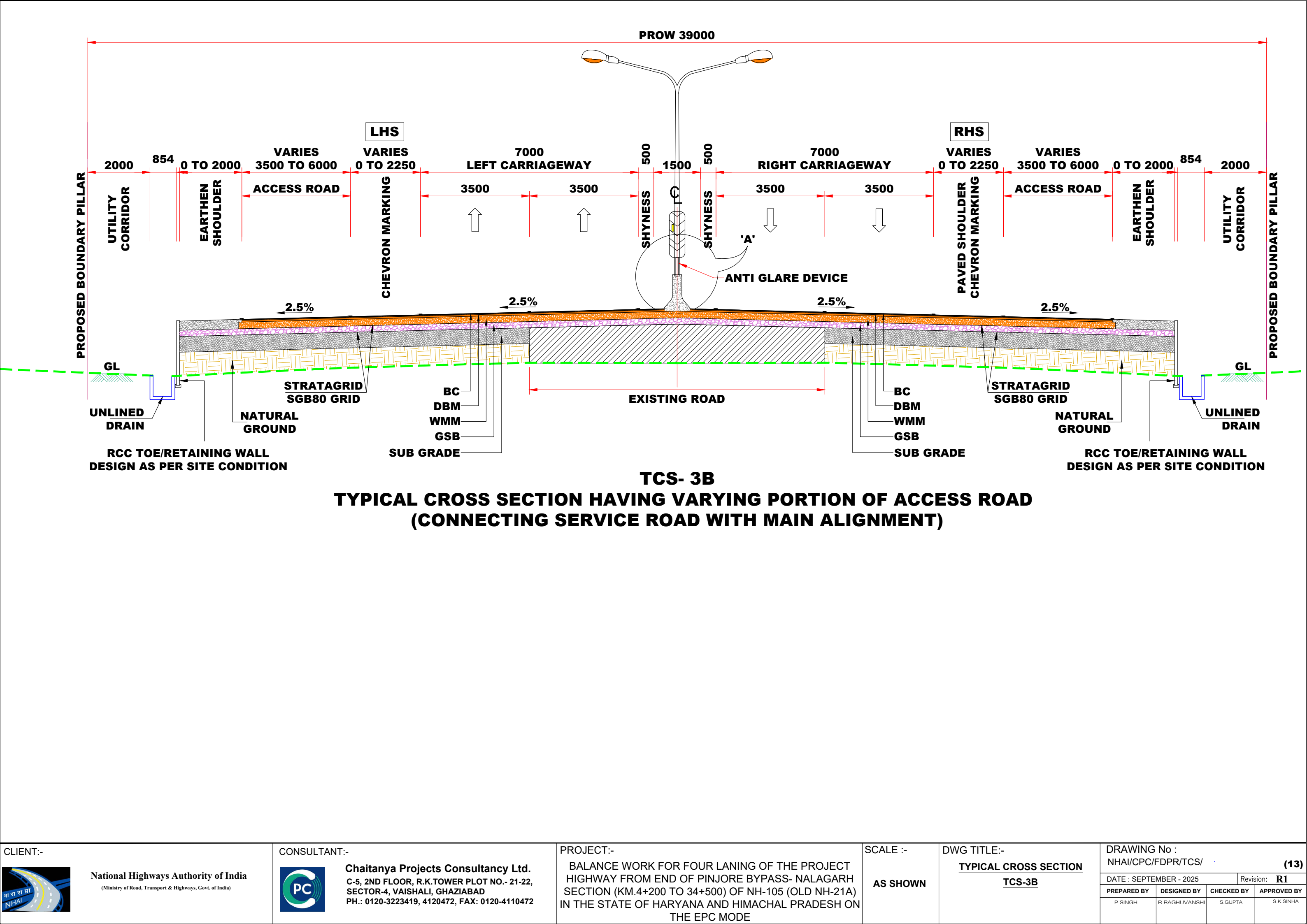
TCS- 3
TYPICAL CROSS SECTION OPEN AREA





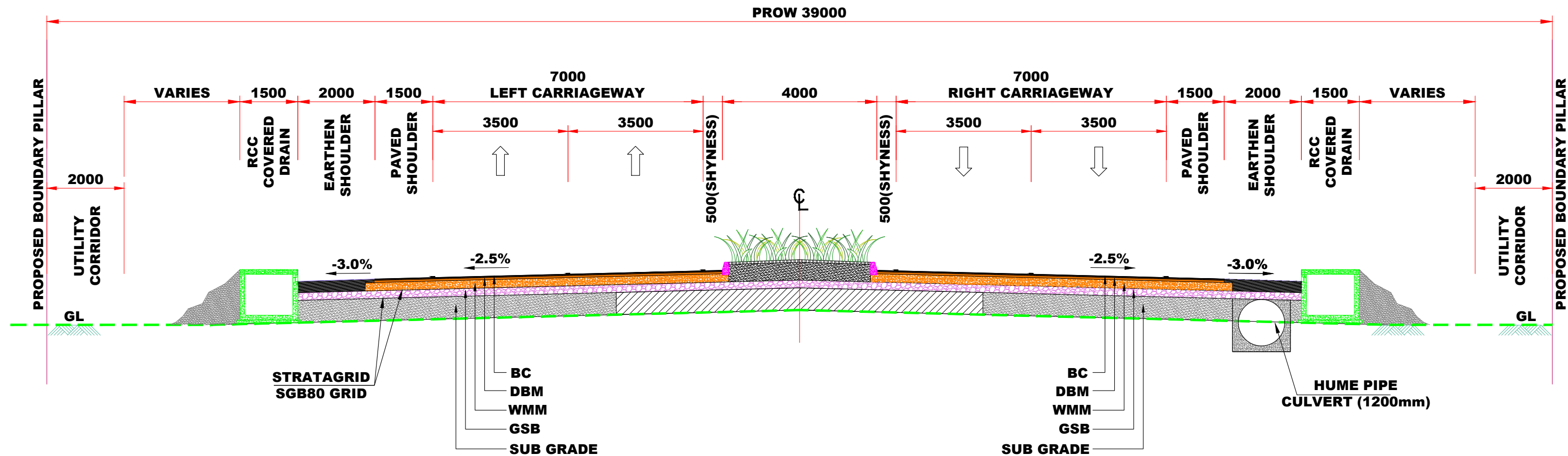


TCS- 3A
TYPICAL CROSS SECTION OPEN AREA
(HAVING MERGING /DIVERGING LANE)

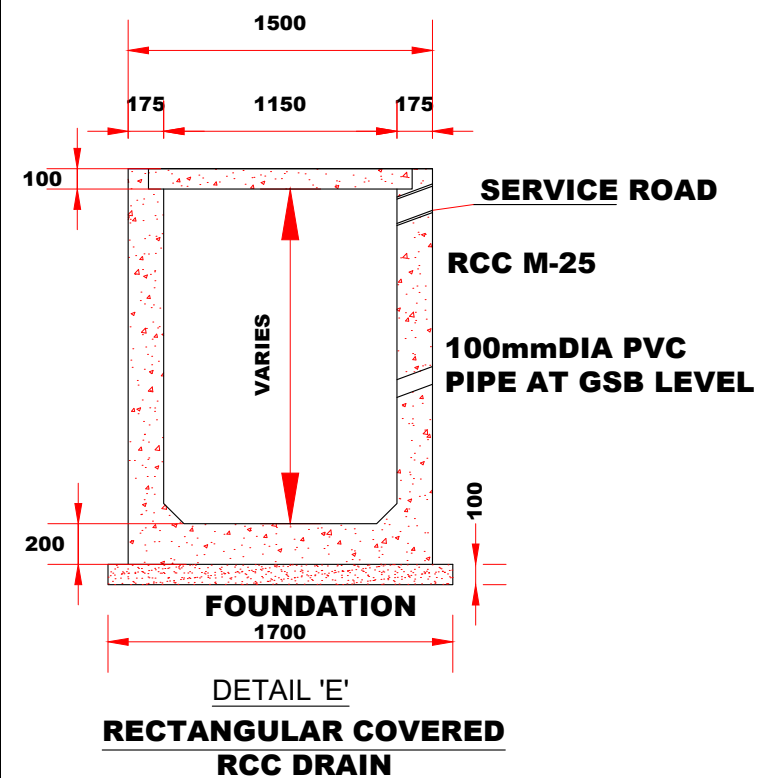
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 National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)		 Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472		BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE		AS SHOWN	TYPICAL CROSS SECTION TCS-3A	DATE : SEPTEMBER - 2025		Revision: R1	
								PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY
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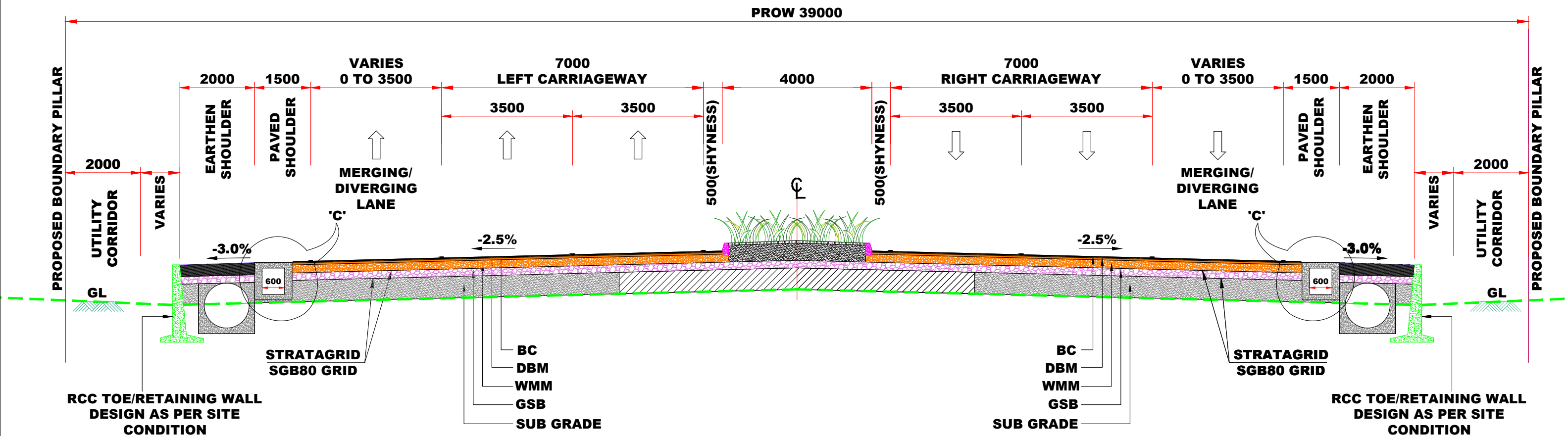
CLIENT:-  National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)		CONSULTANT:-  Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472	PROJECT:- BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE	SCALE :- AS SHOWN	DWG TITLE:- TYPICAL CROSS SECTION TCS-3B	DRAWING No : NHAI/CPC/FDPR/TCS/ (13) DATE : SEPTEMBER - 2025 Revision: R1 PREPARED BY P.SINGH DESIGNED BY R.RAGHUVANSHI CHECKED BY S.GUPTA APPROVED BY S.K.SINHA	
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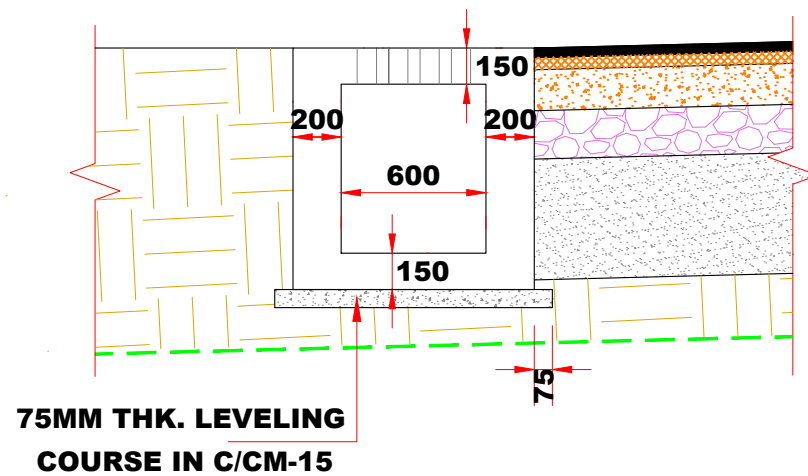
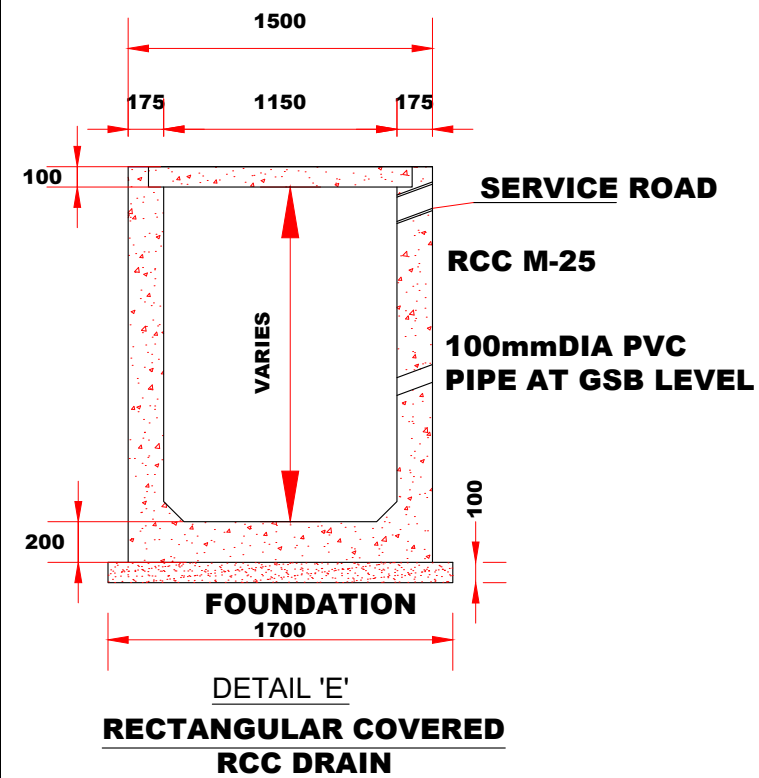
TCS- 3D
TYPICAL CROSS SECTION OPEN AREA WITH BOTH SIDE RCC COVERED DRAIN



CLIENT:-		CONSULTANT:-		PROJECT:-		SCALE :-	DWG TITLE:-	DRAWING No : NHAI/CPC/FDPR/TCS/			
 National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)		 Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472		BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE		AS SHOWN	TYPICAL CROSS SECTION TCS-3D	(15)			
								DATE : SEPTEMBER - 2025			Revision: R1
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								P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA



TCS- 3E
TYPICAL CROSS SECTION OPEN AREA
(HAVING MERGING /DIVERGING LANE)



SECTION - C

CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



Chaitanya Projects Consultancy Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
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PH.: 0120-3223419, 4120472, FAX: 0120-4110472

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SCALE :-

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DWG TITLE:-

TYPICAL CROSS SECTION
TCS-3E

DRAWING No :

NHAI/CPC/FDPR/TCS/

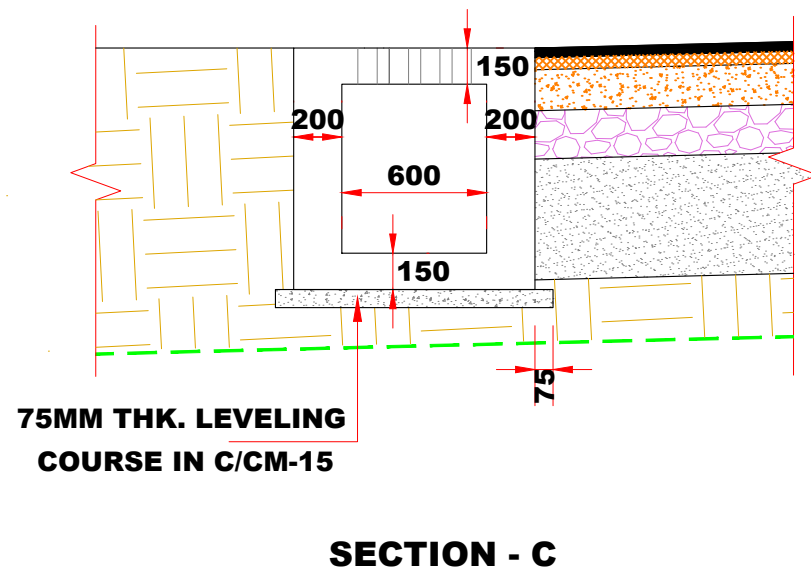
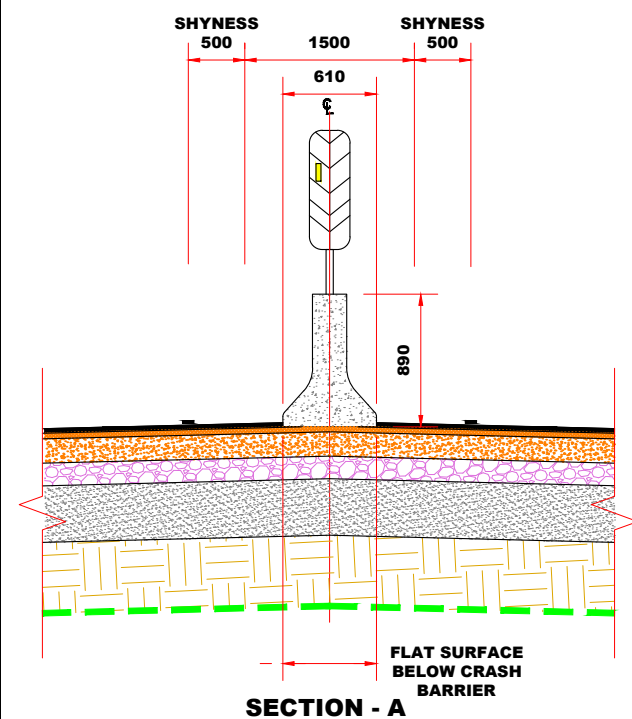
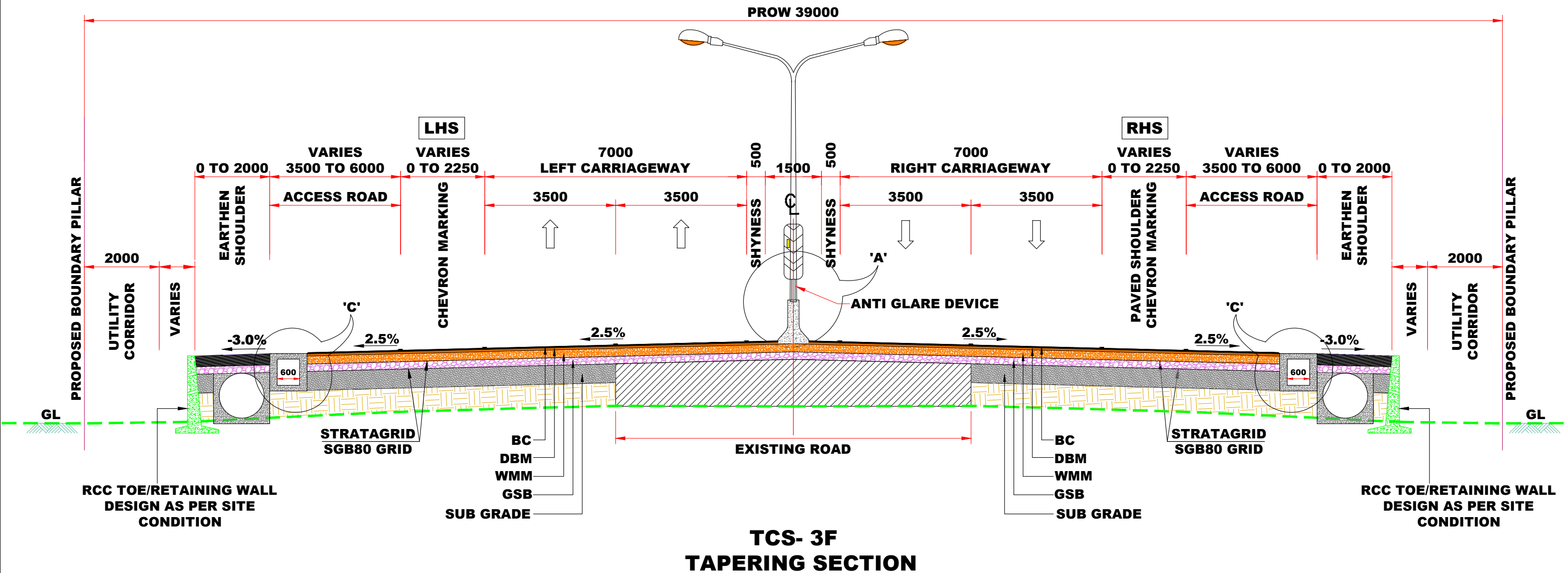
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SCALE :-

AS SHOWN

DWG TITLE:-

TYPICAL CROSS SECTION
TCS-3F

DRAWING No :

NHAI/CPC/FDPR/TCS/

(17)

DATE : SEPTEMBER - 2025

Revision: R1

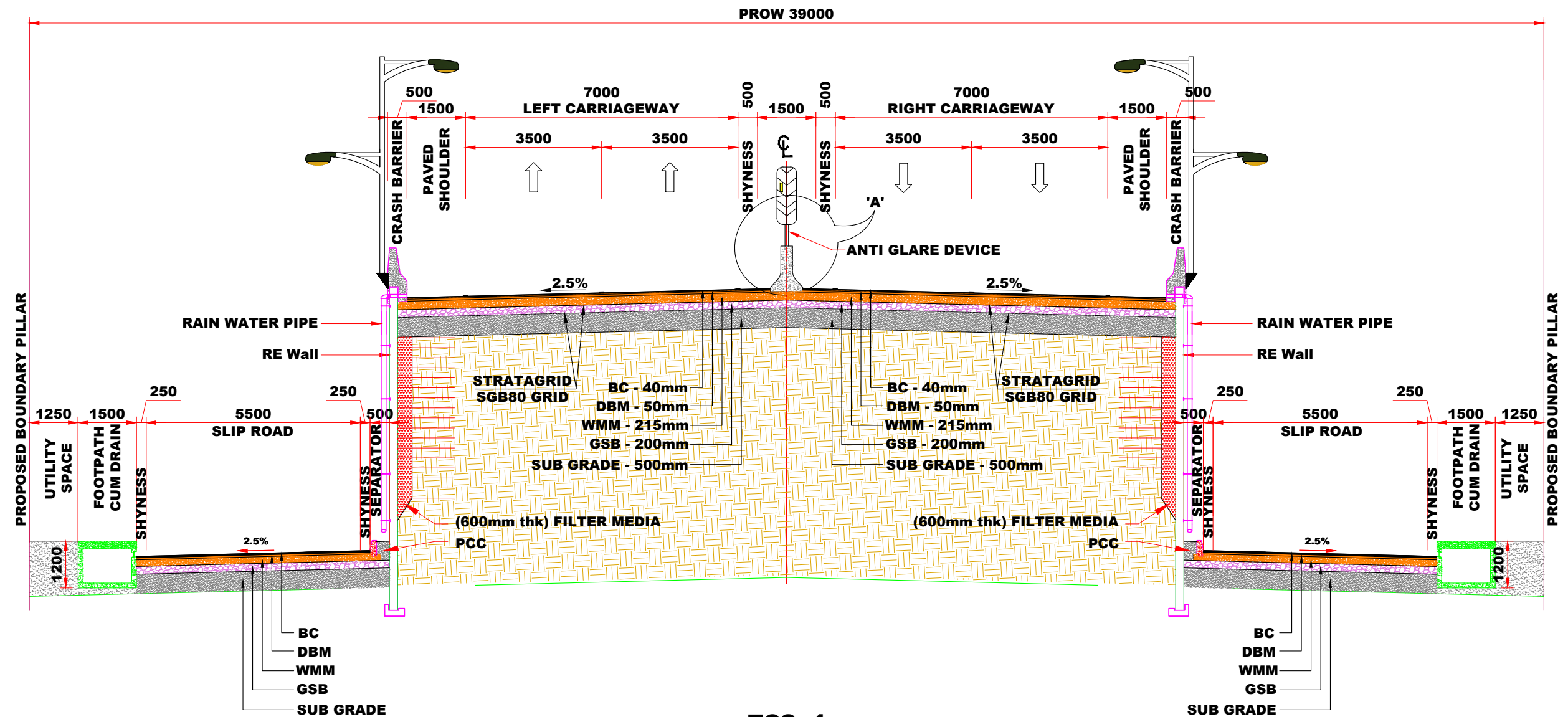
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P.SINGH

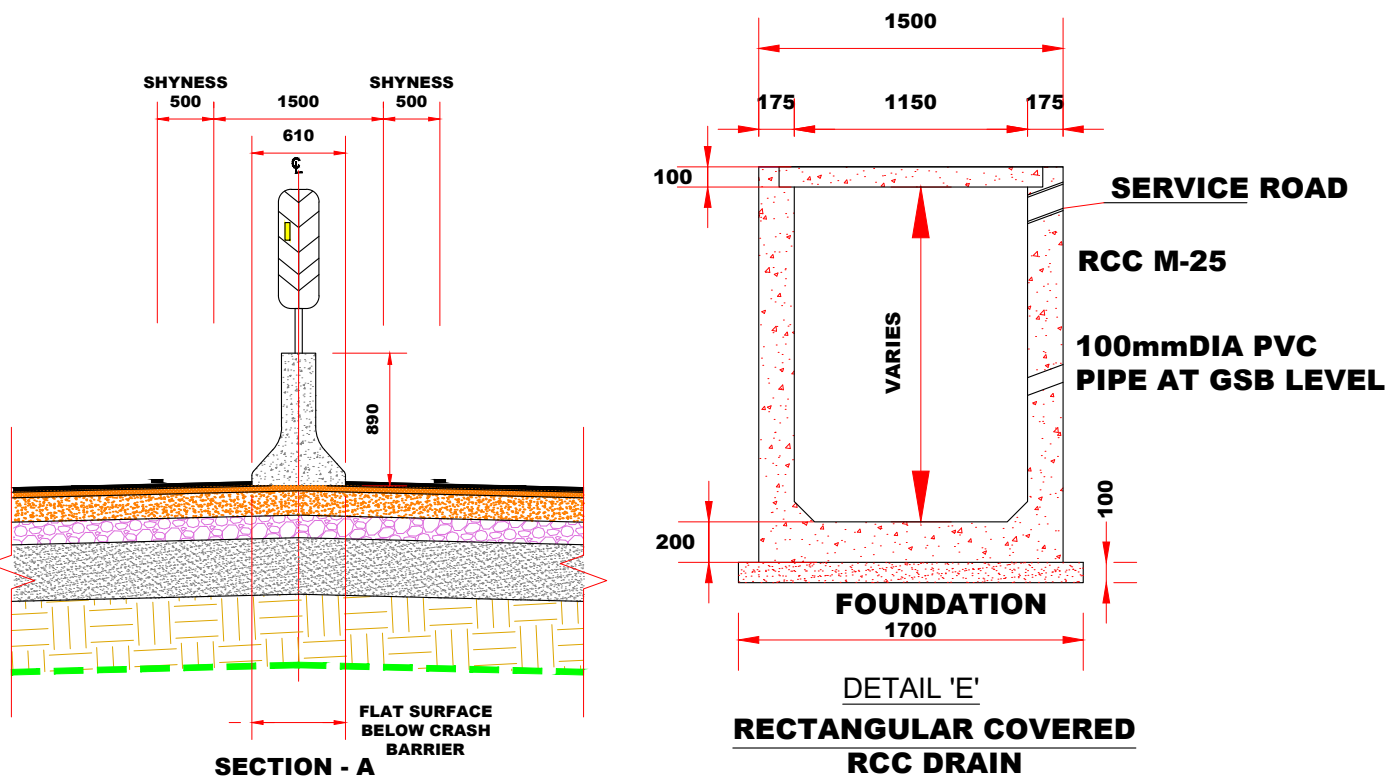
R.RAGHUVANSHI



S.GUPTA

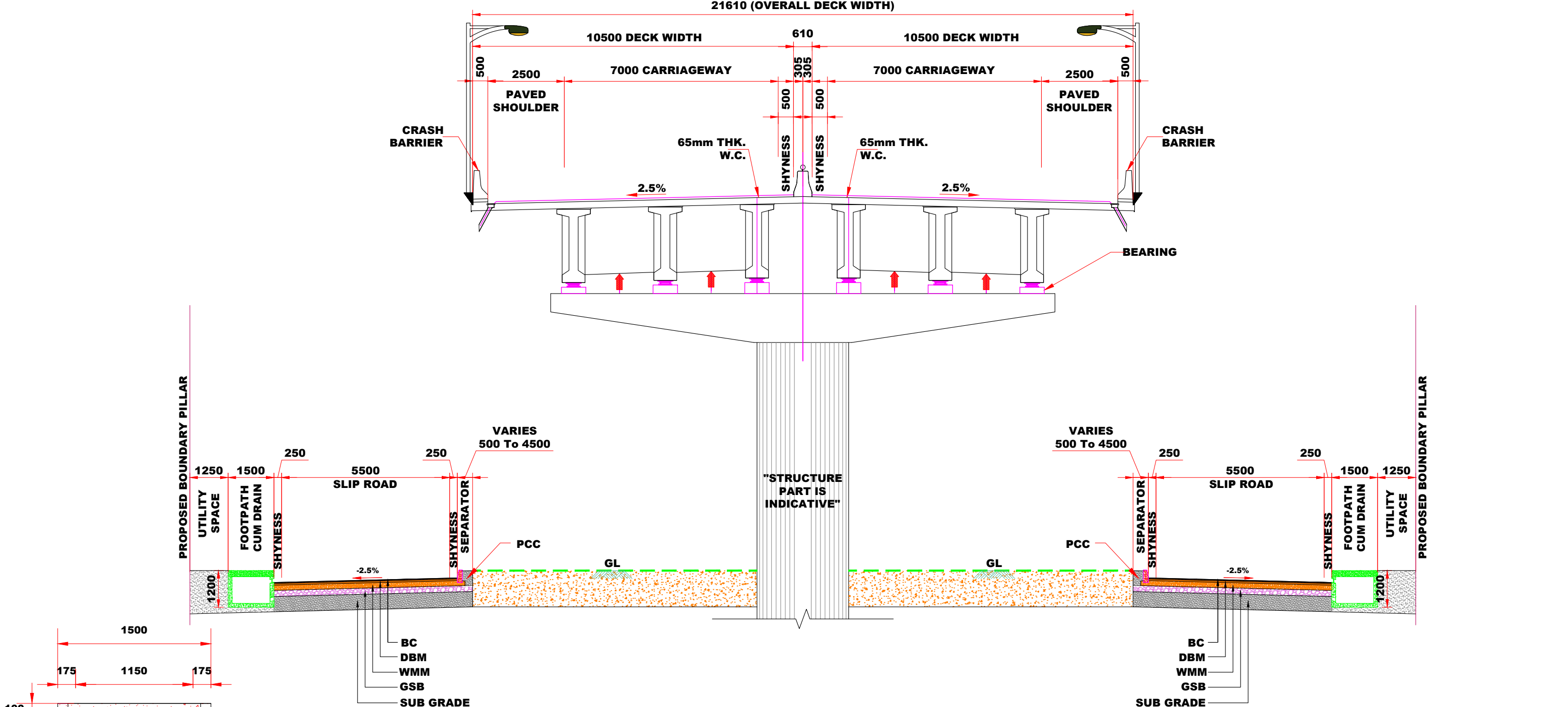
S.K.SINHA



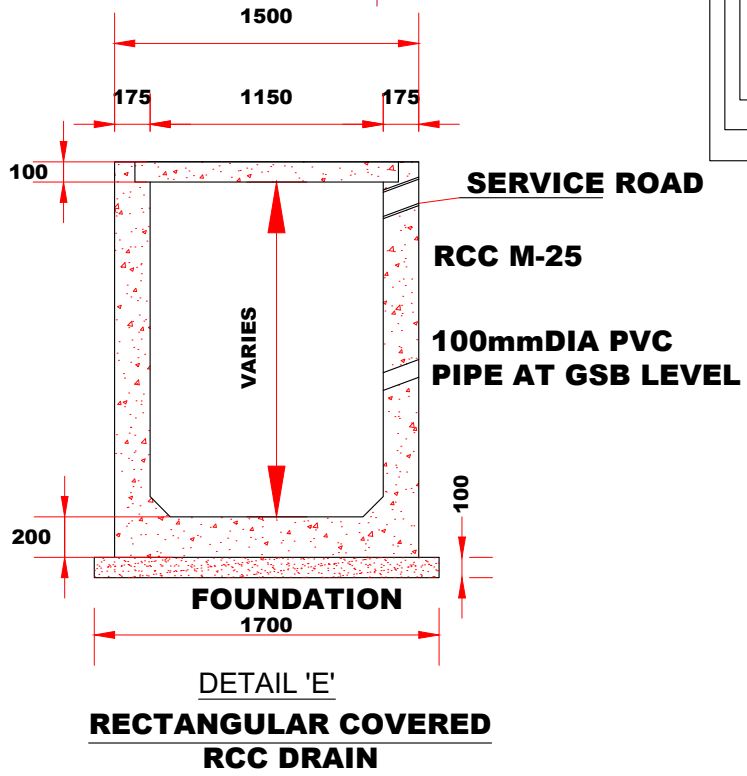
TCS- 4
TYPICAL CROSS SECTION FOR APPROACH FOR FLYOVER/UNDERPASS





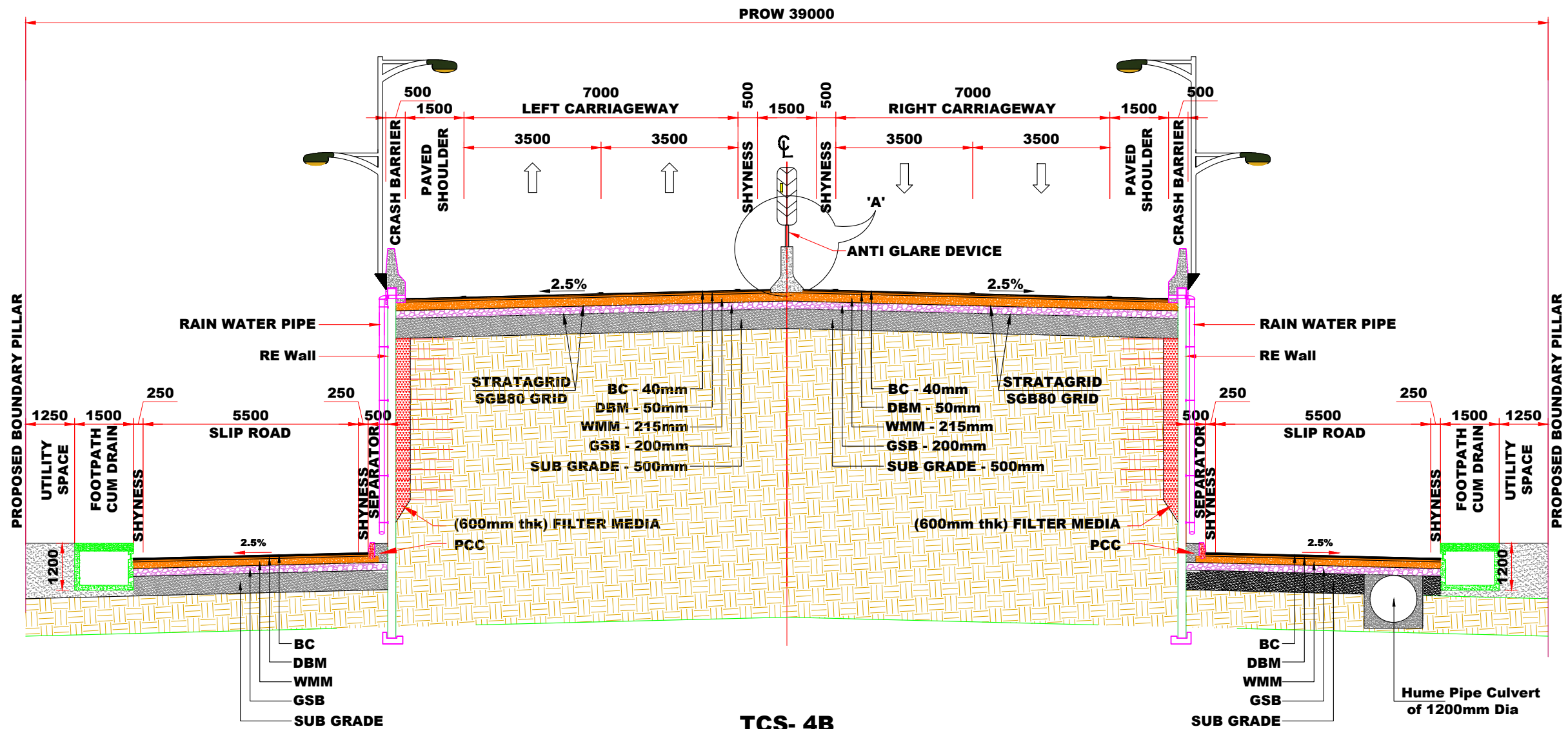
CLIENT:- <div><div><div>National Highways Authority of India</div><div>(Ministry of Road, Transport & Highways, Govt. of India)</div></div></div>		CONSULTANT:- <div><div><div>Chaitanya Projects Consultancy Ltd.</div><div>C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472</div></div></div>		PROJECT:- <div>BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE</div>		SCALE :- <div>AS SHOWN</div>	DWG TITLE:- <div>TYPICAL CROSS SECTION TCS-4</div>	DRAWING No : <div>NHAI/CPC/FDPR/TCS/ (18)</div> <div>DATE : SEPTEMBER - 2025Revision: R1</div> <table><tr><td>PREPARED BY</td><td>DESIGNED BY</td><td>CHECKED BY</td><td>APPROVED BY</td></tr><tr><td>P.SINGH</td><td>R.RAGHUVANSHI</td><td>S.GUPTA</td><td>S.K.SINHA</td></tr></table>				PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY	P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA
PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY																
P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA																



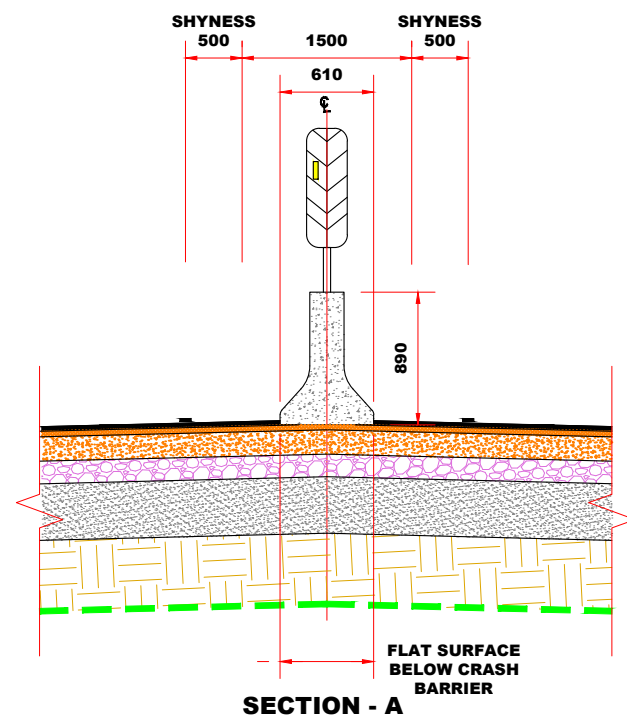
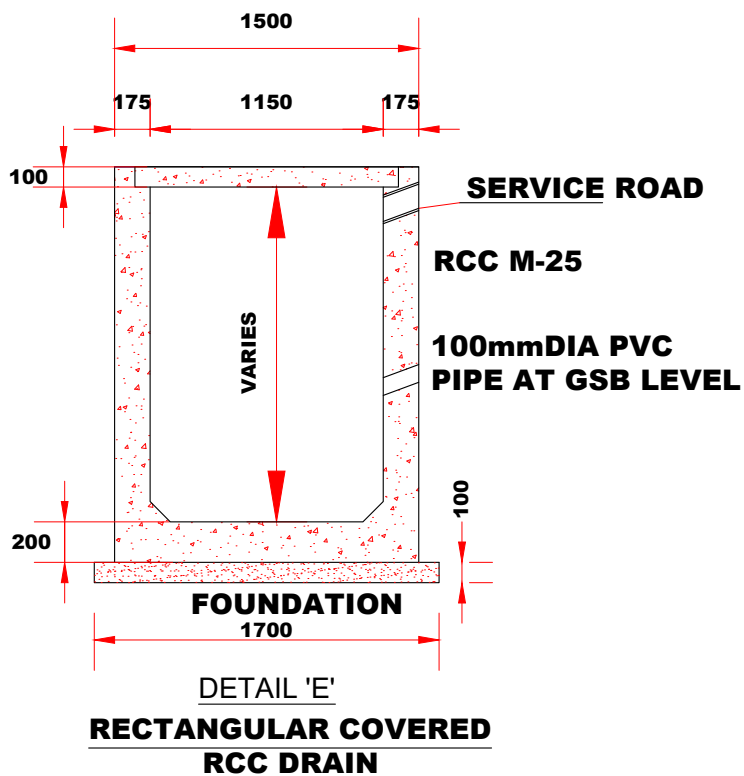
TCS- 4A
TYPICAL CROSS SECTION FOR STRUCTURE OF FLYOVER/UNDERPASS



CLIENT:-  National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)		CONSULTANT:-  Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472	PROJECT:- BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE	SCALE :- AS SHOWN	DWG TITLE:- TYPICAL CROSS SECTION TCS-4A	DRAWING No : NHAI/CPC/FDPR/TCS/ (19) DATE : SEPTEMBER - 2025 Revision: R1 PREPARED BY: P.SINGH DESIGNED BY: R.RAGHUVANSHI CHECKED BY: S.GUPTA APPROVED BY: S.K.SINHA
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TCS- 4B
TYPICAL CROSS SECTION FOR APPROACH FOR FLYOVER/UNDERPASS
WITH HPC IN RHS



CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



Chaitanya Projects Consultancy Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-

BALANCE WORK FOR FOUR LANING OF THE PROJECT
HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH
SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A)
IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON
THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

TYPICAL CROSS SECTION
TCS-4B

DRAWING No :
NHAI/CPC/FDPR/TCS/

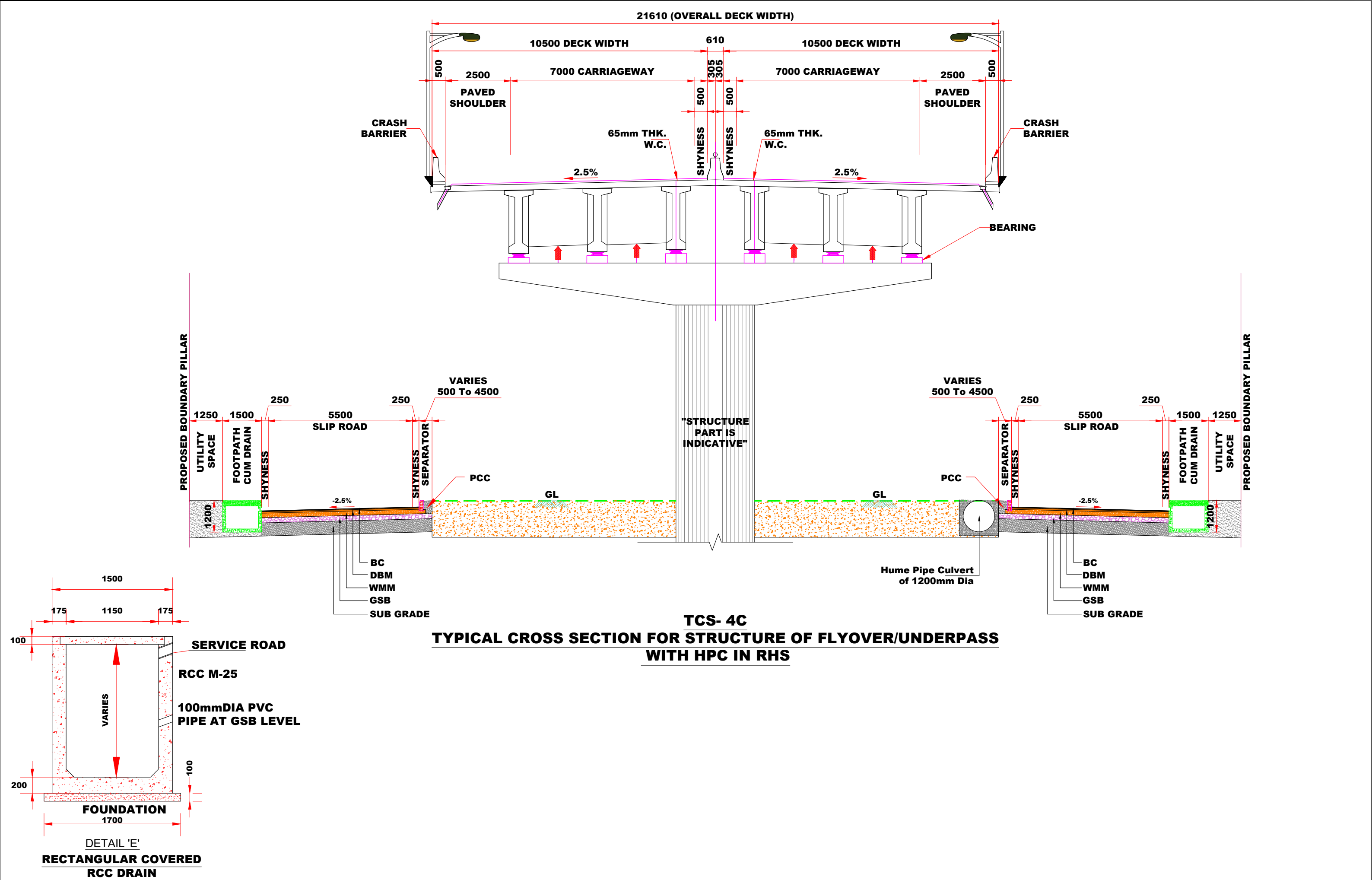
(20)



DATE : SEPTEMBER - 2025

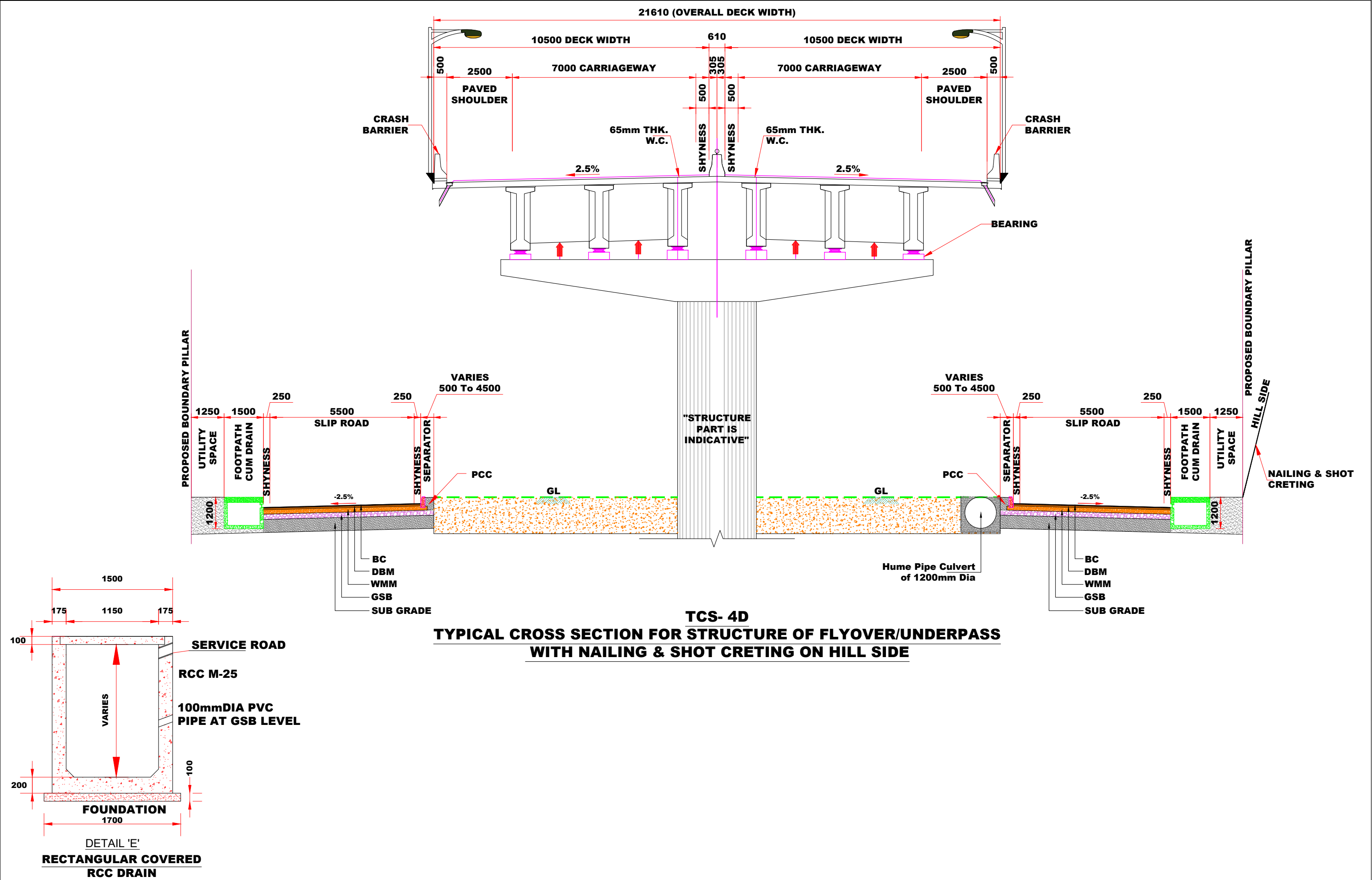
Revision: **R1**



PREPARED BY DESIGNED BY CHECKED BY APPROVED BY

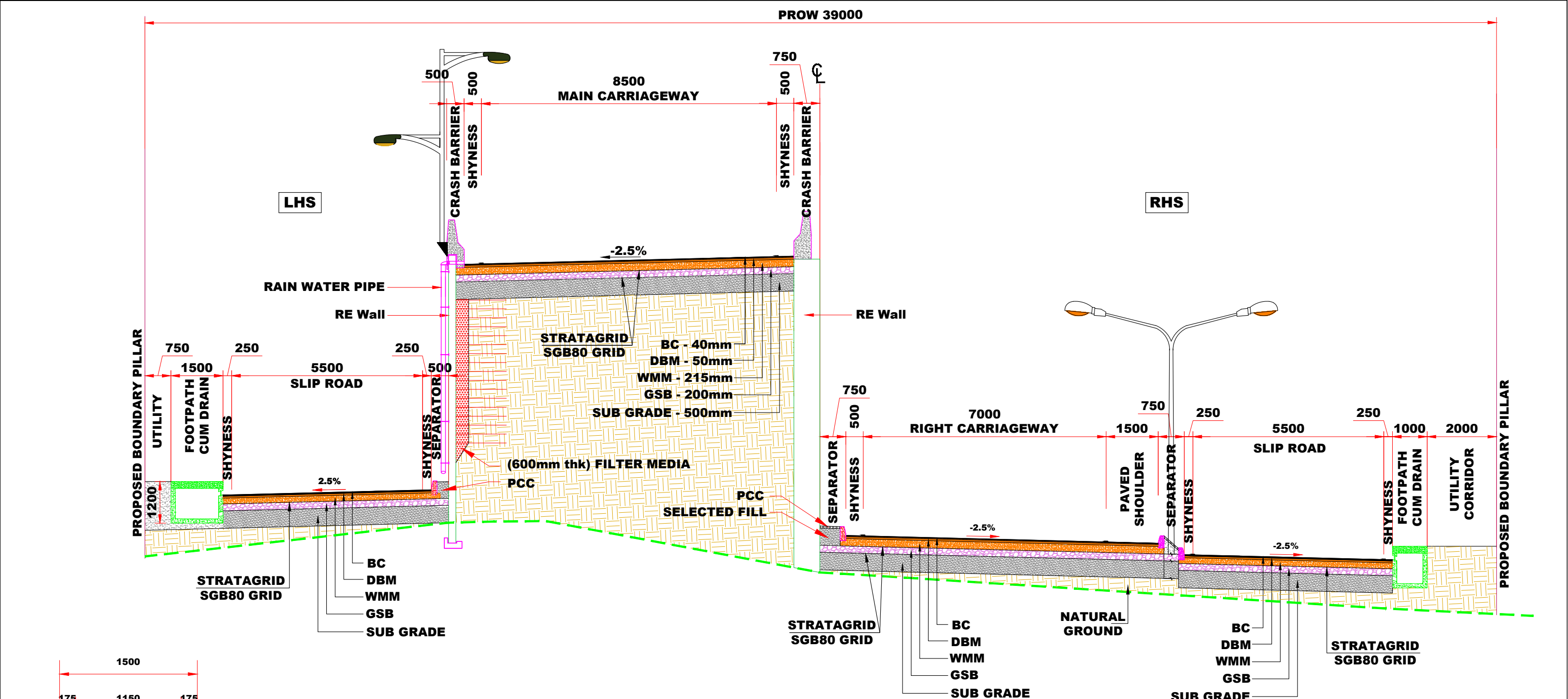
P.SINGH R.RAGHUVANSHI S.GUPTA S.K.SINHA



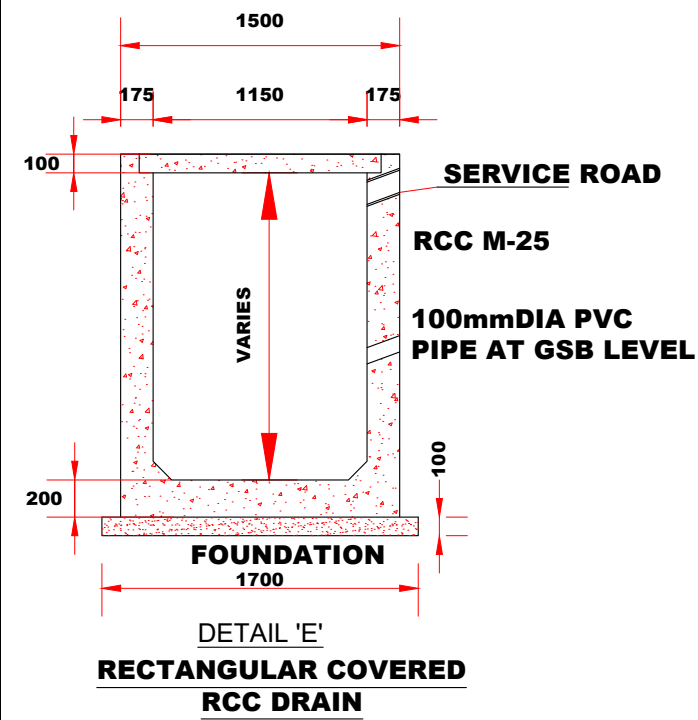
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 <div>National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)</div>		 <div>Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472</div>		BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE		AS SHOWN	TYPICAL CROSS SECTION TCS-4C	(21)			DATE : SEPTEMBER - 2025	Revision: R1
											PREPARED BY	DESIGNED BY
								P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA	





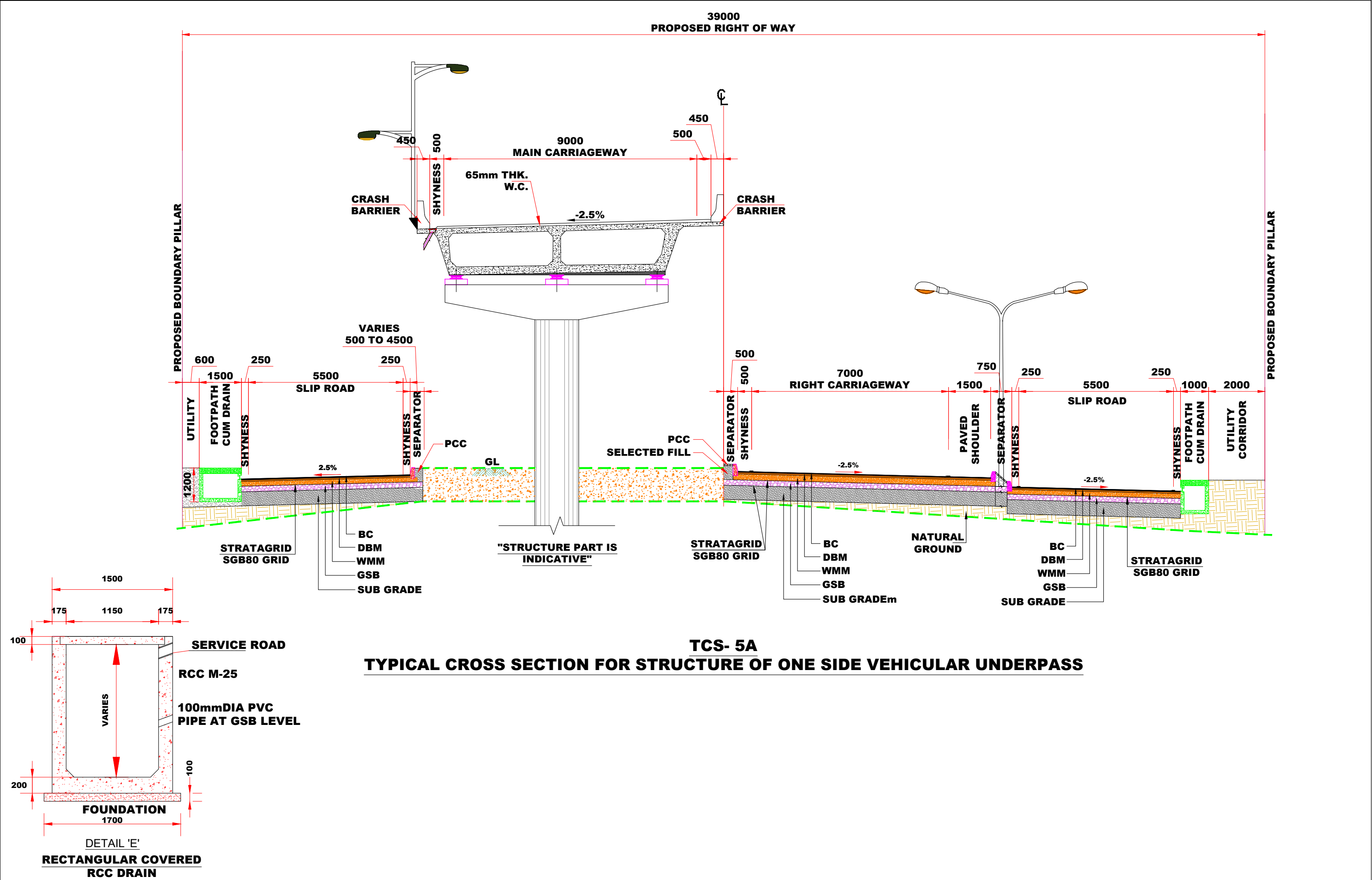
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 National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)		 Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472		BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE		AS SHOWN		TYPICAL CROSS SECTION TCS-4D		DATE : SEPTEMBER - 2025				Revision: R1			
										PREPARED BY		DESIGNED BY		CHECKED BY		APPROVED BY	
										P.SINGH		R.RAGHUVANSHI		S.GUPTA		S.K.SINHA	





TCS- 5
TYPICAL CROSS SECTION FOR APPROACH OF ONE SIDE VEHICULAR UNDERPASS



<div>CLIENT:-</div> <div><div>National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)</div></div>	<div>CONSULTANT:-</div> <div><div>Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472</div></div>	<div>PROJECT:-</div> <div>BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE</div>	<div>SCALE :-</div> <div>AS SHOWN</div>	<div>DWG TITLE:-</div> <div>TYPICAL CROSS SECTION TCS-5</div>	<div>DRAWING No : NHAI/CPC/FDPR/TCS/</div> <div>(24)</div> <div>DATE : SEPTEMBER - 2025</div> <div>Revision: R1</div> <div>PREPARED BY: P.SINGH</div> <div>DESIGNED BY: R.RAGHUVANSHI</div> <div>CHECKED BY: S.GUPTA</div> <div>APPROVED BY: S.K.SINHA</div>
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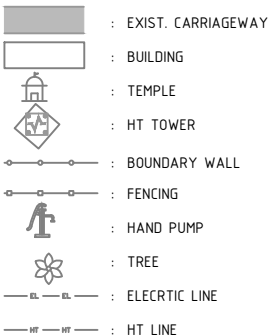


CLIENT:-		CONSULTANT:-		PROJECT:-		SCALE :-	DWG TITLE:-	DRAWING No : NHAI/CPC/FDPR/TCS/ (25)			
 National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)		 Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472		BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE		AS SHOWN	TYPICAL CROSS SECTION TCS-5A	DATE : SEPTEMBER - 2025		Revision: R1	
								PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY
								P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA

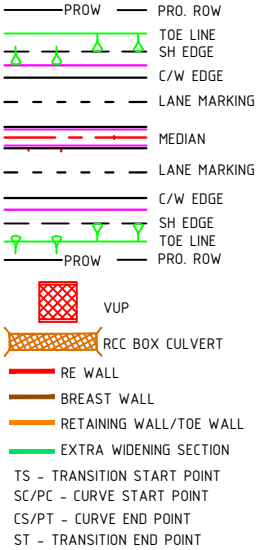
PLAN & PROFILE

LEGEND :

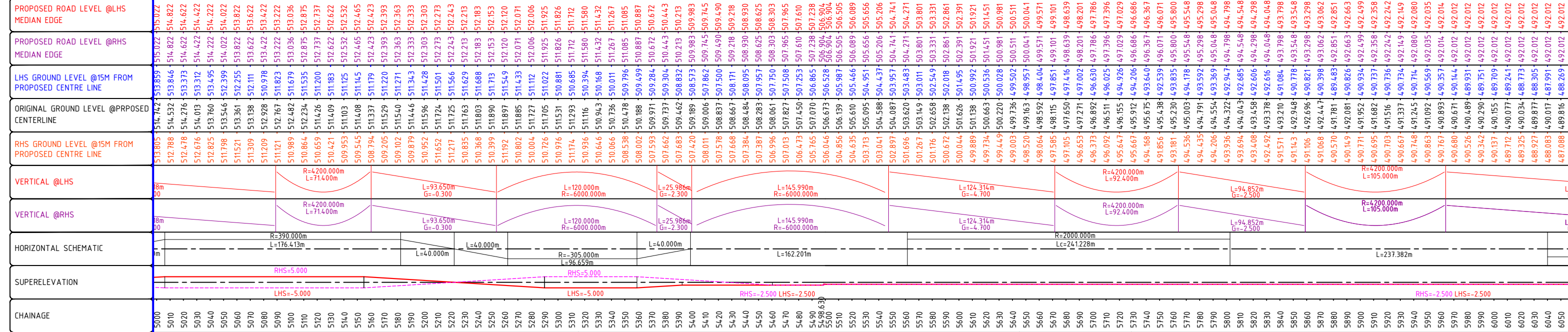
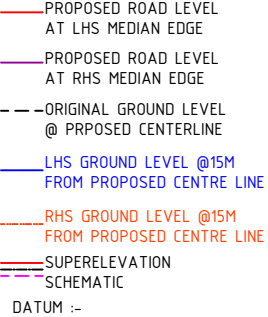
EXISTING PLAN :



PROPOSED PLAN :



PROPOSED PROFILE :



CLIENT:- National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)

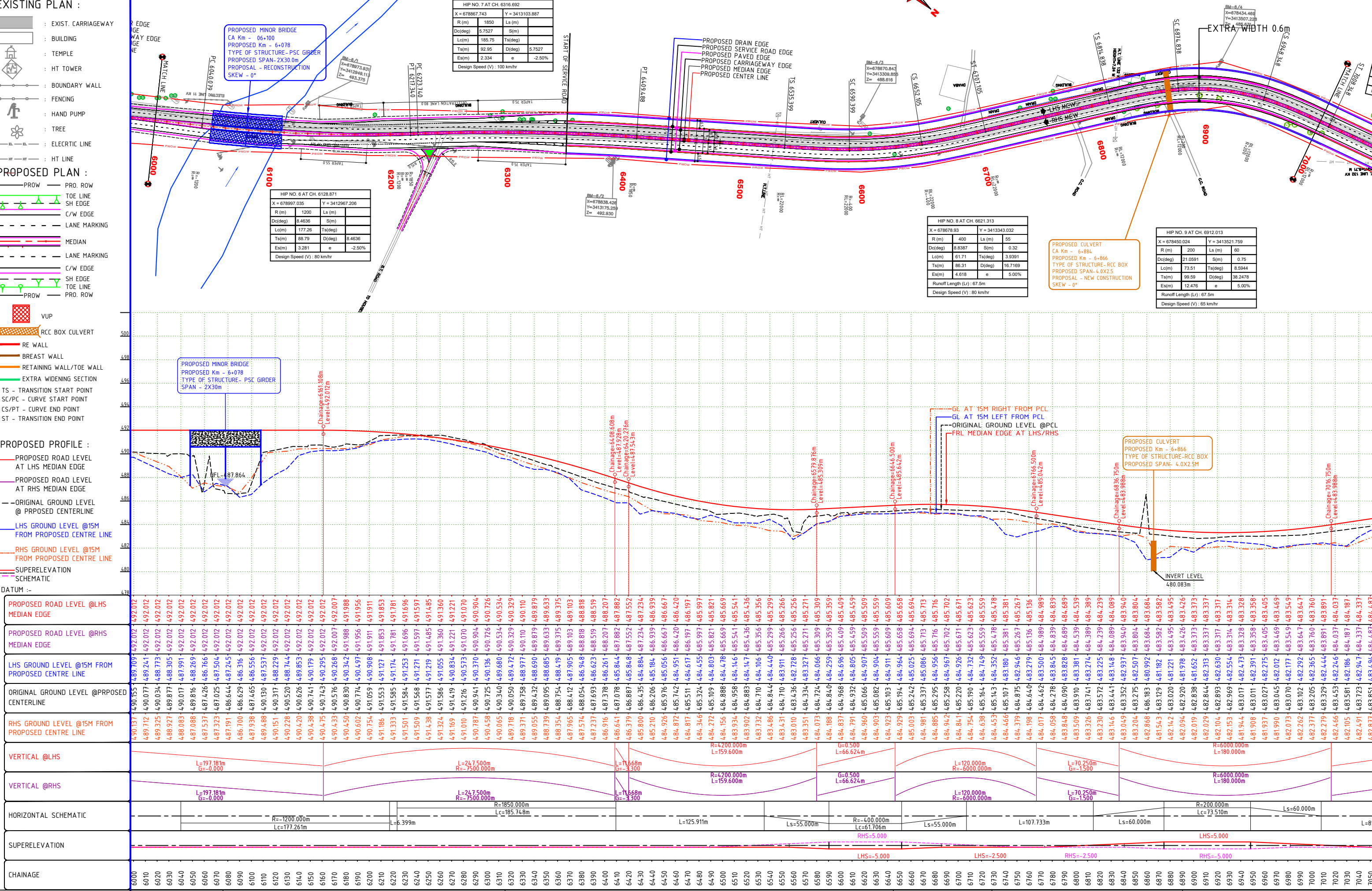
CONSULTANT:- Chaitanya Projects Consultancy Pvt. Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472

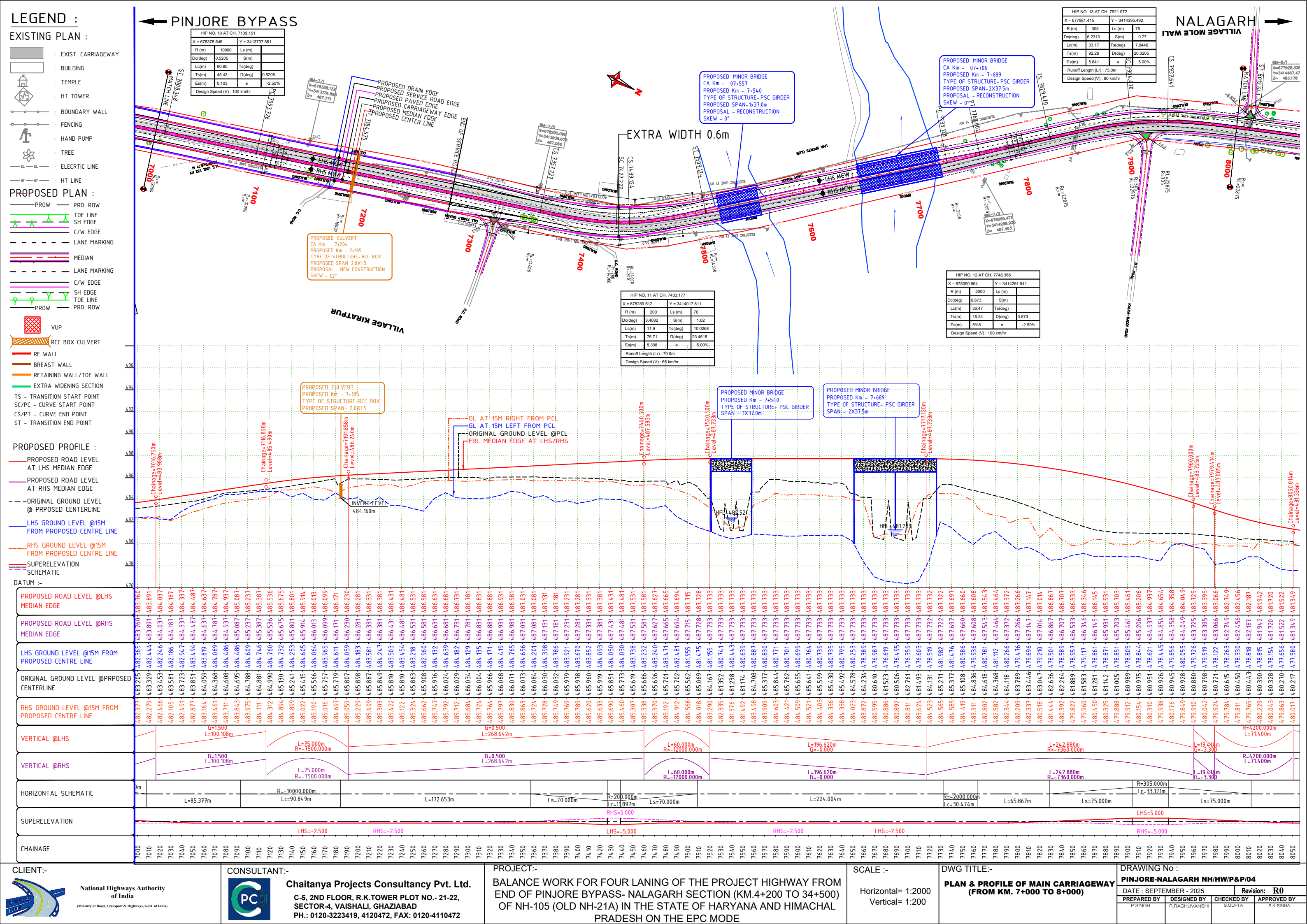
PROJECT:- BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE

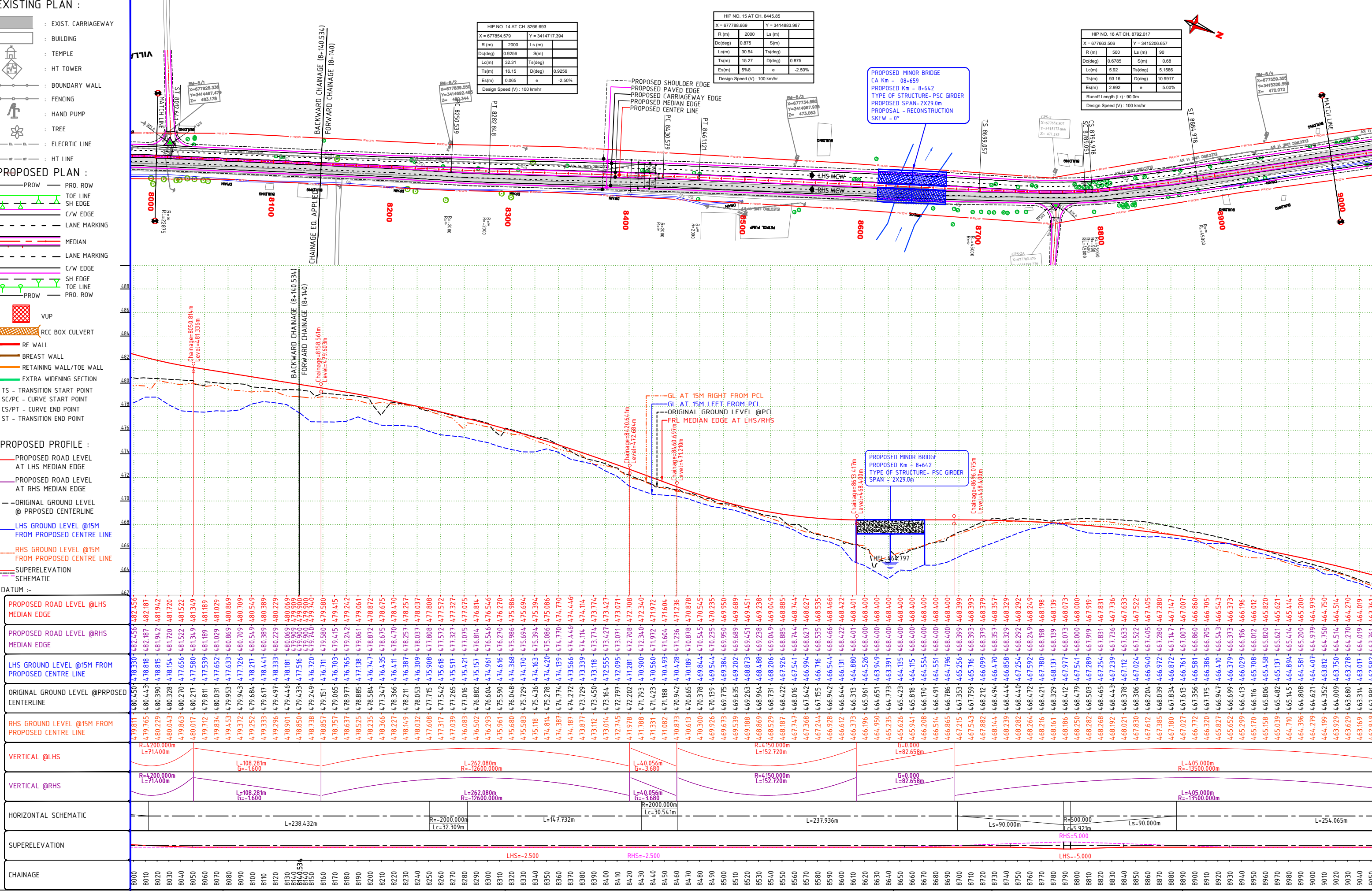
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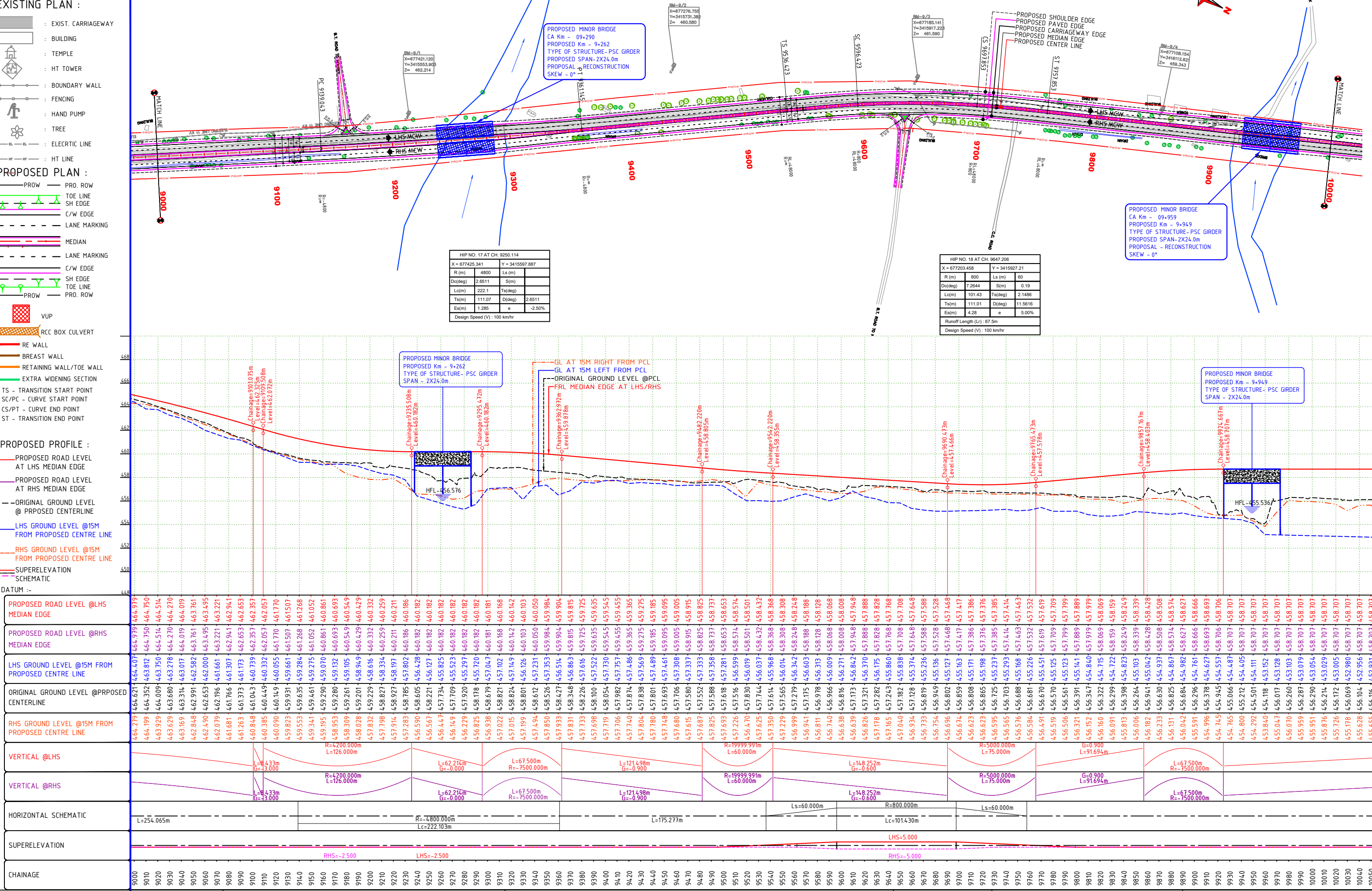
DWG TITLE:- PLAN & PROFILE OF MAIN CARRIAGEWAY (FROM KM. 5+000 TO 6+000)

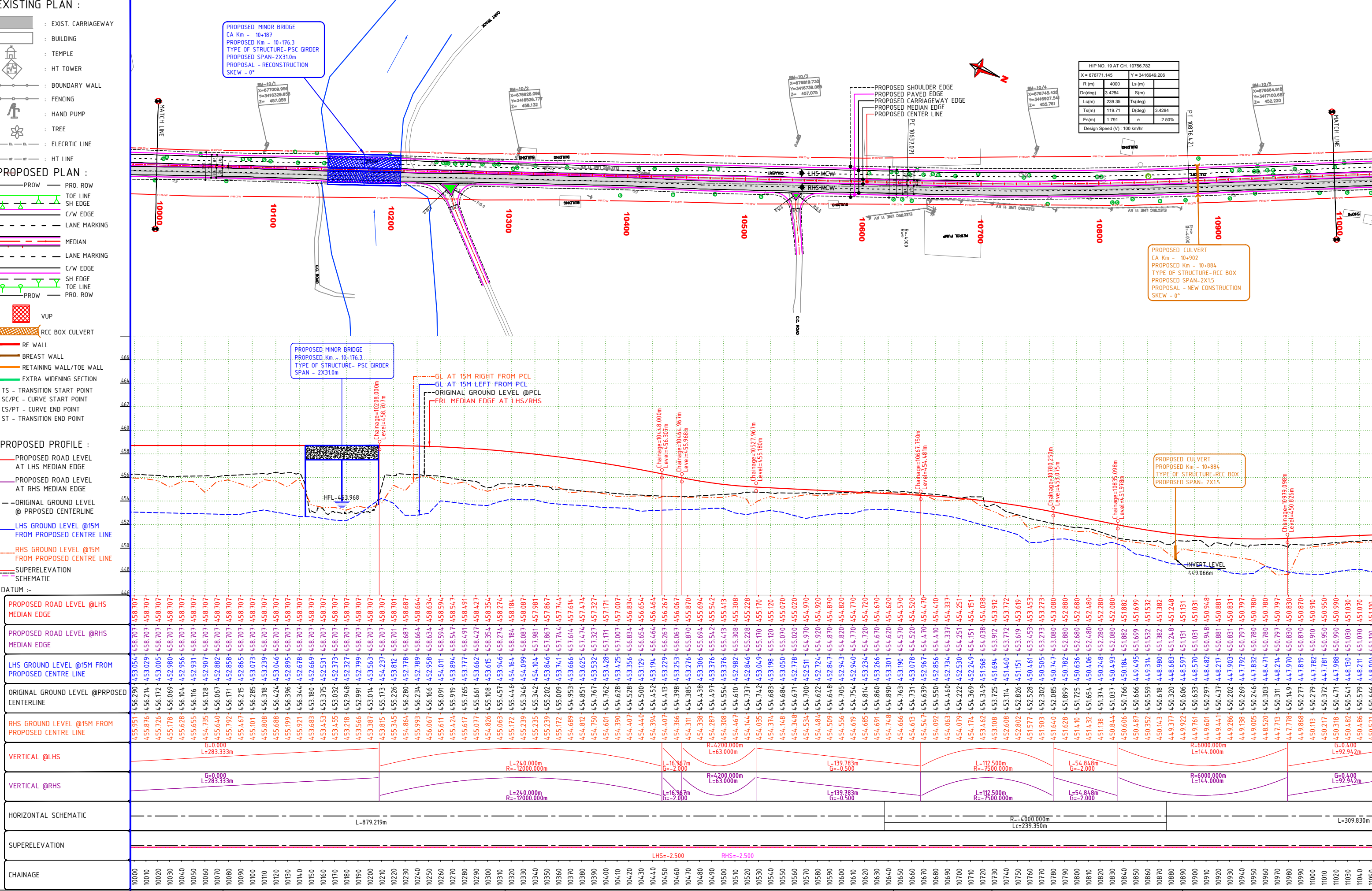
DRAWING No : PINJORE-NALAGARH NH/HW/P&P/02 DATE : SEPTEMBER - 2025 Revision: R0 PREPARED BY P.SINGH DESIGNED BY R.RAGHUVANSHI CHECKED BY S.GUPTA APPROVED BY S.K.SINHA

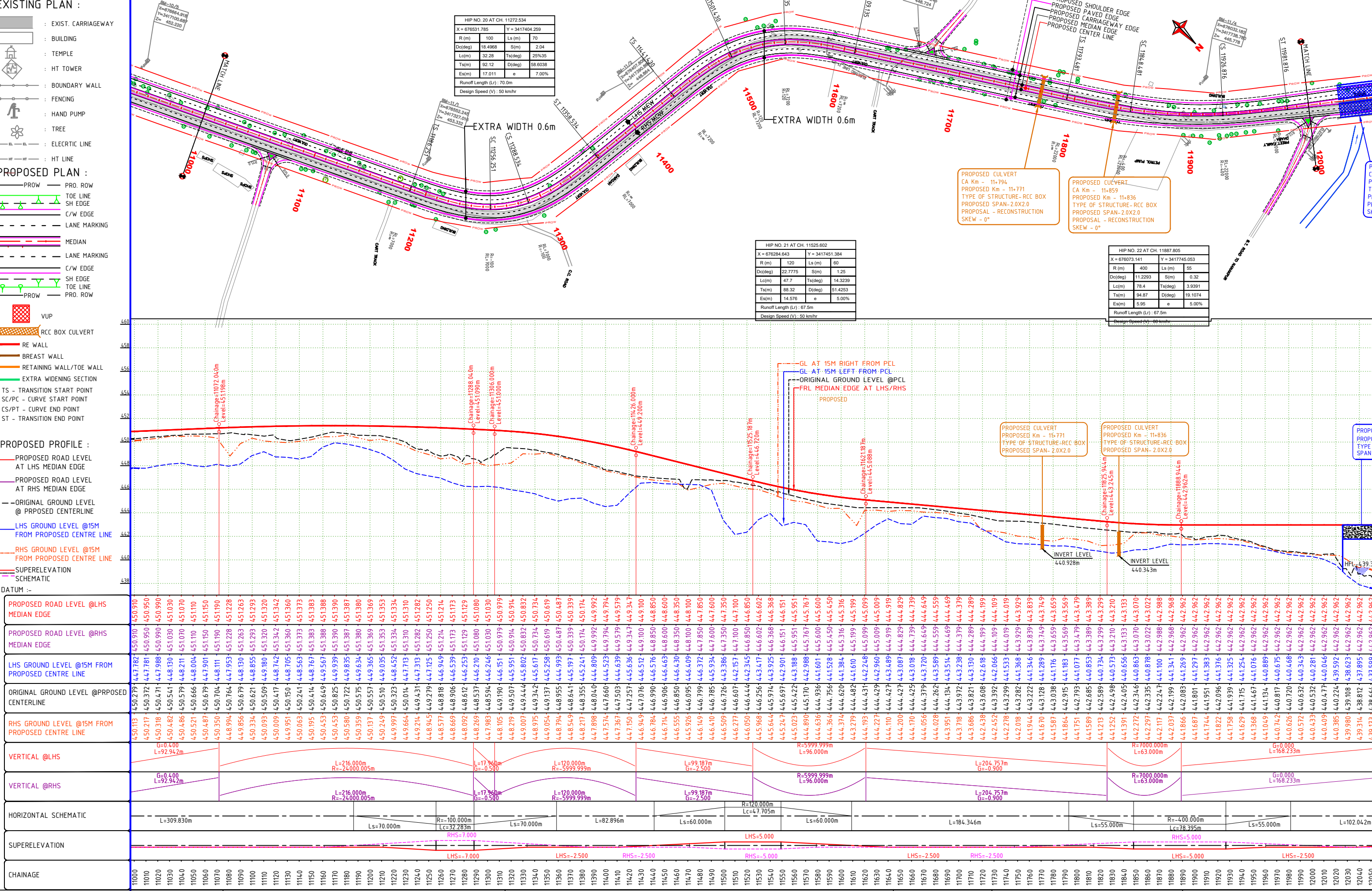


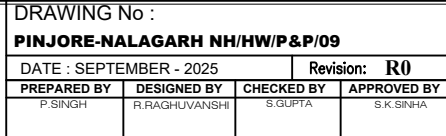


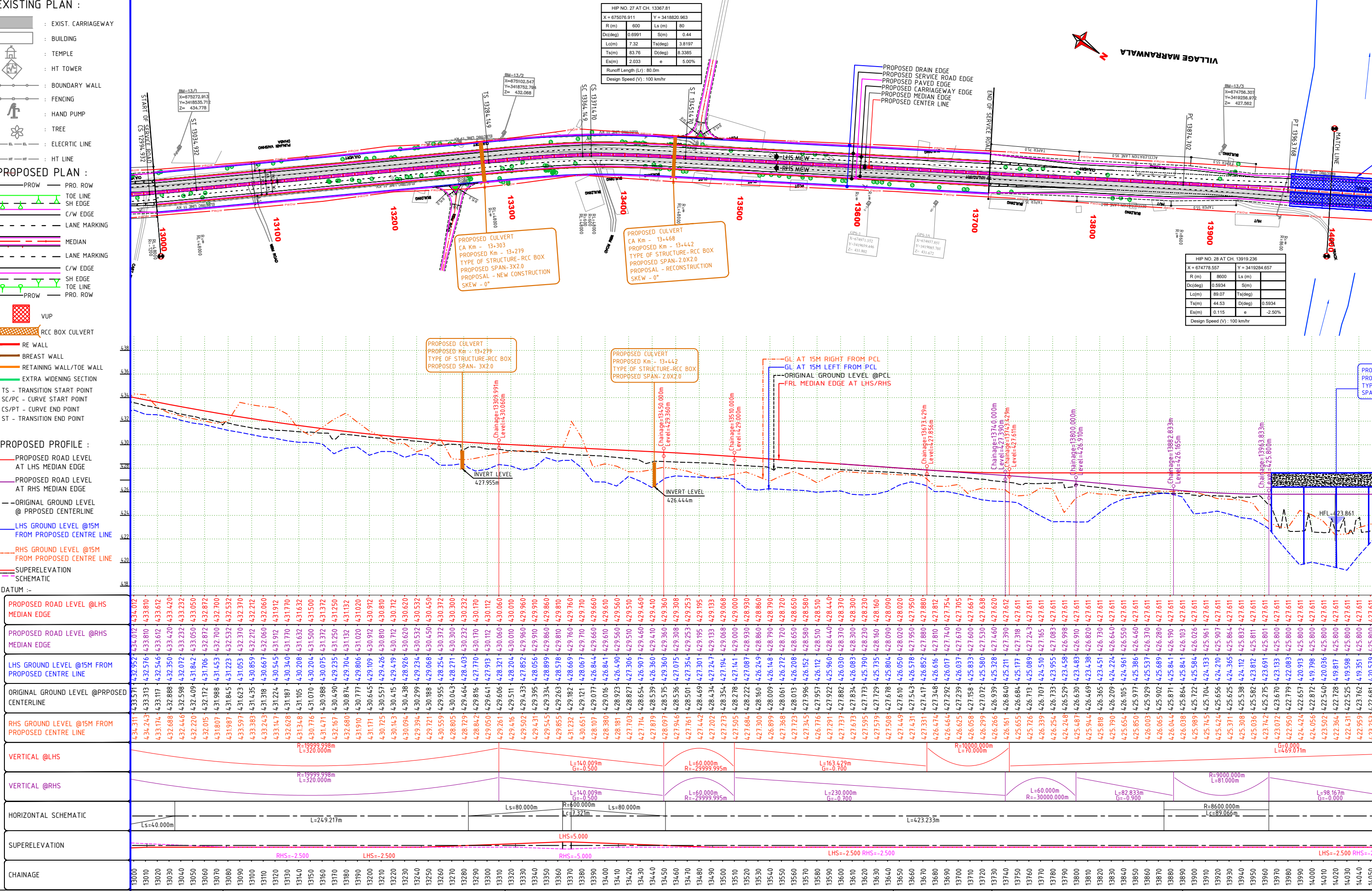


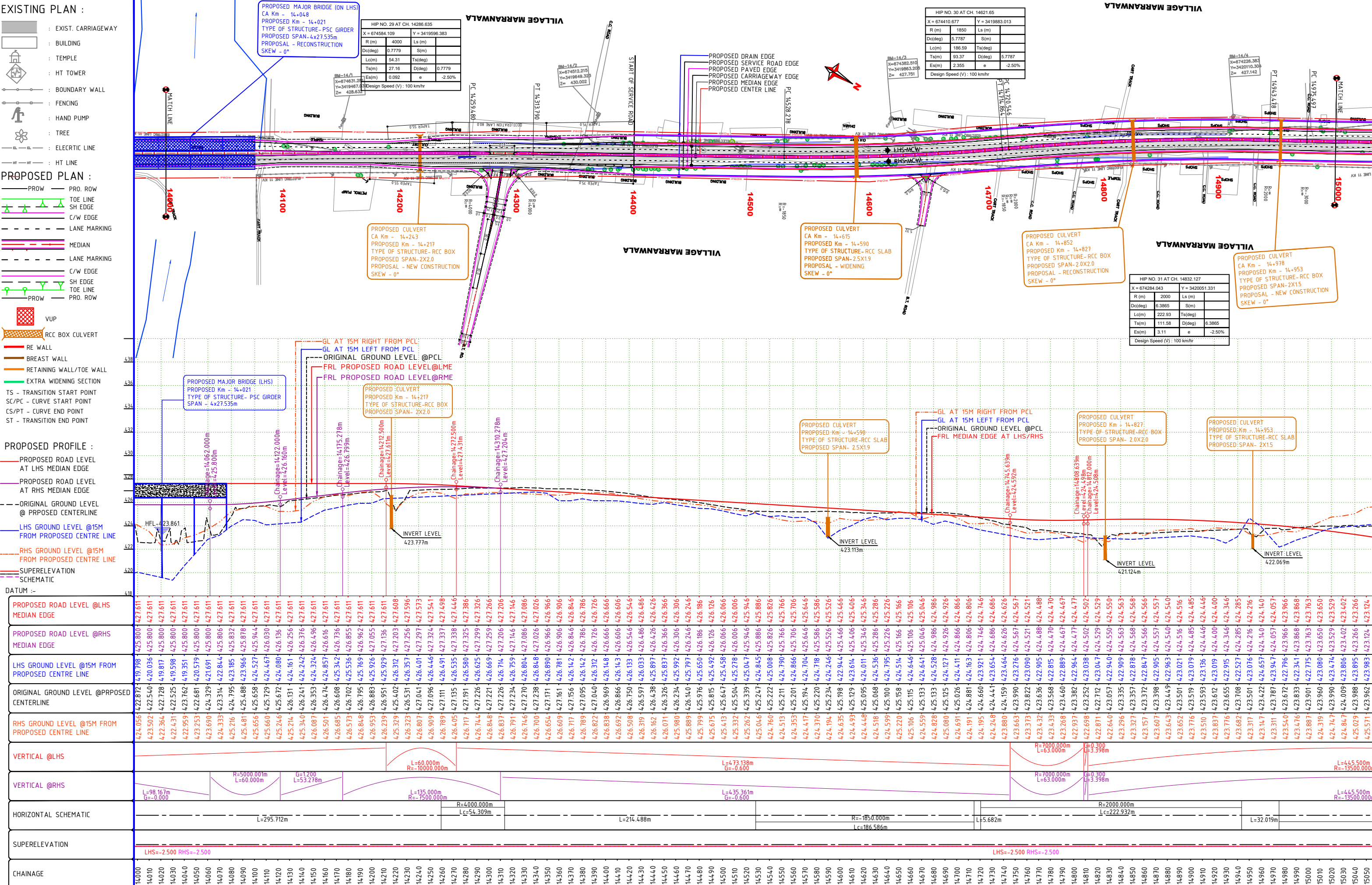


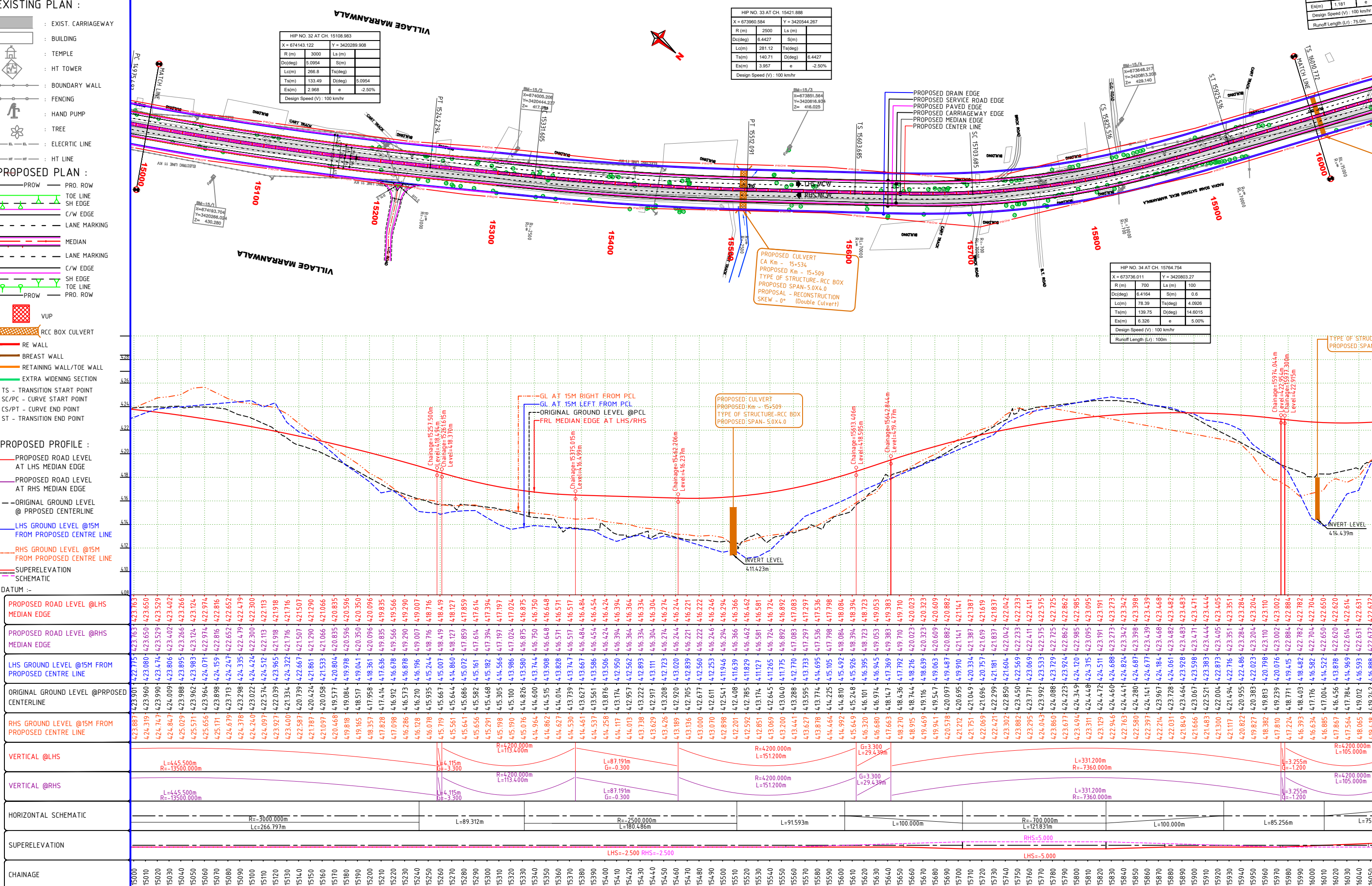












DRAWING No :

PINJORE-NALAGARH NH/HW/P&P/14

DATE : SEPTEMBER - 2025		Revision: R0	
PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY
P. SINGH	R.RAGHUVA NSHII	S.GUPTA	S.K. SINHA

LEGEND :

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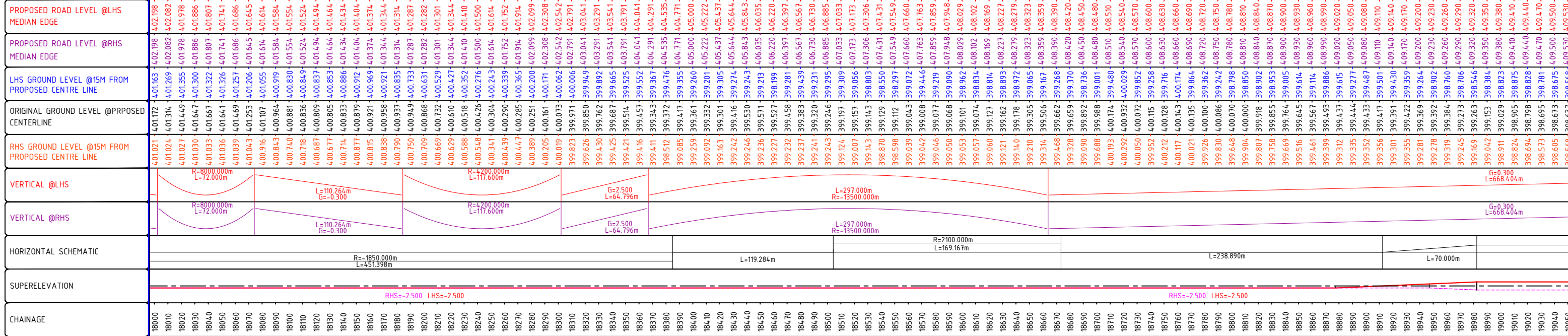
- EXIST. CARRIAGEWAY
- BUILDING
- TEMPLE
- HT TOWER
- BOUNDARY WALL
- FENCING
- HAND PUMP
- TREE
- ELECTRIC LINE
- HT LINE

PROPOSED PLAN :

- PROW
- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
- TOE LINE
- PRO. ROW
- VUP
- RCC BOX CULVERT
- RE WALL
- BREAST WALL
- RETAINING WALL/TOE WALL
- EXTRA WIDENING SECTION
- TS - TRANSITION START POINT
- SC/PC - CURVE START POINT
- CS/PT - CURVE END POINT
- ST - TRANSITION END POINT

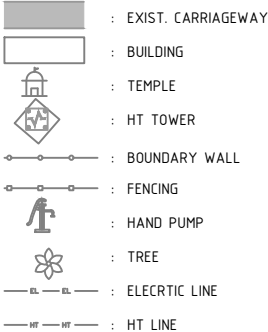
PROPOSED PROFILE :

- PROPOSED ROAD LEVEL AT LHS MEDIAN EDGE
- PROPOSED ROAD LEVEL AT RHS MEDIAN EDGE
- ORIGINAL GROUND LEVEL @ PROPOSED CENTERLINE
- LHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- RHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- SUPERELEVATION
- SCHEMATIC

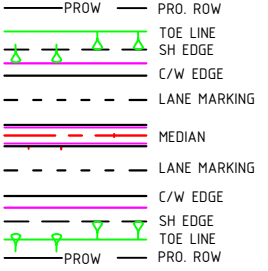


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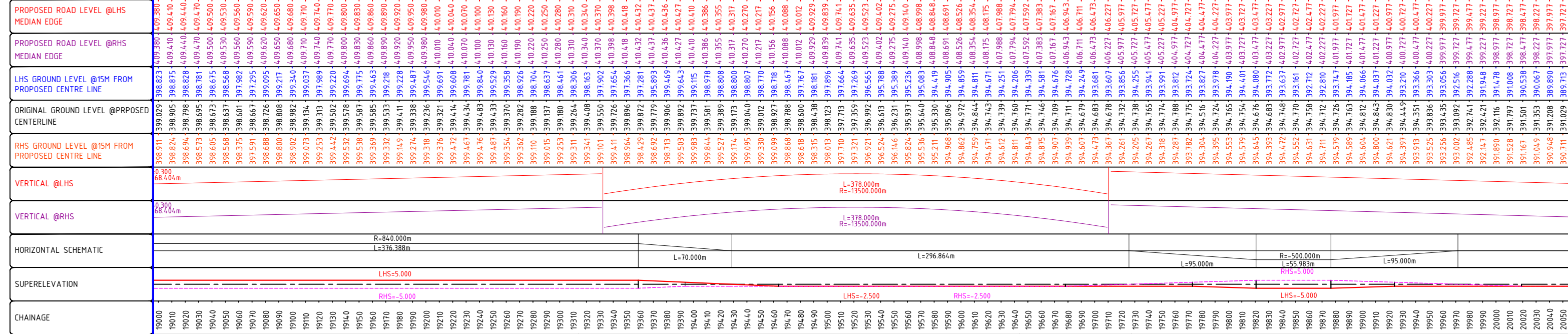
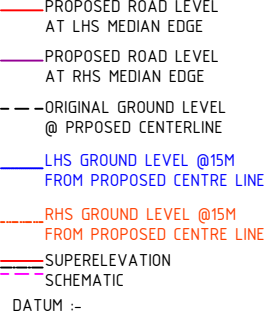
EXISTING PLAN :



PROPOSED PLAN :



PROPOSED PROFILE :



CLIENT:- National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:- Chaitanya Projects Consultancy Pvt. Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:- BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE

SCALE :- Horizontal= 1:2000 Vertical= 1:200

DWG TITLE:- PLAN & PROFILE OF MAIN CARRIAGEWAY (FROM KM. 19+000 TO 20+000)

DRAWING No : PINJORE-NALAGARH NH/HW/P&P/16 DATE : SEPTEMBER - 2025 Revision: R0 PREPARED BY P.SINGH DESIGNED BY R.RAGHUVANSHI CHECKED BY S.GUPTA APPROVED BY S.K.SINHA

LEGEND :

EXISTING PLAN :

- EXIST. CARRIAGEWAY
- BUILDING
- TEMPLE
- HT TOWER
- BOUNDARY WALL
- FENCING
- HAND PUMP
- TREE
- ELECTRIC LINE
- HT LINE

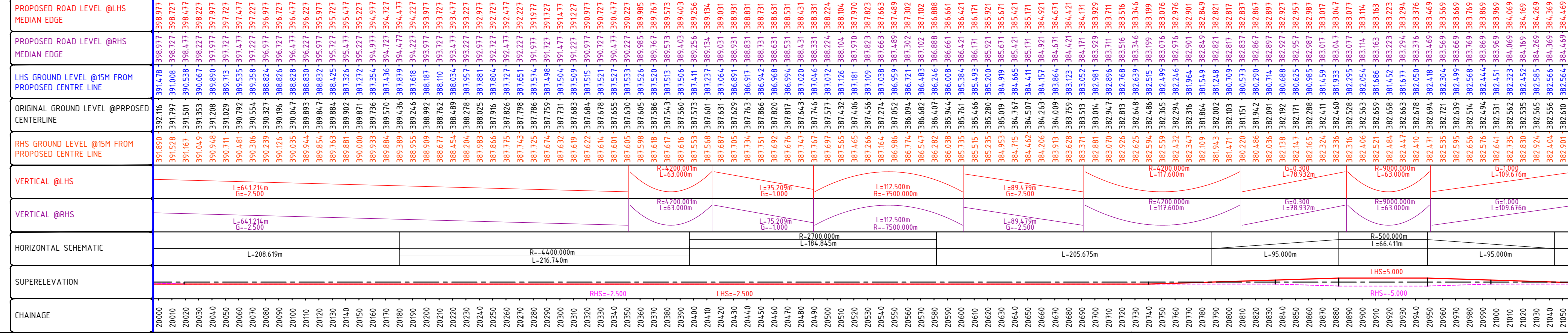
PROPOSED PLAN :

- PROW
- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
- TOE LINE
- PROW
- PRO. ROW

- VUP
- RCC BOX CULVERT
- RE WALL
- BREAST WALL
- RETAINING WALL/TOE WALL
- EXTRA WIDENING SECTION
- TS - TRANSITION START POINT
- SC/PC - CURVE START POINT
- CS/PT - CURVE END POINT
- ST - TRANSITION END POINT

PROPOSED PROFILE :

- PROPOSED ROAD LEVEL AT LHS MEDIAN EDGE
- PROPOSED ROAD LEVEL AT RHS MEDIAN EDGE
- ORIGINAL GROUND LEVEL @ PROPOSED CENTERLINE
- LHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- RHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- SUPERELEVATION
- SCHEMATIC
- DATUM :-



CLIENT:-

National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-

Chaitanya Projects Consultancy Pvt. Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-

BALANCE WORK FOR FOUR LANE OF THE PROJECT HIGHWAY FROM
END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500)
OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL
PRADESH ON THE EPC MODE

SCALE :-

Horizontal= 1:2000
Vertical= 1:200

DWG TITLE:-

PLAN & PROFILE OF MAIN CARRIAGEWAY
(FROM KM. 20+000 TO 21+000)

DRAWING No :

DATE : SEPTEMBER - 2025

Revision: R0

PREPARED BY : P.SINGH

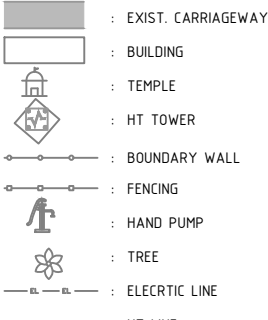
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CHECKED BY : S.GUPTA

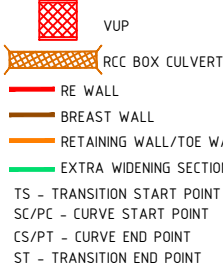
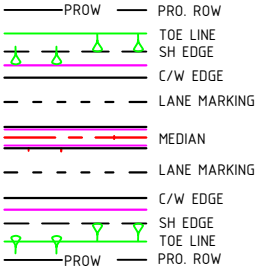
APPROVED BY : S.K.SINHA

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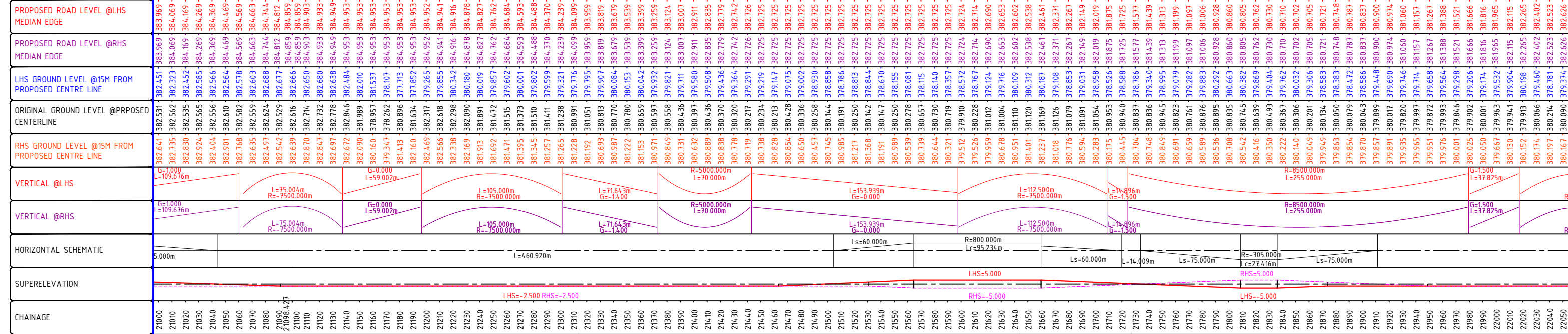
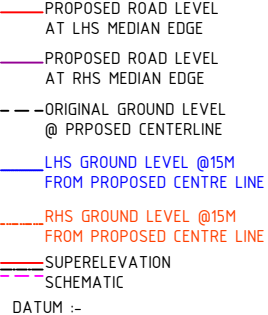
EXISTING PLAN :



PROPOSED PLAN :



PROPOSED PROFILE :



CONSULTANT:-
Chaitanya Projects Consultancy Pvt. Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-
BALANCE WORK FOR FOUR LANE OF THE PROJECT HIGHWAY FROM
END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500)
OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL
PRADESH ON THE EPC MODE

SCALE :-
Horizontal= 1:2000
Vertical= 1:200

DWG TITLE:-
**PLAN & PROFILE OF MAIN CARRIAGEWAY
(FROM KM. 21+000 TO 22+000)**

DRAWING No :
DATE : SEPTEMBER - 2025
Revision: **R0**
PREPARED BY: P. SINGH
DESIGNED BY: R. RAJAGURANSHI
CHECKED BY: S. GUPTA
APPROVED BY: S. K. SINHA

LEGEND :

EXISTING PLAN :

- EXIST. CARRIAGEWAY
- BUILDING
- TEMPLE
- HT TOWER
- BOUNDARY WALL
- FENCING
- HAND PUMP
- TREE
- ELECTRIC LINE
- HT LINE

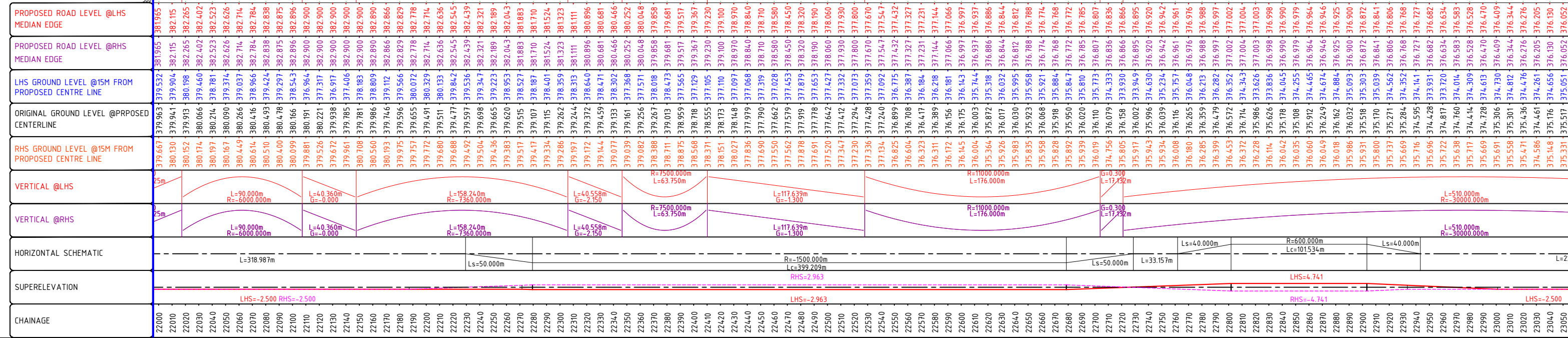
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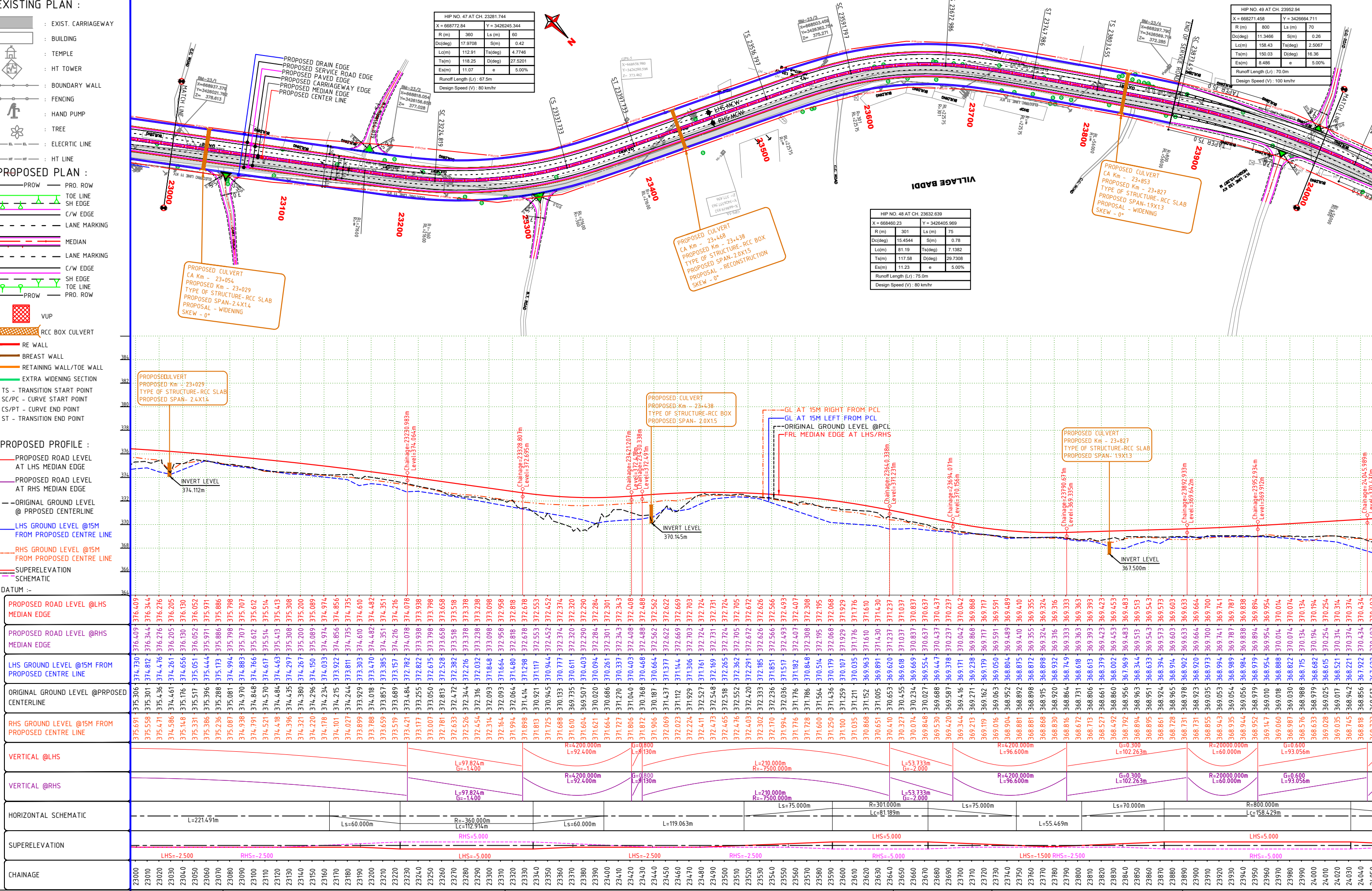
- PROW
- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
- TOE LINE
- PROW
- PRO. ROW

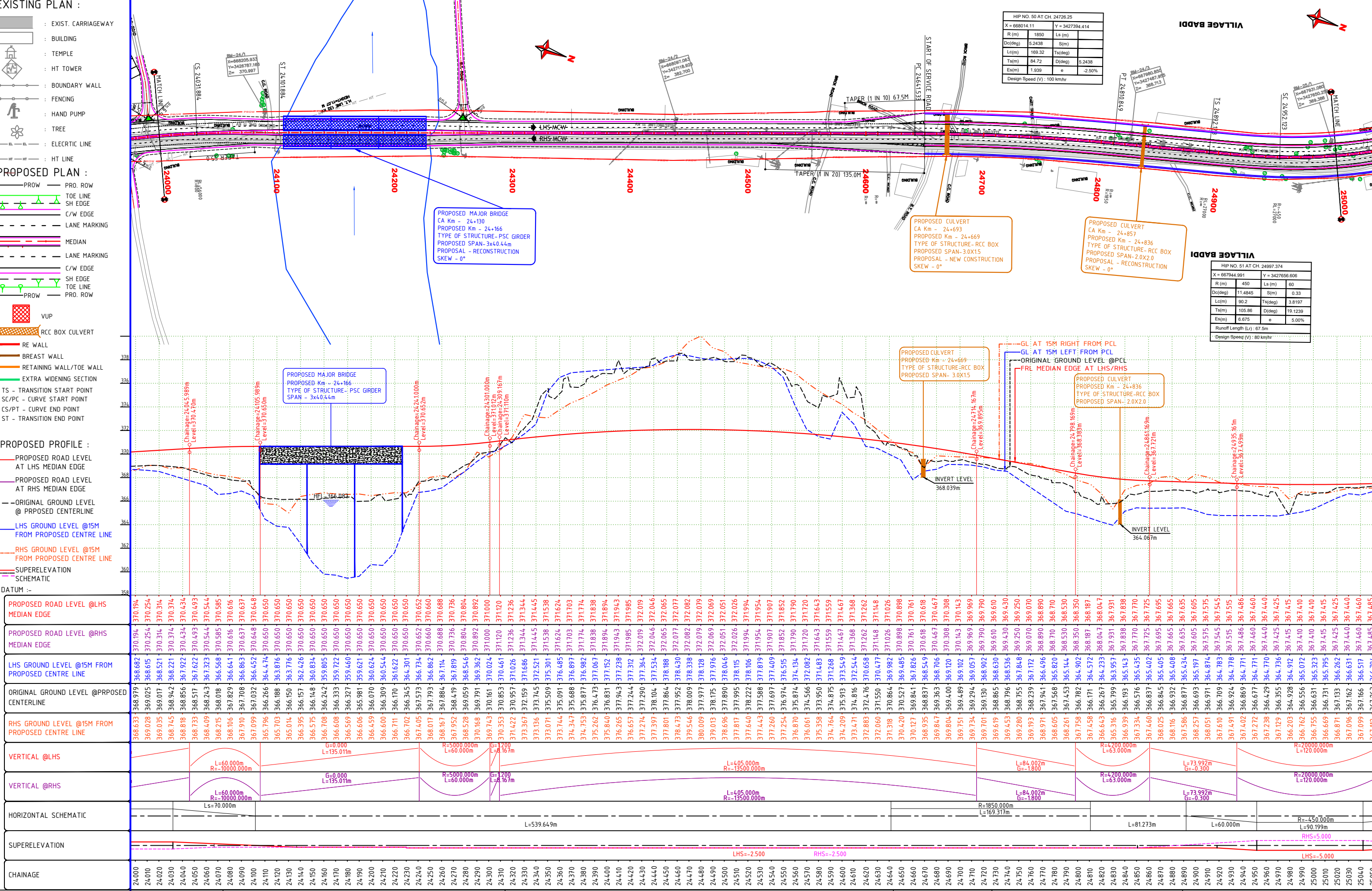
- VUP
- RCC BOX CULVERT
- RE WALL
- BREAST WALL
- RETAINING WALL/TOE WALL
- EXTRA WIDENING SECTION
- TS - TRANSITION START POINT
- SC/PC - CURVE START POINT
- CS/PT - CURVE END POINT
- ST - TRANSITION END POINT

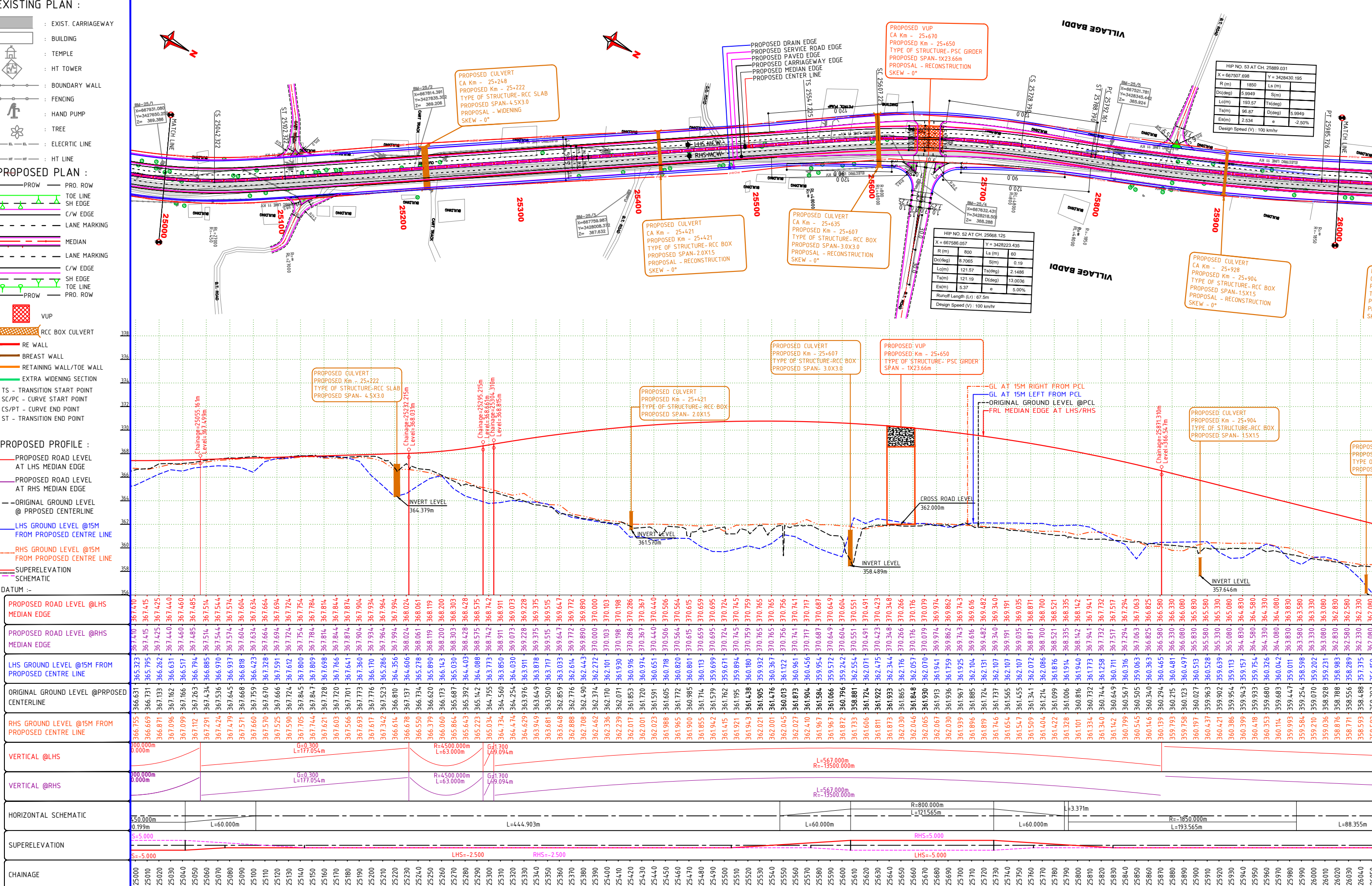
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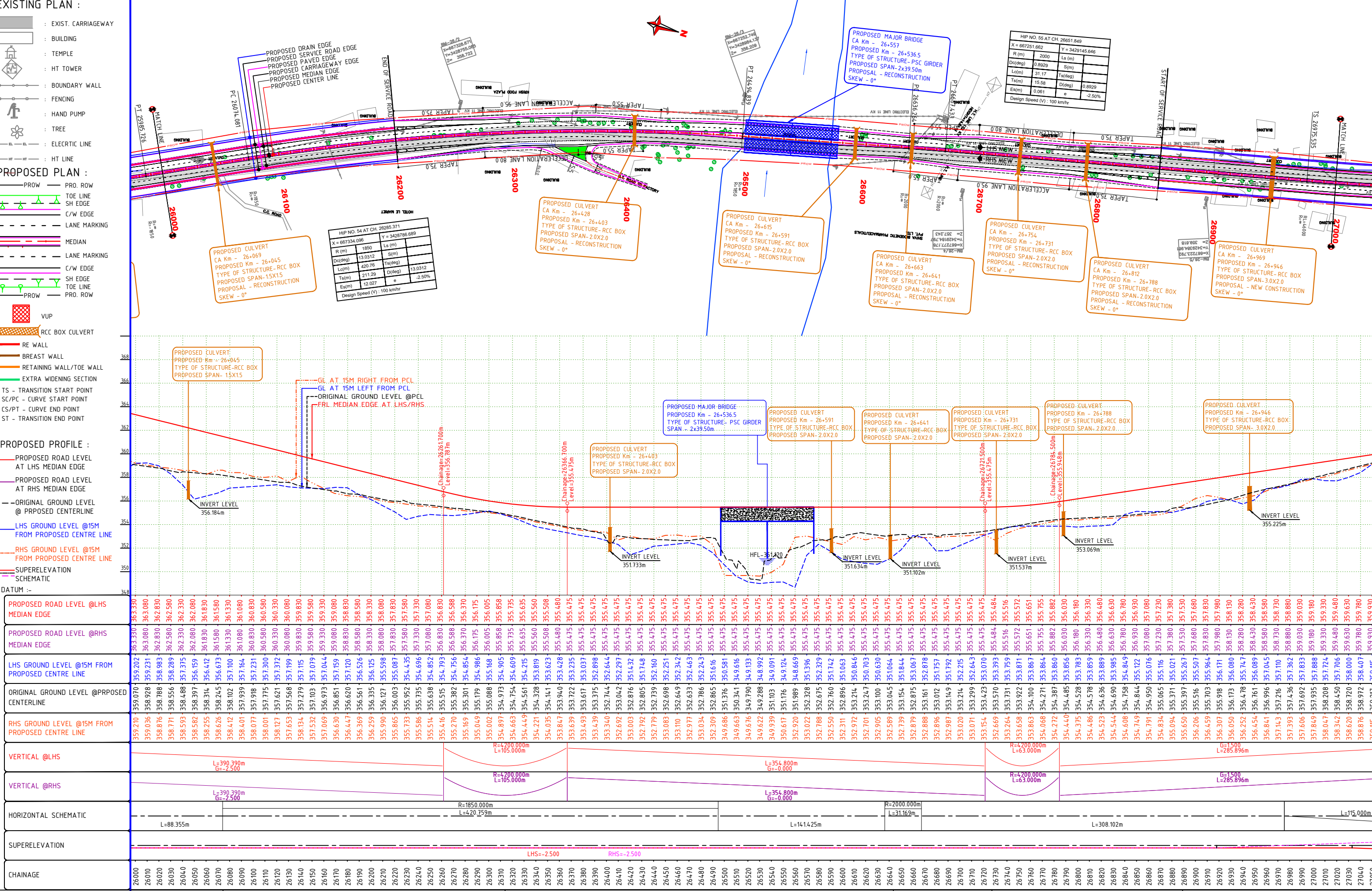
- PROPOSED ROAD LEVEL AT LHS MEDIAN EDGE
- PROPOSED ROAD LEVEL AT RHS MEDIAN EDGE
- ORIGINAL GROUND LEVEL @ PROPOSED CENTERLINE
- LHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- RHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- SUPERELEVATION
- SCHEMATIC
- DATUM :-











LEGEND : PINJORE BYPASS

EXISTING PLAN :

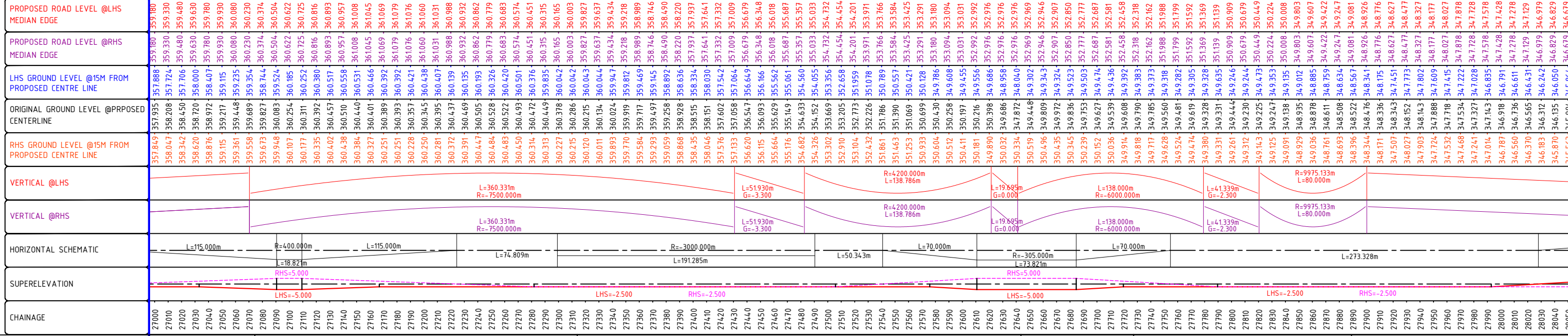
- EXIST. CARRIAGEWAY
- BUILDING
- TEMPLE
- HT TOWER
- BOUNDARY WALL
- FENCING
- HAND PUMP
- TREE
- ELECTRIC LINE
- HT LINE

PROPOSED PLAN :

- PROW
- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
- TOE LINE
- PRO. ROW
- VUP
- RCC BOX CULVERT
- RE WALL
- BREAST WALL
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PROPOSED PROFILE :

- PROPOSED ROAD LEVEL AT LHS MEDIAN EDGE
- PROPOSED ROAD LEVEL AT RHS MEDIAN EDGE
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- LHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- RHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- SUPERELEVATION
- SCHEMATIC
- DATUM :-



CLIENT:-

National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-

Chaitanya Projects Consultancy Pvt. Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-

BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM
END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500)
OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL
PRADESH ON THE EPC MODE

SCALE :-

Horizontal= 1:2000
Vertical= 1:200

DWG TITLE:-

PLAN & PROFILE OF MAIN CARRIAGEWAY
(FROM KM. 27+000 TO 28+000)

DRAWING No :

PINJORE-NALAGARH NH/HW/P&P/24

DATE : SEPTEMBER - 2025

Revision: R0

PREPARED BY

DESIGNED BY

CHECKED BY

APPROVED BY

P.SINGH

R.RAGHUVANSHI

S.GUPTA

S.K.SINHA

← PINJORE BYPASS

NALAGARH ➡

PROPOSED PLAN

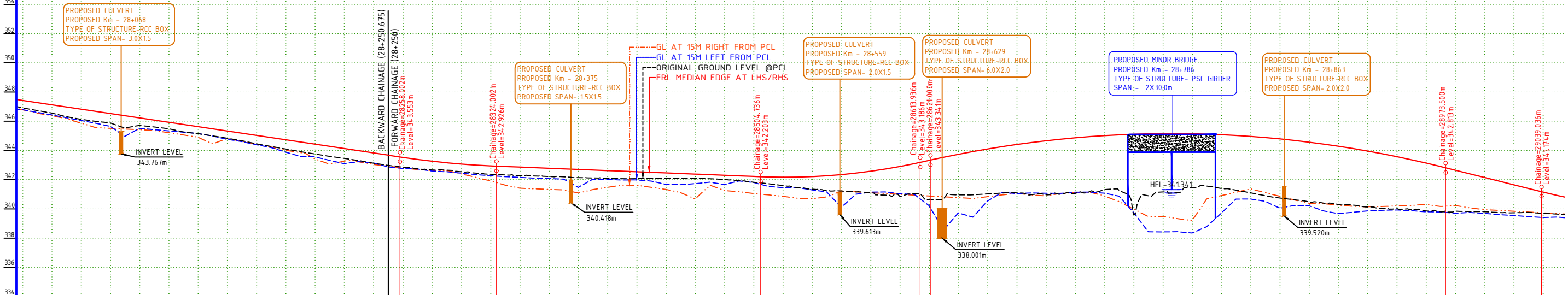
— PROW — PRO. RO

CS/PT - CURVE END POINT

----- RHS GROUND LEVEL @
FROM PROPOSED CENTER

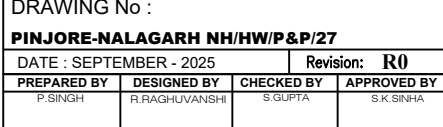
VERTICAL WRITIS

HIP NO. 59 AT CH. 28539.117			
X = 666112.954		Y = 3430531.778	
R (m)	500	Ls (m)	75
Dc(deg)	0.3878	S(m)	0.47
Lc(m)	3.38	Ts(deg)	4.2972
Ts(m)	76.8	D(deg)	8.9821
Es(m)	2.011	e	5.00%
Runoff Length (Lr) : 75.0m			
Design Speed (V) : 80 km/hr			



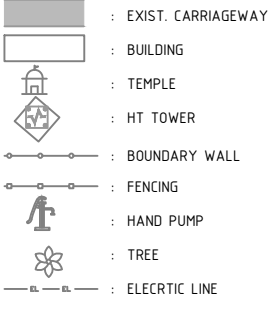
DRAWING No :			
PINJORE-NALAGARH NH/HW/P&P/25			
DATE : SEPTEMBER - 2025		Revision: R0	
PREPARED BY P.SINGH	DESIGNED BY R.RAGHUVANSHI	CHECKED BY S.GUPTA	APPROVED BY S.K.SINHA

PINJORE-NALAGARH NH/HW/P&P/26			
DATE : SEPTEMBER - 2025		Revision: R0	
PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY
P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA

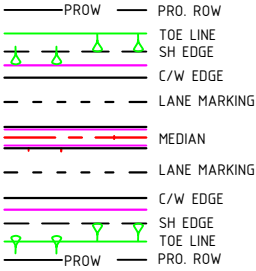


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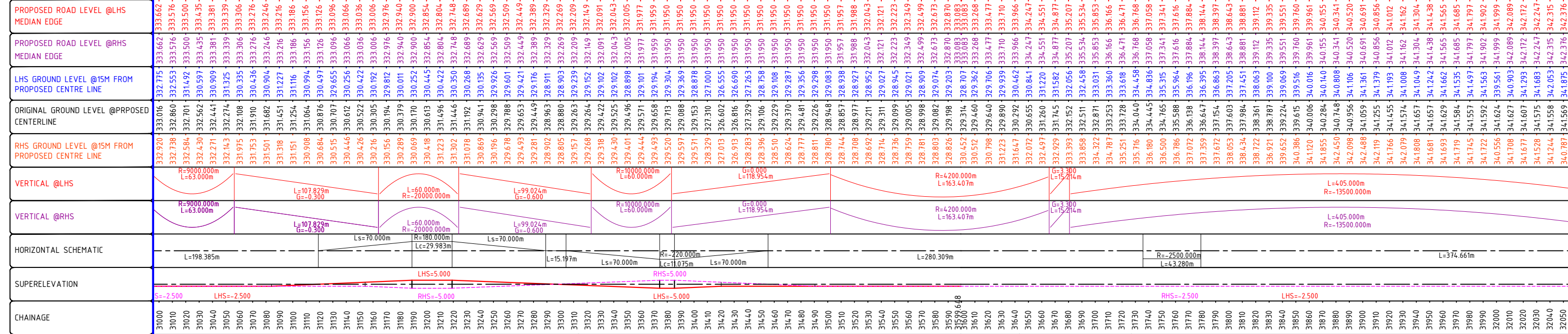
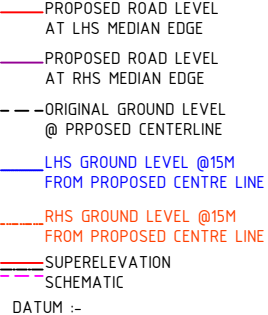
EXISTING PLAN :



PROPOSED PLAN :



PROPOSED PROFILE :



CLIENT:- National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:- Chaitanya Projects Consultancy Pvt. Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:- BALANCE WORK FOR FOUR LANEING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE

SCALE :- Horizontal= 1:2000 Vertical= 1:200

DWG TITLE:- PLAN & PROFILE OF MAIN CARRIAGEWAY (FROM KM. 31+000 TO 32+000)

DRAWING No : PINJORE-NALAGARH NH/HW/P&P/28 DATE : SEPTEMBER - 2025 Revision: R0 PREPARED BY P.SINGH DESIGNED BY R.RAGHUVANSHI CHECKED BY S.GUPTA APPROVED BY S.K.SINHA

LEGEND : PINJORE BYPASS

EXISTING PLAN :

- EXIST. CARRIAGEWAY
- BUILDING
- TEMPLE
- HT TOWER
- BOUNDARY WALL
- FENCING
- HAND PUMP
- TREE
- ELECTRIC LINE
- HT LINE

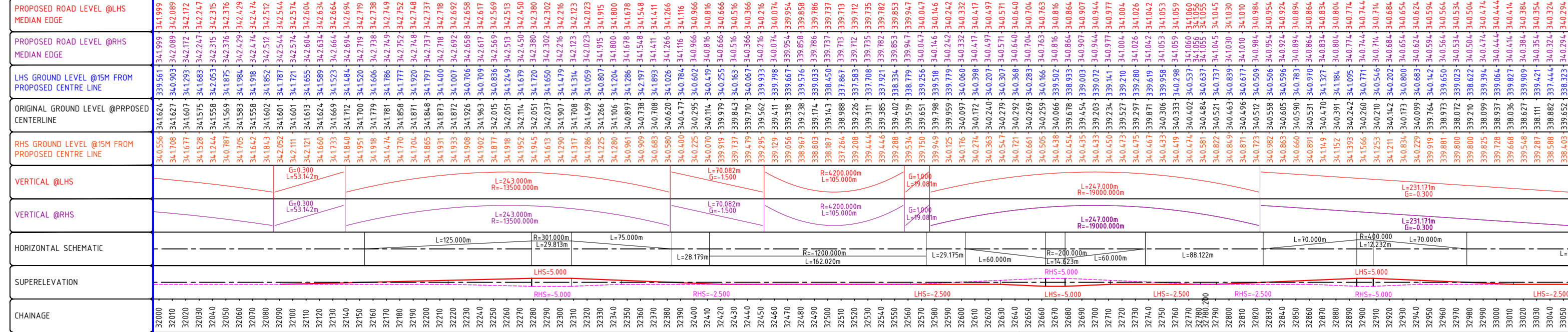
PROPOSED PLAN :

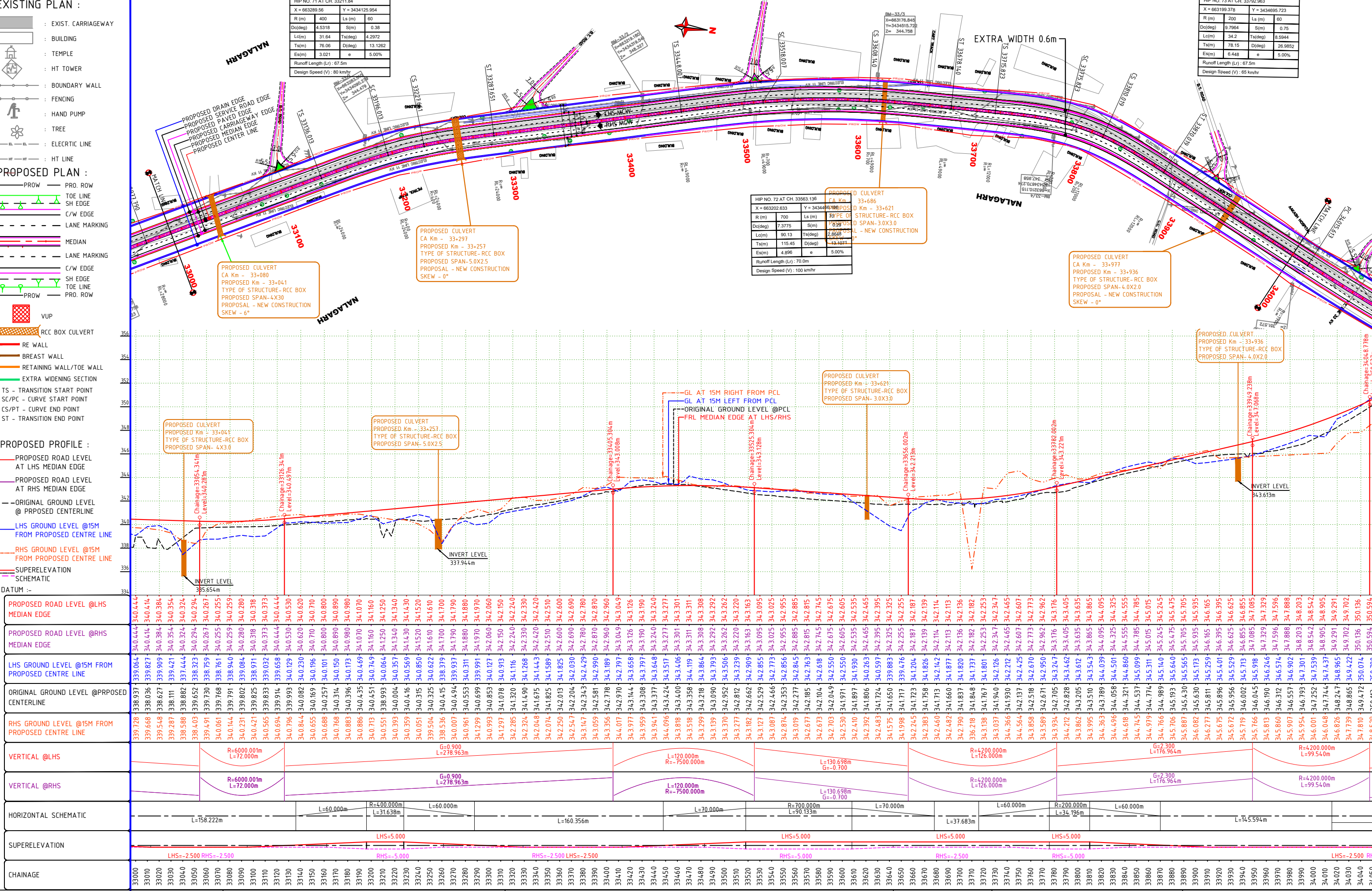
- PROW
- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
- TOE LINE
- PRO. ROW

- VUP
- RCC BOX CULVERT
- RE WALL
- BREAST WALL
- RETAINING WALL/TOE WALL
- EXTRA WIDENING SECTION
- TS - TRANSITION START POINT
- SC/PC - CURVE START POINT
- CS/PT - CURVE END POINT
- ST - TRANSITION END POINT

PROPOSED PROFILE :

- PROPOSED ROAD LEVEL AT LHS MEDIAN EDGE
- PROPOSED ROAD LEVEL AT RHS MEDIAN EDGE
- ORIGINAL GROUND LEVEL @ PROPOSED CENTERLINE
- LHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- RHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- SUPERELEVATION
- SCHEMATIC
- DATUM :-





LEGEND :

EXISTING PLAN :

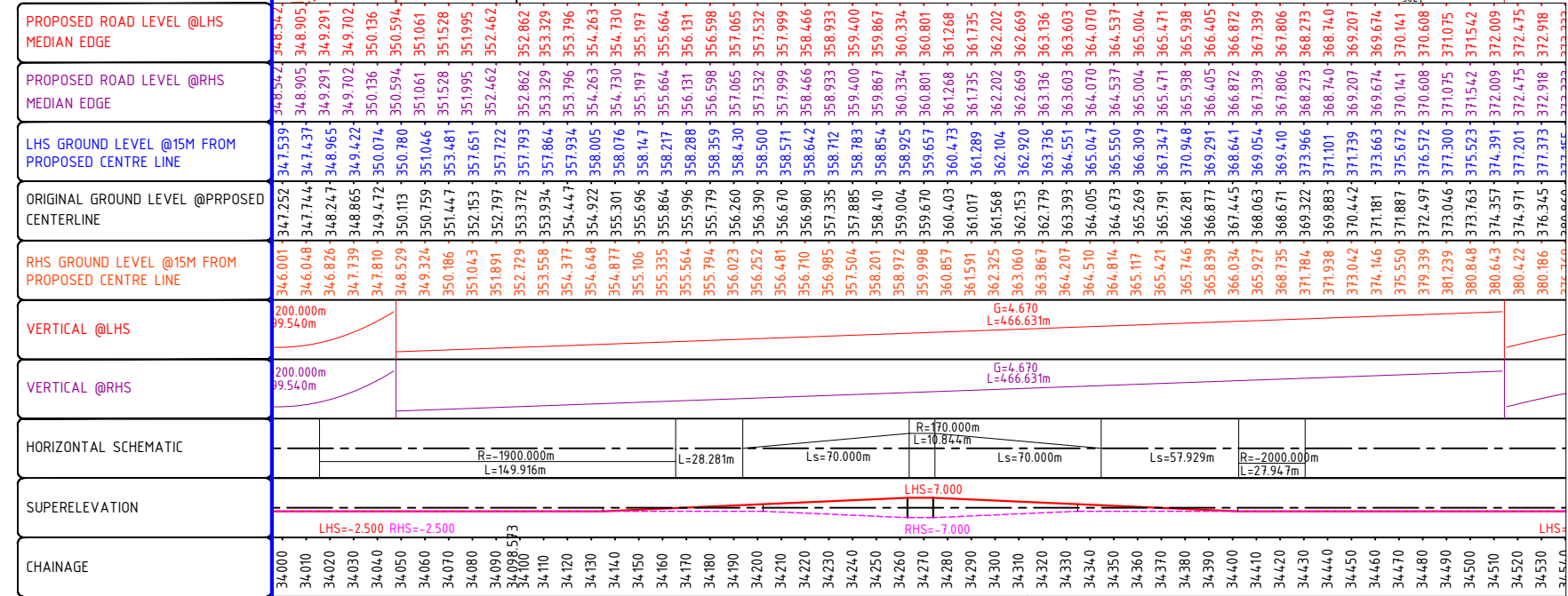
- EXIST. CARRIAGEWAY
- BUILDING
- TEMPLE
- HT TOWER
- BOUNDARY WALL
- FENCING
- HAND PUMP
- TREE
- ELECTRIC LINE
- HT LINE

PROPOSED PLAN :

- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
- TOE LINE
- PRO. ROW
- VUP
- RCC BOX CULVERT
- RE WALL
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- PROPOSED ROAD LEVEL AT LHS MEDIAN EDGE
- PROPOSED ROAD LEVEL AT RHS MEDIAN EDGE
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- LHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- RHS GROUND LEVEL @15M FROM PROPOSED CENTRE LINE
- SUPERELEVATION
- SCHEMATIC
- DATUM :-



CLIENT:-

National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-

Chaitanya Projects Consultancy Pvt. Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-

BALANCE WORK FOR FOUR LANEING OF THE PROJECT HIGHWAY FROM
END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500)
OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL
PRADESH ON THE EPC MODE

SCALE :-

Horizontal= 1:2000
Vertical= 1:200

DWG TITLE:-

**PLAN & PROFILE OF MAIN CARRIAGEWAY
(FROM KM. 34+000 TO 34+500)**

DRAWING No :

PINJORE-NALAGARH NH/HW/P&P/31

DATE : SEPTEMBER - 2025 Revision: **R0**

PREPARED BY P.SINGH	DESIGNED BY R.RAGHUVANSHI	CHECKED BY S.GUPTA	APPROVED BY S.K.SINHA
------------------------	------------------------------	-----------------------	--------------------------

LEGEND :

EXISTING PLAN :

- : EXIST. CARRIAGEWAY
- : BUILDING
- : TEMPLE
- : HT TOWER
- : BOUNDARY WALL
- : FENCING
- : HAND PUMP
- : TREE
- : ELECTRIC LINE
- : HT LINE

PROPOSED PLAN :

- PROW
- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
- TOE LINE
- PROW
- PRO. ROW

- VUP

- RCC BOX CULVERT

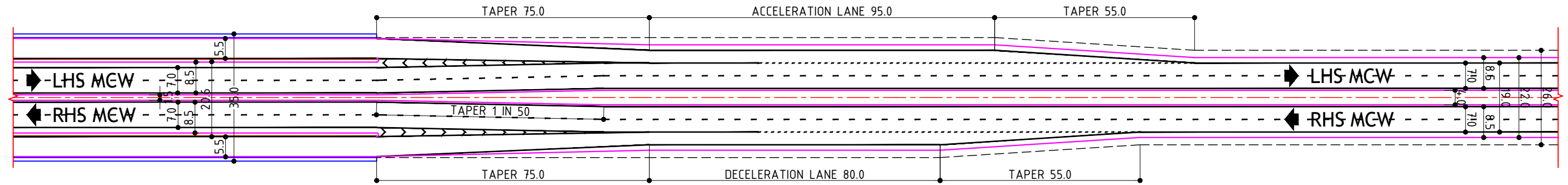
- RE WALL
- BREAST WALL
- RETAINING WALL/TOE WALL
- EXTRA WIDENING SECTION

- TS - TRANSITION START POINT
- SC/PC - CURVE START POINT
- CS/PT - CURVE END POINT
- ST - TRANSITION END POINT

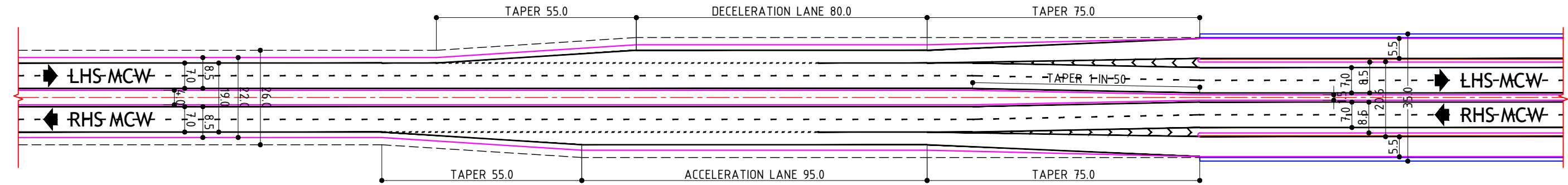
PINJORE BYPASS

NALAGARH

ACCELERATION & DECELERATION LANE
DETAILED PLAN



TRANSITION SECTION FROM SERVICE ROAD TO MAIN ALIGNMENT
FROM TCS 1 TO TCS 3



TRANSITION SECTION FROM SERVICE ROAD TO MAIN ALIGNMENT
FROM TCS 3 TO TCS 1

CLIENT:-



CONSULTANT:-



PROJECT:-

BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY
FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200
TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA
AND HIMACHAL PRADESH ON THE EPC MODE

SCALE :-

Horizontal= 1:2000
Vertical= 1:200

DWG TITLE:-

ACCELERATION & DECELERATION LANE
DETAILED PLAN (I)

DRAWING No :

PINJORE-NALAGARH NH/HW/P&P/32

DATE : SEPTEMBER - 2025
Revision: R0

PREPARED BY: P. SINGH
DESIGNED BY: R. RAGHUVANSHI
CHECKED BY: S. GUPTA
APPROVED BY: S.K. SINHA

LEGEND :

EXISTING PLAN :

- : EXIST. CARRIAGEWAY
- : BUILDING
- : TEMPLE
- : HT TOWER
- : BOUNDARY WALL
- : FENCING
- : HAND PUMP
- : TREE
- : ELECTRIC LINE
- : HT LINE

PROPOSED PLAN :

- PROW
- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
- TOE LINE
- PROW
- PRO. ROW

- VUP

- RCC BOX CULVERT

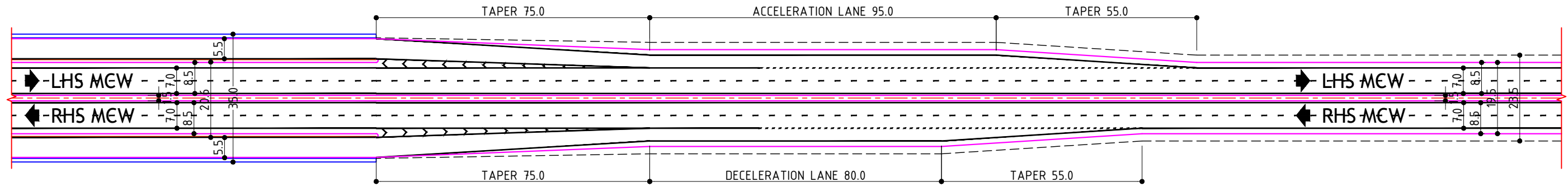
- RE WALL
- BREAST WALL
- RETAINING WALL/TOE WALL
- EXTRA WIDENING SECTION

- TS - TRANSITION START POINT
- SC/PC - CURVE START POINT
- CS/PT - CURVE END POINT
- ST - TRANSITION END POINT

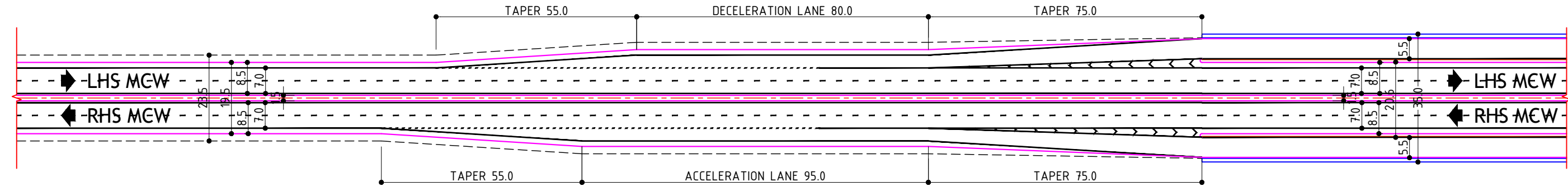
PINJORE BYPASS

NALAGARH

ACCELERATION & DECELERATION LANE
DETAILED PLAN



TRANSITION SECTION FROM SERVICE ROAD TO MAIN ALIGNMENT
FROM TCS 1 TO TCS 2



TRANSITION SECTION FROM SERVICE ROAD TO MAIN ALIGNMENT
FROM TCS 2 TO TCS 1

CLIENT:-



CONSULTANT:-



PROJECT:-

BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY
FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200
TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA
AND HIMACHAL PRADESH ON THE EPC MODE

SCALE :-

Horizontal= 1:2000
Vertical= 1:200

DWG TITLE:-

ACCELERATION & DECELERATION LANE
DETAILED PLAN (II)

DRAWING No :

PINJORE-NALAGARH NH/HW/P&P/33

DATE : SEPTEMBER - 2025

Revision: R0

PREPARED BY DESIGNED BY CHECKED BY APPROVED BY

P.SINGH R.RAGHUVANSHI S.GUPTA S.K.SINHA

LEGEND :

EXISTING PLAN :

- : EXIST. CARRIAGEWAY
- : BUILDING
- : TEMPLE
- : HT TOWER
- : BOUNDARY WALL
- : FENCING
- : HAND PUMP
- : TREE
- : ELECTRIC LINE
- : HT LINE

PROPOSED PLAN :

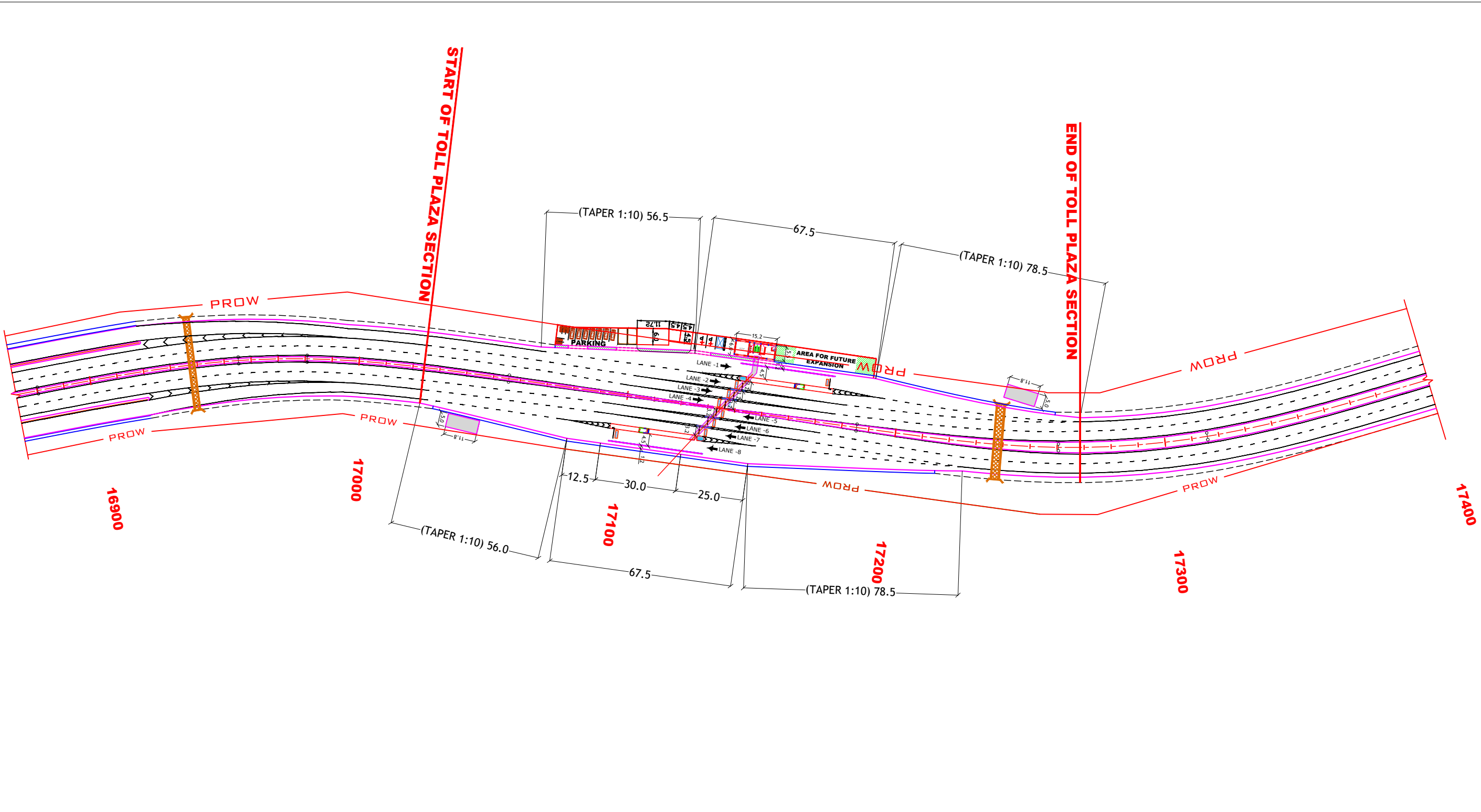
- PROW
- PRO. ROW
- TOE LINE
- SH EDGE
- C/W EDGE
- LANE MARKING
- MEDIAN
- LANE MARKING
- C/W EDGE
- SH EDGE
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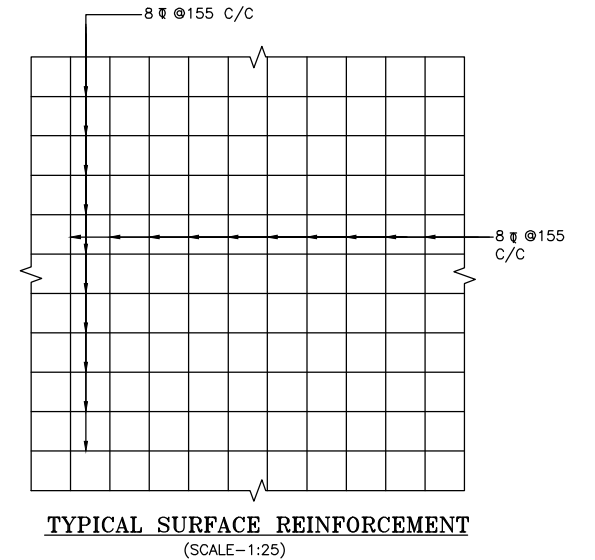
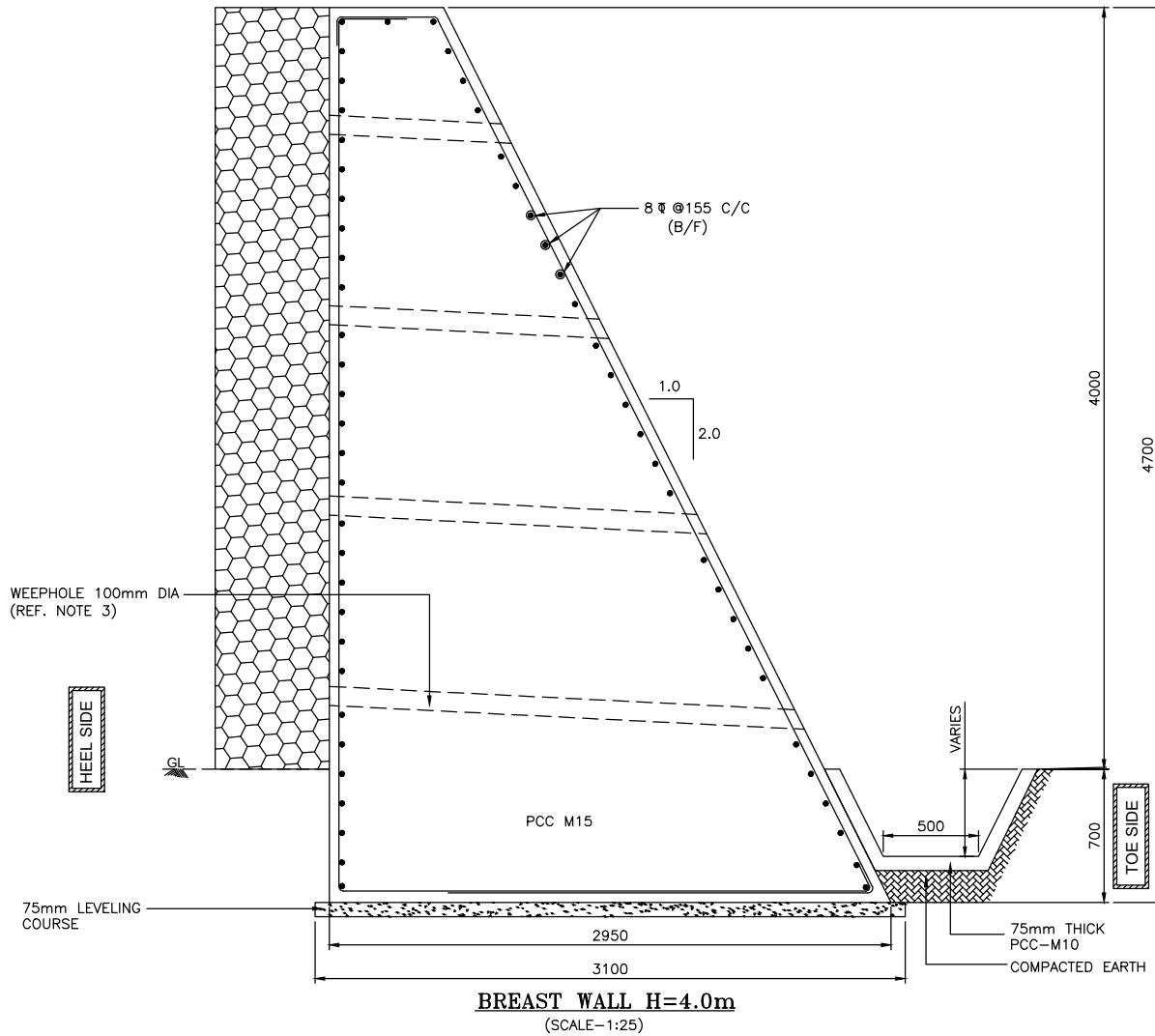
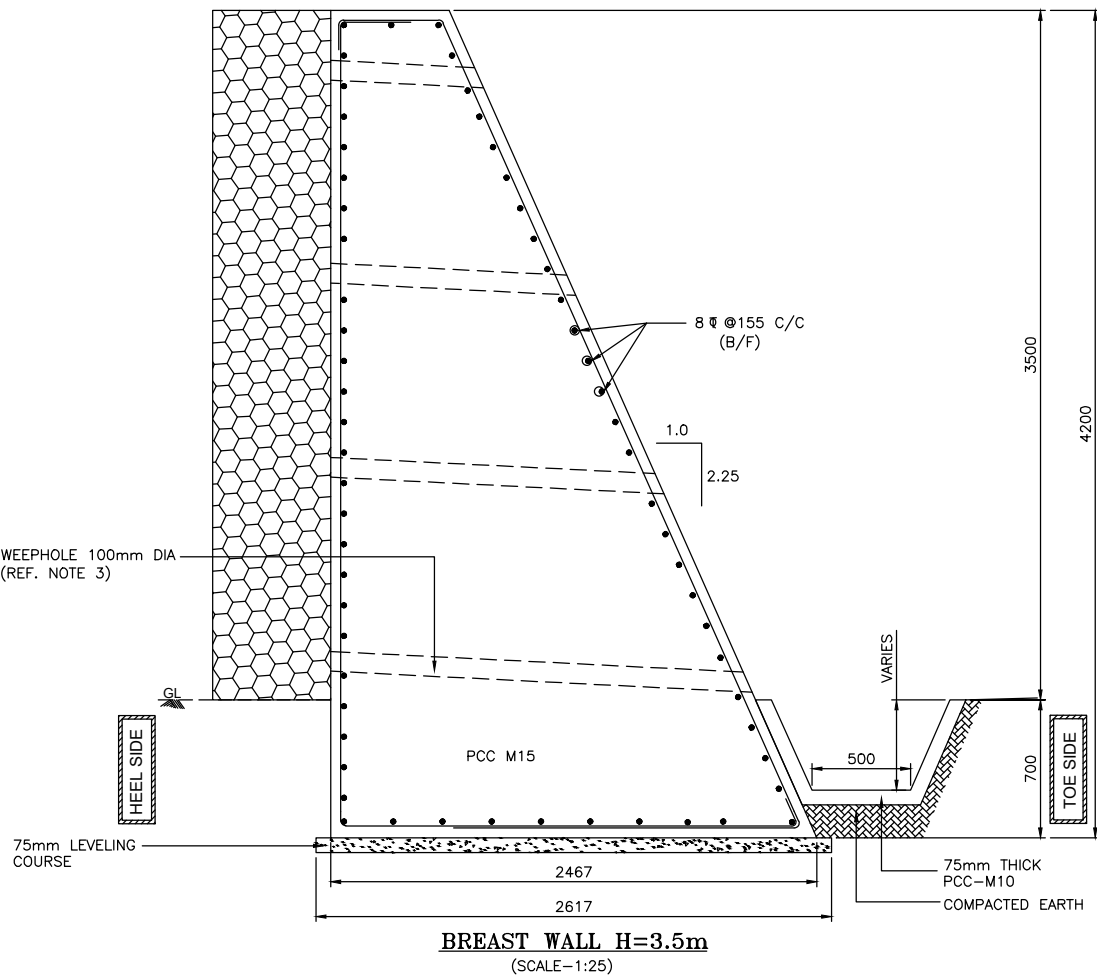
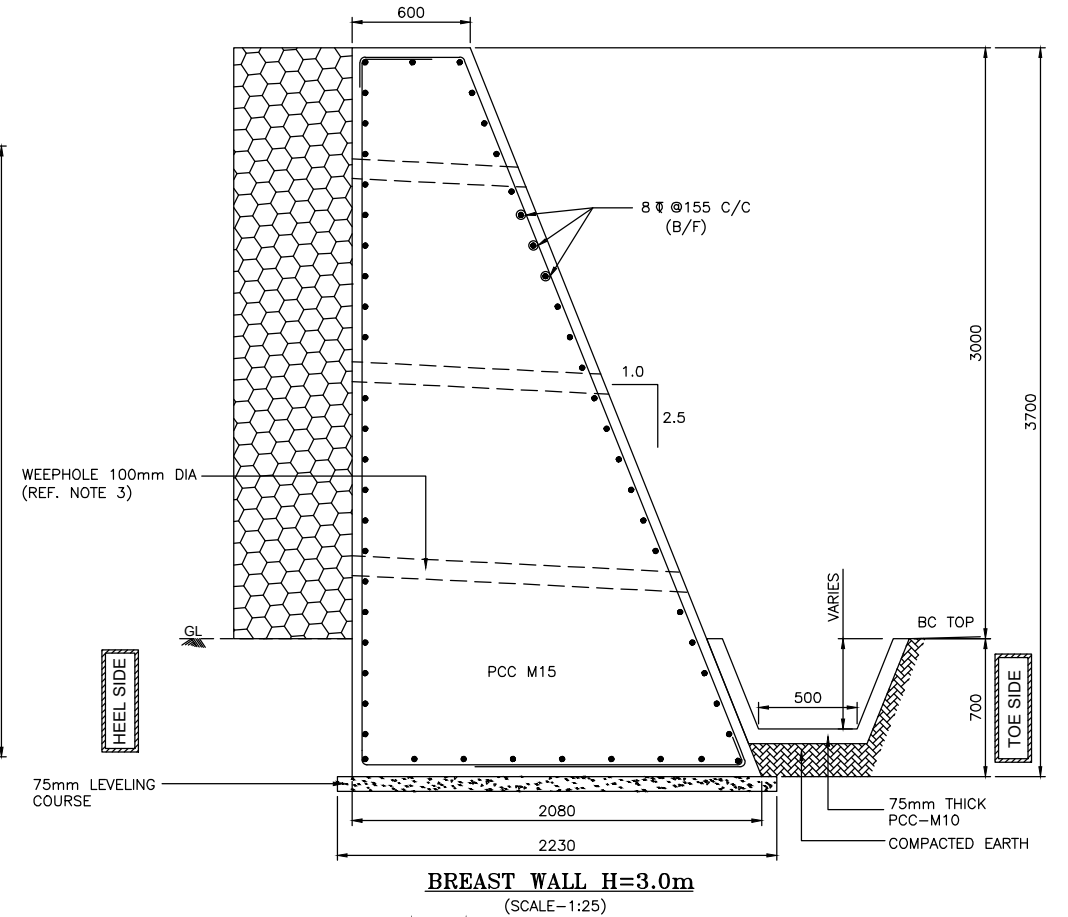
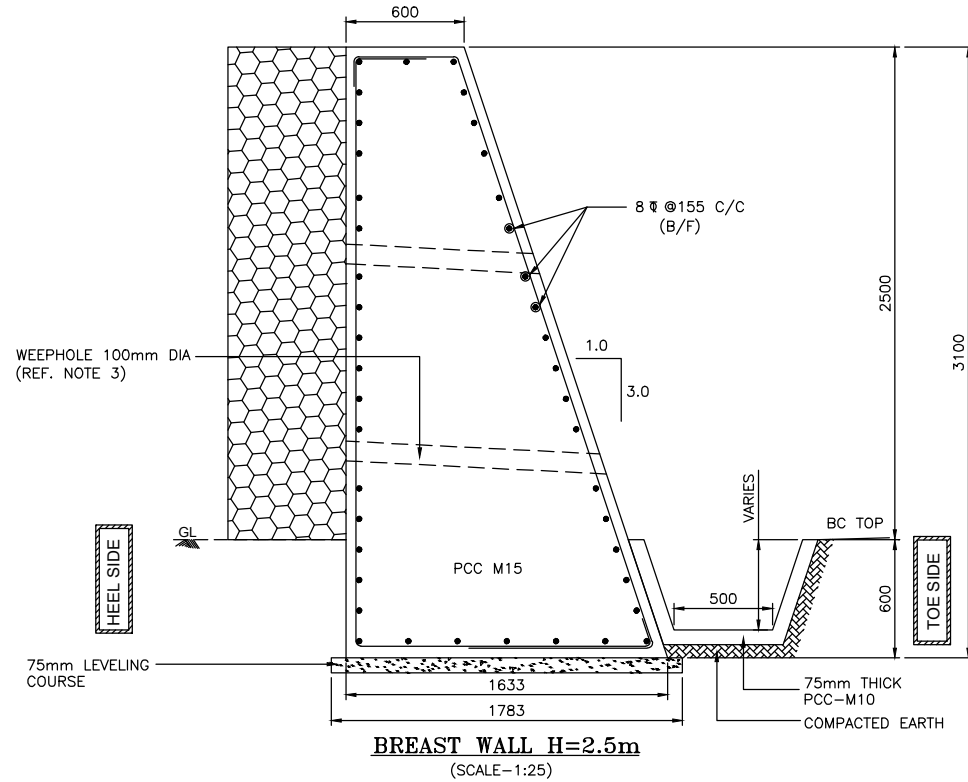
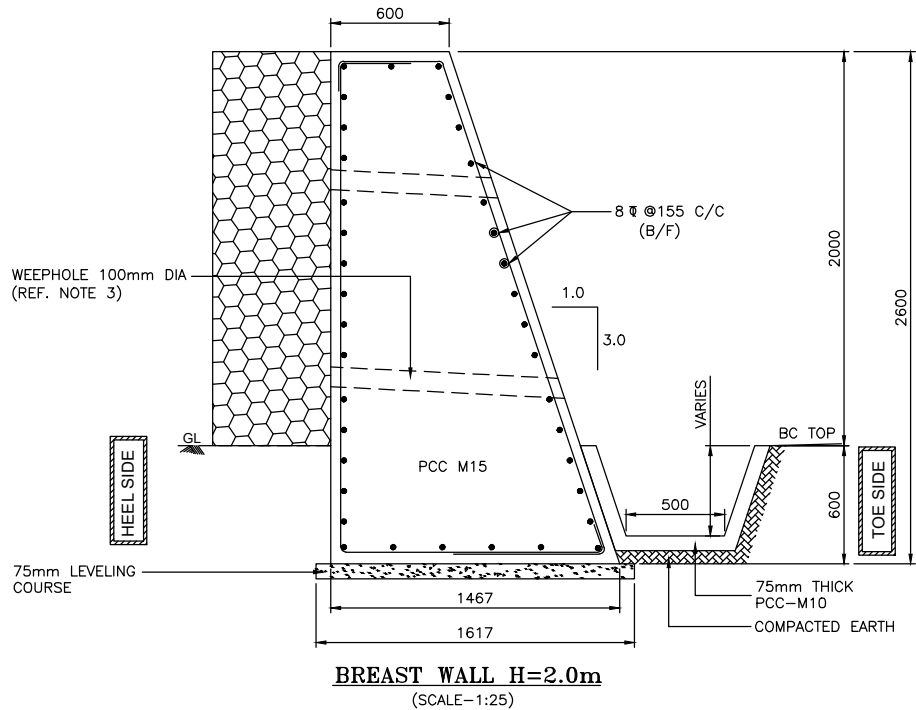
PINJORE BYPASS

TOLL PLAZA DETAILED PLAN



NALAGARH

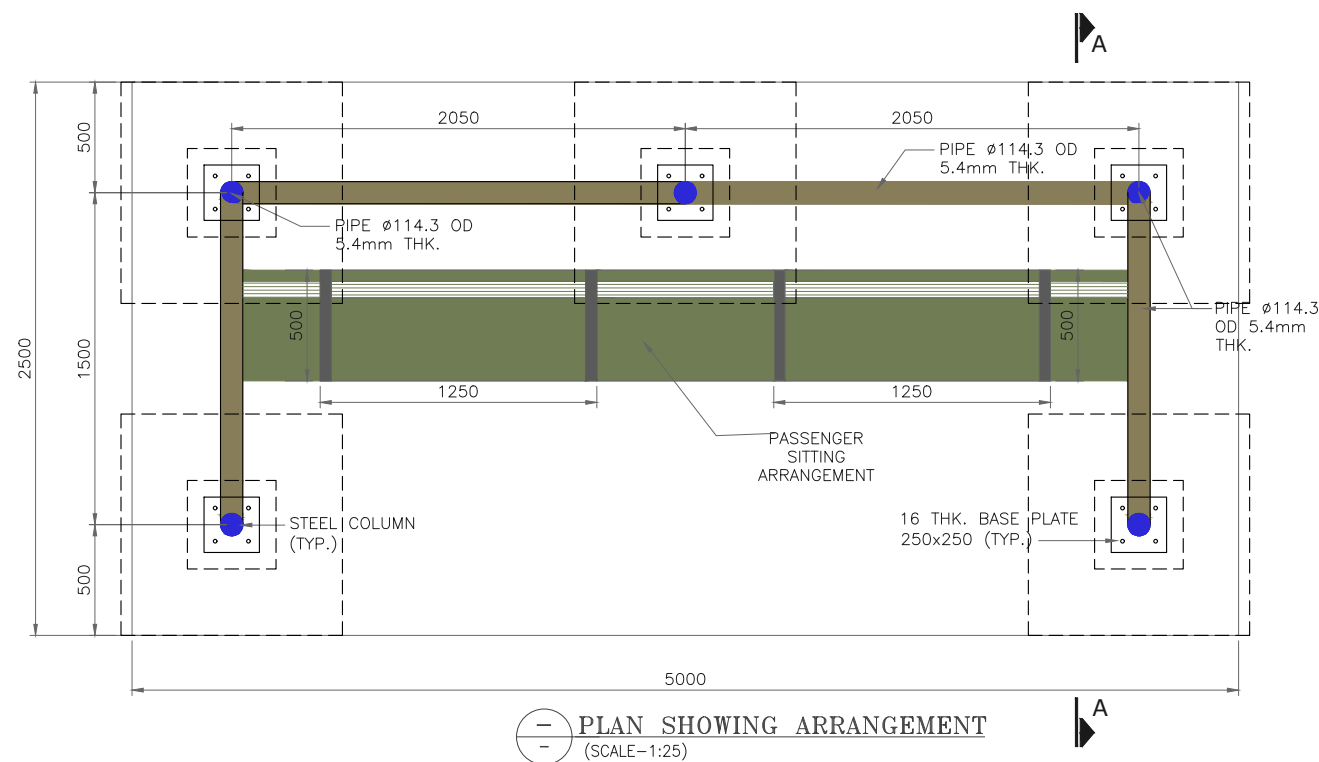
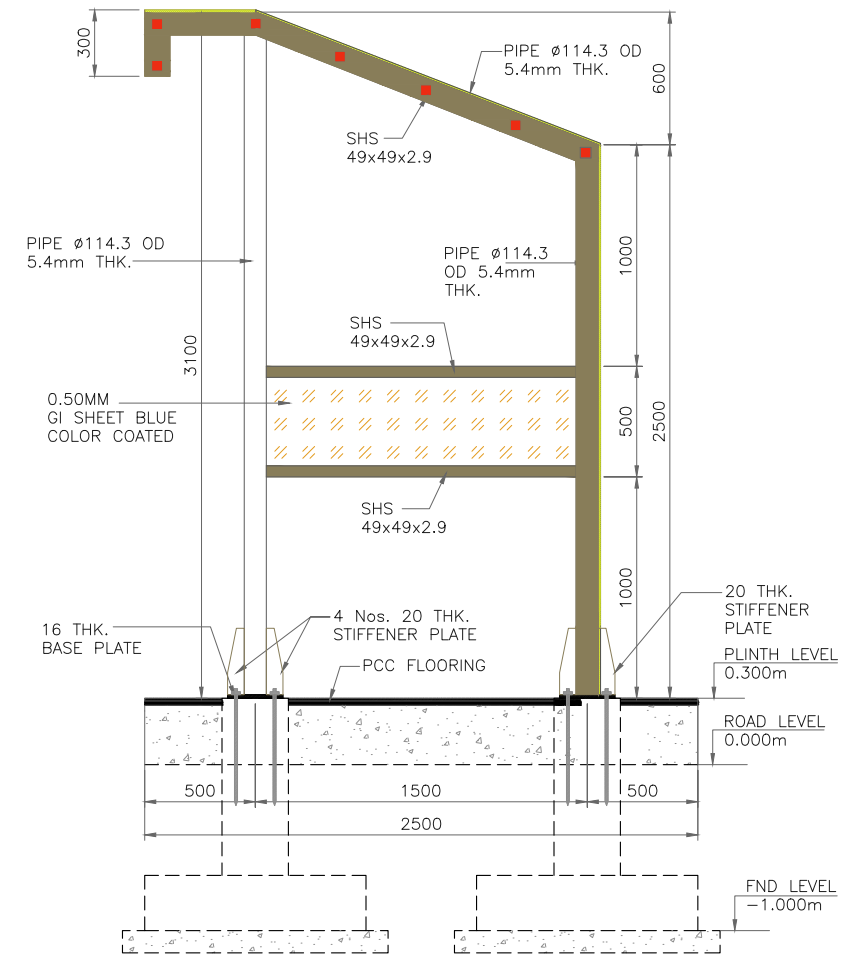
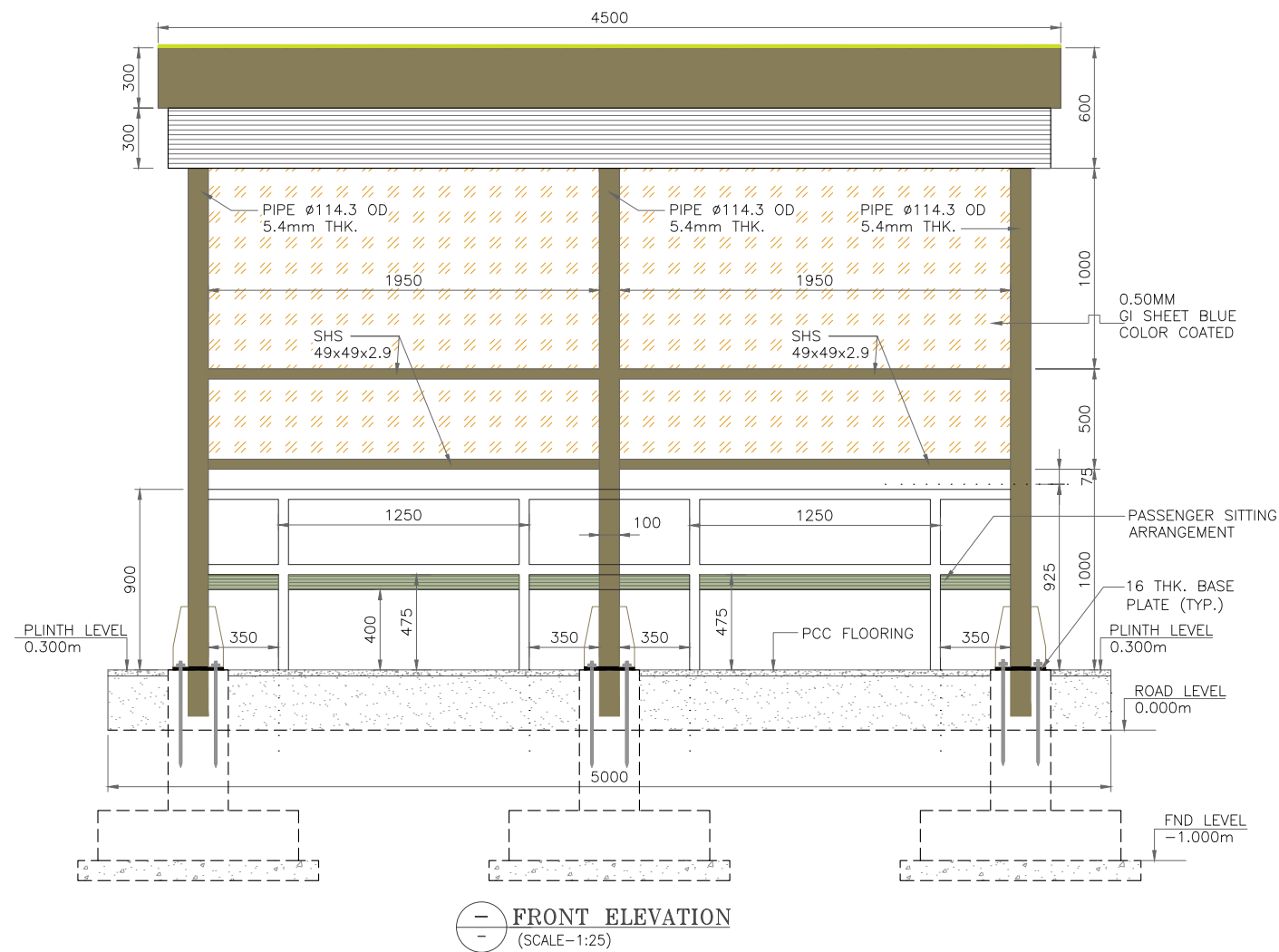


MISCELLANEOUS DRAWINGS



- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS ARE IN METERS AND CHAINAGES ARE IN KILOMETERS UNLESS OTHERWISE MENTIONED.
 2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. 100 DIA WEEP HOLES TO BE PROVIDED AT SPACING OF ABOUT 1.5M CENTER TO CENTER IN EITHER DIRECTION IN STAGGERED MANNER. WEEP HOLE SHALL BE PROVIDED AT 10 DEGREE DOWN FROM HORIZONTAL TOWARDS VALLEY SIDE AS PER IS:14458.
 4. THE SOIL PARAMETERS OF BACK FILLING MATERIAL BEHIND BREAST WALL SHOULD BE ANGLE OF INTERNAL FRICTION OF SOIL $\phi=30^\circ$ AND ANGLE OF INTERNAL FRICTION BETWEEN WALL AND SOIL $\delta=20^\circ$ AND DRY UNIT WEIGHT OF SOIL 2.0t/m^3 .
 5. "SURFACE REINFORCEMENT OF 8MM DIA @ 155 C/C TO BE PROVIDED IN EACH DIRECTION I.E. HORIZONTALLY AND VERTICALLY".
 6. EXPOSURE CONDITION -SEVER AND SEISMIC ZONE4.

CLIENT:- <div><div>National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)</div></div>		CONSULTANT:- <div><div>Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472</div></div>		PROJECT:- <div>BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE</div>		SCALE :- <div>AS SHOWN</div>	DWG TITLE:- <div>DIMENSION AND REINF. DETAIL OF BREAST WALL</div>	DRAWING No : <div>DIMENSION AND REINF. DETAIL OF BREAST WALL</div> <table><tr><td colspan="2">DATE : SEPTEMBER - 2025</td><td colspan="2">Revision: R0</td></tr><tr><td>PREPARED BY</td><td>DESIGNED BY</td><td>CHECKED BY</td><td>APPROVED BY</td></tr><tr><td>P.SINGH</td><td>R.RAGHUVANSHI</td><td>S.GUPTA</td><td>S.K.SINHA</td></tr></table>				DATE : SEPTEMBER - 2025		Revision: R0		PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY	P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA
DATE : SEPTEMBER - 2025		Revision: R0																					
PREPARED BY	DESIGNED BY	CHECKED BY	APPROVED BY																				
P.SINGH	R.RAGHUVANSHI	S.GUPTA	S.K.SINHA																				



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE MENTIONED.
2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. ALL PIPE AND TUBE SECTION USED ARE OF MILD STEEL.

CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



Chaitanya Projects Consultancy Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-

BALANCE WORK FOR FOUR LANING OF THE PROJECT
HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH
SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A)
IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON
THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

GENERAL ARRANGEMENT
DRAWING FOR BUS SHELTER

DRAWING No :

PINJO/NALA/NH-105/HW/BS/1

DATE : SEPTEMBER - 2025

Revision: **R0**

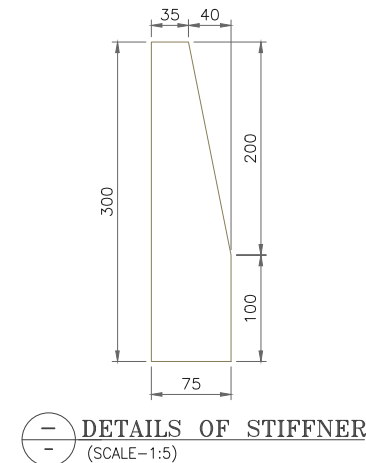
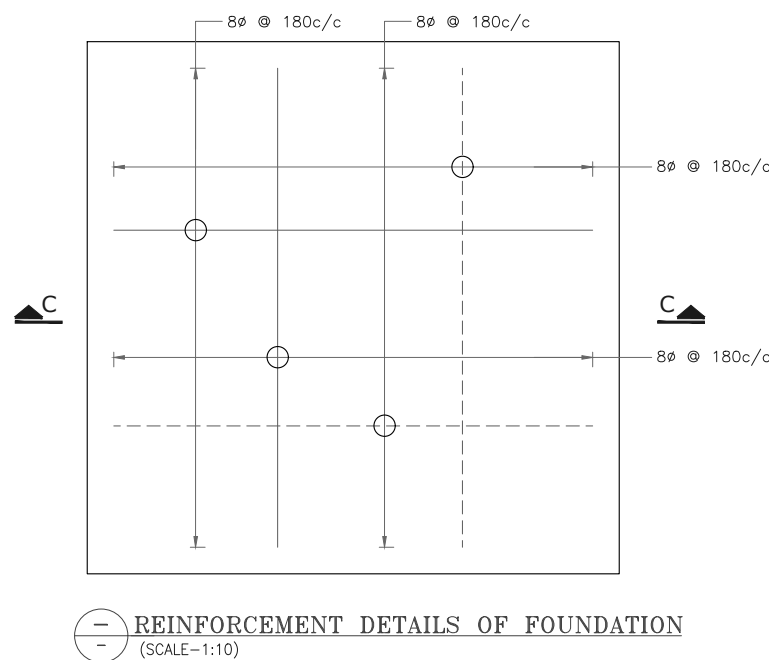
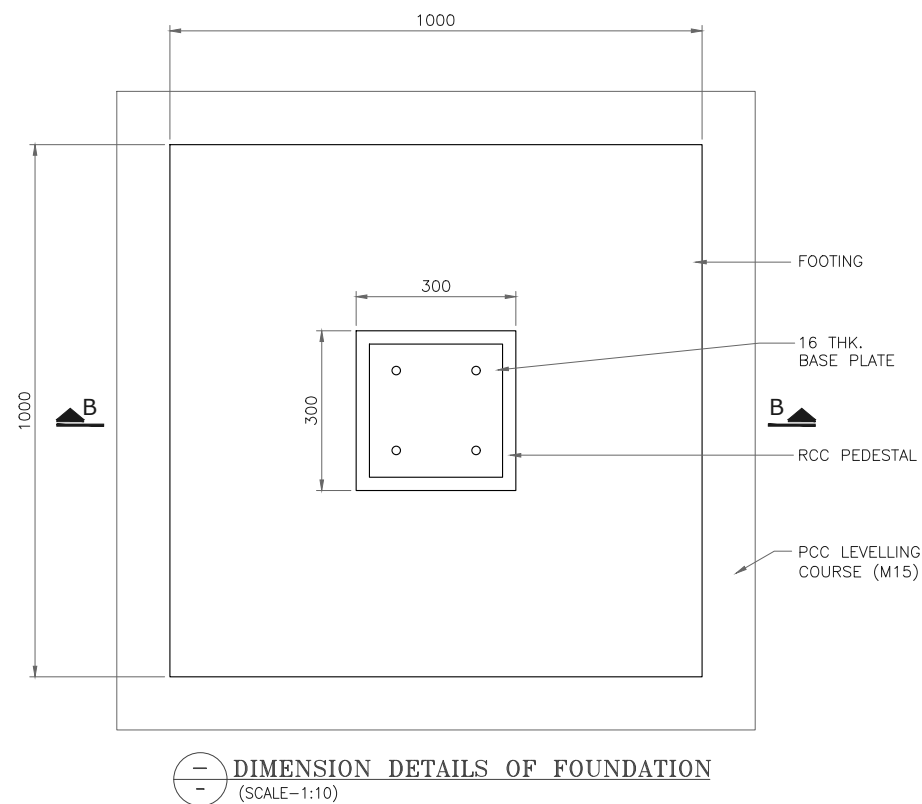
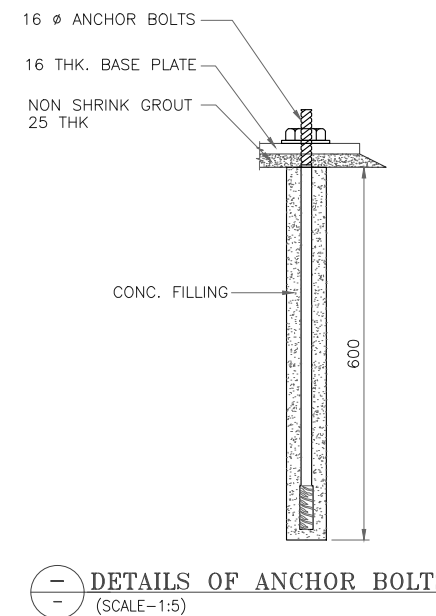
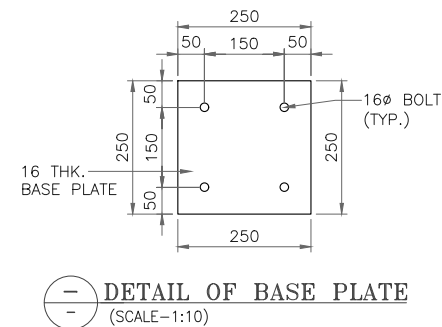
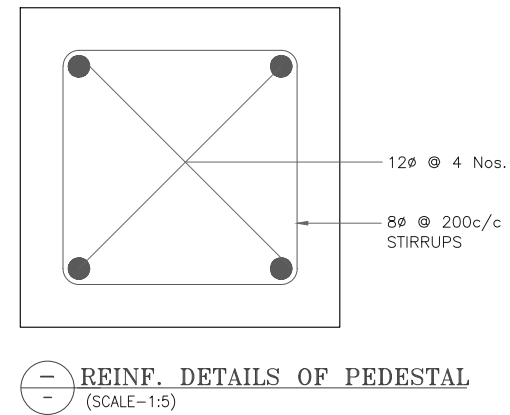
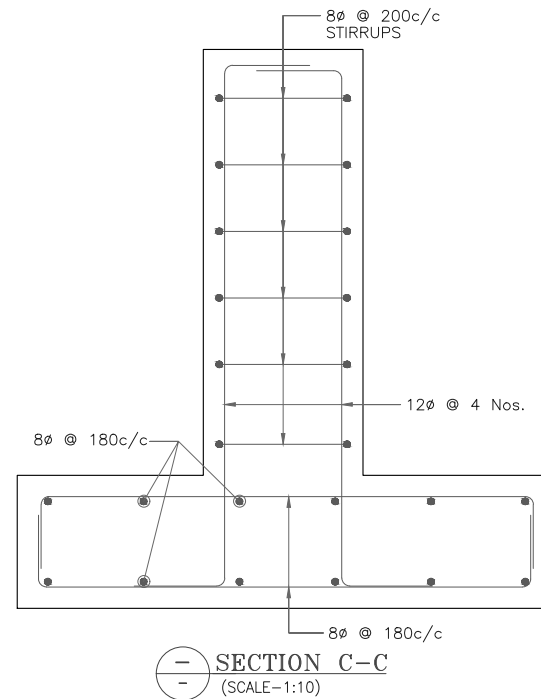
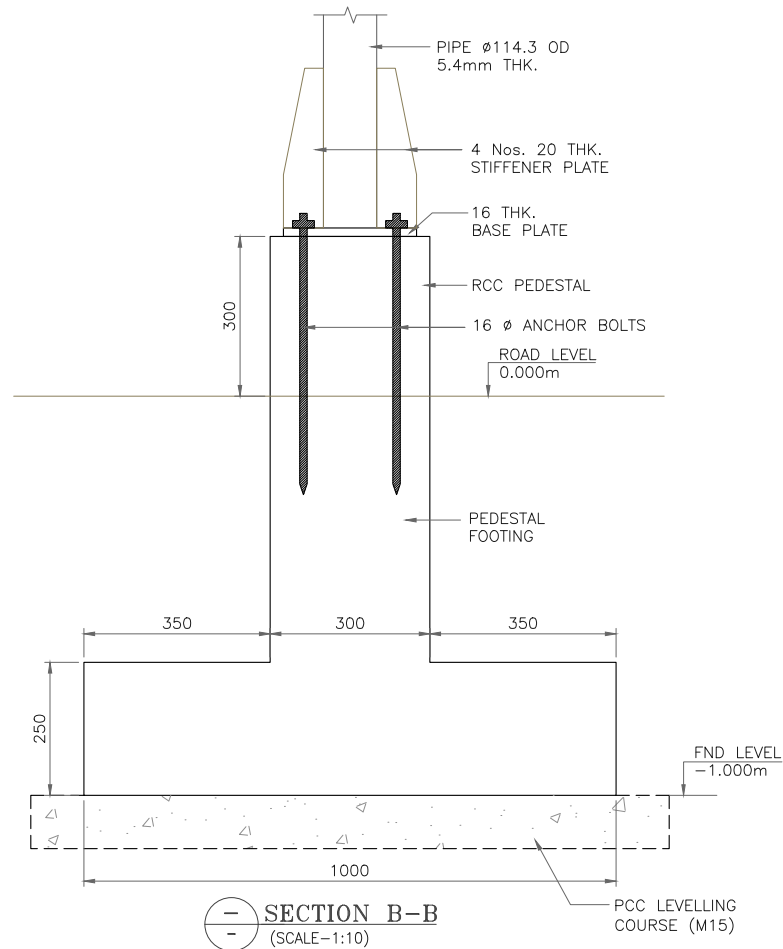
PREPARED BY DESIGNED BY CHECKED BY APPROVED BY

P.SINGH

R.RAGHUVANSHI

S.GUPTA

S.K.SINHA



- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE MENTIONED.
 2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. CLEAR COVER45MM
FOR COLUMN75mm
FOR FOOTING75mm
 4. GRADE OF CONCRETE FOR ALL STRUCTURAL ELEMENT SHALL BE M30 UNLESS AND UNTIL MENTIONED.
 5. GRADE OF STEEL SHALL BE Fe500D.
 6. BASE PRESSURE BELOW FOUNDING LEVEL SHALL BE 10.0T/m².

CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



Chaitanya Projects Consultancy Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-

BALANCE WORK FOR FOUR LANING OF THE PROJECT
HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH
SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A)
IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON
THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

GENERAL ARRANGEMENT
DRAWING FOR BUS SHELTER

DRAWING No :

PINJO/NALA/NH-105/HW/BS/2

DATE : SEPTEMBER - 2025

Revision: **R0**

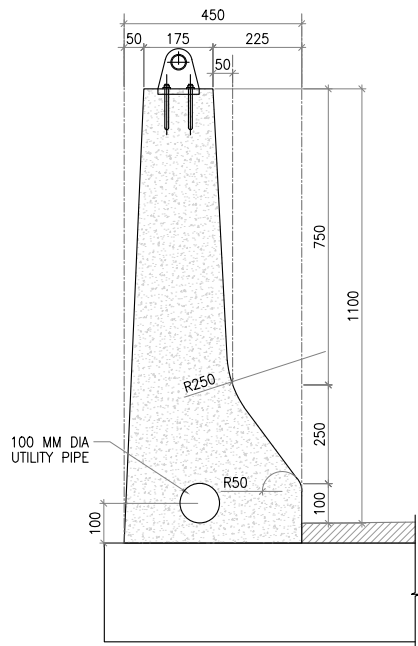
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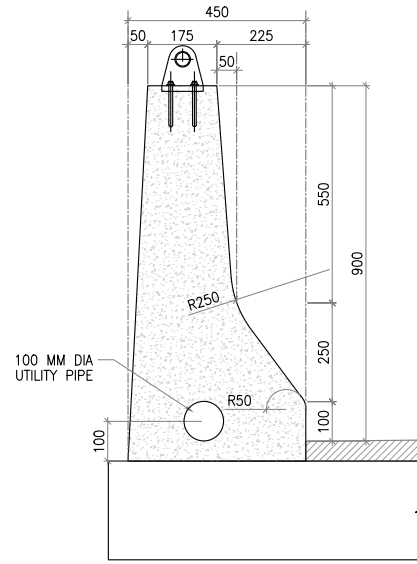
R.RAGHUVANSHI

S.GUPTA

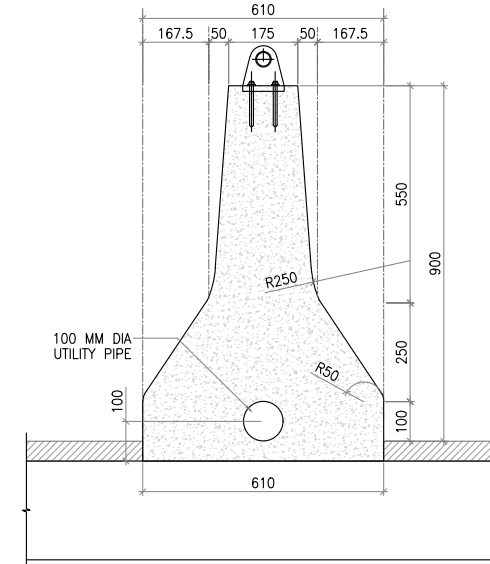
S.K.SINHA



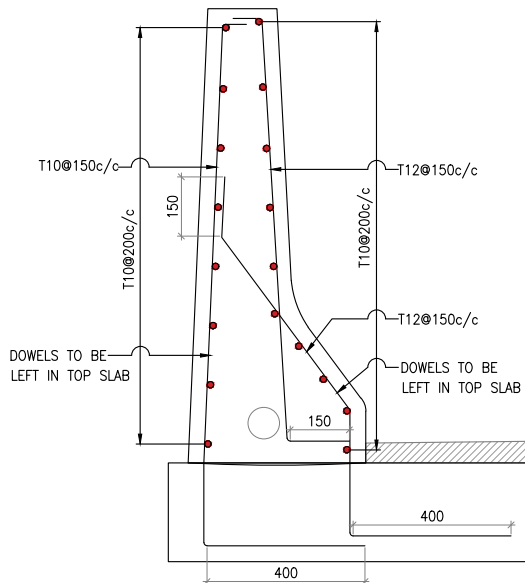
TYPICAL CRASH BARRIER DIMENSIONAL DETAIL
(SCALE 1:10)
P-1 : NORMAL CONTAINMENT
TYPE-1
VALID FOR OUTER SIDE OF CARRIAGEWAY



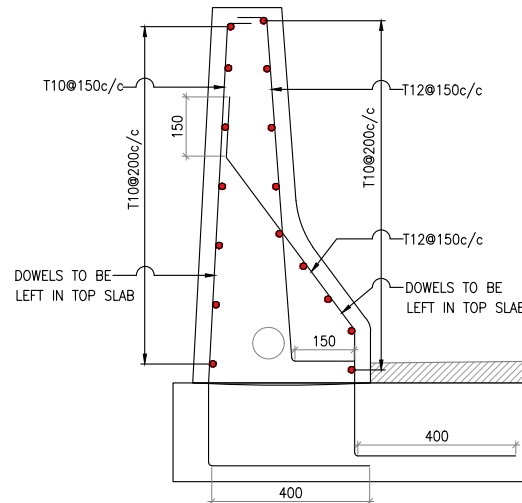
TYPICAL CRASH BARRIER DIMENSIONAL DETAIL
(SCALE 1:10)
P-1 : NORMAL CONTAINMENT
TYPE-2
VALID FOR INNER SIDE WITH FOOTPATH OF CARRIAGEWAY



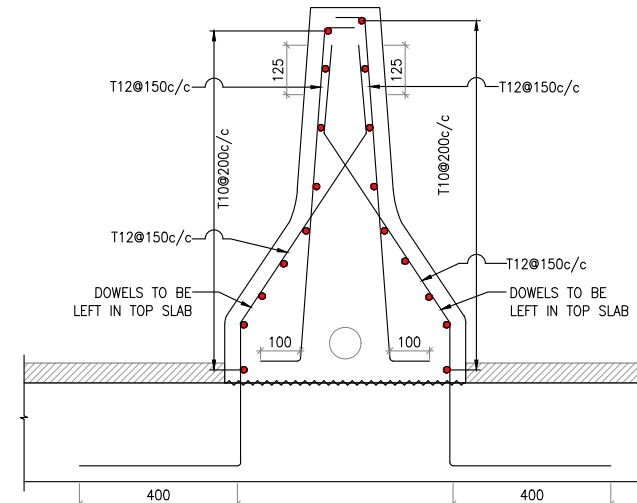
TYPICAL CRASH BARRIER DIMENSIONAL DETAIL
(SCALE 1:10)
P-1 : NORMAL CONTAINMENT
TYPE-3
VALID FOR MID LOCATION OF CARRIAGEWAY



TYPICAL CRASH BARRIER REINFORCEMENT DETAIL
(SCALE 1:10)
TYPE-1



TYPICAL CRASH BARRIER REINFORCEMENT DETAIL
(SCALE 1:10)
TYPE-2



TYPICAL CRASH BARRIER REINFORCEMENT DETAIL
(SCALE 1:10)
TYPE-3

- NOTES:-**
1. ALL CHAINAGES AND REDUCED LEVEL ARE IN METRES.
 2. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE INDICATED.
 3. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT MEASURE ANY DIMENSION.
 4. REINFORCEMENT SHALL BE HIGH YIELD STRENGTH DEFORMED BARS OF GRADE Fe 500-D CONFIRMING TO IS 1786.
 5. GRADE OF CONCRETE & CLEAR COVER TO OUTERMOST STEEL SHALL BE AS FOLLOWS :-
- | DESCRIPTION | GRADE | COVER |
|---------------|-------|-------|
| CRASH BARRIER | M40 | 45MM |
6. NOT MORE THAN 50% BARS SHALL BE LAPPEED AT ANY SECTION.
- | CONCRETE GRADE | LAP LENGTH * (FAVOURABLE) | LAP LENGTH * (UNFAVOURABLE) |
|----------------|---------------------------|-----------------------------|
| M40 | 48Ø | 68Ø |
- * REFERENCE CODES : IRC-6-2017, IRC:112-2020, IRC:78-2014'
7. SEISMIC ZONE CONSIDERED - IV
 8. EXPOSURE CONDITION - SEVERE

CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



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IN THE STATE OF HARYANA AND HIMACHAL
PRADESH ON THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

TYPICAL CRASH BARRIER
DETAILS FOR
(MNB , VUP, MJB & FLYOVER)

DRAWING No :

7301-01-MIS-305D

DATE : SEPTEMBER - 2025 Revision: **R0**

PREPARED BY DESIGNED BY CHECKED BY APPROVED BY

P.SINGH

R.RAGHUVANSHI

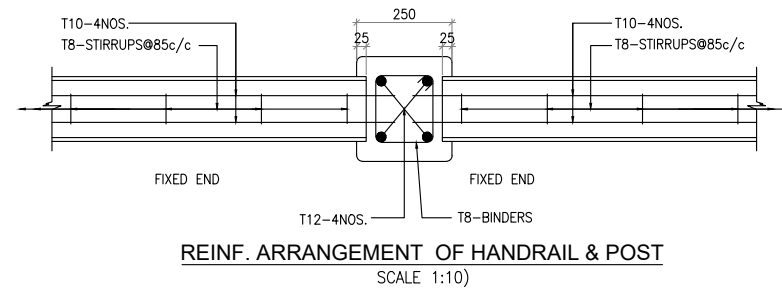
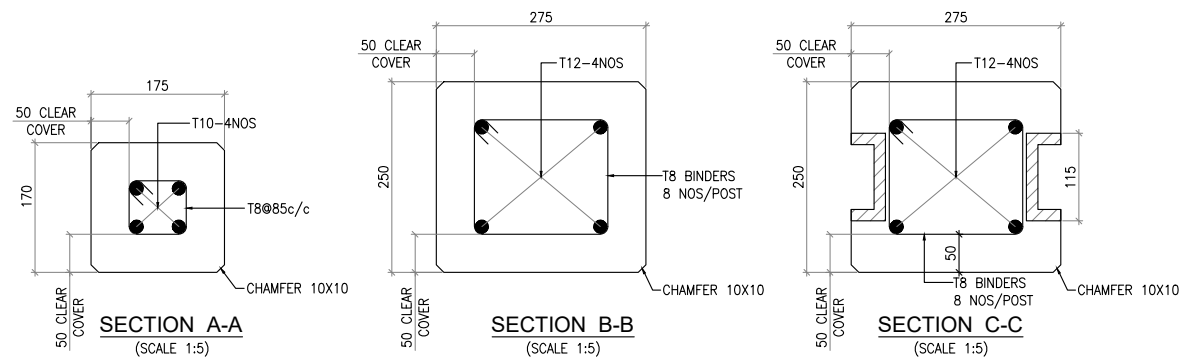
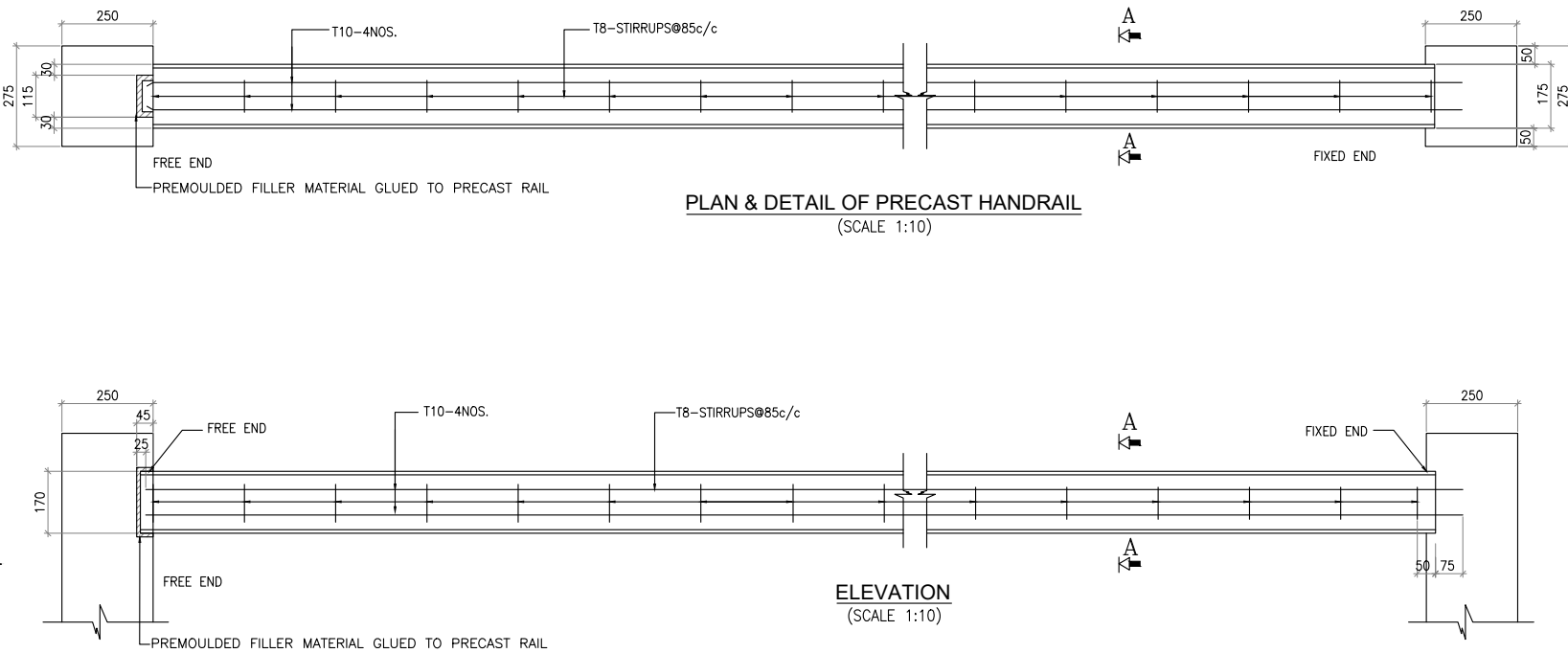
S.GUPTA

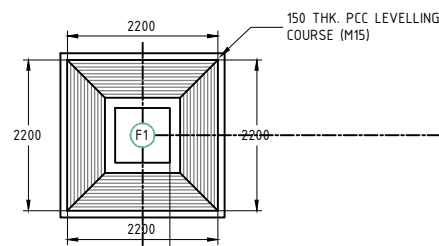
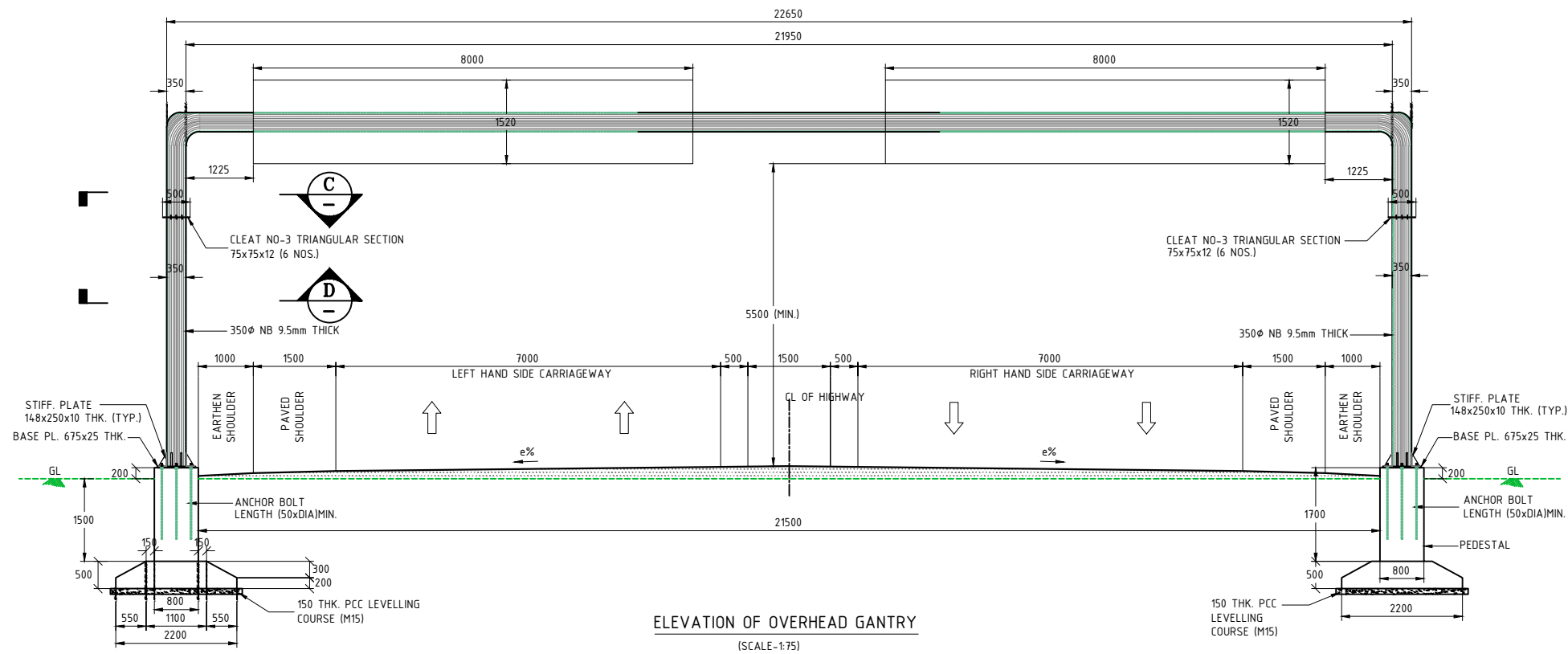
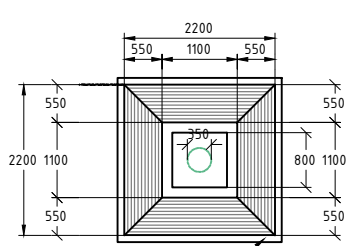
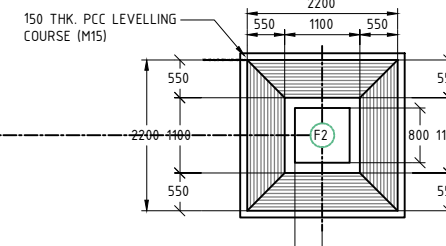
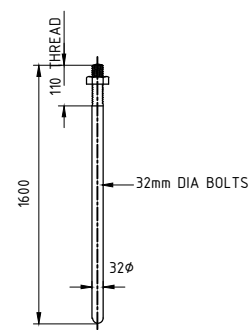
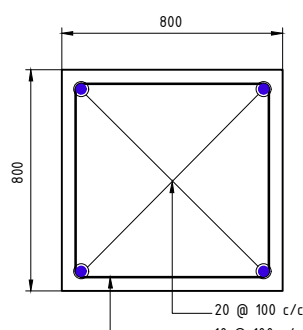
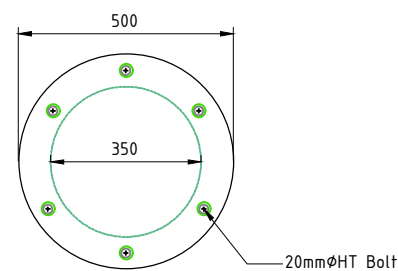
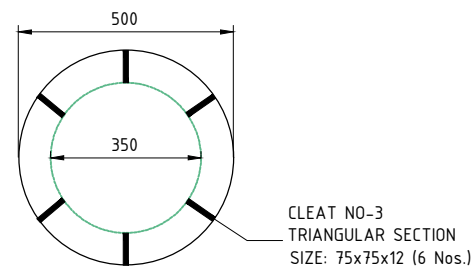
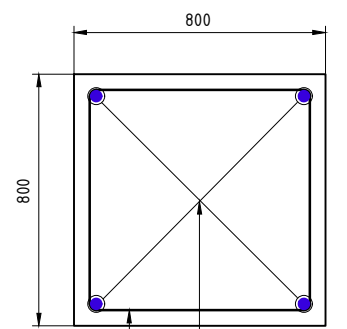
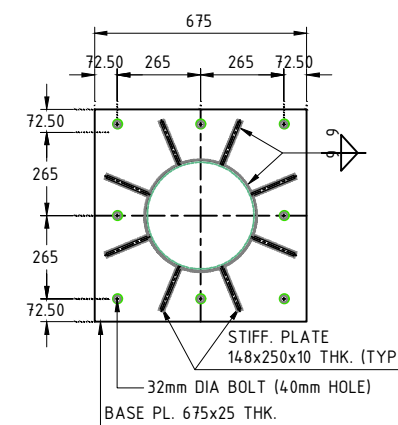
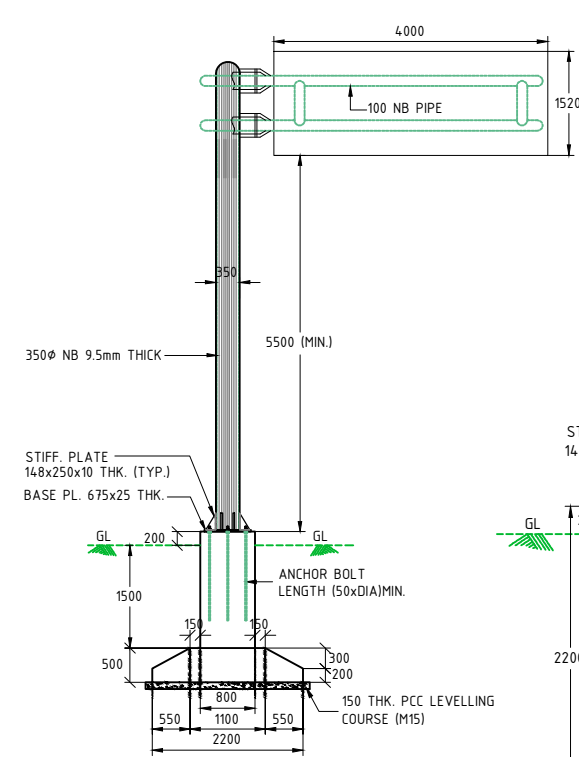
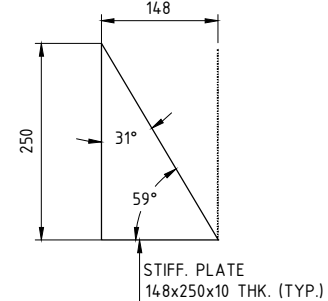
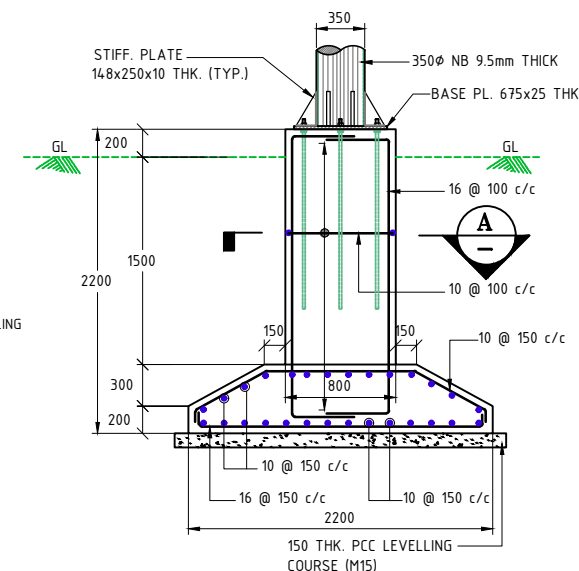
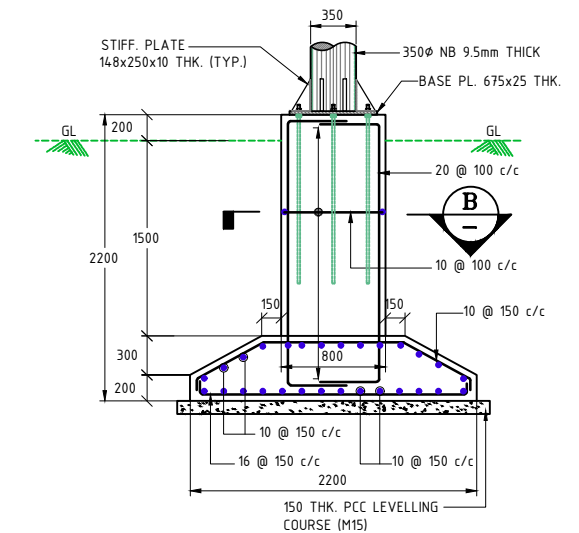
S.K.SINHA



- GENERAL INSTRUCTION & NOTES:-**
- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE INDICATED EXCEPT REDUCED LEVELS WHICH ARE IN METRES.
 - 2) DRAWING SHALL NOT BE MEASURED OR SCALED.
 - 3) GRADE OF CONCRETE FOR :-
(i) RCC RAILING –M30
 - 4) REINFORCEMENT SHALL BE HIGH YIELD STRENGTH DEFORMED BARS OF GRADE Fe 500-D CONFORMING TO IS 1786.
 - 5) CLEAR COVER – 40mm
 - 6) LAP LENGTH SHALL BE AS FOLLOWS:-

CONCRETE GRADE	LAP LENGTH * (FAVOURABLE)	LAP LENGTH * (UNFAVOURABLE)
M25		
M30	40ø	58ø
M35	36ø	52ø
M40	34ø	49ø
M45	32ø	46ø



LAYOUT PLAN AT FOUNDATION
(SCALE-1:75)LAYOUT PLAN AT FOUNDATION
(SCALE-1:75)DETAIL OF ANCHOR BOLTS
(SCALE-1:15)SECTION B-B
(SCALE-1:20)SECTION C-C
(SCALE-1:15)SECTION D-D
(SCALE-1:15)SECTION A-A
(SCALE-1:20)DETAIL OF BASE PLATE
(SCALE-1:20)ELEVATION OF CANTILEVER GANTRY
(SCALE-1:75)DETAIL OF STIFFENER
(SCALE-1:8)DETAIL OF FOUNDATION (OVERHEAD GANTRY)
(SCALE-1:40)DETAIL OF FOUNDATION (CANTILEVER GANTRY)
(SCALE-1:40)

NOTE:-

- (A):-FOR GENERAL
1. ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. THE DIMENSIONS OF ROAD WIDTH MAY VARY & SHALL HAVE TO BE ADJUSTED ACCORDING TO EXISTIN SITUATION & FEATURES DURING PHYSICALLY LAYING OUT.
- (B):-FOR R.C.C
1. DULY WRITTEN DIMENSION ARE TO BE FOLLOWED NEITHER THE BARS SHALL BE COUNTED NOR THE DIMENSION SCALED FROM DRAWINGS.
 2. REINFORCEMENT CONCRETE SHALL BE OF DESIGN MIX-M25.
 3. CLEAR COVER FOR:-
 - a) PEDESTAL = 40mm
 - b) FOUNDATION = 50mm.

CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



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SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A)
IN THE STATE OF HARYANA AND HIMACHAL
PRADESH ON THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

TYPICAL DETAILED
DRAWING OF OVER
HEAD&CANTILEVER GANTRY

DRAWING No :

PINJORE-NALAGARH NH/HW/MIŠC/OHG/04

DATE : SEPTEMBER - 2025

Revision: **R0**

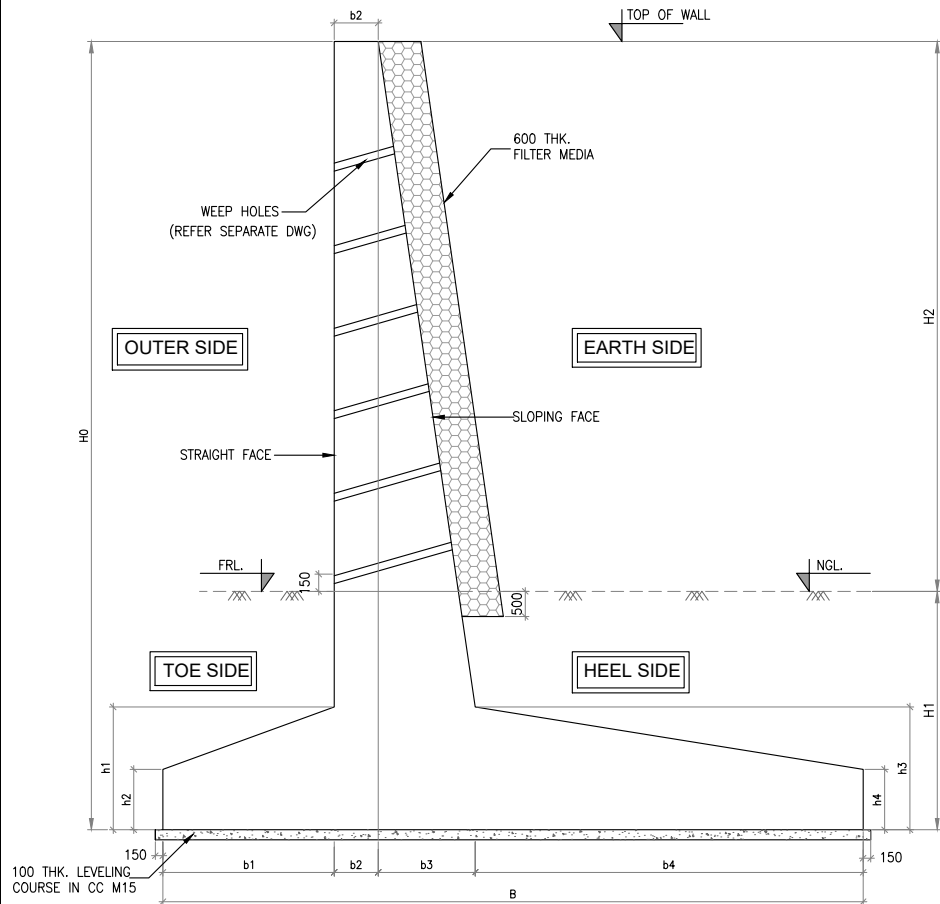
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P.SINGH

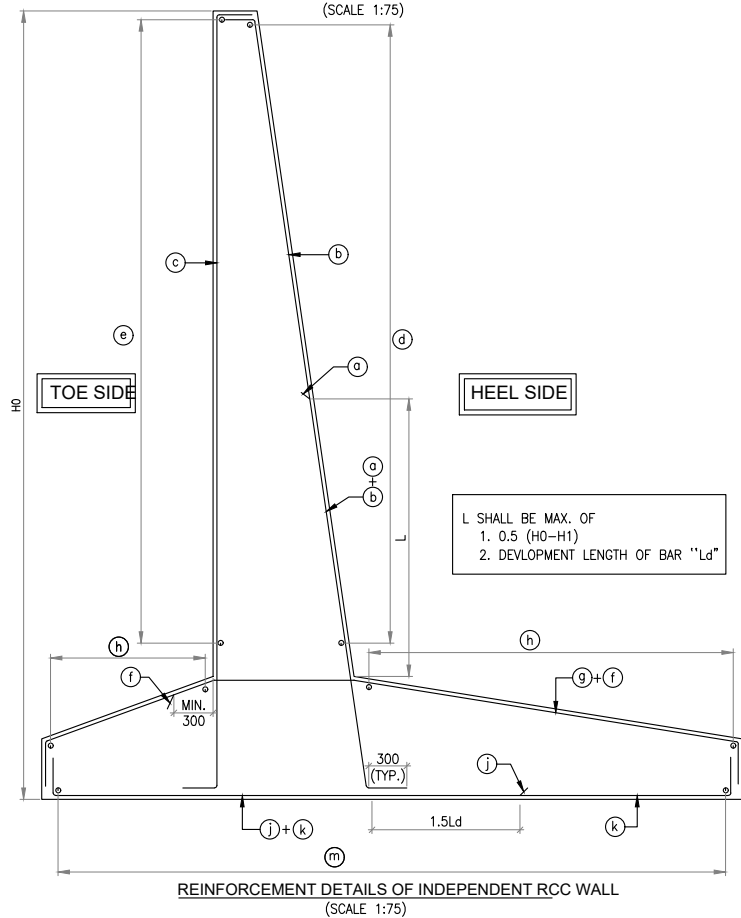
R.RAGHUVANSHI

S.GUPTA

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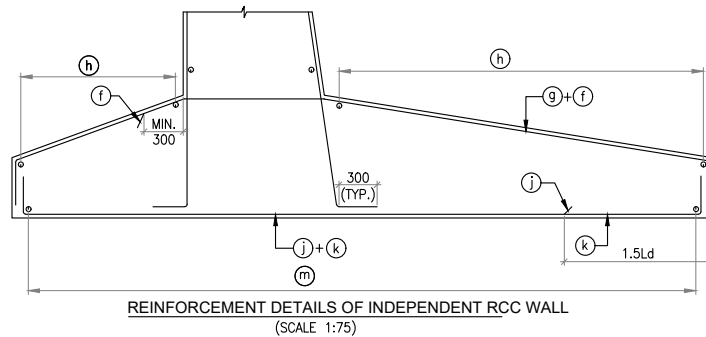
TYPICAL CROSS SECTION OF INDEPENDENT RCC WALL
(SCALE 1:75)



REINFORCEMENT DETAILS OF INDEPENDENT RCC WALL
(SCALE 1:75)

TABLE-1:- DIMENSION DETAILS													
SR NO.	H0 (mm)	H1 (mm)	H2 (mm)	b1	b2	b3	b4	B	h1 (mm)	h2 (mm)	h3 (mm)	h4 (mm)	CALCULATED MAX. GROSS BASE PRESSURE AT BASE OF FOOTING T/m ²
1	5500	2000	3500	1700	300	200	2300	4500	500	300	500	300	9.285
2	6000	2000	4000	1800	300	250	2650	5000	550	300	550	300	10.44
3	6500	2000	4500	1900	300	300	2800	5300	600	300	600	300	11.1
4	7000	2000	5000	2250	300	350	3000	5900	650	300	650	300	12.41
5	7500	2000	5500	2300	300	400	3300	6300	700	300	700	300	13.35
6	8000	2000	6000	2550	300	450	3700	7000	750	300	750	300	14.85

TABLE-02:- REINFORCEMENT DETAILS													
SR NO.	H0		a	b	c	d	e	f	g	h	j	k	m
1	5500	DIA OF BAR	20	16	16	12	12	16	16	12	16	16	12
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
2	6000	DIA OF BAR	20	20	16	16	16	16	16	12	16	16	12
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
3	6500	DIA OF BAR	20	20	16	16	16	20	16	12	20	16	16
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
4	7000	DIA OF BAR	25	20	16	16	16	20	20	16	20	16	16
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
5	7500	DIA OF BAR	25	25	20	20	20	20	20	16	20	20	16
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
6	8000	DIA OF BAR	25	25	20	20	20	25	20	16	25	20	16
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200



REINFORCEMENT DETAILS OF INDEPENDENT RCC WALL
(SCALE 1:75)

TABLE-3:- ALTERNATE BAR SCHEDULE
a+b
f+g
j+k

NOT ES:

- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.ONLY WRITTEN DIMENSIONS AND REINF. DETAILS SHALL BE FOLLOWED. NO DIMENSION SHALL BE SCALED.
- THE REINFORCEMENT SHALL BE OF HYSD BARS (GRADE Fe-500 CONFORMING TO IS: 1786).
- SAFE BEARING CAPACITY OF SOIL MUST BE ENSURED BEFORE COMMENCEMENT OF CONSTRUCTION.
- IT SHOULD BE ENSURED THAT SBC CONSIDERED IS MORE THAN THE MAX. BASE PRESSURE ON RETAINING WALL FOOTINGS.
- 100 DIA WEEP HOLES WITH SLOPE 1 IN 20 SHALL BE PROVIDED AT SPACING OF 1000 C/C BOTH HORIZONTALLY AND VERTICALLY (STAGGERED) IN FULL HEIGHT OF THE RETAINING WALL WITH BOTTOM MOST ROW 150mm ABOVE G.L.
- BACK FILLING AND FILTER MEDIA BEHIND THE TOE WALL SHALL BE PROVIDED WITH SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2014 HAVING PROPERTIES $\phi = 30^\circ$, $C=0$
- CLEAR COVER TO OUTER MUST STEEL AND GRADE OF CONCRETE SHALL BE

DESCRIPTION	GRADE	COVER
INDEPENDENT RCC WALL	M30	50MM (NON EARTH SIDE) 75MM (EARTH SIDE)

- 8, NOT MORE THAN 50% BARS SHALL BE LAPPED AT ANY SECTION.

CONCRETE GRADE	LAP LENGTH * (FAVOURABLE)	LAP LENGTH * (UNFAVOURABLE)
M30	56 ϕ	80 ϕ

- * FOR DEFINITION OF " FAVOURABLE " & " UNFAVOURABLE " REFER IRC : 112-2020.
- SEISMIC ZONE CONSIDERED - IV
 - EXPOSURE CONDITION - SEVERE
 - IF DISCREPANCY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF DESIGN ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
 - FOR CONSTRUCTION JOINT DETAIL WILL FOLLOWED AT SITE AS PER IRC 15:2011
 - REFERENCE CODE IRC-78:2014,IRC-6:2020,IRC-112:2020
 - THE LENGTH OF GRAVITY WALL/ RETAINING WALL/HEAD WALL SHALL BE AS PER SITE CONDITION. IT CAN BE EXTENDED/ RESTRICTED TO MEET THE SITE REQUIREMENT SO THAT THE WIDTH OF SLOPE AT FILLING WILL BE WITHIN THE ROW.

SPECIAL NOTES:-

FOR INTERMEDIATE DESIGN HEIGHT, THE SECTION & THE R/F DETAILS OF THE HIGHER DESIGN HEIGHT SHALL BE FOLLOWED.

CLIENT:-



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(Ministry of Road, Transport & Highways, Govt. of India)

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PRADESH ON THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

INDEPENDENT RCC WALL
REINF.DETAIL FOR
(MNB & MJB)

DRAWING No :

7301-01-MIS-305A

DATE : SEPTEMBER - 2025

Revision: **R0**

PREPARED BY DESIGNED BY CHECKED BY APPROVED BY

P.SINGH

R.RAGHUVANSHI

S.GUPTA

S.K.SINHA

GENERAL INSTRUCTION & NOTES:-

- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE INDICATED EXCEPT REDUCED LEVELS WHICH ARE IN METRES.
- 2) DRAWING SHALL NOT BE MEASURED OR SCALED.
- 3) GRADE OF CONCRETE FOR :-
- (i) RCC WALL –M30
- (ii) PCC WITH 100mm CC M15
- 4) REINFORCEMENT SHALL BE HIGH YIELD STRENGTH DEFORMED BARS OF GRADE Fe 500–D CONFIRMING TO IS 1786.
- 5) CLEAR COVER :-
- (i) 50mm – OUTER SIDE (RETAINING WALL)
- (ii) 75mm – EARTH SIDE (RETAINING WALL)
- 6) SAFE BEARING CAPACITY OF SOIL MUST BE ENSURED BEFORE COMMENCEMENT OF CONSTRUCTION.
- 7) IT SHOULD BE ENSURED THAT SBC CONSIDERED IS MORE THAN THE MAX. BASE PRESSURE ON RETAINING WALL FOOTINGS.

NOTE:- IF REQUIRED SBC IS NOT ACHIEVED ON SITE THEN THE SAME SHALL BE REPLACED WITH GSB UPTO THE DESIRED DEPTH.

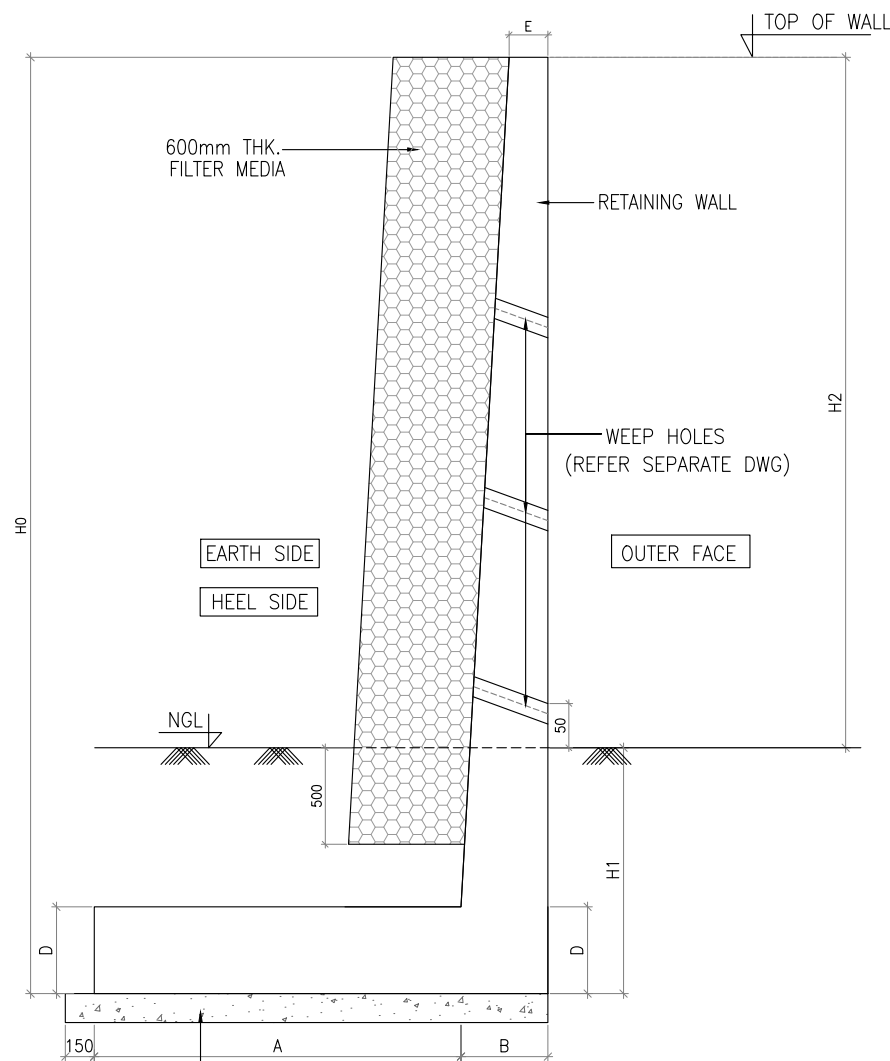
- 8) NOT MORE THAN 50% BARS SHALL BE LAPPED AT ANY SECTION.

CONCRETE GRADE	LAP LENGTH * (FAVOURABLE)	LAP LENGTH * (UNFAVOURABLE)
M30	56ø	80ø

- * FOR DEFINITION OF " FAVOURABLE " & " UNFAVOURABLE " REFER IRC : 112–2020.
- 9) ANY DISCREPANCY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- 10) FOR CONSTRUCTION JOINT DETAIL WILL FOLLOWED AT SITE AS PER IRC 15:2011
- 11) i. BED PROTECTION HAS BEEN PROVIDED AS PER IRC:SP:13:2014.
- ii. BACKFILL MATERIAL SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78:2014 HAVING PROPERTIES C,Ø,DELTA.
- iii. FLOW DIRECTION SHALL BE CROSS VERIFIED AT SITE. BED PROTECTION FOR UPSTREAM AND DOWN STREAM SHALL BE BASED ON THE ACTUAL FLOW DIRECTION AT SITE.
- iv. FLEXIBLE APRON SHALL BE PROVIDED BASED ON THE SITE CONDITION AND SHALL BE DECIDED BY ENGINEER IN CHARGE WHEREVER ROCK IS AVAILABLE AT TOP LEVEL FLEXIBLE APRON SHALL BE DISPENSED.
- 12) THE SIDE SLOPE (AT EMBANKMENT/ STONE PITCHING) MAY VARY AND IT SHALL BE PROVIDED AS PER SITE CONDITION.
- 13) THE LENGTH OF GRAVITY WALL/ RETAINING WALL/HEAD WALL SHALL BE AS PER SITE CONDITION. IT CAN BE EXTENDED/ RESTRICTED TO MEET THE SITE REQUIREMENT SO THAT THE WIDTH OF SLOPE AT FILLING WILL BE WITHIN THE ROW.
- 14) THE WIDTH OF FLOOR APRON AND STONE PITCHING MAY VARY AS PER SITE CONDITION.
- 15) SEISMIC ZONE CONSIDERED – IV
- 16, EXPOSURE CONDITION – SEVERE

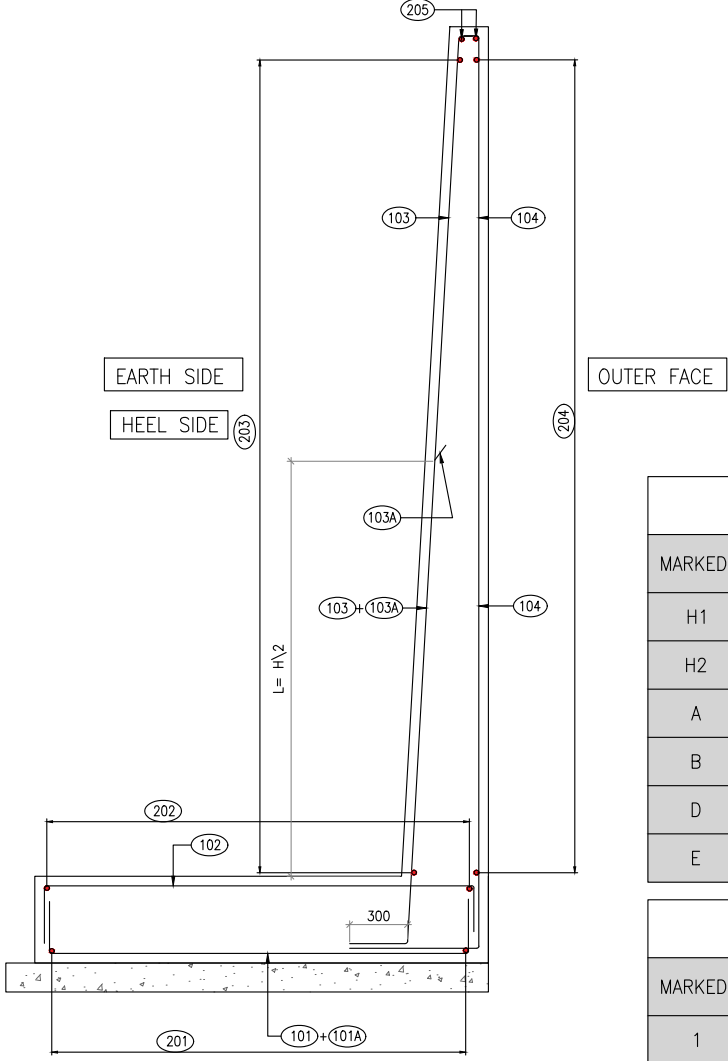
SPECIAL NOTES:-

FOR INTERMEDIATE DESIGN HEIGHT, THE SECTION & THE R/F DETAILS OF THE HIGHER DESIGN HEIGHT SHALL BE FOLLOWED.



100 THK. LEVELING COURSE IN CC (M15)

DIMENSIONAL DETAIL OF INDEPENDENT RCC WALL
(SCALE 1:20)



TYPICAL REINFORCEMENT DETAIL OF INDEPENDENT RCC WALL
(SCALE 1:20)

RETAINING WALL SIZES						
MARKED.	5.5M	6.0M	6.5M	7.0M	7.5M	8.0M
H1	2000	2000	2000	2000	2000	2000
H2	3500	4000	4500	5000	5500	6000
A	3600	4000	4100	4300	4500	5000
B	650	800	800	850	900	950
D	650	750	800	850	900	950
E	300	300	300	300	300	300

CALCULATED MAX. GROSS BASE PRESSURE AT BASE OF FOOTING T/m2						
MARKED.	5.5M	6.0M	6.5M	7.0M	7.5M	8.0M
1	12.17	13.87	13.90	14.6	15.18	15.5

REINFORCEMENT SCHEDULE OF RETAINING WALL							
BAR MARK.	5.5M	6.0M	6.5M	7.0M	7.5M	8.0M	SHAPE OF BAR
	REINFORCEMENT						
101	T16 @200c/c	T16 @200c/c	T20 @200c/c	T20 @200c/c	T20 @200c/c	T25 @200c/c	
101A	T12 @200c/c	T12 @200c/c	T16 @200c/c	T16 @200c/c	T20 @200c/c	T20 @200c/c	
102	T12 @200c/c	T12 @200c/c	T16 @200c/c	T20 @200c/c	T20 @200c/c	T20 @200c/c	
103	T20 @200c/c	T20 @200c/c	T20 @200c/c	T20 @200c/c	T25 @200c/c	T25 @200c/c	
103A	T16 @200c/c	T16 @200c/c	T20 @200c/c	T25 @200c/c	T25 @200c/c	T25 @200c/c	
104	T16 @200c/c	T16 @200c/c	T20 @200c/c	T20 @200c/c	T20 @200c/c	T25 @200c/c	
201	T12 @200c/c	T12 @150c/c	T12 @150c/c	T16 @200c/c	T16 @200c/c	T16 @200c/c	DISTRIBUTION R/F.
202	T12 @200c/c	T12 @150c/c	T12 @150c/c	T16 @200c/c	T16 @200c/c	T16 @200c/c	DISTRIBUTION R/F.
203	T12 @200c/c	T12 @150c/c	T12 @150c/c	T12 @150c/c	T16 @200c/c	T16 @200c/c	DISTRIBUTION R/F.
204	T12 @200c/c	T12 @150c/c	T12 @150c/c	T12 @150c/c	T16 @200c/c	T16 @200c/c	DISTRIBUTION R/F.
205	T12 –4Nos. (2+2)	T12 –4Nos. (2+2)	T12 –4Nos. (2+2)	T12 –4Nos. (2+2)	T16 –4Nos. (2+2)	T16 –4Nos. (2+2)	DISTRIBUTION R/F.

CLIENT:-



National Highways Authority of India
(Ministry of Road, Transport & Highways, Govt. of India)

CONSULTANT:-



Chaitanya Projects Consultancy Ltd.
C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22,
SECTOR-4, VAISHALI, GHAZIABAD
PH.: 0120-3223419, 4120472, FAX: 0120-4110472

PROJECT:-

BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

**INDEPENDENT & DEPENDENT
RCC WALL REINF. DETAIL
ARRANGEMENT FOR
(MNB & MJB)**

DRAWING No :

7301-01-MIS-305B

DATE : SEPTEMBER - 2025

Revision: **R0**

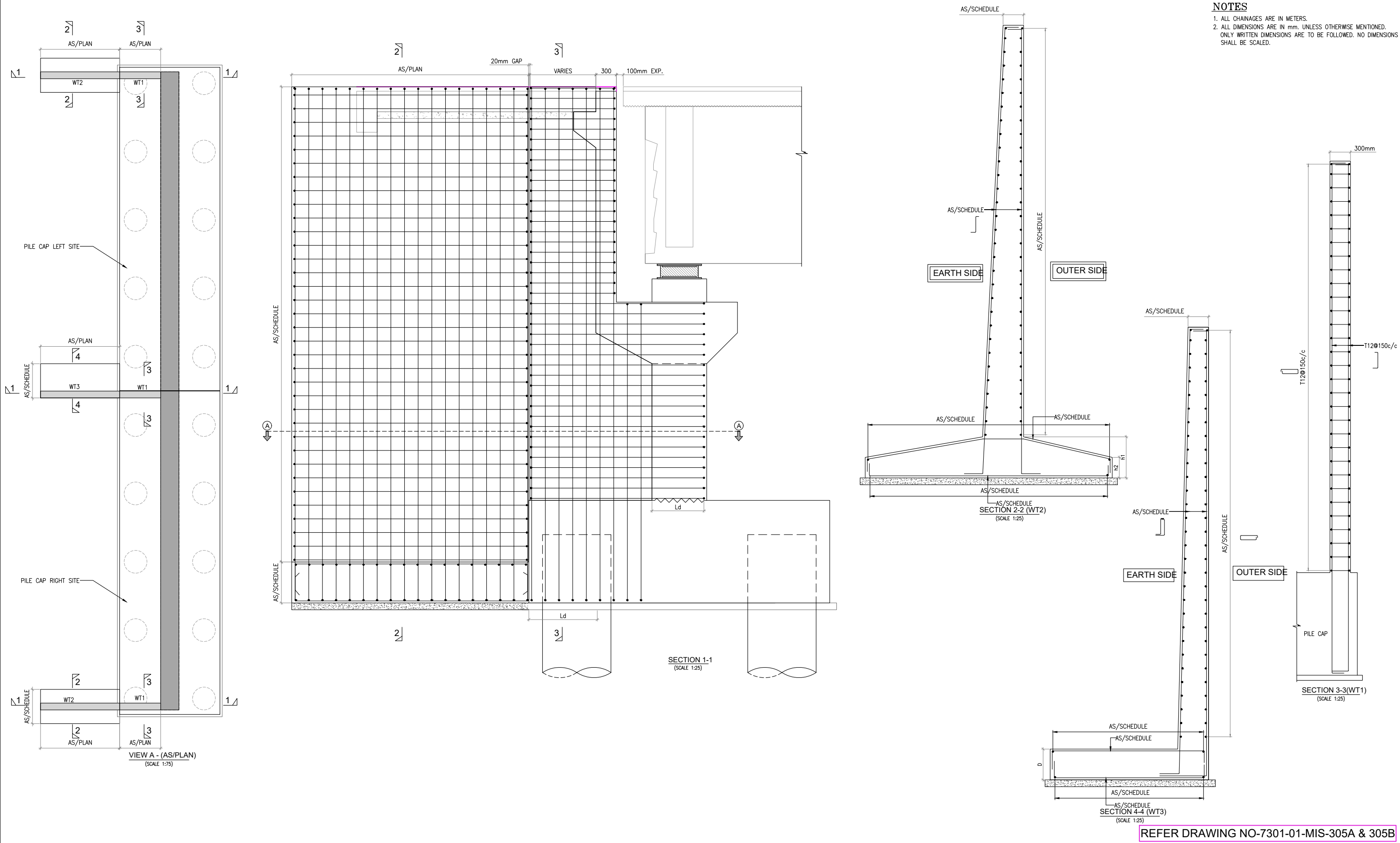
PREPARED BY DESIGNED BY CHECKED BY APPROVED BY

P.SINGH

R.RAGHUVANSHI



S.GUPTA

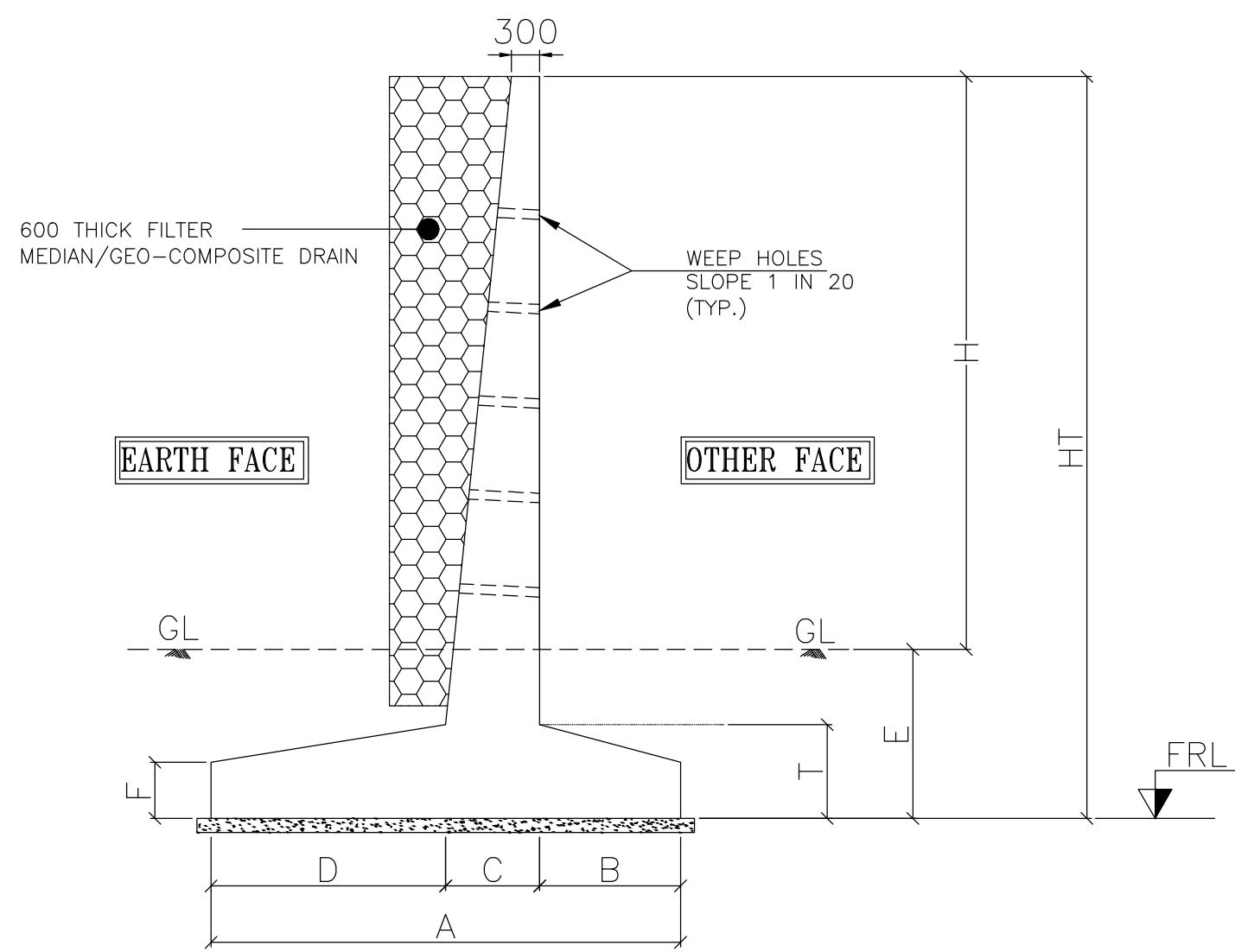
S.K.SINHA



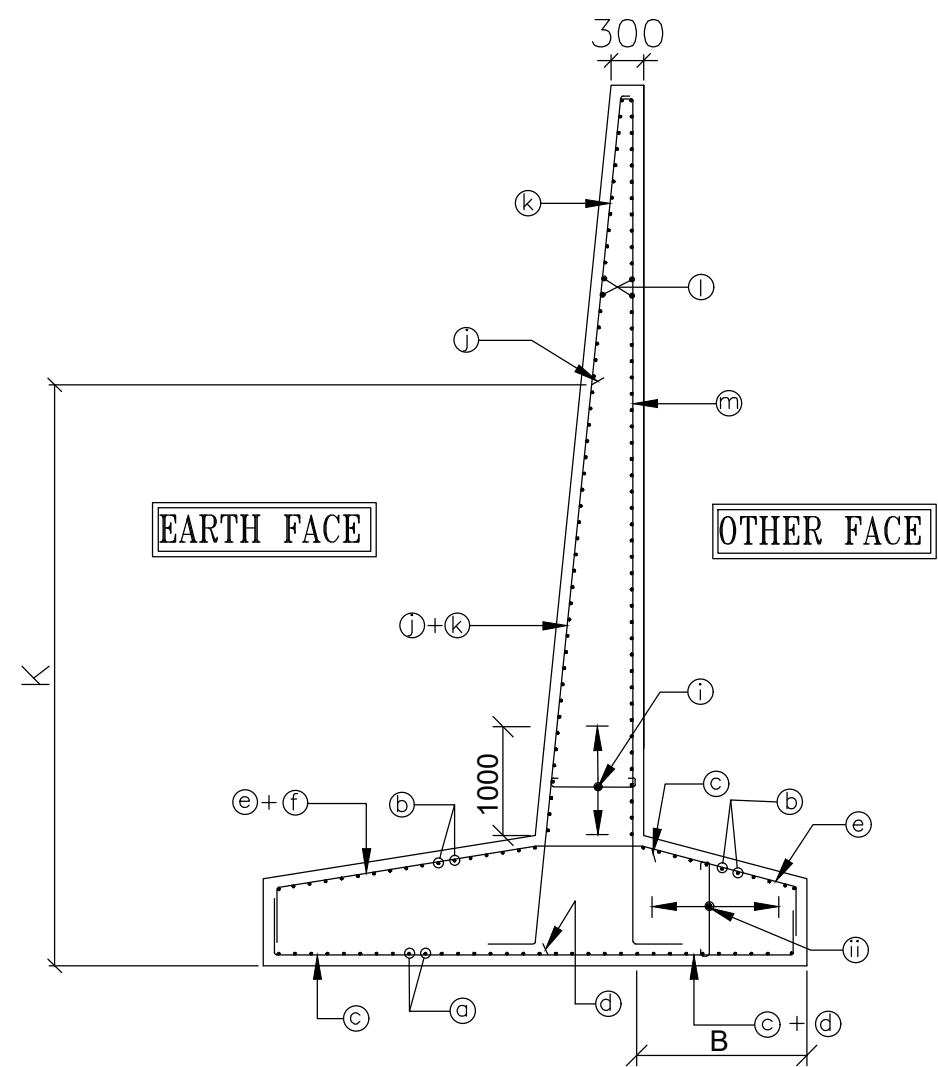
NOTES

1. ALL CHAINAGES ARE IN METERS.
2. ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.

<div>CLIENT:-</div> <div><div>National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)</div></div>	<div>CONSULTANT:-</div> <div><div>Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472</div></div>	<div>PROJECT:-</div> <div>BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE</div>	<div>SCALE :-</div> <div>AS SHOWN</div>	<div>DWG TITLE:-</div> <div>INDEPENDENT & DEPENDENT RCC WALL REINF. DETAIL ARRANGEMENT FOR (MNB & MJB)</div>	<div>DRAWING No :</div> <div>7301-01-MIS-305C</div>	
					<div>DATE : SEPTEMBER - 2025</div>	<div>Revision: R</div>
					<div>PREPARED BY</div> <div>P.SINGH</div>	<div>DESIGNED BY</div> <div>R.RAGHUVANSHI</div>



RCC RETAINING WALL

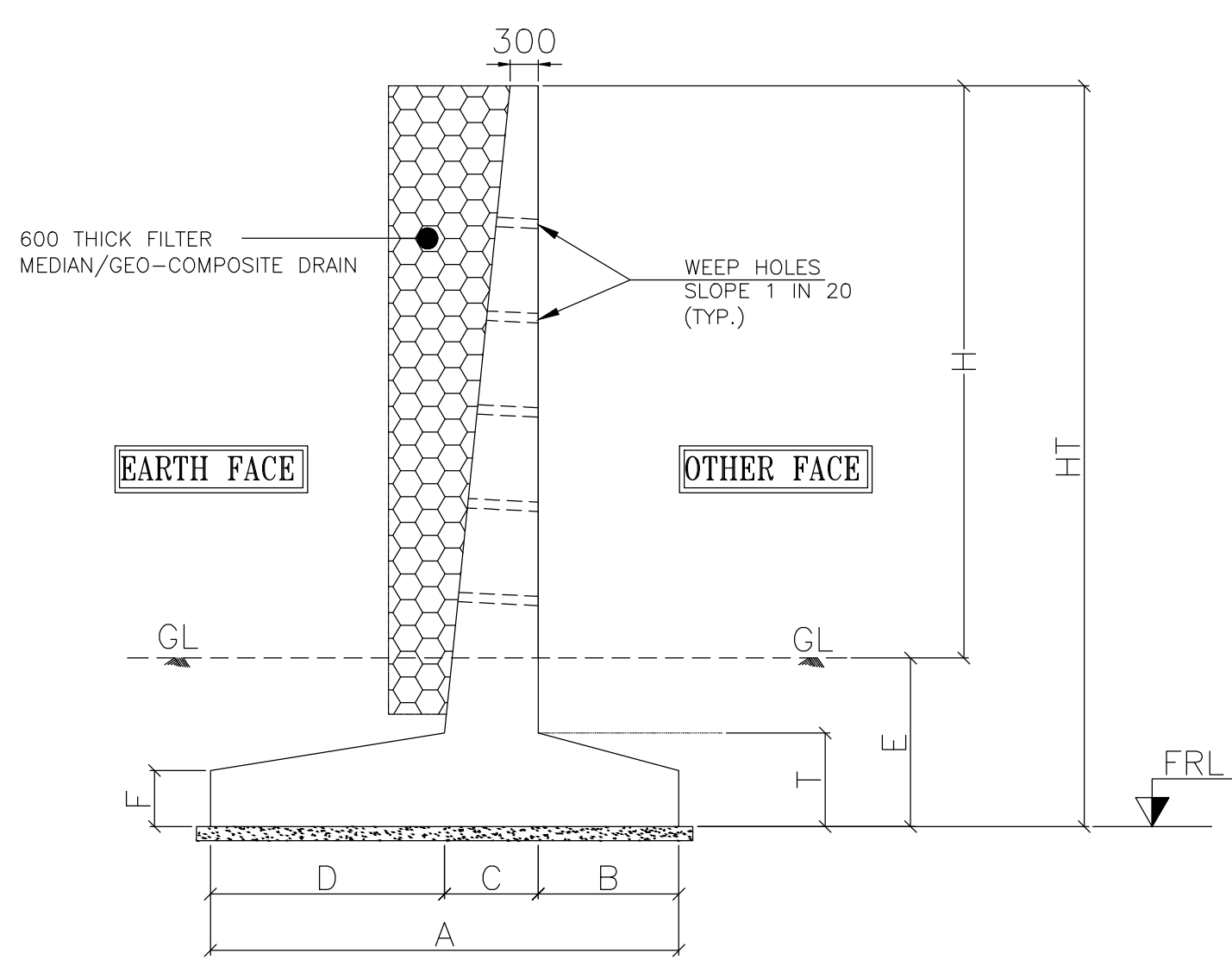


RCC RETAINING WALL

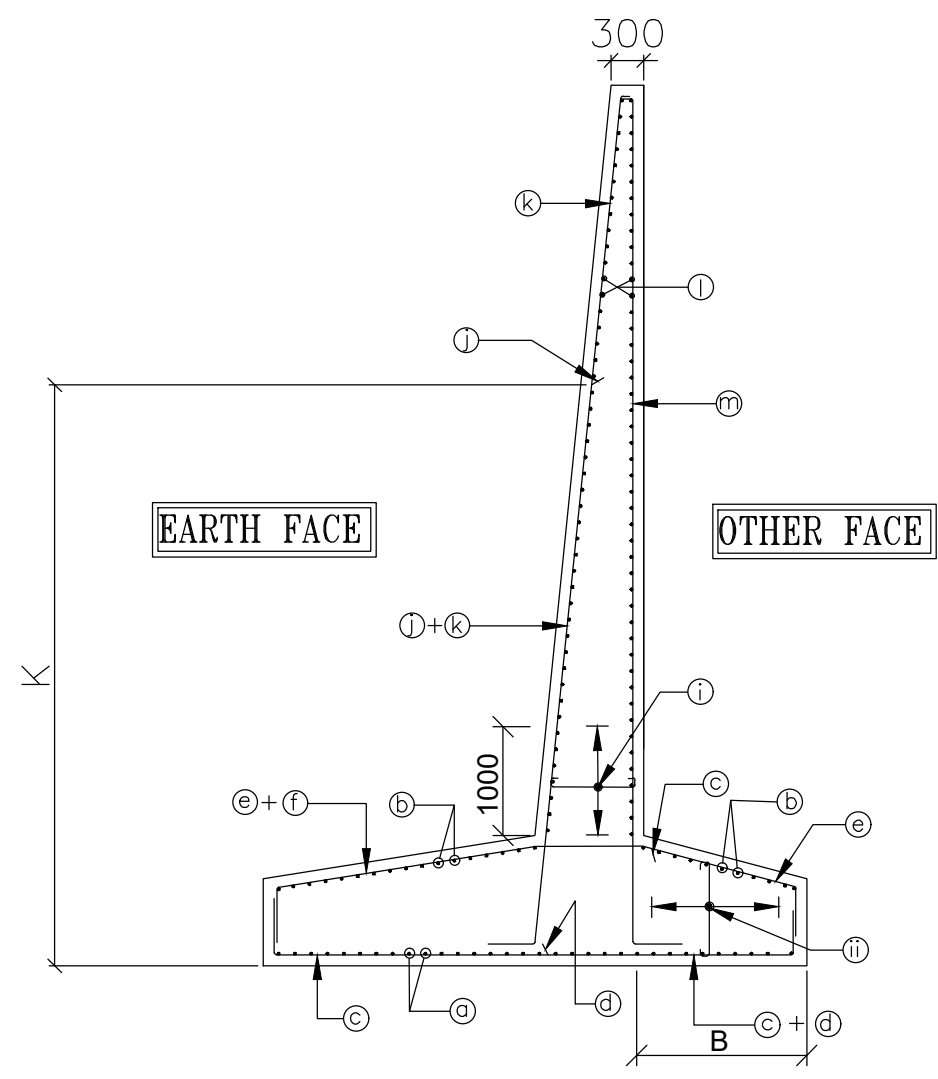
- NOTES:-**
1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE MENTIONED .
 2. DIMENSIONS ARE NOT TO BE SCALED, ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
 3. CONCRETE SHALL BE DESIGN MIX UNLESS OTHERWISE SPECIFIED IN DETAILED DRAWINGS, AND SHALL HAVE MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES FOR ALL ELEMENTS OF STRUCTURES AS INDICATED BELOW:
a) RCC RETAINING WALLM30
 4. REINFORCING STEEL SHALL BE HYSD (TMT) BARS (GRADE DESIGN- TION Fe 500D) CONFORMING TO TABLE 18.1 OF IRC:112-2011.
 5. MINIMUM COVER TO ANY REINFORCEMENT SHALL BE AS:-
a) EARTHEN SIDE75mm
b) NON EARTHEN SIDE45mm
 6. SAFE BEARING CAPACITY SHOULD NOT LESS THAN THAT GIVEN IN DETAIL DRAWING. INCASE ALLOWABLE SOIL BEARING CAPACITY IN FOUND TO BE LESS THAN THE REQUIRED BEARING CAPACITY, THE SOIL SHOULD BE STABILISED TO ACHIEVE THE SAME FOR THIS PURPOSE. THE WEAK SOIL LAYER SHALL BE REMOVED & REFILLED
 7. 100Ø WEEP HOLE SPACED AT 1000C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN A STAGGERED MANNER IN EARTH RETAINING VERTICAL WALL ABOVE GROUND LEVEL.
 8. BACK FILLING BEHIND FILL EARTH RETAINING WALL CONSIST OF SELECTED CONFORMING TO APPENDIX 6 OF IRC : 78-2014 HAVING PROPERTIES C=0, Ø=30° AND 2.0T/M
 9. SPLICING OF REINFORCEMENT SHALL BE DONE EITHER BY OVERLAPPING OR BY USING MECHANICAL COUPLER.
 10. DESIGN & DRAWINGS APPLICABLE FOR MAXIMUM FOR HEIGHT OF DIFFERENT SEGMENTS SHALL BE CONSIDERED FOR CONSTRUCTION.
 11. AS PER CLAUSE NO. 15.2.5 OF IRC: 112-2011. OVERLAPPING FOR SPLICING OF REINFORCEMENT SHALL BE AS FOLLOWS:

PERCENTAGE LAPPED BAR RELATIVE TO TOTAL CROSS SECTION AREA	LAP LENGTH Lp
≤25%	49Ø
33%	56Ø
50%	69Ø
>50%	73Ø

REINFORCEMENT DETAIL OF RCC WALL :-



RCC RETAINING WALL

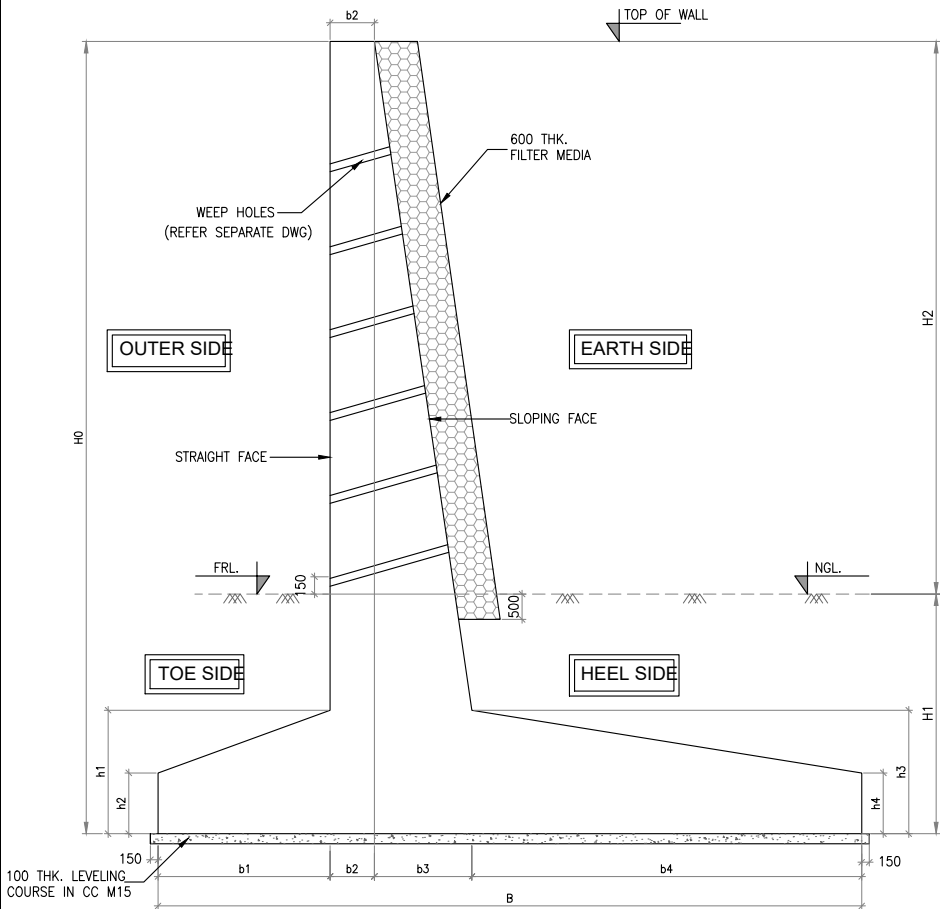


RCC RETAINING WALL

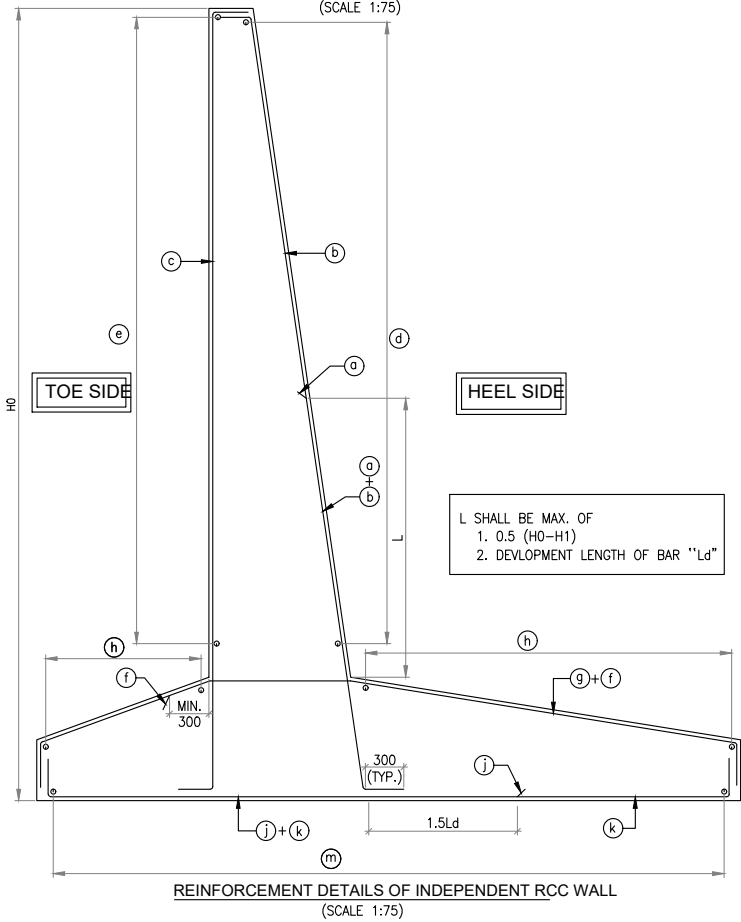
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 10. DESIGN & DRAWINGS APPLICABLE FOR MAXIMUM FOR HEIGHT OF DIFFERENT SEGMENTS SHALL BE CONSIDERED FOR CONSTRUCTION.
 11. AS PER CLAUSE NO. 15.2.5 OF IRC: 112-2011. OVERLAPPING FOR SPLICING OF REINFORCEMENT SHALL BE AS FOLLOWS:
 12. EXPOSURE CONDITION - SEVER AND SEISMIC ZONE 4.

PERCENTAGE LAPPED BAR RELATIVE TO TOTAL CROSS SECTION AREA	LAP LENGTH Lp
≤25%	49Ø
33%	56Ø
50%	69Ø
>50%	73Ø

REINFORCEMENT DETAIL OF RCC WALL :-



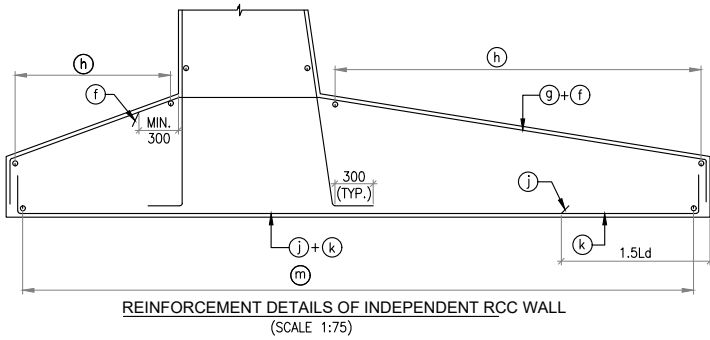
TYPICAL CROSS SECTION OF INDEPENDENT RCC WALL
(SCALE 1:75)



REINFORCEMENT DETAILS OF INDEPENDENT RCC WALL
(SCALE 1:75)

TABLE-1:- DIMENSION DETAILS													
SR NO.	H0 (mm)	H1 (mm)	H2 (mm)	b1	b2	b3	b4	B	h1 (mm)	h2 (mm)	h3 (mm)	h4 (mm)	CALCULATED MAX. GROSS BASE PRESSURE AT BASE OF FOOTING T/m ²
1	5500	2000	3500	1700	300	200	2300	4500	500	300	500	300	9.285
2	6000	2000	4000	1800	300	250	2650	5000	550	300	550	300	10.44
3	6500	2000	4500	1900	300	300	2800	5300	600	300	600	300	11.1
4	7000	2000	5000	2250	300	350	3000	5900	650	300	650	300	12.41
5	7500	2000	5500	2300	300	400	3300	6300	700	300	700	300	13.35
6	8000	2000	6000	2550	300	450	3700	7000	750	300	750	300	14.85

TABLE-02:- REINFORCEMENT DETAILS													
SR NO.	H0		a	b	c	d	e	f	g	h	j	k	m
1	5500	DIA OF BAR	20	16	16	12	12	16	16	12	16	16	12
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
2	6000	DIA OF BAR	20	20	16	16	16	16	16	12	16	16	12
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
3	6500	DIA OF BAR	20	20	16	16	16	20	16	12	20	16	16
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
4	7000	DIA OF BAR	25	20	16	16	16	20	20	16	20	16	16
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
5	7500	DIA OF BAR	25	25	20	20	20	20	20	16	20	20	16
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200
6	8000	DIA OF BAR	25	25	20	20	20	25	20	16	25	20	16
		SPACING OF BARS	200	200	200	200	200	200	200	200	200	200	200



REINFORCEMENT DETAILS OF INDEPENDENT RCC WALL
(SCALE 1:75)

TABLE-3:- ALTERNATE BAR SCHEDULE
a+b
f+g
j+k

NOT ES:

- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED.ONLY WRITTEN DIMENSIONS AND REINF. DETAILS SHALL BE FOLLOWED. NO DIMENSION SHALL BE SCALED.
- THE REINFORCEMENT SHALL BE OF HYSD BARS (GRADE Fe-500 CONFORMING TO IS: 1786).
- SAFE BEARING CAPACITY OF SOIL MUST BE ENSURED BEFORE COMMENCEMENT OF CONSTRUCTION.
- IT SHOULD BE ENSURED THAT SBC CONSIDERED IS MORE THAN THE MAX. BASE PRESSURE ON RETAINING WALL FOOTINGS.
- 100 DIA WEEP HOLES WITH SLOPE 1 IN 20 SHALL BE PROVIDED AT SPACING OF 1000 C/C BOTH HORIZONTALLY AND VERTICALLY (STAGGERED) IN FULL HEIGHT OF THE RETAINING WALL WITH BOTTOM MOST ROW 150mm ABOVE G.L.
- BACK FILLING AND FILTER MEDIA BEHIND THE TOE WALL SHALL BE PROVIDED WITH SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC:78-2014 HAVING PROPERTIES $\phi = 30^\circ$, $C=0$
- CLEAR COVER TO OUTER MUST STEEL AND GRADE OF CONCRETE SHALL BE

DESCRIPTION	GRADE	COVER
INDEPENDENT RCC WALL	M30	50MM (NON EARTH SIDE) 75MM (EARTH SIDE)

- 8, NOT MORE THAN 50% BARS SHALL BE LAPPED AT ANY SECTION.

CONCRETE GRADE	LAP LENGTH * (FAVOURABLE)	LAP LENGTH * (UNFAVOURABLE)
M30	56 ϕ	80 ϕ

- * FOR DEFINITION OF " FAVOURABLE " & " UNFAVOURABLE " REFER IRC : 112-2020.
- SEISMIC ZONE CONSIDERED - IV
 - EXPOSURE CONDITION - SEVERE
 - IF DISCREPANCY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF DESIGN ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
 - FOR CONSTRUCTION JOINT DETAIL WILL FOLLOWED AT SITE AS PER IRC 15:2011
 - REFERENCE CODE IRC-78:2014,IRC-6:2020,IRC-112:2020
 - THE LENGTH OF GRAVITY WALL/ RETAINING WALL/HEAD WALL SHALL BE AS PER SITE CONDITION. IT CAN BE EXTENDED/ RESTRICTED TO MEET THE SITE REQUIREMENT SO THAT THE WIDTH OF SLOPE AT FILLING WILL BE WITHIN THE ROW.

SPECIAL NOTES:-

FOR INTERMEDIATE DESIGN HEIGHT, THE SECTION & THE R/F DETAILS OF THE HIGHER DESIGN HEIGHT SHALL BE FOLLOWED.

CLIENT:-



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SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A)
IN THE STATE OF HARYANA AND HIMACHAL
PRADESH ON THE EPC MODE

SCALE :-

AS SHOWN

DWG TITLE:-

**INDEPENDENT RCC WALL
REINF.DETAIL FOR
(MNB & MJB)**

DRAWING No :

7301-01-MIS-305A

DATE : SEPTEMBER - 2025

Revision: **R0**

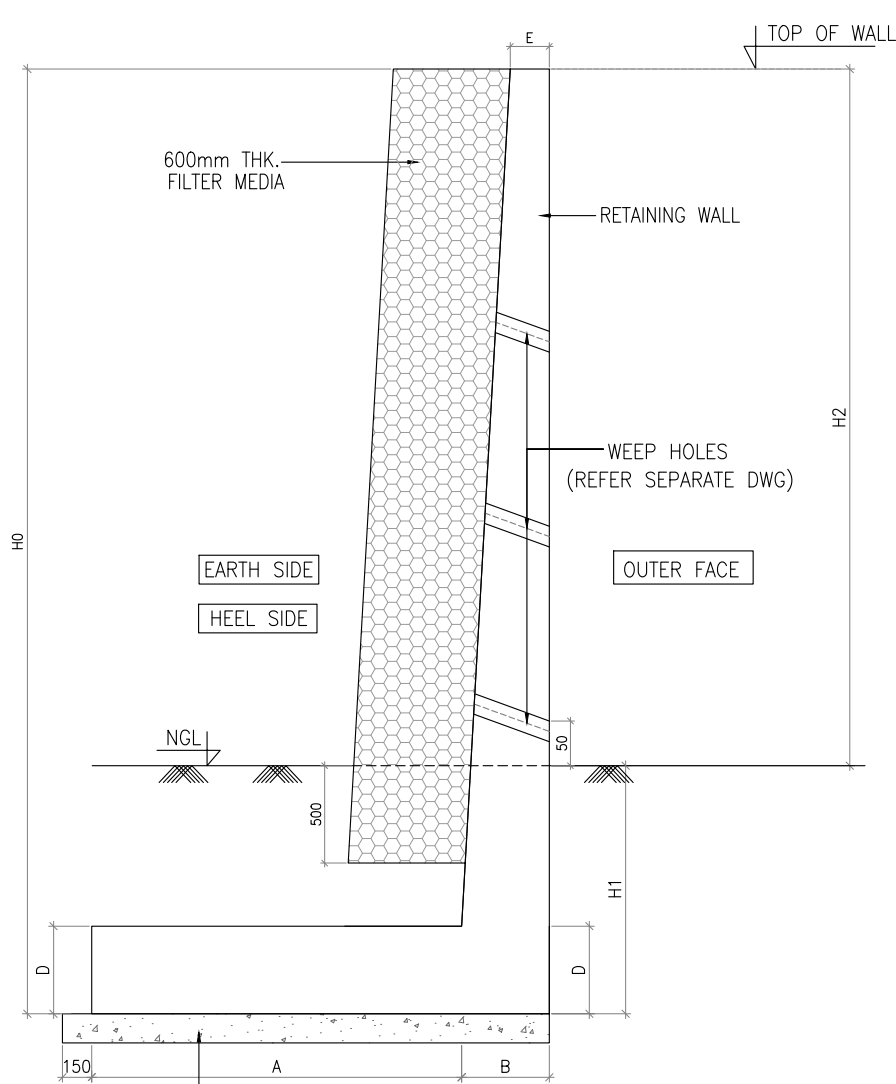
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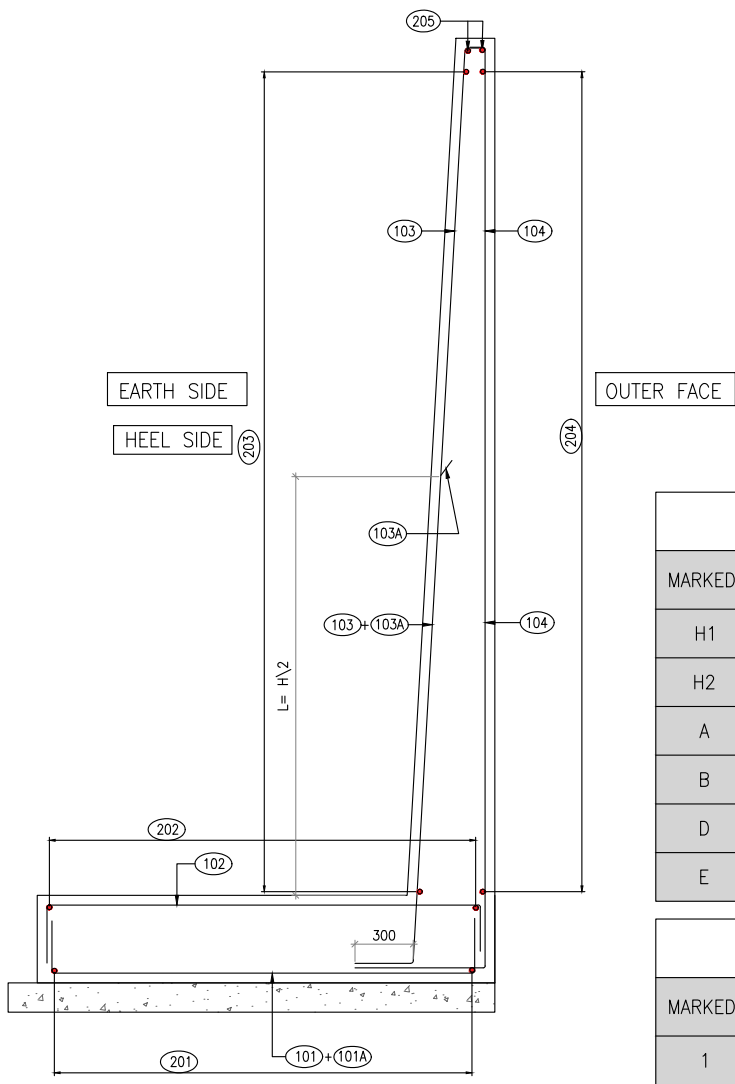
S.GUPTA

S.K.SINHA



100 THK. LEVELING COURSE IN CC (M15)







DIMENSIONAL DETAIL OF INDEPENDENT RCC WALL
(SCALE 1:20)



TYPICAL REINFORCEMENT DETAIL OF INDEPENDENT RCC WALL
(SCALE 1:20)

RETAINING WALL SIZES						
MARKED.	5.5M	6.0M	6.5M	7.0M	7.5M	8.0M
H1	2000	2000	2000	2000	2000	2000
H2	3500	4000	4500	5000	5500	6000
A	3600	4000	4100	4300	4500	5000
B	650	800	800	850	900	950
D	650	750	800	850	900	950
E	300	300	300	300	300	300

CALCULATED MAX. GROSS BASE PRESSURE AT BASE OF FOOTING T/m2						
MARKED.	5.5M	6.0M	6.5M	7.0M	7.5M	8.0M
1	12.17	13.87	13.90	14.6	15.18	15.5

REINFORCEMENT SCHEDULE OF RETAINING WALL							
BAR MARK.	5.5M	6.0M	6.5M	7.0M	7.5M	8.0M	SHAPE OF BAR
	REINFORCEMENT						
101	T16 @200c/c	T16 @200c/c	T20 @200c/c	T20 @200c/c	T20 @200c/c	T25 @200c/c	
101A	T12 @200c/c	T12 @200c/c	T16 @200c/c	T16 @200c/c	T20 @200c/c	T20 @200c/c	
102	T12 @200c/c	T12 @200c/c	T16 @200c/c	T20 @200c/c	T20 @200c/c	T20 @200c/c	
103	T20 @200c/c	T20 @200c/c	T20 @200c/c	T20 @200c/c	T25 @200c/c	T25 @200c/c	
103A	T16 @200c/c	T16 @200c/c	T20 @200c/c	T25 @200c/c	T25 @200c/c	T25 @200c/c	
104	T16 @200c/c	T16 @200c/c	T20 @200c/c	T20 @200c/c	T20 @200c/c	T25 @200c/c	
201	T12 @200c/c	T12 @150c/c	T12 @150c/c	T16 @200c/c	T16 @200c/c	T16 @200c/c	DISTRIBUTION R/F.
202	T12 @200c/c	T12 @150c/c	T12 @150c/c	T16 @200c/c	T16 @200c/c	T16 @200c/c	DISTRIBUTION R/F.
203	T12 @200c/c	T12 @150c/c	T12 @150c/c	T12 @150c/c	T16 @200c/c	T16 @200c/c	DISTRIBUTION R/F.
204	T12 @200c/c	T12 @150c/c	T12 @150c/c	T12 @150c/c	T16 @200c/c	T16 @200c/c	DISTRIBUTION R/F.
205	T12 -4Nos. (2+2)	T12 -4Nos. (2+2)	T12 -4Nos. (2+2)	T12 -4Nos. (2+2)	T16 -4Nos. (2+2)	T16 -4Nos. (2+2)	DISTRIBUTION R/F.

GENERAL INSTRUCTION & NOTES:-

- 1) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE INDICATED EXCEPT REDUCED LEVELS WHICH ARE IN METRES.
- 2) DRAWING SHALL NOT BE MEASURED OR SCALED.
- 3) GRADE OF CONCRETE FOR :-
 - (i) RCC WALL -M30
 - (ii) PCC WITH 100mm CC M15
- 4) REINFORCEMENT SHALL BE HIGH YIELD STRENGTH DEFORMED BARS OF GRADE Fe 500-D CONFIRMING TO IS 1786.
- 5) CLEAR COVER :-
 - (i) 50mm - OUTER SIDE (RETAINING WALL)
 - (ii) 75mm - EARTH SIDE (RETAINING WALL)
- 6) SAFE BEARING CAPACITY OF SOIL MUST BE ENSURED BEFORE COMMENCEMENT OF CONSTRUCTION.
- 7) IT SHOULD BE ENSURED THAT SBC CONSIDERED IS MORE THAN THE MAX. BASE PRESSURE ON RETAINING WALL FOOTINGS

NOTE:- IF REQUIRED SBC IS NOT ACHIEVED ON SITE THEN THE SAME SHALL BE REPLACED WITH GSB UPTO THE DESIRED DEPTH.

- 8) NOT MORE THAN 50% BARS SHALL BE LAPPEED AT ANY SECTION.

CONCRETE GRADE	LAP LENGTH * (FAVOURABLE)	LAP LENGTH * (UNFAVOURABLE)
M30	56ø	80ø

* FOR DEFINITION OF " FAVOURABLE " & " UNFAVOURABLE " REFER IRC : 112-2020.

- 9) ANY DISCREPANCY IS TO BE IMMEDIATELY BROUGHT IN TO THE NOTICE OF ENGINEER FOR NECESSARY MODIFICATION IN THE DRAWING.
- 10) FOR CONSTRUCTION JOINT DETAIL WILL FOLLOWED AT SITE AS PER IRC 15:2011
- 11) i. BED PROTECTION HAS BEEN PROVIDED AS PER IRC:SP:13:2014.
 - ii. BACKFILL MATERIAL SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78:2014 HAVING PROPERTIES C,Ø,DELTA.
 - iii. FLOW DIRECTION SHALL BE CROSS VERIFIED AT SITE. BED PROTECTION FOR UPSTREAM AND DOWN STREAM SHALL BE BASED ON THE ACTUAL FLOW DIRECTION AT SITE.
 - iv. FLEXIBLE APRON SHALL BE PROVIDED BASED ON THE SITE CONDITION AND SHALL BE DECIDED BY ENGINEER IN CHAGE WHEREVER ROCK IS AVAILABLE AT TOP LEVEL FLEXIBLE APRON SHALL BE DISPENSED.
- 12) THE SIDE SLOPE (AT EMBANKMENT/ STONE PITCHING) MAY VARY AND IT SHALL BE PROVIDED AS PER SITE CONDITION.
- 13) THE LENGTH OF GRAVITY WALL/ RETAINING WALL/HEAD WALL SHALL BE AS PER SITE CONDITION. IT CAN BE EXTENDED/ RESTRICTED TO MEET THE SITE REQUIREMENT SO THAT THE WIDTH OF SLOPE AT FILLING WILL BE WITHIN THE ROW.
- 14) THE WIDTH OF FLOOR APRON AND STONE PITCHING MAY VARY AS PER SITE CONDITION.
- 15) SEISMIC ZONE CONSIDERED - IV
- 16) EXPOSURE CONDITION - SEVERE

SPECIAL NOTES:-

FOR INTERMEDIATE DESIGN HEIGHT, THE SECTION & THE R/F DETAILS OF THE HIGHER DESIGN HEIGHT SHALL BE FOLLOWED.

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AS SHOWN

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Revision: **R0**

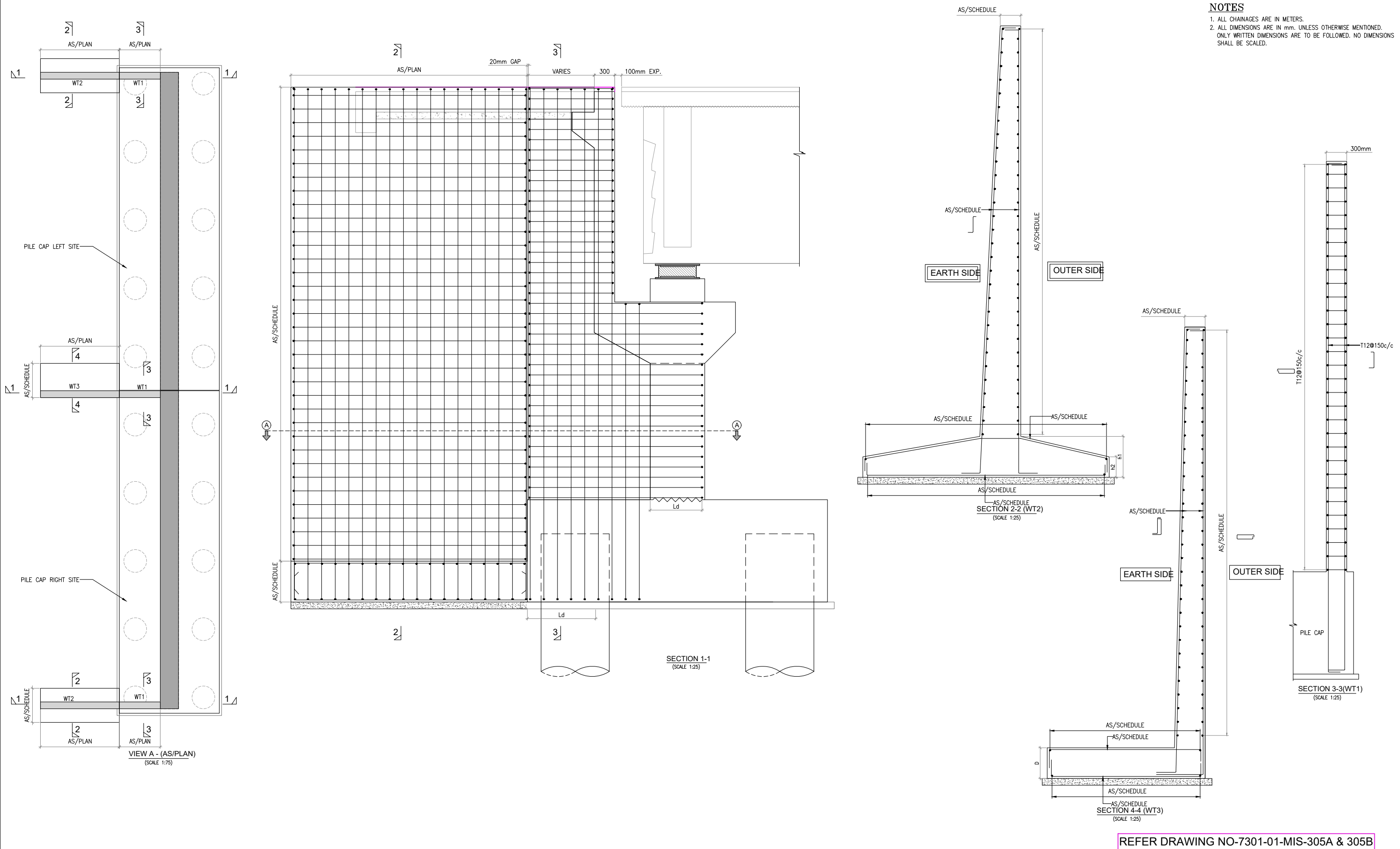
PREPARED BY DESIGNED BY CHECKED BY APPROVED BY



P.SINGH

R.RAGHUVANSHI

S.GUPTA

S.K.SINHA



<div>CLIENT:-</div> <div><div>National Highways Authority of India (Ministry of Road, Transport & Highways, Govt. of India)</div></div>	<div>CONSULTANT:-</div> <div><div>Chaitanya Projects Consultancy Ltd. C-5, 2ND FLOOR, R.K.TOWER PLOT NO.- 21-22, SECTOR-4, VAISHALI, GHAZIABAD PH.: 0120-3223419, 4120472, FAX: 0120-4110472</div></div>	<div>PROJECT:-</div> <div>BALANCE WORK FOR FOUR LANING OF THE PROJECT HIGHWAY FROM END OF PINJORE BYPASS- NALAGARH SECTION (KM.4+200 TO 34+500) OF NH-105 (OLD NH-21A) IN THE STATE OF HARYANA AND HIMACHAL PRADESH ON THE EPC MODE</div>	<div>SCALE :-</div> <div>AS SHOWN</div>	<div>DWG TITLE:-</div> <div>INDEPENDENT & DEPENDENT RCC WALL REINF. DETAIL ARRANGEMENT FOR (MNB & MJB)</div>	<div>DRAWING No :</div> <div>7301-01-MIS-305C</div>	
					<div>DATE : SEPTEMBER - 2025</div>	<div>Revision: R0</div>
					<div>PREPARED BY</div> <div>P. SINGH</div>	<div>DESIGNED BY</div> <div>R. RAGHUVANSHI</div>