

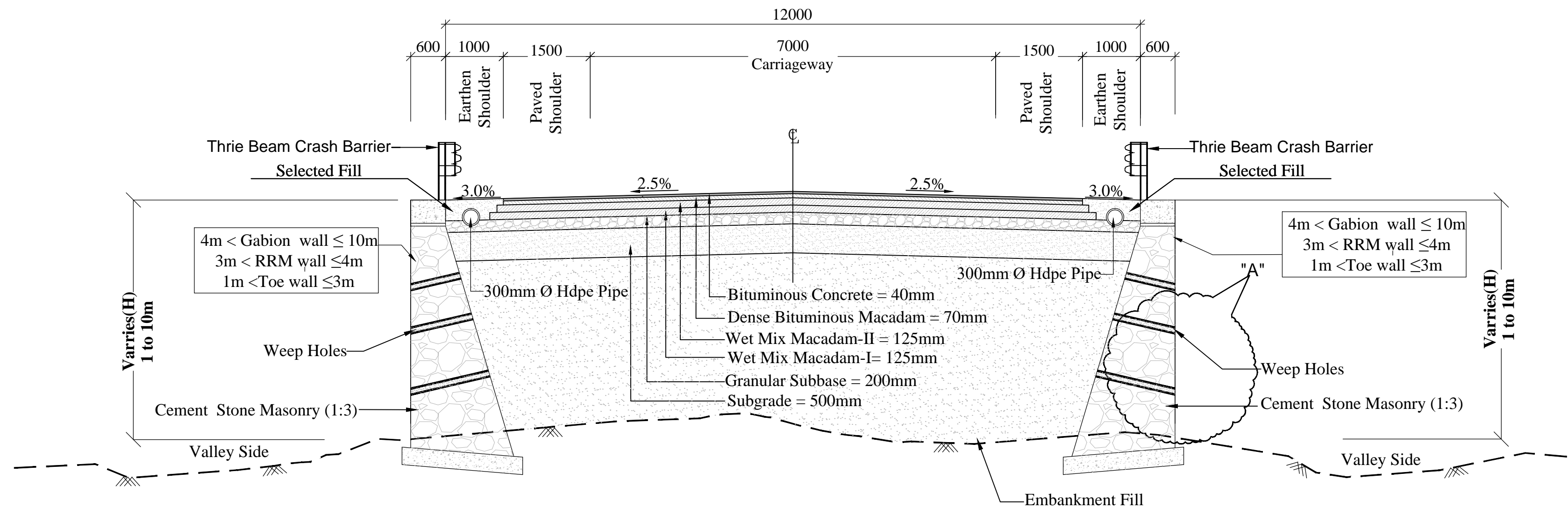
Annex-III
(schedule-A)

**Construction & Up-gradation to 2 Lane with Paved Shoulder from
Design Km. 95+550 to Km. 111+066 of Length 15.516 Km. on Khellani -
Kishtwar - Chattroo - Khanabal section of NH - 244 in the Union Territory
of Jammu & Kashmir**

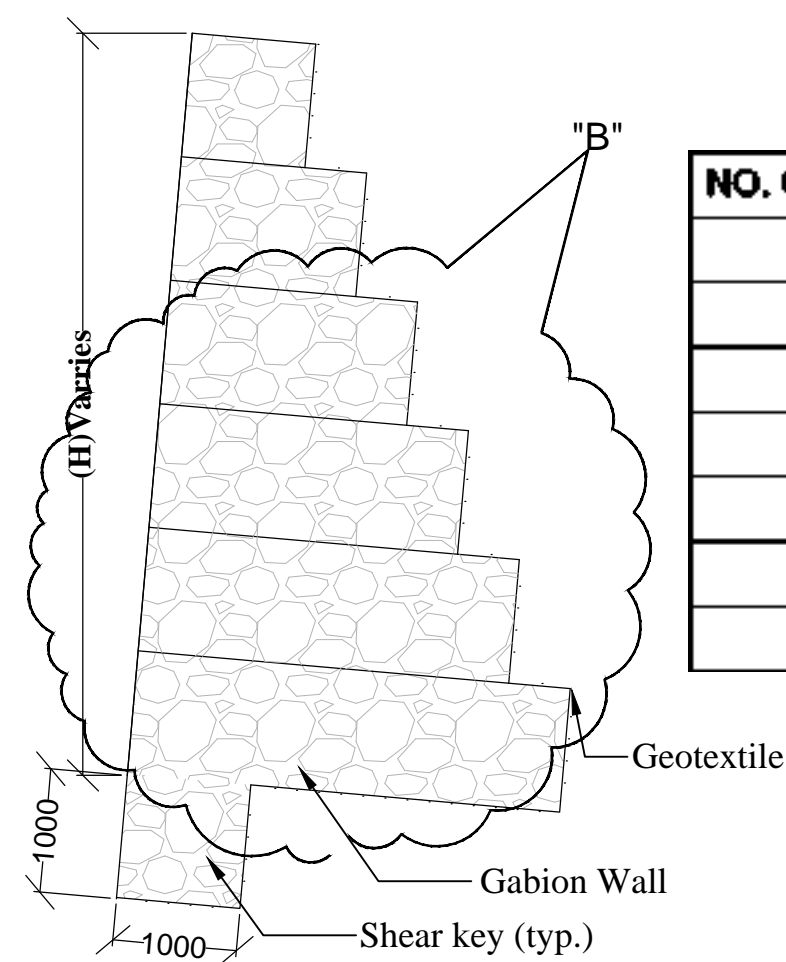
(Alignment Plan)

HIGHWAYS

TYPICAL CROSS SECTION



**Type - 1 - Typical Cross-Section For Two Lane Carriageway With Paved Shoulder
In Mountainous Terrain With Both Side Fill & Protection As Applicable .
(New Construction)**



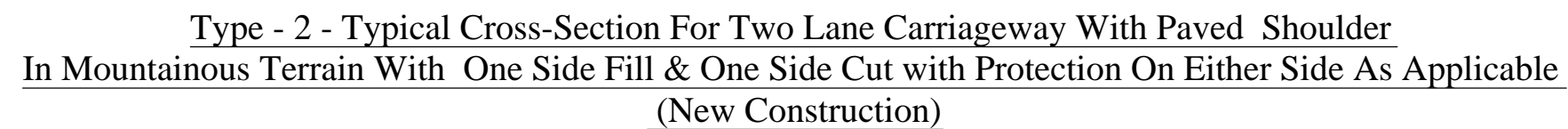
NO. OF COURSES	H (M)	B (M)
5	4	3
6	5	3.5
7	6	4
8	7	4.5
9	8	5
10	9	5.5
11	10	6

NOTE:-




- 1.All Dimension are in millimeters except otherwise specified
- 2.Extra widening will be provided where radius of horizontal curve is less than 300m.
- 3.Toe wall Shall be provided where height of embankment is less than 3m. & greater than 1m.
- 4.Retaining wall Shall be provided where height of embankment is greater than 3m. & less than 4m.
- 5.Gabion wall shall be provided where height of embankment is greater than 4 m.
- 6.Breast wall Shall be provided where height of cut is greater than 3m.
- 7.No protection is required when height of fill is less than 1 m and height of cut is less than 3 m.
- 8.Refer Standard drawing for Details of Section - A " B " C " D " E " F "
9. Wire mesh shall be provided in presence of unstable strata
- 10.Shear key will be adopted where ht. of gabion wall is more than 5m.

REVISION	DATE	AMENDMENT / ISSUE DESCRIPTION	CLIENT	CONSULTANT	Project	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
R0	Oct.-2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	From Design Km.95+550 to Km.111+066	TENDER DRAWING
R1	Dec.-2020				Designed: B D Drawn: S S Checked: T M Approved: A M	Scale: N.T.S. Drawing Title: TYPICAL CROSS SECTION Sheet size: A2 Drawing No.: NHIDCL/NH244/KHELLANI - CHATTROO/TCS/01/R1
						Annex III

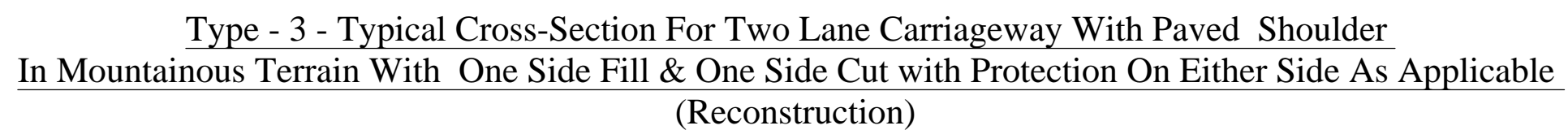
The diagram illustrates a gabion wall cross-section. The wall is composed of several layers of gabions, each filled with stones. The vertical dimension is labeled (H) Varies, and the horizontal dimension is labeled (B) . A cloud-like shape represents the soil behind the wall. A horizontal line at the base is labeled Geotextile. A vertical line at the base is labeled Shear key (typ.). Dimensions of 1000 are shown for the vertical and horizontal sections of the wall.






1. All Dimension are in millimeters except otherwise specified
2. Extra widening will be provided where radius of horizontal curve is less than 300m.
3. Toe wall Shall be provided where height of embankment is less than 3m. & greater than 1m.
4. Retaining wall Shall be provided where height of embankment is greater than 3m. & less than 4m.
5. Gabion wall shall be provided where height of embankment is greater than 4 m.
6. Breast wall Shall be provided where height of cut is greater than 3m.
7. No protection is required when height of fill is less than 1 m and height of cut is less than 3 m.
8. Refer Standard drawing for Details of Section - A" B" C" D" E" F"
9. Wire mesh shall be provided in presence of unstable of strata
10. Shear key will be adopted where ht. of gabion wall is more than 5m.

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R1	Dec.-:2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA								
					In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	Designed: B D Drawn: S S Checked: T M Approved: A M		Scale N.T.S.	Drawing Title Sheet size: A2	TYPICAL CROSS SECTION	Annex III
									Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/TCS/03/R1	

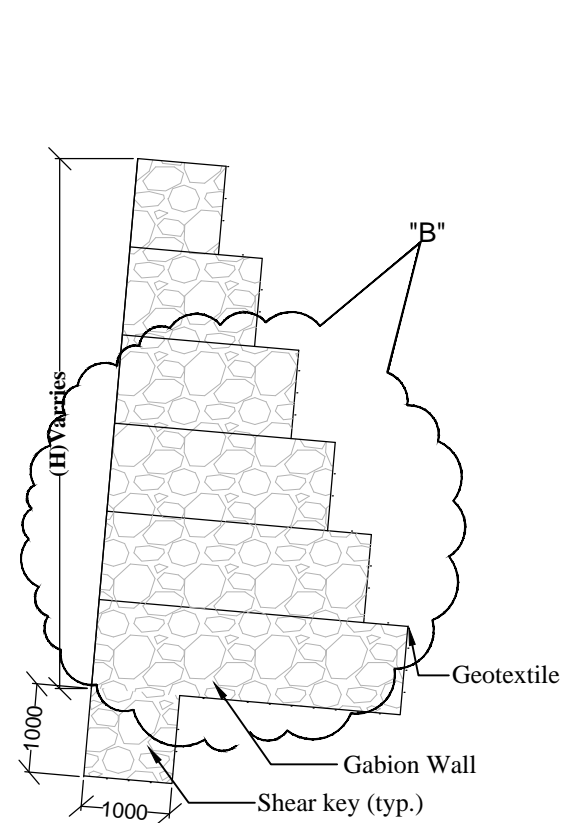
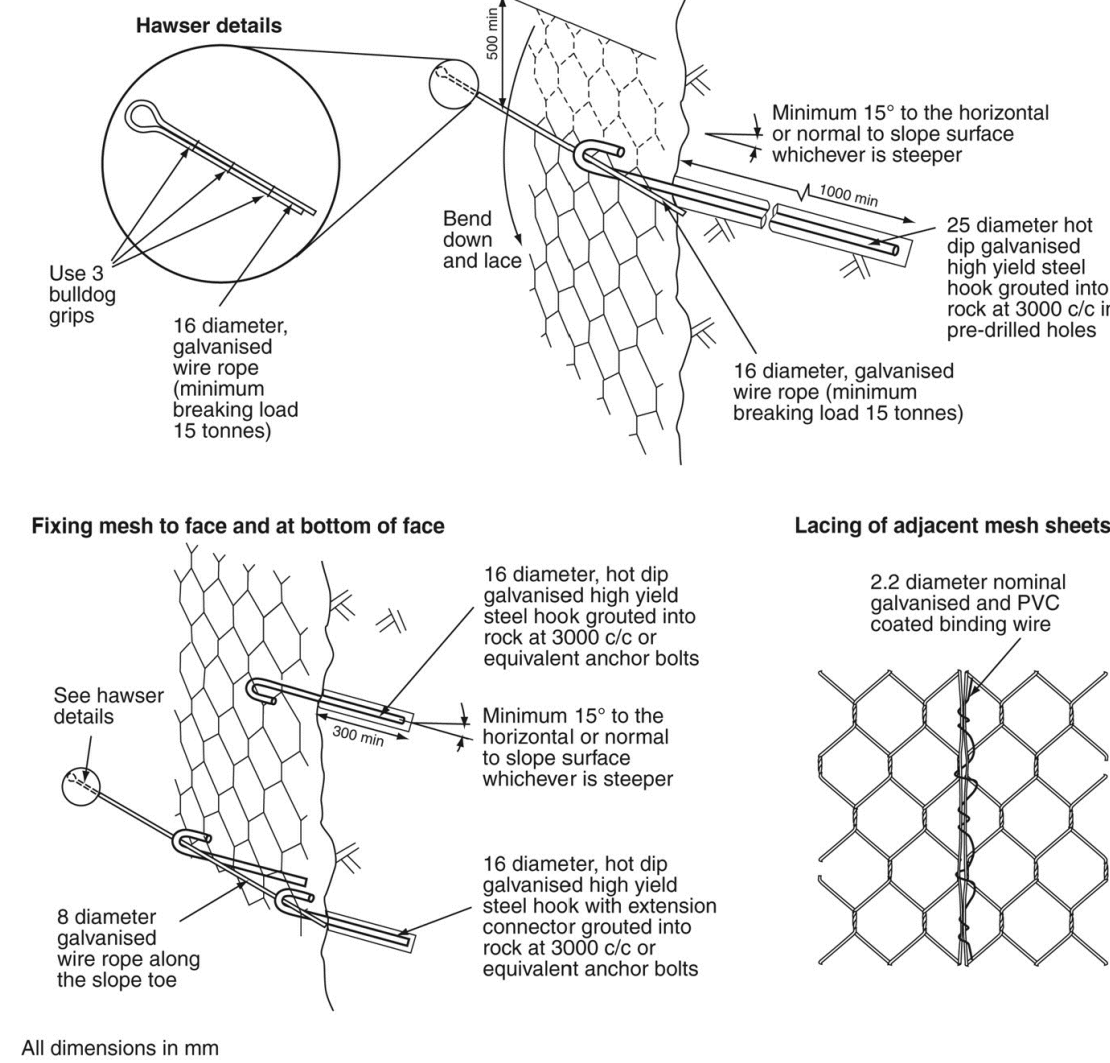
The diagram illustrates a gabion wall cross-section. It features multiple layers of gabions (stone-filled wire mesh boxes) staggered horizontally. A vertical dimension line on the left is labeled "(H)Varies". A horizontal dimension line at the bottom left indicates a width of "1000". A vertical dimension line on the right indicates a height of "1000". A label "B" points to the horizontal distance between the faces of adjacent gabion layers. A label "Geotextile" points to a horizontal line separating the layers. A label "Gabion Wall" points to the entire structure. A label "Shear key (typ.)" points to a small rectangular protrusion at the base of a gabion layer.



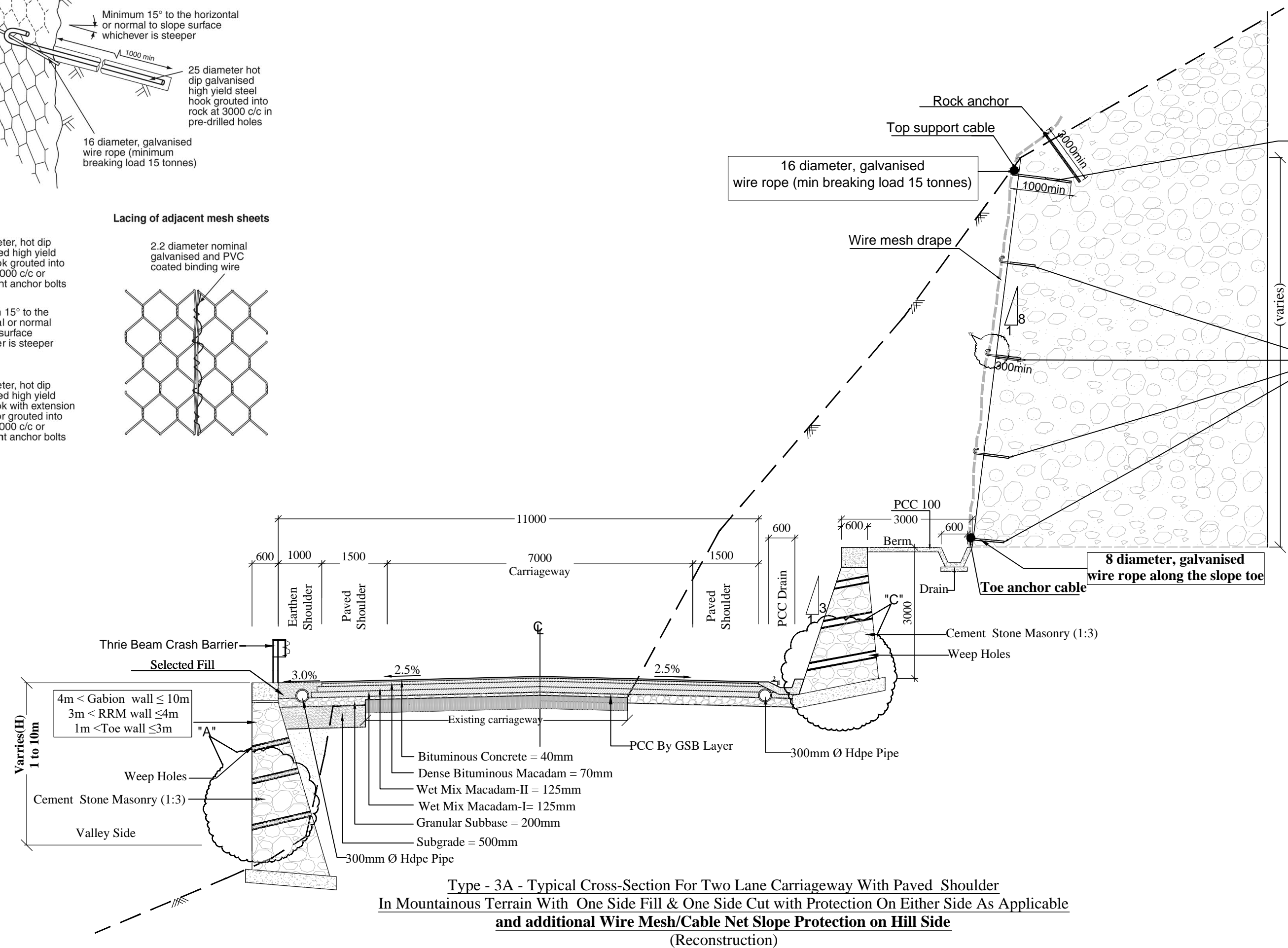
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- 5.Gabion wall shall be provided where height of embankment is greater than 4 m.
- 6.Breast wall Shall be provided where height of cut is greater than 3m.
- 7.No protection is required when height of fill is less than 1 m and height of cut is less than 3 m.
- 8.Refer Standard drawing for Details of Section - A'' B''C''D''E''F''
9. Wire mesh shall be provided in presence of unstable of strata
- 10.Shear key will be adopted where ht.of gabion wall is more than 5m.

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R1	Dec.-:2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 		In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	Designed: B D Drawn: S S Checked: T M Approved: A M		Scale N.T.S.	Drawing Title Sheet size: A2	TYPICAL CROSS SECTION Annex III	
						Drawing No. NHIDCL/NH244/KHELLANI - CHATTROO/TCS/04/R1					

Section "D" Detail of Wire Mesh/Cable Net Slope Protection





NO. OF COURSES	H (M)	B (M)
5	4	3
6	5	3.5
7	6	4
8	7	4.5
9	8	5
10	9	5.5
11	10	6

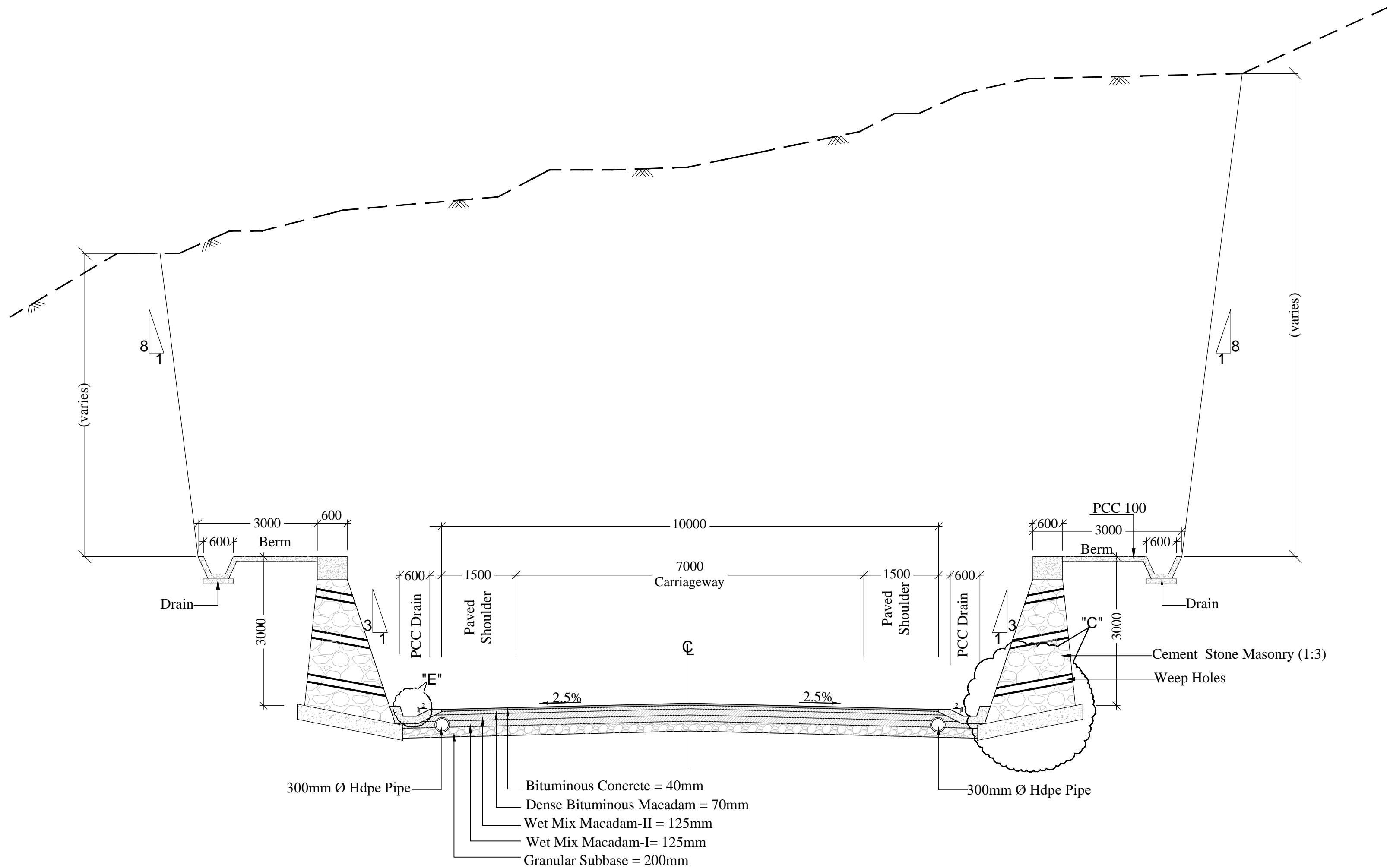


Type - 3A - Typical Cross-Section For Two Lane Carriageway With Paved Shoulder
In Mountainous Terrain With One Side Fill & One Side Cut with Protection On Either Side As Applicable
and additional Wire Mesh/Cable Net Slope Protection on Hill Side
(Reconstruction)

NOTE:-

- 1.All Dimension are in millimeters except otherwise specified
- 2.Extra widening will be provided where radius of horizontal curve is less than 300m.
- 3.Toe wall Shall be provided where height of embankment is less than 3m. & greater than 1m.
- 4.Retaining wall Shall be provided where height of embankment is greater than 3m. & less than 4m.
- 5.Gabion wall shall be provided where height of embankment is greater than 4 m.
- 6.Breast wall Shall be provided where height of cut is greater than 3m.
- 7.No protection is required when height of fill is less than 1 m and height of cut is less than 3 m.
- 8.Refer Standard drawing for Details of Section - A " B " C " D " E " F "
9. Wire mesh shall be provided in presence of unstable of strata
- 10.Shear key will be adopted where ht.of gabion wall is more than 5m.

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:				Project	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
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R1	Dec.-:2020									Annex III
								Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/TCS/05/R1	



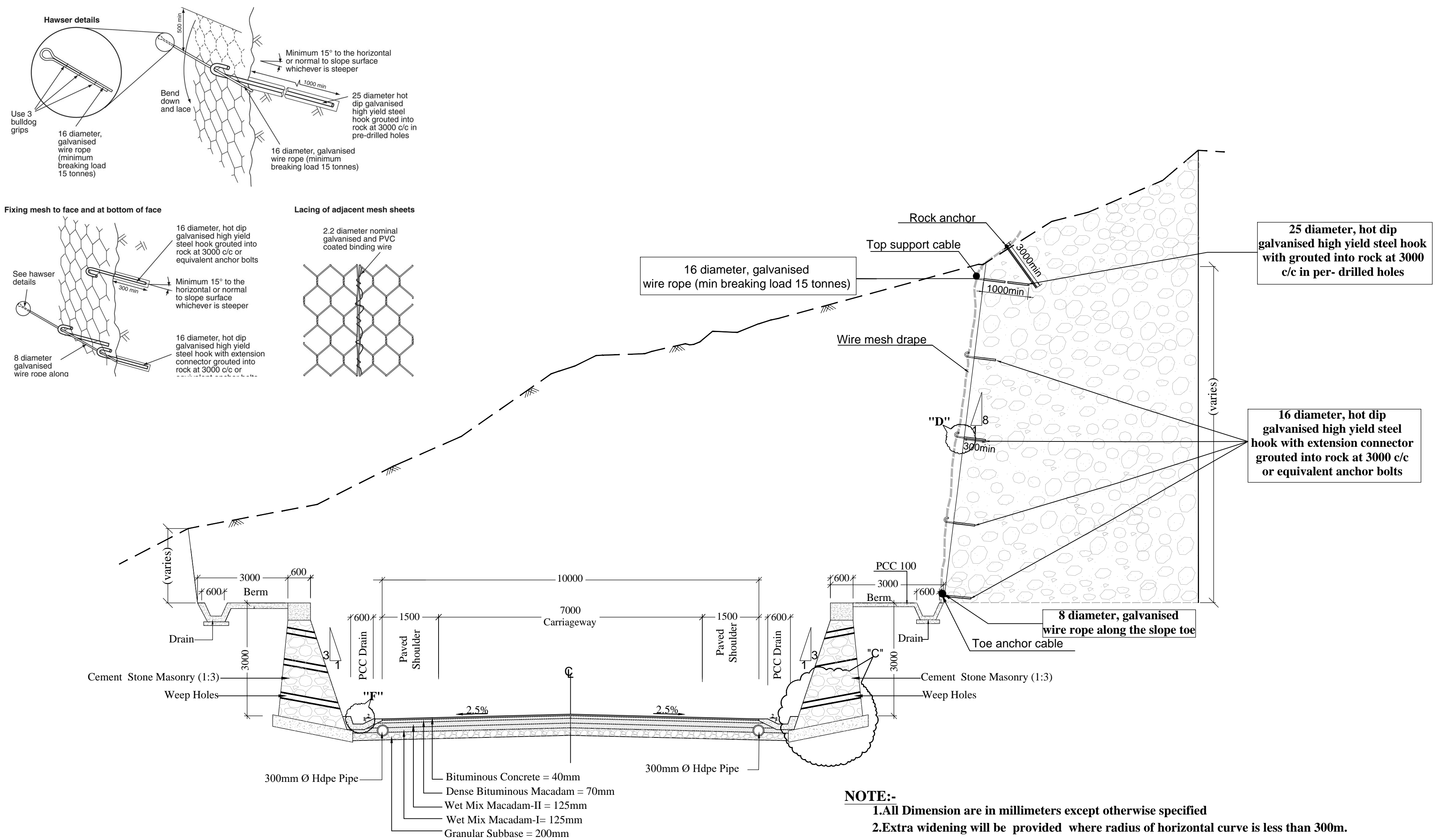
Type - 4- Typical Cross-Section For Two Lane Carriageway With Paved Shoulder
In Mountainous Terrain With Both Side Cut With Protection On Either Side As Applicable
(New Construction)

NOTE:-

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9. Wire mesh shall be provided in presence of unstable of strata
- 10.Shear key will be adopeted where ht.of gabion wall is more than 5m.

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R1	Dec.:-2020							

Section "D" Detail of Wire Mesh/Cable Net Slope Protection



Type - 4A- Typical Cross-Section For Two Lane Carriageway With Paved Shoulder
In Mountainous Terrain, With Both Side Cut & Protection As Applicable With Wire Mesh/Cable Net Slope
Protection on One Side of Hill (New Construction)

NOTE:-

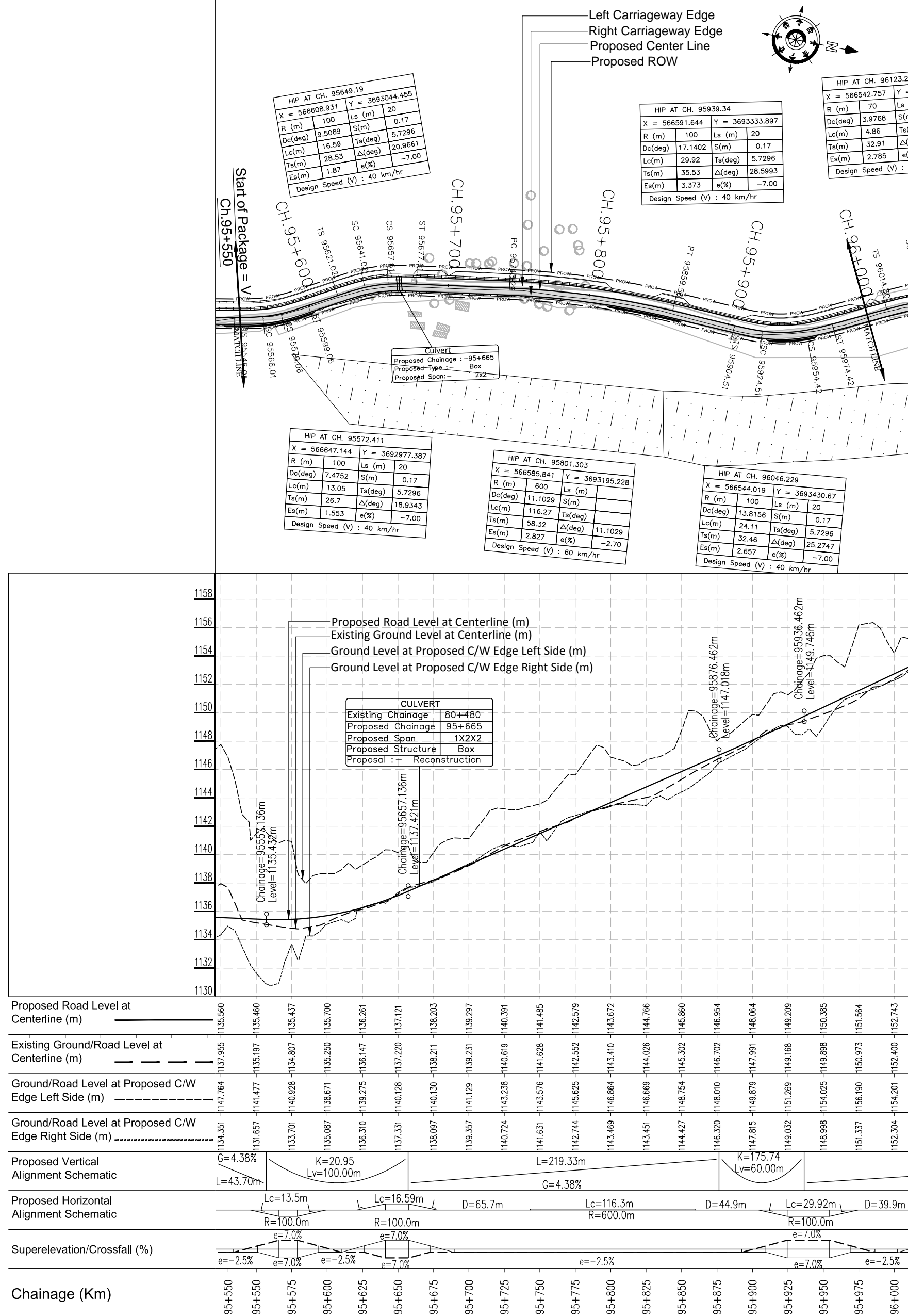
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6. Breast wall Shall be provided where height of cut is greater than 3m.
7. No protection is required when height of fill is less than 1 m and height of cut is less than 3 m.
8. Refer Standard drawing for Details of Section - A " B " C " D " E " F "
9. Wire mesh shall be provided in presence of unstable strata
10. Shear key will be adopted where ht. of gabion wall is more than 5m.

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R1	Dec.-2020				Designed: B D Drawn: S S Checked: T M Approved: A M	Scale: N.T.S. Drawing Title: TYPICAL CROSS SECTION Sheet size: A2 Drawing No.: NHIDCL/NH244/KHELLANI - CHATTROO/TCS/07/R1
						Annex III

PLAN & PROFILE

KHELLANI

CHATTROO

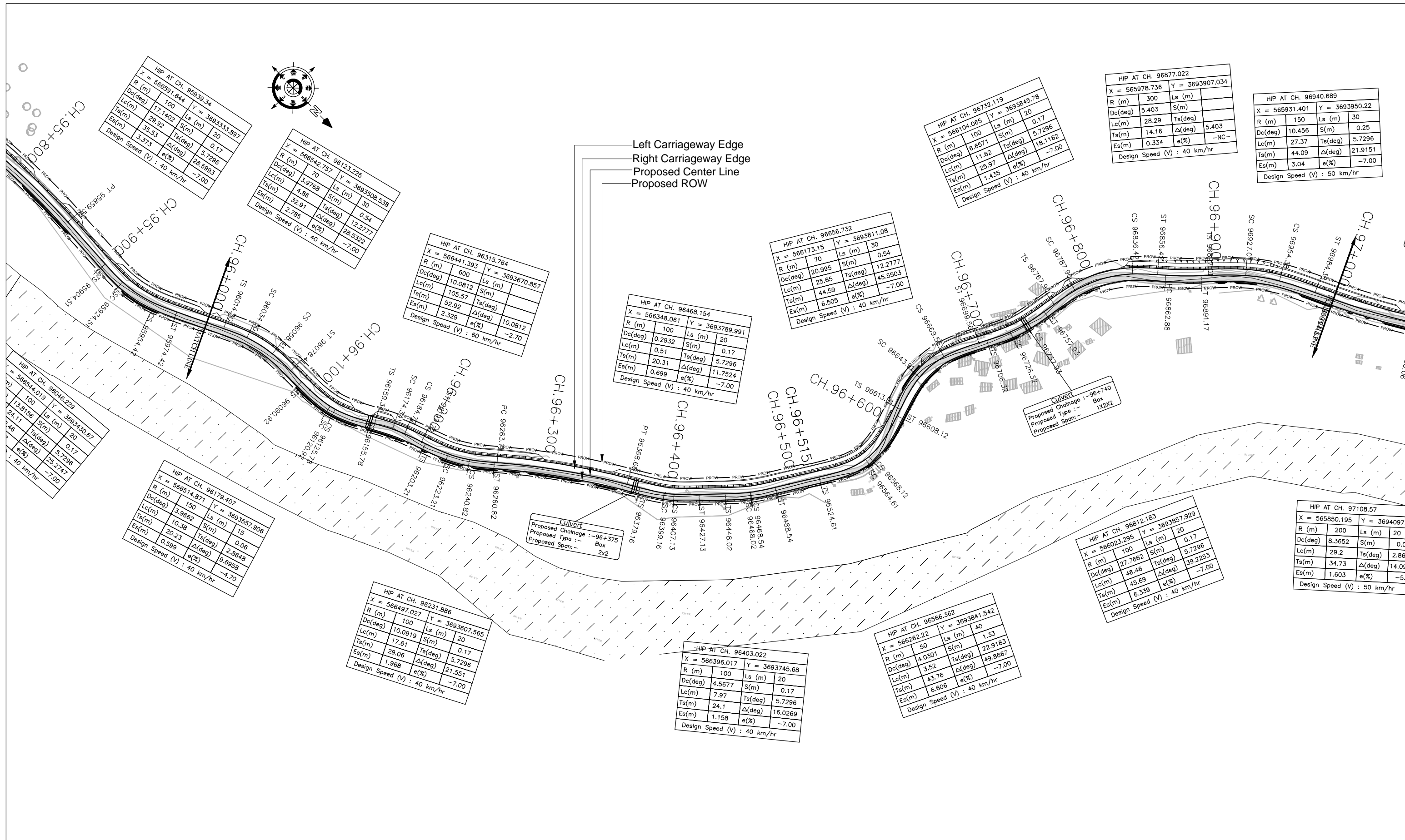


LEGEND	
Proposed Center Line	— — — —
Proposed Median	=====
Proposed Carriageway Edge	=====
Proposed Toe Line	=====
Proposed Right of Way	— PROW — PROW —
Existing Right of Way	=====
Proposed Box Culvert	
Proposed HP Culvert	
Proposed Slab Culvert	
Proposed Vehicular Underpass	
Proposed Cattle Underpass	
Proposed Bridge/ROB	
Toe Wall	— Toe Wall —
Retaining Wall / Breast Wall	=====
Gate Temporary/Permanents	
GPS	
Temporary Bench Mark	
Religious Structures	
Telephone Box	
Transformer Points	
Pylon	
Lamp Post	
Tree-T1,T2,T3,T4,T5,T6,	
Tube Well, Well	
Hand Pump	
Kilometer Stone	
OFC Pillar	
Petrol Pump	
North Symbol	
Railway Track	=====
Existing Paved Road	=====
Existing Unpaved Road	=====
Telephone Line	
High Tension Lines	
Low Tension Line	
Drain	
HFL Line	
Water Pipe Line	=====
Building	
PLAN	
R - Radius of Curve	
Dc - Degree of Curvature	
Lc - Length of Circular Curve	
Ts - Tangent Length	
Es - Apex Distance	
LS - Length of Spiral Curve	
S - Shift	
Δ - Deflection Angle	
V - Design Speed Km/Hr	
e% - Superelevation	
PC - Point of Curvature	
PT - Point of Tangent	
HIP - Horizontal Intersection Point	
L - PROFILE	
G - Gradient %	
Lv - Length of Vertical Curve	
L - Length of Grade(m)	
K - Ratio Between vertical curve Length & Change of Gradient (L/(G2-G1))	
Δ - Superelevation (%)	
D - Straight Length of Horizontal Alignment	
Lc - Length of Circular Curve	

[illegible]

KHELLANI

CHATTROO



LEGEND

Proposed Center Line
Proposed Median
Proposed Carriageway Edge
Proposed Toe Line
Proposed Right of Way
Existing Right of Way
Proposed Box Culvert
Proposed HP Culvert
Proposed Slab Culvert
Proposed Vehicular Underpass
Proposed Cattle Underpass
Proposed Bridge/ROB
Toe Wall
Retaining Wall / Breast Wall
Gate Temporary/Permanents
GPS
Temporary Bench Mark
Religious Structures
Telephone Box
Transformer Points
Pylon
Lamp Post
Tree-T1,T2,T3,T4,T5,T6
Tube Well, Well
Hand Pump
Kilometer Stone
OFC Pillar
Petrol Pump
North Symbol
Railway Track
Existing Paved Road
Existing Unpaved Road
Telephone Line
High Tension Lines
Low Tension Line
Drain
HFL Line
Water Pipe Line
Building

PLAN

R - Radius of Curve
Dc - Degree of Curvature
Lc - Length of Circular Curve
Ts - Tangent Length
Es - Apex Distance
LS - Length of Spiral Curve
S - Shift
Δ - Deflection Angle
V - Design Speed Km/Hr
e% - Superelevation
PC - Point of Curvature
PT - Point of Tangent
HIP - Horizontal Intersection Point

L - PROFILE

G - Gradient %
Lv - Length of Vertical Curve
L - Length of Grade(m)
K - Ratio Between vertical curve Length & Change of Gradient (Lc/(G2-G1))
e - Superelevation (%)
D - Straight Length of Horizontal Alignment
Lc - Length of Circular Curve

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	From Km. Design 95+550 to Km. 111+066	TENDER DRAWING	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
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R1	Dec.-:2020							

LEGEND

Proposed Center Line

Proposed Median

Proposed Carriageway Edge

Proposed Toe Line

Proposed Right of Way

Existing Right of Way

Proposed Box Culvert

Proposed HP Culvert

Proposed Slab Culvert

Proposed Vehicular Underpass

Proposed Cattle Underpass

Proposed Bridge/ROB

Toe Wall

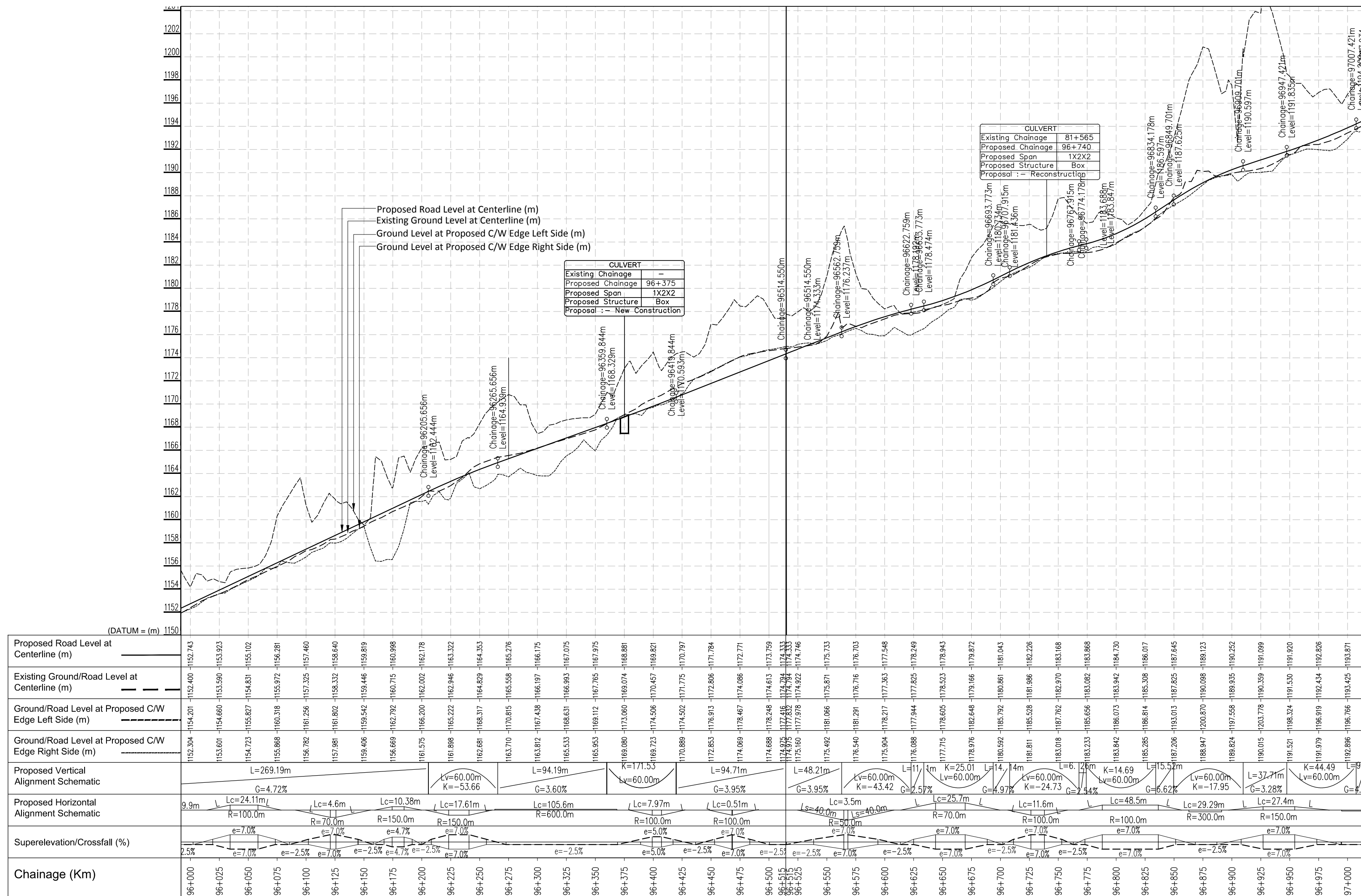
Retaining Wall / Breast Wall	
Gate Temporary/Permanents	
GPS	
Temporary Bench Mark	
Religious Structures	
Telephone Box	
Transformer Points	
Pylon	
Lamp Post	
Tree-T1, T2, T3, T4, T5, T6,	
Tube Well, Well	
Hand Pump	
Kilometer Stone	
OFC Pillar	
Petrol Pump	
North Symbol	
Railway Track	
Existing Paved Road	
Existing Unpaved Road	
Telephone Line	
High Tension Lines	
Low Tension Line	
Drain	
HFL Line	
Water Pipe Line	
Building	

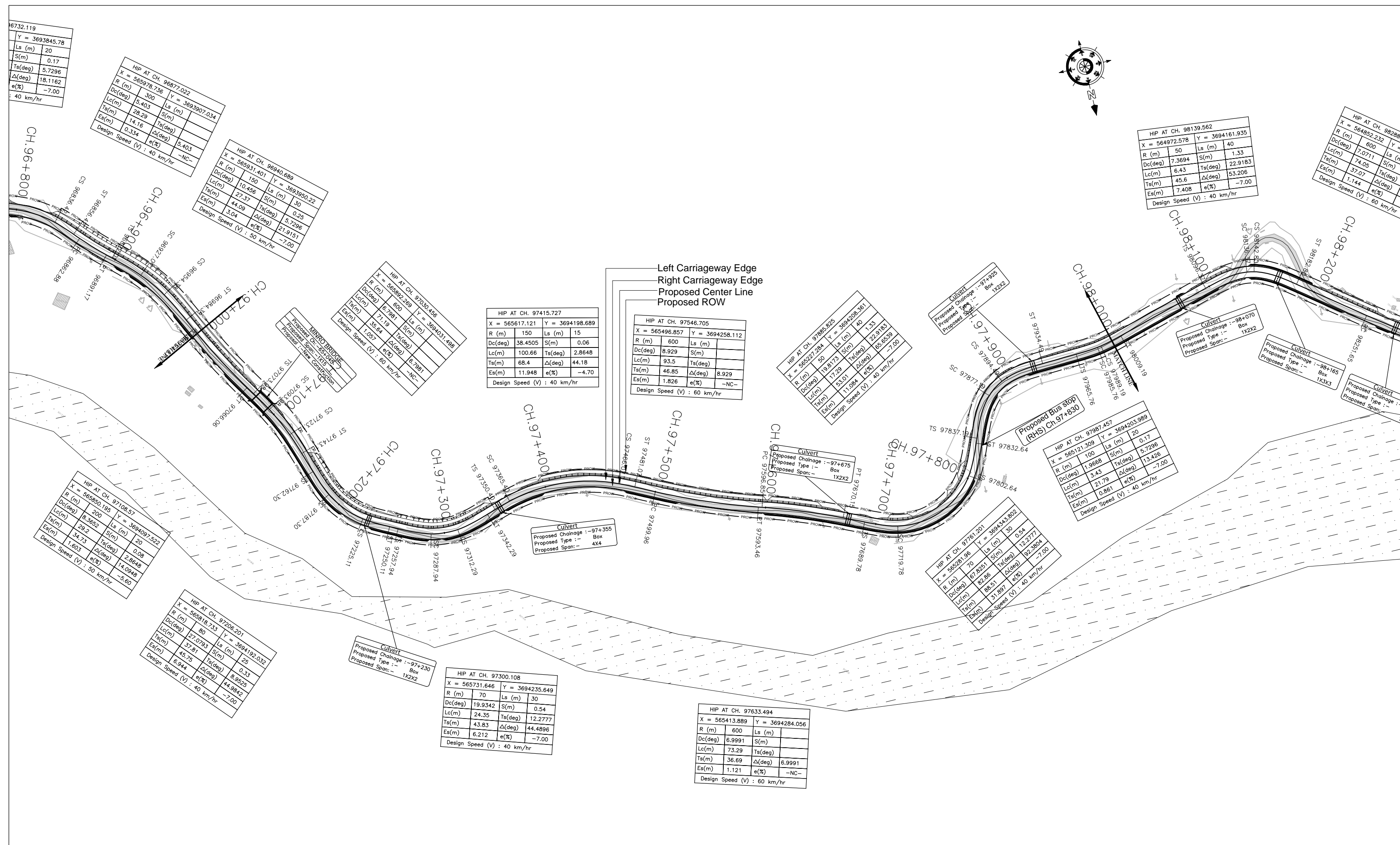
PLAN

- R - Radius of Curve
- Dc - Degree of Curvature
- Lc - Length of Circular Curve
- Ts - Tangent Length
- Es - Apex Distance
- LS - Length of Spiral Curve
- S - Shift
- Δ - Deflection Angle
- V - Design Speed Km/Hr
- e% - Superelevation
- PC - Point of Curvature
- PT - Point of Tangent
- HIP - Horizontal Intersection Point

L - PROFILE

- G - Gradient %
- L_v - Length of Vertical Curve
- L - Length of Grade(m)
- K - Ratio Between vertical curve Length & Change of Gradient ($L_c/(G_2-G_1)$)
- e - Superelevation (%)
- D - Straight Length of Horizontal Alignment
- L_c - Length of Circular Curve

[illegible]



LEGEND	
Proposed Center Line	— — — — —
Proposed Median	=====
Proposed Carriageway Edge	=====
Proposed Toe Line	=====
Proposed Right of Way	=====
Existing Right of Way	=====
Proposed Box Culvert	
Proposed HP Culvert	
Proposed Slab Culvert	
Proposed Vehicular Underpass	
Proposed Cattle Underpass	
Proposed Bridge/ROB	
Toe Wall	===== Toe Wall
Retaining Wall / Breast Wall	=====
Gate Temporary/Permanents	
GPS	
Temporary Bench Mark	
Religious Structures	
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Tree-T1,T2,T3,T4,T5,T6,	
Tube Well, Well	
Hand Pump	
Kilometer Stone	
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Petrol Pump	
North Symbol	
Railway Track	
Existing Paved Road	
Existing Unpaved Road	
Telephone Line	
High Tension Lines	
Low Tension Line	
Drain	
HFL Line	
Water Pipe Line	
Building	
PLAN	
R - Radius of Curve	
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Lc - Length of Circular Curve	
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S - Shift	
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PT - Point of Tangent	
HIP - Horizontal Intersection Point	
L - PROFILE	
G - Gradient %	
Lm - Length of Vertical Curve	
L - Length of Grade(m)	
K - Ratio between vertical curve Length & Change of Gradient (Lc/102-G1)	
▲ - Super-elevation (%)	
D - Straight Length of Horizontal Alignment	
Lc - Length of Circular Curve	

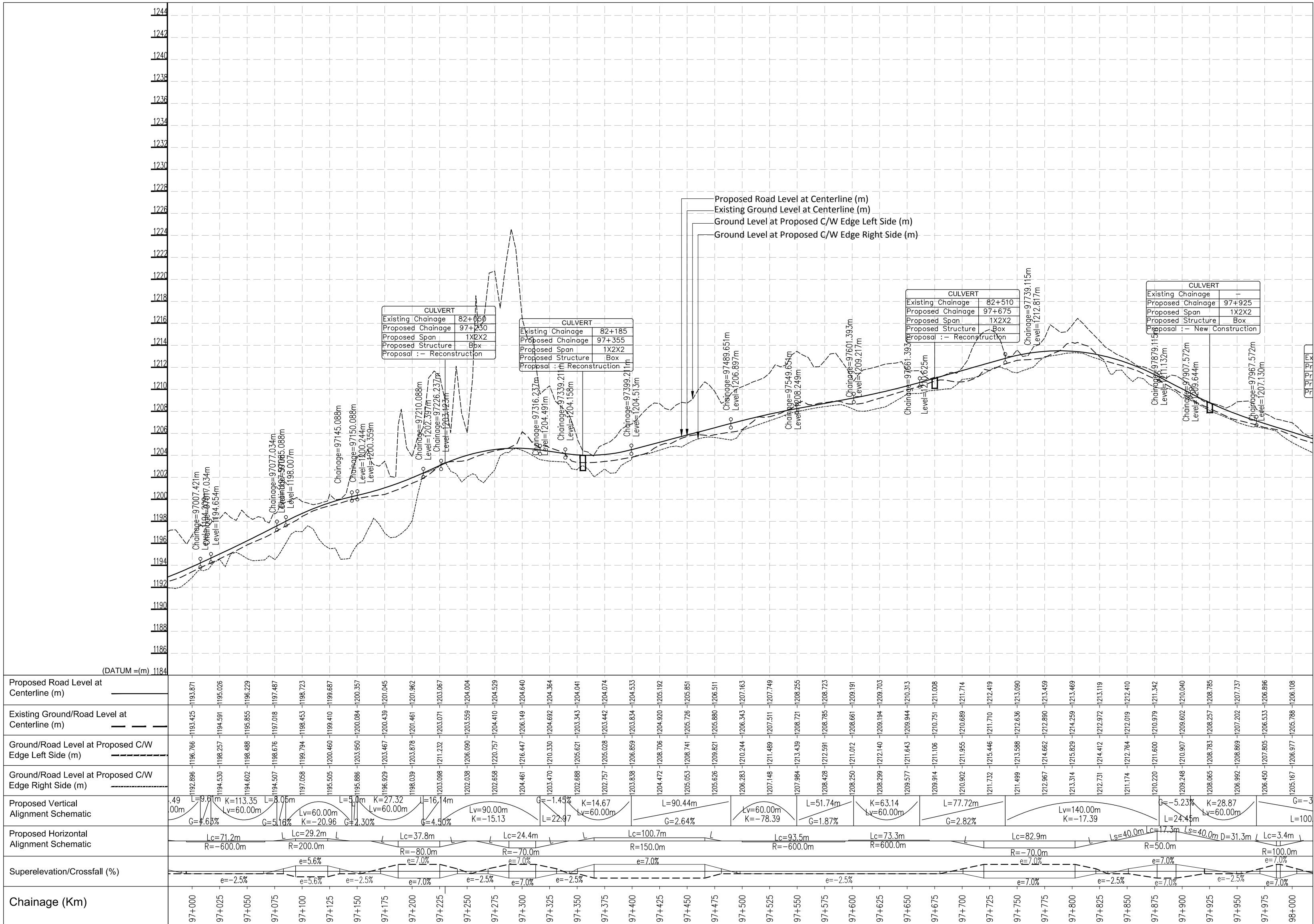
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							Annex III

KHELLANI

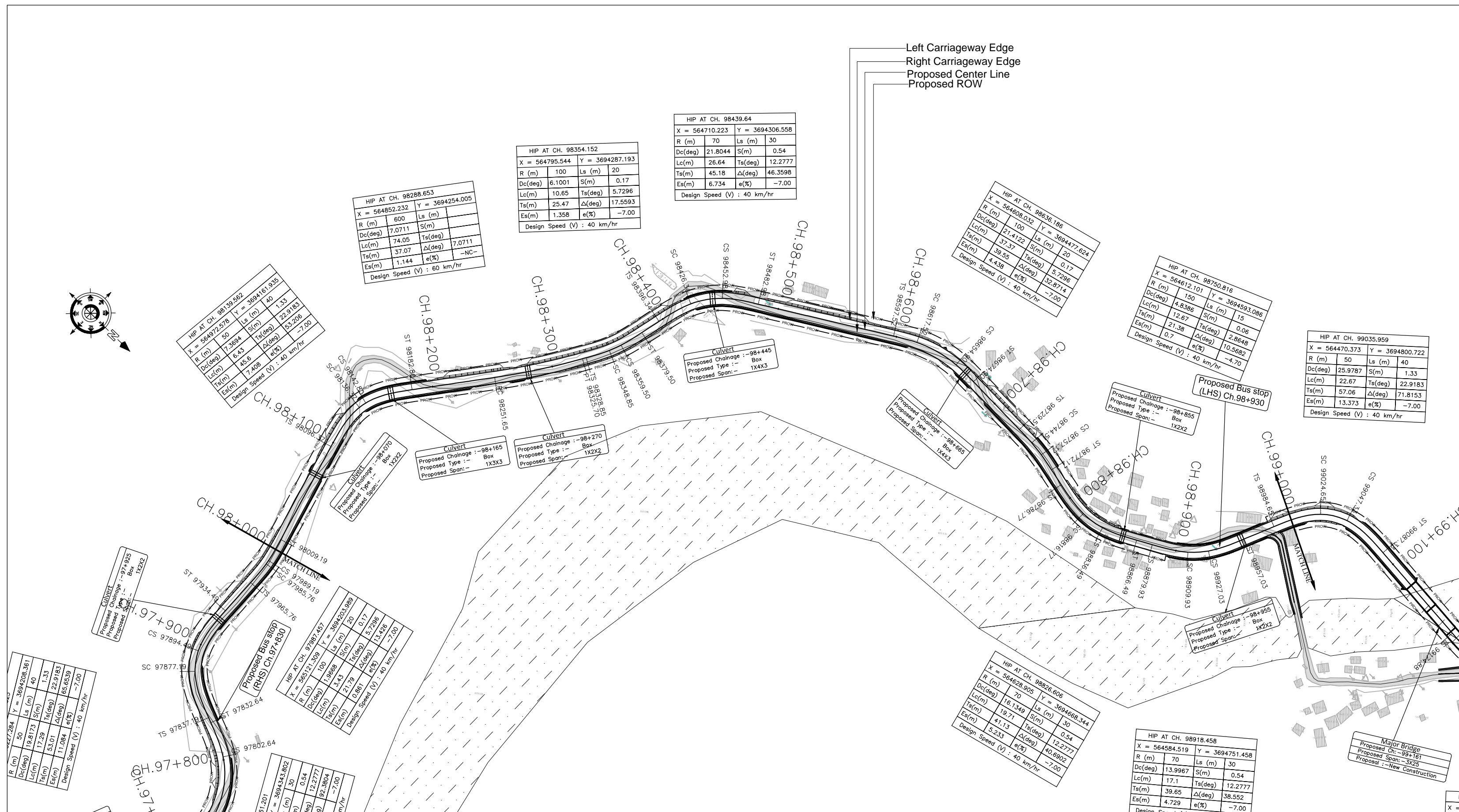
CHATTROO

LEGEND

- Proposed Center Line
Proposed Median
Proposed Carriageway Edge
Proposed Toe Line
Proposed Right of Way
Existing Right of Way
Proposed Box Culvert
Proposed HP Culvert
Proposed Slab Culvert
Proposed Vehicular Underpass
Proposed Cattle Underpass
Proposed Bridge/ROB
Toe Wall
Retaining Wall / Brest Wall
Gate Temporary/Permanents
GPS
Temporary Bench Mark
Religious Structures
Telephone Box
Transformer Points
Pylon
Lamp Post
Tree-T1,T2,T3,T4,T5,T6
Tube Well, Well
Hand Pump
Kilometer Stone
OFC Pillar
Petrol Pump
North Symbol
Railway Track
Existing Paved Road
Existing Unpaved Road
Telephone Line
High Tension Lines
Low Tension Line
Drain
HFL Line
Water Pipe Line
Building
PLAN
R - Radius of Curve
Dc - Degree of Curvature
Lc - Length of Circular Curve
Ts - Tangent Length
Es - Apex Distance
LS - Length of Spiral Curve
S - Shift
L - PROFILE
G - Gradient %
Lv - Length of Vertical Curve
L - Length of Grade(m)
K - Ratio Between vertical curve Length & Change of Gradient (Lc/G2-G1)
e - Superelevation (%)
D - Straight Length of Horizontal Alignment
Lc - Length of Circular Curve

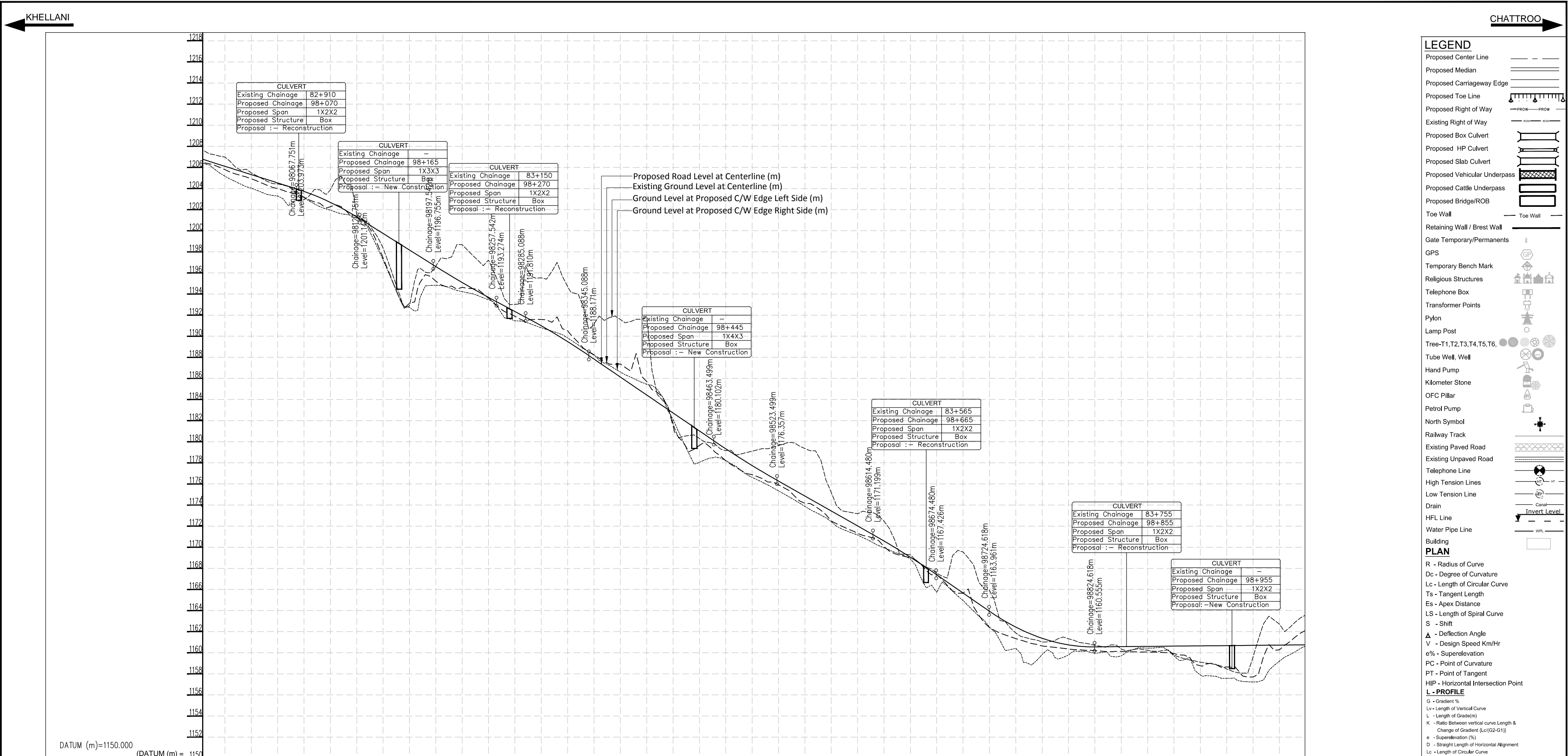


ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	Project:-	TENDER DRAWING	Scale :-	Drawing Title	Drawing No.	Annex III
R0	Oct.-:2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.	RODIC CONSULTANTS PVT. LTD.	From Km. Design 95+550 to Km. 111+066		H=-:1:2500 V=-:1:250	PLAN & PROFILE (km.97+000 to km.98+000)		
R1	Dec.-:2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	1. JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,					NHIDCL/NH244/KHELLANI - CHATTROO/P&P/ 03A/R0	



LEGEND	
Proposed Center Line	---
Proposed Median	---
Proposed Carriageway Edge	---
Proposed Toe Line	---
Proposed Right of Way	PROW — PROW
Existing Right of Way	ROW — ROW
Proposed Box Culvert	
Proposed HP Culvert	
Proposed Slab Culvert	
Proposed Vehicular Underpass	
Proposed Cattle Underpass	
Proposed Bridge/ROB	
Toe Wall	— Toe Wall
Retaining Wall / Breast Wall	—
Gate Temporary/Permanents	
GPS	
Temporary Bench Mark	
Religious Structures	
Telephone Box	
Transformer Points	
Pylon	
Lamp Post	
Tree-T1,T2,T3,T4,T5,T6,	
Tube Well, Well	
Hand Pump	
Kilometer Stone	
OFC Pillar	
Petrol Pump	
North Symbol	
Railway Track	
Existing Paved Road	
Existing Unpaved Road	
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HFL Line	
Water Pipe Line	
Building	
PLAN	
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Dc - Degree of Curvature	
Lc - Length of Circular Curve	
Ts - Tangent Length	
Es - Apex Distance	
LS - Length of Spiral Curve	
S - Shift	
Δ - Deflection Angle	
V - Design Speed Km/Hr	
e% - Superelevation	
PC - Point of Curvature	
PT - Point of Tangent	
HIP - Horizontal Intersection Point	
L - PROFILE	
G - Gradient %	
Lv - Length of Vertical Curve	
L - Length of Grade(m)	
K - Ratio Between vertical curve Length & Change of Gradient (Lc=(92-G1)²)	
e - Superelevation (%)	
D - Straight Length of Horizontal Alignment	
Lc - Length of Circular Curve	

[illegible]



LEGEND

Proposed Center Line
Proposed Median
Proposed Carriageway Edge
Proposed Toe Line
Proposed Right of Way
Existing Right of Way
Proposed Box Culvert
Proposed HP Culvert
Proposed Slab Culvert
Proposed Vehicular Underpass
Proposed Cattle Underpass
Proposed Bridge/ROB
Toe Wall
Retaining Wall / Breast Wall
Gate Temporary/Permanents
GPS
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North Symbol
Railway Track
Existing Paved Road
Existing Unpaved Road
Telephone Line
High Tension Lines
Low Tension Line
Drain
HFL Line
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PLAN
R - Radius of Curve
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PT - Point of Tangent
HIP - Horizontal Intersection Point
L - PROFILE
G - Gradient %
Lv - Length of Vertical Curve
L - Length of Grade(m)
K - Ratio Between vertical curve Length & Change of Gradient (Lc(G2-G1))
+ - Superelevation (%)
D - Straight Length of Horizontal Alignment
Lc - Length of Circular Curve

CULVERT
Existing Chainage 82+910
Proposed Chainage 98+070
Proposed Span 1X2X2
Proposed Structure Box
Proposal :- Reconstruction

Chainage=98067.751m
Level=1203.92m

CULVERT
Existing Chainage -
Proposed Chainage 98+165
Proposed Span 1X3X3
Proposed Structure Box
Proposal :- New Construction

Chainage=98127.451m
Level=1203.92m

Chainage=98197.542m
Level=1196.755m

CULVERT
Existing Chainage 83+150
Proposed Chainage 98+270
Proposed Span 1X2X2
Proposed Structure Box
Proposal :- Reconstruction

Chainage=98257.542m
Level=1193.274m

Chainage=98265.085m
Level=1197.810m

Chainage=98345.085m
Level=1188.171m

CULVERT
Existing Chainage -
Proposed Chainage 98+445
Proposed Span 1X4X3
Proposed Structure Box
Proposal :- New Construction

Chainage=98463.499m
Level=1180.102m

Chainage=98523.499m
Level=1176.357m

CULVERT
Existing Chainage 83+565
Proposed Chainage 98+665
Proposed Span 1X2X2
Proposed Structure Box
Proposal :- Reconstruction

Chainage=98614.480m
Level=1171.199m

Chainage=98674.480m
Level=1167.426m

Chainage=98724.618m
Level=1163.961m

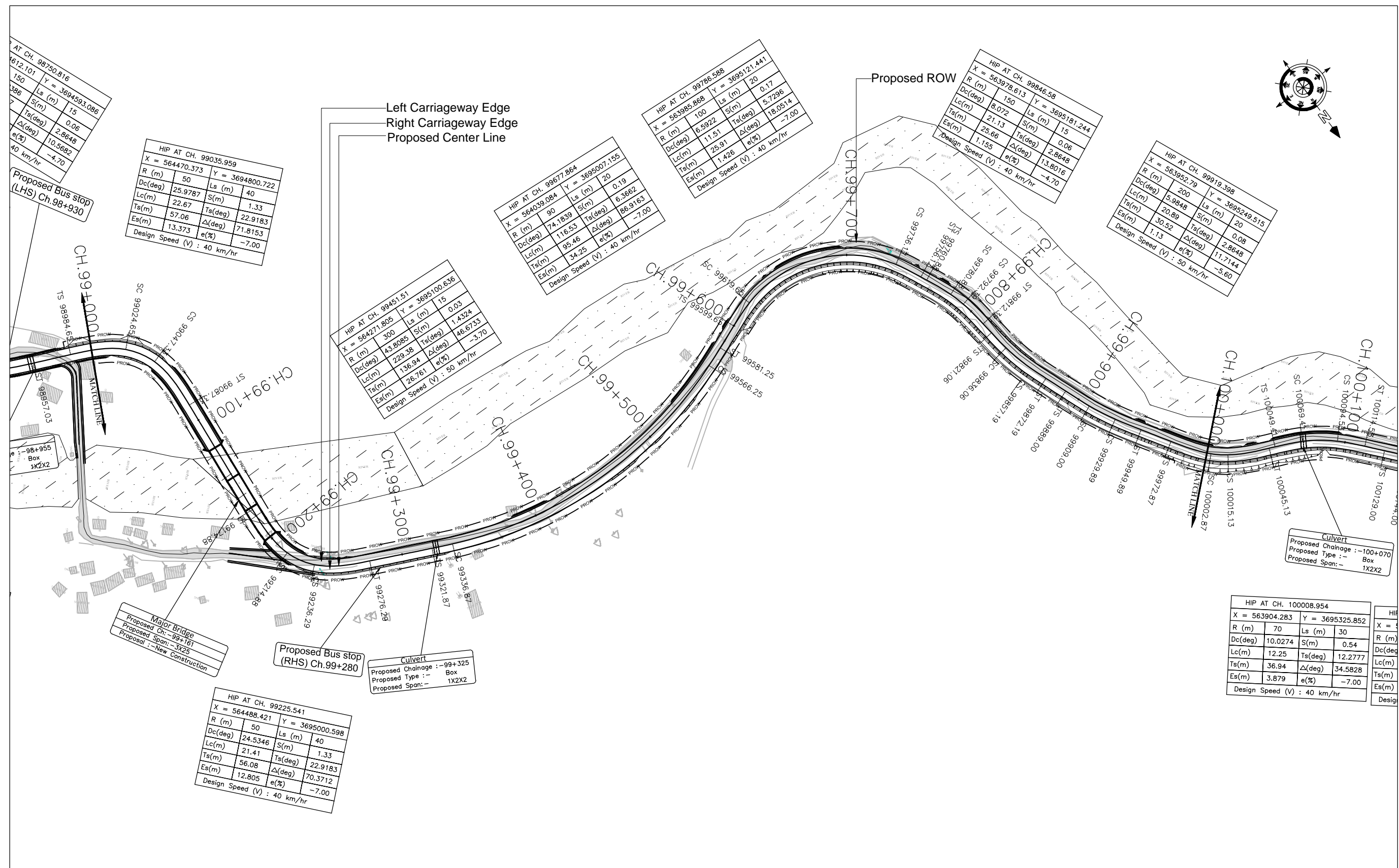
CULVERT
Existing Chainage 83+755
Proposed Chainage 98+855
Proposed Span 1X2X2
Proposed Structure Box
Proposal :- Reconstruction

Chainage=98824.618m
Level=1160.555m

CULVERT
Existing Chainage -
Proposed Chainage 98+955
Proposed Span 1X2X2
Proposed Structure Box
Proposal :- New Construction

DATUM (m)=1150.000
(DATUM (m)) = 1150

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:						
R0	Oct.-:2020		<div>NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.</div> <div>(MINISTRY OF ROAD TRANSPORT & HIGHWAY)</div> <div>GOVERNMENT OF INDIA</div> <div></div>	<div></div> <div>RODIC CONSULTANTS PVT. LTD.</div> <div>1, JAI SINGH MARG (FIRST FLOOR), YMCA</div> <div>CULTURAL CENTRE BUILDING</div> <div>NEW DELHI - 110001 (INDIA)</div> <div>In Association with</div> <div>Monarch Surveyors and Engineering</div> <div>Consultants Pvt. Ltd.,</div> <div></div>	From Km. Design 95+550 to Km. 111+066	TENDER DRAWING	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR		
R1	Dec.-:2020						Scale :-	Drawing Title	PLAN & PROFILE (km.98+000 to km.99+000)	Annex III
							H=:-1:2500 V=:-1:250	Sheet size: A2		
					Designed: B D	Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/P&P/ 04A/R0			
					Drawn: S S					
					Designed: T M					
					Approved: A M					



LEGEND

- Proposed Center Line
- Proposed Median
- Proposed Carriageway Edge
- Proposed Toe Line
- Proposed Right of Way
- Existing Right of Way
- Proposed Box Culvert
- Proposed HP Culvert
- Proposed Slab Culvert
- Proposed Vehicular Underpass
- Proposed Cattle Underpass
- Proposed Bridge/ROB
- Toe Wall

- | | |
|------------------------------|--|
| Retaining Wall / Breast Wall | |
| Gate Temporary/Permanents | |
| GPS | |
| Temporary Bench Mark | |
| Religious Structures | |
| Telephone Box | |
| Transformer Points | |
| Pylon | |
| Lamp Post | |
| Tree-T1,T2,T3,T4,T5,T6, | |
| Tube Well, Well | |
| Hand Pump | |
| Kilometer Stone | |
| OFC Pillar | |
| Petrol Pump | |
| North Symbol | |
| Railway Track | |
| Existing Paved Road | |
| Existing Unpaved Road | |
| Telephone Line | |
| High Tension Lines | |
| Low Tension Line | |
| Drain | |
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| Water Pipe Line | |
| Building | |

PLAN

- R - Radius of Curve
- Dc - Degree of Curvature
- Lc - Length of Circular Curve
- Ts - Tangent Length
- Es - Apex Distance
- LS - Length of Spiral Curve
- S - Shift
- Δ** - Deflection Angle
- V - Design Speed Km/Hr
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L - PROFILE

- G - Gradient %
- Lv - Length of Vertical Curve
- L - Length of Grade(m)
- K - Ratio Between vertical curve Length & Change of Gradient ($L_c/(G_2-G_1)$)
- e - Superelevation (%)
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ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Oct.:2020	
R1	Dec.:2020	

CLIENT

NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT & HIGHWAY)
GOVERNMENT OF INDIA



CONSULTANT:



RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

**In Association with
Monarch Surveyors and Engineering
Consultants Pvt. Ltd.,**

From Km. Design 95+550 to Km. 111+066

TENDER DRAWING

Project:-

CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR

Scale :-

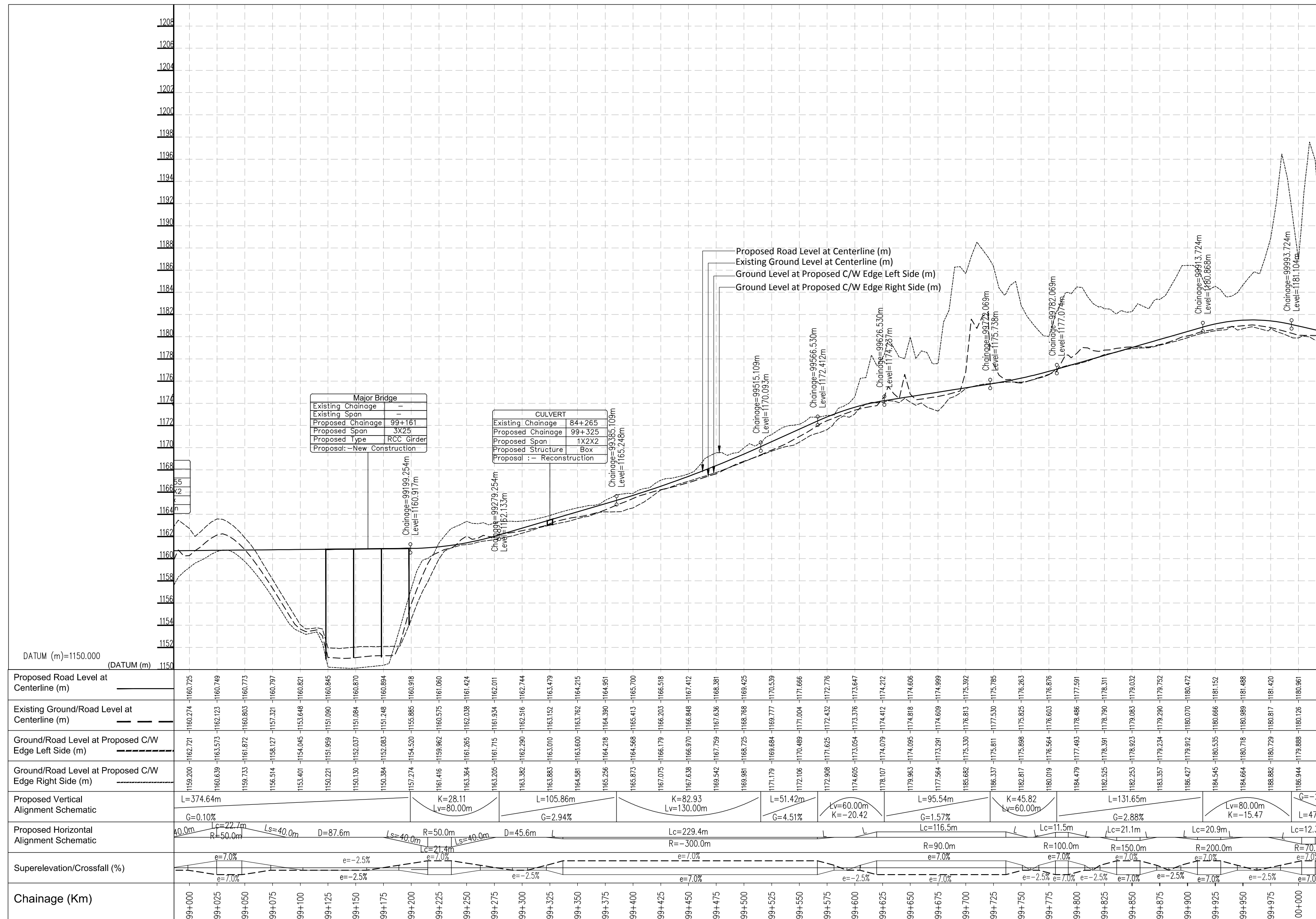
Drawing Title

Drawing No.

PLAN & PROFILE
(km 99+000 to km 100+000)

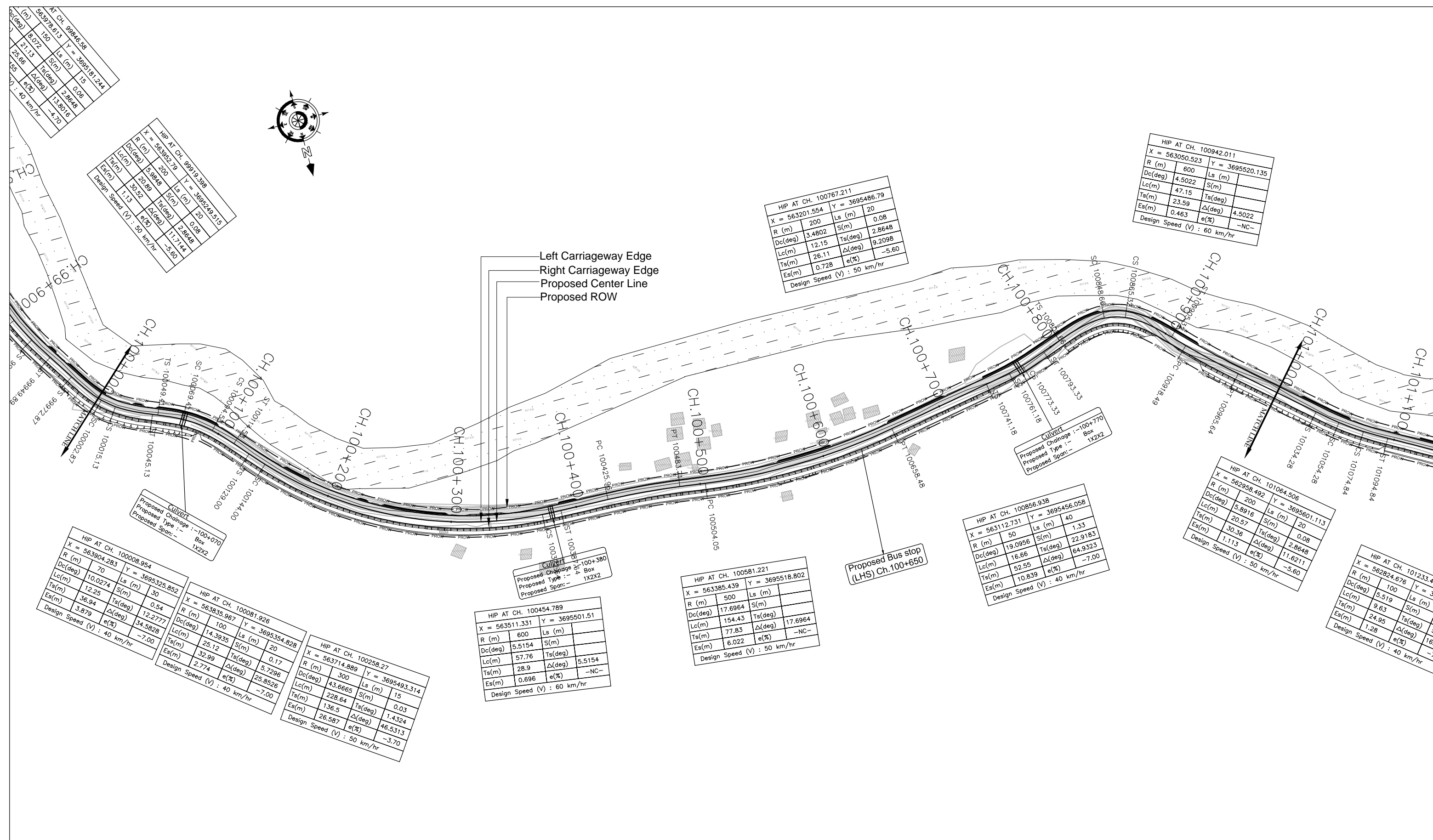
Annex III

NHIDCL/NH244/KHELLANI - CHATTROO/P&P/05/R0


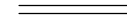
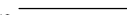
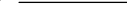

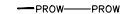










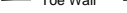
























LEGEND	
Proposed Center Line	— — — — —
Proposed Median	=====
Proposed Carriageway Edge	=====
Proposed Toe Line	=====
Proposed Right of Way	=====
Existing Right of Way	=====
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LEGEND

Proposed Center Line	
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Proposed Slab Culvert	
Proposed Vehicular Underpass	
Proposed Cattle Underpass	
Proposed Bridge/ROB	
Toe Wall	
Retaining Wall / Breast Wall	
Gate Temporary/Permanents	
GPS	
Temporary Bench Mark	
Religious Structures	
Telephone Box	
Transformer Points	
Pylon	
Lamp Post	
Tree-T1,T2,T3,T4,T5,T6,	
Tube Well, Well	
Hand Pump	
Kilometer Stone	
OFC Pillar	
Petrol Pump	
North Symbol	
Railway Track	
Existing Paved Road	
Existing Unpaved Road	
Telephone Line	
High Tension Lines	
Low Tension Line	
Drain	
HFL Line	
Water Pipe Line	
Building	

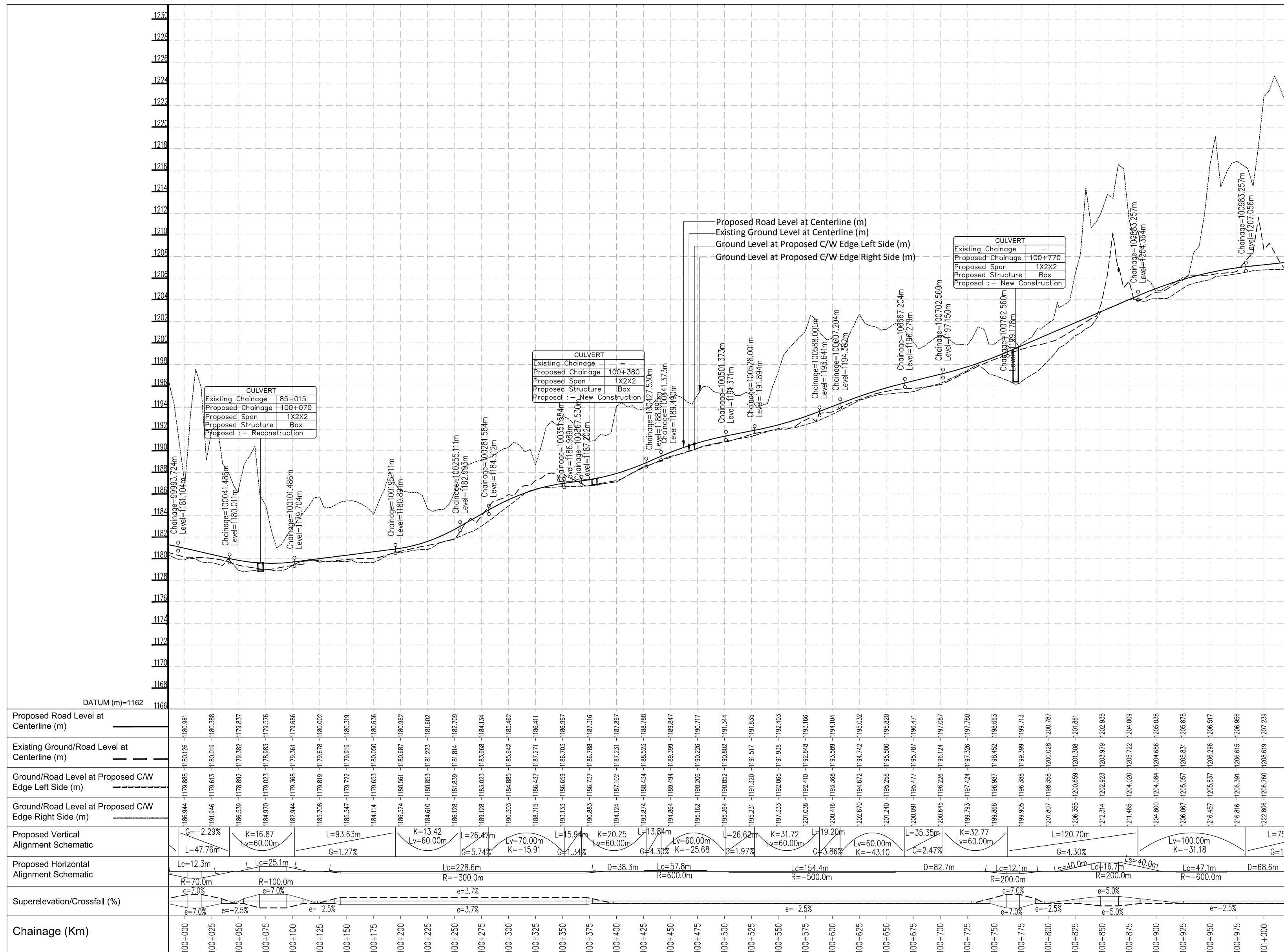
PLAN

- R - Radius of Curve
- Dc - Degree of Curvature
- Lc - Length of Circular Curve
- Ts - Tangent Length
- Es - Apex Distance
- LS - Length of Spiral Curve
- S - Shift
- Δ - Deflection Angle
- V - Design Speed Km/Hr
- e% - Superelevation
- PC - Point of Curvature
- PT - Point of Tangent
- HIP - Horizontal Intersection Point

L - PROFILE

- G - Gradient %
- Lv - Length of Vertical Curve
- L - Length of Grade(m)
- K - Ratio Between vertical curve Length & Change of Gradient $\{L_c/(G_2-G_1)\}$
- e - Superelevation (%)
- d - Length of Horizontal Alignment
- Lc - Length of Circular Curve

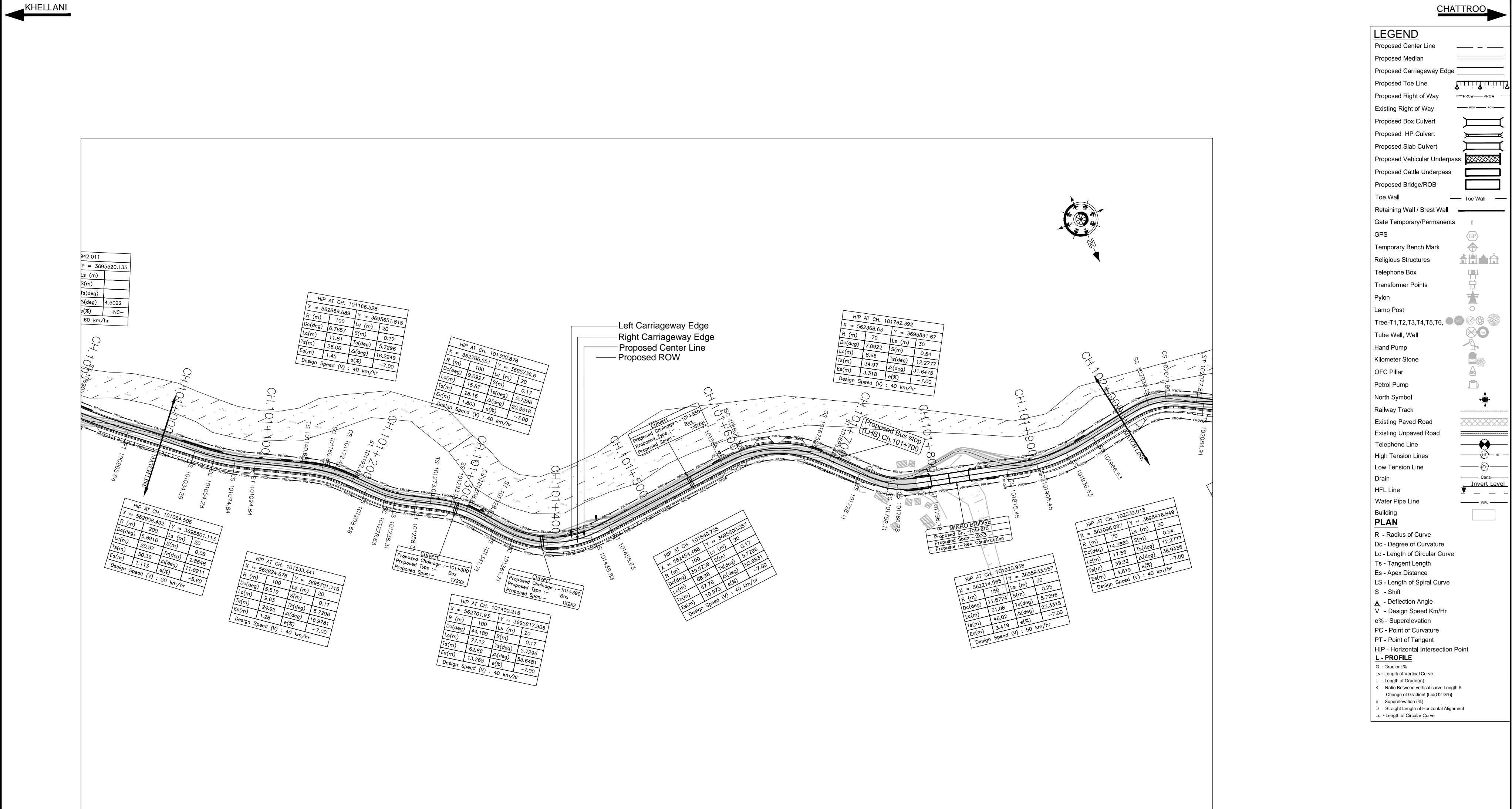
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LEGEND

Proposed Center Line	— — — — —
Proposed Median	=====
Proposed Carriageway Edge	=====
Proposed Toe Line	=====
Proposed Right of Way	————— PROW ——— PROW
Existing Right of Way	————— EXRW ——— EXRW
Proposed Box Culvert	
Proposed HP Culvert	
Proposed Slab Culvert	
Proposed Vehicular Underpass	
Proposed Cattle Underpass	
Proposed Bridge/ROB	
Toe Wall	————— Toe Wall ———
Retaining Wall / Breast Wall	=====
Gate Temporary/Permanents	
GPS	
Temporary Bench Mark	
Religious Structures	
Telephone Box	
Transformer Points	
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LEGEND

Proposed Center Line
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Proposed Right of Way
Existing Right of Way
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D - Straight Length of Horizontal Alignment
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Left Carriageway Edge
Right Carriageway Edge
Proposed Center Line
Proposed ROW

CH. 101+000
CH. 101+100
CH. 101+200
CH. 101+300
CH. 101+400
CH. 101+500
CH. 101+600
CH. 101+700
CH. 101+800
CH. 101+900
CH. 102+000

MINRO BRIDGE
Proposed Ch. - 101+815
Proposed Span - 2X25
Proposal - New Construction

Proposed Bus stop (LHS) Ch. 101+700

Proposed Ch. 101+300
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+390
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+400
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+450
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+500
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+550
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+600
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+650
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+700
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+750
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+800
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+850
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+900
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 101+950
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 102+000
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 102+050
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 102+100
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 102+150
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 102+200
Proposed Type - Box
Proposed Span - 1X2X2

Proposed Ch. 102+250
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Proposed Ch. 104+850
Proposed Type - Box
Proposed Span - 1X2X2

Proposed

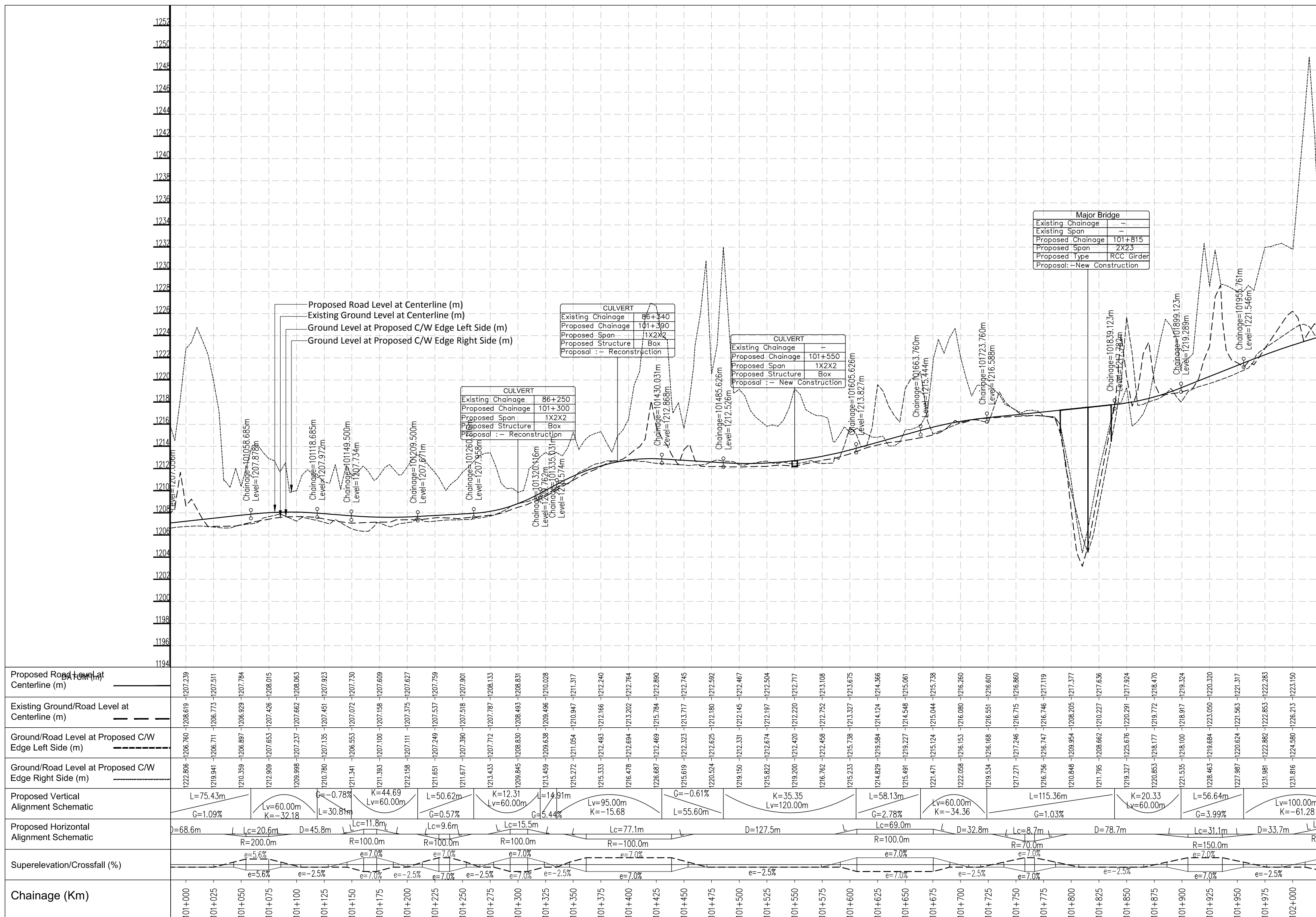
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KHELLANI

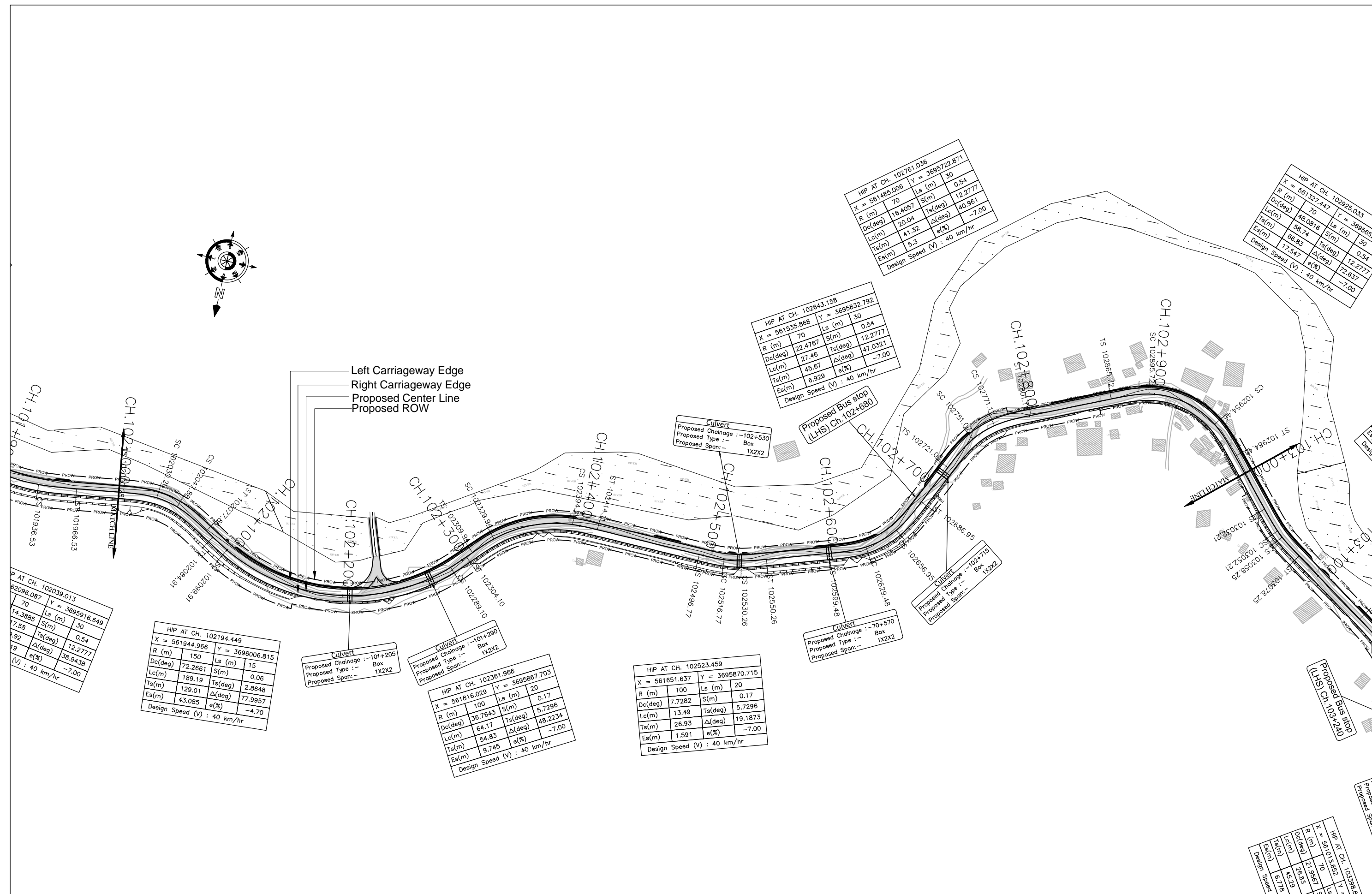
CHATTROO

LEGEND

Proposed Center Line	---
Proposed Median	=====
Proposed Carriageway Edge	=====
Proposed Toe Line	=====
Proposed Right of Way	=====
Existing Right of Way	=====
Proposed Box Culvert	=====
Proposed HP Culvert	=====
Proposed Slab Culvert	=====
Proposed Vehicular Underpass	=====
Proposed Cattle Underpass	=====
Proposed Bridge/ROB	=====
Toe Wall	=====
Retaining Wall / Brest Wall	=====
Gate Temporary/Permanents	=====
GPS	=====
Temporary Bench Mark	=====
Religious Structures	=====
Telephone Box	=====
Transformer Points	=====
Pylon	=====
Lamp Post	=====
Tree-T1,T2,T3,T4,T5,T6	=====
Tube Well, Well	=====
Hand Pump	=====
Kilometer Stone	=====
OFC Pillar	=====
Petrol Pump	=====
North Symbol	=====
Railway Track	=====
Existing Paved Road	=====
Existing Unpaved Road	=====
Telephone Line	=====
High Tension Lines	=====
Low Tension Line	=====
Drain	=====
HFL Line	=====
Water Pipe Line	=====
Building	=====
PLAN	
R - Radius of Curve	
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Es - Apex Distance	
LS - Length of Spiral Curve	
S - Shift	
Δ - Deflection Angle	
V - Design Speed Km/Hr	
e% - Superelevation	
PC - Point of Curvature	
PT - Point of Tangent	
HIP - Horizontal Intersection Point	
L - PROFILE	
G - Gradient %	
Lv - Length of Vertical Curve	
L - Length of Grade(m)	
K - Ratio Between vertical curve Length & Change of Gradient (Lc/G2-G1)	
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ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	From Km. Design 95+550 to Km. 111+066	TENDER DRAWING	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
R0	Oct.:-2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.	RODIC CONSULTANTS PVT. LTD.				
R1	Dec.:-2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)				
				In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	Designed: B D Drawn: S S Designed: T M Approved: A M	Scale :- H=-:1:2500 V=-:1:250	Drawing Title Sheet size: A2 Drawing No.	PLAN & PROFILE (km.69+000 to km.70+000) Annex III
							NHIDCL/NH244/KHELLANI - CHATTROO/P&P/07A/R0	



LEGEND

-
- Proposed Center Line
- Proposed Median
- Proposed Carriageway Edge
- Proposed Toe Line
- Proposed Right of Way
- Existing Right of Way
- Proposed Box Culvert
- Proposed HP Culvert
- Proposed Slab Culvert
- Proposed Vehicular Underpass
- Proposed Cattle Underpass
- Proposed Bridge/ROB
- Toe Wall

- | | |
|---------------------------|--|
| Gate Temporary/Permanents | |
| GPS | |
| Temporary Bench Mark | |
| Religious Structures | |
| Telephone Box | |
| Transformer Points | |
| Pylon | |
| Lamp Post | |
| Tree-T1,T2,T3,T4,T5,T6, | |
| Tube Well, Well | |
| Hand Pump | |
| Kilometer Stone | |
| OFC Pillar | |
| Petrol Pump | |
| North Symbol | |
| Railway Track | |
| Existing Paved Road | |
| Existing Unpaved Road | |
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| High Tension Lines | |
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| Drain | |
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PLAN

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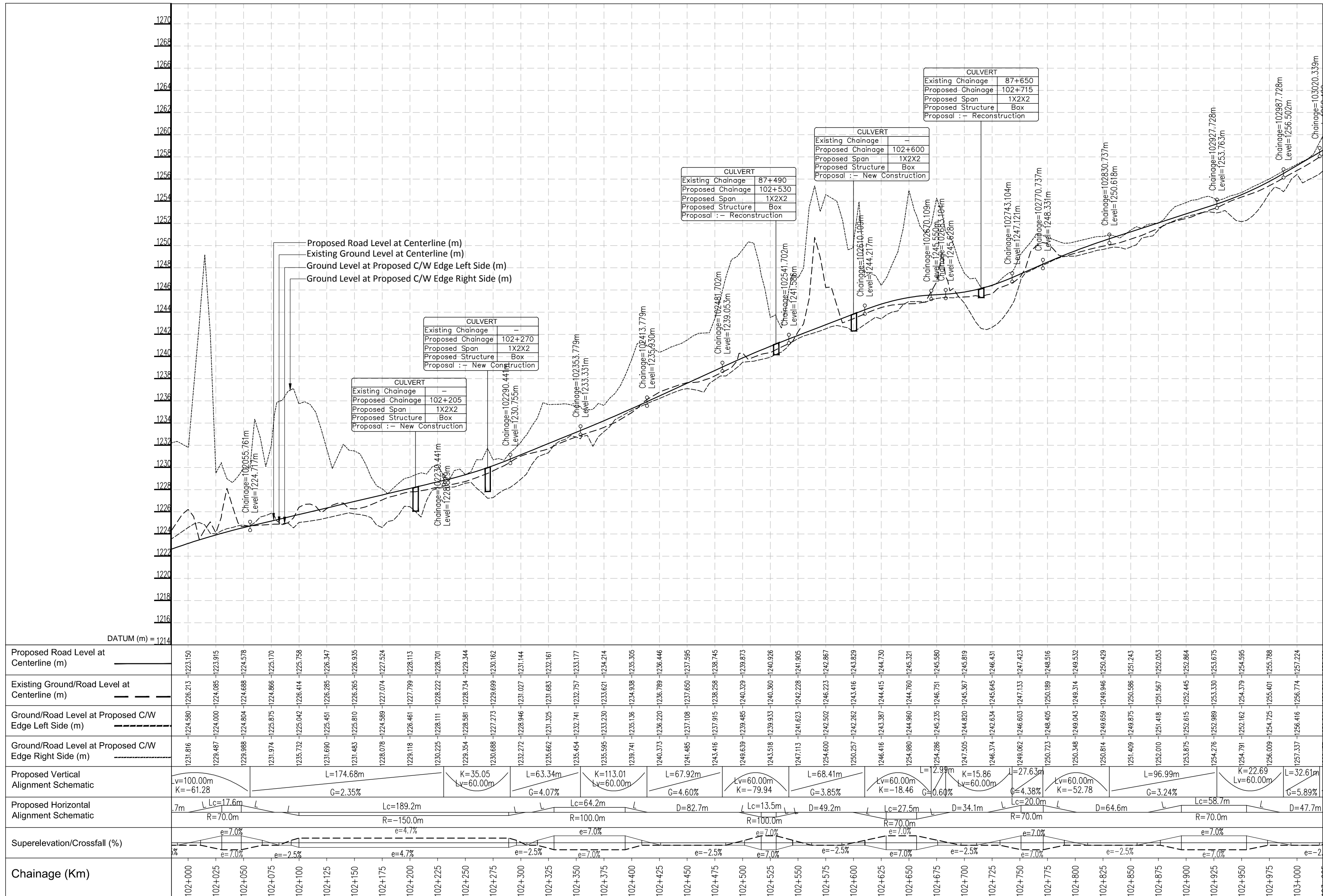
L - PROFILE

- G - Gradient %
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KHELLANI

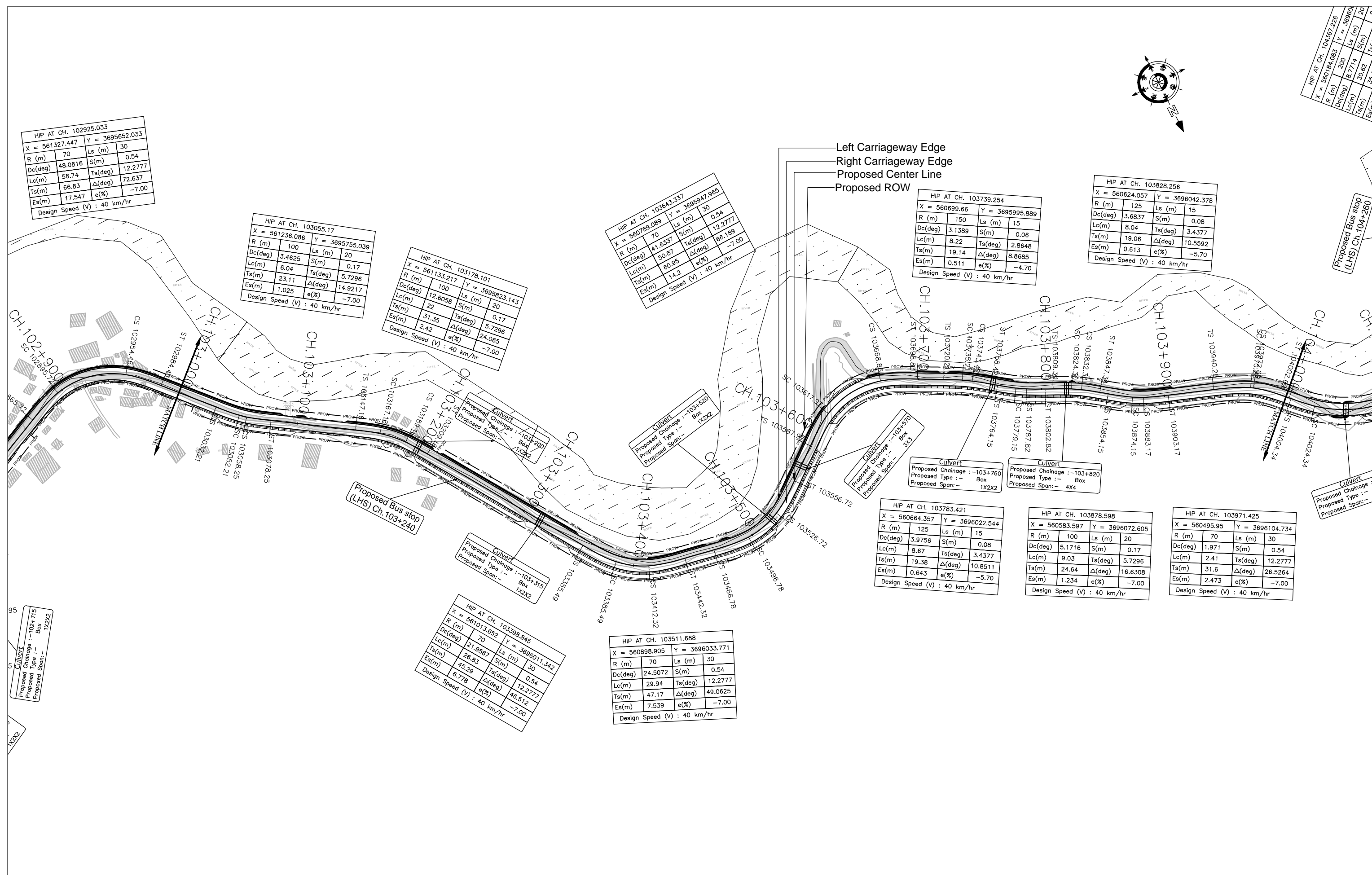
CHATTROO
















LEGEND

























Proposed Center Line
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ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	CLIENT	CONSULTANT	Project:-	TENDER DRAWING	Scale :-	Drawing Title	Drawing No.
R0	Oct.-:2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.	RODIC CONSULTANTS PVT. LTD.	From Km. Design 95+550 to Km. 111+066		H=-:1:2500 V=-:1:250	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
R1	Dec.-:2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,				PLAN & PROFILE (km.102+000 to km.103+000)	Annex III
									NHIDCL/NH244/KHELLANI - CHATTROO/P&P/08A/R0



LEGEND

- | | |
|------------------------------|---|
| Proposed Center Line |  |
| Proposed Median |  |
| Proposed Carriageway Edge |  |
| Proposed Toe Line |  |
| Proposed Right of Way |  |
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| Religious Structures |  |
| Telephone Box |  |
| Transformer Points |  |
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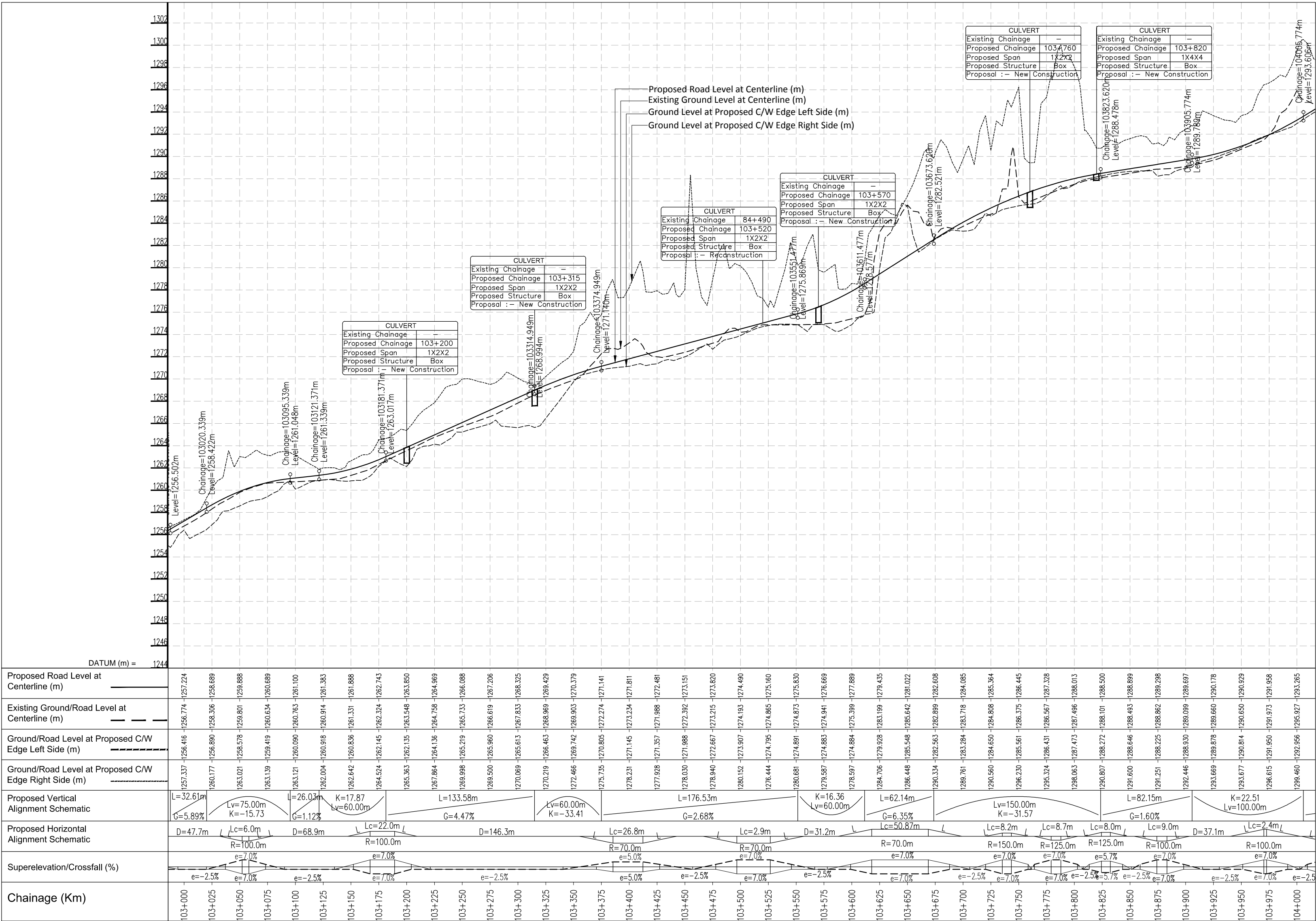
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R0	Oct.-:2020		<div>NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.</div> <div>(MINISTRY OF ROAD TRANSPORT & HIGHWAY)</div> <div>GOVERNMENT OF INDIA</div> <div></div>	<div></div> <div>RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., </div>	From Km. Design 95+550 to Km. 111+066	TENDER DRAWING			
R1	Dec.-:2020								
					<div>Designed: B D</div> <div>Drawn: S S</div> <div>Designed: T M</div> <div>Approved: A M</div>	Scale :- H=-:1:2500 V=-:1:250	Drawing Title	PLAN & PROFILE (km.103+000 to km.104+000)	Annex III
							Sheet size: A2		
							Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/P&P/ 09/R0	



LEGEND

Proposed Center Line

Proposed Median

Proposed Carriageway Edge

Proposed Toe Line

Proposed Right of Way

Existing Right of Way

Proposed Box Culvert

Proposed HP Culvert

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Proposed Vehicular Underpass

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L - Length of Grade(m)

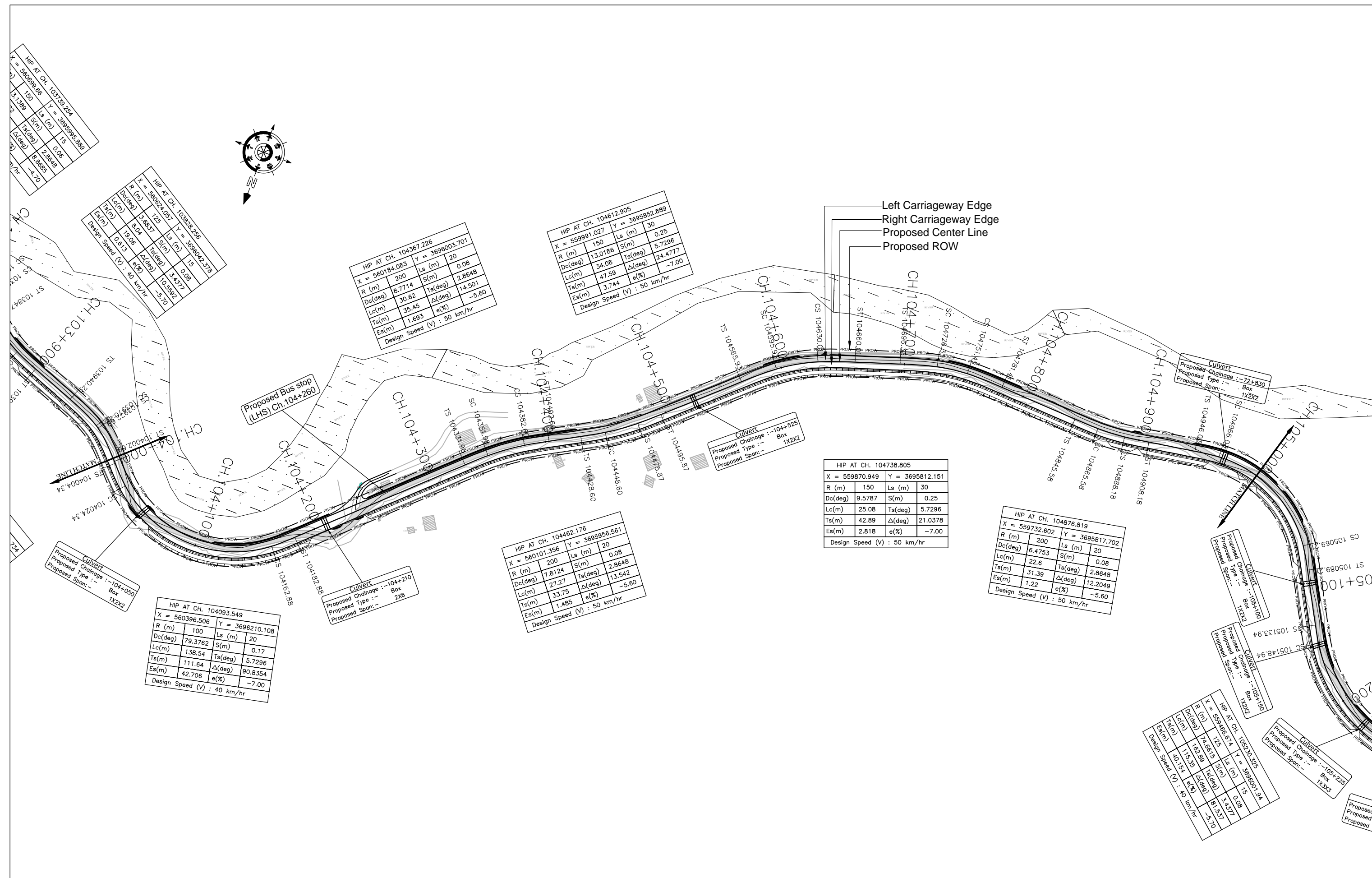
K - Ratio Between vertical curve Length & Change of Gradient (Lc/G(2-G))

e - Superelevation (%)

D - Straight Length of Horizontal Alignment

Lc - Length of Circular Curve

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
R0	Oct.-:2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	TENDER DRAWING	PLAN & PROFILE (km.103+000 to km.104+000)
R1	Dec.-:2020					
					Scale :- H=-:1:2500 V=-:1:250	Drawing Title Sheet size: A2
					Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/P&P/09A/R0
						Annex III



LEGEND

- | | |
|------------------------------|--|
| Proposed Center Line | |
| Proposed Median | |
| Proposed Carriageway Edge | |
| Proposed Toe Line | |
| Proposed Right of Way | |
| Existing Right of Way | |
| Proposed Box Culvert | |
| Proposed HP Culvert | |
| Proposed Slab Culvert | |
| Proposed Vehicular Underpass | |
| Proposed Cattle Underpass | |
| Proposed Bridge/ROB | |
| Toe Wall | |
| Retaining Wall / Breast Wall | |
| Gate Temporary/Permanents | |
| GPS | |
| Temporary Bench Mark | |
| Religious Structures | |
| Telephone Box | |
| Transformer Points | |
| Pylon | |
| Lamp Post | |
| Tree-T1,T2,T3,T4,T5,T6, | |
| Tube Well, Well | |
| Hand Pump | |
| Kilometer Stone | |
| OFC Pillar | |
| Petrol Pump | |
| North Symbol | |
| Railway Track | |
| Existing Paved Road | |
| Existing Unpaved Road | |
| Telephone Line | |
| High Tension Lines | |
| Low Tension Line | |
| Drain | |
| HFL Line | |
| Water Pipe Line | |
| Building | |

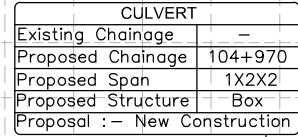
PLAN

- R - Radius of Curve
- Dc - Degree of Curvature
- Lc - Length of Circular Curve
- Ts - Tangent Length
- Es - Apex Distance
- LS - Length of Spiral Curve
- S - Shift
- Δ - Deflection Angle
- V - Design Speed Km/Hr
- e% - Superelevation
- PC - Point of Curvature
- PT - Point of Tangent
- HIP - Horizontal Intersection Point

L - PROFILE

- G - Gradient %
- Lv - Length of Vertical Curve
- L - Length of Grade Line
- R - Ratio Between vertical curve Length & Change of Gradient (Lv/G2-G1)
- e - Superelevation (%)
- D - Straight Length of Horizontal Alignment
- Lc - Length of Circular Curve

[illegible]



CULVERT	
Existing Chainage	—
Proposed Chainage	104+525
Proposed Span	1X2X2
Proposed Structure	Box
Proposal :- New Construction	

Existing Chainage	-
Proposed Chainage	104+210
Proposed Span	1X2X2
Proposed Structure	Box
Proposal :- New Construction	

Existing Chainage	89+080
Proposed Chainage	104+050
Proposed Span	1X2X2
Proposed Structure	Box
Proposal :-	Reconstruction

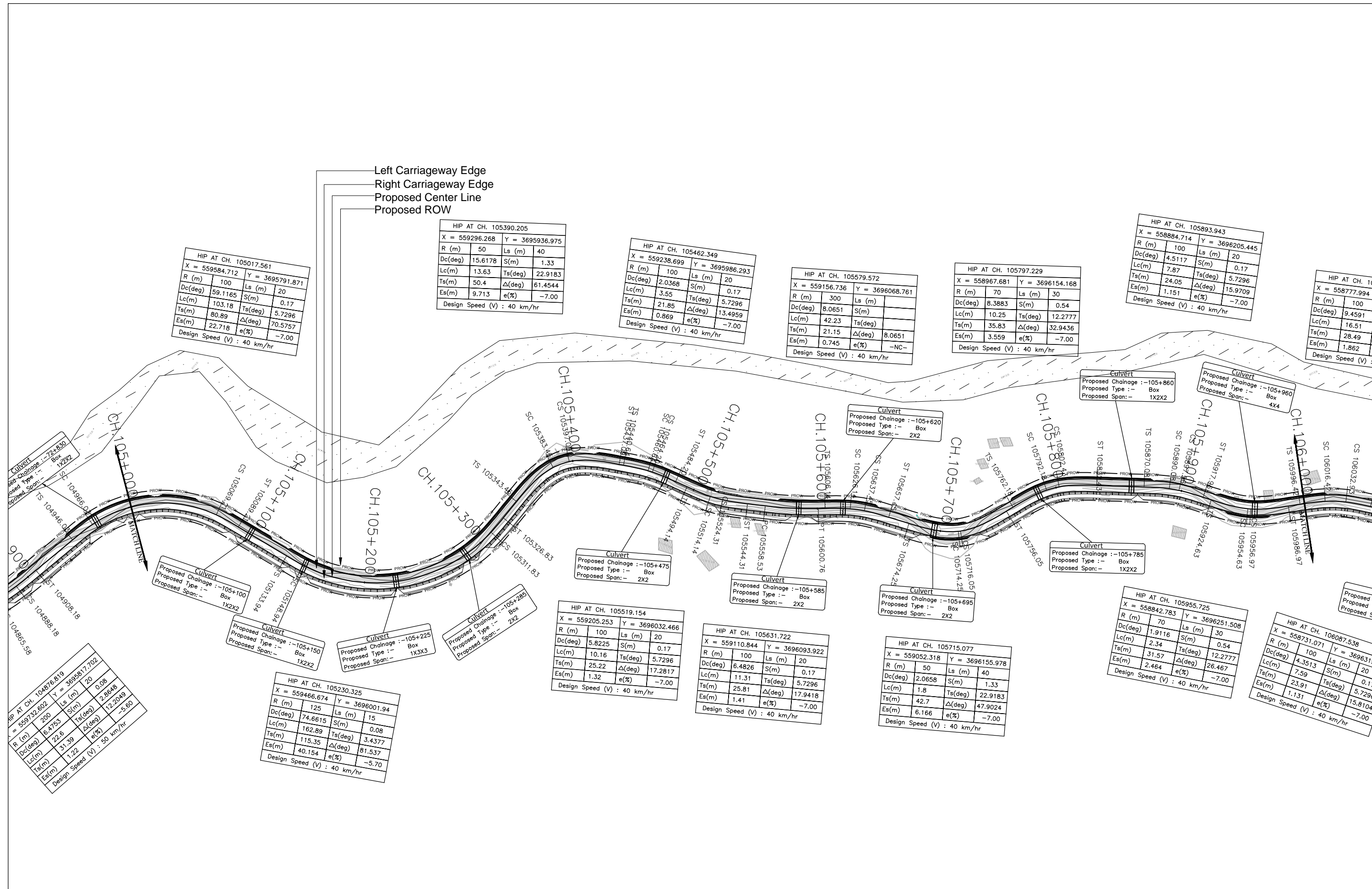
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LEGEND

Proposed Center Line	— — — —
Proposed Median	=====
Proposed Carriageway Edge	=====

- | | |
|---|--|
| Proposed Center Line | |
| Proposed Median | |
| Proposed Carriageway Edge | |
| Proposed Toe Line | |
| Proposed Right of Way | |
| Existing Right of Way | |
| Proposed Box Culvert | |
| Proposed HP Culvert | |
| Proposed Slab Culvert | |
| Proposed Vehicular Underpass | |
| Proposed Cattle Underpass | |
| Proposed Bridge/ROB | |
| Toe Wall | |
| Retaining Wall / Breast Wall | |
| Gate Temporary/Permanents | |
| GPS | |
| Temporary Bench Mark | |
| Religious Structures | |
| Telephone Box | |
| Transformer Points | |
| Pylon | |
| Lamp Post | |
| Tree-T1, T2, T3, T4, T5, T6, | |
| Tube Well, Well | |
| Hand Pump | |
| Kilometer Stone | |
| OFC Pillar | |
| Petrol Pump | |
| North Symbol | |
| Railway Track | |
| Existing Paved Road | |
| Existing Unpaved Road | |
| Telephone Line | |
| High Tension Lines | |
| Low Tension Line | |
| Drain | |
| HFL Line | |
| Water Pipe Line | |
| Building | |
| PLAN | |
| R - Radius of Curve | |
| Dc - Degree of Curvature | |
| Lc - Length of Circular Curve | |
| Ts - Tangent Length | |
| Es - Apex Distance | |
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| S - Shift | |
| Δ - Deflection Angle | |
| V - Design Speed Km/Hr | |
| e% - Superelevation | |
| PC - Point of Curvature | |
| PT - Point of Tangent | |
| HIP - Horizontal Intersection Point | |
| L - PROFILE | |
| G - Gradient % | |
| Lv - Length of Vertical Curve | |
| L - Length of Grade(m) | |
| K - Ratio Between vertical curve Length & Change of Gradient (Lc/(G2-G1)) | |
| e - Superelevation % | |
| D - Straight Length of Horizontal Alignment | |
| Lc - Length of Circular Curve | |

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	PROJECT:-	TENDER DRAWING	Project:-
R0	Oct.-2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)	From Km. Design 95+550 to Km. 111+066		CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
R1	Dec.:2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	In Association with  Monarch Surveyors and Engineering Consultants Pvt. Ltd.,			
						Scale :- H=-:1:2500 V=-:1:250	Drawing Title Sheet size: A2 Drawing No. PLAN & PROFILE (km.104+000 to km.105+000) Annex III
							NHIDCL/NH244/KHELLANI - CHATTROO/P&P/10A/R0



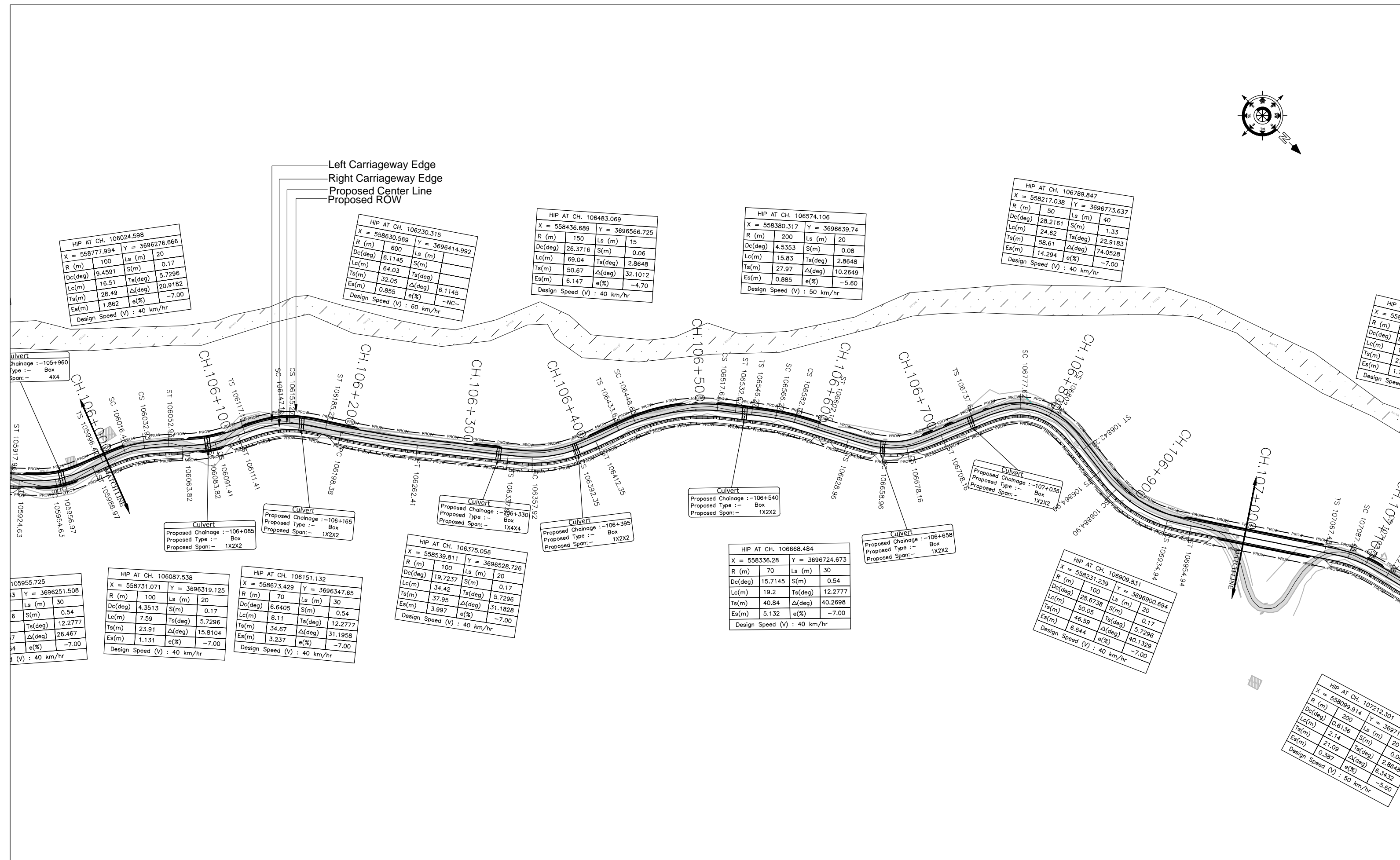
ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Oct.-:2020	
R1	Dec.-:2020	

CLIENT	NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA

CONSULTANT:	<p>RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)</p> <p>In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,</p>
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From Km. Design 95+550 to Km. 111+066	TENDER DRAWING
Designed: B D Drawn: S S Designed: T M Approved: A M	Scale :- H=-:1:2500 V=-:1:250

Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
Drawing Title	PLAN & PROFILE (km.105+000 to km.106+000)
Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/P&P/11/R0
Annex III	



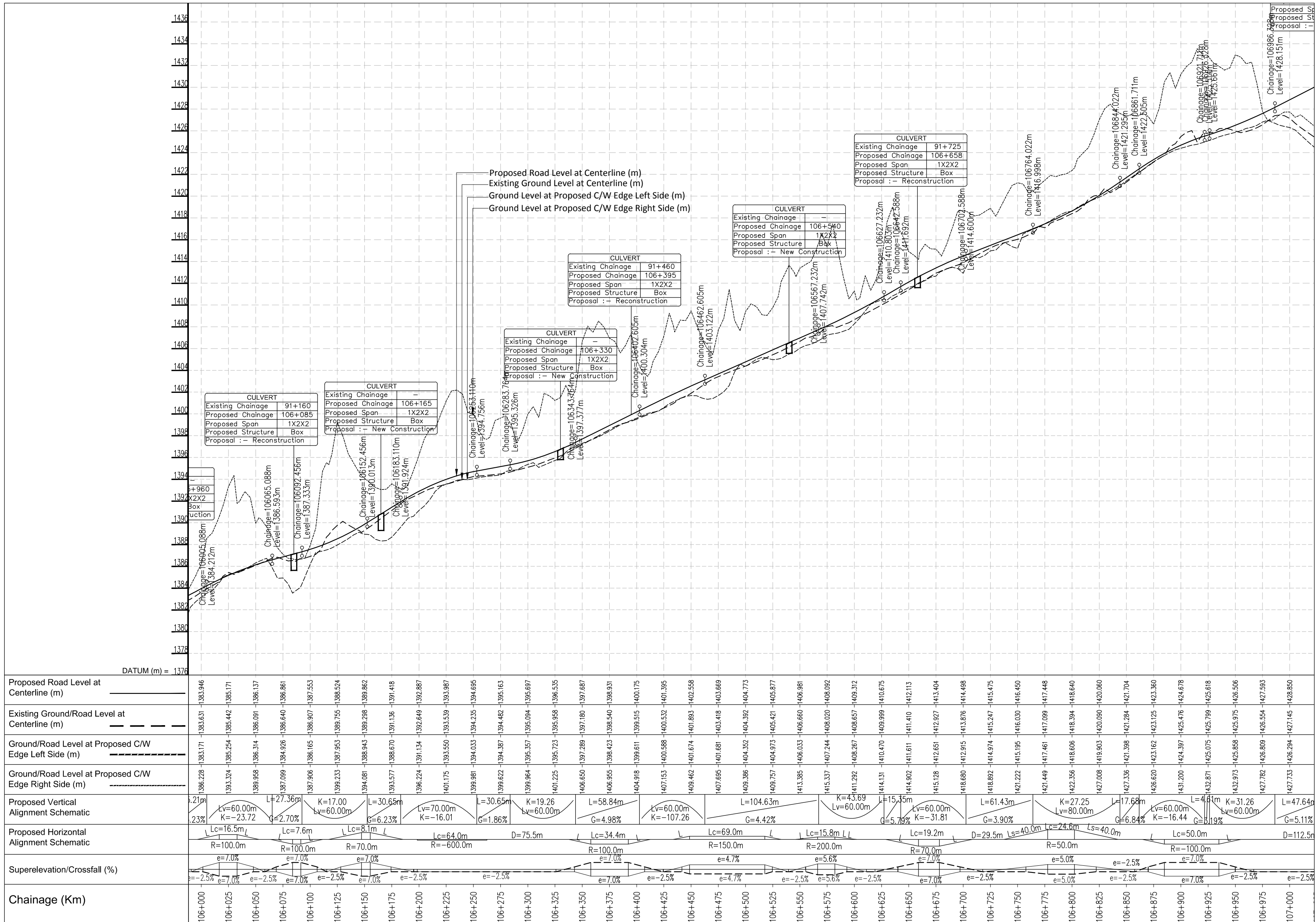
LEGEND

Proposed Center Line	---
Proposed Median	=====
Proposed Carriageway Edge	=====
Proposed Toe Line	=====
Proposed Right of Way	=====
Existing Right of Way	=====
Proposed Box Culvert	=====
Proposed HP Culvert	=====
Proposed Slab Culvert	=====
Proposed Vehicular Underpass	=====
Proposed Cattle Underpass	=====
Proposed Bridge/ROB	=====
Toe Wall	===== Toe Wall
Retaining Wall / Breast Wall	=====
Gate Temporary/Permanents	=====
GPS	=====
Temporary Bench Mark	=====
Religious Structures	=====
Telephone Box	=====
Transformer Points	=====
Pylon	=====
Lamp Post	=====
Tree-T1,T2,T3,T4,T5,T6,	=====
Tide Well, Well	=====
Hand Pump	=====
Kilometer Stone	=====
OFC Pillar	=====
Petrol Pump	=====
North Symbol	=====
Railway Track	=====
Existing Paved Road	=====
Existing Unpaved Road	=====
Telephone Line	=====
High Tension Lines	=====
Low Tension Line	=====
Drain	=====
HFL Line	=====
Water Pipe Line	=====
Building	=====
PLAN	=====
R - Radius of Curve	=====
Dc - Degree of Curvature	=====
Lc - Length of Circular Curve	=====
Ts - Tangent Length	=====
Es - Apex Distance	=====
LS - Length of Spiral Curve	=====
S - Shift	=====
Δ - Deflection Angle	=====
V - Design Speed Km/Hr	=====
e% - Superelevation	=====
PC - Point of Curvature	=====
PT - Point of Tangent	=====
HIP - Horizontal Intersection Point	=====
L - PROFILE	=====
G - Gradient %	=====
Lv - Length of Vertical Curve	=====
L - Length of Grade(m)	=====
K - Ratio Between vertical Curve Length & Change of Gradient (Lv/G2-G1)	=====
e - Superelevation (%)	=====
D - Straight Length of Horizontal Alignment	=====
Lc - Length of Circular Curve	=====

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:
R0	Oct.-:2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 
R1	Dec.-:2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	

← KHELLANI

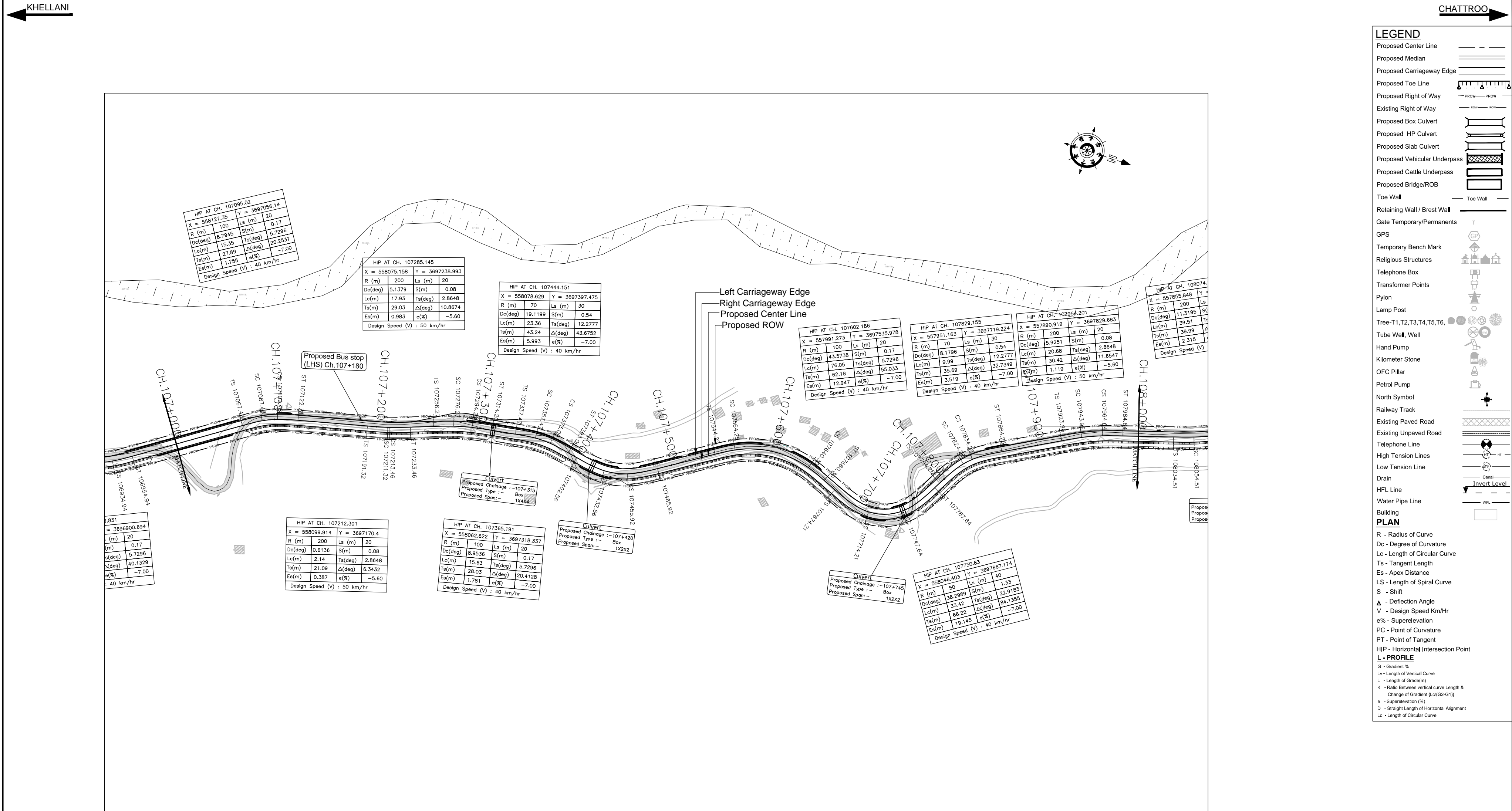
CHATTROO →



LEGEND

Proposed Center Line
Proposed Median
Proposed Carriageway Edge
Proposed Toe Line
Proposed Right of Way
Existing Right of Way
Proposed Box Culvert
Proposed HP Culvert
Proposed Slab Culvert
Proposed Vehicular Underpass
Proposed Cattle Underpass
Proposed Bridge/ROB
Toe Wall
Retaining Wall / Breast Wall
Gate Temporary/Permanents
GPS
Temporary Bench Mark
Religious Structures
Telephone Box
Transformer Points
Pylon
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Hand Pump
Kilometer Stone
OFC Pillar
Petrol Pump
North Symbol
Railway Track
Existing Paved Road
Existing Unpaved Road
Telephone Line
High Tension Lines
Low Tension Line
Drain
HFL Line
Water Pipe Line
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PLAN
R - Radius of Curve
Dc - Degree of Curvature
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Es - Apex Distance
LS - Length of Spiral Curve
S - Shift
Δ - Deflection Angle
V - Design Speed Km/Hr
e% - Superelevation
PC - Point of Curvature
PT - Point of Tangent
HIP - Horizontal Intersection Point
L - PROFILE
G - Gradient %
Lv - Length of Vertical Curve
L - Length of Grade(m)
K - Ratio Between vertical curve Length & Change of Gradient (Lc/G2-G1)
e - Superelevation (%)
D - Straight Length of Horizontal Alignment
Lc - Length of Circular Curve

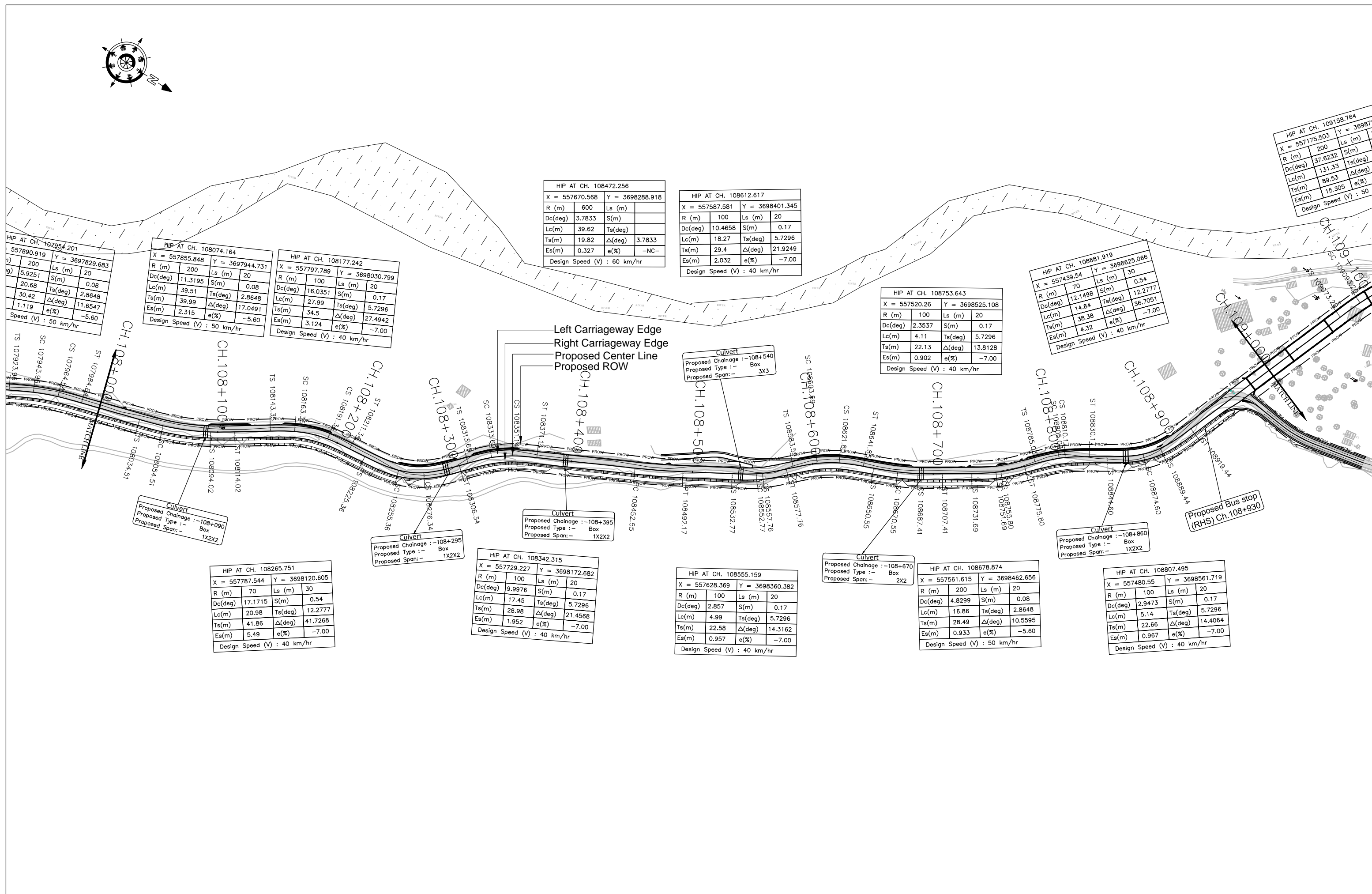
ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
R0	Oct.-:2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	From Km. Design 95+550 to Km. 111+066	TENDER DRAWING
R1	Dec.-:2020					
					Scale :- H=-:1:2500 V=-:1:250	Drawing Title Sheet size: A2 Drawing No.
						PLAN & PROFILE (Km.106+000 to Km.107+000) NHIDCL/NH244/KHELLANI - CHATTROO/P&P/12A/R0
						Annex III



ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	Project:-	TENDER DRAWING	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
R0	Oct.-:2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	From Km. Design 95+550 to Km. 111+066	Scale :- H=:-1:2500 V=:-1:250	Drawing Title PLAN & PROFILE (Km.107+000 to Km.108+000)	Annex III
R1	Dec.-:2020							
							Drawing No. NHIDCL/NH244/KHELLANI - CHATTROO/P&P/13/R0	

KHELLANI

CHATTROO



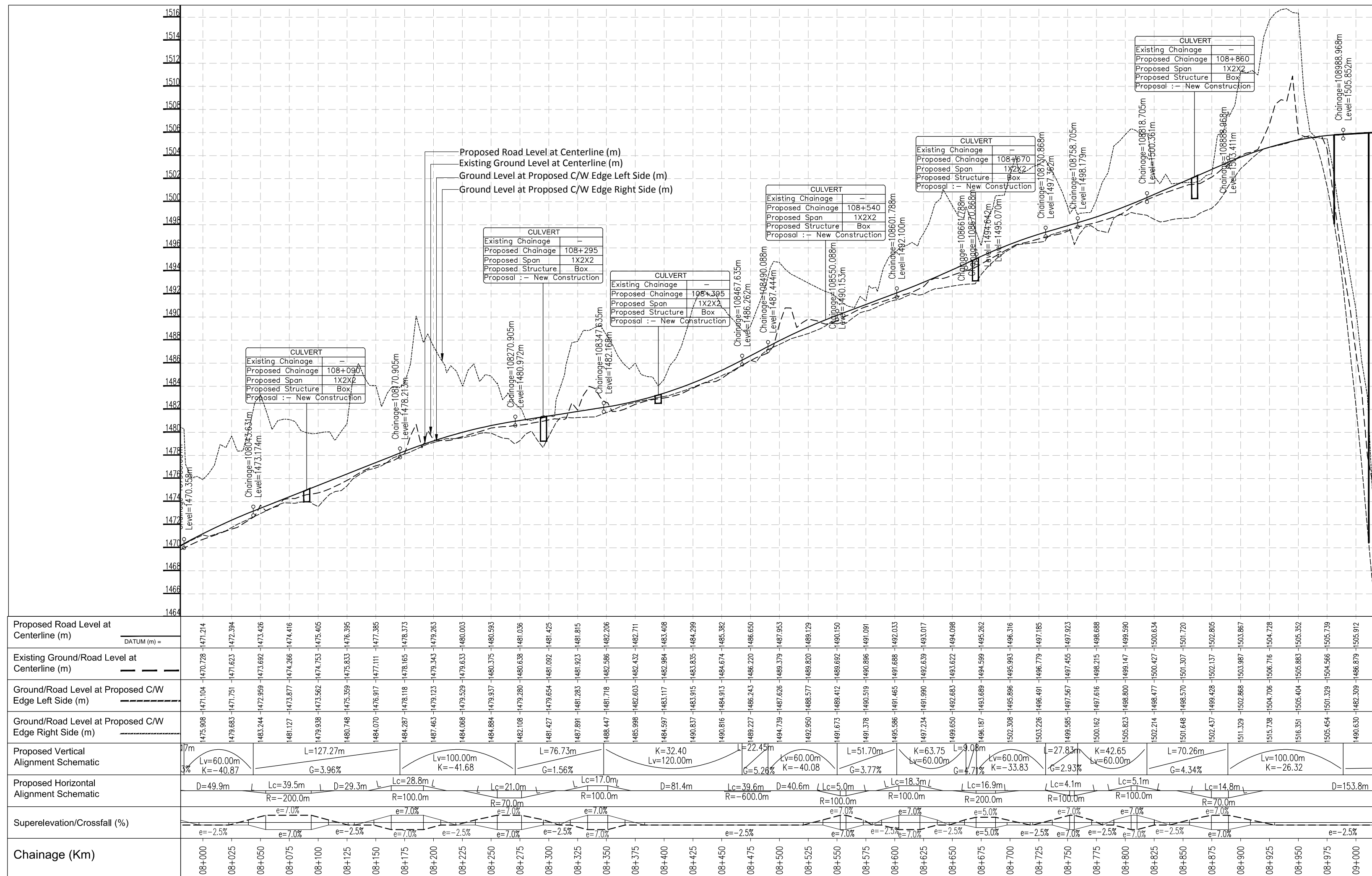
LEGEND

- Proposed Center Line
- Proposed Median
- Proposed Carriageway Edge
- Proposed Toe Line
- Proposed Right of Way
- Existing Right of Way
- Proposed Box Culvert
- Proposed HP Culvert
- Proposed Slab Culvert
- Proposed Vehicular Underpass
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- Hand Pump
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- OFC Pillar
- Petrol Pump
- North Symbol
- Railway Track
- Existing Paved Road
- Existing Unpaved Road
- Telephone Line
- High Tension Lines
- Low Tension Line
- Drain
- HFL Line
- Water Pipe Line
- Building
- PLAN**
- R - Radius of Curve
- Dc - Degree of Curvature
- Lc - Length of Circular Curve
- Ts - Tangent Length
- Es - Apex Distance
- LS - Length of Spiral Curve
- S - Shift
- Δ - Deflection Angle
- V - Design Speed Km/Hr
- e% - Superelevation
- PC - Point of Curvature
- PT - Point of Tangent
- HIP - Horizontal Intersection Point
- L - PROFILE**
- G - Gradient %
- Lv - Length of Vertical Curve
- L - Length of Grade(m)
- K - Ratio Between vertical curve Length & Change of Gradient (Lc/(G2-G1))
- e - Superelevation (%)
- D - Straight Length of Horizontal Alignment
- Lc - Length of Circular Curve

ISSUE	DATE	AMENDMENT / ISSUE DESCRIPTION	CLIENT	CONSULTANT	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
R0	Oct.-2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	From Km. Design 95+550 to Km. 111+066	TENDER DRAWING
R1	Dec.-2020					
					Scale :-	Drawn: B D Sheet size: A2 Designed: S S T M Approved: A M
					Scale :-	H=-:1:2500 V=-:1:250
					Drawing Title	PLAN & PROFILE (Km.108+000 to Km.109+000)
					Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/P&P/14/R0
						Annex III

LEGEND

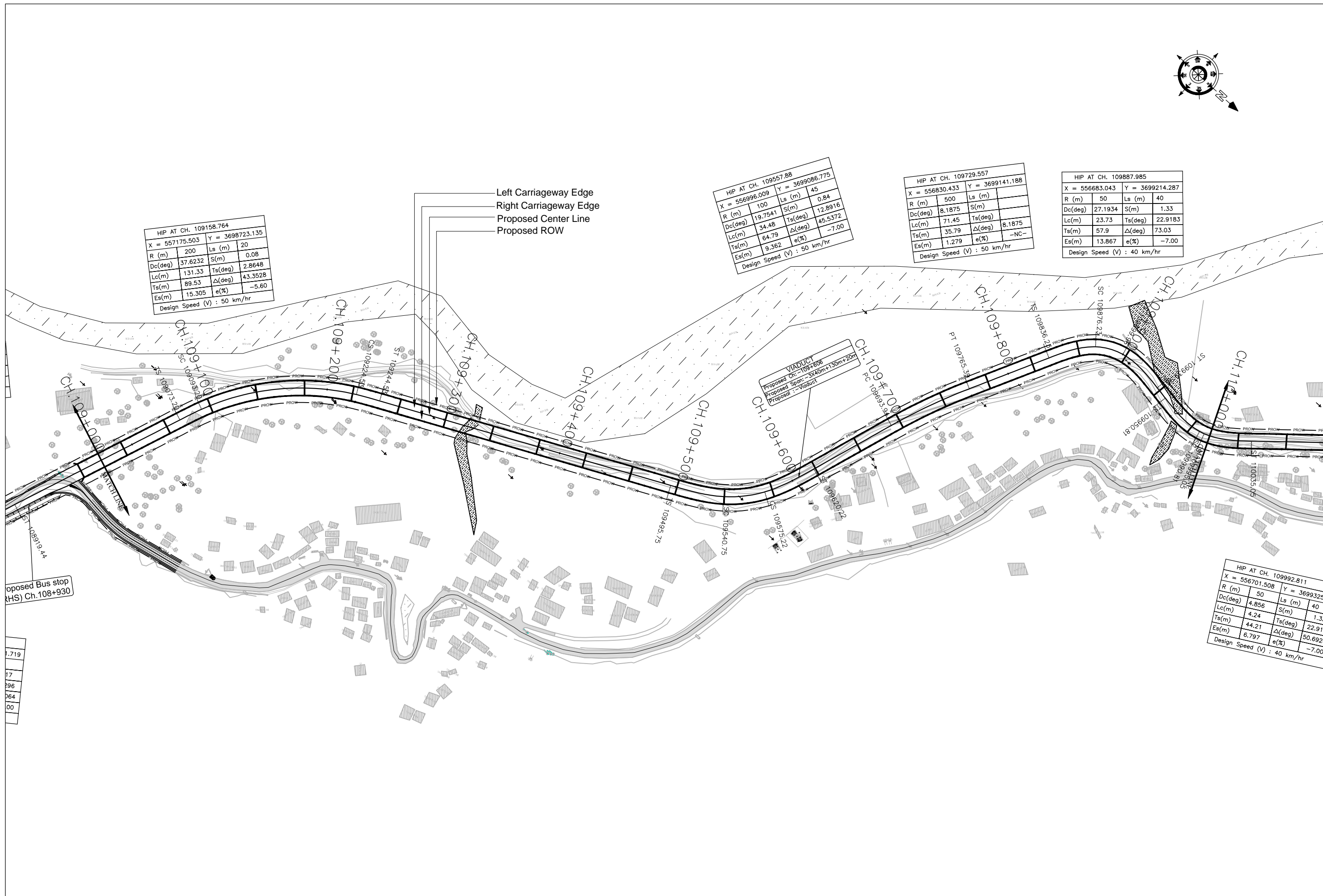
Proposed Center Line	
Proposed Median	
Proposed Carriageway Edge	
Proposed Toe Line	
Proposed Right of Way	
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Proposed Box Culvert	
Proposed HP Culvert	
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Lv - Length of Vertical Curve	
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ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:
R0	Oct.-:2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.. 
R1	Dec.-:2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	
				<div>From Km. Design 95+550 to Km. 111+066</div> <div>TENDER DRAWING</div> <div>Project:-</div> <div>CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR</div> <div>Scale :-</div> <div>H=:-1:2500</div> <div>V=:-1:250</div> <div>Drawing Title</div> <div>Sheet size: A2</div> <div>Drawing No.</div> <div>PLAN & PROFILE</div> <div>(Km.108+000 to Km.109+000)</div> <div>Annex III</div> <div>NHIDCL/NH244/KHELLANI - CHATTROO/P&P/14A/R0</div>

KHELLANI

CHATTROO



LEGEND

- Proposed Center Line
- Proposed Median
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- Proposed Box Culvert
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- Building
- PLAN
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ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Oct.-:2020	
R1	Dec.-:2020	

CLIENT
NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT & HIGHWAY)
GOVERNMENT OF INDIA

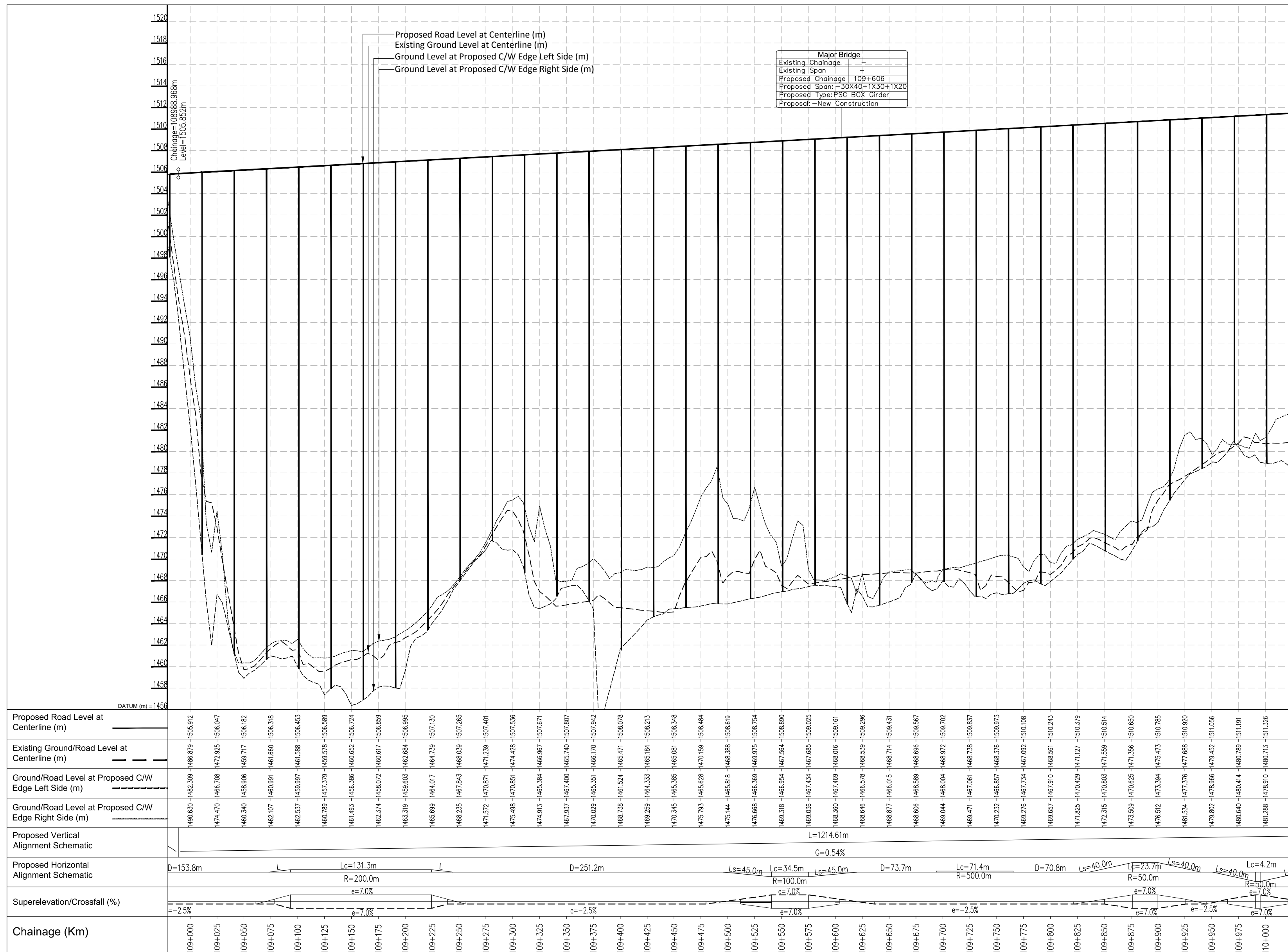
CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
In Association with
Monarch Surveyors and Engineering
Consultants Pvt. Ltd.,

From Km. Design 95+550 to Km. 111+066
TENDER DRAWING
Project:-
CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR

Scale :-
H=:-1:2500
V=:-1:250
Drawing Title
Sheet size: A2
Drawing No.

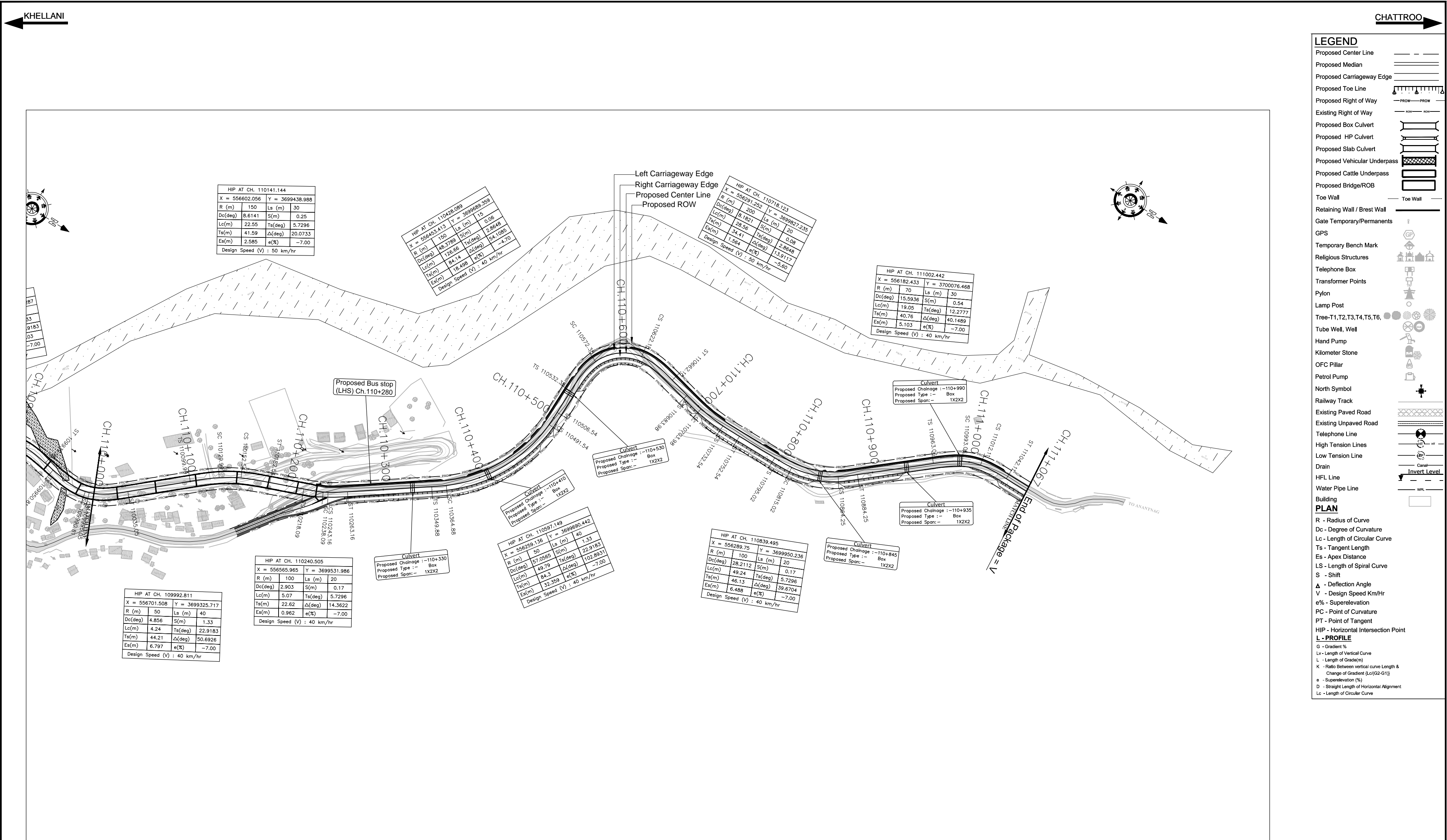
PLAN & PROFILE
(Km.109+000 to Km.110+000)
Annex III
NHIDCL/NH244/KHELLANI - CHATTROO/P&P/15/R0



LEGEND

Proposed Center Line	---
Proposed Median	=====
Proposed Carriageway Edge	=====
Proposed Toe Line	=====
Proposed Right of Way	=====
Existing Right of Way	=====
Proposed Box Culvert	=====
Proposed HP Culvert	=====
Proposed Slab Culvert	=====
Proposed Vehicular Underpass	=====
Proposed Cattle Underpass	=====
Proposed Bridge/ROB	=====
Toe Wall	===== Toe Wall
Retaining Wall / Breast Wall	=====
Gate Temporary/Permanents	=====
GPS	=====
Temporary Bench Mark	=====
Religious Structures	=====
Telephone Box	=====
Transformer Points	=====
Pylon	=====
Lamp Post	=====
Tree-T1,T2,T3,T4,T5,T6	=====
Tide Well, Well	=====
Hand Pump	=====
Kilometer Stone	=====
OFC Pillar	=====
Petrol Pump	=====
North Symbol	=====
Railway Track	=====
Existing Paved Road	=====
Existing Unpaved Road	=====
Telephone Line	=====
High Tension Lines	=====
Low Tension Line	=====
Drain	=====
HFL Line	=====
Water Pipe Line	=====
Building	=====
PLAN	=====
R - Radius of Curve	=====
Dc - Degree of Curvature	=====
Lc - Length of Circular Curve	=====
Ts - Tangent Length	=====
Es - Apex Distance	=====
LS - Length of Spiral Curve	=====
S - Shift	=====
Δ - Deflection Angle	=====
V - Design Speed Km/Hr	=====
e% - Superelevation	=====
PC - Point of Curvature	=====
PT - Point of Tangent	=====
HIP - Horizontal Intersection Point	=====
L - PROFILE	=====
G - Gradient %	=====
Lv - Length of Vertical Curve	=====
L - Length of Grade(m)	=====
K - Ratio Between vertical curve Length & Superelevation (%)	=====
D - Straight Length of Horizontal Alignment	=====
Lc - Length of Circular Curve	=====

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	<div>CLIENT</div> <div>NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.</div> <div>(MINISTRY OF ROAD TRANSPORT & HIGHWAY)</div> <div>GOVERNMENT OF INDIA</div> <div></div>	<div>CONSULTANT:</div> <div></div> <div>RODIC CONSULTANTS PVT. LTD.</div> <div>1, JAI SINGH MARG (FIRST FLOOR), YMCA</div> <div>CULTURAL CENTRE BUILDING</div> <div>NEW DELHI - 110001 (INDIA)</div> <div>In Association with</div> <div>Monarch Surveyors and Engineering</div> <div>Consultants Pvt. Ltd.,</div> <div></div>	From Km. Design 95+550 to Km. 111+066	TENDER DRAWING	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHOTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	PLAN & PROFILE (Km.109+000 to Km.110+000)	Annex III
R0	Oct.-2020									
R1	Dec.:2020									
				<div>Designed: B D</div> <div>Drawn: S S</div> <div>Designed: T M</div> <div>Approved: A M</div>	Scale :-	Drawing Title				
				H=:-1:2500	Sheet size: A2					
				V=:-1:250	Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/P&P/15A/R0				



LEGEND

Proposed Center Line — — —


Proposed Median _____


Proposed Carriageway Edge _____


Proposed Toe Line _____


Proposed Right of Way _____
— PROW — PROW —


Existing Right of Way _____
— ROW — ROW —


Proposed Box Culvert 

Proposed HP Culvert 

Proposed Slab Culvert 

Proposed Vehicular Underpass 

Proposed Cattle Underpass 

Proposed Bridge/ROB 

Toe Wall _____ Toe Wall _____

Retaining Wall / Breast Wall	
Gate Temporary/Permanents	
GPS	
Temporary Bench Mark	
Religious Structures	
Telephone Box	
Transformer Points	
Pylon	
Lamp Post	
Tree-T1,T2,T3,T4,T5,T6,	
Tube Well, Well	
Hand Pump	
Kilometer Stone	
OFC Pillar	
Petrol Pump	
North Symbol	
Railway Track	
Existing Paved Road	
Existing Unpaved Road	
Telephone Line	
High Tension Lines	
Low Tension Line	
Drain	
HFL Line	
Water Pipe Line	
Building	

PLAN

R - Radius of Curve

- Dc - Degree of Curvature
- Lc - Length of Circular Curve
- Ts - Tangent Length
- Es - Apex Distance
- LS - Length of Spiral Curve
- S - Shift
- Δ - Deflection Angle
- V - Design Speed Km/Hr
- e% - Superelevation
- PC - Point of Curvature
- PT - Point of Tangent
- HIP - Horizontal Intersection Point
- L - PROFILE**
 - G - Gradient %
 - Lv - Length of Vertical Curve
 - L - Length of Grade(m)
 - K - Ratio between vertical curve Length & Change of Gradient (L/(G2-G1))
 - e - Superelevation (%)
 - D - Slope/Length of Horizontal Alignment
 - Lc - Length of Circular Curve

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Oct.-2020	
R1	Dec.-2020	

CLIENT

NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT & HIGHWAY)
GOVERNMENT OF INDIA

The logo of the National Highway and Infrastructure Development Corporation (NHAI) is located in the bottom left corner. It features a stylized bridge or highway structure with the letters 'NHAI' in large, bold, blue font. Below the letters, the text 'NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION' is written in a smaller, blue font. The entire logo is enclosed in a black rectangular border.

CONSULTANT:



RODIC CONSULTANTS PVT. LTD.
 1, JAI SINGH MARG (FIRST FLOOR), YMCA
 CULTURAL CENTRE BUILDING
 NEW DELHI - 110001 (INDIA)

In Association with
**Monarch Surveyors and Engineering
 Consultants Pvt. Ltd.,**



RODIC CONSULTANTS PVT. LTD.
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CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

In Association with
Monarch Surveyors and Engineering
Consultants Pvt. Ltd.,

From Km. Design 95+550 to Km. 111+066	
Designed:	B D
Drawn:	S S
Designed:	T M
Approved:	A M

6	TENDER DRAWING
	Scale :- H=-1:2500 V=-1:250

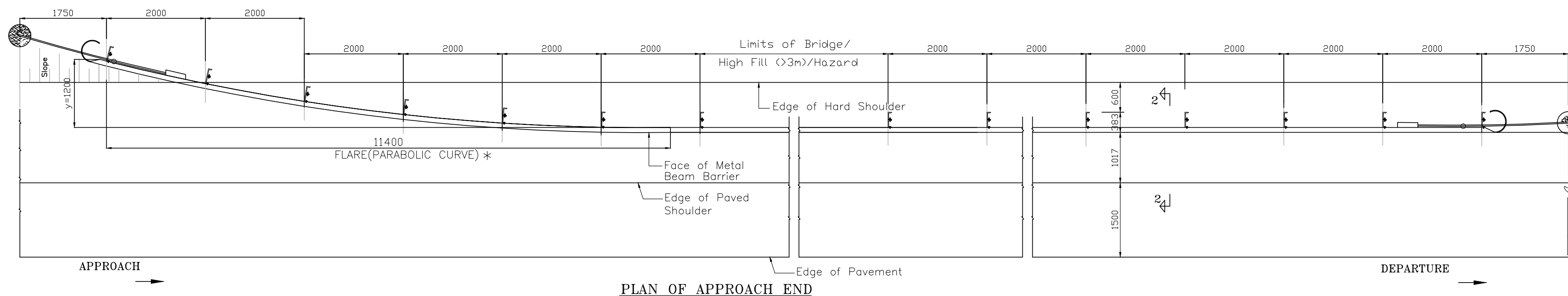
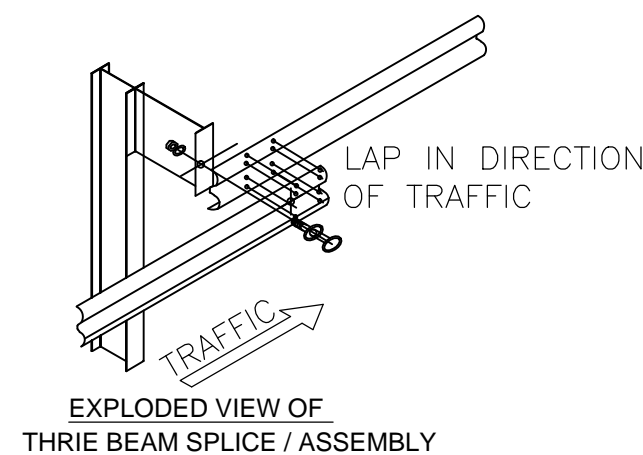
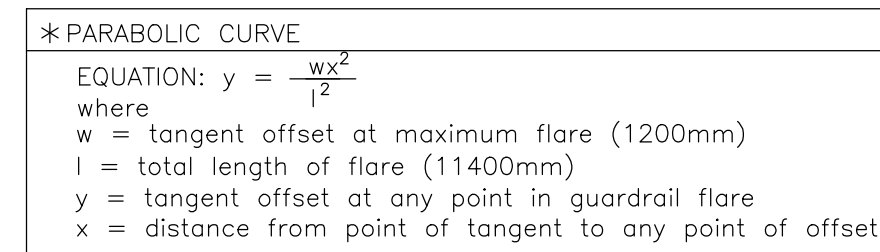
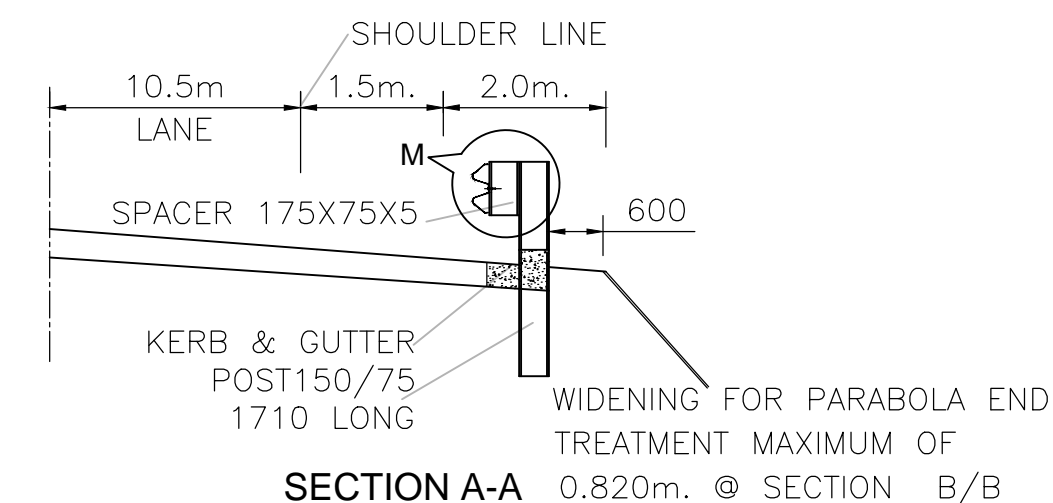
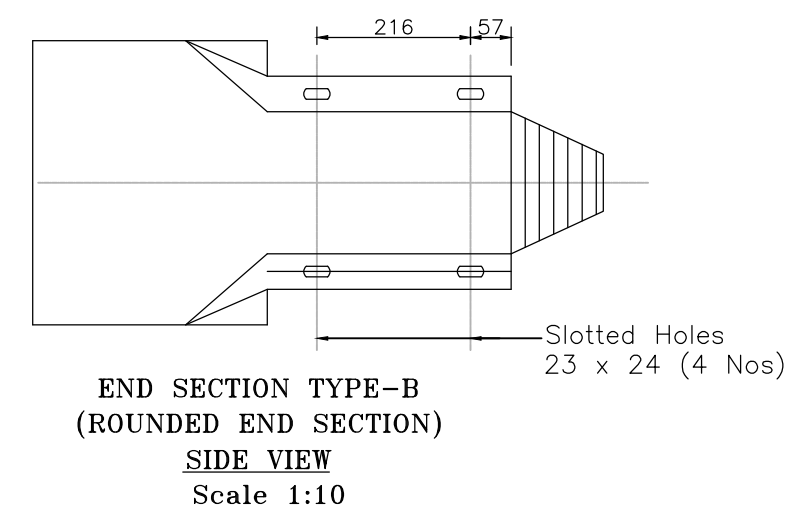
Project:-	
Drawing Title	
Sheet size	
Drawing No	




CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR		
PLAN & PROFILE (Km.110+000 to Km.111+086)		Annex III
NHIDCL/NH244/KHELLANI - CHATTROO/P&P/16/R0		

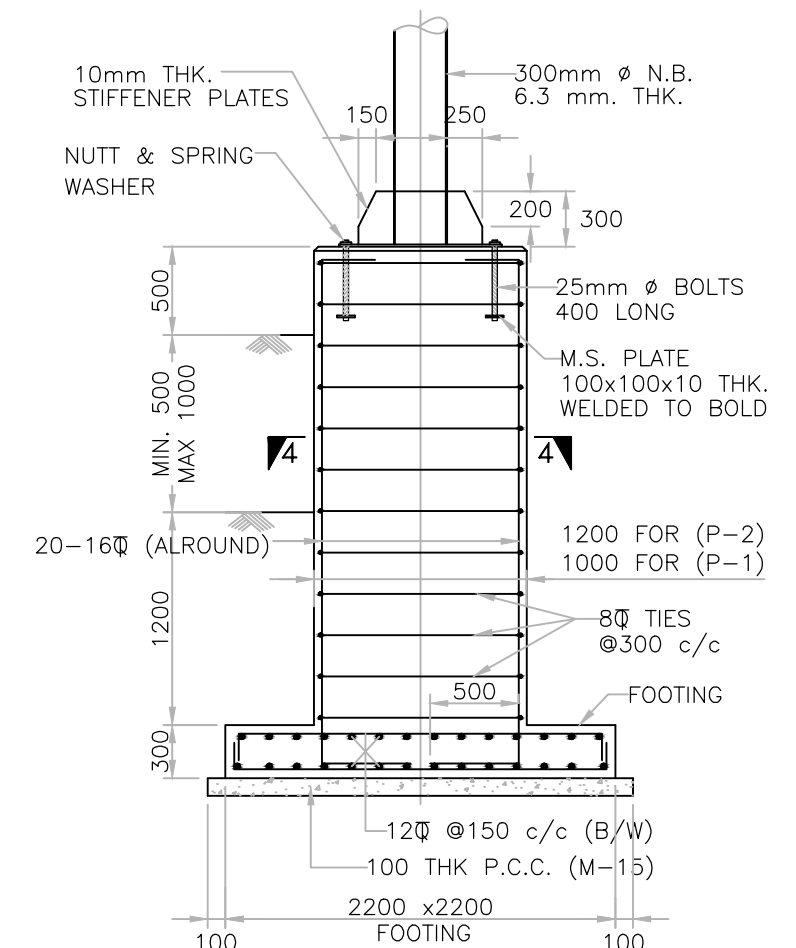
PLAN & PROFILE
(Km.110+000 to Km.111+086)
P&P/16/R0

Annex III

STANDARD DRAWING



ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:
R0	Dec.-2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 
				From Design Km.95+550 to Km.111+066
				Designed: BD Drawn: SS Checked: TM Reviewed: AM
				TENDER DRAWING
				Scale :- NTS
				Drawing Title Sheet size: A2
				CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR STANDARD DRAWING TYPICAL DETAILS OF THRIE BEAM CRASH BARRIER
				Annex III



2-12mm THK. PLATES
10mm THK. STIFFENER PLATES
300Ø NOMINAL BORE PIPE

1000
80
80
80
1000
80

1200x1200 (FOR P-2)
1000x1000 (FOR P-1)

20-16Ø (ALROUND)

SET OF TIES
8 @ 300 c/c

The drawing consists of two views: a top view (left) and an elevation view (right).

Top View: Shows a square plate with a central circular opening. The plate is 1200 mm wide and 1200 mm high. The central opening has a nominal bore of 300 mm. The plate is made of 2-12mm THK. PLATES. There are 10mm THK. STIFFENER PLATES. The plate is supported by 10 NOS. -25mmØ ANCHORE BOLTS. The plate is surrounded by a 40mmØ N.B. PIPE. The plate is also surrounded by 2-12mm THK. PLATES. The plate is also surrounded by 10mm THK. STIFFENER PLATES. The plate is also surrounded by 300Ø NOMINAL BORE PIPE. The plate is also surrounded by 40mmØ N.B. PIPE. The plate is also surrounded by 10 NOS. -25mmØ ANCHORE BOLTS. The plate is also surrounded by 2-12mm THK. PLATES. The plate is also surrounded by 10mm THK. STIFFENER PLATES. The plate is also surrounded by 300Ø NOMINAL BORE PIPE. The plate is also surrounded by 40mmØ N.B. PIPE. The plate is also surrounded by 10 NOS. -25mmØ ANCHORE BOLTS.

Elevation View: Shows the side profile of the assembly. The total height is 1300 mm. The plate thickness is 12 mm. The stiffener plate thickness is 10 mm. The nominal bore pipe diameter is 300 mm. The N.B. pipe diameter is 40 mm. The anchor bolts are 25 mm diameter. The plate is supported by 10 NOS. -25mmØ ANCHORE BOLTS. The plate is also surrounded by 2-12mm THK. PLATES. The plate is also surrounded by 10mm THK. STIFFENER PLATES. The plate is also surrounded by 300Ø NOMINAL BORE PIPE. The plate is also surrounded by 40mmØ N.B. PIPE. The plate is also surrounded by 10 NOS. -25mmØ ANCHORE BOLTS. The plate is also surrounded by 2-12mm THK. PLATES. The plate is also surrounded by 10mm THK. STIFFENER PLATES. The plate is also surrounded by 300Ø NOMINAL BORE PIPE. The plate is also surrounded by 40mmØ N.B. PIPE. The plate is also surrounded by 10 NOS. -25mmØ ANCHORE BOLTS.

2-12mm THK. PLATES
10mm THK. STIFFENER PLATES
300Ø NOMINAL BORE PIPE

1200
1000
80
80

10 NOS.-25mmØ ANCHORE BOLTS

1000
80
80
1200

Technical drawing of a 3-bay portal frame structure. The drawing includes the following dimensions and specifications:




- Overall width: 1000
- Bay width (TYP): 1054.55
- Column height: 100 (top section), 200 (bottom section)
- Column base width: 200 (top section), 100 (bottom section)
- Members: 80mm \varnothing N.B. PIPE (columns and beams), 40mm \varnothing N.B. PIPE (diagonal bracing)
- Connections: WELD (BOTH SIDE OF PIPE), 2 NOS. OF L 75x75x6 mm THK., 100 LONG ON EACH SIDE OF PIPE WELDED TO PLATE & PIPE ANGLED NOT SHOWN, FILLET WELD
- Notes: NOS.-12 mm THK., PLATES HAVING 8 NOS., 20 mm \varnothing BOLTS

80mm \varnothing N.B. PIPE

WELDING AROUND (TYP)

40mm \varnothing N.B. PIPE

DETAIL-B

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:			Project	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM DESIGN KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
R0	Dec. -2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 	From Design Km.95+550 to Km.111+066	TENDER DRAWING			
						Scale :-	Drawing Title	STANDAR DRAWING OVER HEAD SIGN	
						NTS	Sheet size: A2	NHIDCL/NH244/KHELLANI - CHATTROO/ OHG/02/R0	
								Annex III	

STRUCTURES

DRAWING INDEX

CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR

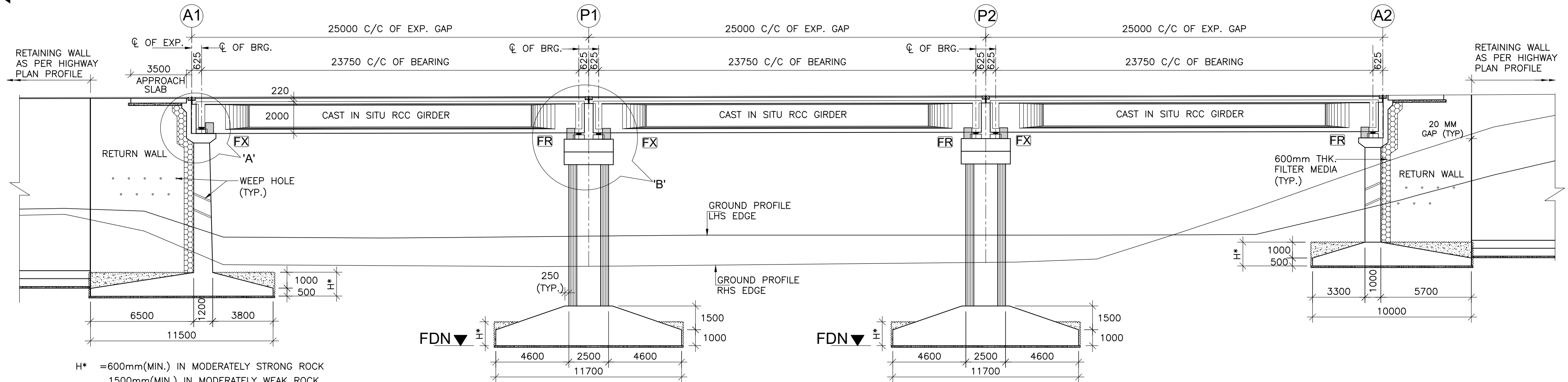
DRAWING OF STRUCTURES (PACKAGE-V) From Km 95+550 to Km 111+066

SL. No.	DRAWING TITLE	DRAWING NO.	DATE OF ISSUE OF DRAWINGS	REVISION STATUS & DATE
A. MAJOR BRIDGES				
1	GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT CH. 99+160.5	NHIDCL/NH-244/KHELLANI-CHATTROO/MJB/99+160.5/01/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/MJB/99+160.5/02/R1	Dec-20	R1
B. MINOR BRIDGES				
1	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT CH. 101+815	NHIDCL/NH-244/KHELLANI-CHATTROO/MNB/101+815/01/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/MNB/101+815/02/R1	Dec-20	R1
C. VIADUCTS				
1	GENERAL ARRANGEMENT DRAWING FOR VIADUCT AT CH. 109+606	NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/01/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/02/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/03/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/04/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/05/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/06/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/07/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/08/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/VIA/109+606/09/R1	Dec-20	R1
D. CULVERTS				
1	GENERAL ARRANGEMENT DRAWING FOR TYPICAL SINGLE CELL BOX CULVERT (TYPE-1)	NHIDCL/NH-244/KHELLANI-CHATTROO/CUL/TYPE-1/01/R1	Dec-20	R1
2	GENERAL ARRANGEMENT DRAWING FOR TYPICAL SINGLE CELL BOX CULVERT (TYPE-2)	NHIDCL/NH-244/KHELLANI-CHATTROO/CUL/TYPE-2/01/R1	Dec-20	R1
		NHIDCL/NH-244/KHELLANI-CHATTROO/CUL/TYPE-2/02/R1	Dec-20	R1
E. MISCELLANEOUS				
1	DETAILS OF APPROACH SLAB	NHIDCL/NH-244/KHELLANI-CHATTROO/MISC/01/R1	Dec-20	R1
2	DETAILS OF DRAINAGE SPOUT & WEARING COAT	NHIDCL/NH-244/KHELLANI-CHATTROO/MISC/02/R1	Dec-20	R1
3	DIMENSIONAL & REINFORCEMENT DETAILS OF CRASH BARRIER	NHIDCL/NH-244/KHELLANI-CHATTROO/MISC/03/R1	Dec-20	R1
4	DETAILS OF FILLER TYPE EXPANSION JOINT	NHIDCL/NH-244/KHELLANI-CHATTROO/MISC/04/R1	Dec-20	R1
5	DIMENSIONAL AND REINFORCEMENT DETAILS OF RCC RETAINING WALL	NHIDCL/NH-244/KHELLANI-CHATTROO/MISC/05/R1	Dec-20	R1

MAJOR BRIDGES

← KHELLANI

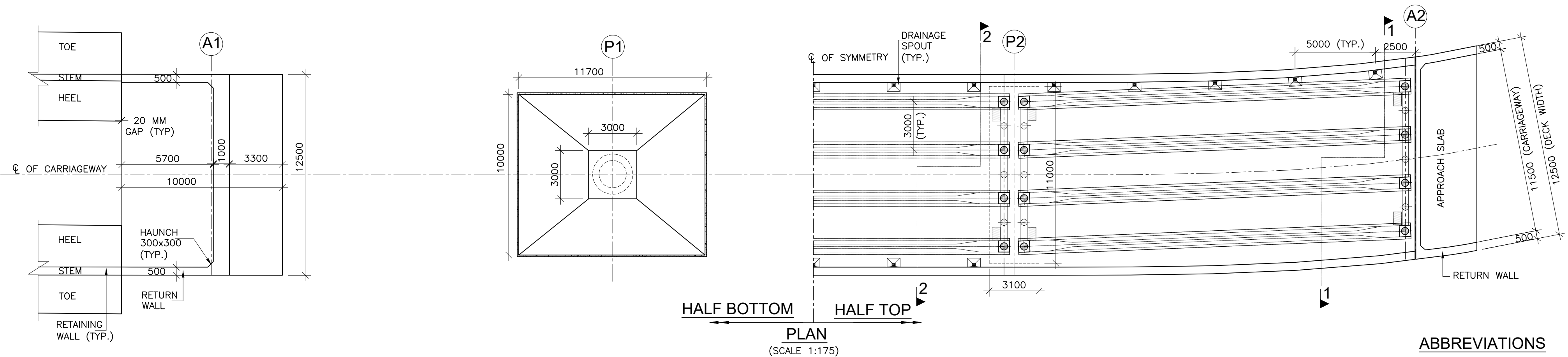
CHATTROO ➡



FORMATION LEVEL (m)	1160.768	1160.809	1160.849	1160.889
LOWEST GROUND LEVEL (m)	1151.068	1150.120	1150.365	1154.021
FOUNDING LEVEL (m)	1148.240	1145.100	1145.100	1150.140
CHAINAGE (Km)	99+123	99+148	99+173	99+198



SECTIONAL ELEVATION OF PROPOSED BRIDGE

(SCALE 1:175)



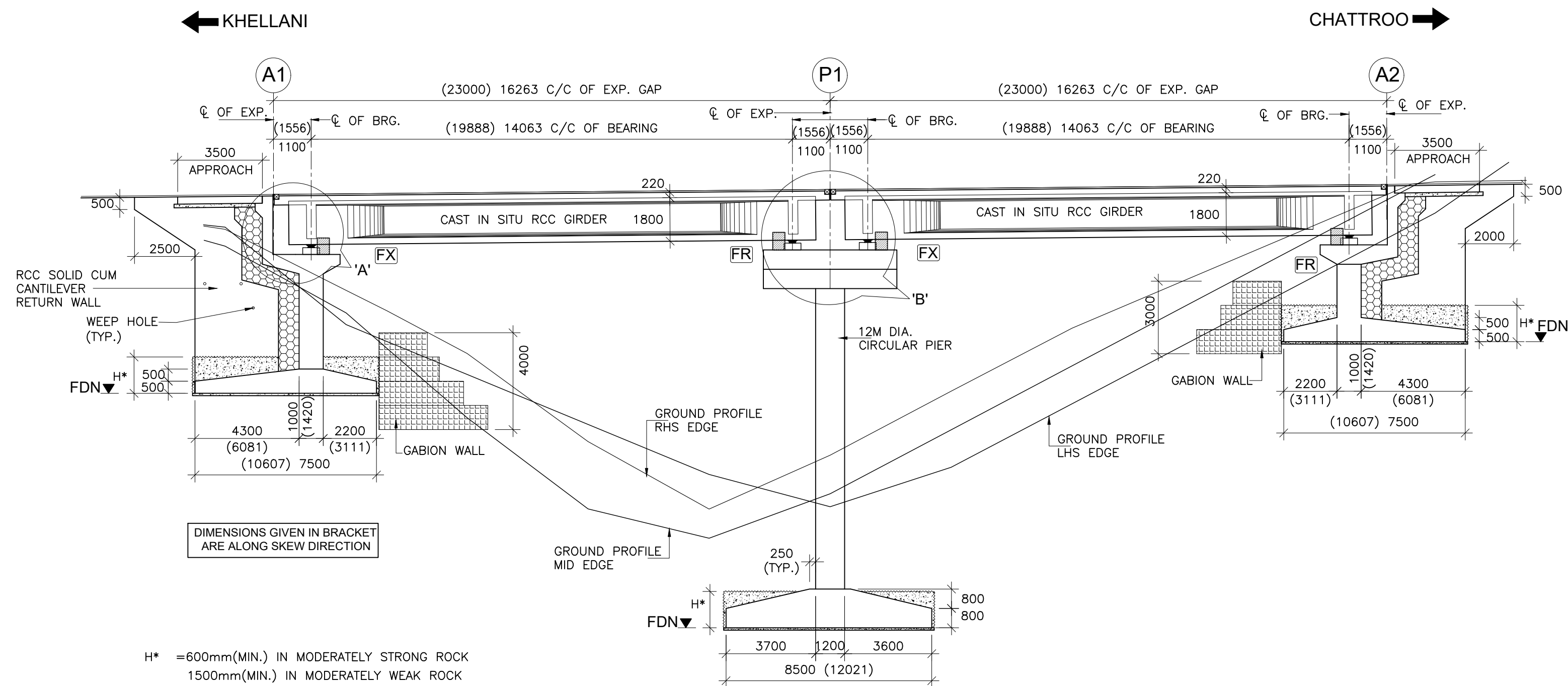
ABBREVIATIONS

FRL	:	FINISHED ROAD LEVEL
HFL	:	HIGH FLOOD LEVEL
C/C	:	CENTER LINE
LVL.	:	LEVEL
TYP.	:	TYPICAL
THK.	:	THICK
FR	:	FREE BEARING
FX	:	FIXED BEARING
C/C	:	CENTER TO CENTER
GL	:	GROUND
FDN	:	FOUNDATION
EXP	:	EXPANSION
BRG.	:	BEARING
RCC	:	REINFORCED CEMENT CONCRETE

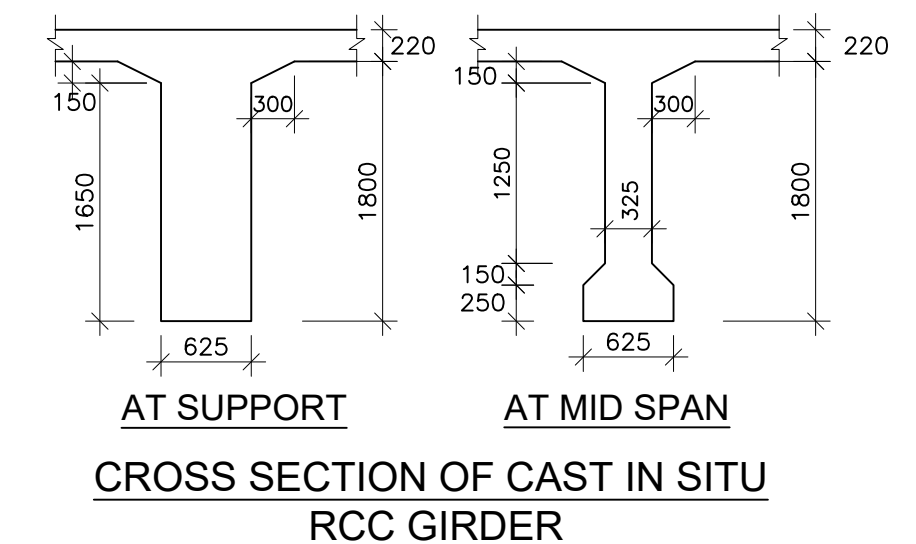
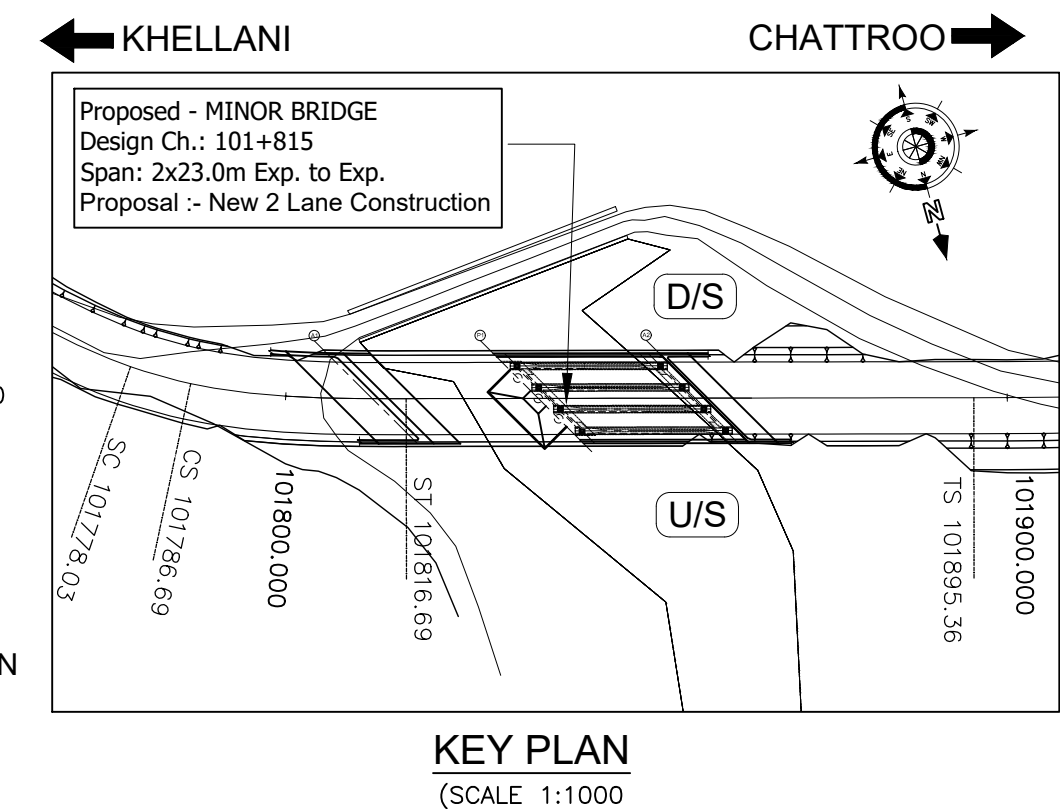
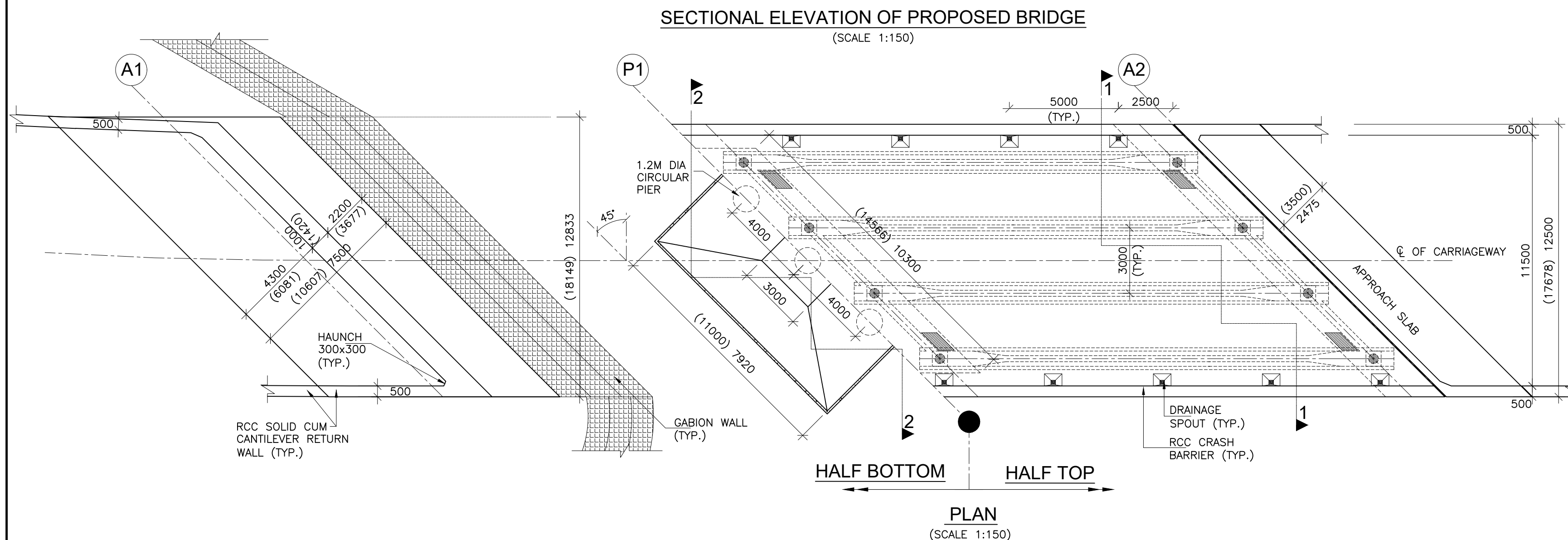
ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:						
R0	Oct :-2020		 NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 	From Design Km. 95+550 to Km. 111+066	TENDER DRAWING	Project:- CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	Scale :- As Shown	Drawing Title Sheet size: A2 Drawing No. GENERAL ARRANGEMENT DRAWING FOR MAJOR BRIDGE AT CH. 99+160.5 NHIDCL/NH244/KHELLANI - CHATTROO/MJB/99+160.5/01/R1	Annex III
R1	Dec :-2020									

[illegible]

MINOR BRIDGES




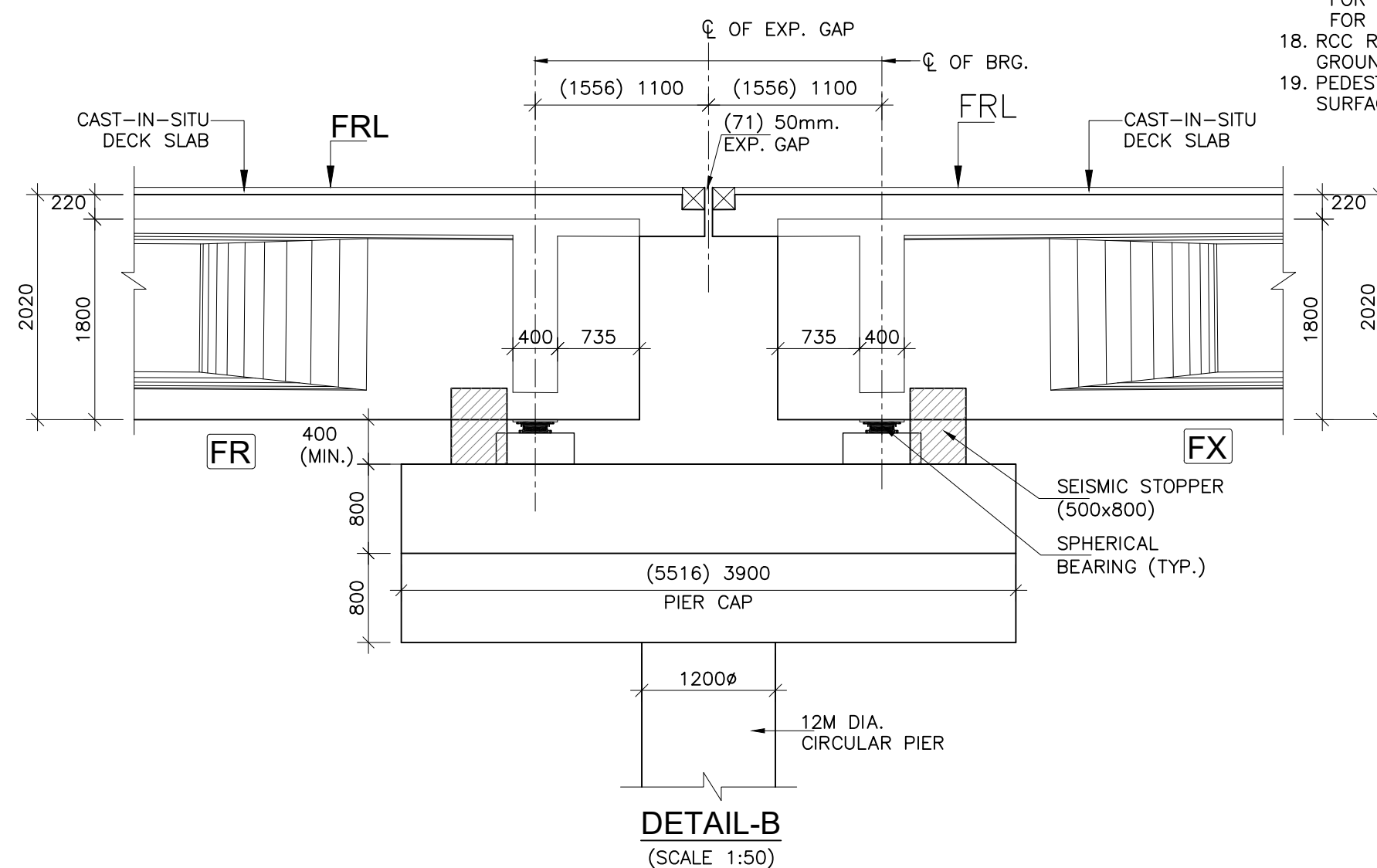
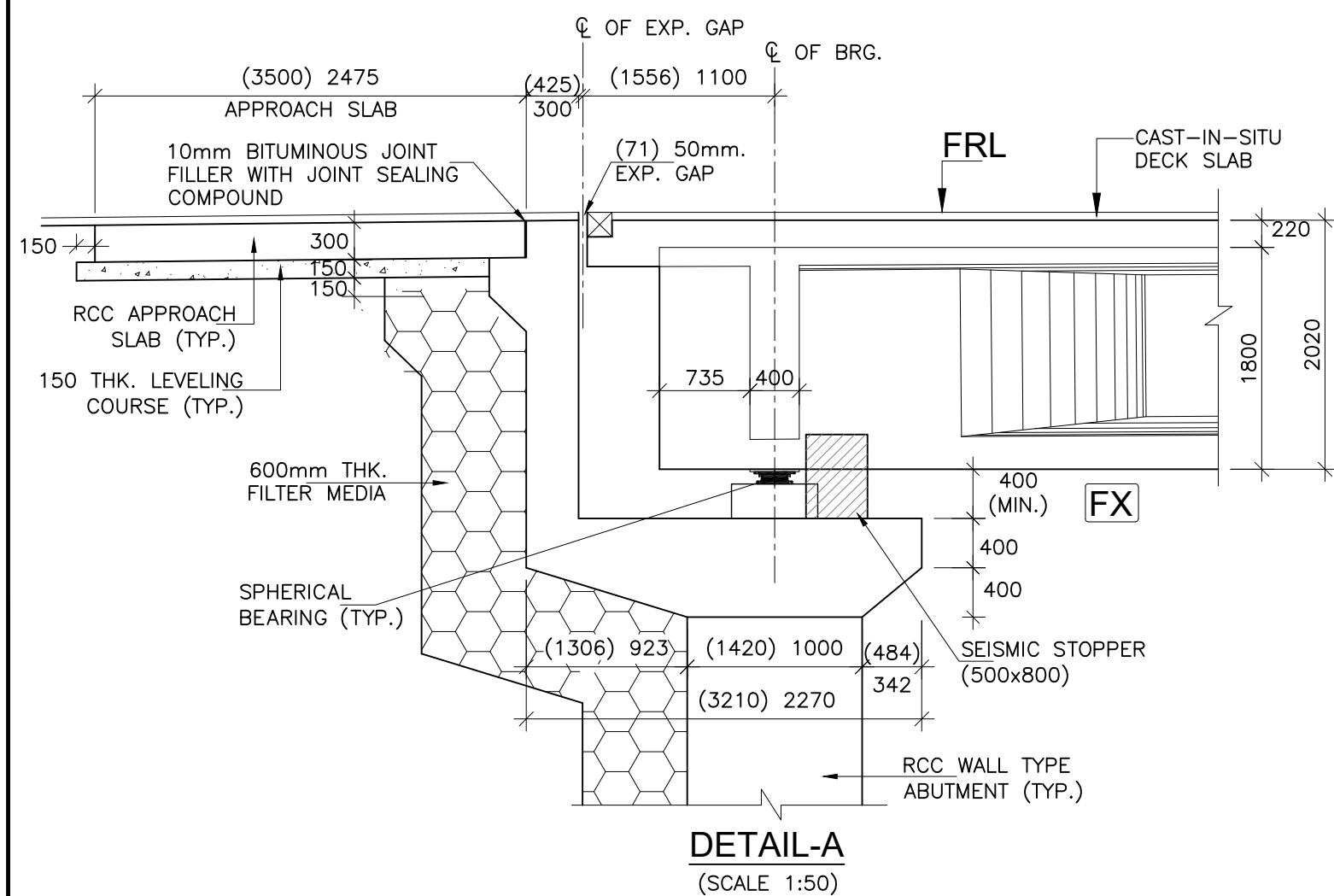
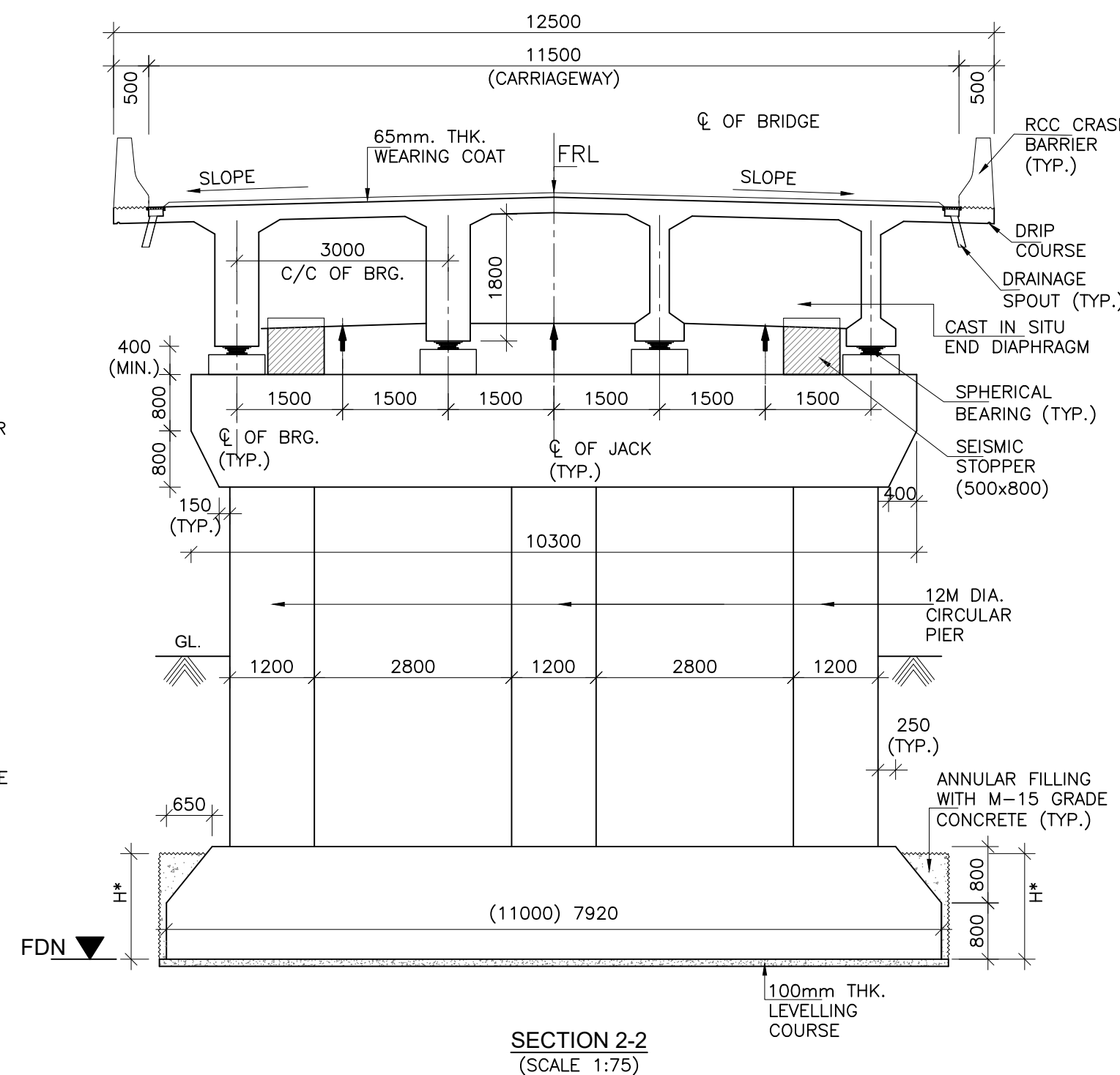
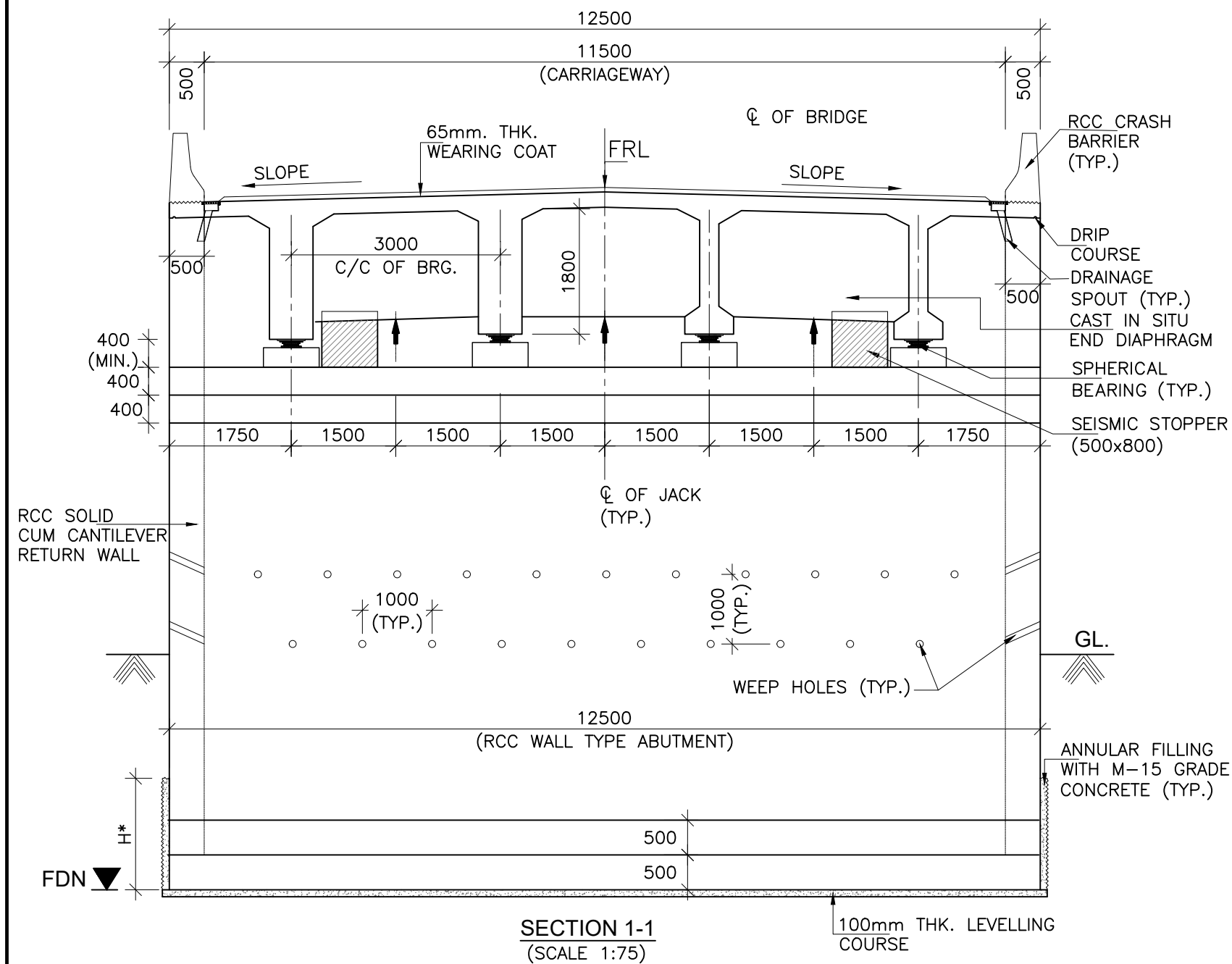
FORMATION LEVEL (m)	1217.327	1217.534	1217.772
LOWEST GROUND LEVEL (m)	1213.564	1204.420	1215.537
FOUNDING LEVEL (m)	1209.110	1199.420	1211.270
CHAINAGE (Km)	101+792	101+815	101+838



ABBREVIATIONS

FRL	:	FINISHED ROAD LEVEL
HFL	:	HIGH FLOOD LEVEL
C/C	:	CENTER LINE
LVL.	:	LEVEL
TYP.	:	TYPICAL
THK.	:	THICK
FR	:	FREE BEARING
FX	:	FIXED BEARING
C/C	:	CENTER TO CENTER
GL	:	GROUND
FDN	:	FOUNDATION
EXP	:	EXPANSION
BRG.	:	BEARING
RCC	:	REINFORCED CEMENT CONCRETE

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	CONSULTANT:  RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 	From Design Km. 95+550 to Km. 111+066 <div> Designed: HM Drawn: SB Designed: VT Approved: AM </div>	TENDER DRAWING Scale :- As Shown	Project:- Drawing Title Sheet size: A2 Drawing No.	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT CH. 101+815 NHIDCL/NH244/KHELLANI - CHATTROO/MNB/101+815/01/R1	Annex III
R0	Oct :-2020								
R1	Dec :-2020								






NOTE:-

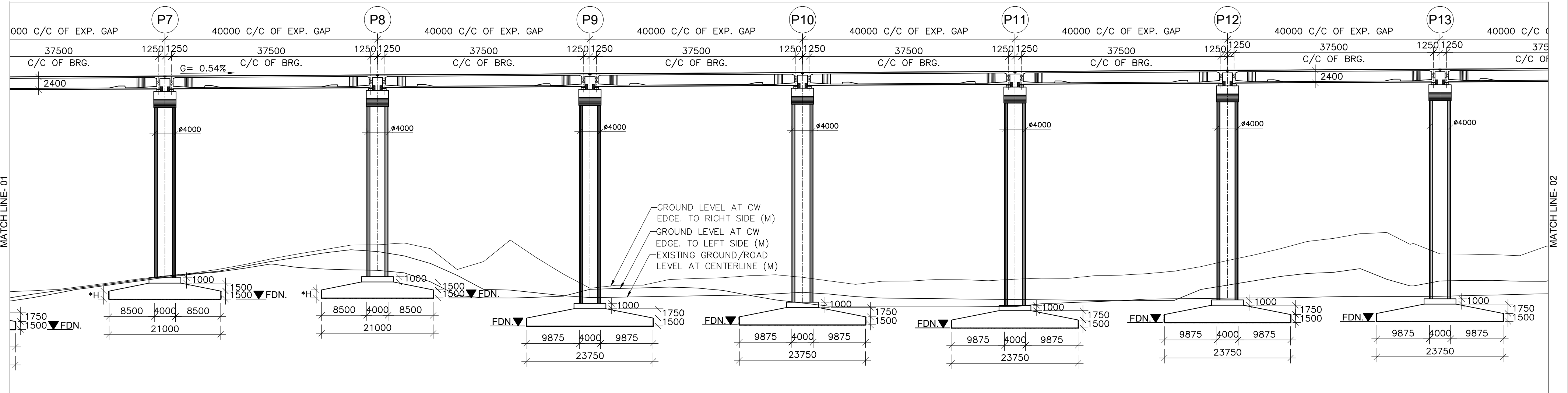
1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
2. THE BRIDGE IS DESIGNED FOR GOVERNING CASE OF FOLLOWING
 - i) ONE LANE OF IRC CLASS 70R + ONE LANE OF IRC CLASS A.
 - ii) THREE LANE OF IRC CLASS A
 - iii) IRC CLASS SV LOADING: SPECIAL MULTI AXLE HYDRAULIC TRAILER VEHICLE
(PRIME MOVER WITH 20 AXLE TRAILER-GVW=385 Tonnes)
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES AS FOLLOWS :-

RCC CAST-IN-SITU GIDER & DECK SLAB	-35 MPa
ABUTMENT, ABUTMENT CAP, DIRT WALL & FOUNDATION	-35 MPa
RCC CRASH BARRIER	-40 MPa
RCC APPROACH SLAB	-30 MPa
LEVELING COURSE UNDER APPROACH SLAB	-15 MPa
LEVELING COURSE UNDER FOUNDATION	-10 MPa
PEDESTAL & SEISMIC RESTRAINER	-45 MPa
4. THE REINFORCING BARS SHALL BE OF THERMO MECHANICAL TREATED HYSD (GRADE DESIGNATION Fe-500D) CONFORMING TO IS:1786 STANDARDS.
5. CORRUGATED HDPE SHEATHING CONFORMING TO IS: 14268-1995.
6. CLEAR COVER TO OUTER MOST STEEL SHALL BE AS UNDER:-
 - a) FOR SUPER STRUCTURE -50mm
 - b) FOR FOUNDATION -75mm
 - c) FOR SUBSTRUCTURE:
 - i) EARTH FACE -75mm
 - ii) NON EARTH FACE -50mm
7. 65mm THK. WEARING COURSE COMPRISING OF 40mm THK. ASPHALTIC CONCRETE OVER LAID WITH 25mm THK. MASTIC ASPHALT SHALL BE PROVIDED AS PER SECTION 500 OF MORTH SPECIFICATIONS.
8. SPHERICAL BEARINGS SHALL BE DESIGNED AS PER PROVISION OF IRC : 83 (PART-IV 2014).
9. STRIP SEAL TYPE EXPANSION JOINTS SHALL BE PROVIDED AS PER PROVISION OF SP-69.
10. BACK FILLING BEHIND ABUTMENT SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi \geq 35^\circ$, $\delta=22.5^\circ$ & $\gamma_d = 20 \text{ KN/m}^3$
11. 100mm DIA WEEP HOLES AT 1000mm C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN STAGGERED MANNER IN VERTICAL WALLS OF THE ABUTMENT SHAFT AND RETURN WALL FROM 150mm ABOVE G.L IN ONE OR TWO LAYERS AT A SLOPE OF 1 VERTICAL TO 20 HORIZONTAL TOWARDS THE DRAINING FACE.
12. WATER TO BE USED IN CONCRETING & CURING SHALL CONFORM TO CLAUSE 18.8.4(4) IRC : 112:2011.
13. SAFE BEARING CAPACITY ASSUMED IN DESIGN AT PROPOSED FOUNDING LEVEL IS 35 t/m^2 . THIS SHALL BE ASCERTAINED BEFORE EXECUTION OF WORK AT SITE.
14. THE BRIDGE IS DESIGNED FOR SEISMIC ZONE-V
15. MODERATE CONDITION OF EXPOSURE SHALL BE CONSIDERED IN DESIGN.
16. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWING. FRL & CAMBER, SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWINGS.
17. THE MINIMUM EMBEDMENT OF THE FOUNDATIONS INTO THE ROCK BELOW SHALL BE AS FOLLOWS:

FOR ROCKS OF MODERATELY STRONG	= 0.6M
FOR ROCKS OF MODERATELY WEAK	= 1.5M
18. RCC RETAINING WALL SHALL BE PROVIDED UPO 2M HEIGHT ABOVE GROUND LEVEL. BELOW 2M HEIGHT, PCC TOE WALL SHALL BE PROVIDED.
19. PEDESTAL BEARING SHALL BE PLACED BETWEEN TRUE HORIZONTAL SURFACES.

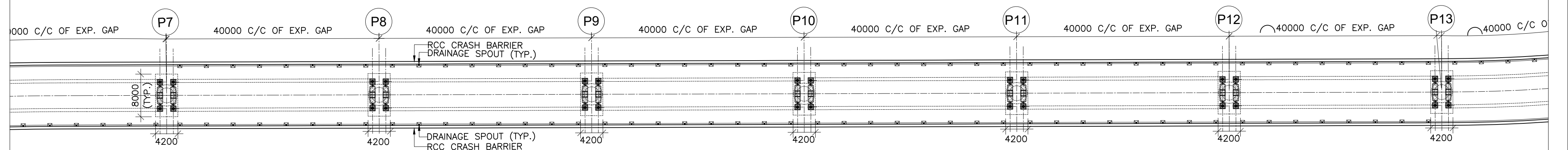
ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	CONSULTANT:  RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 	From Design Km. 95+550 to Km. 111+066		TENDER DRAWING	Project:- CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR				
R0	Oct :-2020				Designed: HM				Scale :- As Shown	Drawing Title	GENERAL ARRANGEMENT DRAWING FOR MINOR BRIDGE AT CH. 101+815	Annex III
R1	Dec :-2020				Drawn: SB							
					Designed: VT		Drawing size: A2	Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/MNB/101+815/02/R1			
					Approved: AM							

VIADUCTS

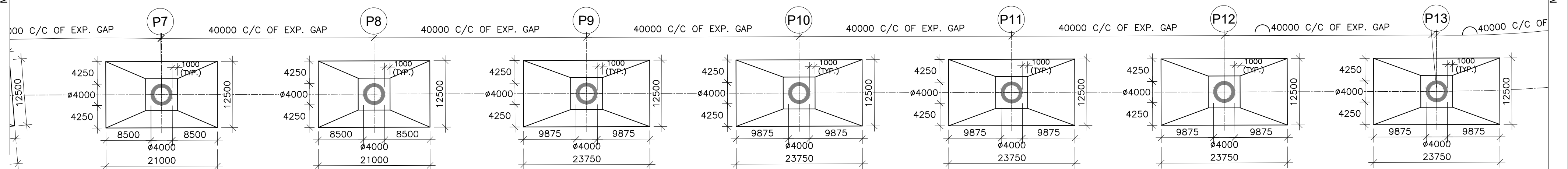


FORMATION LEVEL (m)	1507.327	1507.544	1507.761	1507.977	1508.194	1508.410	1508.627
LOWEST GROUND LEVEL(m)	1469.392	1470.733	1465.622	1464.582	1463.896	1465.500	1465.851
FOUNDING LEVEL (m)	1465.330	1465.545	1460.260	1460.480	1459.895	1460.910	1461.130
CHAINAGE (Km)	109+261	109+301	109+341	109+381	109+421	109+461	109+501

LONGITUDINAL ELEVATION OF VIADUCT
(SCALE 1:500)






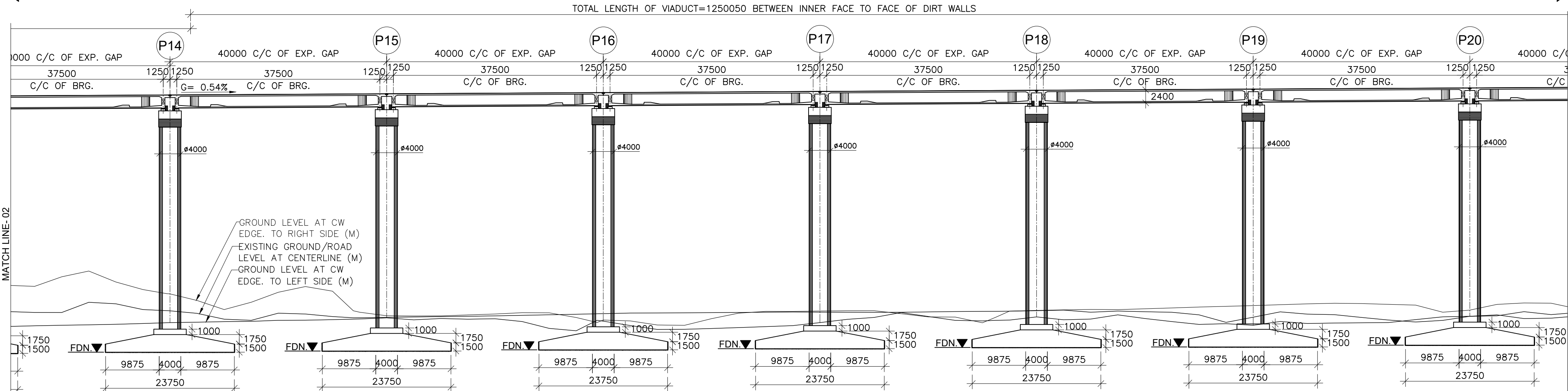
TOP PLAN
(SCALE 1:500)



BOTTOM PLAN
(SCALE 1:500)

SPAN ARRANGEMENT
30x40.0m+1x30.0m+1x20.0m
Total Length of Bridge= 1250.0m

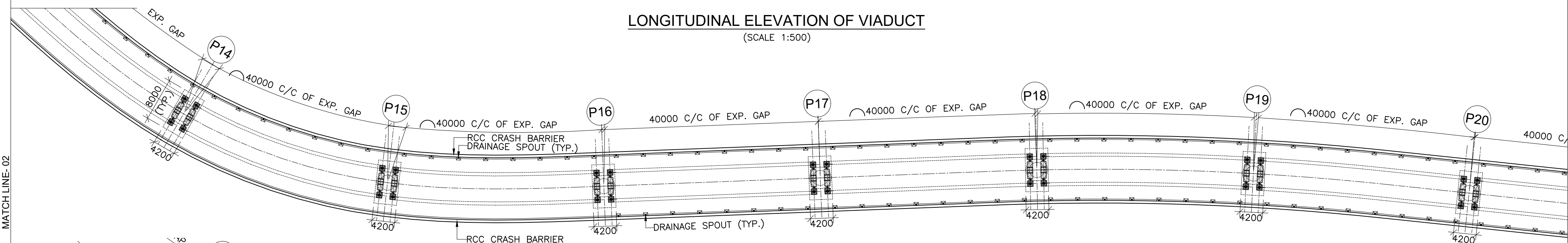
ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	Project:-	TENDER DRAWING	Drawing Title	Sheet size: A2	Annex III
R0	Oct :-2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.		From Design Km. 95+550 to Km. 111+066		CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR		
R1	Dec :-2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 			Scale :- As Shown	GENERAL ARRANGEMENT DRAWING FOR VIADUCT AT CH. 109+606		
					Designed: AV Drawn: AH Designed: VT Approved: AM		NHIDCL/NH244/KHELLANI - CHATTROO/ VIA/109+606/03/R1		



FORMATION LEVEL (m)	1508.844	1509.060	1509.277	1509.493	1509.710	1509.927	1510.143
LOWEST GROUND LEVEL(m)	1466.798	1467.674	1467.069	1466.799	1467.857	1466.307	1467.972
FOUNDING LEVEL (m)	1461.345	1461.560	1461.780	1461.990	1462.210	1462.305	1462.645
CHAINAGE (Km)	109+541	109+581	109+606	109+621	109+661	109+701	109+781

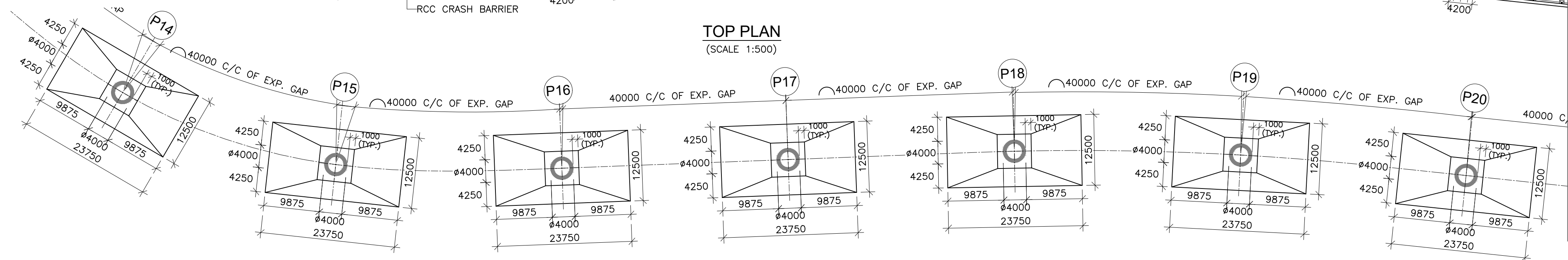
LONGITUDINAL ELEVATION OF VIADUCT

(SCALE 1:500)



TOP PLAN

(SCALE 1:500)



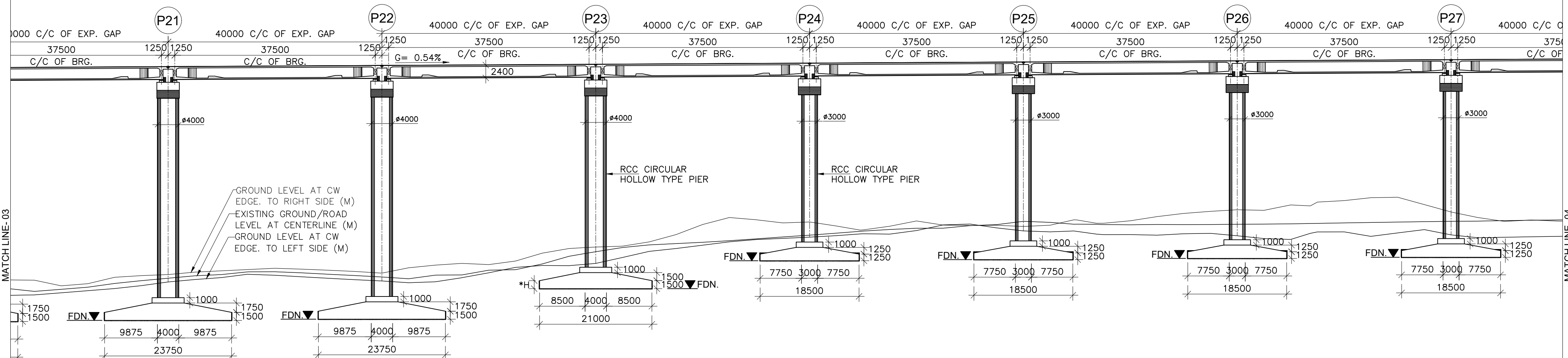
BOTTOM PLAN

(SCALE 1:500)

SPAN ARRANGEMENT
30x40.0m+1x30.0m+1x20.0m
Total Length of Bridge= 1250.0m

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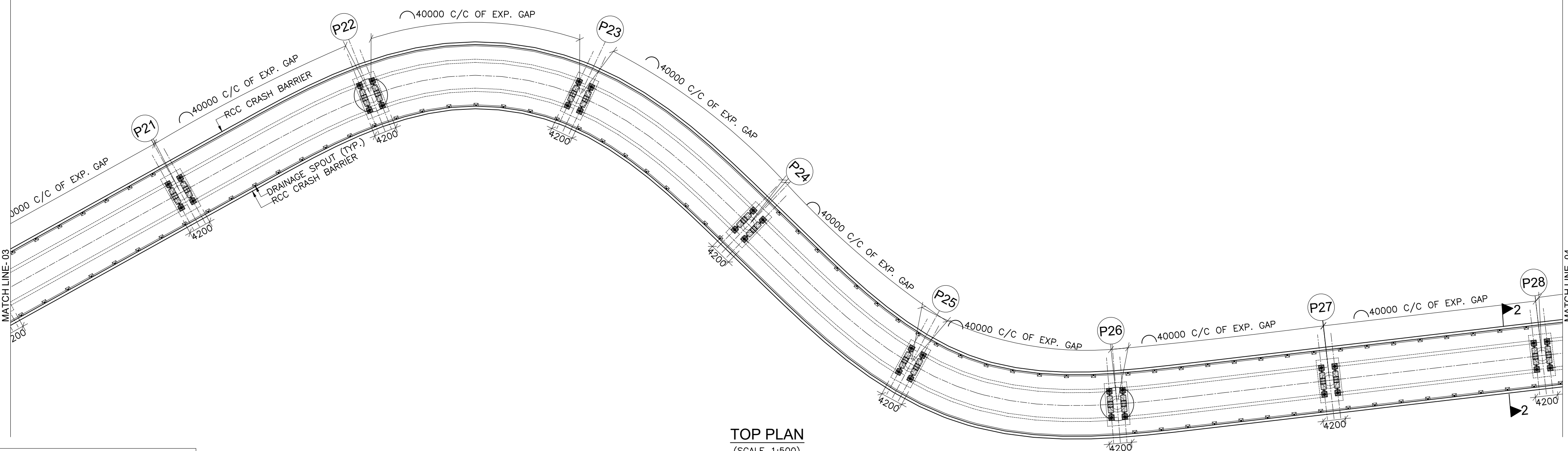
TOTAL LENGTH OF VIADUCT=1250050 BETWEEN INNER FACE TO FACE OF DIRT WALLS



FORMATION LEVEL (m)	1510.360	1510.576	1510.793	1511.009	1511.226	1511.443	1511.659
LOWEST GROUND LEVEL(m)	1470.047	1470.233	1473.520	1478.429	1479.592	1478.681	1478.854
FOUNDING LEVEL (m)	1462.860	1463.075	1468.790	1474.010	1474.225	1474.445	1474.660
CHAINAGE (Km)	109+821	109+861	109+901	109+941	109+981	110+021	110+061

LONGITUDINAL ELEVATION OF VIADUCT



(SCALE 1:500)

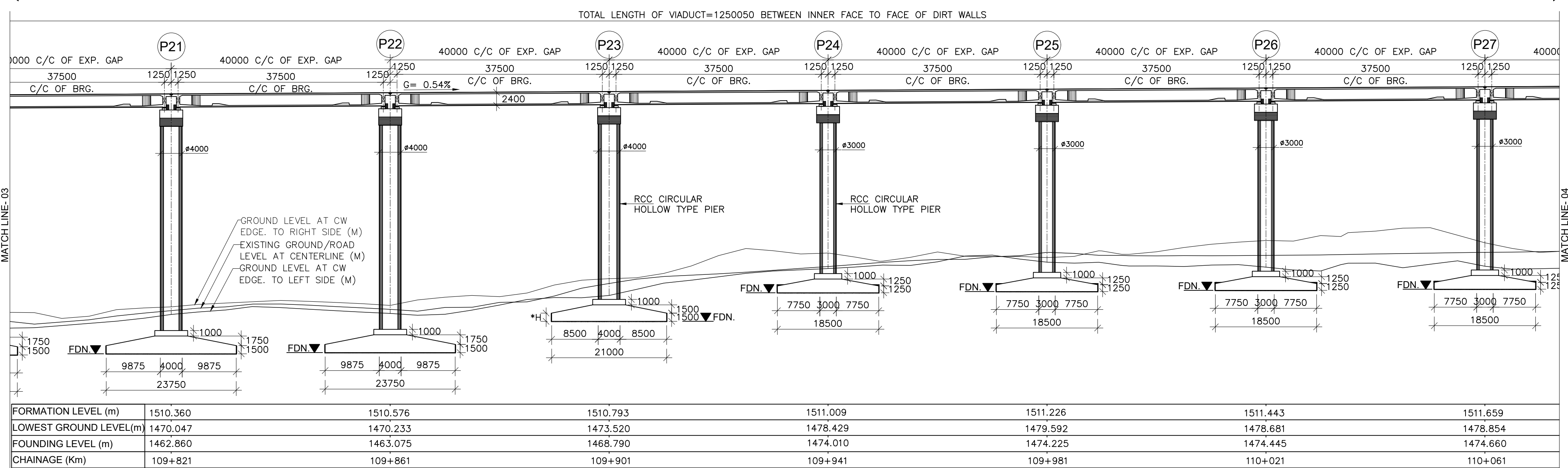


TOP PLAN

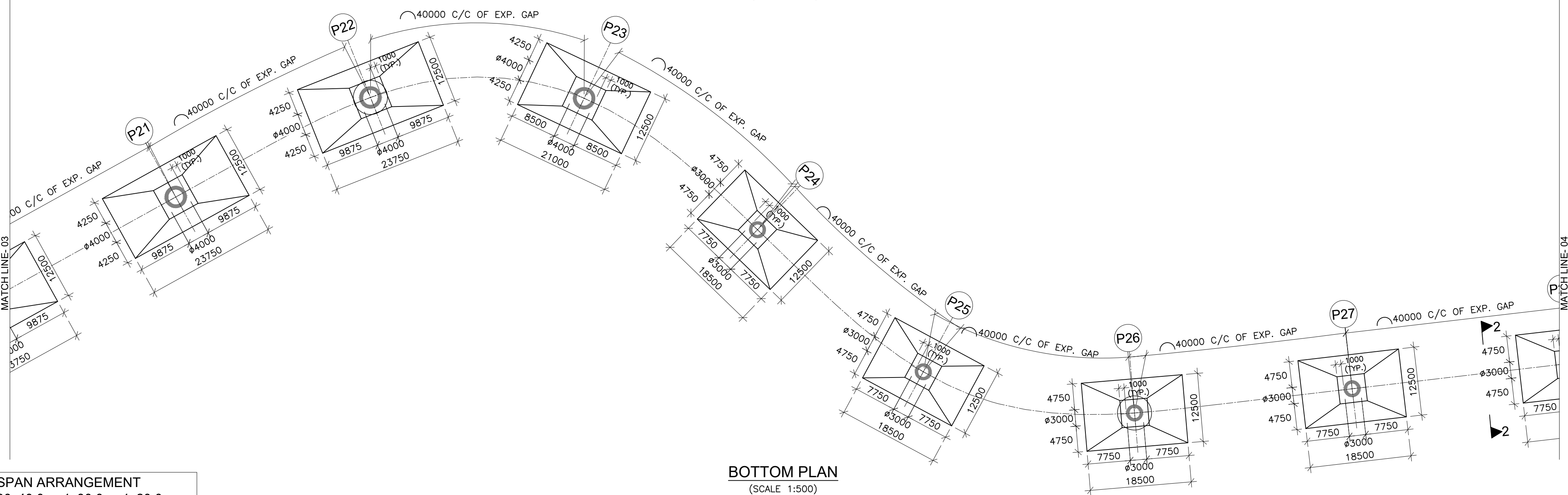
(SCALE 1:500)

SPAN ARRANGEMENT
30x40.0m+1x30.0m+1x20.0m
Total Length of Bridge= 1250.0m

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:				Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
R0	Oct :-2020		 NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	  RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	From Design Km. 95+550 to Km. 111+066	TENDER DRAWING		Scale :- As Shown	Drawing Title Sheet size: A2 Drawing No. NHIDCL/NH244/KHELLANI - CHATTROO/ VIA/109+606/05/R1	Annex III
R1	Dec :-2020									



LONGITUDINAL ELEVATION OF VIADUCT
(SCALE 1:500)



BOTTOM PLAN
(SCALE 1:500)

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Oct :-2020	
R1	Dec :-2020	

CLIENT

NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT & HIGHWAY)
GOVERNMENT OF INDIA

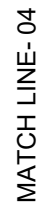
CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
In Association with
Monarch Surveyors and Engineering
Consultants Pvt. Ltd.,

From Design Km. 95+550 to Km. 111+066	
Designed:	AV
Drawn:	AH
Designed:	VT
Approved:	AM

TENDER DRAWING
Scale :- As Shown

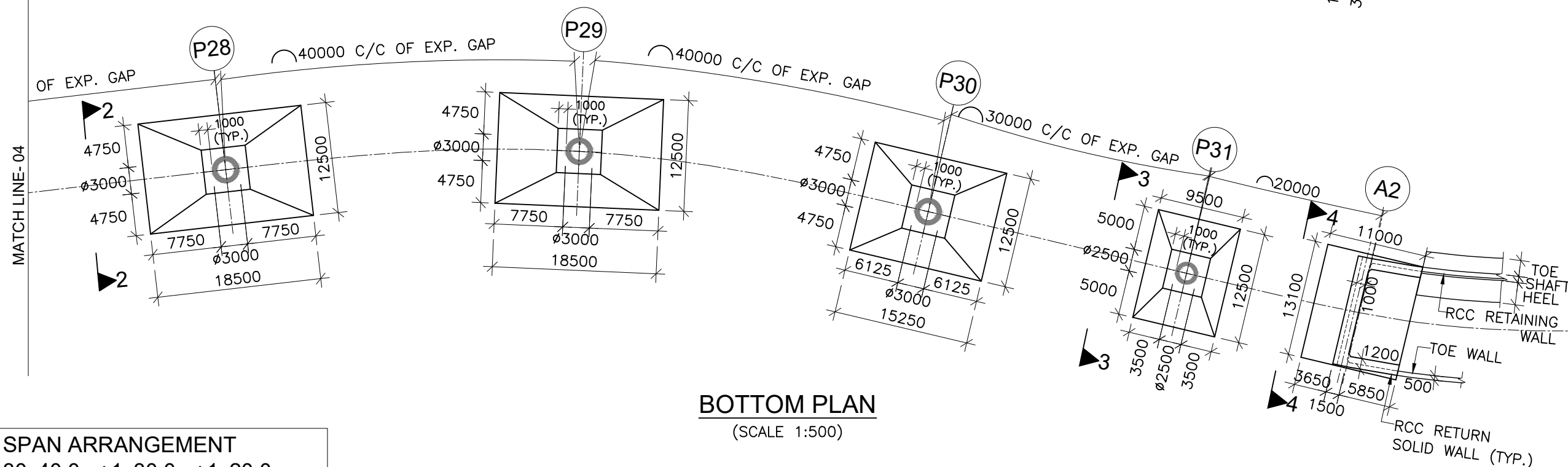
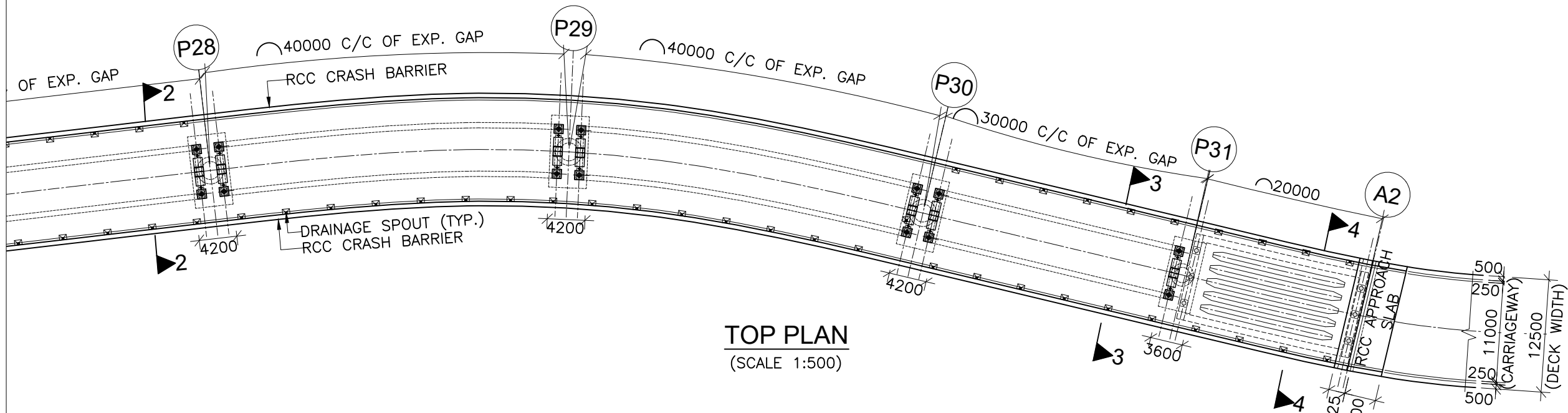
Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
Drawing Title Sheet size: A2	GENERAL ARRANGEMENT DRAWING FOR VIADUCT AT CH. 109+606	Annex III
Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/ VIA/109+606/06/R1	



FORMATION LEVEL (m)	1511.876	1512.092	1512.309	1512.482	1512.718
LOWEST GROUND LEVEL(m)	1478.926	1481.456	1487.091	1498.000	1503.548
FOUNDING LEVEL (m)	1474.875	1475.090	1481.810	1493.980	1500.545
CHAINAGE (Km)	110+101	110+141	110+181	110+211	110+231

LONGITUDINAL ELEVATION OF VIADUCT

(SCALE 1:500)



SPAN ARRANGEMENT

30x40.0m+1x30.0m+1x20.0m
Total Length of Bridge= 1250.0m

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Oct :-2020	
R1	Dec :-2020	

CLIENT

NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(MINISTRY OF ROAD TRANSPORT & HIGHWAY)
GOVERNMENT OF INDIA



CONSULTANT:



RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

**In Association with
Monarch Surveyors and Engineering
Consultants Pvt. Ltd.,**

From Design Km. 95+550 to Km. 111+066

6 TENDER DRAWING

Designed:	AV		
Drawn:	AH		
Designed:	VT		
Approved:	AM		

Scale :-
As Shown

Project:-

CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+350 TO KM 111+066 OF LENGTH 15.16 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR

Drawing Title	GENERAL ARRANGEMENT DRAWING FOR VIADUCT AT CH. 109+606
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Annex III

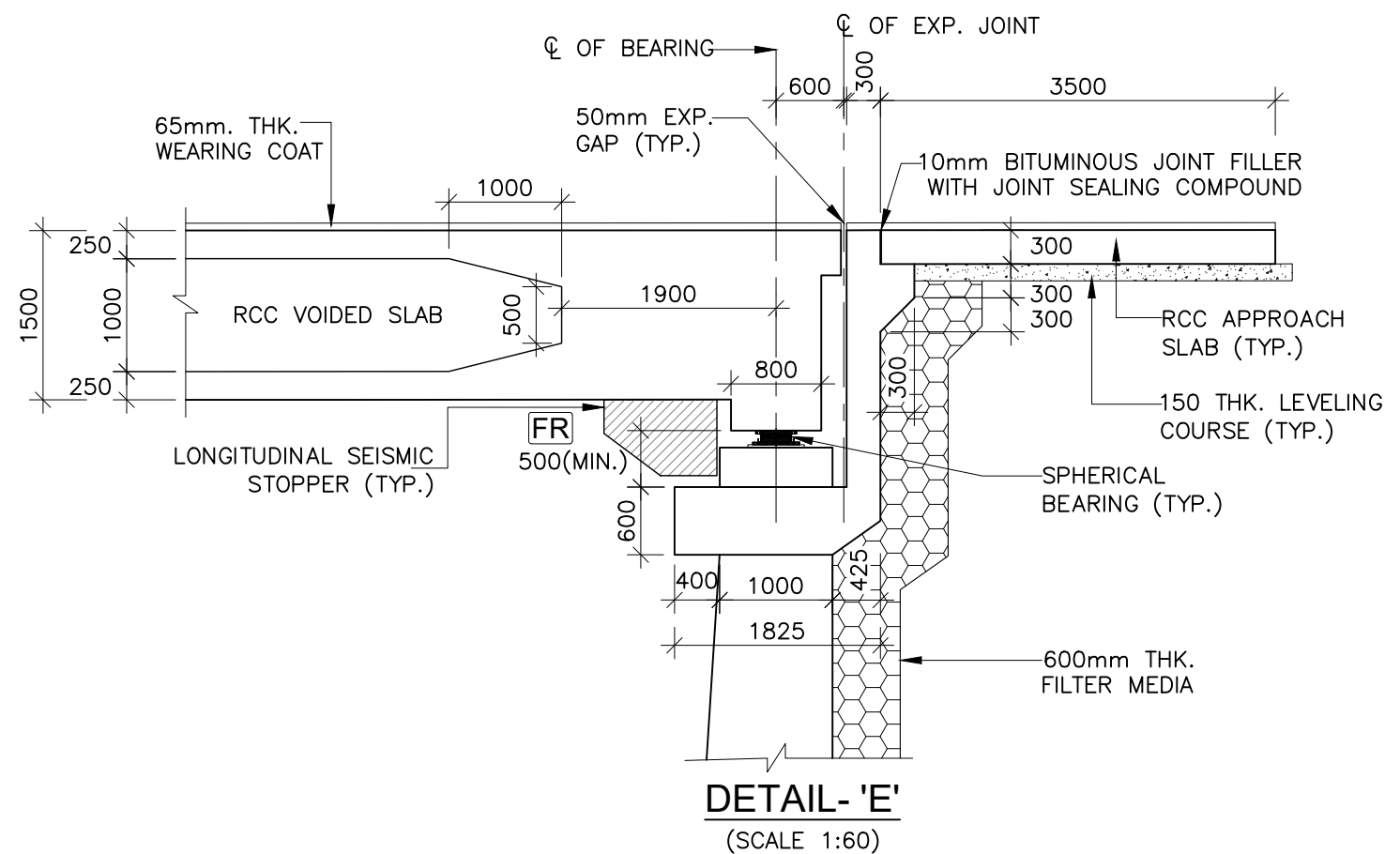
Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/ VIA/109+606/07/R1
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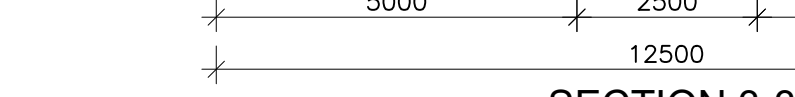
NOTES:-

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSIONS SHALL BE SCALED.
2. i) EACH CARRIAGEWAY OF THE PROPOSED BRIDGE IS TO BE DESIGNED FOR ONE LANE OF IRC CLASS 70R + ONE LANE OF IRC CLASS A OR 3 LANES OF IRC CLASS A LOADING GOVERNS.
ii) THIS BRIDGE IS ALSO TO BE FOR DESIGNED FOR IRC CLASS SV LOADING: SPECIAL MULTI AXLE HYDRAULIC TRAILER VEHICLE (PRIME MOVER WITH 20 AXLE TRAILER-GVW=385 Tonnes).
3. CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH ON 150mm CUBES AS FOLLOWS :-

PRECAST PSC GIRDER	-50 MPa
RCC VOIDED SLAB	-40 MPa
RCC DECK SLAB	-40 MPa
SUBSTRUCTURE & FOUNDATION	-35 MPa
RCC CRASH BARRIER	-40 MPa
RCC APPROACH SLAB	-30 MPa
LEVELING COURSE	-15 MPa
PEDESTAL & SEISMIC RESTRAINER	-45 MPa
4. THE REINFORCING BARS SHALL BE OF THERMO MECHANICALLY TREATED/CORROSION RESISTANT STEEL (TMT/CRS) (GRADE DESIGNATION Fe-500D) CONFORMING TO IS:1786 STANDARDS.
5. CLEAR COVER TO OUTER MOST STEEL SHALL BE AS UNDER:-

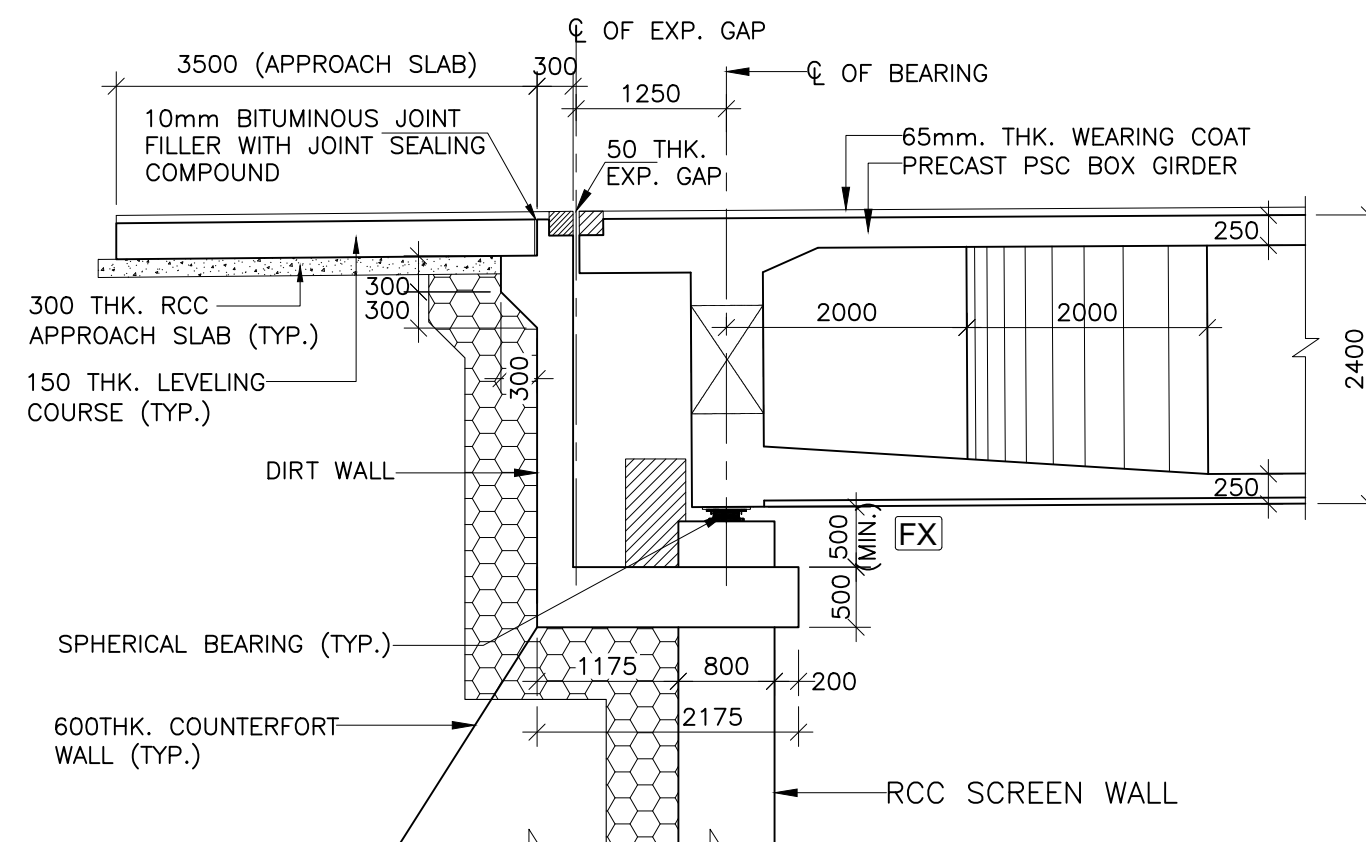
a) FOR SUPER STRUCTURE	-50mm
b) FOR FOUNDATION	-75mm
c) FOR SUBSTRUCTURE:	
i) EARTH FACE	-75mm
ii) NON EARTH FACE	-50mm
6. ALL STRUCTURAL STEEL SHALL BE OF GRADE E350 FY 330 Mpa CONFORM TO IS:2062-1999.
7. ALL WELDING SHALL CONFORM TO IS:816-1969 AND IS:1323-1982.
8. 65mm THK. WEARING COURSE COMPRISING OF 40mm THK. ASPHALTIC CONCRETE OVER LAID WITH 25mm THK. MASTIC ASPHALT SHALL BE PROVIDED AS PER SECTION 500 OF MORTH SPECIFICATIONS.
9. PAINTING WITH CORROSION RESISTANT PROTECTIVE COATING ON EXPOSED SURFACES OF STEEL MEMBER SHALL BE CARRIED OUT AS PER IRC:24.2010
10. SPHERICAL BEARINGS SHALL BE DESIGNED AS PER PROVISION OF IRC : 83 (PART-IV 2015).
11. STRIP SEAL MODULAR TYPE EXPANSION JOINTS SHALL BE PROVIDED AS PER PROVISION OF SP-69.
12. BACK FILLING BEHIND ABUTMENT SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78-2014 HAVING PROPERTIES $C=0$, $\phi \geq 35^\circ$, $\delta = 22.5^\circ$ & $\gamma_d = 20 \text{ KN/m}^3$
13. 100mm DIA WEEP HOLES AT 1000mm C/C BOTH HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN STAGGERED MANNER IN VERTICAL WALLS OF THE ABUTMENT SHAFT AND RETURN WALL FROM 150mm ABOVE G.L IN ONE OR TWO LAYERS AT A SLOPE OF 1 VERTICAL TO 20 HORIZONTAL TOWARDS THE DRAINING FACE.
14. SAFE BEARING CAPACITY CONSIDERED IN DESIGN AT PROPOSED FOUNDING LEVEL IS 45 t/m^2 . THIS SHALL BE ASCERTAINED BEFORE EXECUTION OF WORK AT SITE.
15. WATER TO BE USED IN CONCRETING & CURING SHALL CONFORM TO CLAUSE 18.8.4(4) IRC : 112:2011.
16. THE BRIDGE IS DESIGNED FOR SEISMIC ZONE- V
17. MODERATE CONDITION OF EXPOSURE SHALL BE CONSIDERED IN DESIGN.
18. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWING. FRL & CAMBER, SUPER ELEVATION AT PARTICULAR LOCATION SHALL BE VERIFIED WITH THE HIGHWAY DRAWINGS.





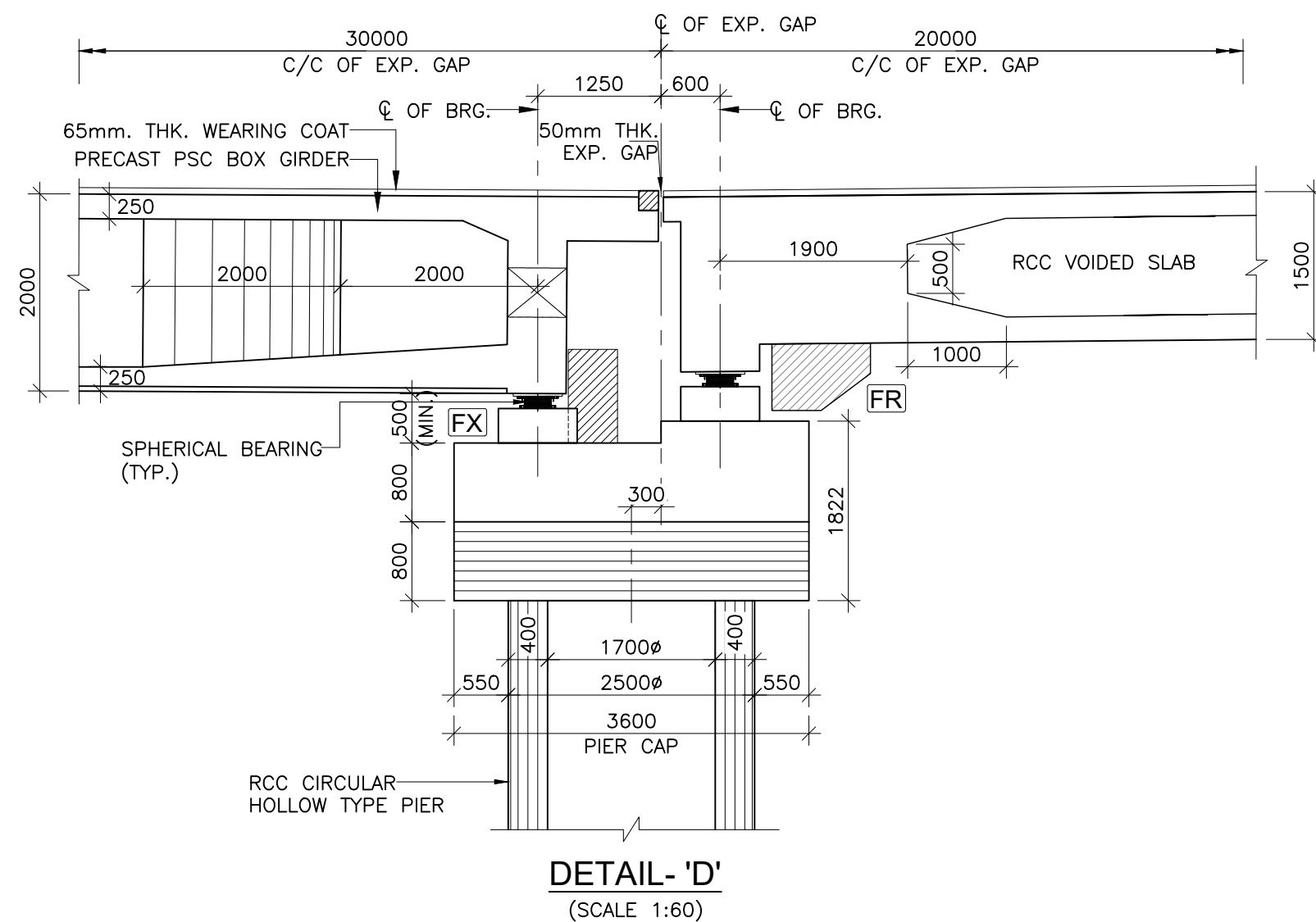
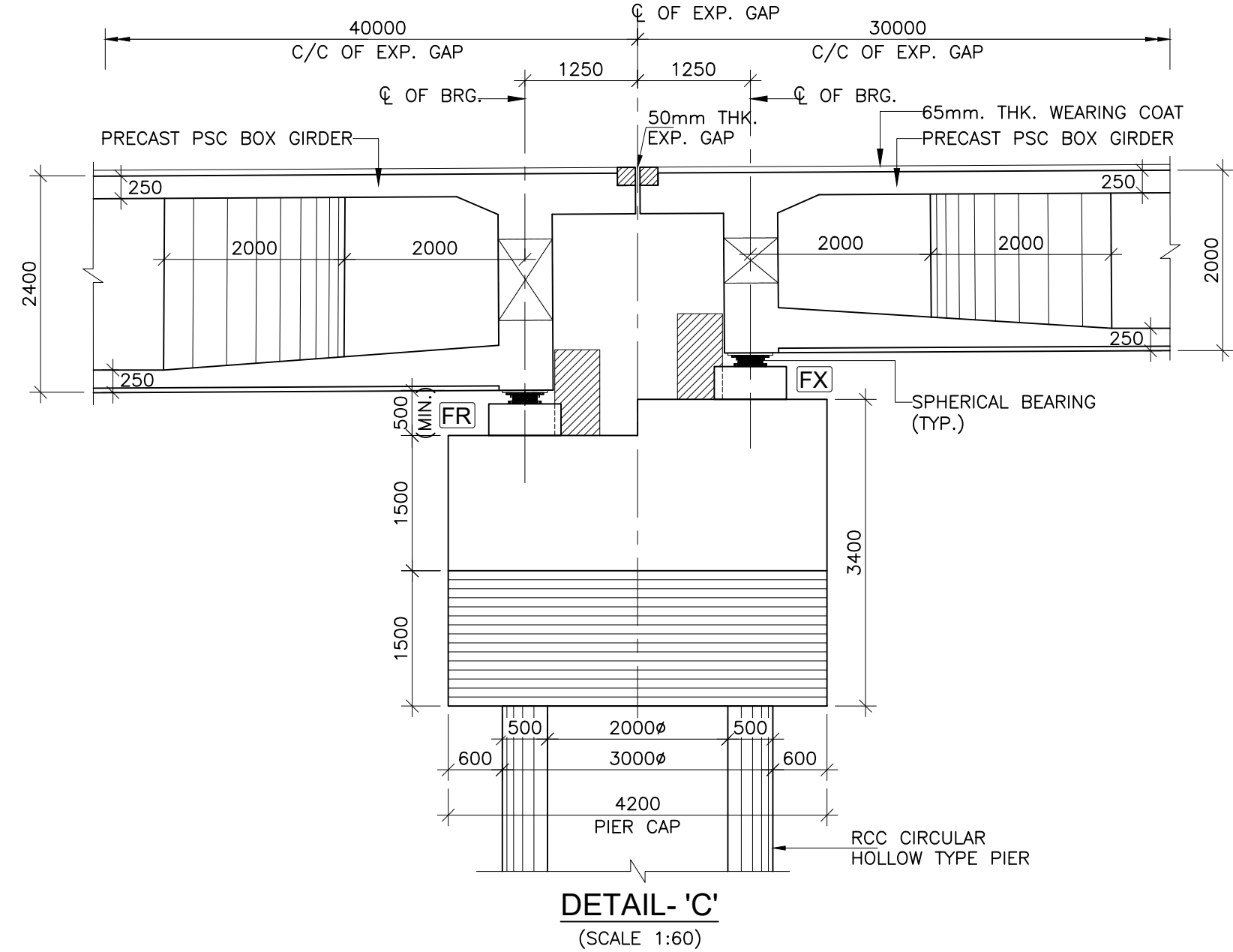
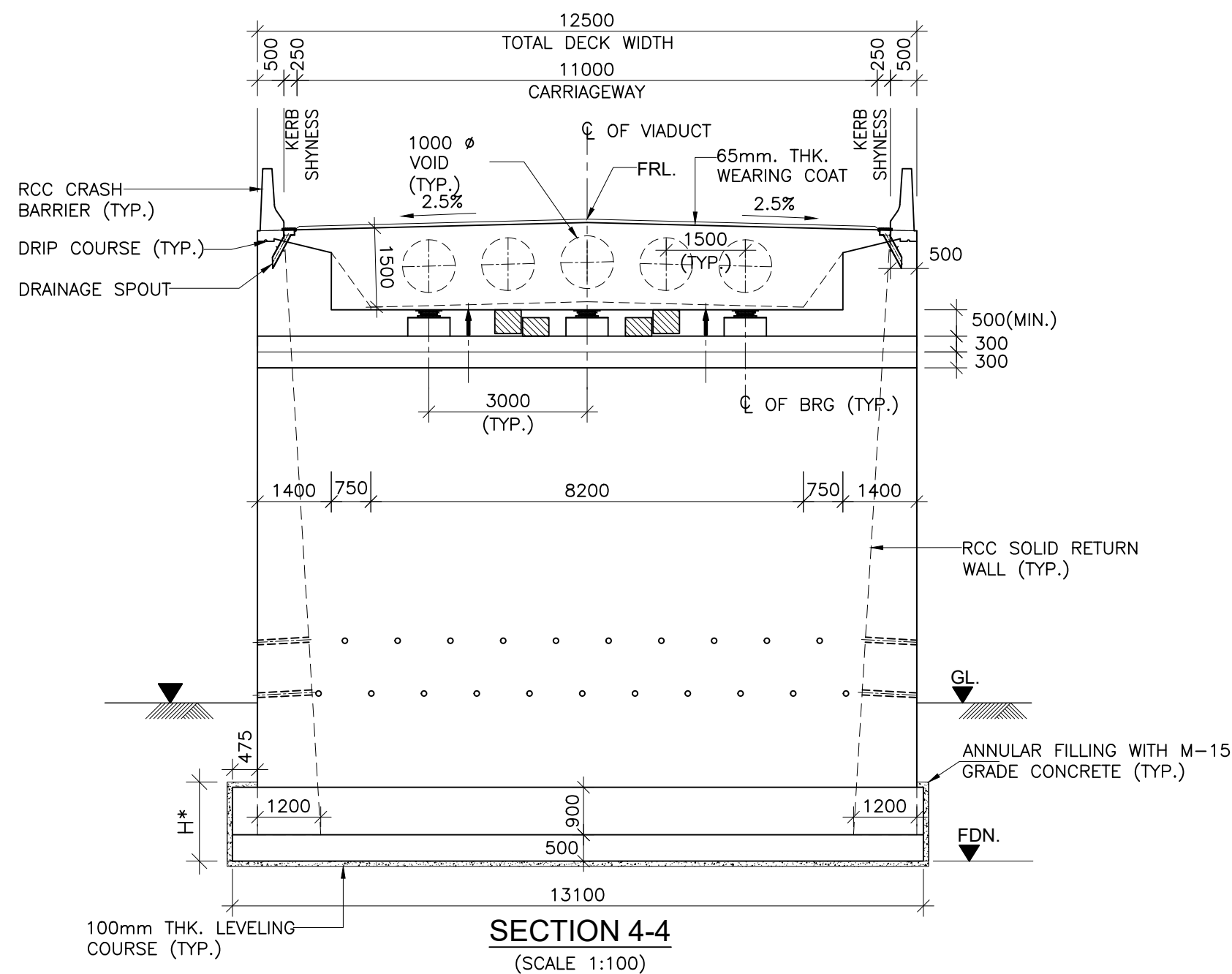
Technical drawing of a bridge cross-section showing a precast PSC box girder supported by a pier. The drawing includes dimensions for the girder (2400mm high, 4000mm wide), the pier (5200mm wide, 3000mm high), and the expansion gap (1250mm). Labels include 'PRECAST PSC BOX GIRDER', 'EXP. GAP', 'C/C OF EXP. GAP', 'FR', 'FX', 'SPHERICAL BEARING (TYP.)', and 'RCC CIRCULAR HOLLOW TYPE PIER'.

DETAIL- 'B'
(SCALE 1:60)



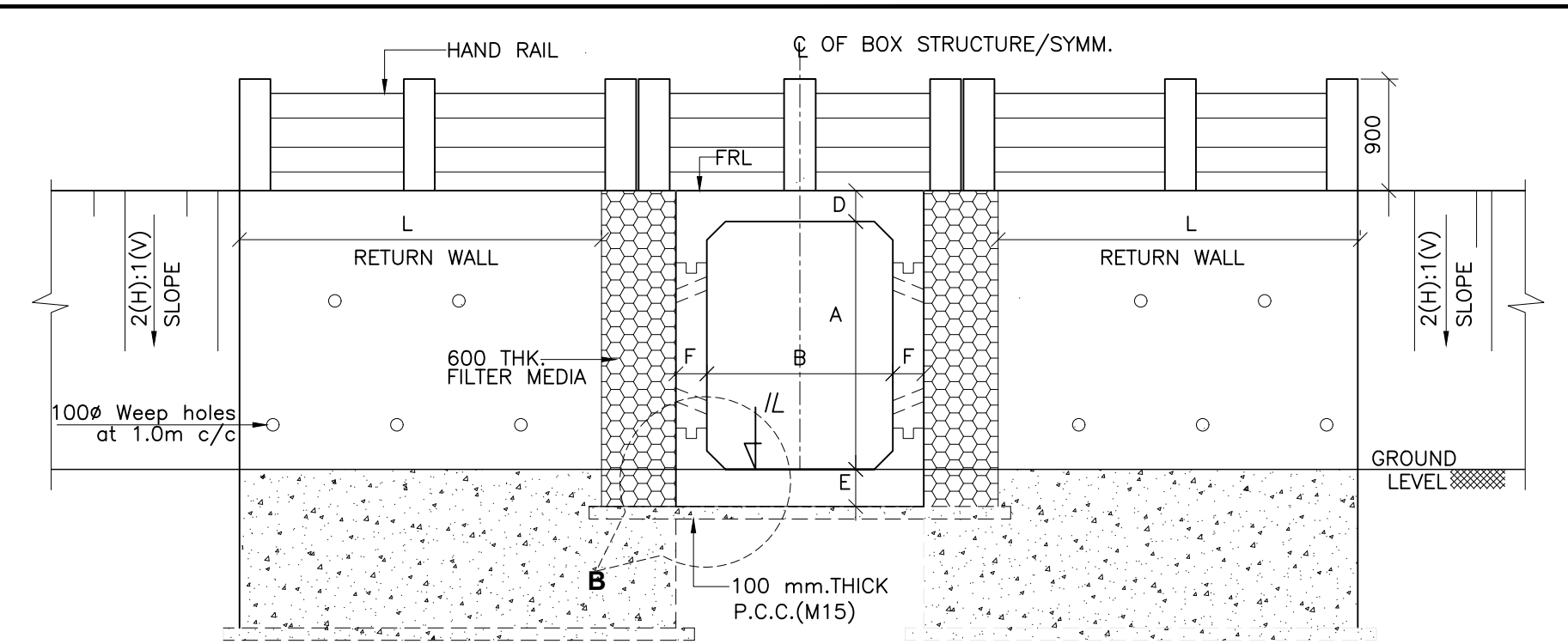
DETAIL- 'A'
(SCALE 1:60)

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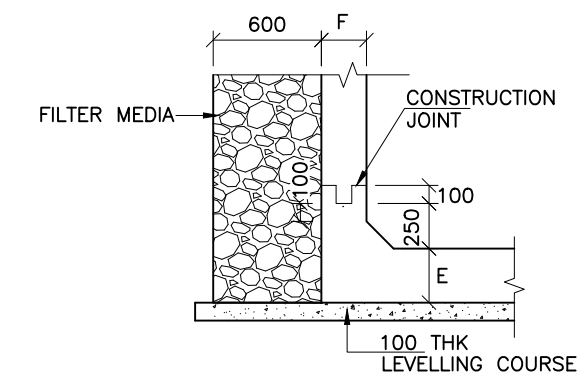
ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:		From Design Km. 95+550 to Km. 111+066	TENDER DRAWING	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
R0	Oct :-2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 			Scale :- As Shown	Drawing Title	GENERAL ARRANGEMENT DRAWING FOR VIADUCT AT CH. 109+606	Annex III
R1	Dec :-2020							Sheet size: A2	Drawing No.	NHIDCL/NH244/KHELLANI - CHATTROO/ VIA/109+606/09/R1

CULVERTS

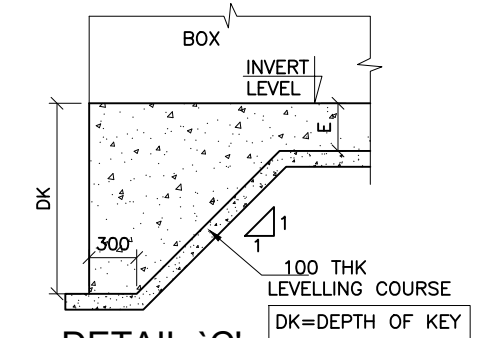


SECTION A-A
(SCALE 1:75)

SECTION B-B
(SCALE 1:50)



DETAIL-'B'
(SCALE 1:40)



DETAIL-'C'

(SCALE 1:40)

TABLE SHOWING SALIENT DIMENSIONS

PROPOSED CHAINAGE (km)	BOX CELL DESIGNATION Nc/ab/c*	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	L (mm)
98+445	1/43/0	4000	3000	—	350	400	375	6000
105+225	1/33/0	3000	3000	—	275	300	275	4500
105+960	1/44/0	4000	4000	—	350	400	375	6000
107+315	1/44/0	4000	4000	—	350	400	375	6000

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS, AND LEVELS ARE IN METERS, UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DRAWING SHALL BE SCALED.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE PLAN & PROFILE AND OTHER RELEVANT DRAWINGS.
3. PROTECTION WORKS SHOWN ARE INDICATIVE ONLY. THESE SHALL BE VERIFIED AND NECESSARY MODIFICATIONS TO BE CARRIED OUT AS PER SITE CONDITION.
4. SOFT AND LOOSE PATCHES IN THE BEARING AREA ARE TO BE REPLACED BY COMPACTED GRANULAR FILLS WITH LAYERS NOT EXCEEDING 300MM
5. DESIGN, DIMENSION AND REINFORCEMENT DETAILING TO BE FOLLOWED FROM MINISTRY PUBLICATION "STANDARD DRAWING FOR BOX CELL CULVERT".
6. GRADE OF CONCRETE FOR VARIOUS COMPONENTS ARE MENTIONED IN GENERAL NOTES.
7. MINIMUM NET BEARING CAPACITY REQUIRED FOR SOIL IS 15 T/M^2
8. RETURN WALL TYPE (CANTILEVER, PCC OR RCC) SHALL BE FINALISED ON SITE IN CONSULTATION WITH AUTHORITY ENGINEER.
9. c* IS MAXIMUM HEIGHT OF FILL BELOW CULVERT




ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	CONSULTANT:  RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 	From Design Km. 95+550 to Km. 111+066 TENDER DRAWING	Project:- CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	Scale :- As Shown	Drawing Title GENERAL ARRANGEMENT DRAWING FOR SINGLE CELL BOX CULVERT (TYPE-2)	Drawing No. NHIDCL/NH244/KHELLANI - CHATTROO/CUL/TYPE-2/01/R1	Annex III
R0	Oct :-2020									
R1	Dec :-2020									


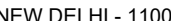
TABLE SHOWING SALIENT DIMENSIONS

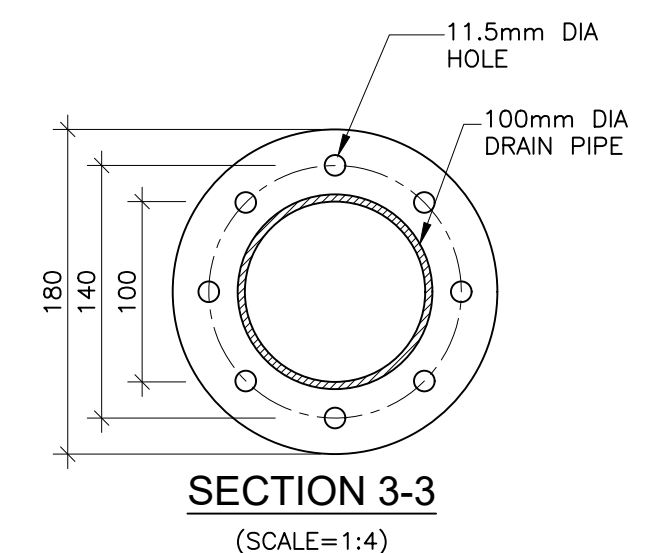
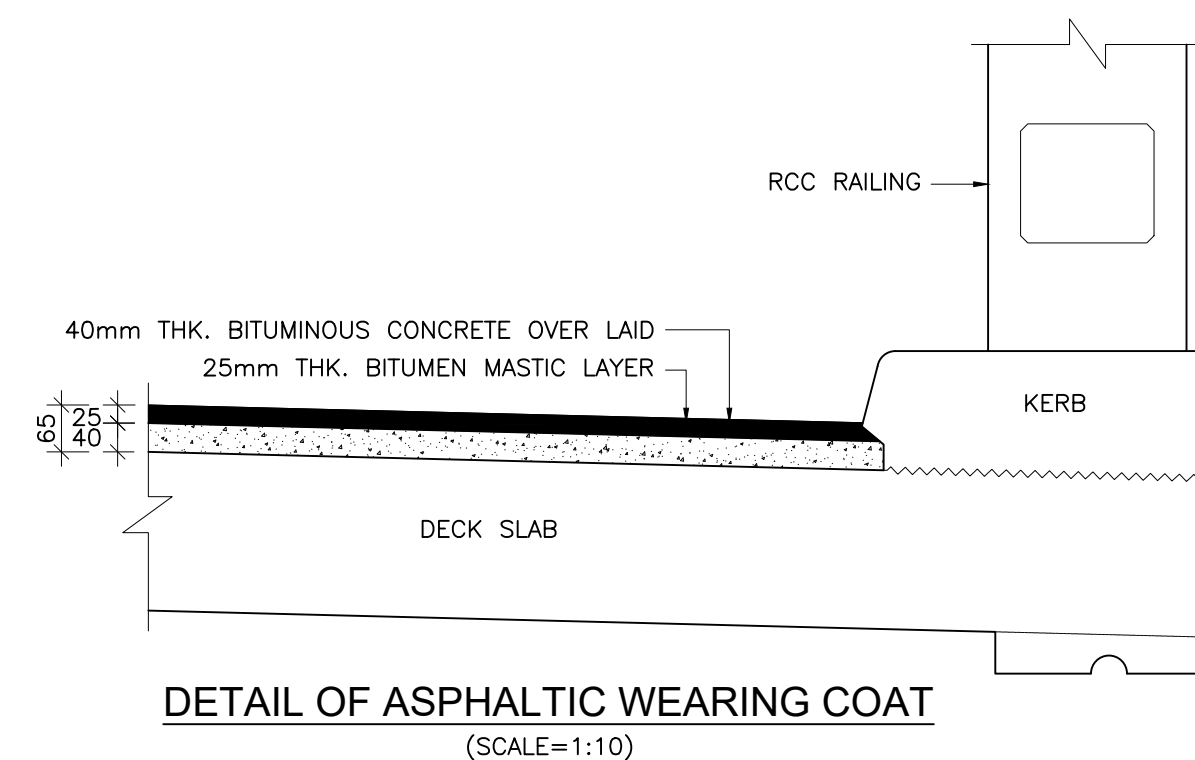
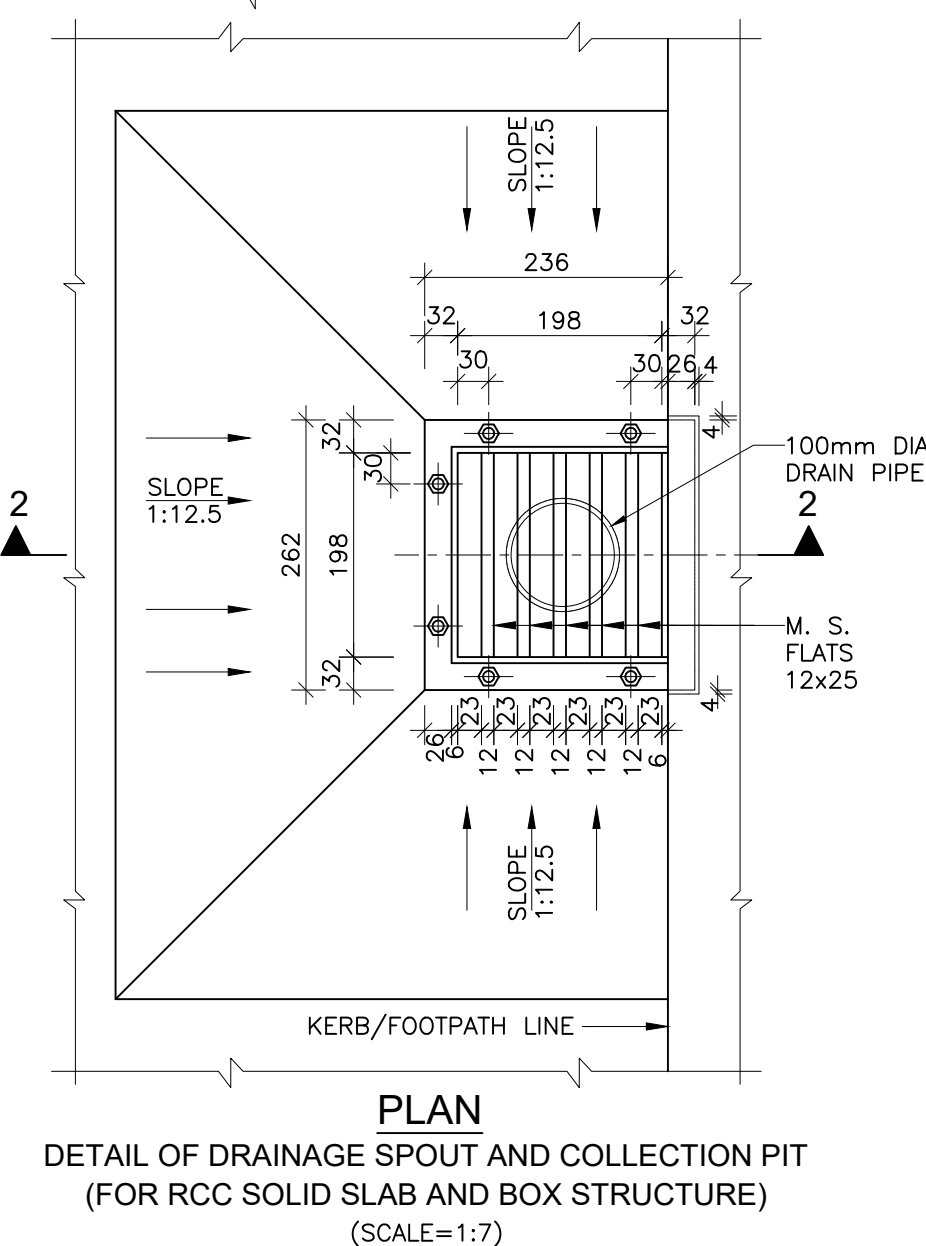
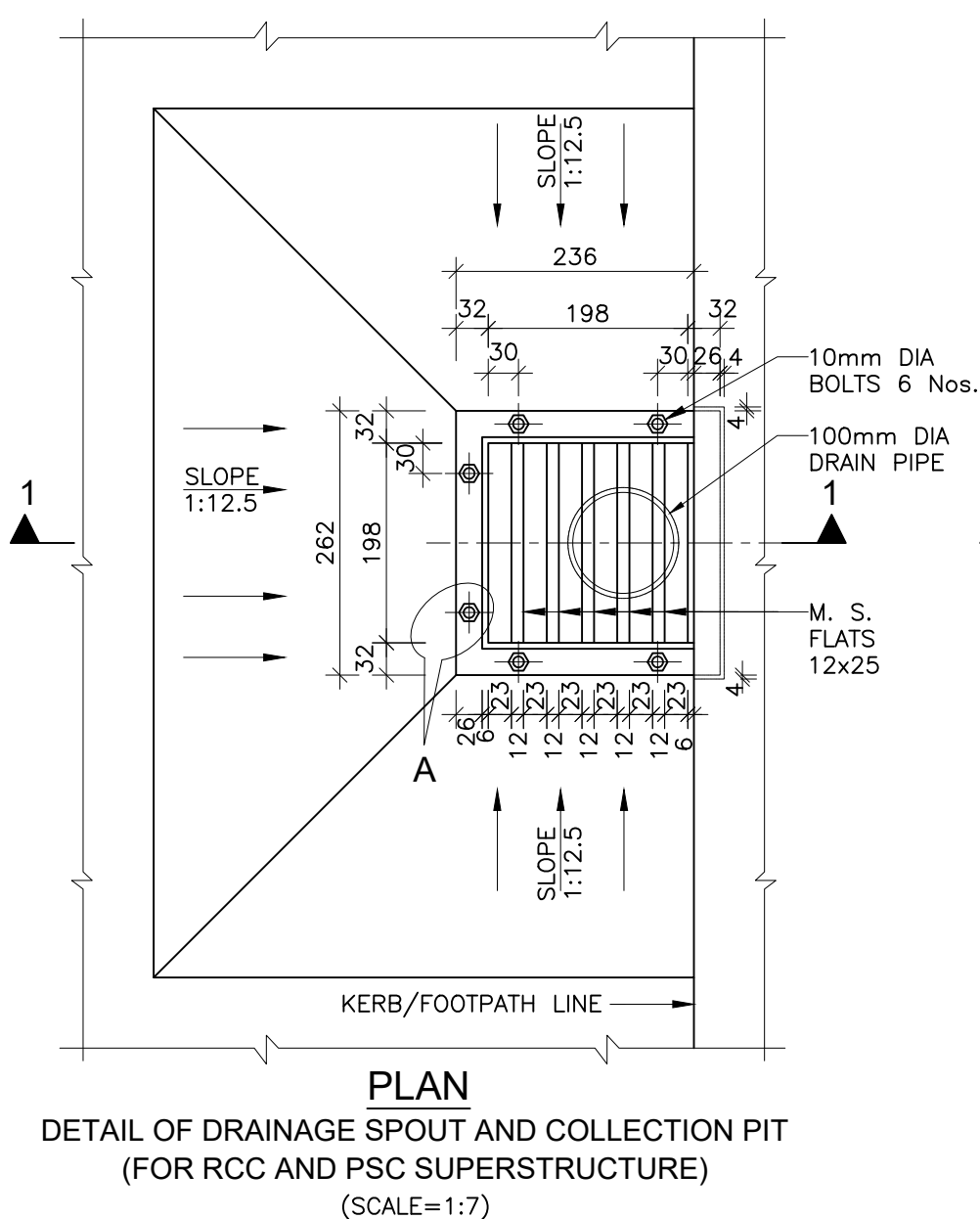
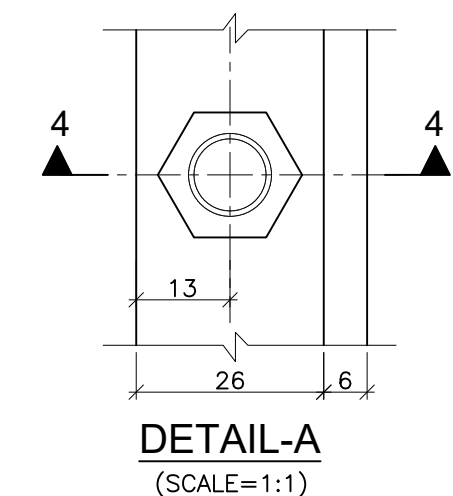
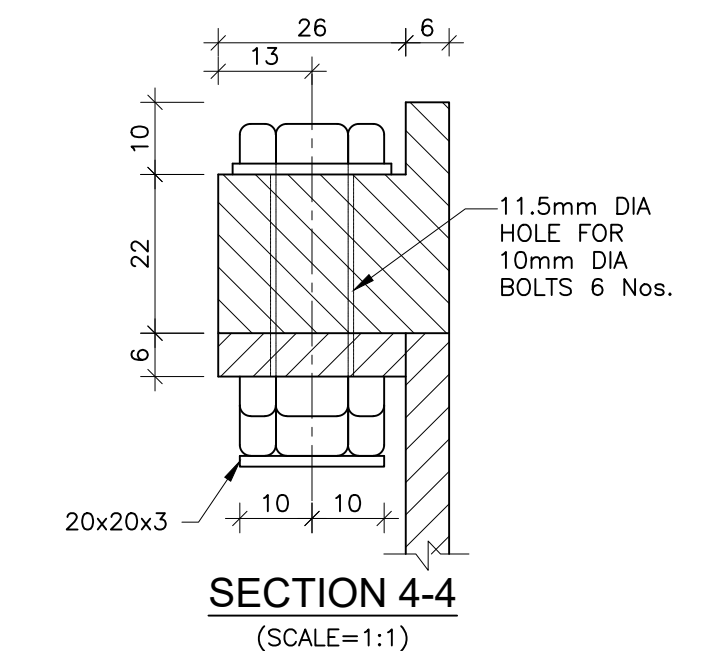
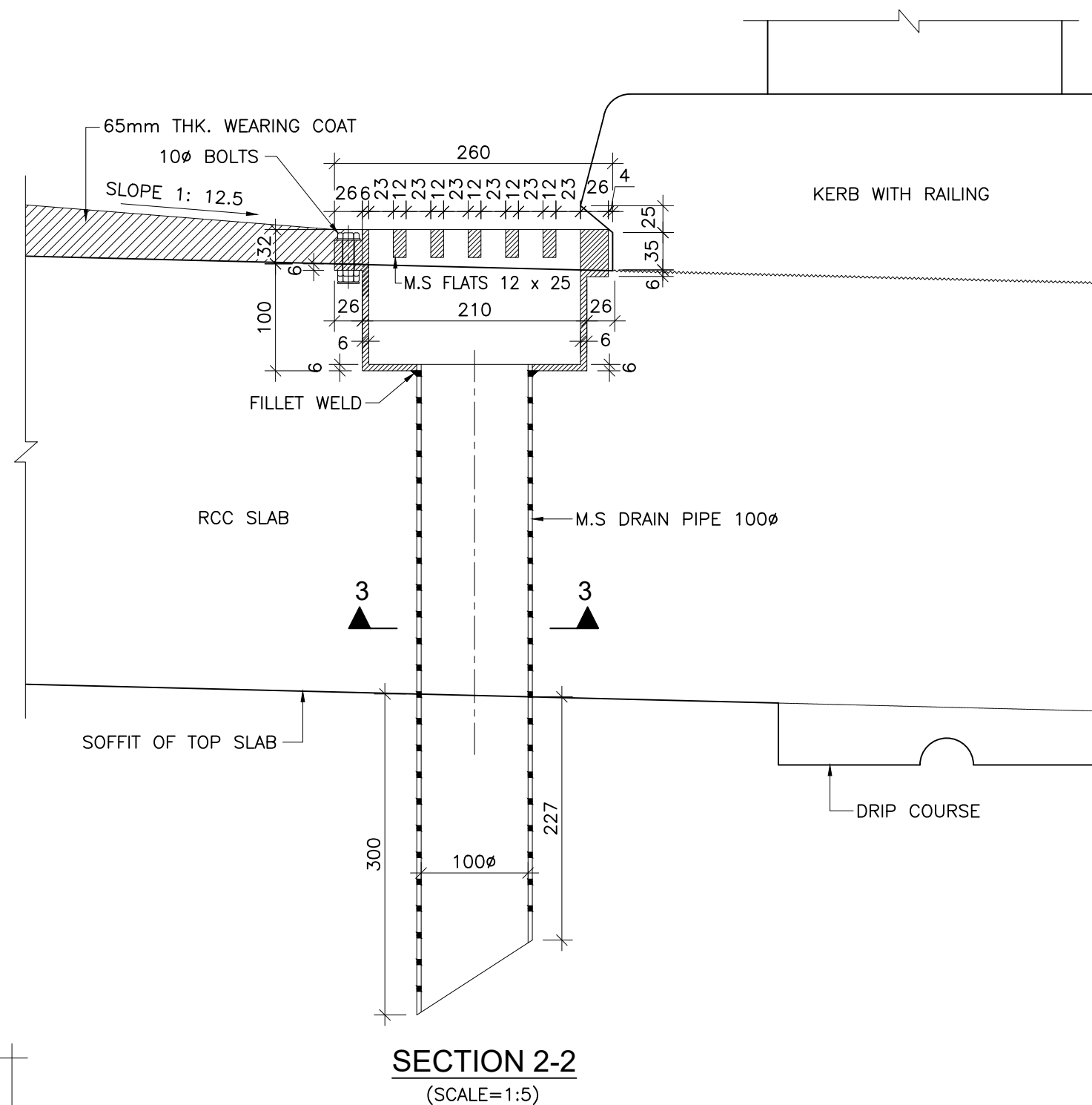
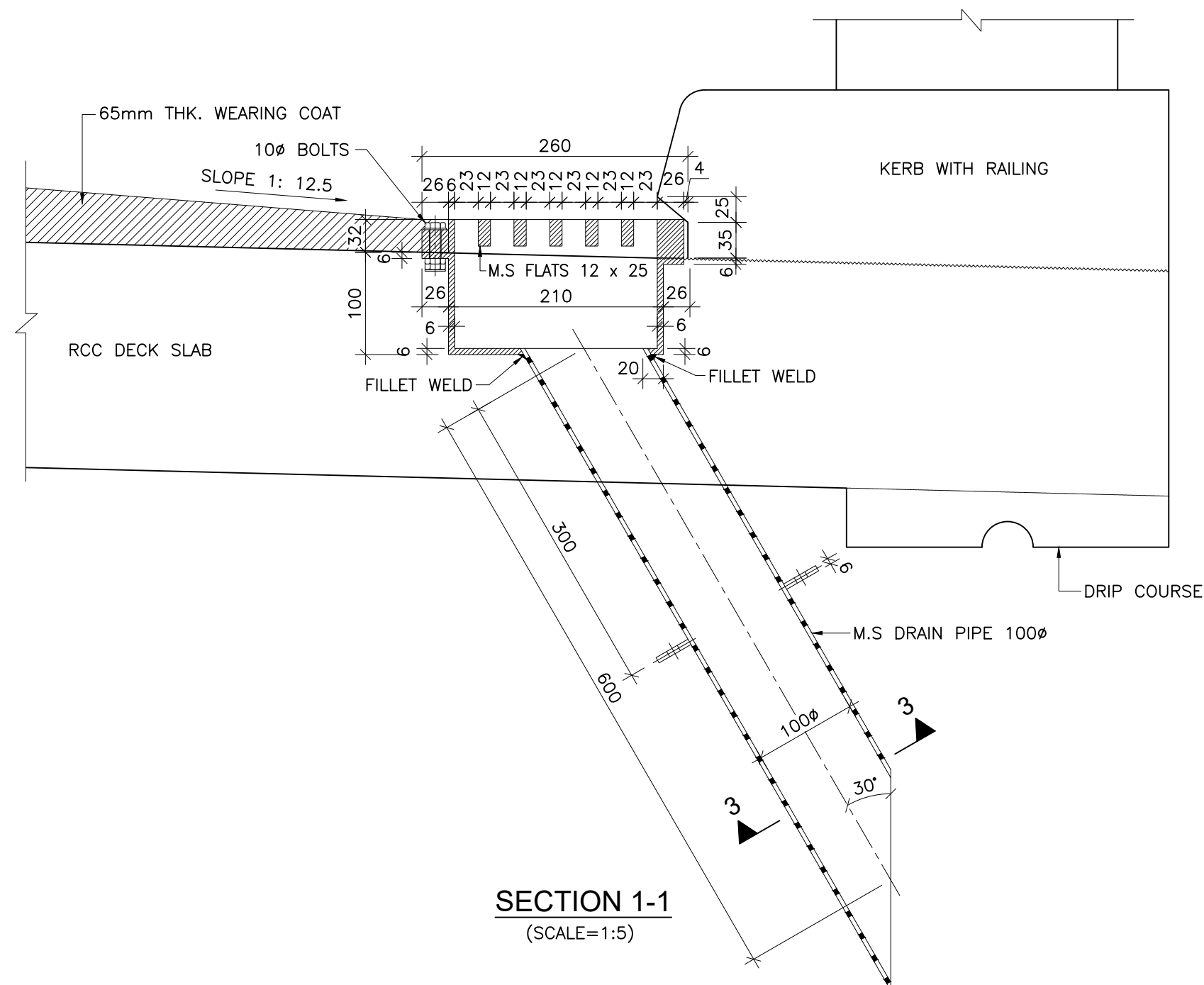
PROPOSED CHAINAGE	BOX CELL DESIGNATION Nc/ab/Ec	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	L (mm)
95+665	1/22/0	2000	2000	-	225	250	250	3500
96+375	1/22/0	2000	2000	-	225	250	250	3500
96+740	1/22/0	2000	2000	-	225	250	250	3500
97+230	1/22/0	2000	2000	-	225	250	250	3500
97+355	1/44/0	4000	4000	-	350	400	375	6000
97+675	1/22/0	2000	2000	-	225	250	250	3500
97+925	1/22/0	2000	2000	-	225	250	250	3500
98+070	1/22/0	2000	2000	-	225	250	250	3500
98+165	1/33/0	3000	3000	-	275	300	275	4500
98+270	1/22/0	2000	2000	-	225	250	250	3500
98+665	1/22/0	2000	2000	-	225	250	250	3500
98+855	1/22/0	2000	2000	-	225	250	250	3500
98+955	1/22/0	2000	2000	-	225	250	250	3500
99+325	1/22/0	2000	2000	-	225	250	250	3500
100+070	1/22/0	2000	2000	-	225	250	250	3500
100+380	1/22/0	2000	2000	-	225	250	250	3500
100+770	1/22/0	2000	2000	-	225	250	250	3500
101+300	1/22/0	2000	2000	-	225	250	250	3500
101+390	1/22/0	2000	2000	-	225	250	250	3500
101+550	1/22/0	2000	2000	-	225	250	250	3500
102+205	1/22/0	2000	2000	-	225	250	250	3500
102+270	1/22/0	2000	2000	-	225	250	250	3500
102+530	1/22/0	2000	2000	-	225	250	250	3500
102+600	1/22/0	2000	2000	-	225	250	250	3500
102+715	1/22/0	2000	2000	-	225	250	250	3500
103+200	1/22/0	2000	2000	-	225	250	250	3500
103+315	1/22/0	2000	2000	-	225	250	250	3500
103+520	1/22/0	2000	2000	-	225	250	250	3500
103+570	1/33/0	3000	3000	-	275	300	275	4500
103+760	1/22/0	2000	2000	-	225	250	250	3500
103+820	1/44/0	4000	4000	-	350	400	375	6000
104+050	1/22/0	2000	2000	-	225	250	250	3500
104+210	1/22/0	2000	2000	-	225	250	250	3500

PROPOSED CHAINAGE	BOX CELL DESIGNATION Nc/ab/Ec	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	L (mm)
104+525	1/22/0	2000	2000	-	225	250	250	3500
104+970	1/22/0	2000	2000	-	225	250	250	3500
105+100	1/22/0	2000	2000	-	225	250	250	3500
105+150	1/22/0	2000	2000	-	225	250	250	3500
105+285	1/22/0	2000	2000	-	225	250	250	3500
105+475	1/22/0	2000	2000	-	225	250	250	3500
105+585	1/22/0	2000	2000	-	225	250	250	3500
105+620	1/22/0	2000	2000	-	225	250	250	3500
105+695	1/22/0	2000	2000	-	225	250	250	3500
105+785	1/22/0	2000	2000	-	225	250	250	3500
105+860	1/22/0	2000	2000	-	225	250	250	3500
106+085	1/22/0	2000	2000	-	225	250	250	3500
106+165	1/22/0	2000	2000	-	225	250	250	3500
106+330	1/44/0	4000	4000	-	350	400	375	6000
106+395	1/22/0	2000	2000	-	225	250	250	3500
106+540	1/22/0	2000	2000	-	225	250	250	3500
106+658	1/22/0	2000	2000	-	225	250	250	3500
107+035	1/22/0	2000	2000	-	225	250	250	3500
107+420	1/22/0	2000	2000	-	225	250	250	3500
107+745	1/22/0	2000	2000	-	225	250	250	3500
108+090	1/22/0	2000	2000	-	225	250	250	3500
108+295	1/22/0	2000	2000	-	225	250	250	3500
108+395	1/22/0	2000	2000	-	225	250	250	3500
108+540	1/33/0	3000	3000	-	275	300	275	4500
108+670	1/22/0	2000	2000	-	225	250	250	3500
108+860	1/22/0	2000	2000	-	225	250	250	3500
110+330	1/22/0	2000	2000	-	225	250	250	3500
110+410	1/22/0	2000	2000	-	225	250	250	3500
110+530	1/22/0	2000	2000	-	225	250	250	3500
110+845	1/22/0	2000	2000	-	225	250	250	3500
110+935	1/22/0	2000	2000	-	225	250	250	3500
110+990	1/22/0	2000	2000	-	225	250	250	3500

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	<div>CLIENT</div> <div>NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA</div> <div></div>	<div>CONSULTANT:</div> <div><div>RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)</div><div>In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., </div></div>	From Design Km. 95+550 to Km. 111+066	TENDER DRAWING	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
R0	Oct :-2020								
R1	Dec :-2020								
								GENERAL ARRANGEMENT DRAWING FOR SINGLE CELL BOX CULVERT (TYPE-I)	Annex III
								NHIDCL/NH244/KHELLANI - CHATTROO/CUL/TYPE-1/02/R1	




MISCELLANEOUS

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	CONSULTANT:  RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd., 	From Design Km. 95+550 to Km. 111+066 TENDER DRAWING	Project:- CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	Scale :- As Shown	Drawing Title Sheet size: A2 Drawing No.	DETAILS OF APPROACH SLAB (FOR 12.5m DECK WIDTH) NHIDCL/NH244/KHELLANI - CHATTROO/MISC/01/R1 Annex III
R0	Oct :-2020								
R1	Dec :-2020								







NOTES:-

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSION IS TO BE SCALED.
2. DRAINAGE SPOUT AND COLLECTION PIT ASSEMBLY SHALL BE FABRICATED FROM MILD STEEL AND AFTER FABRICATION THE COMPLETE ASSEMBLY EXCEPT GRATING MILD STEEL AND AFTER FABRICATION THE COMPLETE ASSEMBLY EXCEPT GRATING SHALL BE GIVEN A HOT DIPPED GALVANISED COATING.
3. SPACING OF DRAINAGE SPOUT SHALL NOT EXCEED 5.0m C/C.
4. 65mm THK. WEARING COAT COMPRISING OF 40mm THK. ASPHALTIC CONCRETE OVER LAID WITH 25mm THK. MASTIC ASPHALT SHALL BE PROVIDED AS PER SECTION 500 OF MORTH SPECIFICATIONS.
5. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE GENERAL ARRANGEMENT DRAWING OF THE RESPECTIVE BRIDGES.

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 	CONSULTANT:  RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.. 	From Design Km. 95+550 to Km. 111+066 <div> <div>Designed:</div> <div>Drawn:</div> <div>Designed:</div> <div>Approved:</div> </div> <div> <div>AV</div> <div>KS</div> <div>VT</div> <div>AM</div> </div>	TENDER DRAWING Scale :- As Shown	Project:- Drawing Title Sheet size: A2 Drawing No.	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR DETAILS OF DRAINAGE SPOUT AND WEARING COAT NHIDCL/NH244/KHELLANI - CHATTROO/MISC/02/R1	Annex III
R0	Oct :-2020								
R1	Dec :-2020								



- ## REINFORCEMENT SCHEDULE

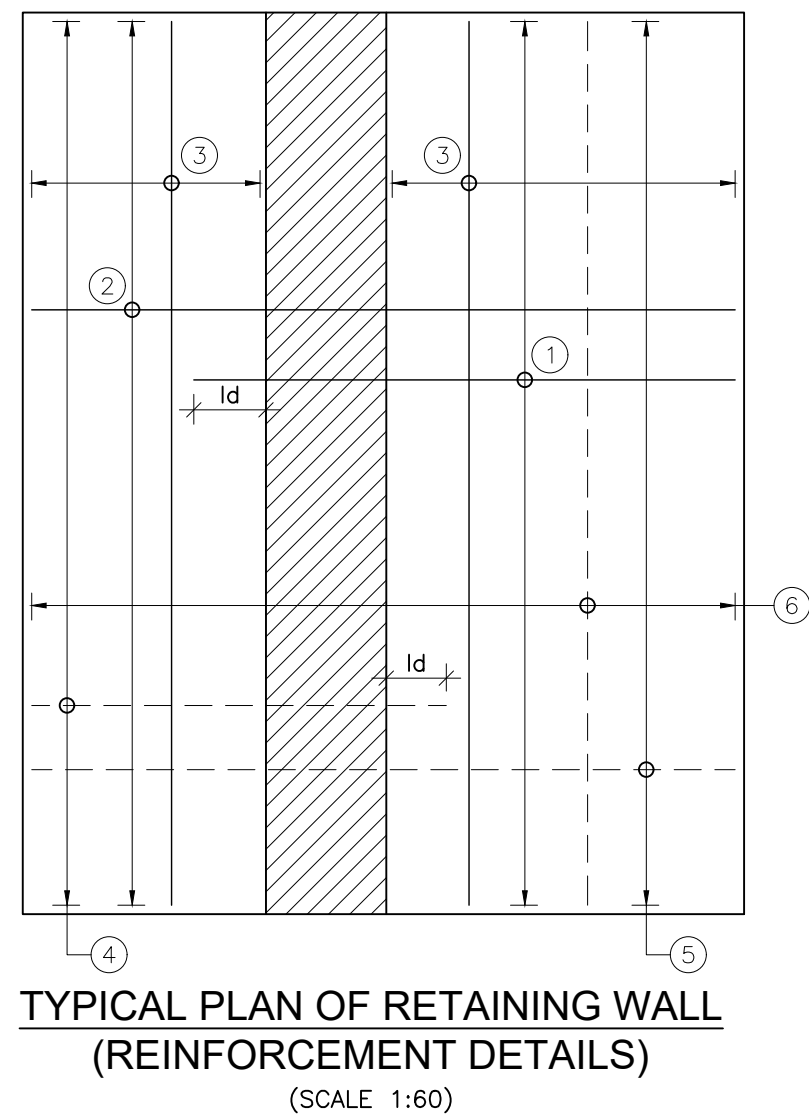
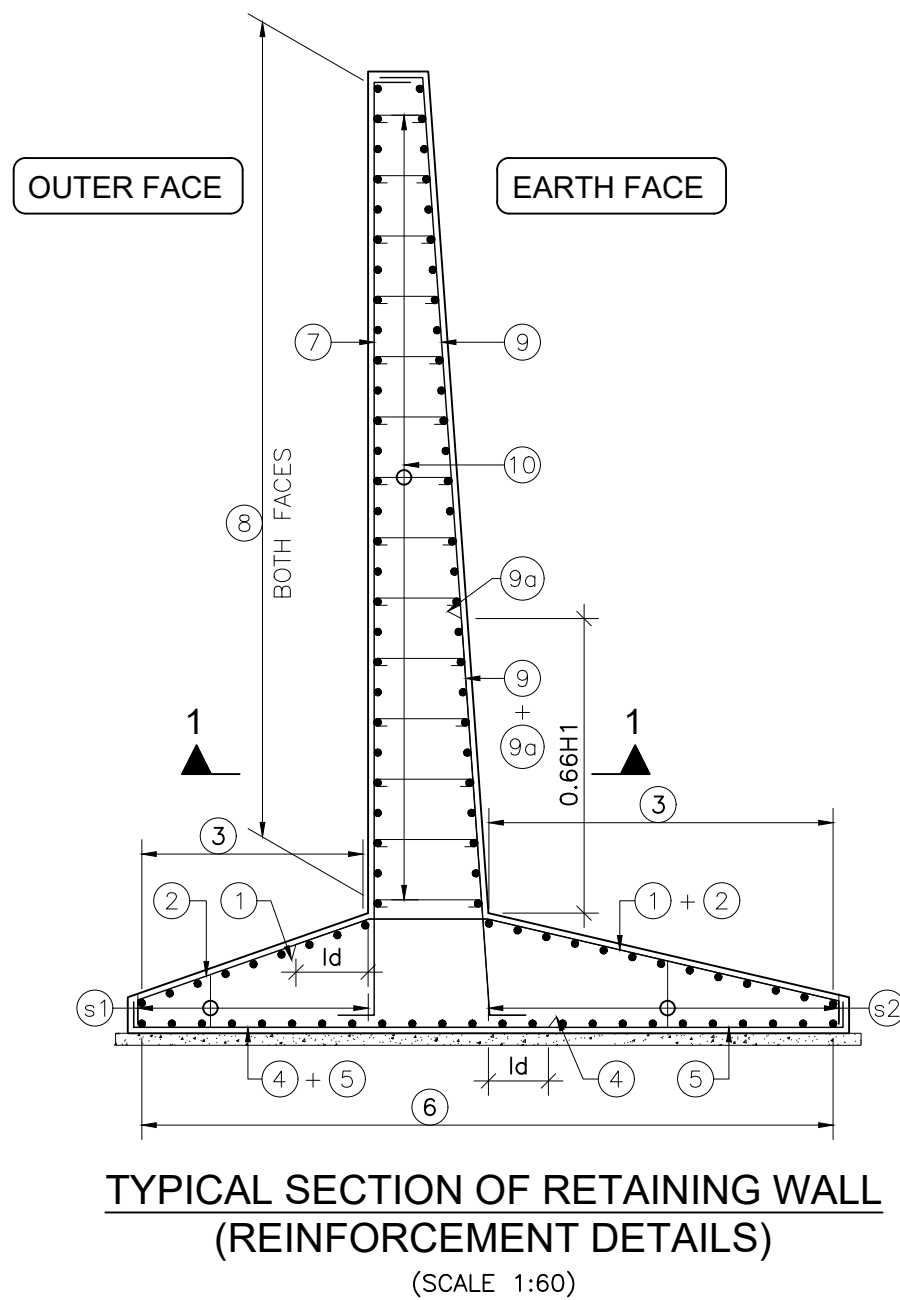
BAR MRKD.	DESCRIPTION	SHAPE	REMARKS
①	16 ϕ @150c/c		
②	16 ϕ @150c/c		
③	12 ϕ @150c/c		
④	16 ϕ - 3 Nos.		



ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:		Project:-											
R0	Oct :-2020		 NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA	 	RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,	From Design Km. 95+550 to Km. 111+066	TENDER DRAWING	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR									
R1	Dec :-2020																
					<table><tr><td>Designed:</td><td>AV</td></tr><tr><td>Drawn:</td><td>KS</td></tr><tr><td>Designed:</td><td>VT</td></tr><tr><td>Approved:</td><td>AM</td></tr></table>	Designed:	AV	Drawn:	KS	Designed:	VT	Approved:	AM	Scale :- As Shown	Drawing Title Sheet size: A2 Drawing No.	DIMENSIONAL AND REINFORCEMENT DETAILS OF CRASH BARRIER NHIDCL/NH244/KHELLANI - CHATTROO/MISC/03/R1	Annex III
Designed:	AV																
Drawn:	KS																
Designed:	VT																
Approved:	AM																



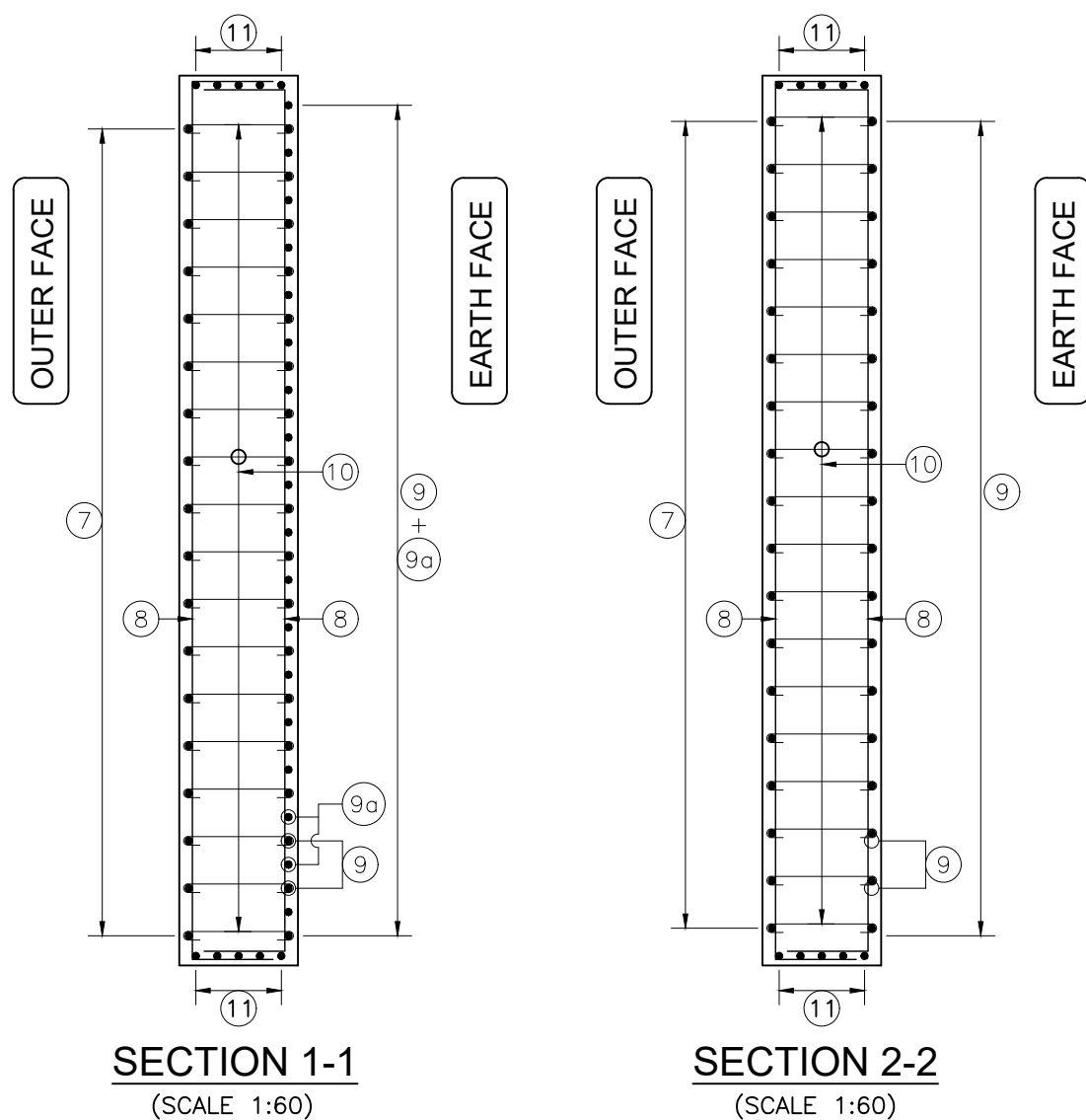
ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	From Design Km. 95+550 to Km. 111+066	TENDER DRAWING	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR
R0	Oct :-2020		NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.					
R1	Dec :-2020		(MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA 		1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)			
				In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,		Designed: AV Drawn: KS Designed: VT Approved: AM	Scale :- As Shown	Drawing Title Sheet size: A2 Drawing No. Annex III
								DETAILS OF EXPANSION JOINT NHIDCL/NH244/KHELLANI - CHATTROO/MISC/04/R1



BAR MRKD.	SHAPE	TOTAL 6.0m HEIGHT	TOTAL 7.0m HEIGHT	TOTAL 8.0m HEIGHT	TOTAL 9.0m HEIGHT	TOTAL 10.0m HEIGHT	TOTAL 11.0m HEIGHT	TOTAL 12.0m HEIGHT	TOTAL 13.0m HEIGHT	TOTAL 14.0m HEIGHT
①		12 ￼@200c/c	12 ￼@200c/c	12 ￼@200c/c	16 ￼@200c/c	16 ￼@200c/c	16 ￼@200c/c	20 ￼@190c/c	25 ￼@190c/c	25 ￼@160c/c
②		12 ￼@200c/c	12 ￼@200c/c	12 ￼@200c/c	12 ￼@200c/c	12 ￼@200c/c	12 ￼@200c/c	16 ￼@190c/c	20 ￼@190c/c	20 ￼@160c/c
③		12 ￼@200c/c	12 ￼@200c/c	12 ￼@200c/c	12 ￼@150c/c	12 ￼@200c/c	12 ￼@150c/c	12 ￼@125c/c	16 ￼@100c/c	20 ￼@150c/c
④		12 ￼@200c/c	16 ￼@180c/c	20 ￼@200c/c	25 ￼@200c/c	25 ￼@200c/c	32 ￼@200c/c	32 ￼@190c/c	32 ￼@190c/c	32 ￼@160c/c
⑤		12 ￼@200c/c	12 ￼@180c/c	12 ￼@200c/c	16 ￼@200c/c	20 ￼@200c/c	20 ￼@200c/c	25 ￼@190c/c	32 ￼@190c/c	32 ￼@160c/c
⑥		12 ￼@200c/c	12 ￼@200c/c	12 ￼@200c/c	12 ￼@150c/c	16 ￼@200c/c	16 ￼@150c/c	16 ￼@125c/c	16 ￼@100c/c	20 ￼@150c/c
⑦		16 ￼@200c/c	16 ￼@200c/c	20 ￼@200c/c	20 ￼@200c/c	20 ￼@200c/c	20 ￼@200c/c	25 ￼@200c/c	25 ￼@190c/c	25 ￼@170c/c
⑧		12 ￼@200c/c	12 ￼@150c/c	12 ￼@150c/c	12 ￼@125c/c	16 ￼@150c/c	16 ￼@150c/c	16 ￼@150c/c	16 ￼@140c/c	16 ￼@125c/c
⑨		20 ￼@200c/c	25 ￼@200c/c	25 ￼@200c/c	25 ￼@200c/c	32 ￼@200c/c	32 ￼@200c/c	32 ￼@200c/c	32 ￼@190c/c	32 ￼@170c/c
⑨g		16 ￼@200c/c	16 ￼@200c/c	20 ￼@200c/c	25 ￼@200c/c	20 ￼@200c/c	25 ￼@200c/c	32 ￼@200c/c	32 ￼@190c/c	32 ￼@170c/c
⑩		8 ￼@200c/c	8 ￼@300c/c	8 ￼@300c/c	8 ￼@250c/c	8 ￼@300c/c	8 ￼@300c/c	8 ￼@300c/c	8 ￼@280c/c	8 ￼@250c/c
⑪		16 ￼@150c/c	16 ￼@150c/c	16 ￼@150c/c	16 ￼@150c/c	16 ￼@150c/c	16 ￼@150c/c	16 ￼@150c/c	16 ￼@150c/c	16 ￼@150c/c
⑳1		-	-	-	-	2L-12 ￼ @200c/c	2L-12 ￼ @150c/c	2L-12 ￼ @125c/c	2L-12 ￼ @100c/c	2L-12 ￼ @150c/c
⑳2		-	-	-	-	-	-	-	2L-12 ￼ @100c/c	2L-12 ￼ @150c/c

SR. NO.	TOTAL HEIGHT (H)		6.0m	7.0m	8.0m	9.0m	10.0m	11.0m	12.0m	13.0m	14.0m	
1	BASE	WIDTH	A	4.4	5.3	6.3	7.25	8.1	9.0	10.0	11.1	12.45
2	HEEL		B	2.4	2.8	3.2	3.5	4.0	4.3	4.7	5.1	5.5
3	WALL		C	0.6	0.7	0.9	1.0	1.1	1.2	1.3	1.5	1.7
4	TOE		D	1.4	1.8	2.2	2.75	3.0	3.5	4.0	4.5	5.25
5	BASE	THK.	T	0.6	0.7	0.9	1.0	1.1	1.2	1.3	1.5	1.7
6	MAX. BASE PRESSURE(kn/m) AS PER DESIGN			181.8	183.0	188.7	186.9	198.6	199.2	198.9	200.2	191.24

(DIMENSIONS GIVEN IN THE TABLE ARE IN METRES)



- NOTES:-**
- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NO DIMENSION IS TO BE SCALED.
 - THE CONCRETE GRADE SHALL BE M35.
 - THE REINFORCING BARS SHALL BE OF THERMO MECHANICALLY TREATED/CORROSION RESISTANT STEEL (TMT-CRS) (GRADE DESIGNATION Fe-500D) CONFORMING TO IS:1786 STANDARDS.
 - CLEAR COVER TO OUTER MOST STEEL SHALL BE AS UNDER:-
 - EARTH FACE -75mm.
 - NON EARTH FACE -50mm.
 - 100mm DIA WEEP HOLES AT 1000mm C/C STAGGERED HORIZONTALLY AND VERTICALLY SHALL BE PROVIDED IN TWO LAYERS ABOVE G.L IN VERTICAL WALLS OF RETAINING WALLS.
 - LAYING, COMPACTION AND EXTENT OF BACKFILL BEHIND RETAINING WALLS SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX:6 OF IRC:78-2014 HAVING PROPERTIES $C = 0$, $\phi \geq 30^\circ$ AND DENSITY= 20KN/m³.
 - LAPPING OF REINFORCEMENT SHALL BE AVOIDED AS FAR AS POSSIBLE. IN CASE LAPPING OF BARS BECOMES UNAVOIDABLE, MINIMUM LAP LENGTH OF REINFORCEMENT BARS SHALL BE CALCULATED AS eFOLLOW WITH MAXIMUM ALLOWABLE LAPPING (p) OF 50% ONLY.
(IRC:112-2011) (CLAUSE:15.2.5.1)
 LAP LENGTH $l_s = \alpha l_{bnet}$
 $\alpha = 1.0$ FOR $p \leq 25\%$
 $\alpha = 1.15$ FOR $25\% \leq p \leq 33\%$
 $\alpha = 1.4$ FOR $33\% \leq p \leq 50\%$
 IN THE CASE OF BUNDLED BARS
 LAP LENGTH $= 1.3x l_s$ (CLAUSE:15.2.7.3)
 (IRC:112-2011) (CLAUSE:15.2.3.3)
 DEVELOPMENT LENGTH (l_{bnet})
 $l_{bnet} = \alpha l_b$ ($\alpha = 1.0$)
 $l_b = k \phi$
 $k = 40$ FOR M30 (Fe500D)
 $k = 36$ FOR M35 (Fe500D)
 $k = 34$ FOR M40 (Fe500D)
 FOR UNFAVORABLE BOND CONDITION THE l_b SHOULD BE MULTIPLIED BY FACTOR OF 1.43.
 FOR $\phi \geq 32mm$ l_b , SHOULD BE INCREASED BY MULTIPLYING FACTOR (1.30)
 - SAFE BEARING CAPACITY OF SOIL AT FOUNDATION LEVEL SHALL NOT BE LESS THAN THAT GIVEN IN S.No. 6 OF THE TABLE SHOWING DIMENSIONAL DETAILS.
 - TO COUNTER FOR THE DEFLECTION RETAINING WALL SHALL BE CONSTRUCTED TILTED BACK BY 1 IN 100.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE GENERAL ARRANGEMENT DRAWING OF THE RESPECTIVE BRIDGES.

SURFACE BAR SHALL BE PROVIDED IN FOOTING
AT 12ϕ @150c/c WHEREVER REQUIRED

ISSUE	DATE	AMENDMENT \ ISSUE DESCRIPTION	CLIENT	CONSULTANT:	From Design Km. 95+550 to Km. 111+066	TENDER DRAWING	Project:-	CONSTRUCTION & UP-GRADATION TO 2 LANE WITH PAVED SHOULDER FROM KM 95+550 TO KM 111+066 OF LENGTH 15.516 KM ON KHELLANI - KISHTWAR - CHATTROO - KHANABAL SECTION OF NH 244 IN THE UNION TERRITORY OF JAMMU AND KASHMIR	
R0	Oct :-2020		 <p>NATIONAL HIGHWAY & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. (MINISTRY OF ROAD TRANSPORT & HIGHWAY) GOVERNMENT OF INDIA</p>	 RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA) In Association with Monarch Surveyors and Engineering Consultants Pvt. Ltd.,			Drawing Title	SHEET size: A2	Annex III
R1	Dec :-2020								