BUILDING INFRASTRUCTURE - BUILDING THE NATION

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED
(A Public sector Company under MoRTH)

Name of Work :

Four Laning of NH-37 from Jhanji (Km.490.800) to Demow (Km. 534.800) Under SARDP-NE, Phase-B on EPC Mode in the State of Assam

PLAN & PROFILE
(From km.490+800 to Km.534+800)

Authority	:National Highways & Infrastructure Development Corporation Limited
Authority's Engineer	: M/s Voyants Solutions Pvt.Ltd
Contractor	: M/s Kamac Engineering Pvt Ltd & M/s Shiva Harlalka (JV)
Contract Price	: Rs.2,34,19,90,000/-

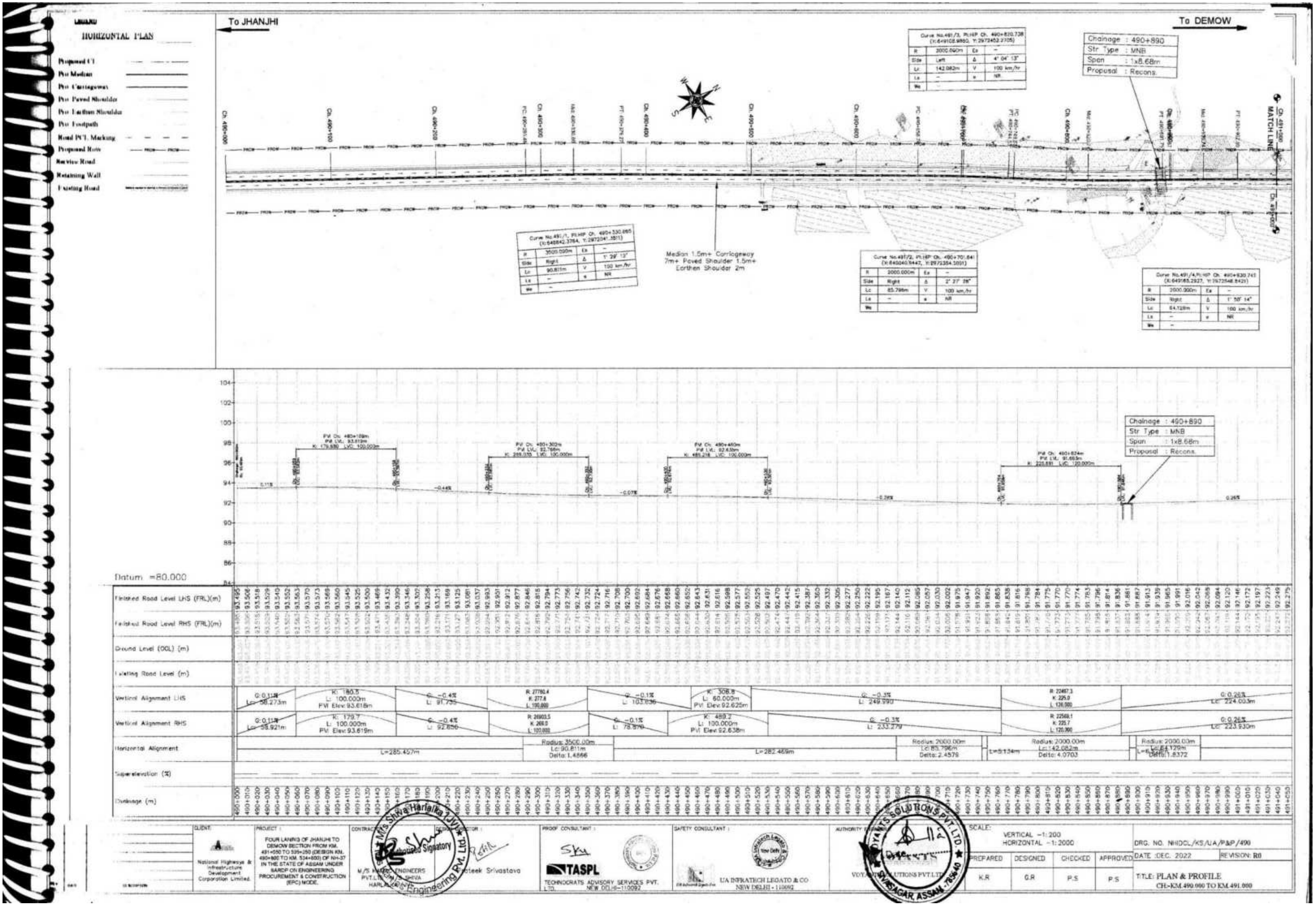
CONSTRUCTION COMPANY

M/s Kamac Engineering Pvt Ltd & M/s Shiva Harlalka (JV)

VOYANTS

CIN-U74140HR2004PTC046918

M/s Voyants Solutions Pvt.Ltd

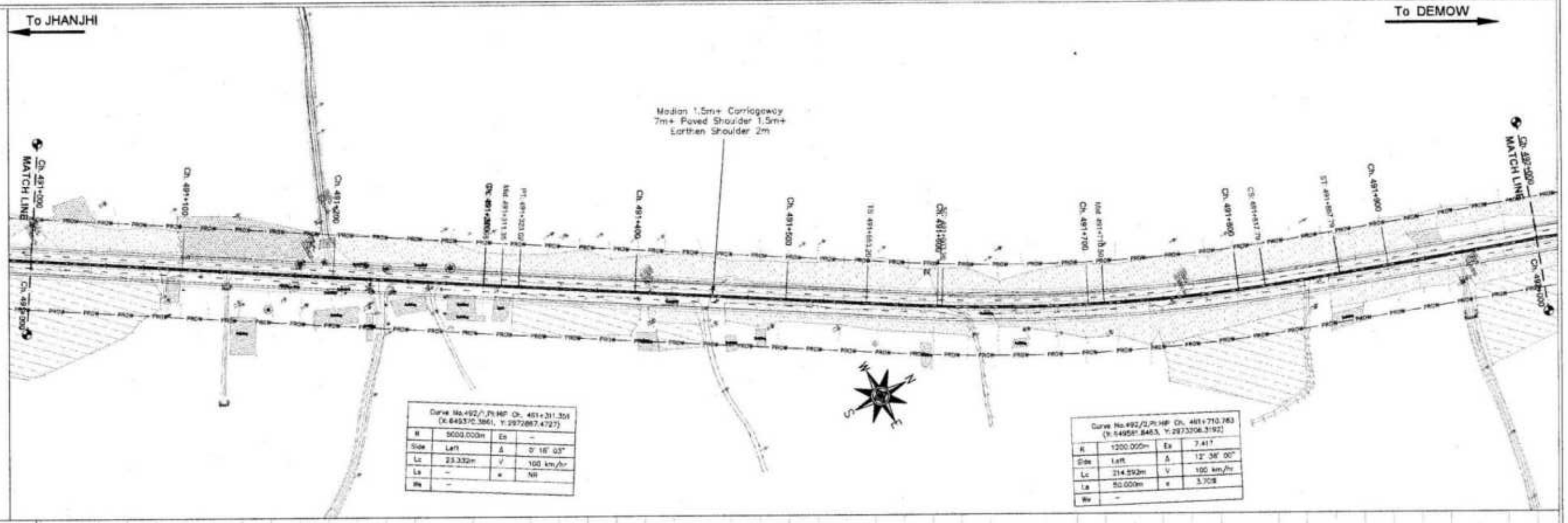


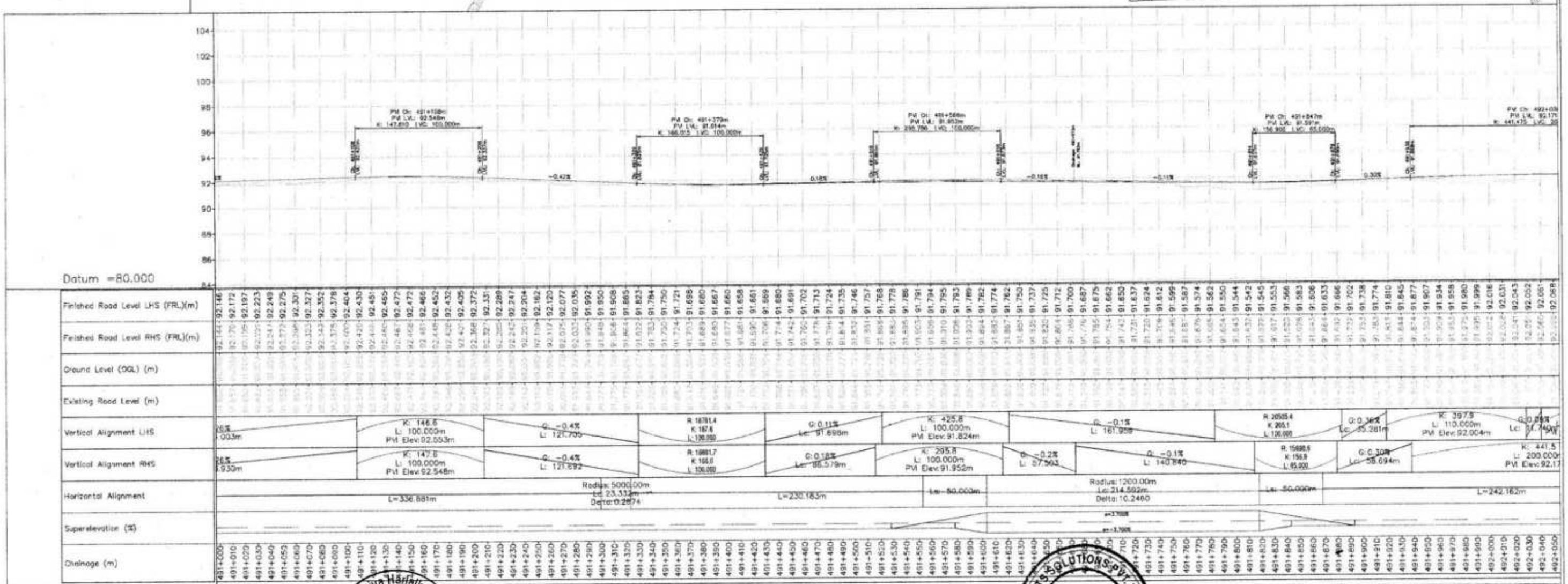
LEGEND
HORIZONTAL PLAN
Proposed CL
Pro Median
Pro Carriageway
Pro Paved Shoulder
Pro Earthen Shoulder
Pro Footpath
Road PCL Marking
Proposed Row
Service Road
Retaining Wall
Existing Road
To JHANJHI
To DEMOW
Chainage : 490+890
Str Type : MNB
Span : 1x8.68m
Proposal : Recons.
Median 1.5m+ Carriageway 7m+ Paved Shoulder 1.5m+ Earthen Shoulder 2m
MATCH LINE
Datum =80.000
Finished Road Level LHS (FRL)(m)
Finished Road Level RHS (FRL)(m)
Ground Level (OGL) (m)
Existing Road Level (m)
Vertical Alignment LHS
Vertical Alignment RHS
Horizontal Alignment
Superelevation (%)
Chainage (m)
CLIENT:
National Highways & Infrastructure Development Corporation Limited.
PROJECT :
FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.
CONTRACTOR :
M/S HARIALA ENGINEERS PVT.LTD. M/S SHIVA HARIALA JV
DESIGN DIRECTOR :
Prateek Srivastava
PROOF CONSULTANT :
TASPL
TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092
SAFETY CONSULTANT :
UA INFRATECH LEGATO & CO NEW DELHI - 110092
AUTHORITY ENGINEER :
VOYANTS SOLUTIONS PVT.LTD.
SCALE:
VERTICAL -1:200
HORIZONTAL -1:2000
PREPARED K.R
DESIGNED G.R
CHECKED P.S
APPROVED P.S
DRG. NO. NHIDCL/KS/UA/P&P/490
DATE :DEC. 2022
REVISION: R0
TITLE: PLAN & PROFILE
CH:-KM.490.000 TO KM.491.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro. Carriageway
- Pro. Paved Shoulder
- Pro. Earthen Shoulder
- Pro. Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





CLIENT	National Highways & Infrastructure Development Corporation Limited.
PROJECT	FOUR LANING OF JHANJHI – DEMOW SECTION FROM KM 491+000 TO 595+250 (DESIGN KM 490+800 TO KM. 534+800) IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.
CONTRACTOR	M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALIKA (JV) PVT.LTD
DESIGN DIRECTOR	Prateek Srivastava
PROOF CONSULTANT	TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092
SAFETY CONSULTANT	UA INFRATECH LEGATO & CO NEW DELHI - 110092
AUTHORITY	VOYANTS SOLUTIONS PVT. LTD.
SCALE	VERTICAL –1: 200 HORIZONTAL –1: 2000
DRG. NO.	NHIDCL/KS/UA/P&P/491
DATE	DEC. 2022
REVISION	R0

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

TITLE: PLAN & PROFILE
CH:-KM.491.000 TO KM.492.000

DATE | DESCRIPTION

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Chainage	: 492+355
Str Type	: MNB
Span	: 1x6.0m
Proposal	: Recons.

Curve No.493/3, PI:HP Ch. 492+436.918 (E:649829.9097, Y:2973891.3934)

R	2000.000m	Es	–
Side	Right	Δ	3° 20' 56"
Lc	81.996m	V	100 km/hr
Ls	–	e	NR
Re	–		

Curve No.493/1, PI:HP Ch. 492+141.282 (E:649726.6163, Y:2973611.2532)

R	3000.000m	Es	–
Side	Right	Δ	1° 47' 48"
Lc	62.650m	V	100 km/hr
Ls	–	e	NR
Re	–		

Curve No.493/2, PI:HP Ch. 492+309.244 (E:649781.1777, Y:2973767.5337)

R	3000.000m	Es	–
Side	Left	Δ	4° 07' 45"
Lc	144.134m	V	100 km/hr
Ls	–	e	NR
Re	–		

Median 1.5m+ Carriageway 7m+ Paved Shoulder 1.5m+ Earthen Shoulder 2m

To Ganuwa Bridge

Ch. 491+500 MATCH LINE

Ch. 493+500 MATCH LINE

Ch. 491+500

Ch. 493+500

Ch. 492+100 Ch. 492+200 Ch. 492+300 Ch. 492+400 Ch. 492+500 Ch. 492+600 Ch. 492+700 Ch. 492+800 Ch. 492+900

PVI Ch: 492+078m PVI LVL: 92.17m K: 441.475 LVC: 200.000m

PVI Ch: 492+345m PVI LVL: 91.712m K: 415.302 LVC: 60.000m

PVI Ch: 492+623m PVI LVL: 90.884m K: 232.942 LVC: 60.000m

PVI Ch: 492+747m PVI LVL: 90.849m K: 366.226 LVC: 150.000m

PVI Ch: 493+011m PVI LVL: 91.831m K: 105.265 LVC: 120.000m

-0.18% -0.79% -0.04% 0.37%

Datum =80.000

Finished Road Level LHS (FRL)(m)	92.016 92.031 92.043 92.052 92.061 92.068 92.071 92.070 92.066 92.058 92.046 92.033 92.019 92.006 91.992 91.979 91.965 91.952 91.938 91.924 91.911 91.897 91.884 91.870 91.857 91.843 91.830 91.816 91.803 91.789 91.776 91.762 91.749 91.733 91.715 91.694 91.670 91.644 91.615 91.585 91.555 91.525 91.495 91.465 91.435 91.405 91.374 91.344 91.313 91.282 91.251 91.220 91.189 91.158 91.127 91.096 91.065 91.034 91.003 90.974 90.949 90.929 90.913 90.901 90.894 90.890 90.886 90.882 90.878 90.876 90.878 90.882 90.889 90.899 90.912 90.928 90.946 90.968 90.992 91.020 91.050 91.083 91.119 91.156 91.193 91.231 91.268 91.305 91.343 91.380 91.417 91.455 91.492 91.529 91.567 91.604 91.637 91.661 91.675 91.680 91.675 91.661 91.637 91.604 91.561 91.509
Finished Road Level RHS (FRL)(m)	92.016 92.031 92.043 92.052 92.061 92.068 92.071 92.070 92.066 92.058 92.046 92.033 92.019 92.006 91.992 91.979 91.965 91.952 91.938 91.924 91.911 91.897 91.884 91.870 91.857 91.843 91.830 91.816 91.803 91.789 91.776 91.762 91.749 91.733 91.715 91.694 91.670 91.644 91.615 91.585 91.555 91.525 91.495 91.465 91.435 91.405 91.374 91.344 91.313 91.282 91.251 91.220 91.189 91.158 91.127 91.096 91.065 91.034 91.003 90.974 90.949 90.929 90.913 90.901 90.894 90.890 90.886 90.882 90.878 90.876 90.878 90.882 90.889 90.899 90.912 90.928 90.946 90.968 90.992 91.020 91.050 91.083 91.119 91.156 91.193 91.231 91.268 91.305 91.343 91.380 91.417 91.455 91.492 91.529 91.567 91.604 91.637 91.661 91.675 91.680 91.675 91.661 91.637 91.604 91.561 91.509
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	G: 0.18% K: 271.6 Lc: 60.000m PVI Elev:92.087m; G: -0.1% L: 217.675; K: 365.4 L: 60.000m PVI Elev:91.711m; G: -0.3% L: 49.591; K: 5433.9 L: 60.000m PVI Elev:91.384m; G: -0.3% L: 93.779; R: 22433.4 K: 224.3 L: 60.000; G: -0.04% L: 34.942; R: 34833.3 K: 348.2 L: 145.000; G: 0.37% Lc: 130.542m; K: 105.2 L: 120.000m PVI Elev:91.831m
Vertical Alignment RHS	K: 441.5 L: 200.000m PVI Elev:92.171m; G: -0.1% L: 177.070; K: 415.3 L: 60.000m PVI Elev:91.712m; G: -0.3% L: 218.334; R: 23294.9 K: 232.9 L: 60.000; G: -0.04% L: 19.430; R: 36022.6 K: 360.2 L: 150.000; G: 0.37% Lc: 128.207m; K: 105.3 L: 120.000m PVI Elev:91.831m
Horizontal Alignment	242.162m; Radius: 2000.00m Lc:62.650m Delta: 1.7948; L=64.542m; Radius: 2000.00m Lc:144.134m Delta: 4.1291; L=16.634m; Radius: 2000.00m Lc:81.996m Delta: 2.3490; L=987.130m
Superelevation (%)	
Chainage (m)	492+000 492+010 492+020 492+030 492+040 492+050 492+060 492+070 492+080 492+090 492+100 492+110 492+120 492+130 492+140 492+150 492+160 492+170 492+180 492+190 492+200 492+210 492+220 492+230 492+240 492+250 492+260 492+270 492+280 492+290 492+300 492+310 492+320 492+330 492+340 492+350 492+360 492+370 492+380 492+390 492+400 492+410 492+420 492+430 492+440 492+450 492+460 492+470 492+480 492+490 492+500 492+510 492+520 492+530 492+540 492+550 492+560 492+570 492+580 492+590 492+600 492+610 492+620 492+630 492+640 492+650 492+660 492+670 492+680 492+690 492+700 492+710 492+720 492+730 492+740 492+750 492+760 492+770 492+780 492+790 492+800 492+810 492+820 492+830 492+840 492+850 492+860 492+870 492+880 492+890 492+900 492+910 492+920 492+930 492+940 492+950 492+960 492+970 492+980 492+990 493+000 493+010 493+020 493+030 493+040 493+050

NO.	DATE	DESCRIPTION	CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+055 TO 535+250 (DESIGN KM 490+800 TO KM. 534+800) OF NH-15 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	DESIGN DIRECTION: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

M/S KAMDHENU ENGINEERS PVT.LTD. M/S Shiva Harlalka (JV) HARLALKA

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT. LTD.

SCALE: VERTICAL –1: 200 HORIZONTAL –1: 2000				DRG. NO. NHIDCL/KS/UA/P&P/492
PREPARED	DESIGNED	CHECKED	APPROVED	DATE: DEC. 2022 REVISION: R0
K.R	G.R	P.S	P.S	TITLE: PLAN & PROFILE CH-KM.492.000 TO KM.493.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Chainage : 493+612
Str Type : MNB
Span : 2x6.23m
Proposal : Recons.

Curve No.494/3,PI:HP Ch. 493+702.466 (X:650258.3491, Y:2975060.0281)

R	2500.000m	Es	–
Side	Left	Δ	3° 16' 43"
Lc	143.051m	V	100 km/hr
Ls	–	e	NR
We	–		

MATCH LINE

Ch. 493+100

Ch. 493+200

Ch. 493+300

Ch. 493+400

PCC Ch. 493+487.841

PT Ch. 493+530.892

PCC Ch. 493+574.270

Ch. 493+600

PT Ch. 493+673.516

PC Ch. 493+702.466

MAT Ch. 493+745.000

Ch. 493+800

PT Ch. 493+845.000

MATCH LINE

Ch. 493+900

Median 1.5m+ Carriageway 7m+ Paved Shoulder 1.5m+ Earthen Shoulder 2m

To Barmuri Morh>>>

Curve No.494/1, PI:HP Ch. 493+408.842 (X:650167.5433, Y:2974889.1315)

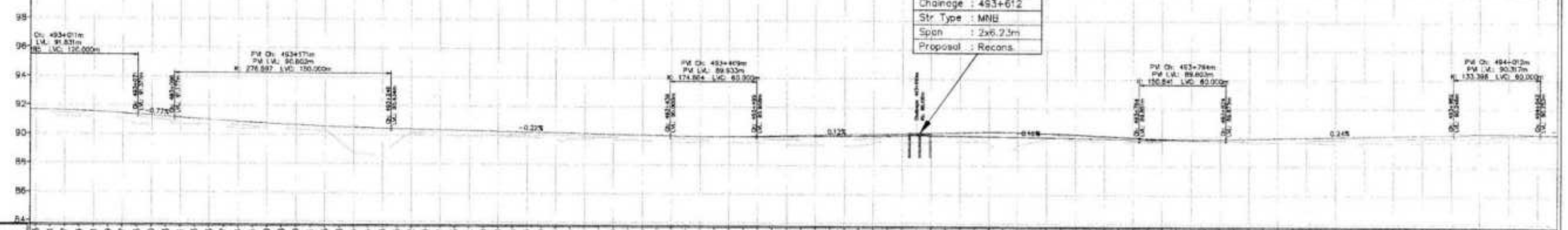
R	2000.000m	Es	–
Side	Right	Δ	1° 49' 19"
Lc	63.587m	V	100 km/hr
Ls	–	e	NR
We	–		

Curve No.494/2,PI:HP Ch. 493+586.270 (X:650219.8461, Y:2974870.4662)

R	2000.000m	Es	–
Side	Left	Δ	2° 05' 12"
Lc	72.835m	V	100 km/hr
Ls	–	e	NR
We	–		

Curve No.494/4,PI:HP Ch. 493+883.574 (X:650306.8146, Y:2975254.0031)

R	2000.000m	Es	–
Side	Right	Δ	3° 26' 44"
Lc	120.275m	V	100 km/hr
Ls	–	e	NR
We	–		



Datum =80.000

Finished Road Level LHS (FRL)(m)	91.675 91.661 91.637 91.604 91.561 91.509 91.447 91.376 91.300 91.223 91.146 91.073 91.003 90.937 90.874 90.816 90.760 90.708 90.660 90.616 90.575 90.538 90.504 90.474 90.448 90.425 90.402 90.380 90.357 90.335 90.312 90.290 90.268 90.245 90.223 90.200 90.178 90.155 90.133 90.111 90.088 90.066 90.043 90.021 89.998 89.976 89.959 89.966 89.970 89.981 89.999 90.021 90.042 90.064 90.086 90.107 90.129 90.150 90.172 90.194 90.215 90.237 90.258 90.280 90.301 90.320 90.329 90.327 90.314 90.290 90.256 90.211 90.162 90.114 90.065 90.017 89.968 89.922 89.886 89.863 89.851 89.852 89.865 89.887 89.911 89.935 89.956 89.972 89.982 89.985 89.978 89.958 90.009 90.029 90.053 90.076 90.100 90.124 90.147 90.171 90.194 90.218 90.242 90.263 90.277 90.283 90.282 90.273 90.257 90.236
Finished Road Level RHS (FRL)(m)	
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	K: 105.2 120.000m Elev: 91.831m; L: 25.29; -0.8%; R: 27656.4 K: 276.6 L: 150.000; G: -0.2% L: 193.264; R: 13628.4 K: 136.3 L: 60.000; G: 0.22% Lc: 143.716m; K: 92.7 L: 65.000m PVI Elev: 90.378m; G: -0.5% L: 50.134; R: 8318.4 K: 83.2 L: 60.000; G: 0.24% Lc: 157.776m; K: 133.4 L: 60.000m PVI Elev: 90.317m; L: 25.29
Vertical Alignment RHS	K: 105.3 120.000m Elev: 91.831m; L: 25.29; -0.8%; R: 27659.7 K: 276.6 L: 150.000; G: -0.2% L: 193.264; R: 17488.4 K: 174.9 L: 60.000; G: 0.12% Lc: 110.740m; G: -0.2% L: 154.116; R: 13094.1 K: 130.9 L: 60.000; G: 0.24% Lc: 157.776m; K: 133.4 L: 60.000m PVI Elev: 90.317m; L: 25.29
Horizontal Alignment	1.30m; Radius: 2000.00m Lc: 63.597m Delta: 1.8219; Radius: 2000.00m L=19.211 C: 72.835m Delta: 2.0866; L=8.238m; Radius: 2500.00m Lc: 143.051m Delta: 3.2785; L=49.466m; Radius: 2000.00m Lc: 120.275m Delta: 3.4456
Superelevation (%)	
Chainage (m)	493+000 493+010 493+020 493+030 493+040 493+050 493+060 493+070 493+080 493+090 493+100 493+110 493+120 493+130 493+140 493+150 493+160 493+170 493+180 493+190 493+200 493+210 493+220 493+230 493+240 493+250 493+260 493+270 493+280 493+290 493+300 493+310 493+320 493+330 493+340 493+350 493+360 493+370 493+380 493+390 493+400 493+410 493+420 493+430 493+440 493+450 493+460 493+470 493+480 493+490 493+500 493+510 493+520 493+530 493+540 493+550 493+560 493+570 493+580 493+590 493+600 493+610 493+620 493+630 493+640 493+650 493+660 493+670 493+680 493+690 493+700 493+710 493+720 493+730 493+740 493+750 493+760 493+770 493+780 493+790 493+800 493+810 493+820 493+830 493+840 493+850 493+860 493+870 493+880 493+890 493+900 493+910 493+920 493+930 493+940 493+950 493+960 493+970 493+980 493+990 494+000 494+010 494+020 494+030 494+040 494+050

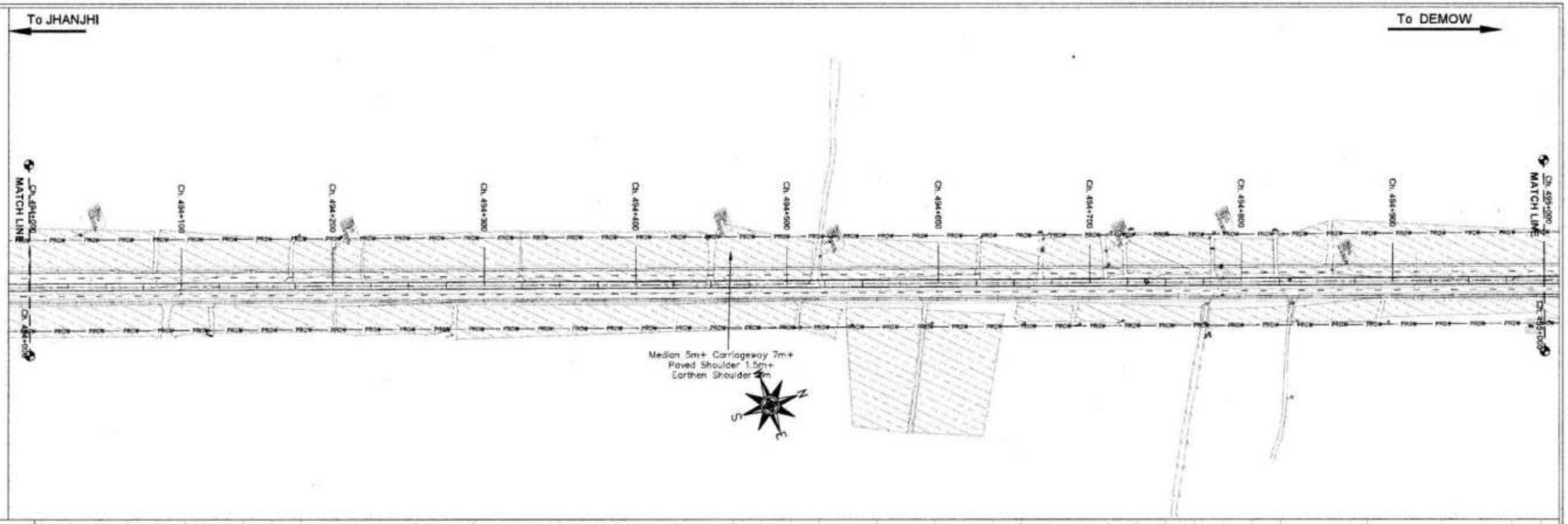
NO.	DESCRIPTION	CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM 491+050 TO 535+250 (DESIGN KM 490+600 TO KM. 534+800) OF NH-15 IN THE STATE OF ASSAM UNDER SARDP-NE ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S Shiva Harlalka (JV) M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV)	DESIGN DIRECTOR: Proteek Srivastava
		PROJ. CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.	

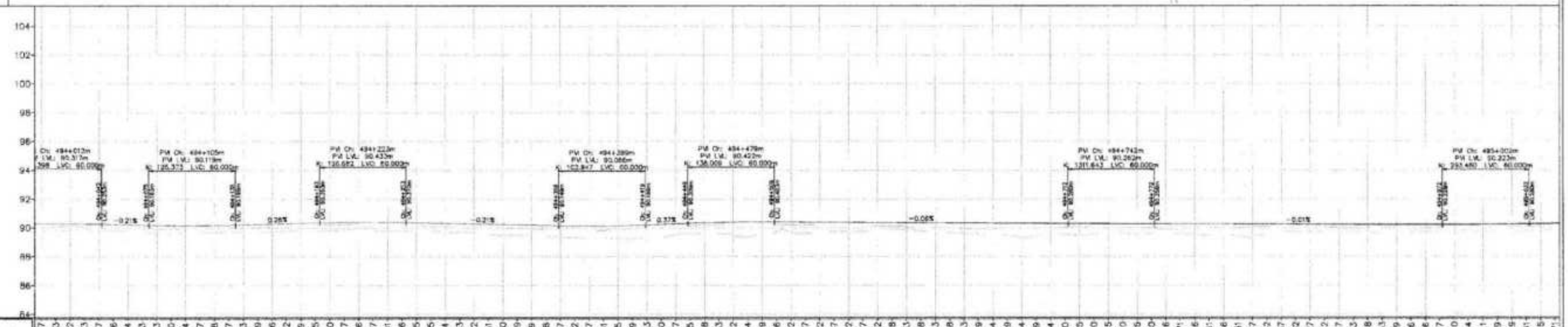
SCALE:				DRG. NO. NHIDCL/KS/UA/P&P/493
VERTICAL –1: 200 HORIZONTAL –1: 2000				DATE :DEC. 2022 REVISION: R0
PREPARED	DESIGNED	CHECKED	APPROVED	TITLE: PLAN & PROFILE CH:-KM.493.000 TO KM.494.000
K.R	G.R	P.S	P.S	

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





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LEGEND

HORIZONTAL PLAN

- Proposed CL
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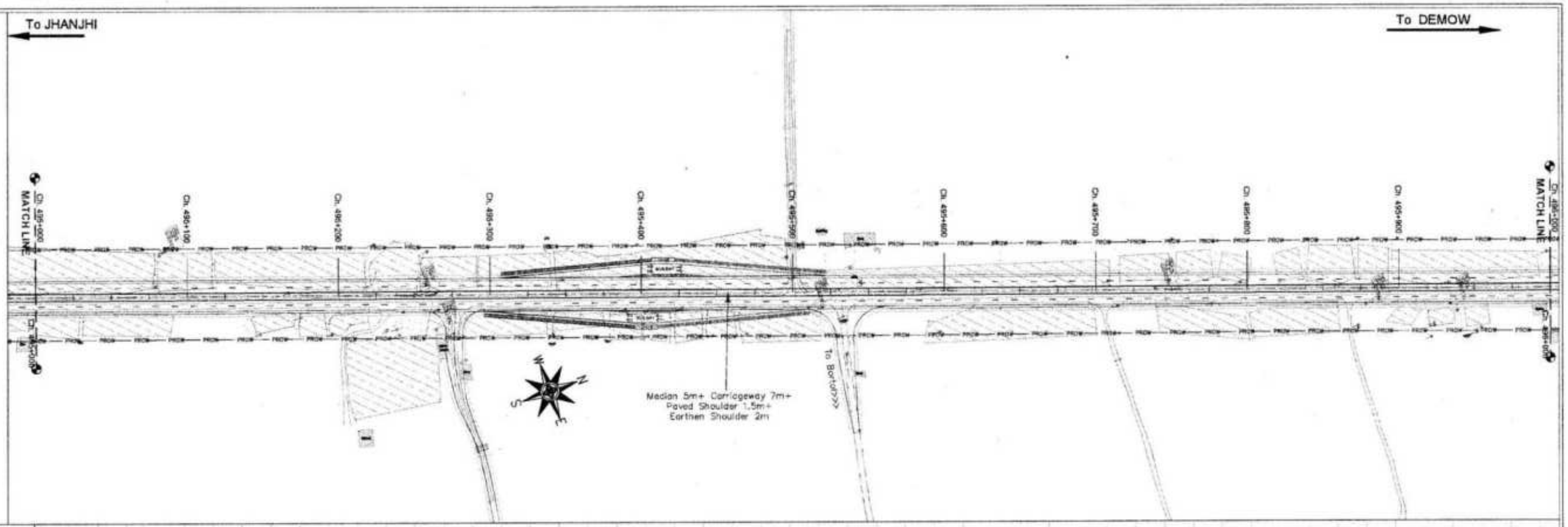

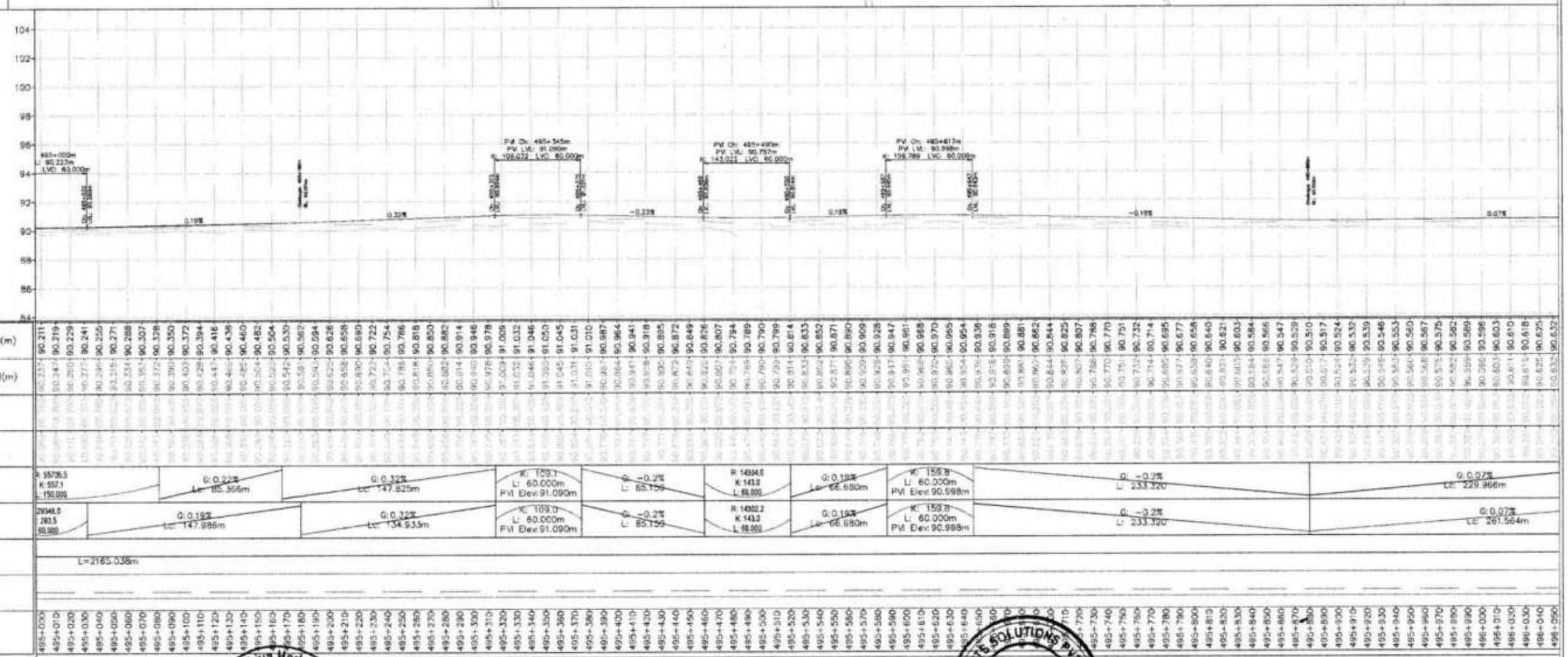

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LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
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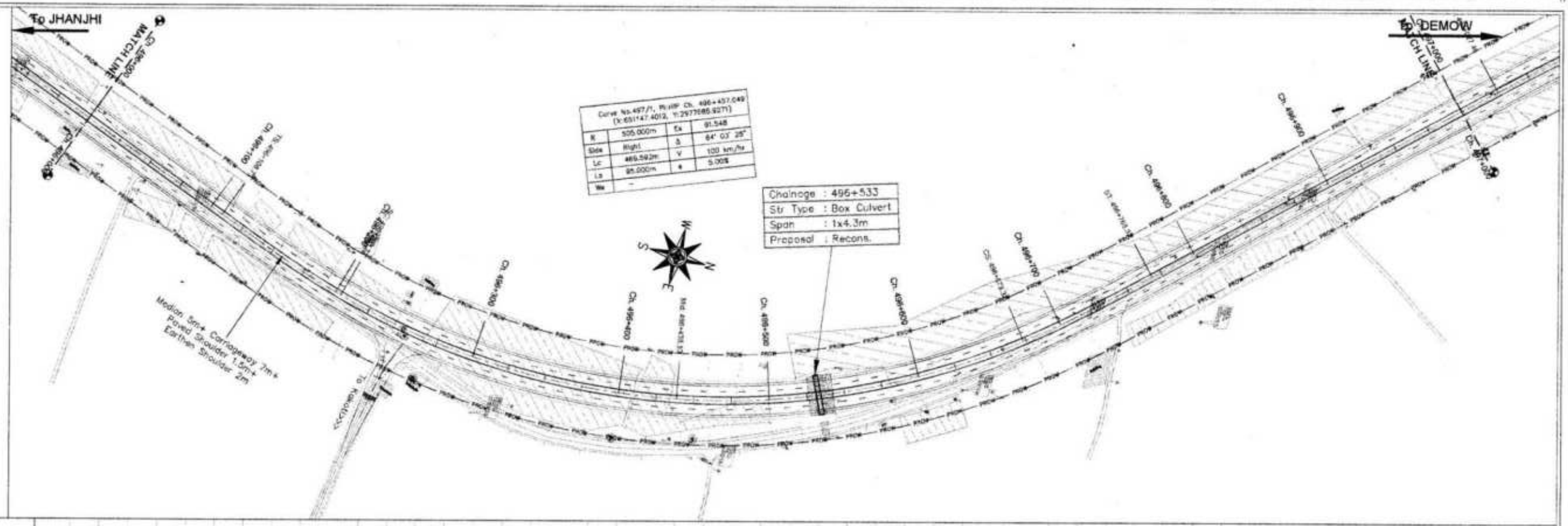

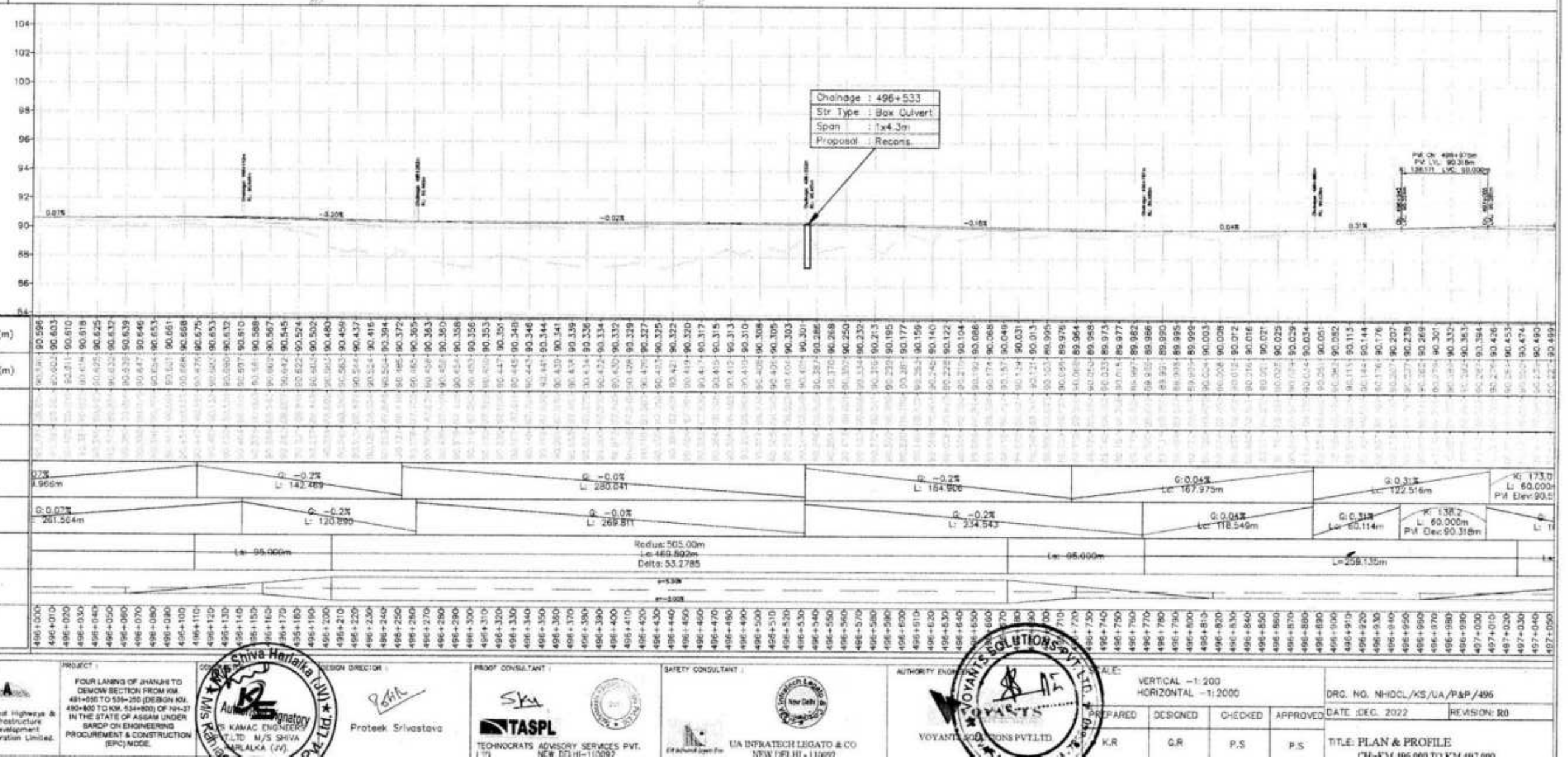

CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 481+000 TO 539+250 (DESIGN KM. 480+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BAROT ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

SCALE: VERTICAL –1: 200, HORIZONTAL –1: 2000

DRG. NO. NHIDCL/KS/UA/P&P/496

DATE :DEC. 2022 REVISION: R0

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

TITLE: PLAN & PROFILE

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
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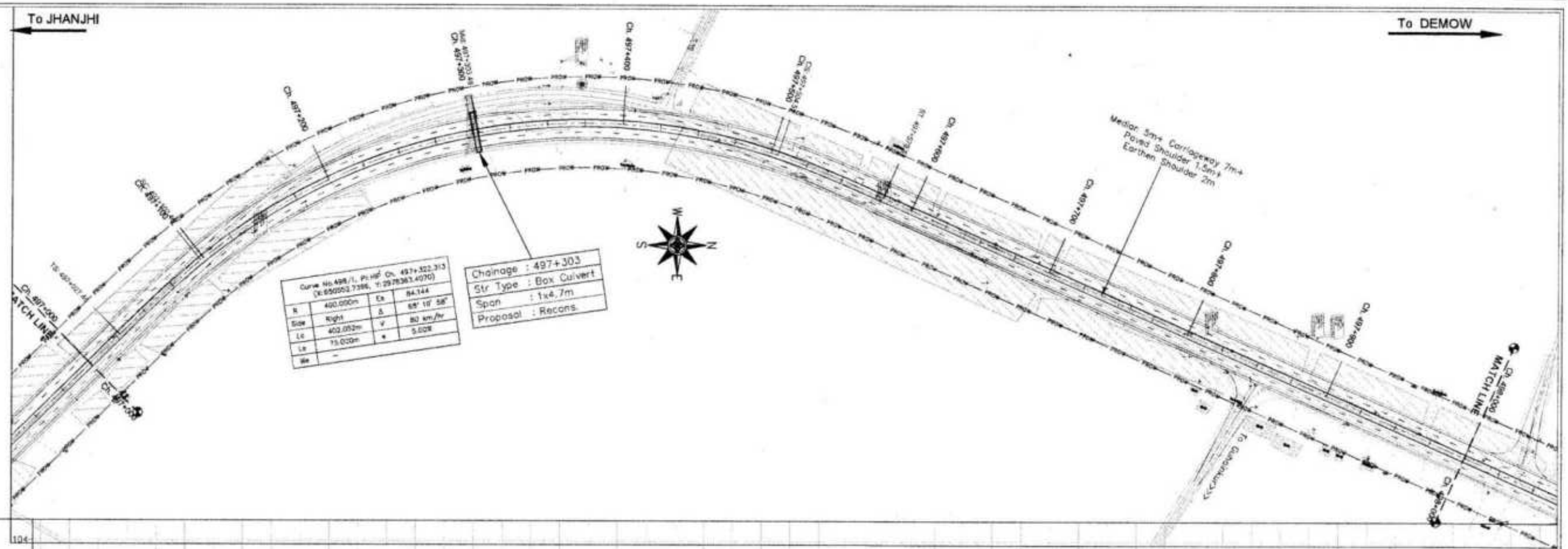
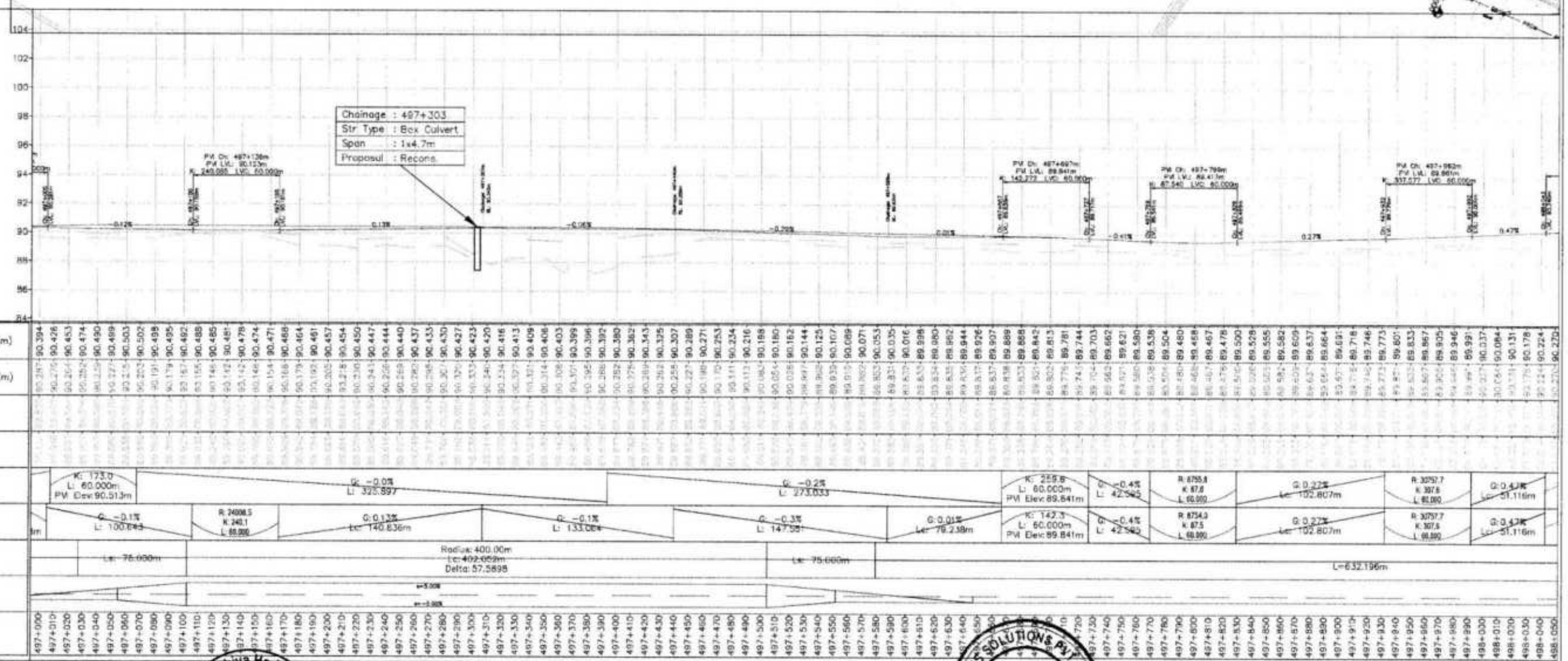
- Retaining Wall
- Existing Road





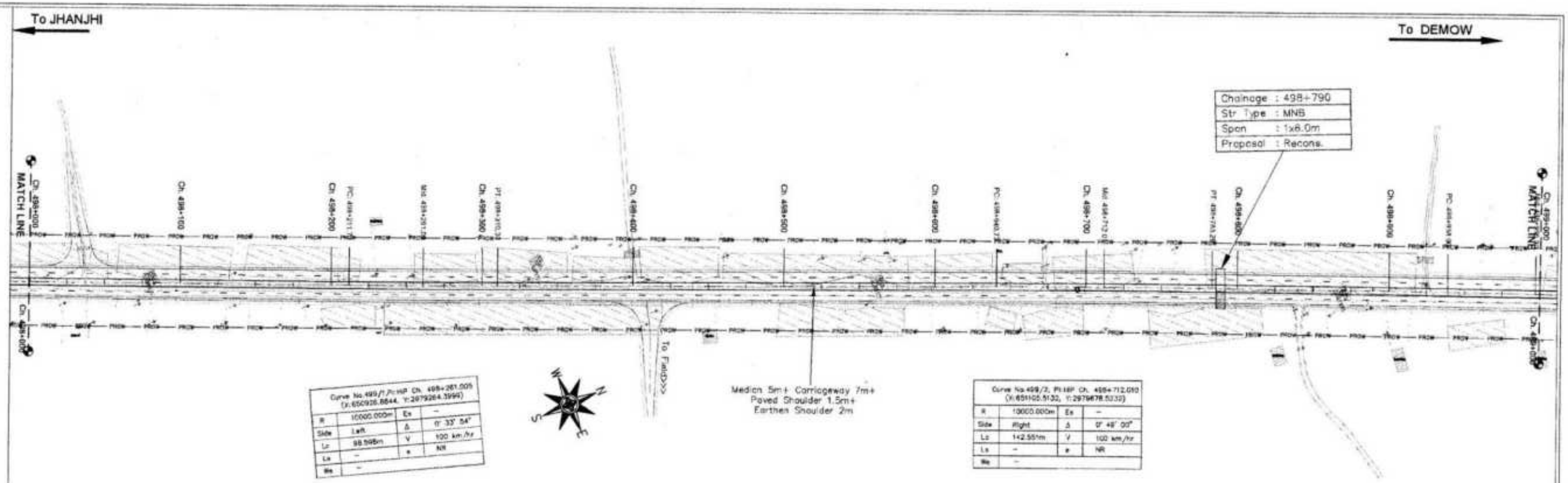
Datum =80.000

Finished Road Level LHS (FRL)(m)	90.394 90.426 90.453 90.474 90.490 90.499 90.503 90.502 90.498 90.495 90.492 90.488 90.485 90.481 90.478 90.474 90.471 90.468 90.464 90.461 90.457 90.454 90.450 90.447 90.444 90.440 90.437 90.433 90.430 90.427 90.423 90.420 90.416 90.413 90.409 90.406 90.403 90.399 90.396 90.392 90.389 90.382 90.375 90.362 90.343 90.325 90.307 90.289 90.271 90.253 90.234 90.216 90.198 90.180 90.162 90.144 90.125 90.107 90.089 90.071 90.053 90.035 90.016 89.998 89.980 89.962 89.944 89.926 89.907 89.889 89.868 89.842 89.813 89.781 89.744 89.703 89.662 89.621 89.580 89.538 89.504 89.480 89.468 89.467 89.478 89.500 89.528 89.555 89.582 89.609 89.637 89.664 89.691 89.718 89.746 89.773 89.801 89.833 89.867 89.905 89.946 89.991 90.037 90.084 90.131 90.178 90.224 90.270
Finished Road Level RHS (FRL)(m)	90.270 90.252 90.226 90.194 90.155 90.146 90.142 90.142 90.146 90.154 90.168 90.179 90.192 90.205 90.218 90.230 90.241 90.250 90.259 90.268 90.276 90.284 90.292 90.300 90.307 90.314 90.321 90.327 90.333 90.339 90.345 90.351 90.357 90.363 90.369 90.375 90.381 90.387 90.393 90.399 90.405 90.411 90.417 90.423 90.429 90.435 90.441 90.447 90.453 90.459 90.465 90.471 90.477 90.483 90.489 90.495 90.501 90.507 90.513 90.519 90.525 90.531 90.537 90.543 90.549 90.555

LEGEND

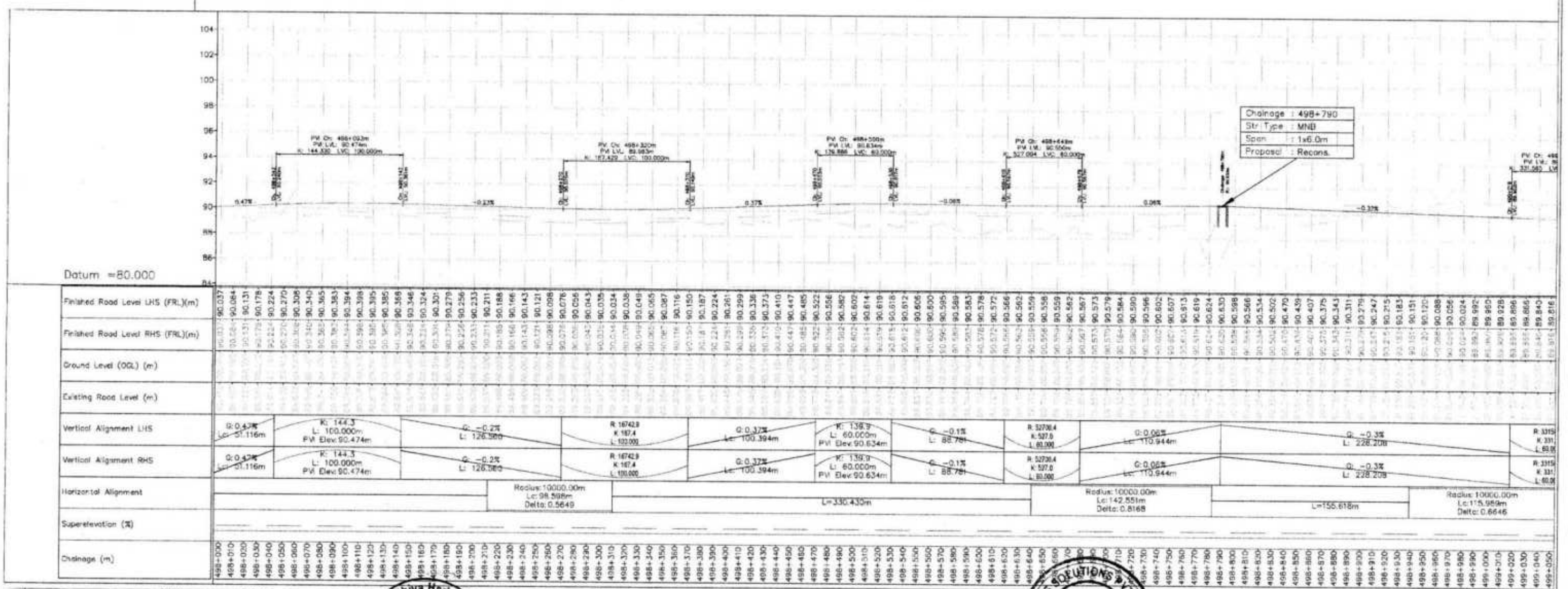
HORIZONTAL PLAN

- Proposed CL
- Pvt Median
- Pvt Carriageway
- Pvt Paved Shoulder
- Pvt Earthen Shoulder
- Pvt Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road



Curve No.499/1,PI:HP Ch. 498+261.005 (X:650926.8844, Y:2879264.3999)			
R	10000.000m	Es	–
Side	Left	Δ	0° 33' 54"
Lc	98.598m	V	100 km/hr
Ls	–	e	NR
Rs	–		

Curve No.499/2, PI:IP Ch. 498+712.050 (X:651105.5132, Y:2879678.5032)			
R	10000.000m	Es	–
Side	Right	Δ	0° 48' 00"
Lc	142.551m	V	100 km/hr
Ls	–	e	NR
Rs	–		



| | | |

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Curve No.499/3, PI:HP Ch. 499+896.868 (X:651222.0662, Y:2979936.4802)			
R	10000.000m	Ex	–
Side	Right	Δ	0° 39' 52"
Lc	115.989m	V	100 km/hr
Ls	–	e	NR
We	–		

Curve No.500/3, PI:HP Ch. 499+506.058 (X:651452.5682, Y:2980447.9096)			
R	5000.000m	Ex	–
Side	Left	Δ	0° 36' 49"
Lc	53.549m	V	100 km/hr
Ls	–	e	NR
We	–		

Median 5m+ Carriageway 7m+
Paved Shoulder 1.5m+
Earthen Shoulder 2m

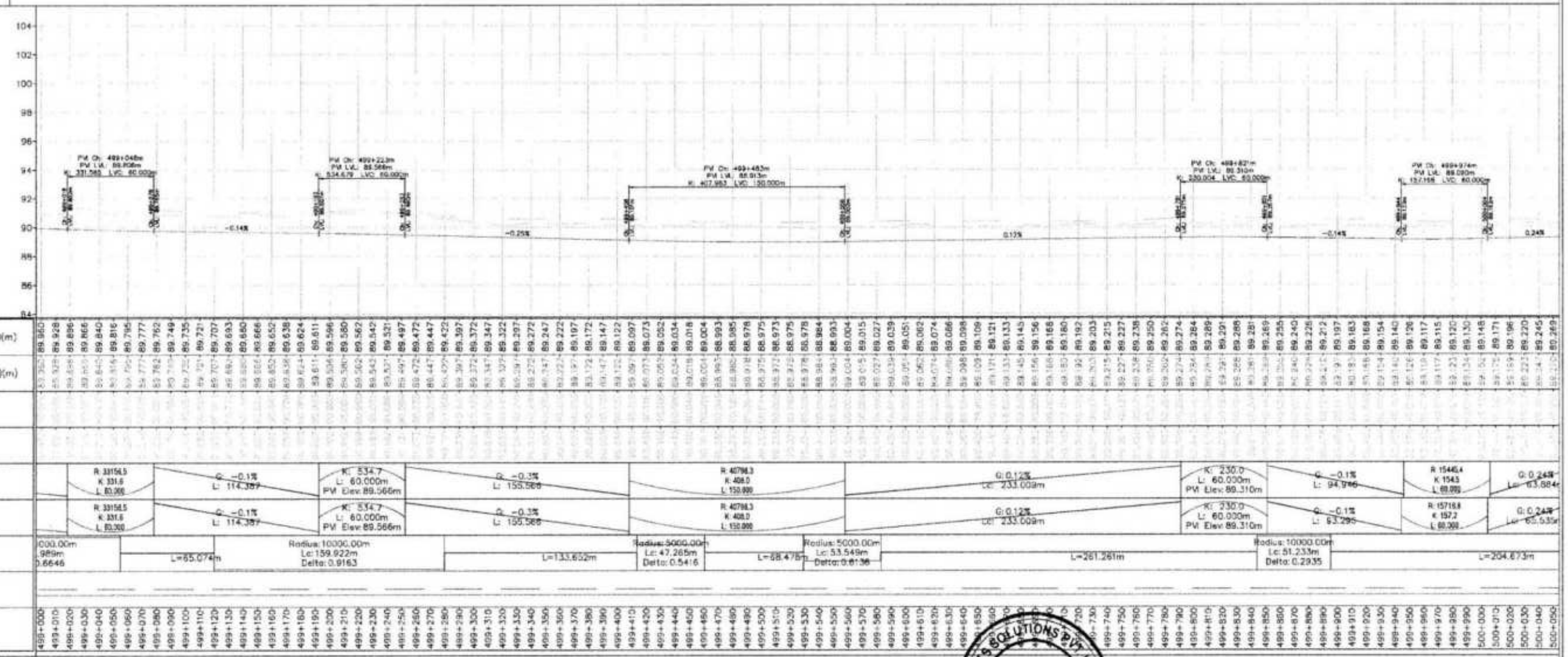
Ch. 499+000 MATCH LINE

Ch. 500+060 MATCH LINE

Curve No.500/1, PI:HP Ch. 499+199.928 (X:651307.2730, Y:2980122.7673)			
R	10000.000m	Ex	–
Side	Left	Δ	0° 54' 59"
Lc	159.922m	V	100 km/hr
Ls	–	e	NR
We	–		

Curve No.500/2, PI:HP Ch. 499+437.173 (X:651402.3829, Y:2980339.8760)			
R	5000.000m	Ex	–
Side	Right	Δ	0° 32' 30"
Lc	47.265m	V	100 km/hr
Ls	–	e	NR
We	–		

Curve No.500/4, PI:HP Ch. 499+869.710 (X:651576.2708, Y:2980734.8327)			
R	10000.000m	Ex	–
Side	Right	Δ	0° 17' 37"
Lc	51.233m	V	100 km/hr
Ls	–	e	NR
We	–		



Finished Road Level LHS (FRL)(m)	
Finished Road Level RHS (FRL)(m)	
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	R 33156.5 K: 331.6 L: 60.000 / G: −0.1% L: 114.387 / K: 534.7 L: 60.000m PVI Elev:89.566m / G: −0.3% L: 159.568 / R: 40798.3 K: 408.0 L: 150.000 / G: 0.12% Lc: 233.009m / K: 230.0 L: 60.000m PVI Elev:89.310m / G: −0.1% L: 94.996 / R: 15440.4 K: 154.5 L: 60.000 / G: 0.24% Lc: 63.884m
Vertical Alignment RHS	R: 33156.5 K: 331.6 L: 60.000 / G: −0.1% L: 114.387 / K: 534.7 L: 60.000m PVI Elev:89.566m / G: −0.3% L: 159.568 / R: 40798.3 K: 408.0 L: 150.000 / G: 0.12% Lc: 233.009m / K: 230.0 L: 60.000m PVI Elev:89.310m / G: −0.1% L: 93.296 / R: 15716.8 K: 157.2 L: 60.000 / G: 0.24% Lc: 65.535m
Horizontal Alignment	000.00m 98m 0.6646 / L=65.074m / Radius: 10000.00m Lc: 159.922m Delta: 0.9163 / L=133.632m / Radius: 5000.00m Lc: 47.265m Delta: 0.5416 / L=68.475m / Radius: 5000.00m Lc: 53.549m Delta: 0.6136 / L=261.261m / Radius: 10000.00m Lc: 51.233m Delta: 0.2935 / L=204.673m
Superelevation (%)	
Chainage (m)	499+000 … 500+050

DATE	DESCRIPTION	CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+016 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Proteek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

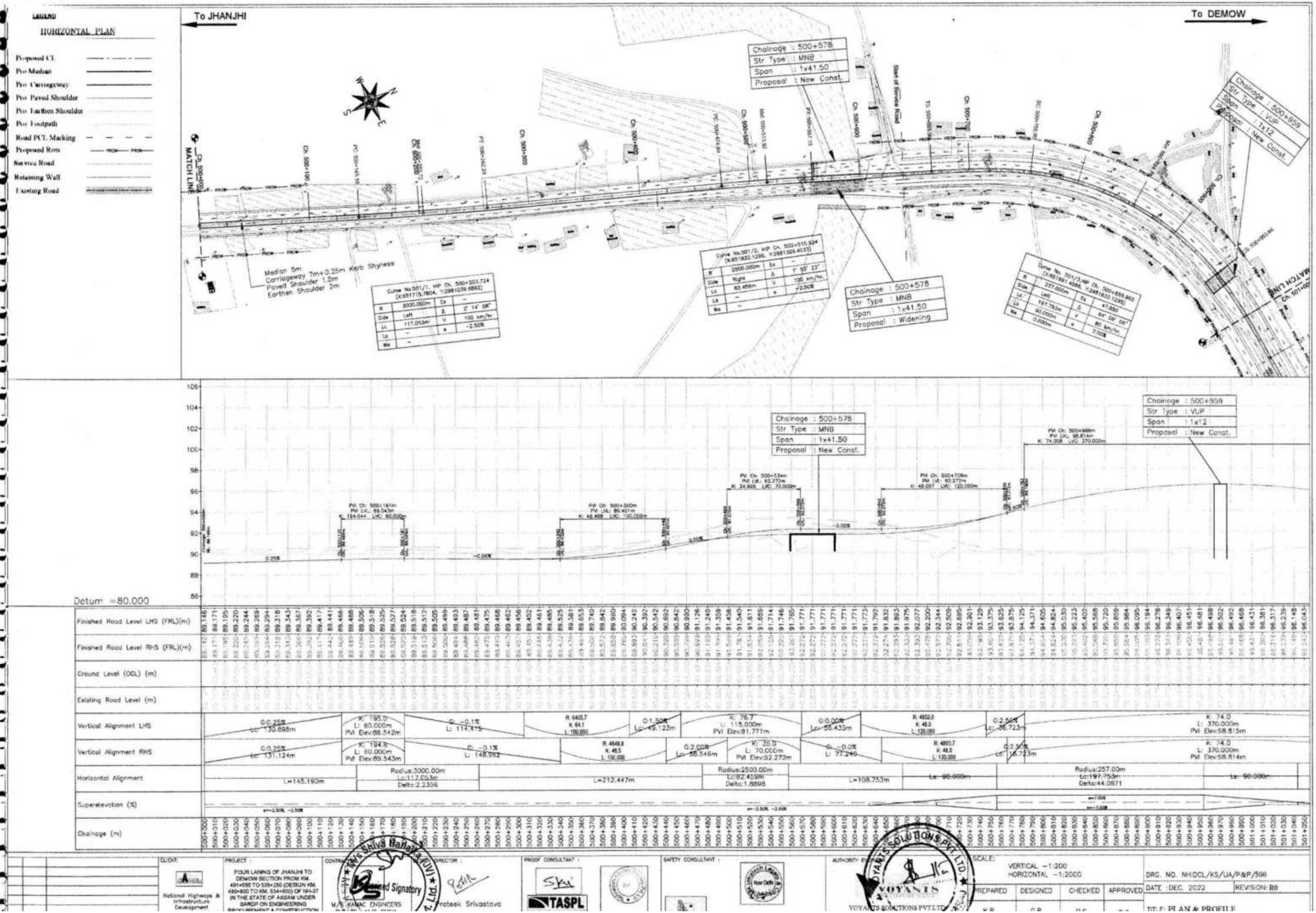
SCALE: VERTICAL −1: 200, HORIZONTAL −1: 2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/499

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH:-KM.499.000 TO KM.500.000



LEGEND
HORIZONTAL PLAN
Proposed CL
Pro Median
Pro Carriageway
Pro Paved Shoulder
Pro Earthen Shoulder
Pro Footpath
Road PCL Marking
Proposed Row
Service Road
Retaining Wall
Existing Road
To JHANJHI
To DEMOW
MATCH LINE
Chainage : 500+578
Str Type : MNB
Span : 1x41.50
Proposal : New Const.
Chainage : 500+959
Str Type : VUP
Span : 1x12
Proposal : New Const.
Median 5m
Carriageway 7m+0.25m Kerb Shyness
Paved Shoulder 1.5m
Earthen Shoulder 2m
Chainage : 500+578
Str Type : MNB
Span : 1x41.50
Proposal : Widening
Datum =80.000
Finished Road Level LHS (FRL)(m)
Finished Road Level RHS (FRL)(m)
Ground Level (OCL) (m)
Existing Road Level (m)
Vertical Alignment LHS
Vertical Alignment RHS
Horizontal Alignment
Superelevation (%)
Chainage (m)
CLIENT
National Highways & Infrastructure Development
PROJECT
FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION
CONTRACTOR
M/S KAMAC ENGINEERS
DIRECTOR
Prateek Srivastava
PROOF CONSULTANT
TASPL
SAFETY CONSULTANT
AUTHORITY ENGINEER
VOYANTS SOLUTIONS PVT LTD
SCALE:
VERTICAL -1:200
HORIZONTAL -1:2000
PREPARED
DESIGNED
CHECKED
APPROVED
DRG. NO. NHIDCL/KS/UA/P&P/500
DATE : DEC. 2022
REVISION: R0
TITLE: PLAN & PROFILE

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Curve No.502/1, HIP Ch. 501+129.854 (X:652268.6217, Y:2981668.5628)			
R	2000.000m	Es	–
Side	Left	Δ	3° 03' 41"
Lc	106.861m	V	100 km/hr.
Ls	–	e	-2.50%
We	–		

Curve No.502/2, HIP Ch. 501+441.852 (X:652079.0928, Y:2981804.4862)			
R	5000.000m	Es	–
Side	Left	Δ	0° 27' 03"
Lc	39.340m	V	100 km/hr.
Ls	–	e	-2.50%
We	–		

Curve No.502/3, HIP Ch. 501+581.795 (X:652728.8234, Y:2981706.0942)			
R	5000.000m	Es	–
Side	Right	Δ	0° 32' 17"
Lc	46.955m	V	100 km/hr.
Ls	–	e	-2.50%
We	–		

Curve No.502/4, HIP Ch. 501+931.758 (X:653085.8947, Y:2981749.7639)			
R	305.000m	Es	18.548
Side	Left	Δ	35° 55' 25"
Lc	111.230m	V	80 km/hr.
Ls	80.000m	e	7.00%
We	–		

Chainage : 501+890
Str Type : Hume Pipe
Span : 1x1.2m
Proposal : New Const.

MATCH LINE Ch. 500+000

MATCH LINE Ch. 502+050

Median 3m
Carriageway 7m+0.25m Kerb Shyness
Paved Shoulder 3.75m
Separator 1.5m
Service Road 7m
Drain cum Footpath 1.5m

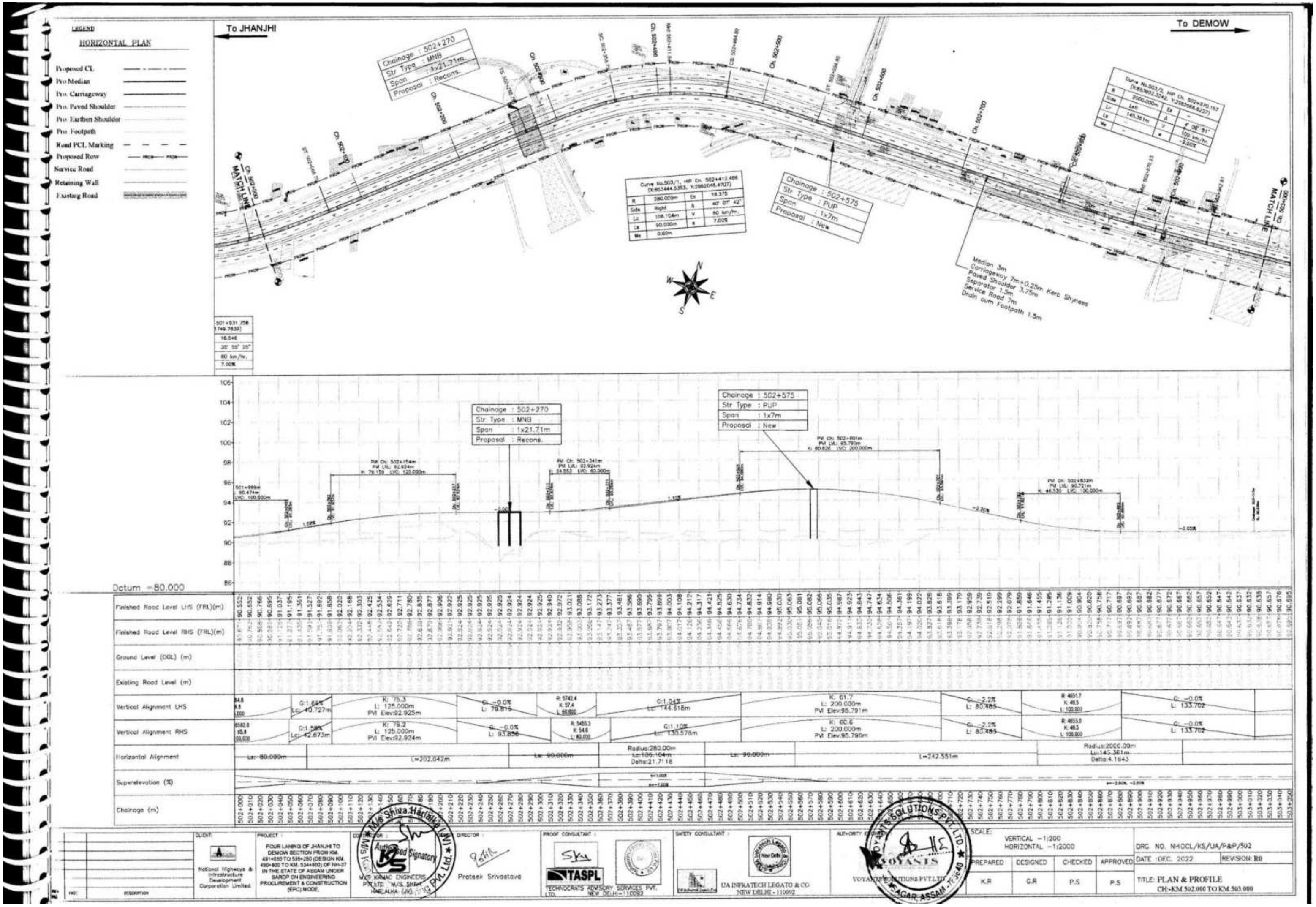
Datum =80.000

Finished Road Level LHS (FRL)(m)	
Finished Road Level RHS (FRL)(m)	
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	G: -2.5% Li: 125.489 / R: 4497.7 K: 45.0 L: 130.000 / G:0.32% Lc: 102.805m / K: 159.0 Li: 60.000m PVI Elev:90.200m / G:0.01% Lc: 365.208m / R: 9584.9 K: 69.8 L: 115.000
Vertical Alignment RHS	G: -2.5% Li: 125.489 / R: 4497.9 K: 45.0 L: 130.000 / G:0.32% Lc: 102.805m / K: 181.5 Li: 60.000m PVI Elev:90.200m / G:0.06% Lc: 378.262m / R: 9582.0 K: 65.8 L: 105.000
Horizontal Alignment	0.000m / L=32.755m / Radius:2000.00m Lc:106.861m Delta:3.0614 / L=256.911m / Radius:5000.00m Lc:39.340m Delta:0.4508 / L=106.796m / Radius:5000.00m Lc:46.955m Delta:0.5381 / L=180.246m / Lc: 80.000m / Radius:305.00m Lc:111.230m Delta:20.8951 / Lc: 80.000m
Superelevation (%)	+/-2.50% -2.50% / +/-7.00%
Chainage (m)	501+000 … 502+050

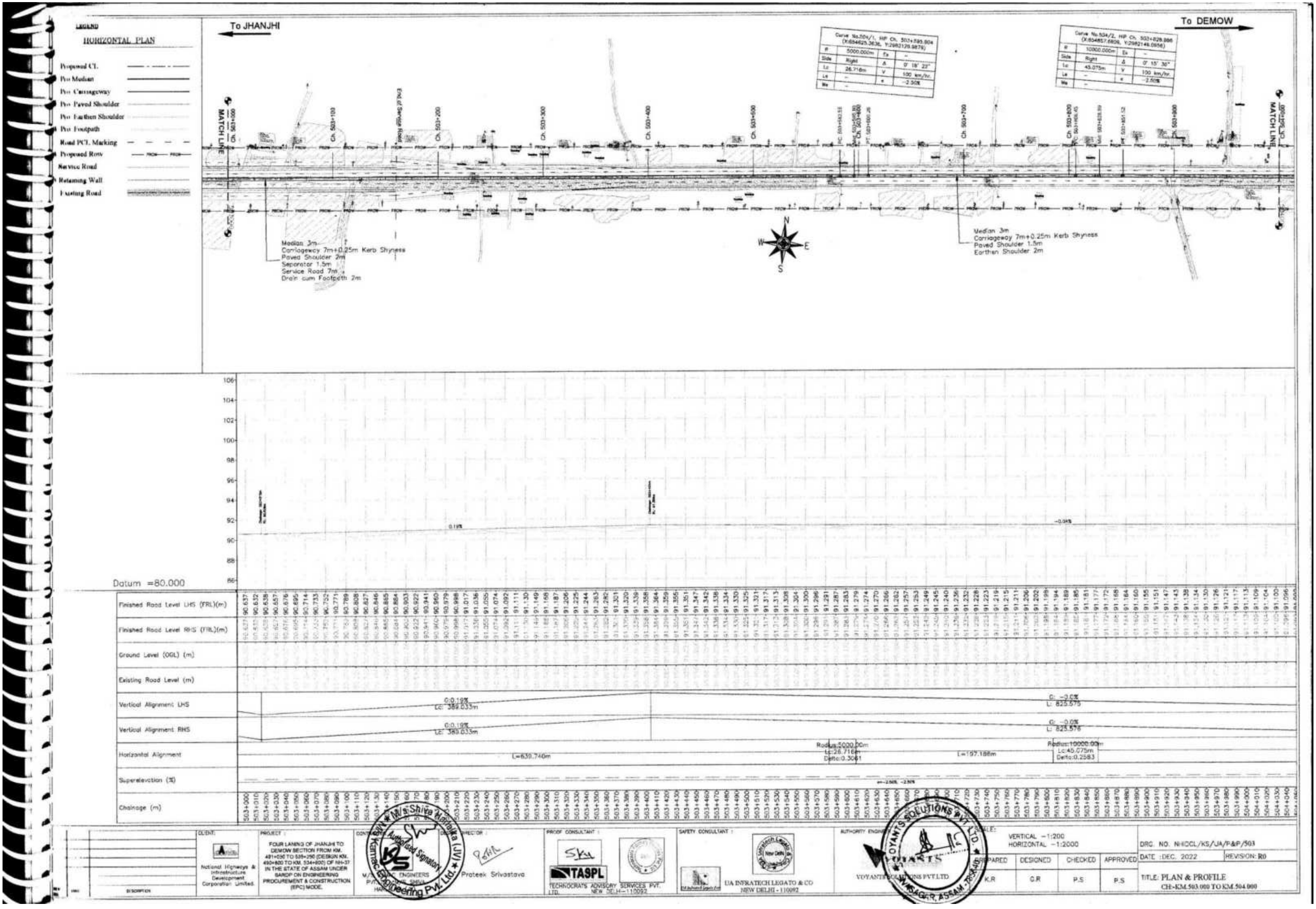
DESCRIPTION	CLIENT	PROJECT	CONTRACTOR	DIRECTOR	PROOF CONSULTANT	SAFETY CONSULTANT	AUTHORITY ENGINEER	SCALE	DRG. NO. NHIDCL/KS/JA/P&P/501
	National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+656 TO KM. 535+256 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP-NE ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/S KAMAC ENGINEERS PVT.LTD. M/S SHIVA HARLALKA (JV)	Prateek Srivastava	TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT.LTD.	VERTICAL –1:200 HORIZONTAL –1:2000	DATE : DEC. 2022 REVISION: R0

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

TITLE: PLAN & PROFILE
CH:-KM.501.000 TO KM.502.000



LEGEND
HORIZONTAL PLAN
Proposed CL
Pro Median
Pro. Carriageway
Pro. Paved Shoulder
Pro. Earthen Shoulder
Pro. Footpath
Road PCL Marking
Proposed Row
Service Road
Retaining Wall
Existing Road
To JHANJHI
To DEMOW
Chainage : 502+270
Str Type : MNB
Span : 1x21.71m
Proposal : Recons.
Chainage : 502+575
Str Type : PUP
Span : 1x7m
Proposal : New
Median 3m
Carriageway 7m+0.25m Kerb Shyness
Paved Shoulder 3.75m
Separator 1.5m
Service Road 7m
Drain cum Footpath 1.5m
MATCH LINE
Datum =80.000
Finished Road Level LHS (FRL)(m)
Finished Road Level RHS (FRL)(m)
Ground Level (OGL) (m)
Existing Road Level (m)
Vertical Alignment LHS
Vertical Alignment RHS
Horizontal Alignment
Superelevation (%)
Chainage (m)
Ls: 80.000m
L=202.042m
Ls: 90.000m
Radius:280.00m
Lc:136.104m
Delta:21.7118
Ls: 90.000m
L=242.551m
Radius:2000.00m
Lc:145.361m
Delta:4.1643
CLIENT:
National Highways & Infrastructure Development Corporation Limited
PROJECT :
FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.
CONTRACTOR :
M/S KAMAC ENGINEERS PVT. LTD. M/S. SHIVA HARLALKA (JV)
DIRECTOR :
Prateek Srivastava
PROOF CONSULTANT :
TASPL
TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092
SAFETY CONSULTANT :
UA INFRATECH LEGATO & CO NEW DELHI - 110092
AUTHORITY ENGINEER :
VOYANTS SOLUTIONS PVT. LTD.
SCALE:
VERTICAL -1:200
HORIZONTAL -1:2000
PREPARED
DESIGNED
CHECKED
APPROVED
K.R
G.R
P.S
P.S
DRG. NO. NHIDCL/KS/UA/P&P/502
DATE :DEC. 2022
REVISION: R0
TITLE: PLAN & PROFILE
CH:-KM 502.000 TO KM.503.000



CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S. KARMAC ENGINEERS PVT. LTD. SHIVA HARIYALA (JV)	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT LTD.	SCALE: VERTICAL -1:200 HORIZONTAL -1:2000

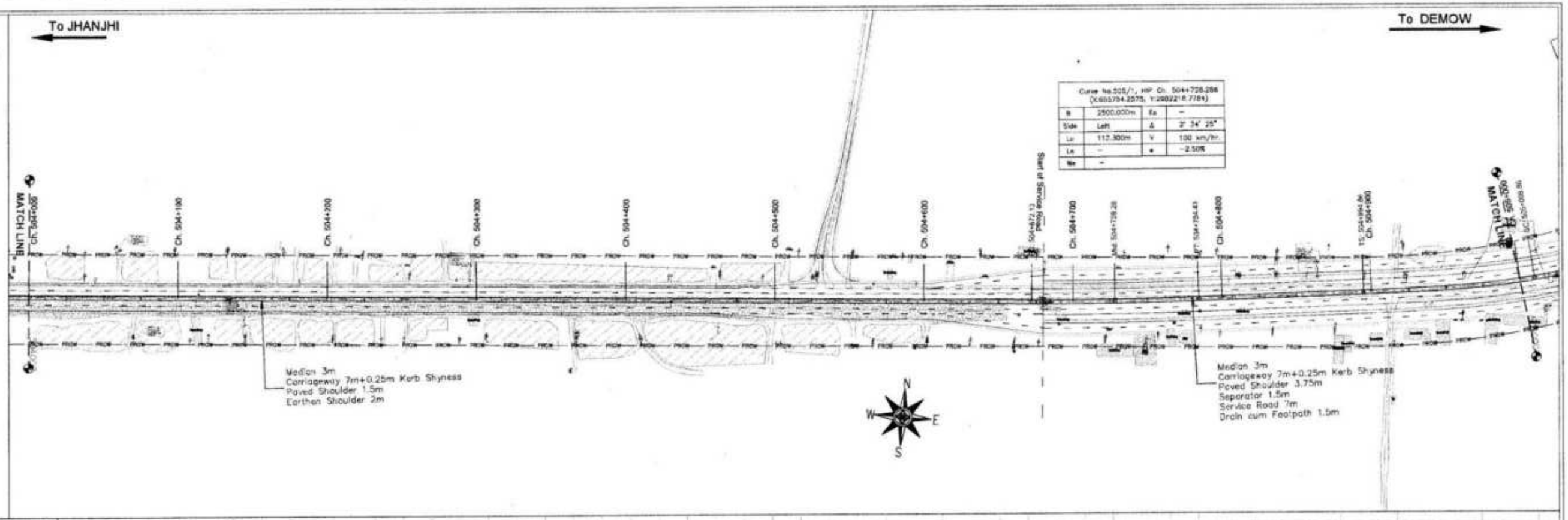
PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

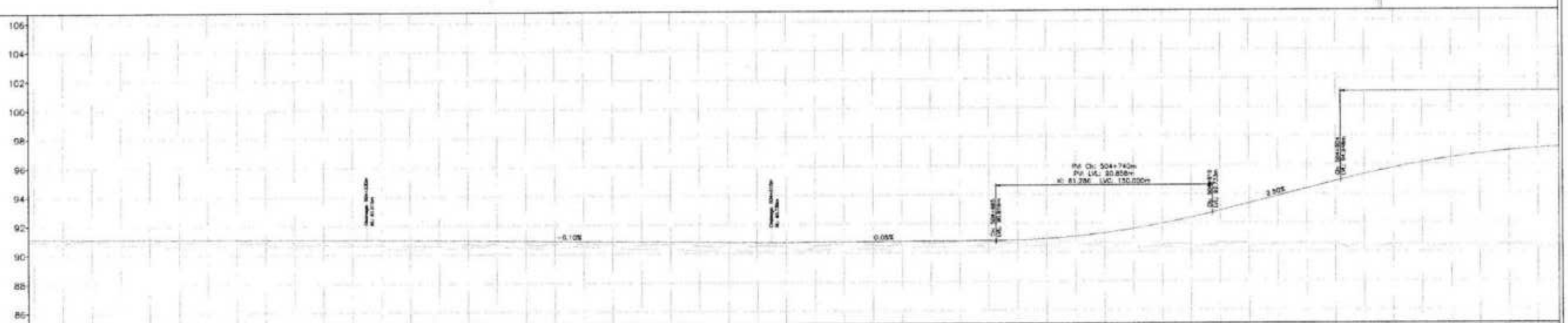
DRG. NO. NHIDCL/KS/JA/P&P/503
DATE :DEC. 2022
REVISION: R0
TITLE: PLAN & PROFILE
CH:-KM.503.000 TO KM.504.000

LEGEND

HORIZONTAL PLAN

- Proposed C/L
- Pvt Median
- Pvt Carriageway
- Pvt Paved Shoulder
- Pvt Earthen Shoulder
- Pvt Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





Datum = 80.000

Finished Road Level LHS (FRL)(m)	
Finished Road Level RHS (FRL)(m)	
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	G: -0.1% L: 279.970 / G:0.05% Lc: 155.000m / R: 6128.7 K: 61.3 L: 150.000 / G:2.50% Lc: 88.669m
Vertical Alignment RHS	G: -0.1% L: 279.970 / G:0.05% Lc: 155.000m / R: 6128.6 K: 61.3 L: 150.000 / G:2.50% Lc: 88.508m
Horizontal Alignment	L=826.603m / Radius:2500.00m Lsc:112.500m Delta:2.5737 / L=110.433m / Lc: 115.000m
Superelevation (%)	e=-2.50% -2.50%
Chainage (m)	504+000 to 505+050

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP-NE ON ENGINEERING, PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S. [illegible] ENGINEERS PVT. LTD. & M/S SHIVA HARDIKA JV

Authorised Signatory

For Shiva Hardika JV (M/s Shiva Hardika Infrastructure Engineering Pvt. Ltd.)

GENERAL MANAGER / DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI – 110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI – 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT LTD

VOYANTS SOLUTIONS PVT. LTD. SILCHAR, ASSAM

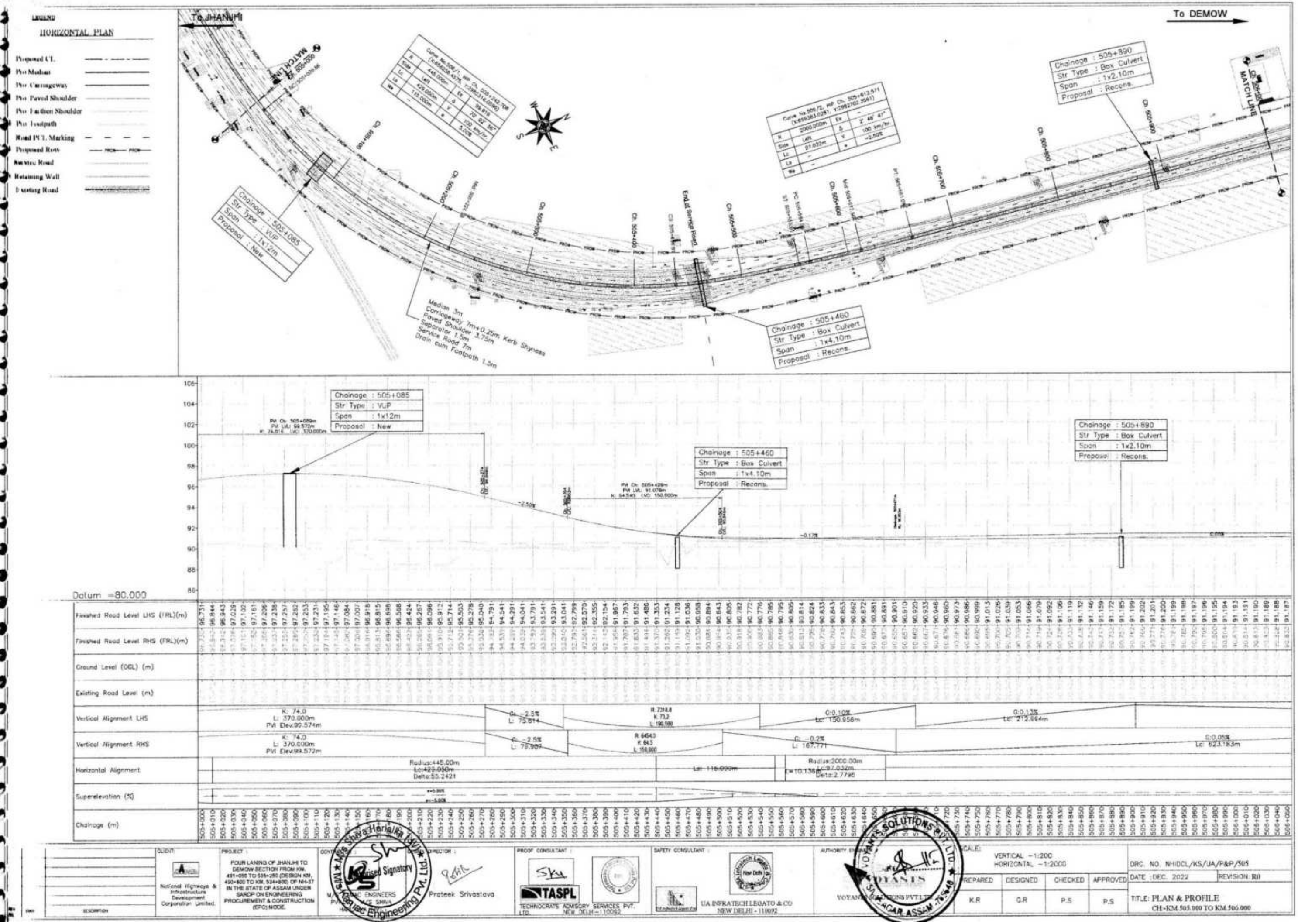
SCALES: VERTICAL – 1:200, HORIZONTAL – 1:2000

DRG. NO. NH:DCL/KS/UA/P&P/504

DATE : DEC. 2022 REVISION: R0

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

TITLE: PLAN & PROFILE CH:-KM.504.000 TO KM.505.000



CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP-NE ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/s Kamtac Engineers Pvt. Ltd.	DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT. LTD. SILCHAR, ASSAM-788148

SCALE: VERTICAL -1:200 HORIZONTAL -1:2000

DRC. NO. NHIDCL/KS/UA/P&P/505

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DATE : DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH-KM.505.000 TO KM.506.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Retw
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Chainage : 506+260
Str Type : Box Culvert
Span : 1x2.00m
Proposal : Recons.

MATCH LINE Ch. 506+000

Ch. 506+100 | Ch. 506+200 | Ch. 506+300 | Ch. 506+400 | Ch. 506+500 | Ch. 506+600 | Ch. 506+700 | Ch. 506+800 | Ch. 506+900

MATCH LINE Ch. 507+000

Median 3m
Carriageway 7m+0.25m Kerb Shyness
Paved Shoulder 1.5m
Earthen Shoulder 2m

Curve No.507/1, HIP Ch. 506+810.602 (X:656594.2285, Y:2963881.6431)			
R	10000.000m	Ts	--
Dirn	Right	Δ	0° 34' 51"
Lc	101.393m	V	100 km/hr.
Ls	--	e	-2.50%
Rc	--		

Chainage : 506+260
Str Type : Box Culvert
Span : 1x2.00m
Proposal : Recons.

Datum =80.000

Finished Road Level LHS (FRL)(m)

Finished Road Level RHS (FRL)(m)

Centre Level (OCL) (m)

Existing Road Level (m)

Vertical Alignment LHS: G: -0.0% L: 776.739 | G:0.11% Le: 190.025m | G:0.21% Le: 150.000m

Vertical Alignment RHS: G: -0.2% L: 117.375 | G:0.04% Le: 273.470m | G:0.15% Le: 351.564m

Horizontal Alignment: L=1098.828m | Radius:10000.00m Lc:101.393m Delta:0.5809

Superelevation (%)

Chainage (m)

CLIENT:	PROJECT	CONSULTANT	DIRECTOR	PROOF CONSULTANT	SAFETY CONSULTANT	AUTHORITY ENGINEER	SCALE:
National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+900) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP-NE ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	AMAC ENGINEERS JV M/S SHIVA (JV)	Prateek Srivastava	TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI - 110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANT SOLUTIONS PVT.LTD.	VERTICAL -1:200 HORIZONTAL -1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

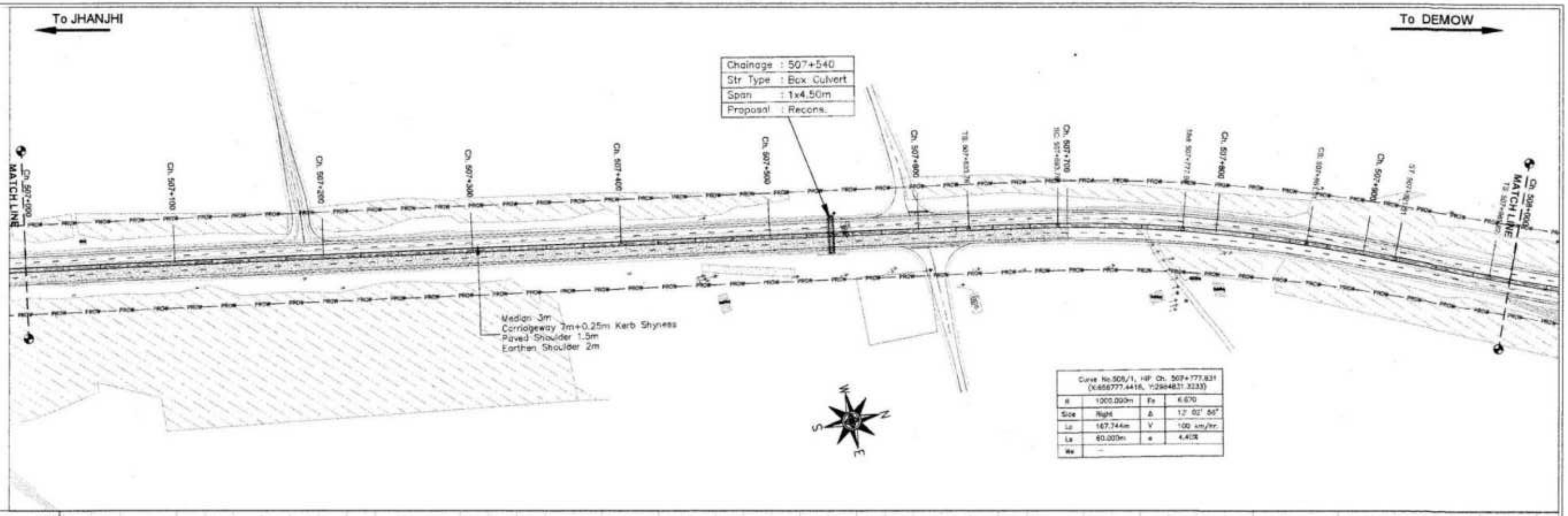
DRG. NO. NHIDCL/KS/UA/P&P/506

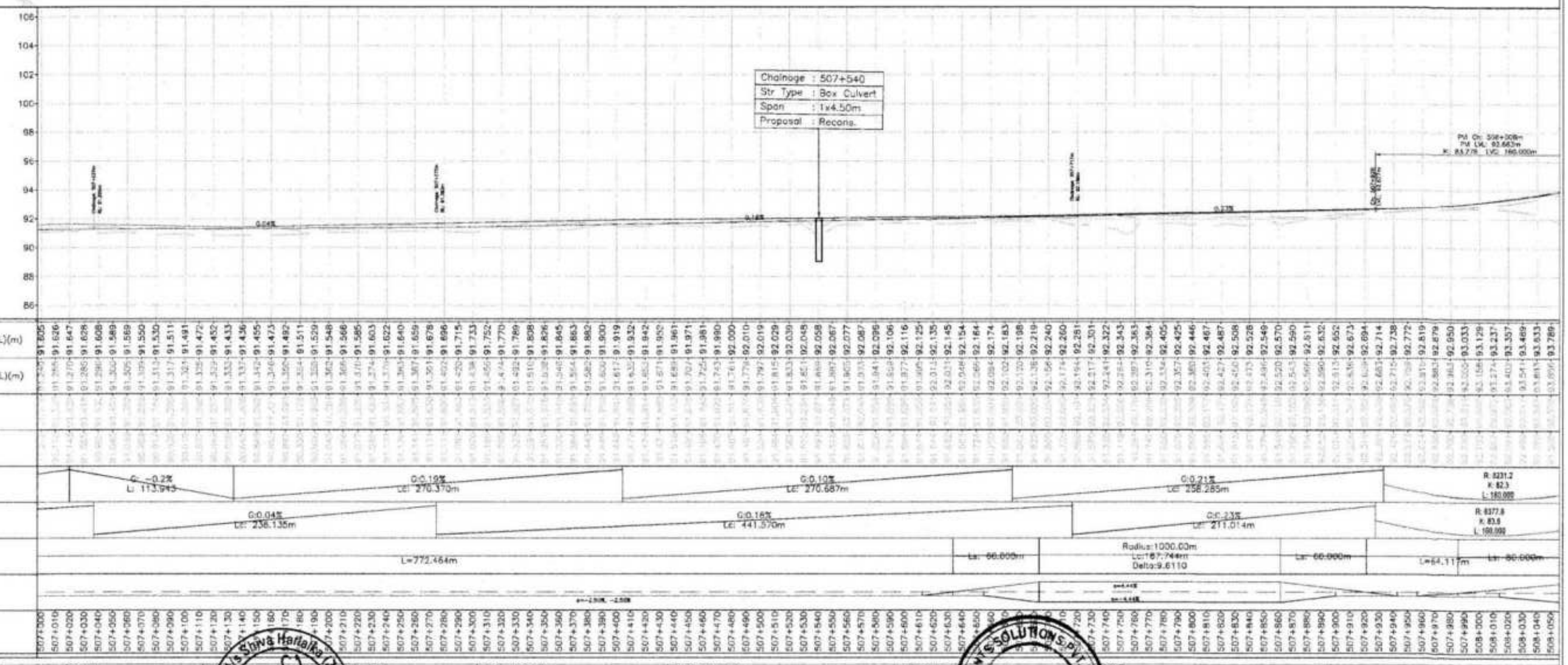
DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE
CH.-KM.506.000 TO KM.507.000

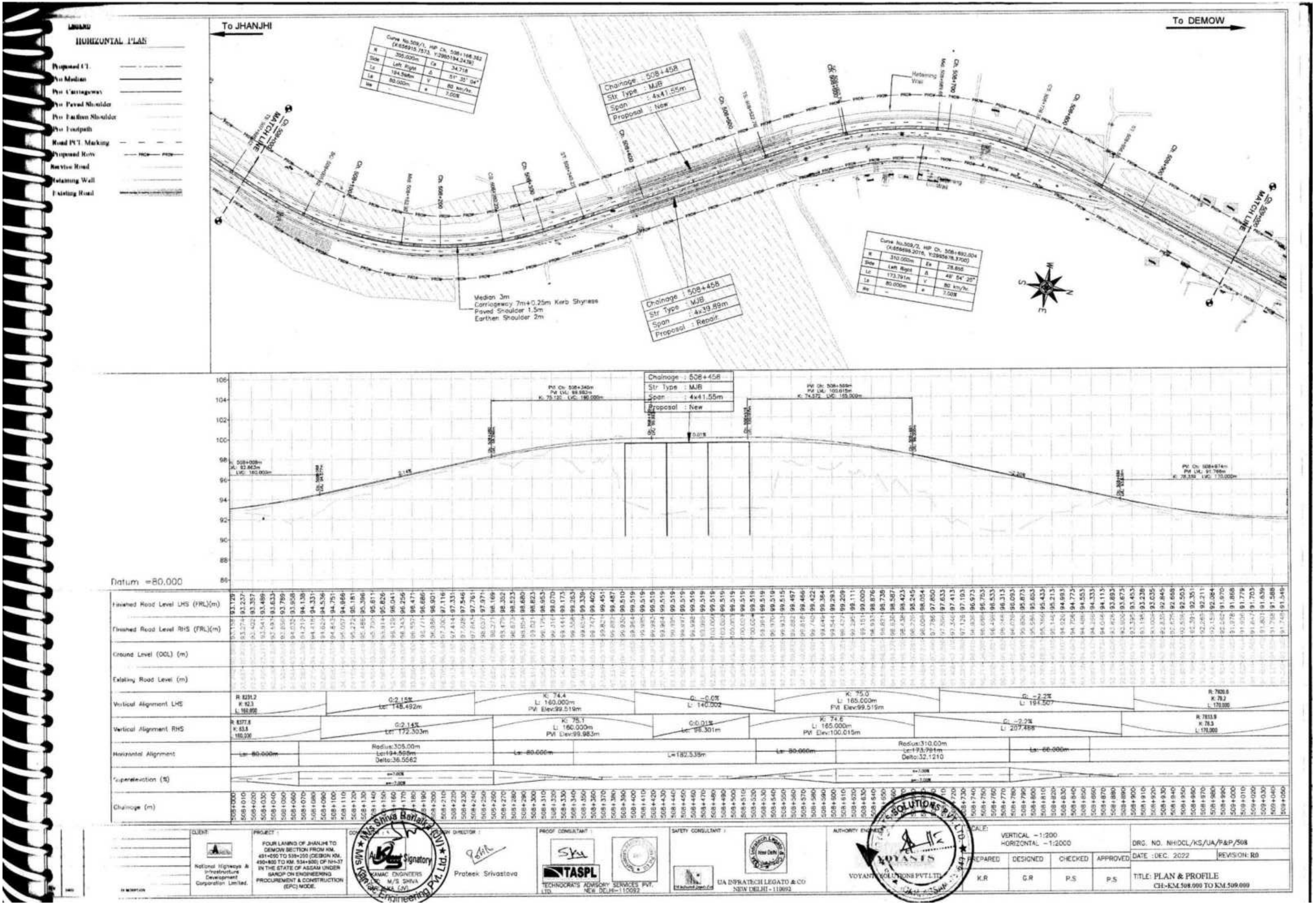
...ONTAL PLAN

- ...CL
- ...
- ...ngarow
- ...ved Shoulder
- ...rthen Shoulder
- ...Footpath
- ...PCC Marking
- ...ined Row
- ...ting Road
- ...ting Well
- ...ting Road





CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 492+800 TO KM. 534+900) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP-ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONSULTANT: M/S SHIVA ENGINEERS	DESIGN DIRECTION: Prateek Srivastava	PROF CONSULTANT: TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI - 110092
SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.	SCALE: VERTICAL -1:200 HORIZONTAL -1:2000		DRG. NO. NHIDCL/KS/JA/P&P/507
		PREPARED: K.R	DESIGNED: G.R	CHECKED: P.S
		APPROVED: P.S	DATE: DEC. 2022	REVISION: R0
			TITLE: PLAN & PROFILE CH:KM.507.000 TO KM.508.000	



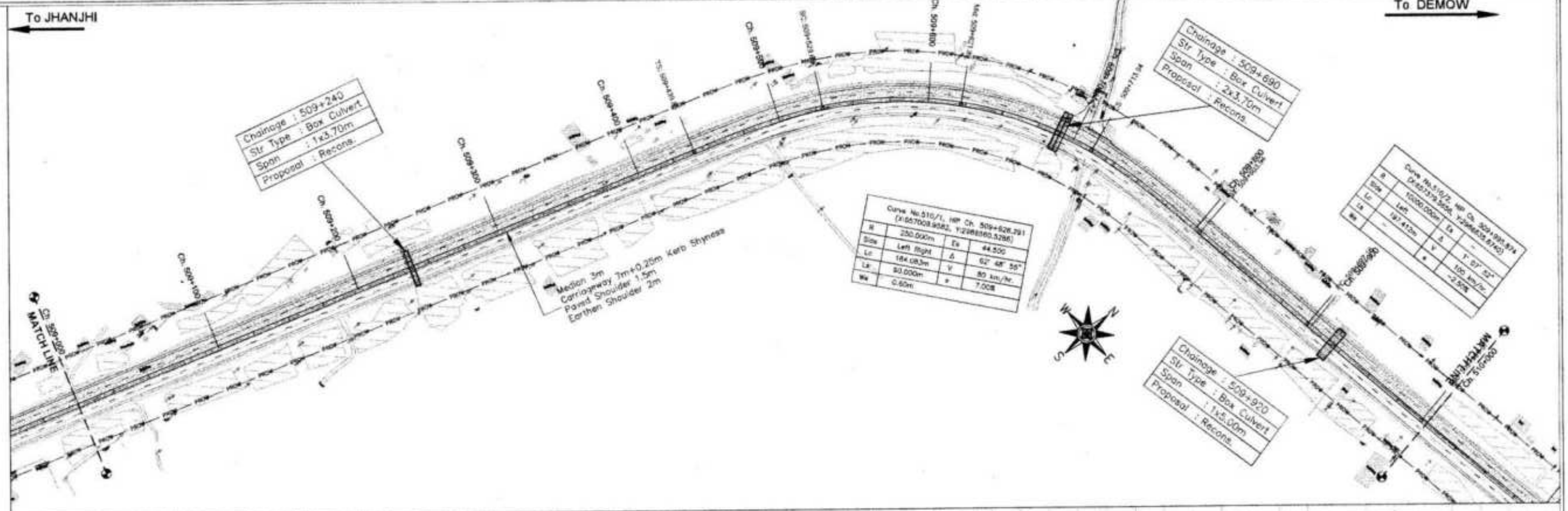
CLIENT:	PROJECT :	CONSULTANT :	DESIGN DIRECTOR :	PROOF CONSULTANT :	SAFETY CONSULTANT :	AUTHORITY ENGINEER :
National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 539+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/s Shiva Barlaika (JV) M/s Kamac Engineering Pvt. Ltd. Authorised Signatory KAMAC ENGINEERS LTD. M/S SHIVA BARLAIKA (JV)	Prateek Srivastava	TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT.LTD.

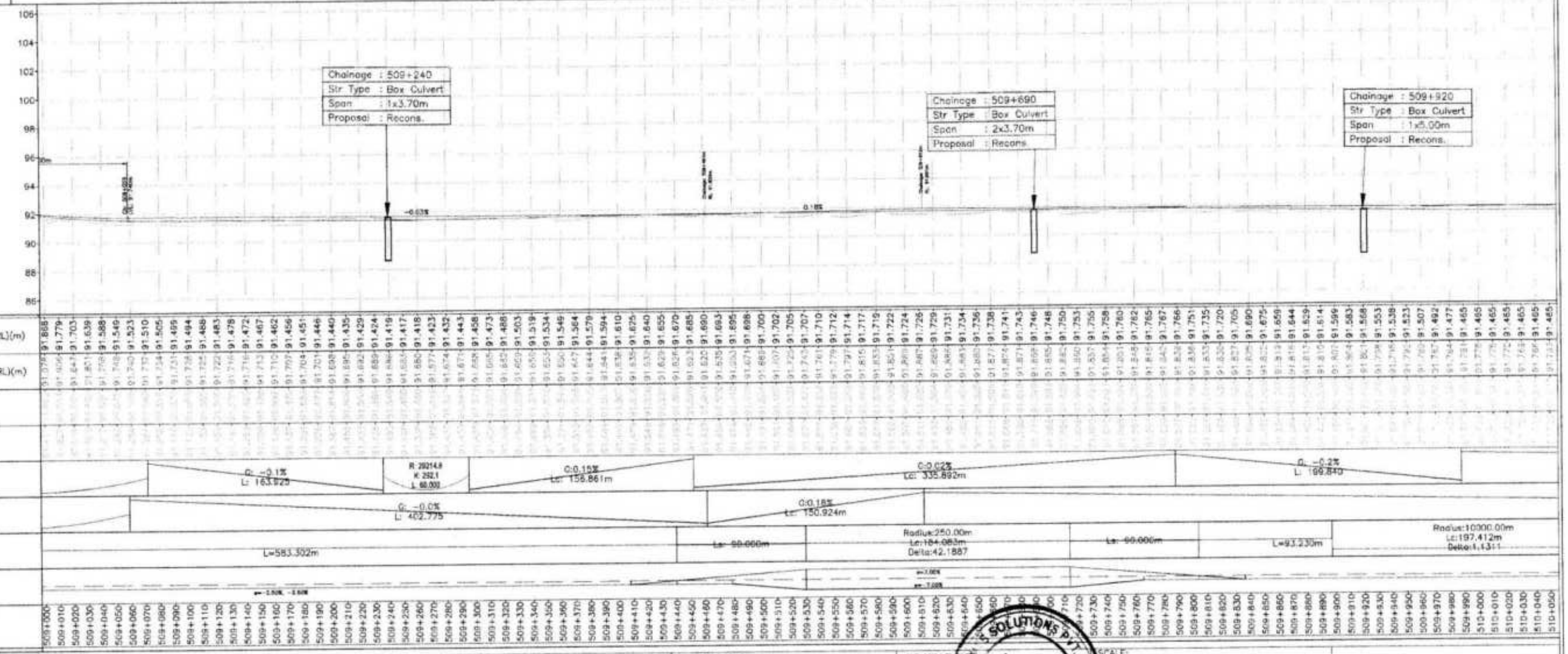
SCALE:				
VERTICAL -1:200 HORIZONTAL -1:2000				DRG. NO. NHIDCL/KS/UA/P&P/508
PREPARED	DESIGNED	CHECKED	APPROVED	DATE :DEC. 2022 REVISION: R0
K.R	G.R	P.S	P.S	TITLE: PLAN & PROFILE CH:-KM.508.000 TO KM.509.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pvt Median
- Pvt Carriageway
- Pvt Paved Shoulder
- Pvt Earthen Shoulder
- Pvt Footpath
- Road PCL Marking
- Proposed ROW
- Service Road
- Retaining Wall
- Existing Road





CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LAMING OF JHANJHI TO DEMON SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROF CONSULTANT: TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092
SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI-110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.	SCALE: VERTICAL -1:200 HORIZONTAL -1:2000	DRG. NO. NHIDCL/KS/UA/P&P/509	
PREPARED: K.R	DESIGNED: G.R	CHECKED: P.S	APPROVED: P.S	DATE: DEC. 2022 REVISION: R0
TITLE: PLAN & PROFILE CH:-KM.509.000 TO KM.510.000				

M/s Shiva Harlalka (JV) Authorised Signatory
M/s Kamac Engineering Pvt. Ltd.

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Curve No. 511/1, HIP Ch. 510+439.292 (X:657817.2507, Y:2986708.8435)			
R	5000.000m	Es	–
Side	Left	Δ	0° 28' 06"
Lc	40.877m	V	100 km/hr.
Ls	–	e	-2.50%
Ws	–		

Curve No.511/2, HIP Ch. 510+861.616 (X:656233.5858, Y:2986777.8461)			
R	10000.000m	Es	–
Side	Right	Δ	0° 25' 32"
Lc	74.259m	V	100 km/hr.
Ls	–	e	-2.50%
Ws	–		

MATCH LINE Ch. 510+000

Ch. 510+094.58

Ch. 510+100

Ch. 510+200

Ch. 510+300

Ch. 510+400

Ch. 510+418.63

Ch. 510+439.29

PT 510+459.71

Ch. 510+500

Ch. 510+600

Ch. 510+700

Ch. 510+800

Ch. 510+824.49

PCL 510+861.62

Ch. 510+900

MATCH LINE Ch. 511+000

Median 3m
Carriageway 7m+0.75m Kerb Shyness
Paved Shoulder 1.5m
Earthen Shoulder 2m

Chainage	: 510+940
Str Type	: Box Culvert
Span	: 1x2.00m
Proposal	: Recons.

N W E S

Chainage	: 510+940
Str Type	: Box Culvert
Span	: 1x2.00m
Proposal	: Recons.

-0.00%

0.12%

Datum =80.000

Finished Road Level LHS (FRL)(m)

Finished Road Level RHS (FRL)(m)

Ground Level (OGL) (m)

Existing Road Level (m)

Vertical Alignment LHS — G: -0.0% L: 1075.839

Vertical Alignment RHS — G: -0.0% L: 1129.748; G:0.12% L: 159.838m

Horizontal Alignment — 0000.00m; 7.412m; L=1311; L=324.254m; Radius:5000.00m Lc:40.877m Delta:0.4684; L=364.779m; Radius:10000.00m Lc:74.256m Delta:0.4255

Superelevation (%)

Chainage (m)

M/s Shiva Harlalka (JV) ★ M/s Kamac Engineering Pvt. Ltd. ★ Authorised Signatory

CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+650) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRAT'S ADVISORY SERVICES PVT. LTD. NEW DELHI – 110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANT SOLUTIONS PVT.LTD.	SCALE: VERTICAL –1:200 HORIZONTAL –1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

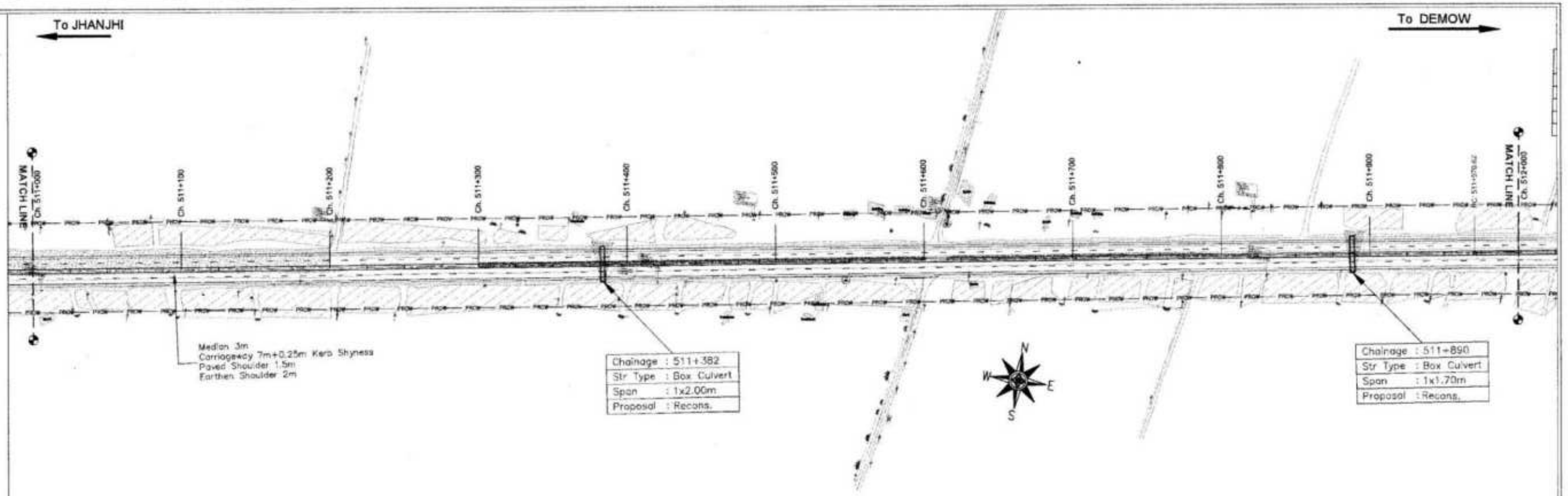
DRG. NO. NHIDCL/KS/UA/P&P/510 | DATE :DEC. 2022 | REVISION: R0

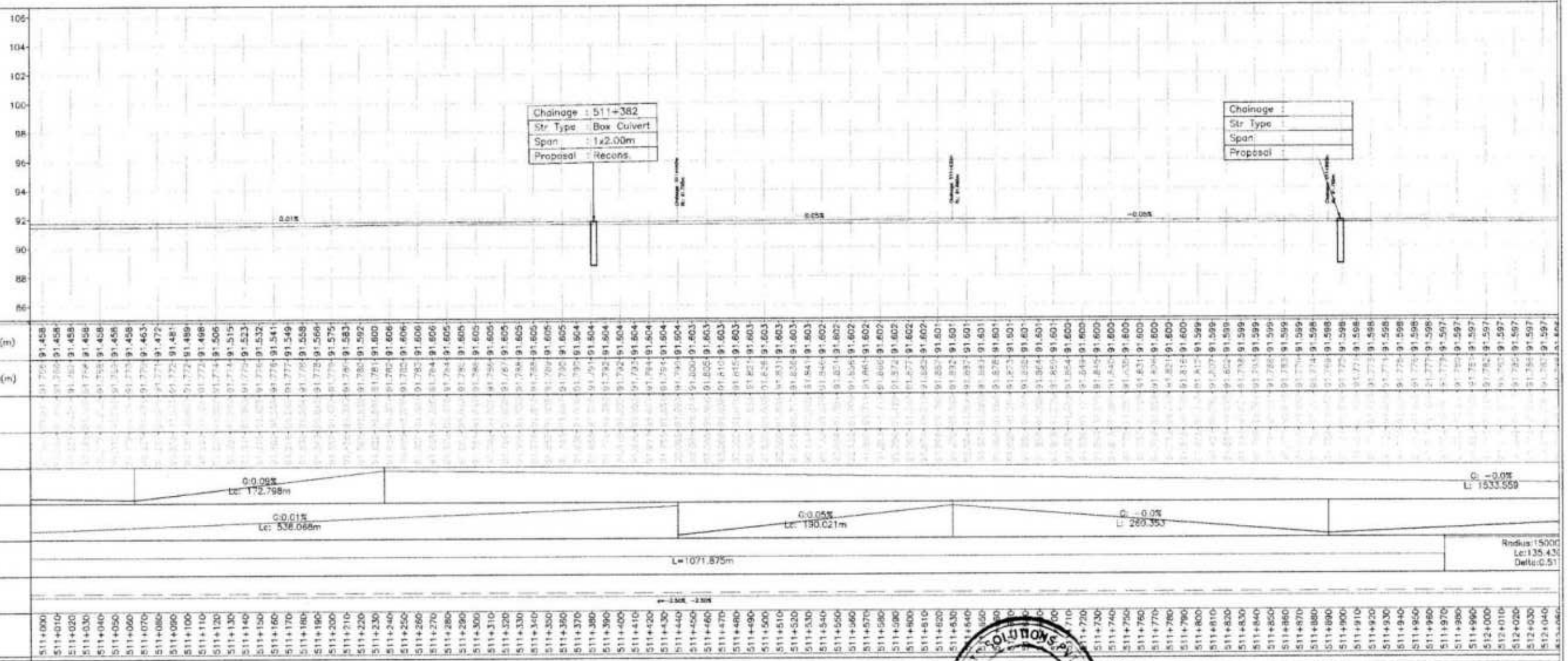
TITLE: PLAN & PROFILE
CH-KM.510.000 TO KM.511.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





Authorised Signatory
M/s Shiva Harlalka (JV)
M/s Kamac Engineering Pvt. Ltd.

CLIENT:	PROJECT:	CONTRACTOR:	DESIGN DIRECTOR:	PROOF CONSULTANT:	SAFETY CONSULTANT:	AUTHORITY ENGINEER:	SCALES:
National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	Prateek Srivastava	TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT. LTD.	VERTICAL -1:200 HORIZONTAL -1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/511

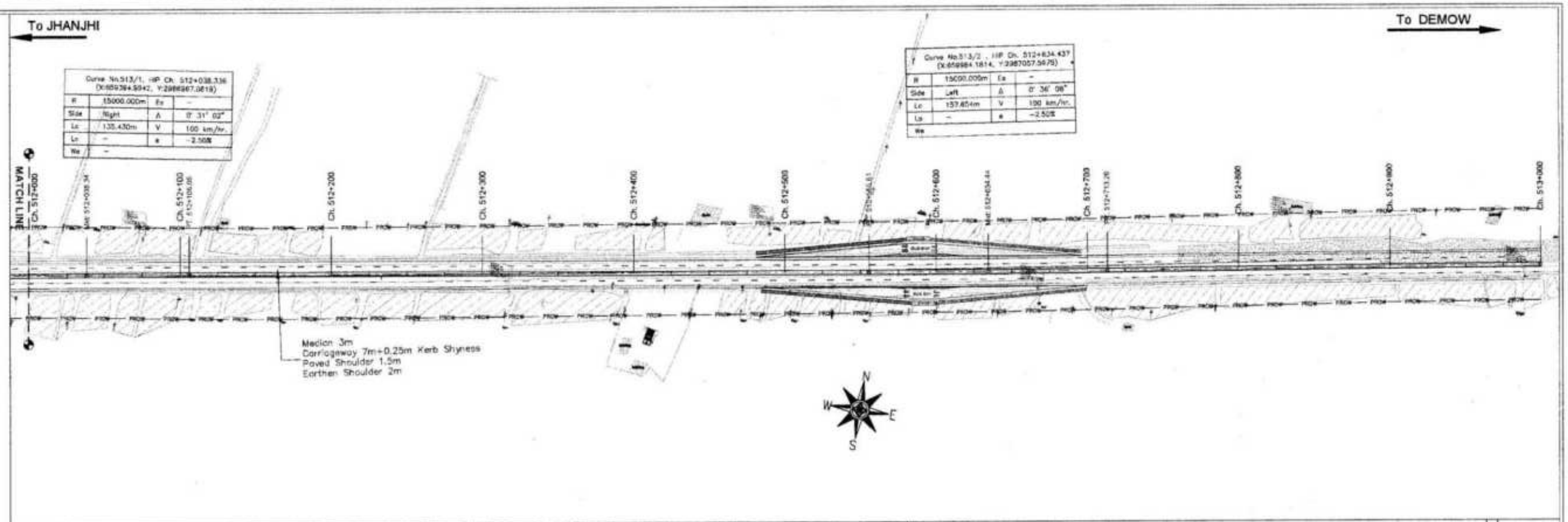
DATE : DEC. 2022 REVISION: R0

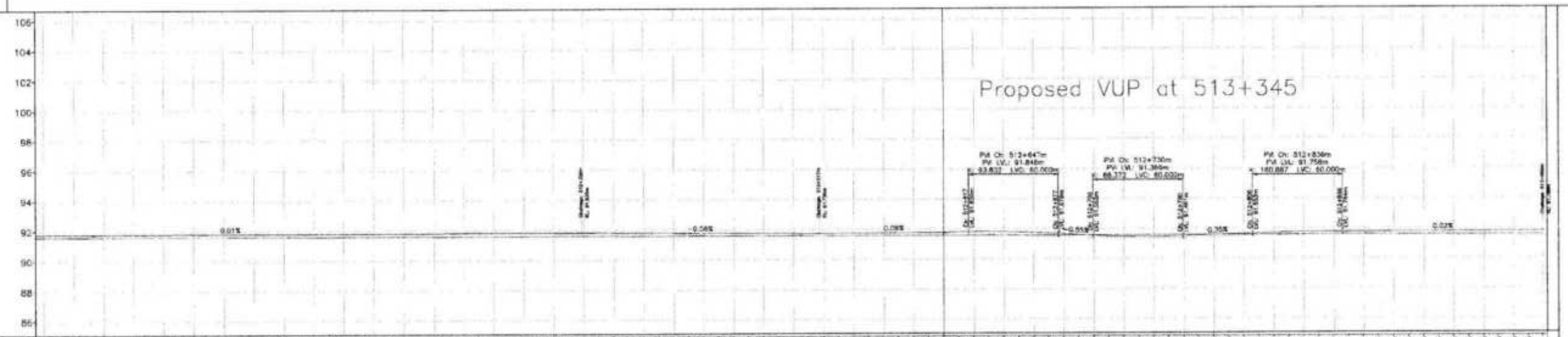
TITLE: PLAN & PROFILE
CH:-KM.511.000 TO KM.512.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





Curve No.513/1, HP Ch. 512+038.336 (X:659394.5942, Y:2986967.0819)			
R	15000.000m	Es	-
Side	Right	Δ	0° 31' 02"
Lc	135.430m	V	100 km/hr.
Ls	-	e	-2.50%
We	-		

Curve No.513/2, HP Ch. 512+634.437 (X:659984.1814, Y:2987057.5975)			
R	15000.000m	Es	-
Side	Left	Δ	0° 36' 08"
Lc	157.654m	V	100 km/hr.
Ls	-	e	-2.50%
We			

Finished Road Level LHS (FRL)(m)

Finished Road Level RHS (FRL)(m)

Ground Level (OGL) (m)

Existing Road Level (m)

Vertical Alignment LHS: -0.0% 533.559; G: -0.0% L: 229.548

Vertical Alignment RHS: G:0.01% Lc: 468.206m; G: -0.1% L: 158.388; G:0.09% Lc: 99.650m; K: 93.8 L: 60.000m PVI Elev:91.846m; G: -0.6% L: 22.940; R: 6637.2 X: 66.4 L: 60.000; G:0.35% Lc: 46.433m; K: 180.9 L: 60.000m PVI Elev:91.758m; G:0.02% Lc: 133.543m

Horizontal Alignment: Radius:15000.00m Lc:135.430m Delta:0.5173; L=449.559m; Radius:15000.00m Lc:157.654m Delta:0.6022; L=286.265m

Superelevation (%)

Chainage (m)

M/s Shiva Harlalka (JV) Authorised Signatory M/s Kamac Engineering Pvt. Ltd.

NO.	DESCRIPTION	CLIENT:	PROJECT:	CONTRACTOR:	DESIGN DIRECTOR:	PROOF CONSULTANT:	SAFETY CONSULTANT:	AUTHORITY ENGINEER:
		National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/S KAMAC ENGINEERS PVT.LTD. M/S SHIVA HARLALKA (JV).	Prateek Srivastava	TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT.LTD.

SCALE:				
VERTICAL -1:200 HORIZONTAL -1:2000				DRG. NO. NHIDCL/KS/UA/P&P/512
PREPARED	DESIGNED	CHECKED	APPROVED	DATE :DEC. 2022 REVISION: R0
K.R	G.R	P.S	P.S	TITLE: PLAN & PROFILE CH:-KM.512.000 TO KM.513.000

To JHANJHI

To DEMOW

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

Curve No.512/2, HIP Ch. 513+634.538 (X: 659984.1814, Y: 2887057.5975)			
R	15000.000m	Es	–
Side	Left	Δ	0° 36' 05"
Lc	157.467m	V	100 Km/hr.
Ls	–	e	NR
We	–		

Median 3m+ Carriageway 7m+ Paved Shoulder 3.75m+Service Road 7m

Curve No.514/1, HIP Ch. 513+081.6 (X: 660425.3773, Y: 2887130.1412)			
R	5000.000m	Es	–
Side	Right	Δ	0° 34'
Lc	50.474m	V	100 Km
Ls	–	e	NR
We	–		

MATCH LINE Ch. 512+500

Ch. 512+600

Ch. 512+700

Ch. 512+800

Ch. 512+900

MATCH LINE Ch. 513+000

Ch. 513+100

Chainage	: 513+047
Str Type	: Box Culvert
Span	: 1x1.8m
Proposal	: Recons.

N

W E

S

Datum =80.000

Finished Road Level LHS (FRL)(m)	
Finished Road Level RHS (FRL)(m)	
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	
Vertical Alignment RHS	
Horizontal Alignment	L=55.703m; Radius:15000.00m, Lc:157.467m, Delta:0.6015; L=343.178m
Superelevation (%)	e=−2.50%, −2.50%
Chainage (m)	512+500 … 513+060

M/s Shiva Harlalka (JV) Authorised Signatory

DESCRIPTION	CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD. M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.	SCALE: VERTICAL −1: 200, HORIZONTAL −1: 2000	DRG. NO. NHIDCL/KS/UA/P&P/512A

PREPARED	DESIGNED	CHECKED	APPROVED	DATE: DEC. 2022	REVISION: R0
K.R	G.R	P.S	P.S	TITLE: PLAN & PROFILE CH-KM.512.500 TO KM.513.000	

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Curve No.514/1, HIP Ch. 513+081.657 (X:660425.3773, Y:2987130.1412)			
R	5000.000m	Ex	–
Side	Right	Δ	0° 34' 40"
Lc	50.414m	V	100 Km/hr.
Ls	–	e	NR
We	–		

Curve No.514/2, HIP Ch. 513+328.606 (X:660669.4657, Y:2987147.7565)			
R	5000.000m	Ex	–
Side	Left	Δ	1° 47' 29"
Lc	156.340m	V	100 Km/hr.
Ls	–	e	NR
We	–		

Curve No.514/3,HIP Ch. 513+724.688 (X:661036.8407, Y:2987233.4107)			
R	500.000m	Ex	6.707
Side	Right	Δ	20° 21' 15"
Lc	82.524m	V	100 Km/hr.
Ls	25.000m	e	5.00%
We	–		

MATCH LINE Ch. 513+000

MATCH LINE Ch. 514+000

Chainage : 513+047
Str Type : Box Culvert
Span : 1x1.8m
Proposal : Recons.

Median 3m+ Carriageway 7m+ Paved Shoulder 3.75m+Service Road 7m

Chainage : 513+340
Str Type : VUP
Span : 1x12
Proposal : New Const.

Chainage : 513+665
Str Type : Box Culvert
Span : 1x2.1m
Proposal : Recons.

Chainage : 513+698
Str Type : VUP
Span : 1x12
Proposal : New Const.

Datum =80.000

Finished Road Level LHS (FRL)(m)	
Finished Road Level RHS (FRL)(m)	
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	G: 2.50% Lc: 113.312m; K: 75.0 L: 200.000m PVI Elev: 98.419m; G: -0.0% L: 405.170; K: 81.0 L: 200.000m PVI Elev: 98.231m; G: -2.5% L: 108.135
Vertical Alignment RHS	G: 2.50% Lc: 103.560m; K: 75.0 L: 200.000m PVI Elev: 98.419m; G: -0.0% L: 405.170; K: 81.0 L: 200.000m PVI Elev: 98.231m; G: -2.5% L: 101.097
Horizontal Alignment	Radius: 5000.00m Lc: 50.414m Delta: 0.5777; L=143.616m; Radius: 5000.00m Lc:156.340m Delta: 1.7915; L=187.462m; Ls: 95.000m; Radius: 500.00m Lc:82.60 4m Delta: 9.4681; Ls: 95.000m; L=223.815m
Superelevation (%)	
Chainage (m)	513+000 … 514+060

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+200 (DESIGN KM. 495+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP-ON ENGINEERING, PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

M/s Shiva Harlalka (JV) * Kamac Engineering Pvt. Ltd. * Authorised Signatory

SCALE:	PREPARED	DESIGNED	CHECKED	APPROVED
VERTICAL –1: 200 HORIZONTAL –1: 2000	K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/513

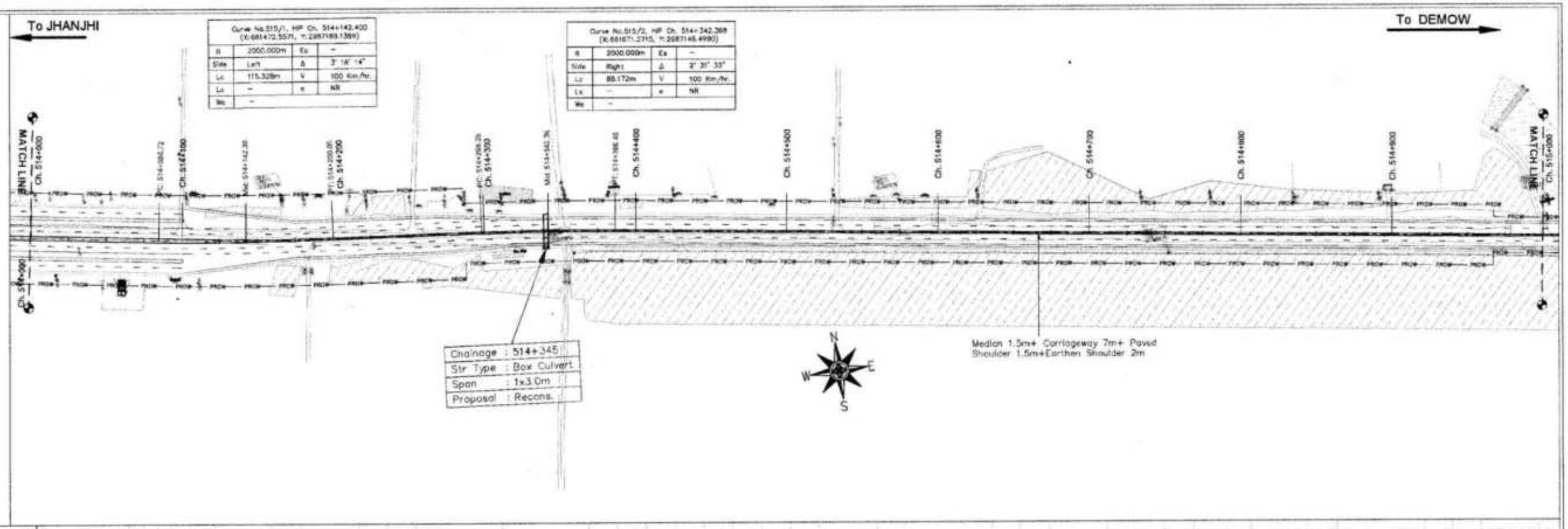
DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH-KM.513.000 TO KM.514.000

LEGEND

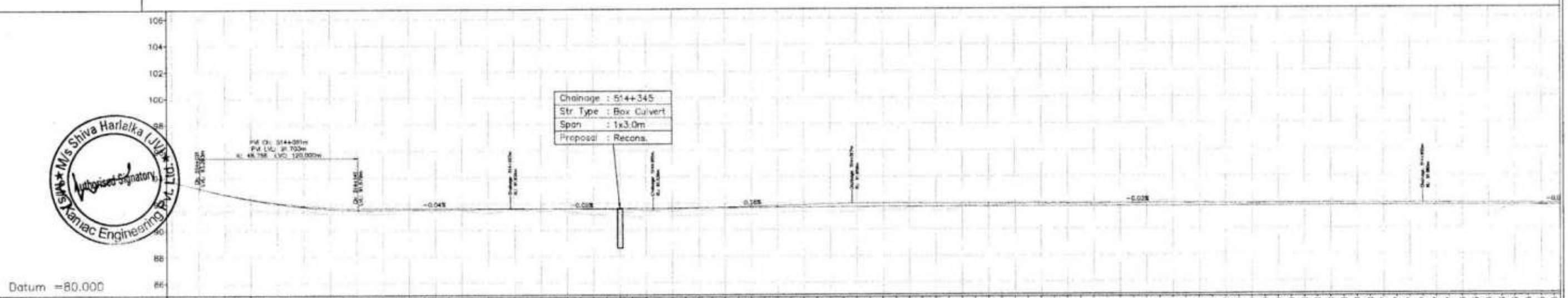
HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road



Curve No.515/1, HP Ch. 514+142.400 (X:681472.5571, Y:2987189.1389)			
R	2000.000m	Es	–
Side	Left	Δ	3° 18' 14"
Lc	115.328m	V	100 Km/hr.
Lx	–	e	NR
We	–		

Curve No.515/2, HP Ch. 514+342.368 (X:681671.2715, Y:2987146.4990)			
R	2000.000m	Es	–
Side	Right	Δ	2° 31' 33"
Lc	88.172m	V	100 Km/hr.
Lx	–	e	NR
We	–		



Chainage (m)	Finished Road Level LHS (FRL)(m)	Finished Road Level RHS (FRL)(m)	Ground Level (GGL) (m)	Existing Road Level (m)	Vertical Alignment LHS	Vertical Alignment RHS	Horizontal Alignment	Superelevation (%)
514+000	93.735	93.735					815m	
514+010	93.485	93.485						
514+020	93.235	93.235						
514+030	92.985	92.985						
514+040	92.749	92.749						
514+050	92.535	92.535						
514+060	92.341	92.341						
514+070	92.169	92.169						
514+080	92.018	92.018						
514+090	91.888	91.888						
514+100	91.779	91.779						
514+110	91.691	91.691						
514+120	91.625	91.625						
514+130	91.580	91.580						
514+140	91.556	91.556						
514+150	91.553	91.553						
514+160	91.557	91.557						
514+170	91.565	91.565						
514+180	91.569	91.569						
514+190	91.574	91.574						
514+200	91.578	91.578						
514+210	91.582	91.582						
514+220	91.586	91.586						
514+230	91.590	91.590						
514+240	91.595	91.595						
514+250	91.599	91.599						
514+260	91.603	91.603						
514+270	91.607	91.607						
514+280	91.611	91.611						
514+290	91.616	91.616						
514+300	91.620	91.620						
514+310	91.624	91.624						
514+320	91.628	91.628						
514+330	91.632	91.632						
514+340	91.637	91.637						
514+350	91.641	91.641						
514+360	91.645	91.645						
514+370	91.649	91.649						
514+380	91.653	91.653						
514+390	91.658	91.658						
514+400	91.662	91.662						
514+410	91.666	91.666						
514+420	91.670	91.670						
514+430	91.674	91.674						
514+440	91.678	91.678						
514+450	91.683	91.683						
514+460	91.687	91.687						
514+470	91.691	91.691						
514+480	91.695	91.695						
514+490	91.699	91.699						
514+500	91.704	91.704						
514+510	91.708	91.708						
514+520	91.712	91.712						
514+530	91.714	91.714						
514+540	91.714	91.714						
514+550	91.714	91.714						
514+560	91.713	91.713						
514+570	91.713	91.713						
514+580	91.713	91.713						
514+590	91.713	91.713						
514+600	91.713	91.713						
514+610	91.713	91.713						
514+620	91.712	91.712						
514+630	91.712	91.712						
514+640	91.712	91.712						
514+650	91.712	91.712						
514+660	91.712	91.712						
514+670	91.712	91.712						
514+680	91.712	91.712						
514+690	91.712	91.712						
514+700	91.711	91.711						
514+710	91.711	91.711						
514+720	91.711	91.711						
514+730	91.710	91.710						
514+740	91.710	91.710						
514+750	91.710	91.710						
514+760	91.710	91.710						
514+770	91.710	91.710						
514+780	91.710	91.710						
514+790	91.710	91.710						
514+800	91.709	91.709						
514+810	91.709	91.709						
514+820	91.709	91.709						
514+830	91.709	91.709						
514+840	91.709	91.709						
514+850	91.709	91.709						
514+860	91.708	91.708						
514+870	91.708	91.708						
514+880	91.708	91.708						
514+890	91.708	91.708						
514+900	91.708	91.708						
514+910	91.708	91.708						
514+920	91.707	91.707						
514+930	91.707	91.707						
514+940	91.707	91.707						
514+950	91.707	91.707						
514+960	91.707	91.707						
514+970	91.707	91.707						
514+980	91.706	91.706						
514+990	91.706	91.706						
515+000	91.706	91.706						
515+010	91.706	91.706						
515+020	91.706	91.706						
515+030	91.706	91.706						
515+040	91.705	91.705						
515+050	91.705	91.705						

Vertical Alignment LHS: R: 4720.2, K: 47.2, L: 120.000; G: 0.04%, Lc: 386.333m; G: -0.0%, L: 817.525

Vertical Alignment RHS: R: 4675.6, K: 48.8, L: 120.000; G: -0.0%, L: 115.982; G: -0.1%, L: 108.162; G: 0.28%, Lc: 151.278m; G: -0.0%, L: 433.295; G: -, L: 20

Horizontal Alignment: 815m; Radius: 2000.00m, Lc: 115.328m, Delta: 3.3039; L=98.227m; Radius: 2000.00m, Lc: 88.172m, Delta: 2.5259; L=927.838m

Superelevation (%)

M/s Shiva Harlalka (JV) Authorised Signatory M/s Kamac Engineering Pvt. Ltd.

DATE	DESCRIPTION	CLIENT:	PROJECT:	CONTRACTOR:	DESIGN DIRECTOR:	PROOF CONSULTANT:	SAFETY CONSULTANT:	AUTHORITY ENGINEER:
		National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+900) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	Prateek Srivastava	TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT.LTD.

SCALE: VERTICAL -1:200, HORIZONTAL -1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/514

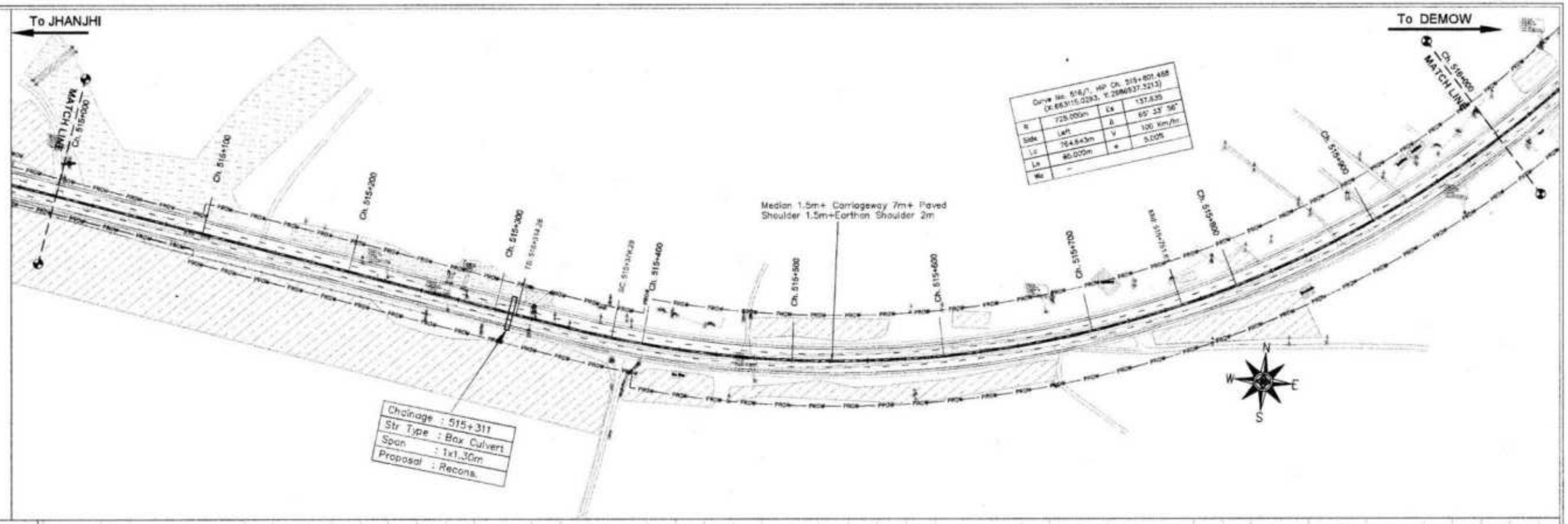
DATE :DEC. 2022 REVISION: R0

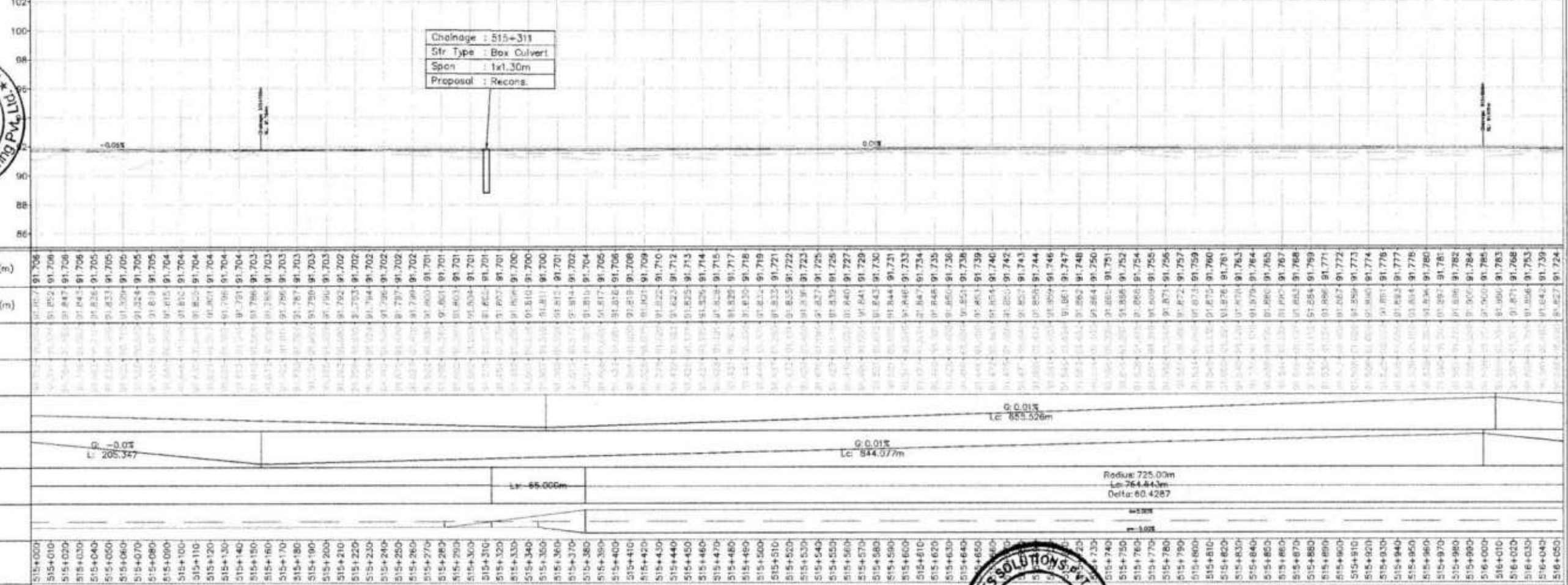
TITLE: PLAN & PROFILE CH-KM.514.000 TO KM.515.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road P/L Marking
- Proposed Row
- Earthen Road
- Retaining Wall
- Existing Road





Approved Signatory
M/s Shiva Harlalka (JV) ★ M/s Kamac Engineering Pvt. Ltd.

CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING, PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Proteek Srivastava	PROOF CONSULTANT: TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

SCALE: VERTICAL –1: 200, HORIZONTAL –1: 2000

DRG. NO. NHIDCL/KS/UA/P&P/515

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE
CH:-KM.515.000 TO KM.516.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road P/L Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Chainage	: 516+365
Str Type	: Pipe Culvert
Span	: 2x1.20m
Proposal	: New Const.

Curve No.517/1/HP Ch. 516+445.539 (X:663630.4575, Y:2987529.8508)

R	3000.000m	Es	--
Side	Right	Δ	1° 07' 23"
Lc	58.804m	V	100 Km/hr.
La	--	e	Nil
Ls	--		

Curve No.517/3/HP Ch. 516+694.339 (X:663987.5382, Y:2987737.1818)

R	2000.000m	Es	--
Side	Right	Δ	4° 36' 38"
Lc	160.939m	V	100 Km/hr.
La	--	e	Nil
Ls	--		

Curve No.517/2/HP Ch. 516+563.821 (X:663987.0268, Y:2987628.4109)

R	2000.000m	Es	--
Side	Left	Δ	1° 57' 25"
Lc	68.306m	V	100 Km/hr.
La	--	e	Nil
Ls	--		

Chainage	: 516+932
Str Type	: MNB
Span	: 1x27.45+3x12.2
Proposal	: New Const.

MATCH LINE Ch. 516+400

MATCH LINE Ch. 517+000

Ch. 516+100 Ch. 516+200 Ch. 516+300 Ch. 516+400 Ch. 516+500 Ch. 516+600 Ch. 516+700 Ch. 516+800 Ch. 516+900

PC Ch. 516+474.461 PT Ch. 516+542.461 PC Ch. 516+596.761 PT Ch. 516+664.761 PC Ch. 516+618.339 PT Ch. 516+778.339

Truck Lay Bay

Retaining Wall

Median 5m+ Carriageway 7m+ Paved Shoulder 1.5m+Earthen Shoulder 2m

Chainage	: 516+932
Str Type	: MNB
Span	: 1x27.45+2x12.2
Proposal	: Widening

Chainage	: 516+932
Str Type	: MNB
Span	: 1x27.45+2x12.2
Proposal	: New Const.

Chainage	: 516+365
Str Type	: Pipe Culvert
Span	: 2x1.20m
Proposal	: New Const.

PVI Ch. 516+676m PVI LVL: 91.656m K: 56.462 LVC: 100.000m

PVI Ch. 516+856m PVI LVL: 94.559m K: 75.817 LVC: 135.000m

PVI Ch. 517+033m PVI LVL: 94.900m K: 76.597 LVC: 125.0

-0.15% 0.01% 1.78% 0.00%

Datum =80.000

Finished Road Level LHS (FRL)(m)

Finished Road Level RHS (FRL)(m)

Ground Level (OGL) (m)

Existing Road Level (m)

Vertical Alignment LHS: G: -0.1% L: 231.347; G: -0.0% L: 369.538; R: 5925.6 K: 53.4 L: 85.000; G:1.7% Lc: 80.647m; K: 76.1 L: 135.000m PVI Elev:94.900m; G:0.00% Lc: 52.459m; K: 76.5 L: 125.00 PVI Elev:94.9

Vertical Alignment RHS: G: -0.1% L: 198.955; G: 0.01% Lc: 425.855m; R: 5940.2 K: 56.5 L: 100.000; G:1.78% Lc: 64.504m; K: 75.8 L: 135.000m PVI Elev:94.899m; G:0.00% Lc: 45.367m; K: 76.6 L: 125.000m PVI Elev:94.900

Horizontal Alignment: Ls= 65.000m; L=207.209m; Radius: 3000.00m Lc: 58.804m Delta:1.1231; L=53.724m; Radius: 2000.00m Lc: 68.306m Delta: 1.9568; L=16.855m; Radius: 2000.00m Lc: 160.939m Delta: 4.6106; L=163.119m; Ls= 115.000m

Superelevation (%)

Chainage (m)

M/s Shiva Harlalka (JV) Authorised Signatory M/s Kamac Engineering Pvt. Ltd.

CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+056 TO 539+250 (DESIGN KM. 490+900 TO KM. 534+900) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS PLANNING PVT.LTD.

TITLE: VERTICAL -1: 200 HORIZONTAL -1: 2000

DRG. NO. NHIDCL/KS/UA/P&P/516

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

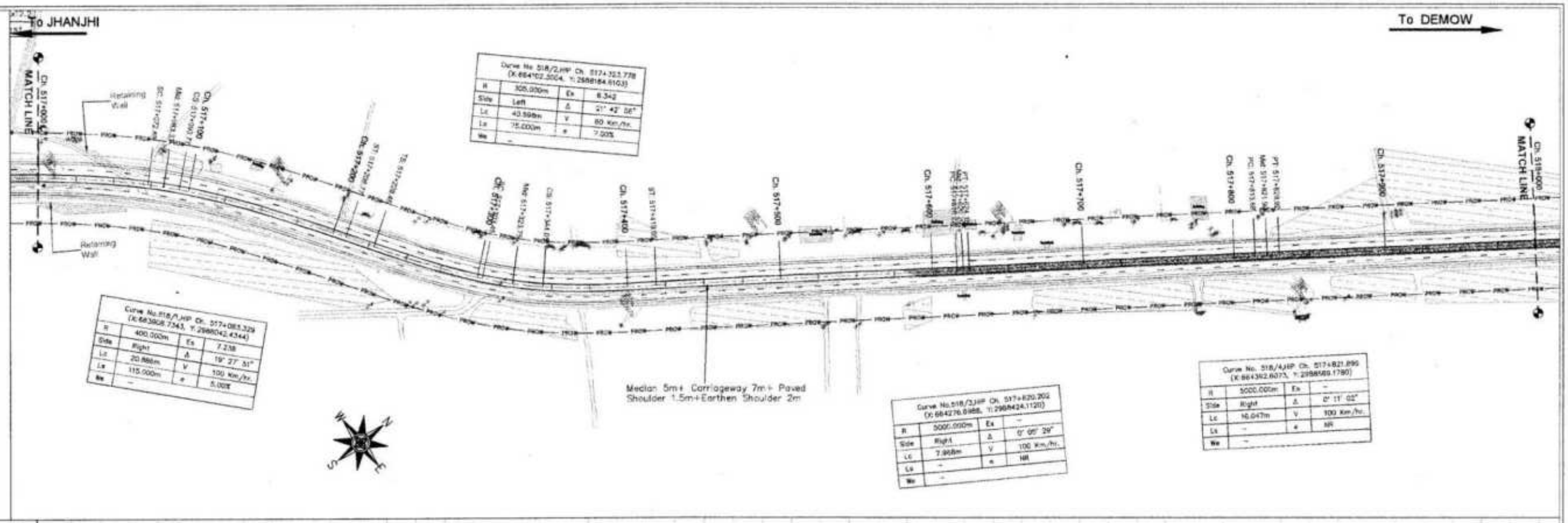
DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH-KM.516.000 TO KM.517.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro.Median
- Pro. Carriageway
- Pro. Paved Shoulder
- Pro. Earthen Shoulder
- Pro. Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road



Curve No.518/2,HP Ch. 517+323.778 (X:664102.3004, Y:2988184.6103)

R	305.000m	Ex	6.342
Side	Left	Δ	21° 42' 06"
Lc	40.598m	V	80 Km/hr.
Ls	75.000m	e	7.00%
We	–		

Curve No.518/1,HP Ch. 517+083.329 (X:663908.7343, Y:2988042.4344)

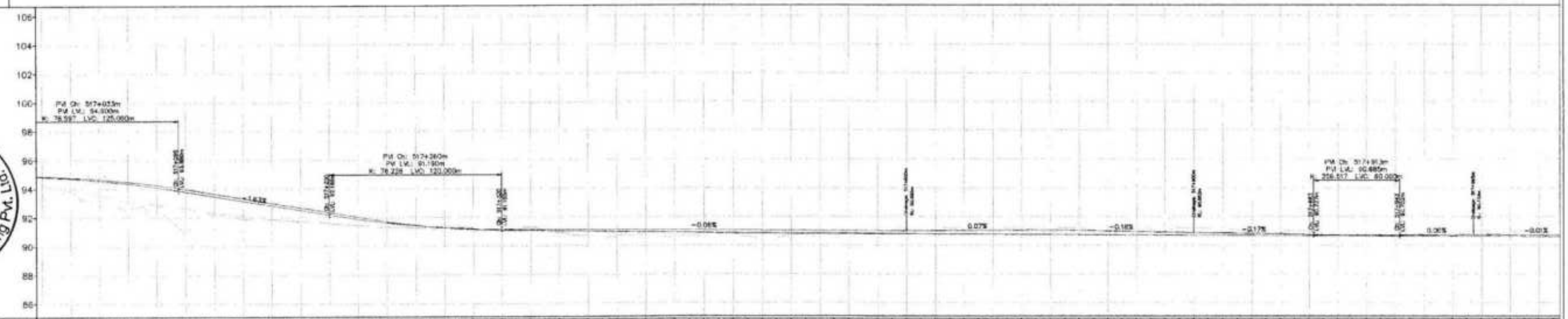
R	400.000m	Ex	7.238
Side	Right	Δ	19° 27' 51"
Lc	20.886m	V	100 Km/hr.
Ls	115.000m	e	5.00%
We	–		

Curve No.518/3,HP Ch. 517+820.202 (X:664276.6988, Y:2988424.1120)

R	5000.000m	Ex	–
Side	Right	Δ	0° 05' 29"
Lc	7.968m	V	100 Km/hr.
Ls	–	e	NR
We	–		

Curve No. 518/4,HP Ch. 517+821.899 (X:664392.6073, Y:2988589.1780)

R	5000.000m	Ex	–
Side	Right	Δ	0° 11' 02"
Lc	16.047m	V	100 Km/hr.
Ls	–	e	NR
We	–		



Chainage (m)	Finished Road Level LHS (FRL)(m)	Finished Road Level RHS (FRL)(m)	Ground Level (OGL) (m)	Existing Road Level (m)
517+000	94.878	94.878		
517+010	94.848	94.848		
517+020	94.804	94.804		
517+030	94.748	94.748		
517+040	94.678	94.678		
517+050	94.595	94.595		
517+060	94.499	94.499		
517+070	94.390	94.390		
517+080	94.268	94.268		
517+090	94.133	94.133		
517+100	93.985	93.985		
517+110	93.825	93.825		
517+120	93.662	93.662		
517+130	93.498	93.498		
517+140	93.335	93.335		
517+150	93.171	93.171		
517+160	93.008	93.008		
517+170	92.845	92.845		
517+180	92.681	92.681		
517+190	92.518	92.518		
517+200	92.355	92.355		
517+210	92.191	92.191		
517+220	92.028	92.028		
517+230	91.864	91.864		
517+240	91.706	91.706		
517+250	91.585	91.585		
517+260	91.443	91.443		
517+270	91.339	91.339		
517+280	91.254	91.254		
517+290	91.188	91.188		
517+300	91.139	91.139		
517+310	91.110	91.110		
517+320	91.094	91.094		
517+330	91.078	91.078		
517+340	91.063	91.063		
517+350	91.048	91.048		
517+360	91.032	91.032		
517+370	91.017	91.017		
517+380	91.001	91.001		
517+390	90.986	90.986		
517+400	90.971	90.971		
517+410	90.955	90.955		
517+420	90.940	90.940		
517+430	90.924	90.924		
517+440	90.909	90.909		
517+450	90.894	90.894		
517+460	90.878	90.878		
517+470	90.863	90.863		
517+480	90.847	90.847		
517+490	90.834	90.834		
517+500	90.830	90.830		
517+510	90.826	90.826		
517+520	90.822	90.822		
517+530	90.817	90.817		
517+540	90.813	90.813		
517+550	90.809	90.809		
517+560	90.805	90.805		
517+570	90.801	90.801		
517+580	90.797	90.797		
517+590	90.792	90.792		
517+600	90.788	90.788		
517+610	90.784	90.784		
517+620	90.780	90.780		
517+630	90.776	90.776		
517+640	90.772	90.772		
517+650	90.767	90.767		
517+660	90.763	90.763		
517+670	90.759	90.759		
517+680	90.755	90.755		
517+690	90.751	90.751		
517+700	90.747	90.747		
517+710	90.742	90.742		
517+720	90.738	90.738		
517+730	90.734	90.734		
517+740	90.730	90.730		
517+750	90.726	90.726		
517+760	90.721	90.721		
517+770	90.717	90.717		
517+780	90.713	90.713		
517+790	90.709	90.709		
517+800	90.705	90.705		
517+810	90.701	90.701		
517+820	90.696	90.696		
517+830	90.692	90.692		
517+840	90.688	90.688		
517+850	90.684	90.684		
517+860	90.680	90.680		
517+870	90.676	90.676		
517+880	90.671	90.671		
517+890	90.667	90.667		
517+900	90.663	90.663		
517+910	90.659	90.659		
517+920	90.655	90.655		
517+930	90.651	90.651		
517+940	90.646	90.646		
517+950	90.642	90.642		
517+960	90.638	90.638		
517+970	90.634	90.634		
517+980	90.630	90.630		
517+990	90.625	90.625		
518+000	90.621	90.621		
518+010	90.617	90.617		
518+020	90.613	90.613		
518+030	90.609	90.609		
518+040	90.604	90.604		
518+050	90.600	90.600		

Vertical Alignment LHS: K: 76.5, L: 125.000m, PVI Elev:94.900m; G: -1.6%, L: 126.024; R:5486.0, K:84.1, L:88.000; G: -0.2%, L: 175.342; G: -0.0%, L: 716.289

Vertical Alignment RHS: K: 76.6, L: 125.000m, PVI Elev:94.900m; G: -1.6%, L: 104.902; R:7022.6, K:76.2, L:120.000; G: -0.1%, L: 279.992; G:0.02%, Lc: 98.450m; G: -0.2%, L: 101.550; G: -0.2%, L: 83.086; R:25651.7, K:256.5, L:90.000; G:0.06%, L: 51.427m; G: -0.0%, L: 86.878

Horizontal Alignment: s: 115.000m; Radius: 400.00m, Lc: 20.886m, Delta: 2.9517; Ls: 115.000m; L=19.679m; Ls: 75.000m; Radius: 305.00m, Lc: 40.598m, Delta: 7.6265; Ls: 75.000m; L=197.172m; Radius: 5000.00m, Lc: 7.968m, Delta: 0.0913; L=189.689m; Radius: 5000.00m, Lc: 16.047m, Delta: 0.1839; L=318.192m

Superelevation (%): e=5.00%; e=-5.00%; e=7.00%; e=-7.00%

Datum =80.000

M/s Shiva Harlalka (JV) M/s Kamac Engineering Pvt. Ltd. Authorised Signatory

REV	DATE	DESCRIPTION

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+650 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

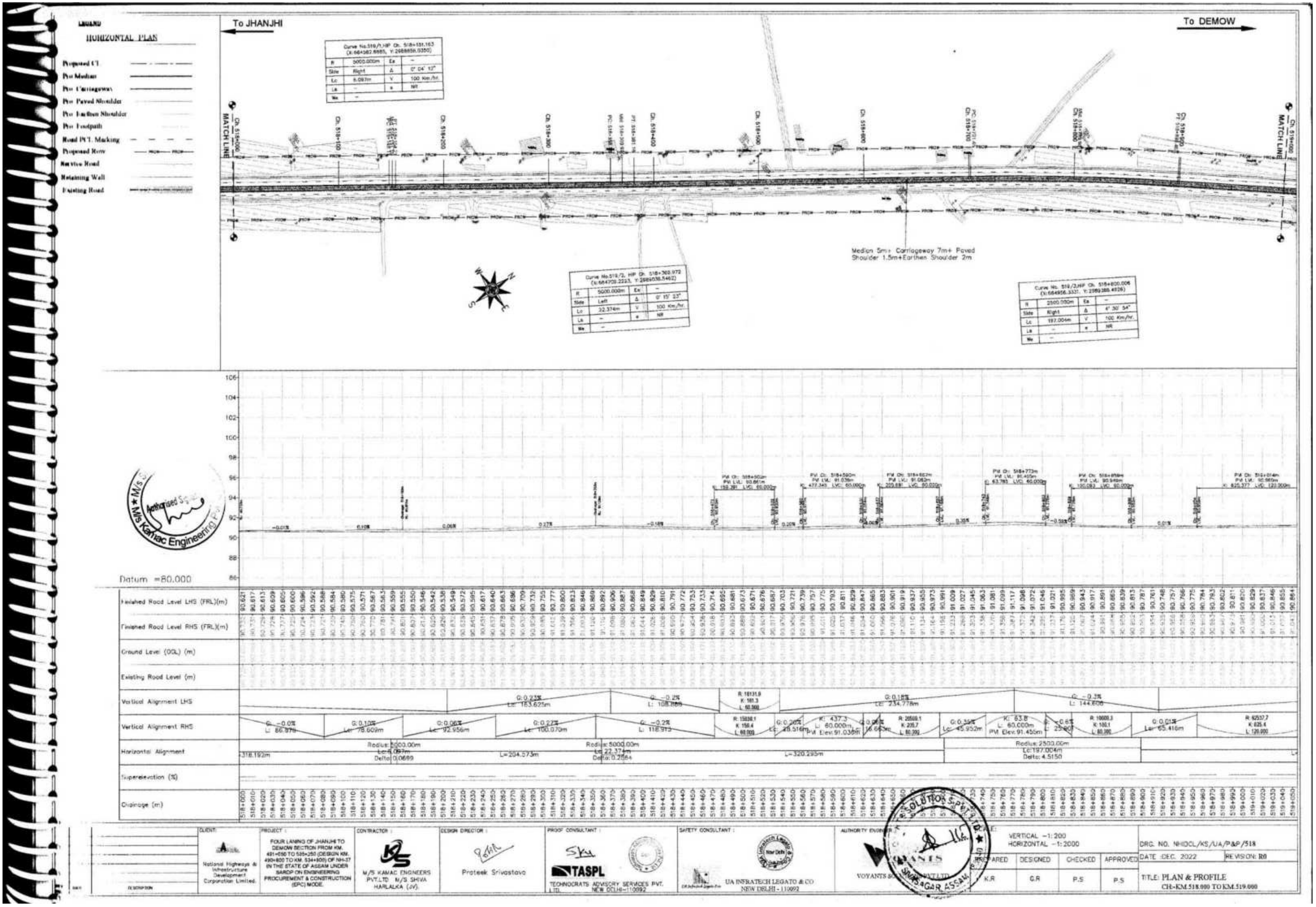
SCALE: VERTICAL -1:200, HORIZONTAL -1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/517

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH:-KM.517.000 TO KM.518.000

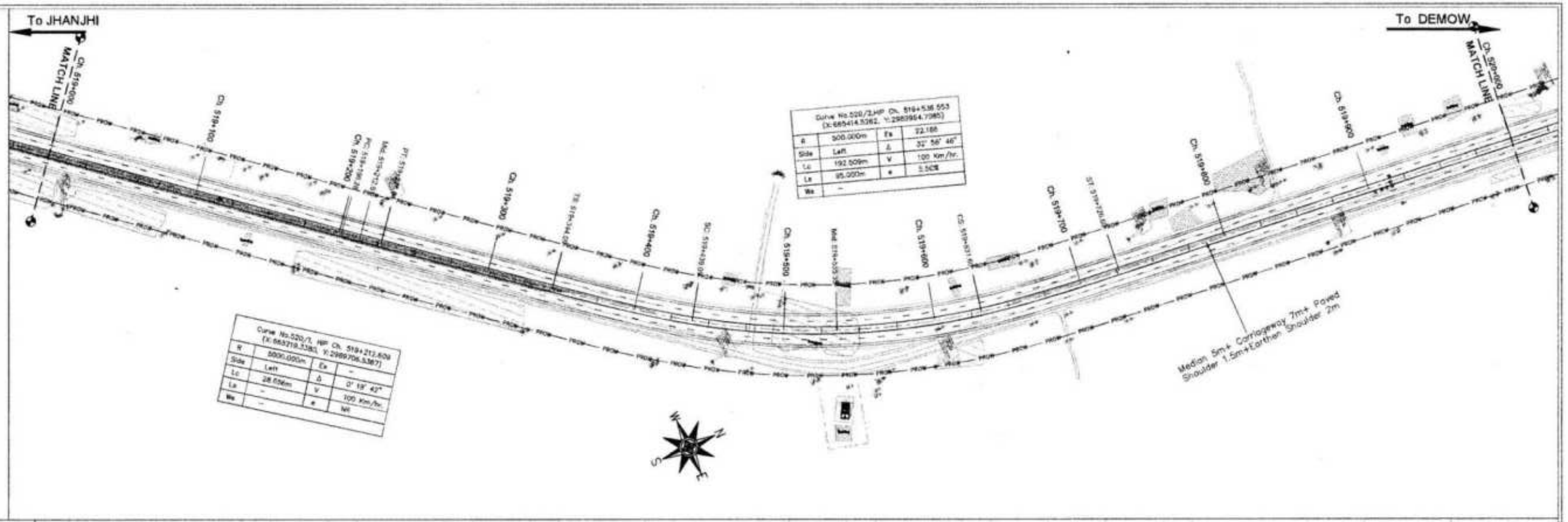


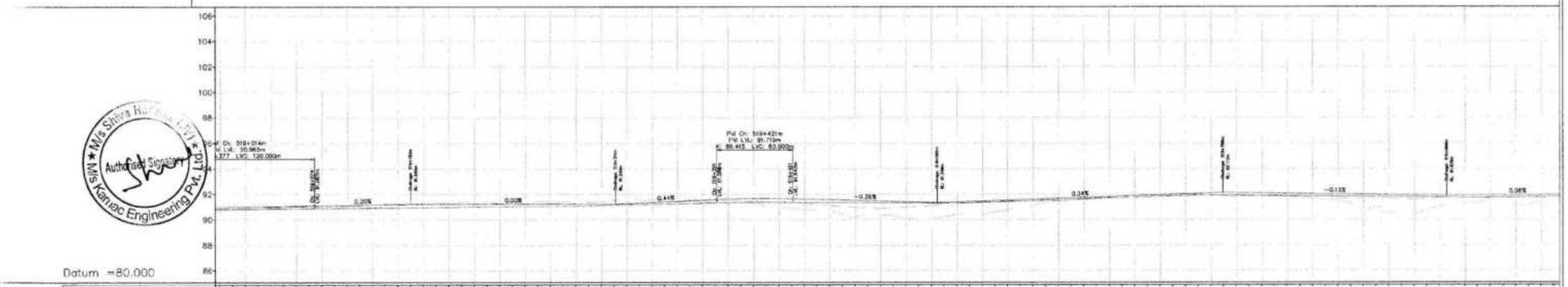
LEGEND
HORIZONTAL PLAN
Proposed CL
Pro Median
Pro Carriageway
Pro Paved Shoulder
Pro Earthen Shoulder
Pro Footpath
Road PCL Marking
Proposed Row
Service Road
Retaining Wall
Existing Road
To JHANJHI
To DEMOW
MATCH LINE
Median 5m+ Carriageway 7m+ Paved Shoulder 1.5m+Earthen Shoulder 2m
Datum =80.000
Finished Road Level LHS (FRL)(m)
Finished Road Level RHS (FRL)(m)
Ground Level (GOL) (m)
Existing Road Level (m)
Vertical Alignment LHS
Vertical Alignment RHS
Horizontal Alignment
Superelevation (%)
Chainage (m)
CLIENT:
National Highways & Infrastructure Development Corporation Limited.
PROJECT:
FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.
CONTRACTOR:
M/S KAMAC ENGINEERS PVT.LTD. M/S SHIVA HARLALKA (JV).
DESIGN DIRECTOR:
Prateek Srivastava
PROOF CONSULTANT:
TASPL
TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092
SAFETY CONSULTANT:
UA INFRATECH LEGATO & CO NEW DELHI - 110092
AUTHORITY ENGINEER:
VOYANTS SOLUTIONS PVT.LTD.
SCALE:
VERTICAL -1:200
HORIZONTAL -1:2000
PREPARED
DESIGNED
CHECKED
APPROVED
K.R
G.R
P.S
P.S
DRG. NO. NHIDCL/KS/UA/P&P/518
DATE :DEC. 2022
REVISION: R0
TITLE: PLAN & PROFILE
CH-KM.518.000 TO KM.519.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





REV	DATE	DESCRIPTION	CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+650 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER BAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT. LTD.	SCALE: VERTICAL –1: 200 HORIZONTAL –1: 2000	DRG. NO. NHIDCL/KS/UA/P&P/519
										PREPARED: K.R	DESIGNED: G.R	CHECKED: P.S	APPROVED: P.S	DATE :DEC. 2022	REVISION: R0
														TITLE: PLAN & PROFILE CH:-KM.519.000 TO KM.520.000	

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Chainage : 520+360
Str Type : Box Culvert
Span : 1x1.30m
Proposal : Recons.

MATCH LINE

MATCH LINE

Curve No.521/1, HIP Ch. 520+332.086 (X:669514.4037, Y:2990755.9457)			
R	10000.000m	Es	–
Side	Right	Δ	0° 04' 54"
Lc	14.236m	V	100 Km/hr.
Ls	–	e	NR
We	–		

Curve No.521/2, HIP Ch. 520+533.112 (X:669538.7969, Y:2990955.7360)			
R	10000.000m	Es	–
Side	Left	Δ	0° 01' 59"
Lc	5.767m	V	100 Km/hr.
Ls	–	e	NR
We	–		

Median 5m+ Carriageway 7m+ Paved Shoulder 1.5m+Earthen Shoulder 2m

Curve No.521/3,HIP Ch. 520+907.934 (X:669581.7430, Y:2991327.8125)			
R	1000.000m	Es	10.725
Side	Right	Δ	16° 37' 38"
Lc	240.186m	V	100 Km/hr.
Ls	50.000m	e	6.408
We	–		

Chainage : 520+360
Str Type : Box Culvert
Span : 1x1.30m
Proposal : Recons.

PVI Ch: 520+244m
PVI LVL: 92.268m
K: 218.3 LVC: 60.000m

PVI Ch: 520+393m
PVI LVL: 92.126m
K: 236.3 LVC: 150.000m

PVI Ch: 520+564m
PVI LVL: 90.914m
K: 85.0 LVC: 100.000m

PVI Ch: 520+783m
PVI LVL: 91.625m
K: 203.1 LVC: 60.000m

Datum =80.000

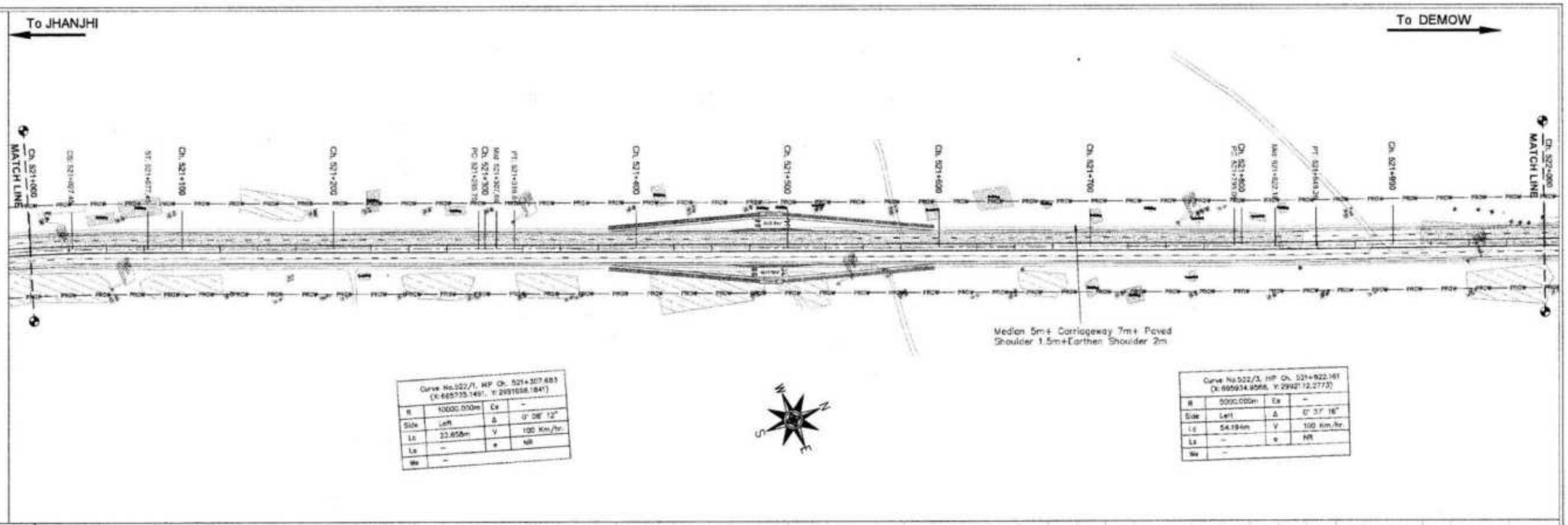
Finished Road Level LHS (FRL)(m)	91.739 91.750 91.761 91.771 91.782 91.792 91.803 91.813 91.824 91.834 91.845 91.855 91.866 91.876 91.887 91.897 91.908 91.918 91.929 91.939 91.950 91.961 91.971 91.982 91.992 92.003 92.013 92.024 92.034 92.045 92.055 92.066 92.076 92.087 92.097 92.108 92.118 92.128 92.139 92.149 92.160 92.170 92.181 92.191 92.202 92.212 92.223 92.233 92.244 92.254 92.265 92.275 92.286 92.296 92.307 92.317 92.328 92.338 92.349 92.359 92.370 92.380 92.391 92.401 92.412 92.422 92.433 92.443 92.454 92.464 92.475 92.485 92.496 92.506 92.517 92.527 92.538 92.548 92.559 92.569 92.580 92.590 92.601 92.611 92.622 92.632 92.643 92.653 92.664 92.674 92.685 92.695 92.706 92.716 92.727 92.737 92.748 92.758 92.769 92.779 92.790 92.800 92.811 92.821 92.832 92.842 92.853 92.863 92.874 92.884 92.895 92.905 92.916 92.926 92.937 92.947 92.958 92.968 92.979 92.989 93.000 93.010 93.021 93.031 93.042 93.052 93.063 93.073 93.084 93.094 93.105 93.115 93.126 93.136 93.147 93.157 93.168 93.178 93.189 93.199 93.210 93.220 93.231 93.241 93.252 93.262 93.273 93.283 93.294 93.304
Finished Road Level RHS (FRL)(m)	91.750 91.761 91.771 91.782 91.792 91.803 91.813 91.824 91.834 91.845 91.855 91.866 91.876 91.887 91.897 91.908 91.918 91.929 91.939 91.950 91.961 91.971 91.982 92.003 92.013 92.024 92.034 92.045 92.055 92.066 92.076 92.087 92.097 92.108 92.118 92.128 92.139 92.149 92.160 92.170 92.181 92.191 92.202 92.212 92.223 92.233 92.244 92.254 92.265 92.275 92.286 92.296 92.307 92.317 92.328 92.338 92.349 92.359 92.370 92.380 92.391 92.401 92.412 92.422 92.433 92.443 92.454 92.464 92.475 92.485 92.496 92.506 92.517 92.527 92.538 92.548 92.559 92.569 92.580 92.590 92.601 92.611 92.622 92.632 92.643 92.653 92.664 92.674 92.685 92.695 92.706 92.716 92.727 92.737 92.748 92.758 92.769 92.779 92.790 92.800 92.811 92.821 92.832 92.842 92.853 92.863 92.874 92.884 92.895 92.905 92.916 92.926 92.937 92.947 92.958 92.968 92.979 92.989 93.000 93.010 93.021 93.031 93.042 93.052 93.063 93.073 93.084 93.094 93.105 93.115 93.126 93.136 93.147 93.157 93.168 93.178 93.189 93.199 93.210 93.220 93.231 93.241 93.252 93.262 93.273 93.283 93.294 93.304
Ground Level (GGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	G:0.11% Lc: 383.862m; K: 69.2 L: 100.000m PVI Elev:92.184m; G:-1.0% L: 37.604; R:10091.7 K: 100.8 L: 150.000; G:0.48% Lc: 132.296m; K: 137.0 L: 60.000m PVI Elev:91.724m; G:0.04% Lc: 94.388m; K: 141.0 L: 60.000m PVI Elev:91.781m; G: L:
Vertical Alignment RHS	G:0.08% Lc: 110.913m; G:0.18% Lc: 136.892m; K: 218.3 L: 60.000m PVI Elev:92.268m; G:-0.1% L: 48.836; K: 236.3 L: 150.000m PVI Elev:92.126m; G:-0.7% L: 41.666; R:9501.3 K:85.0 L:150.000; G:0.33% Lc: 138.492m; K: 203.1 L: 60.000m PVI Elev:91.625m; G:0.03% Lc: 177.469m; G:-0.2% L: 78.823
Horizontal Alignment	L=588.387m; Radius:10000.00m Lc:14.236m Delta:0.0816; L=191.024m; Radius:10000.00m Lc:5.767m Delta:0.0330; L=291.259m; Lc: 50.000m; Radius:1000.00m Lc:240.186m Delta:13.7623; Lc: 50
Superelevation (%)	
Chainage (m)	520+000 520+010 520+020 520+030 520+040 520+050 520+060 520+070 520+080 520+090 520+100 520+110 520+120 520+130 520+140 520+150 520+160 520+170 520+180 520+190 520+200 520+210 520+220 520+230 520+240 520+250 520+260 520+270 520+280 520+290 520+300 520+310 520+320 520+330 520+340 520+350 520+360 520+370 520+380 520+390 520+400 520+410 520+420 520+430 520+440 520+450 520+460 520+470 520+480 520+490 520+500 520+510 520+520 520+530 520+540 520+550 520+560 520+570 520+580 520+590 520+600 520+610 520+620 520+630 520+640 520+650 520+660 520+670 520+680 520+690 520+700 520+710 520+720 520+730 520+740 520+750 520+760 520+770 520+780 520+790 520+800 520+810 520+820 520+830 520+840 520+850 520+860 520+870 520+880 520+890 520+900 520+910 520+920 520+930 520+940 520+950 520+960 520+970 520+980 520+990 521+000 521+010 521+020 521+030 521+040 521+050

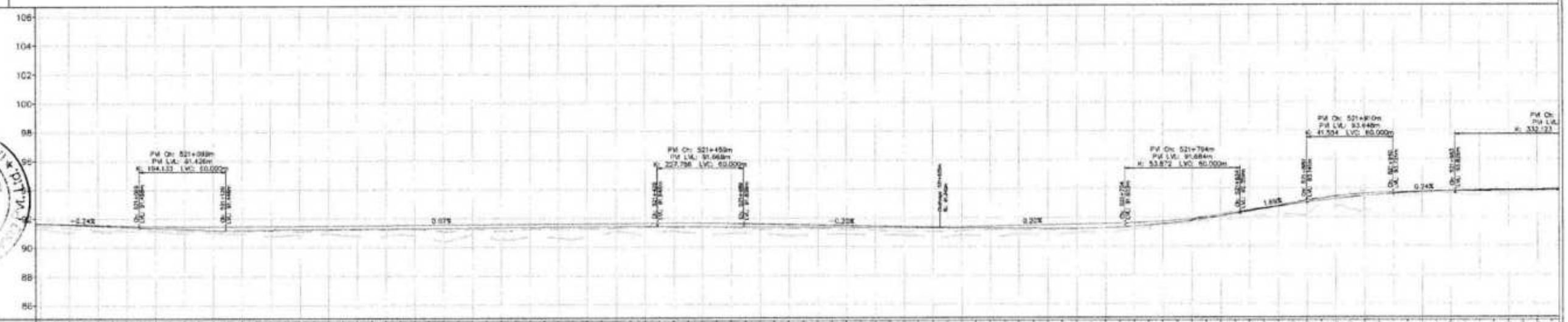
REV NO.	DATE	DESCRIPTION	CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+650 TO 535+255 (DESIGN KM. 490+800 TO KM. 534+900) OF NH-17 IN THE STATE OF ASSAM UNDER BARDP-NN ENGINEERING, PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092
			SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD	SCALE: VERTICAL –1: 200 HORIZONTAL –1: 2000	DRG. NO. NHIDCL/KS/UA/P&P/520					
						PREPARED K.R	DESIGNED G.R	CHECKED P.S	APPROVED P.S	DATE :DEC. 2022	REVISION: R0
										TITLE: PLAN & PROFILE CH=KM.520.000 TO KM.521.000	

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro. Carriageway
- Pro. Paved Shoulder
- Pro. Earthen Shoulder
- Pro. Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





Chainage (m)	Finished Road Level LHS (FRL)(m)	Finished Road Level RHS (FRL)(m)	Ground Level (OGL) (m)	Existing Road Level (m)
521+000	91.665	91.626		
521+010	91.645	91.616		
521+020	91.588	91.549		
521+030	91.510	91.472		
521+040	91.433	91.394		
521+050	91.356	91.317		
521+060	91.278	91.240		
521+070	91.201	91.203		
521+080	91.211	91.218		
521+090	91.226	91.234		
521+100	91.242	91.249		
521+110	91.257	91.265		
521+120	91.273	91.280		
521+130	91.288	91.296		
521+140	91.304	91.311		
521+150	91.319	91.327		
521+160	91.335	91.342		
521+170	91.350	91.358		
521+180	91.366	91.373		
521+190	91.381	91.389		
521+200	91.397	91.405		
521+210	91.412	91.420		
521+220	91.424	91.418		
521+230	91.411	91.404		
521+240	91.397	91.391		
521+250	91.384	91.377		
521+260	91.370	91.364		
521+270	91.357	91.350		
521+280	91.343	91.337		
521+290	91.330	91.323		
521+300	91.316	91.310		
521+310	91.303	91.296		
521+320	91.289	91.283		
521+330	91.276	91.269		
521+340	91.262	91.256		
521+350	91.249	91.242		
521+360	91.235	91.229		
521+370	91.228	91.243		
521+380	91.243	91.273		
521+390	91.278	91.318		
521+400	91.304	91.378		
521+410	91.454	91.545		
521+420	91.651	91.772		
521+430	91.908	92.060		
521+440	92.226	92.402		
521+450	92.575	92.737		
521+460	92.888	93.028		
521+470	93.156	93.273		
521+480	93.378	93.473		
521+490	93.555	93.627		
521+500	93.687	93.736		
521+510	93.774	93.800		
521+520	93.815	93.821		
521+530	93.827	93.833		
521+540	93.839	93.845		
521+550	93.851	93.851		
521+560	93.851	93.851		
521+570	93.851	93.851		
521+580	93.851	93.851		
521+590	93.851	93.851		
521+600	93.851	93.851		
521+610	93.851	93.851		
521+620	93.851	93.851		
521+630	93.851	93.851		
521+640	93.851	93.851		
521+650	93.851	93.851		
521+660	93.851	93.851		
521+670	93.851	93.851		
521+680	93.851	93.851		
521+690	93.851	93.851		
521+700	93.851	93.851		
521+710	93.851	93.851		
521+720	93.851	93.851		
521+730	93.851	93.851		
521+740	93.851	93.851		
521+750	93.851	93.851		
521+760	93.851	93.851		
521+770	93.851	93.851		
521+780	93.851	93.851		
521+790	93.851	93.851		
521+800	93.851	93.851		
521+810	93.851	93.851		
521+820	93.851	93.851		
521+830	93.851	93.851		
521+840	93.851	93.851		
521+850	93.851	93.851		
521+860	93.851	93.851		
521+870	93.851	93.851		
521+880	93.851	93.851		
521+890	93.851	93.851		
521+900	93.851	93.851		
521+910	93.851	93.851		
521+920	93.851	93.851		
521+930	93.851	93.851		
521+940	93.851	93.851		
521+950	93.851	93.851		
521+960	93.851	93.851		
521+970	93.851	93.851		
521+980	93.851	93.851		
521+990	93.851	93.851		
522+000	93.851	93.851		
522+010	93.851	93.851		
522+020	93.851	93.851		
522+030	93.851	93.851		
522+040	93.851	93.851		
522+050	93.851	93.851		

Vertical Alignment LHS: G: -0.4% L: 121.295; G: 0.08% Lc: 296.405m; G: -0.1% L: 293.201; R: 6576.3 K: 65.8 L: 120.000; G: 1.76% Lc: 12.172m; K: 88.3 L: 150.000m PVI Elev: 93.774m; G: 0.06% Lc: 78.449m

Vertical Alignment RHS: G: -0.2% L: 78.823; R: 19413.3 K: 194.1 L: 60.000; G: 0.07% Lc: 300.042m; K: 227.8 L: 60.000m PVI Elev: 91.668m; G: -0.2% L: 136.400; G: 0.20% Lc: 128.526m; R: 5387.2 K: 53.9 L: 80.000; G: 1.69% Lc: 48.309m; K: 41.6 L: 60.000m PVI Elev: 93.648m; G: 0.24% Lc: 43.031m; K: L: 15 PVI Elev

Horizontal Alignment: Ls: 50.000m; L=218.302m; Radius: 10000.00m Lc: 23.858m Delta: 0.1367; L=475.452m; Radius: 5000.00m Lc: 54.194m Delta: 0.6210; L=241.735m

Superelevation (%)

REV. NO.	DATE	DESCRIPTION

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

SCALE: VERTICAL -1:200 HORIZONTAL -1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	C.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/521

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH:-KM.521.000 TO KM.522.000

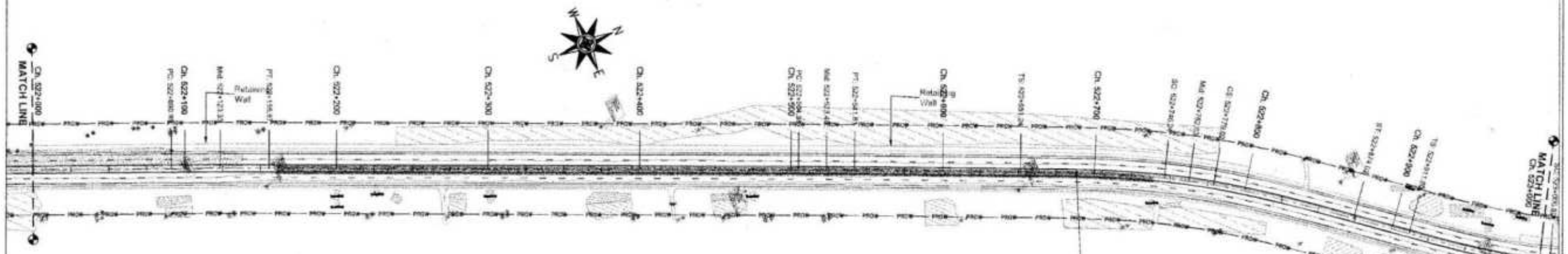
LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed ROW
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

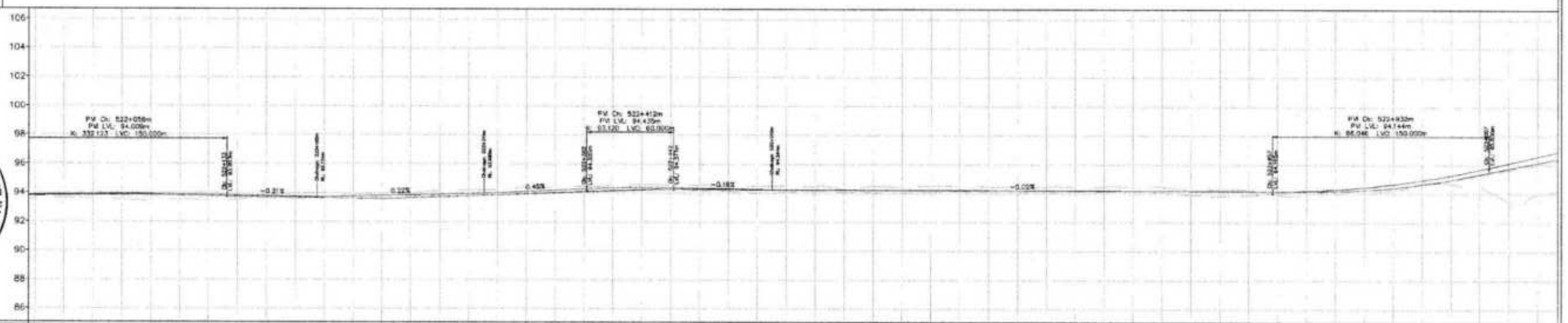
To DEMOW



Curve No.533/1/HP Ch. 522+133.331 (X:666048.9073, Y:2992451.0590)			
R	5000.000m	Ex	–
Side	Right	Δ	0° 44' 28"
Lc	64.675m	V	100 Km/hr.
Ls	–	e	NR
We	–		

Curve No.533/3, HP Ch. 522+523.395 (X:666205.0531, Y:2992819.3933)			
R	5000.000m	Ex	–
Side	Right	Δ	0° 25' 19"
Lc	36.826m	V	100 Km/hr.
Ls	–	e	NR
We	–		

Curve No.PI:HP Ch. 522+762.637 (X:666304.1726, Y:2993037.0090)			
R	500.000m	Ex	4.868
Side	Right	Δ	14° 38' 34"
Lc	32.782m	V	80 Km/hr.
Ls	95.000m	e	5.00%
We	–		



Datum =80.000

Finished Road Level LHS (FRL)(m)	
Finished Road Level RHS (FRL)(m)	
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	G: 0.06% Lc: 76.449m; G: −0.2% L: 171.756; G: 0.36% Lc: 186.953m; G: −0.0% L: 459.748; R: 4972.3 K: 49.7 L: 100.000
Vertical Alignment RHS	K: 332.1 L: 150.000m PVI Elev: 94.009m; G: −0.2% L: 62.342; G: 0.22% Lc: 115.575m; G: 0.45% Lc: 71.124m; K: 93.1 L: 60.000m PVI Elev: 94.435m; G: −0.2% L: 68.234; G: −0.0% L: 348.310; R: 8604.8 K: 66.0 L: 150.000
Horizontal Alignment	35m; Radius: 5000.00m Lc: 64.675m Delta: 0.7411; L=349.314m; Radius: 5000.00m Lc: 36.826m Delta: 0.4220; L=109.432m; Ls: 95.000m; Radius: 500.00m Lc: 32.782m Delta: 3.7568; Ls: 95.000m; L=37.775m; Ls: 95.000m; Radius: 250.0 Lc:65.40 Delta:14.99
Superelevation (%)	
Chainage (m)	522+000 … 523+050

M/s Kaniac Engineering Pvt. Ltd.
Authorised Signatory

REV. NO.	DATE	DESCRIPTION

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 539+200 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KANAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL — TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD

SCALE: VERTICAL −1: 200, HORIZONTAL −1: 2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/522

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH:-KM 522.000 TO KM.523.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Curve No.524/1,HIP Ch. 523+039.689 (X:666461.0083, Y:2993264.6997)			
R	250.000m	Ex	15.028
Side	Left	Δ	36° 45' 45"
Lc	65.407m	V	80 Km/hr.
Ls	95.000m	e	7.00%
We	0.6m		

Chainage : 523+255
Str Type : MJB
Span 42.755+44.10+42.755
Proposal : New Const.

Chainage : 523+255
Str Type : MJB
Span 42.90+44.52+42.28
Proposal : Repair

Curve No.524/2, HIP Ch. 523+524.527 (X:666457.8568, Y:2993747.5000)			
R	305.000m	Ex	27.579
Side	Right	Δ	46° 19' 35"
Ls	171.613m	V	80 Km/hr.
Ls	75.000m	e	7.00%
We	-		

Median 5m+ Carriageway 7m+ Paved Shoulder 1.5m+Earthen Shoulder 2m

Chainage : 523+808
Str Type : Box Culvert
Span : 1x3.0m
Proposal : Recons.

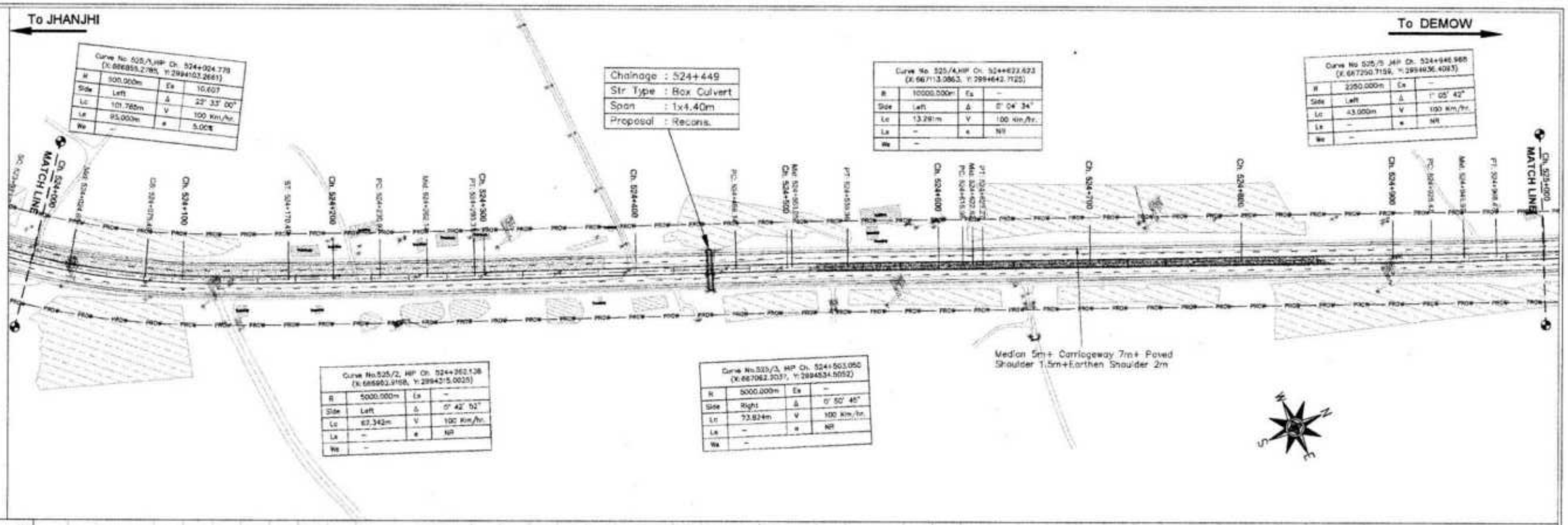
Datum =80.000

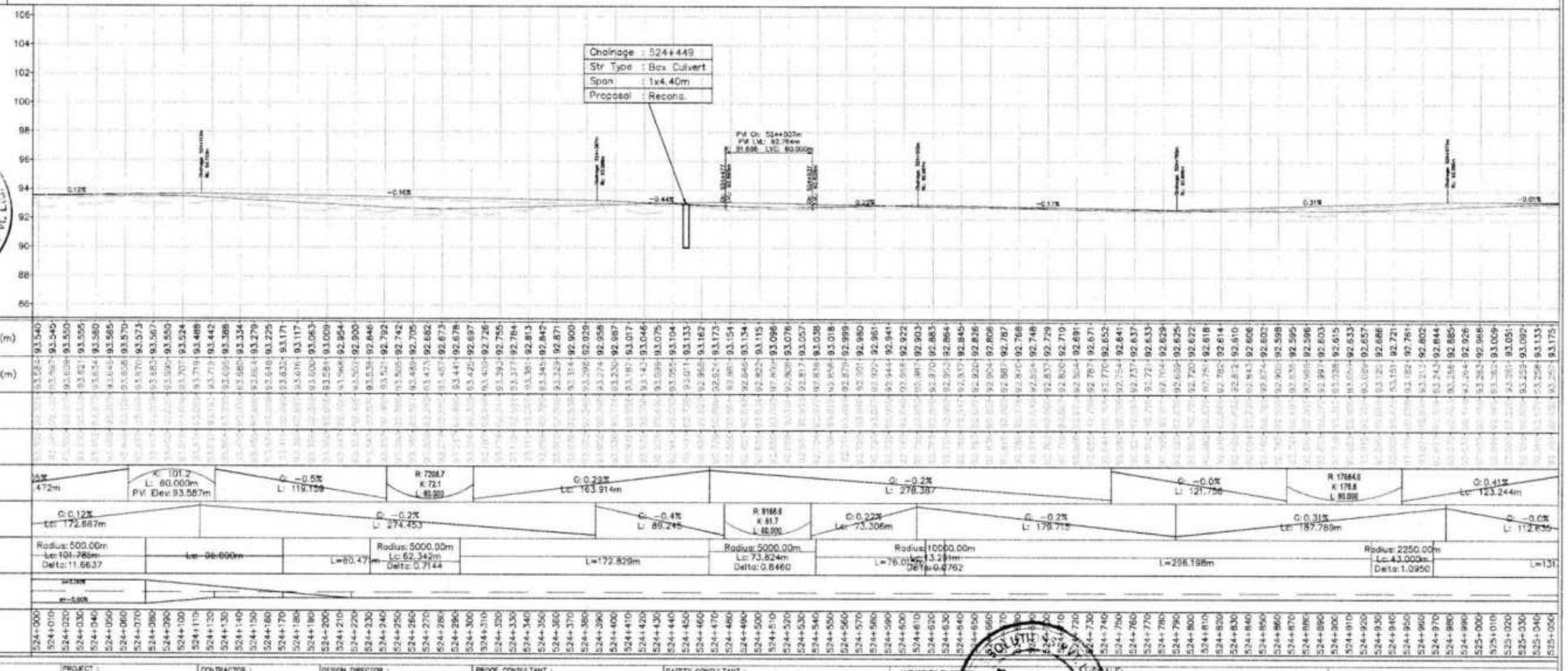
Finished Road Level LHS (FRL)(m)	95.361 95.560 95.760 95.959 96.158 96.357 96.556 96.756 96.955 97.154 97.353 97.552 97.751 97.951 98.149 98.331 98.483 98.608 98.733 98.771 98.809 98.820 98.820 98.820

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro.Median
- Pro. Carriageway
- Pro. Paved Shoulder
- Pro. Earthen Shoulder
- Pro. Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





Authorised Signatory M/s Kamac Engineering Pvt. Ltd.

REV	DESCRIPTION

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+650 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+900) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL, TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

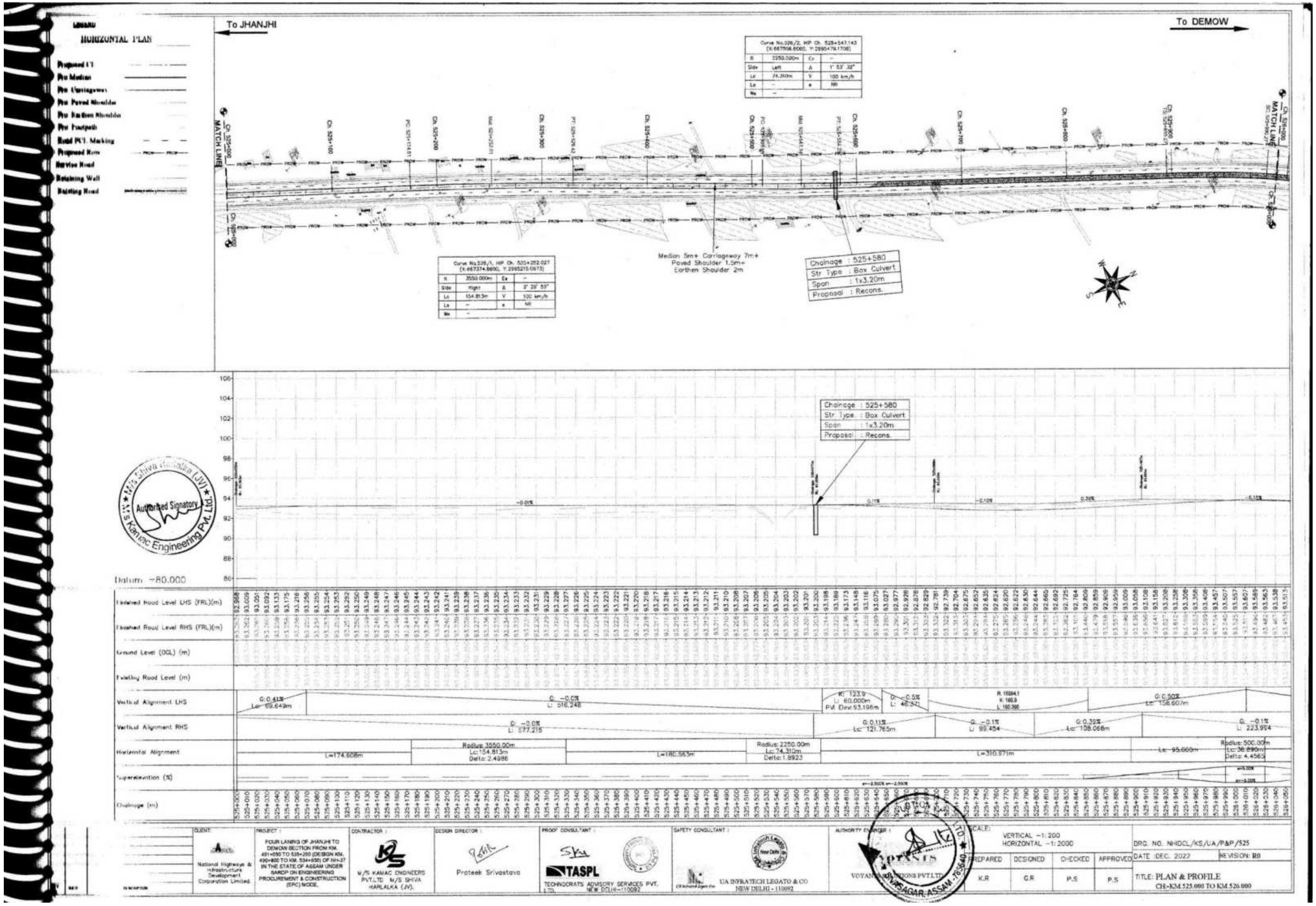
SCALE: VERTICAL –1: 200, HORIZONTAL –1: 2000

DRG. NO. NHIDCL/KS/UA/P&P/524

DATE :DEC. 2022 REVISION: R0

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

TITLE: PLAN & PROFILE CH.-KM.524.000 TO KM.525.000

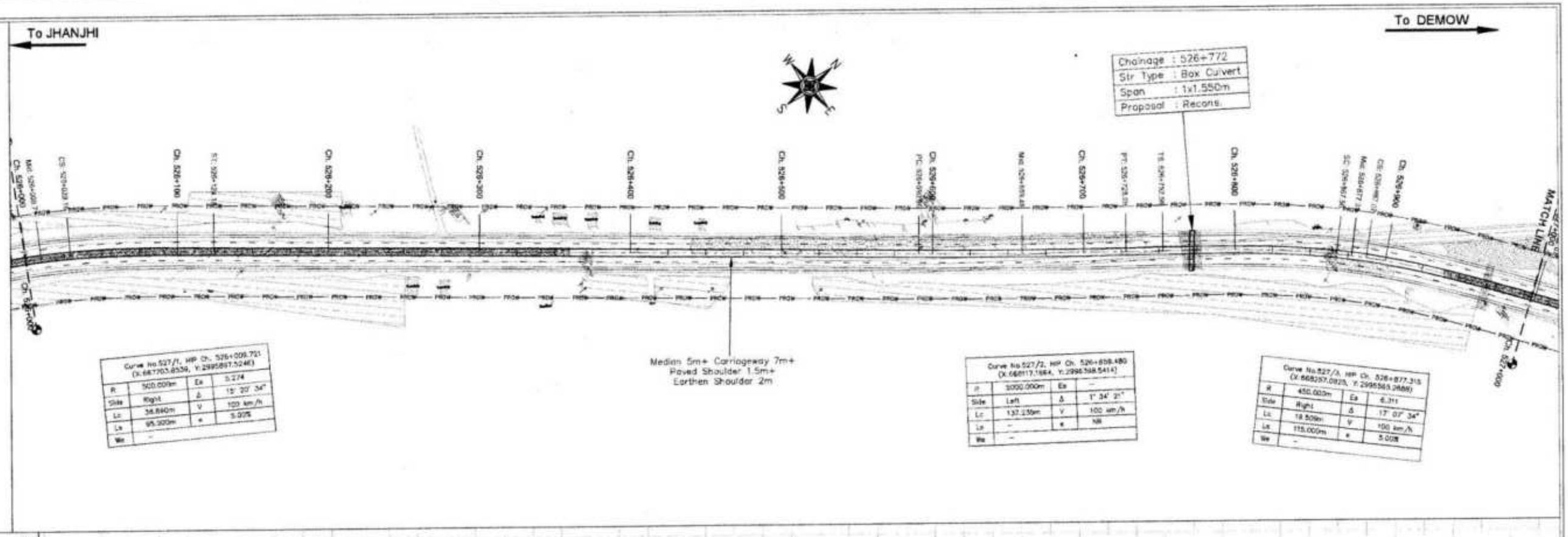


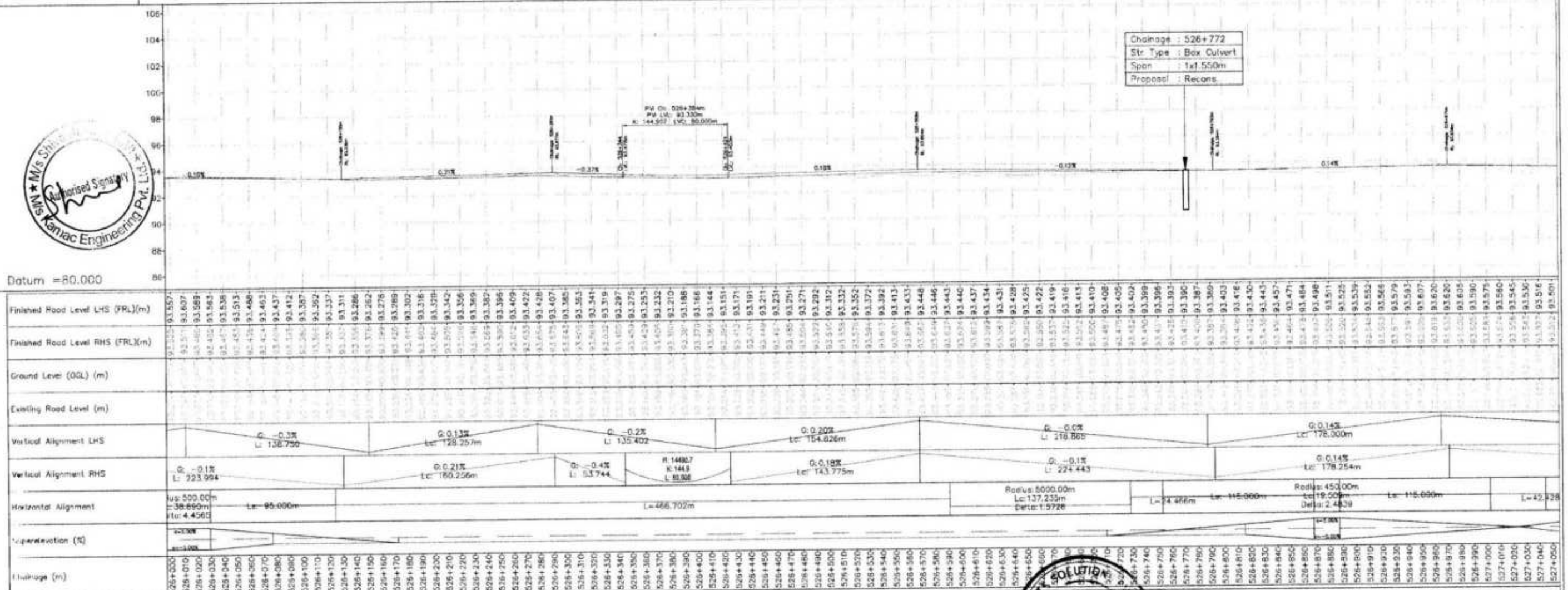
LEGEND
HORIZONTAL PLAN
Proposed CT
Pro Median
Pro Carriageway
Pro Paved Shoulder
Pro Earthen Shoulder
Pro Footpath
Road PCT Marking
Proposed Row
Service Road
Retaining Wall
Existing Road
To JHANJHI
To DEMOW
Curve No.526/2, HP Ch. 525+547.143 (X:667508.6060, Y:2995479.1708)
R 2250.000m Ex –
Side Left Δ 1° 53' 32"
Lc 74.310m V 100 km/h
Lx – e NR
We –
Curve No.526/1, HP Ch. 525+252.027 (X:667374.8800, Y:2995215.0673)
R 3550.000m Ex –
Side Right Δ 2° 29' 55"
Lc 154.813m V 100 km/h
Lx – e NR
We –
MATCH LINE
Ch. 525+000
Ch. 525+100
Ch. 525+200
Ch. 525+300
Ch. 525+400
Ch. 525+500
Ch. 525+600
Ch. 525+700
Ch. 525+800
Ch. 525+900
Ch. 526+000
Median 5m+ Carriageway 7m+
Paved Shoulder 1.5m+
Earthen Shoulder 2m
Chainage : 525+580
Str Type : Box Culvert
Span : 1x3.20m
Proposal : Recons.
Chainage : 525+580
Str Type : Box Culvert
Span : 1x3.20m
Proposal : Recons.
M/s Shiva Harlalka (JV)
Authorised Signatory
M/s Kamac Engineering Pvt. Ltd.
Datum =80.000
Finished Road Level LHS (FRL)(m)
Finished Road Level RHS (FRL)(m)
Ground Level (OGL) (m)
Existing Road Level (m)
Vertical Alignment LHS
G: 0.41% Lc: 69.649m
G: -0.0% L: 516.248
K: 123.9 L: 60.000m PVI Elev: 93.196m
G: -0.5% L: 46.371
R: 16094.1 K: 160.9 L: 160.000
G: 0.50% Lc: 158.607m
Vertical Alignment RHS
G: -0.0% L: 577.215
G: 0.11% Lc: 121.765m
G: -0.1% L: 99.454
G: 0.39% Lc: 108.068m
G: -0.1% L: 223.994
Horizontal Alignment
L=174.608m
Radius: 3550.00m Lc: 154.813m Delta: 2.4986
L=180.563m
Radius: 2250.00m Lc: 74.310m Delta: 1.8923
L=310.971m
Ls: 95.000m
Radius: 500.00m Lc: 36.890m Delta: 4.4565
Superelevation (%)
Chainage (m)
CLIENT: National Highways & Infrastructure Development Corporation Limited.
PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.
CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).
DESIGN DIRECTOR: Proteek Srivastava
PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092
SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092
AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.
SCALE: VERTICAL -1:200 HORIZONTAL -1:2000
PREPARED K.R
DESIGNED G.R
CHECKED P.S
APPROVED P.S
DRG. NO. NHIDCL/KS/UA/P&P/525
DATE :DEC. 2022
REVISION: R0
TITLE: PLAN & PROFILE CH:-KM.525.000 TO KM.526.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road





M/s Shiva Kamac Engineering Pvt. Ltd. Authorised Signatory

CLIENT:	PROJECT:	CONTRACTOR:	DESIGN DIRECTOR:	PROOF CONSULTANT:	SAFETY CONSULTANT:	AUTHORITY ENGINEER:
National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	Prateek Srivastava	TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT.LTD.

SCALE: VERTICAL -1:200 HORIZONTAL -1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/526

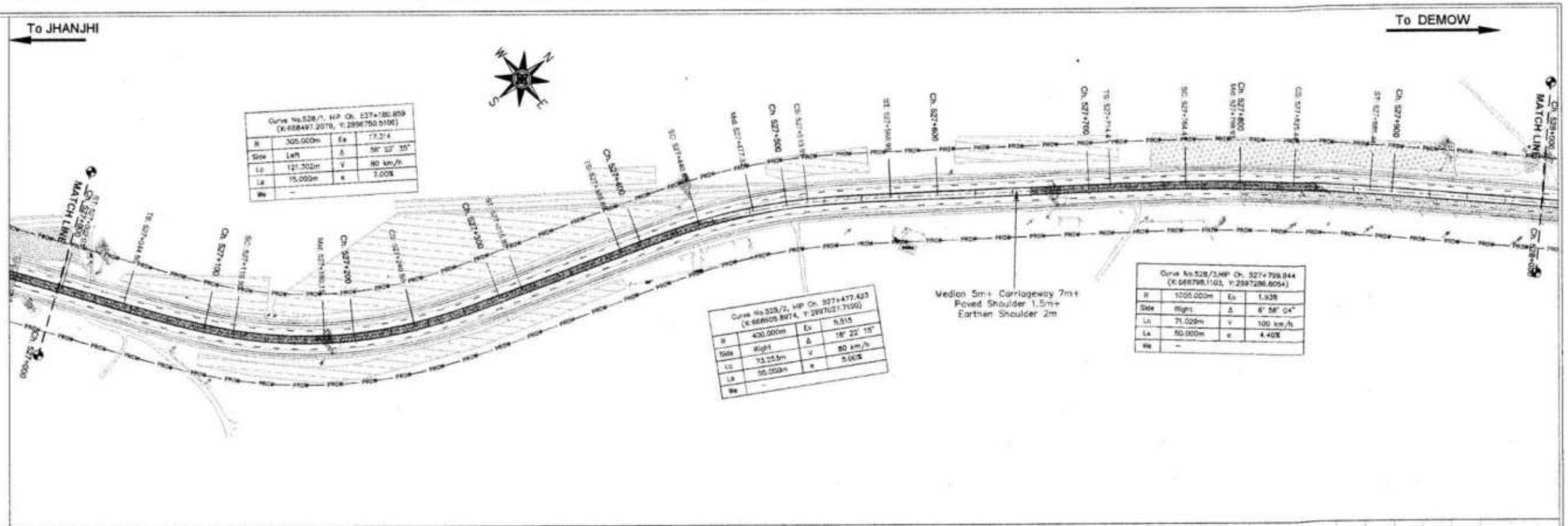
DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH-KM.526.000 TO KM.527.000

LEGEND

HORIZONTAL PLAN

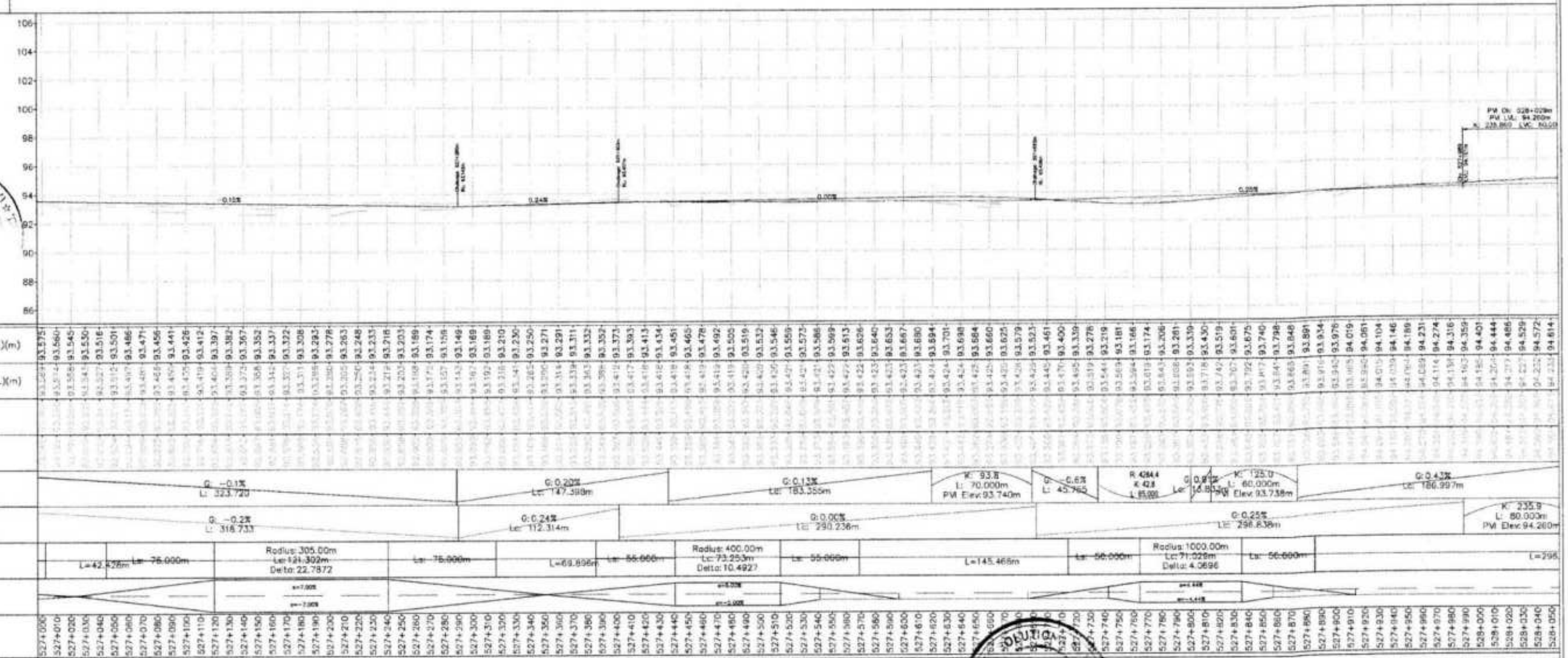
- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed ROW
- Service Road
- Retaining Wall
- Existing Road



Curve No.528/1, HIP Ch. 527+180.859 (X:668497.2070, Y:2998750.5106)			
R	305.000m	Ex	17.374
Side	Left	Δ	38° 33' 35"
Lc	121.302m	V	80 km/h
Ls	75.000m	e	7.00%
Wa	–		

Curve No.528/2, HIP Ch. 527+477.423 (X:668405.8974, Y:2997827.7100)			
R	400.000m	Ex	9.515
Side	Right	Δ	18° 22' 15"
Lc	73.253m	V	80 km/h
Ls	55.000m	e	5.00%
Wa	–		

Curve No.528/3,HIP Ch. 527+709.944 (X:668798.1103, Y:2997286.6054)			
R	1000.000m	Ex	1.938
Side	Right	Δ	4° 06' 04"
Lc	71.029m	V	100 km/h
Ls	50.000m	e	4.40%
Wa	–		



M/s Shiva Harlalka (JV)

CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 499+600 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD. M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS ENGINEERS PVT.LTD.	SCALE: VERTICAL –1: 200 HORIZONTAL –1: 2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/527

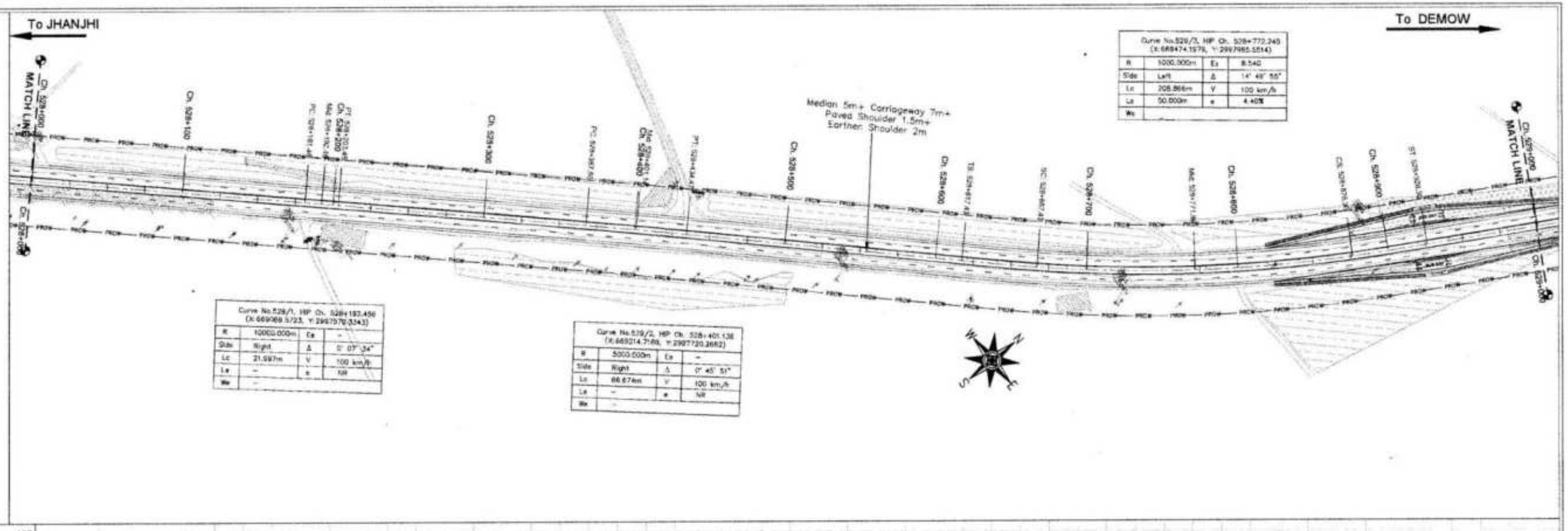
DATE :DEC. 2022 REVISION: R0

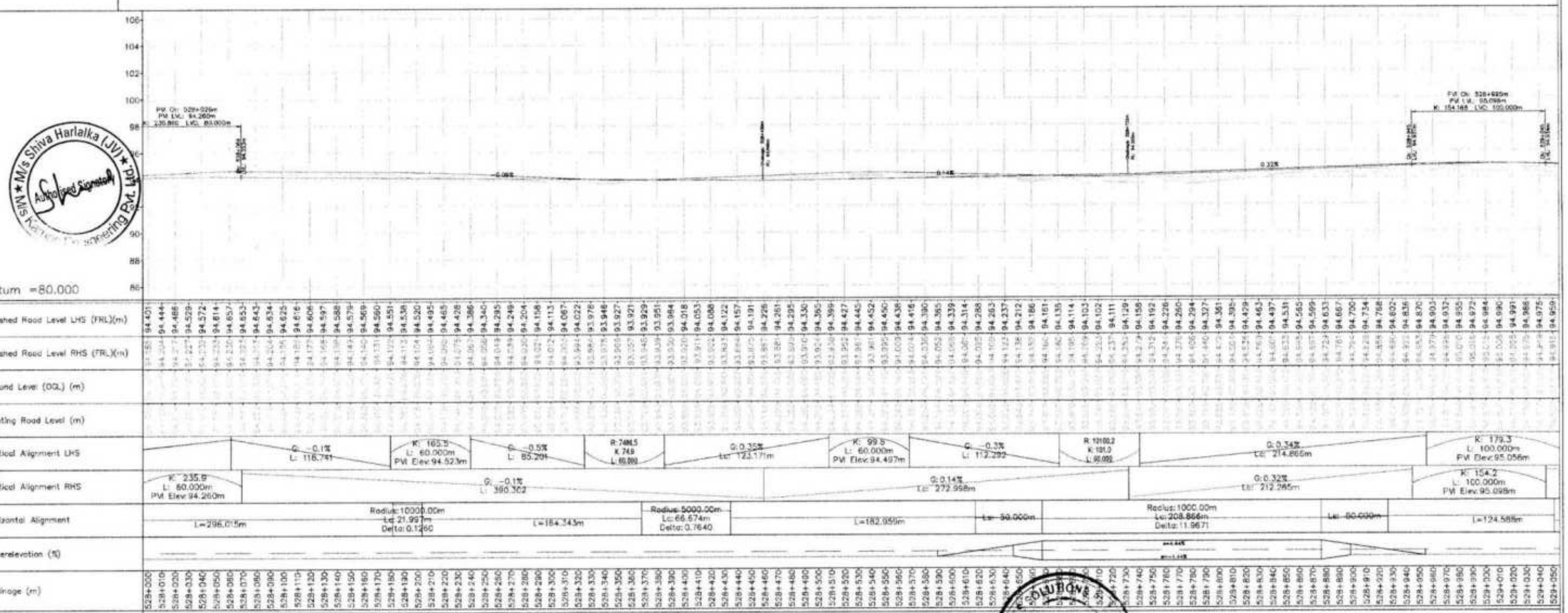
TITLE: PLAN & PROFILE CH:-KM 527.000 TO KM 528.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Retw
- Service Road
- Retaining Wall
- Existing Road





CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

SCALE: VERTICAL -1:200 HORIZONTAL -1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/528

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH:KM.528.000 TO KM.529.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pvt Median
- Pvt Carriageway
- Pvt Paved Shoulder
- Pvt Earthen Shoulder
- Pvt Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Curve No.530/1, HP Ch. 529+094.739 (X: 669838.4529, Y: 2998383.5414)			
R	3500.000m	Es	–
Side	Left	Δ	1° 26' 09"
Lc	87.704m	V	100 km/h
Ls	–	e	NR
We	–		

Median 5m+ Carriageway 7m+
Paved Shoulder 1.5m+
Earthen Shoulder 2m

Chainage	: 529+535
Str Type	: Box Culvert
Span	: 1x4.400m
Proposal	: Recons.

MATCH LINE Ch: 529+000

MATCH LINE Ch: 530+000

Curve No. 530/2, HP Ch. 529+213.488 (X: 669695.2397, Y: 2998388.2373)			
R	3500.000m	Es	–
Side	Right	Δ	1° 03' 36"
Lc	64.806m	V	100 km/h
Ls	–	e	NR
We	–		

Curve No.530/3, HP Ch. 529+617.875 (X: 669895.1575, Y: 2998719.7532)			
R	2200.000m	Es	–
Side	Right	Δ	1° 18' 41"
Lc	50.353m	V	100 km/h
Ls	–	e	NR
We	–		

Curve No.530/4, HP Ch. 529+681.422 (X: 669932.9723, Y: 2998782.8383)			
R	2200.000m	Es	–
Side	Left	Δ	1° 40' 01"
Lc	64.001m	V	100 km/h
Ls	–	e	NR
We	–		

Chainage	: 529+535
Str Type	: Box Culvert
Span	: 1x4.400m
Proposal	: Recons.

PVI Ch: 529+740m
PVI LVL: 93.481m
K: 389.657 LVC: 150.000m

Datum =80.000

Finished Road Level LHS (FRL)(m)

Finished Road Level RHS (FRL)(m)

Ground Level (OGL) (m)

Existing Road Level (m)

Vertical Alignment LHS

Vertical Alignment RHS

Horizontal Alignment

Superelevation (%)

Chainage (m)

CLIENT:	PROJECT:	CONTRACTOR:	DESIGN DIRECTOR:	PROOF CONSULTANT:	SAFETY CONSULTANT:	AUTHORITY ENGINEER:	SCALE:
National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMON SECTION FROM KM. 491+050 TO 535+250 (DEMON KM. 480+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP-NE ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	Prateek Srivastava	TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT.LTD.	VERTICAL –1: 200 HORIZONTAL –1: 2000

DESCRIPTION	PREPARED	DESIGNED	CHECKED	APPROVED
	K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/529

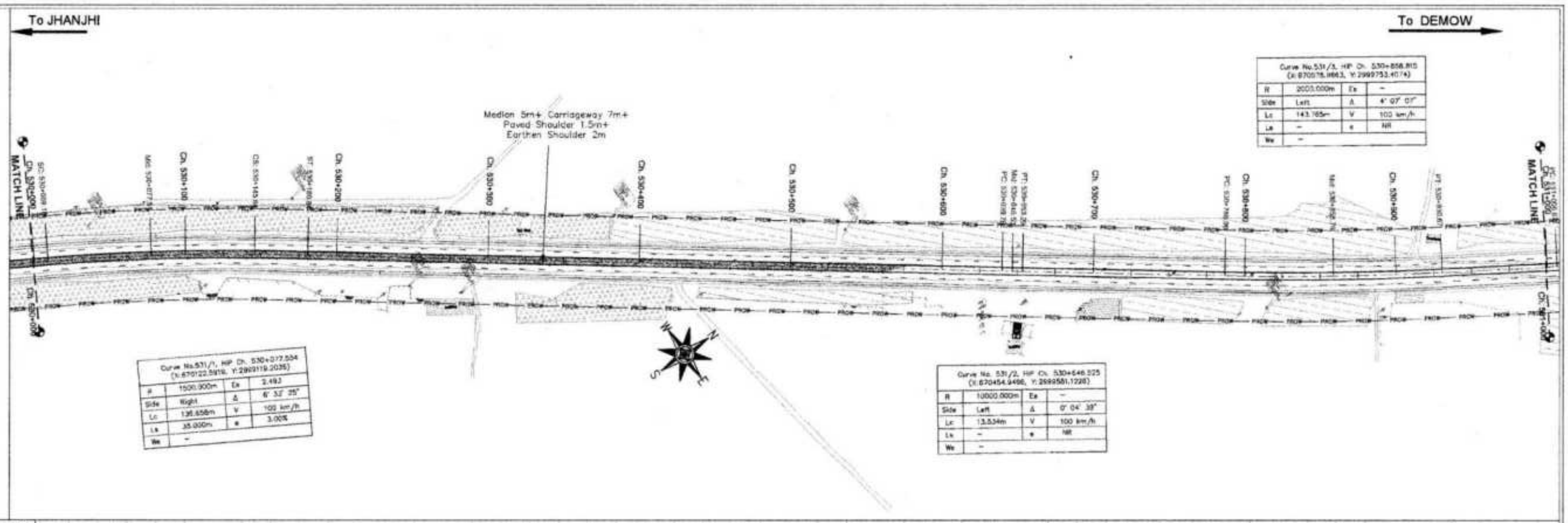
DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE
CH:-KM.529.000 TO KM.530.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road



Curve No.531/3, HIP Ch. 530+858.815 (X:670578.9663, Y:2999753.4074)

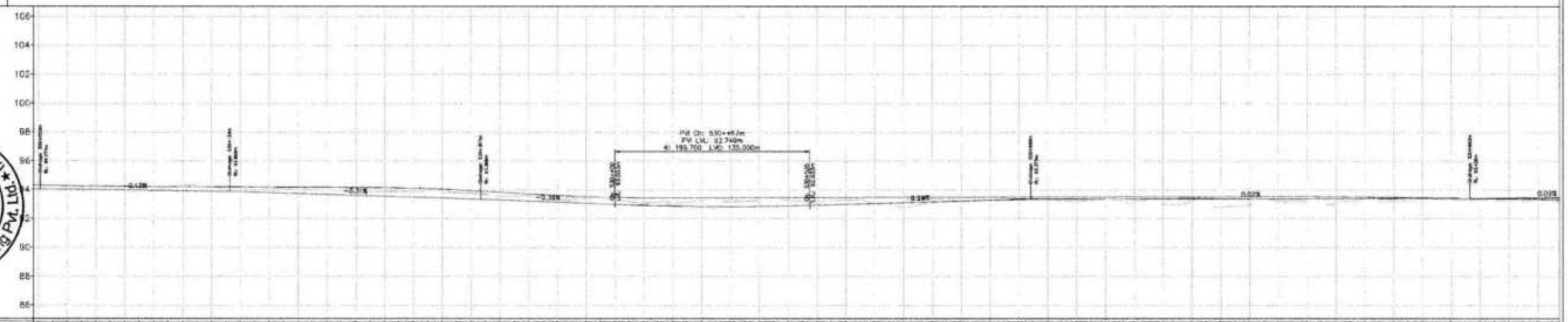
R	2000.000m	Es	–
Side	Left	Δ	4° 07' 07"
Lc	143.765m	V	100 km/h
Ls	–	e	NR
We	–		

Curve No.531/1, HIP Ch. 530+077.534 (X:670122.5919, Y:2999119.2035)

R	1500.000m	Es	2.493
Side	Right	Δ	6° 32' 25"
Lc	136.658m	V	100 km/h
Ls	35.000m	e	3.00%
We	–		

Curve No. 531/2, HIP Ch. 530+646.525 (X:670454.9498, Y:2999581.1228)

R	10000.000m	Es	–
Side	Left	Δ	0° 04' 39"
Lc	13.534m	V	100 km/h
Ls	–	e	NR
We	–		



Chainage (m)	Finished Road Level LHS (FRL)(m)	Finished Road Level RHS (FRL)(m)	Ground Level (GGL) (m)	Existing Road Level (m)
530+000	94.326	94.070		
530+010	94.307	94.060		
530+020	94.287	94.047		
530+030	94.268	94.034		
530+040	94.249	94.021		
530+050	94.235	94.008		
530+060	94.231	93.994		
530+070	94.227	93.981		
530+080	94.224	93.968		
530+090	94.220	93.965		
530+100	94.216	93.942		
530+110	94.212	93.929		
530+120	94.209	93.916		
530+130	94.205	93.903		
530+140	94.201	93.877		
530+150	94.198	93.847		
530+160	94.194	93.816		
530+170	94.190	93.785		
530+180	94.186	93.755		
530+190	94.183	93.724		
530+200	94.179	93.693		
530+210	94.175	93.663		
530+220	94.171	93.632		
530+230	94.168	93.601		
530+240	94.163	93.577		
530+250	94.150	93.540		
530+260	94.128	93.509		
530+270	94.097	93.479		
530+280	94.058	93.448		
530+290	94.010	93.417		
530+300	93.954	93.387		
530+310	93.897	93.353		
530+320	93.841	93.314		
530+330	93.784	93.276		
530+340	93.727	93.237		
530+350	93.672	93.198		
530+360	93.623	93.159		
530+370	93.579	93.120		
530+380	93.542	93.081		
530+390	93.510	93.042		
530+400	93.485	93.003		
530+410	93.465	92.964		
530+420	93.451	92.935		
530+430	93.443	92.906		
530+440	93.442	92.887		
530+450	93.444	92.877		
530+460	93.447	92.859		
530+470	93.449	92.853		
530+480	93.452	92.865		
530+490	93.455	92.855		
530+500	93.457	92.864		
530+510	93.460	92.878		
530+520	93.462	92.890		
530+530	93.465	92.920		
530+540	93.468	92.948		
530+550	93.470	92.977		
530+560	93.473	93.005		
530+570	93.476	93.034		
530+580	93.478	93.062		
530+590	93.481	93.091		
530+600	93.484	93.120		
530+610	93.486	93.148		
530+620	93.489	93.177		
530+630	93.492	93.206		
530+640	93.494	93.234		
530+650	93.497	93.263		
530+660	93.499	93.292		
530+670	93.502	93.320		
530+680	93.505	93.349		
530+690	93.507	93.372		
530+700	93.510	93.376		
530+710	93.513	93.377		
530+720	93.515	93.378		
530+730	93.516	93.380		
530+740	93.521	93.382		
530+750	93.523	93.384		
530+760	93.526	93.385		
530+770	93.528	93.387		
530+780	93.531	93.389		
530+790	93.534	93.391		
530+800	93.536	93.394		
530+810	93.539	93.396		
530+820	93.542	93.398		
530+830	93.544	93.399		
530+840	93.547	93.401		
530+850	93.550	93.403		
530+860	93.552	93.405		
530+870	93.555	93.406		
530+880	93.555	93.408		
530+890	93.544	93.410		
530+900	93.532	93.412		
530+910	93.521	93.413		
530+920	93.510	93.415		
530+930	93.499	93.417		
530+940	93.488	93.418		
530+950	93.476	93.420		
530+960	93.465	93.422		
530+970	93.454	93.424		
530+980	93.443	93.425		
530+990	93.432	93.432		
531+000	93.421	93.441		
531+010	93.409	93.450		
531+020	93.398	93.458		
531+030	93.387	93.467		
531+040	93.376	93.476		
531+050	93.365	93.475		

Vertical Alignment LHS: G: -0.0% L: 187.930; K: 113.3 L: 60.000m PVI Elev: 94.155m; G: -0.6% L: 48.030; R: 18853.8 K: 168.5 L: 100.000; G: 0.03% Lc: 435.357m; G: -0.1% L: 160.751

Vertical Alignment RHS: G: -0.1% L: 131.361; G: -0.3% L: 173.928; G: -0.4% L: 93.184; R: 19979.0 K: 199.7 L: 135.000; G: 0.29% Lc: 153.454m; G: 0.02% Lc: 304.924m; G: 0.09 Lc: 106.5

Horizontal Alignment: Radius: 1500.00m Lc: 136.658m Delta: 5.2200; Lc: 35.000m; L=458.922m; Radius: 10000.00m Lc: 13.534m Delta: 0.0775; L=133.610m; Radius: 2000.00m Lc: 143.765m Delta: 4.1186; L=75.999m

Superelevation (%): e=3.00%; e=-3.00%

CLIENT:	PROJECT:	CONTRACTOR:	DESIGN DIRECTOR:	PROOF CONSULTANT:	SAFETY CONSULTANT:	AUTHORITY ENGINEER:
National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+030 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	Proteek Srivastava	TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT LTD

SCALE: VERTICAL -1: 200 HORIZONTAL -1: 2000

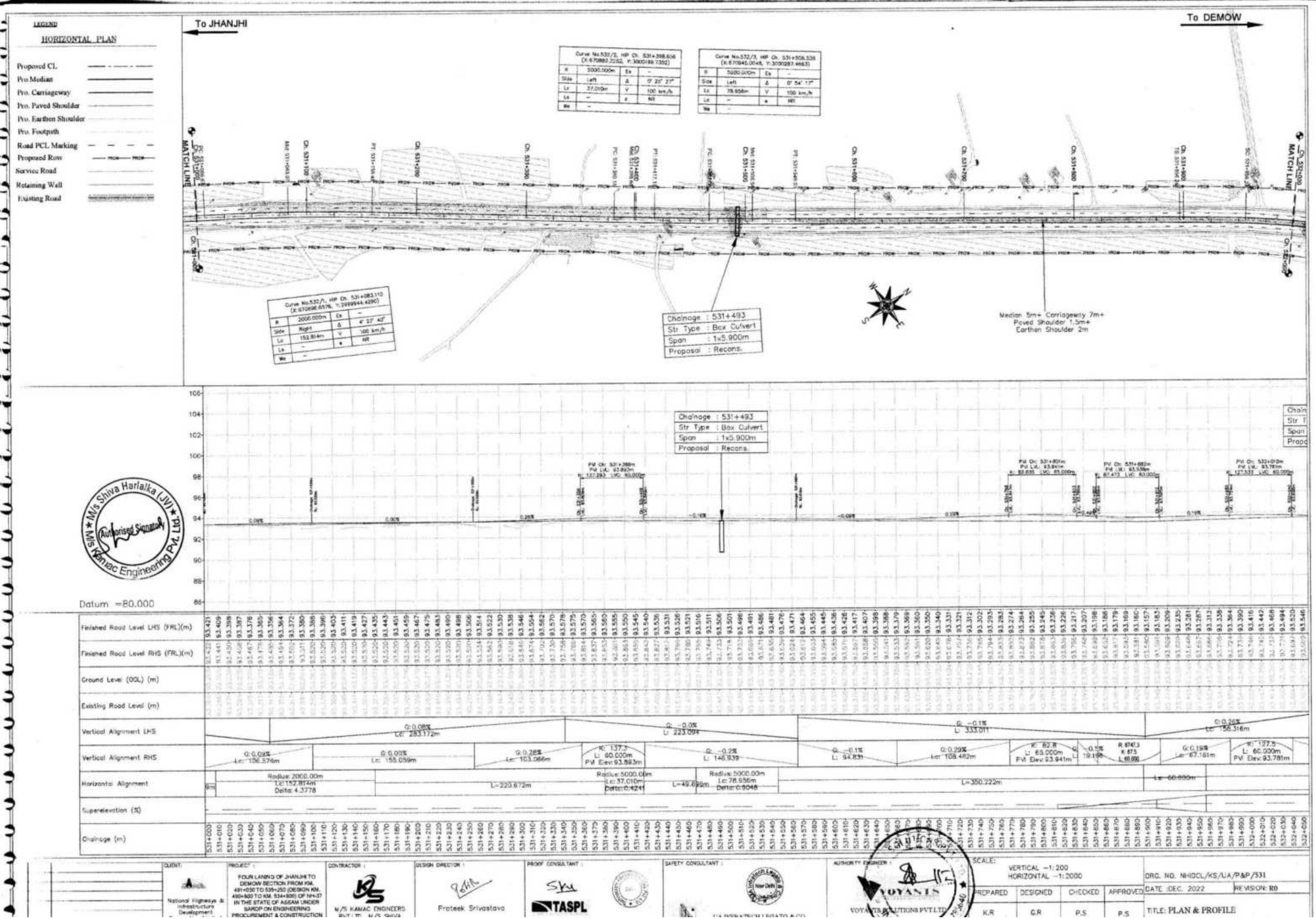
PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/530

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH:-KM.530.000 TO KM.531.000

M/s Shiva Harlalka (JV) Authorised Signatory M/s Kamac Engineering Pvt. Ltd.



LEGEND
HORIZONTAL PLAN
Proposed CL
Pro.Median
Pro. Carriageway
Pro. Paved Shoulder
Pro. Earthen Shoulder
Pro. Footpath
Road PCL Marking
Proposed Row
Service Road
Retaining Wall
Existing Road
To JHANJHI
To DEMOW
MATCH LINE
Chainage : 531+493
Str Type : Box Culvert
Span : 1x5.900m
Proposal : Recons.
Median 5m+ Carriageway 7m+
Paved Shoulder 1.5m+
Earthen Shoulder 2m
Datum =80.000
Finished Road Level LHS (FRL)(m)
Finished Road Level RHS (FRL)(m)
Ground Level (OGL) (m)
Existing Road Level (m)
Vertical Alignment LHS
Vertical Alignment RHS
Horizontal Alignment
Superelevation (%)
Chainage (m)
M/s Shiva Harlalka (JV)
M/s Kamac Engineering Pvt. Ltd.
Authorised Signatory
CLIENT:
National Highways & Infrastructure Development
PROJECT:
FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+600 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION
CONTRACTOR:
M/S KAMAC ENGINEERS PVT. LTD. M/S SHIVA
DESIGN DIRECTOR:
Proteek Srivastava
PROOF CONSULTANT:
TASPL
SAFETY CONSULTANT:
AUTHORITY ENGINEER:
VOYANTS
VOYANTS SOLUTIONS PVT LTD
SCALE:
VERTICAL -1:200
HORIZONTAL -1:2000
PREPARED
DESIGNED
CHECKED
APPROVED
K.R
G.R
P.S
P.S
DRG. NO. NHIDCL/KS/UA/P&P/531
DATE :DEC. 2022
REVISION: R0
TITLE: PLAN & PROFILE

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCT. Marking
- Proposed Rows
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Chainage : 532+077
Str Type : Box Culvert
Span : 1x1.500m
Proposal : Recons.

Curve No. 533/2,HIP Ch. 532+400.347 (X:671543.5060, Y:3000935.0449)			
R	1000.000m	Ex	2.245
Slope	Left	Δ	7° 29' 27"
Lc	80.742m	V	100 km/h
Ls	50.000m	e	4.40%
We	-		

Curve No.533/3, HIP Ch. 532+867.921 (X:671673.2121, Y:3001038.5769)			
R	3000.000m	Ex	-
Slope	Left	Δ	1° 03' 54"
Lc	55.763m	V	100 km/h
Ls	-	e	NR
We	-		

Curve No.533/1, HIP Ch. 532+098.847 (X:671287.5071, Y:3000771.8453)			
R	815.000m	Ex	18.714
Slope	Right	Δ	24° 13' 18"
Lc	284.304m	V	100 km/h
Ls	60.000m	e	5.00%
We	-		

Curve No.533/4, HIP Ch. 532+882.906 (X:671917.7193, Y:3001239.4845)			
R	5000.000m	Ex	-
Slope	Right	Δ	0° 42' 18"
Ls	61.466m	V	100 km/h
Ls	-	e	NR
We	-		

Median 5m+ Carriageway 7m+
Paved Shoulder 1.5m+
Earthen Shoulder 2m

Ch. 532+000 BEGIN LINK

Ch. 533+000 MATCH LINE

Datum =80.000

Finished Road Level LHS (FRL)(m)	93.416 93.442 93.468 93.494 93.520 93.546 93.560 93.553 93.547 93.540 93.534 93.527 93.521 93.514 93.507 93.501 93.494 93.488 93.481 93.475 93.468 93.462 93.455 93.449 93.442 93.436 93.429 93.423 93.416 93.410 93.403 93.397 93.390 93.384 93.377 93.371 93.364 93.358 93.351 93.345 93.338 93.332 93.325 93.319 93.312 93.306 93.299 93.293 93.286 93.280 93.273 93.267 93.260 93.254 93.247 93.240 93.234 93.227 93.221 93.214 93.208 93.201 93.195 93.188 93.182 93.175 93.169 93.162 93.156 93.149 93.143 93.136 93.130 93.123 93.117 93.110 93.104 93.097 93.091 93.084 93.078 93.071 93.065 93.058 93.052 93.045 93.039 93.032 93.026 93.019 93.013 93.006 93.000 92.993 92.987 92.980 92.974 92.967 92.961 92.954 92.948 92.941 92.935 92.928 92.922 92.915 92.909 92.902 92.896 92.889 92.883 92.876 92.870 92.863 92.857 92.850 92.844 92.837 92.831 92.824
Finished Road Level RHS (FRL)(m)	93.746 93.772 93.798 93.824 93.850 93.876 93.890 93.883 93.877 93.870 93.864 93.857 93.851 93.844 93.837 93.831 93.824 93.818 93.811 93.805 93.798 93.792 93.785 93.779 93.772 93.766 93.759 93.753 93.746 93.740 93.733 93.727 93.720 93.714 93.707 93.701 93.694 93.688 93.681 93.675 93.668 93.662 93.655 93.649 93.642 93.636 93.629 93.623 93.616 93.610 93.603 93.597 93.590 93.584 93.577 93.571 93.564 93.558 93.551 93.545 93.538 93.532 93.525 93.519 93.512 93.506 93.499 93.493 93.486 93.480 93.473 93.467 93.460 93.454 93.447 93.441 93.434 93.428 93.421 93.415 93.408 93.402 93.395 93.389 93.382 93.376 93.369 93.363 93.356 93.350 93.343 93.337 93.330 93.324 93.317 93.311 93.304 93.298 93.291 93.285 93.278 93.272 93.265 93.259 93.252 93.246 93.239 93.233 93.226 93.220 93.213 93.207 93.200 93.194 93.187 93.181 93.174 93.168 93.161 93.155 93.148 93.142 93.135 93.129 93.122 93.116 93.109 93.103 93.096 93.090 93.083 93.077 93.070 93.064 93.057 93.051 93.044 93.038 93.031 93.025 93.018 93.012 93.005 92.999 92.992 92.986 92.979 92.973 92.966 92.960 92.953 92.947 92.940 92.934 92.927 92.921 92.914 92.908 92.901 92.895 92.888 92.882 92.875 92.869 92.862 92.856 92.849 92.843 92.836 92.830 92.823
Ground Level (OGL) (m)	
Existing Road Level (m)	
Vertical Alignment LHS	G: -0.1% L: 503.673 ; G: 0.12% L: 461.599m
Vertical Alignment RHS	K: 127.6 60.000m Elev:93.781m ; G: -0.3% L: 81.229 ; G: 0.18% Lc: 81.946m ; K: 363.2 L: 150.000m PVI Elev:93.632m ; G: -0.3% L: 94.619 ; R:10777.2 K:107.8 L:60.000 ; G: 0.29% Lc: 162.543m ; G: -0.0% L: 234.097 ; G: 0.12% Lc: 147.976m
Horizontal Alignment	Radius:815.00m Lc:284.304m Delta:16.9870 ; Ls: 60.000m ; L=8.615m ; Radius:1000.00m Lc:80.742m Delta:4.6262 ; Ls: 50.000m ; L=49.143m ; Radius:3000.00m Lc: 55.763m Delta: 1.0650 ; L=256.430m ; Radius:5000.00m Lc:61.466m Delta:0.7043
Superelevation (%)	e=5.00% e=-5.00% ; e=4.40% e=-4.40%
Chainage (m)	532+000 532+010 532+020 532+030 532+040 532+050 532+060 532+070 532+080 532+090 532+100 532+110 532+120 532+130 532+140 532+150 532+160 532+170 532+180 532+190 532+200 532+210 532+220 532+230 532+240 532+250 532+260 532+270 532+280 532+290 532+300 532+310 532+320 532+330 532+340 532+350 532+360 532+370 532+380 532+390 532+400 532+410 532+420 532+430 532+440 532+450 532+460 532+470 532+480 532+490 532+500 532+510 532+520 532+530 532+540 532+550 532+560 532+570 532+580 532+590 532+600 532+610 532+620 532+630 532+640 532+650 532+660 532+670 532+680 532+690 532+700 532+710 532+720 532+730 532+740 532+750 532+760 532+770 532+780 532+790 532+800 532+810 532+820 532+830 532+840 532+850 532+860 532+870 532+880 532+890 532+900 532+910 532+920 532+930 532+940 532+950 532+960 532+970 532+980 532+990 533+000 533+010 533+020 533+030 533+040 533+050

M/s Shiva Harlalka (JV) ★ M/s Kamac Engineering Pvt. Ltd. ★ Authorised Signatory

CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+556 TO 539+288 (DESIGN KM. 493+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP-NE ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava	PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NSW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

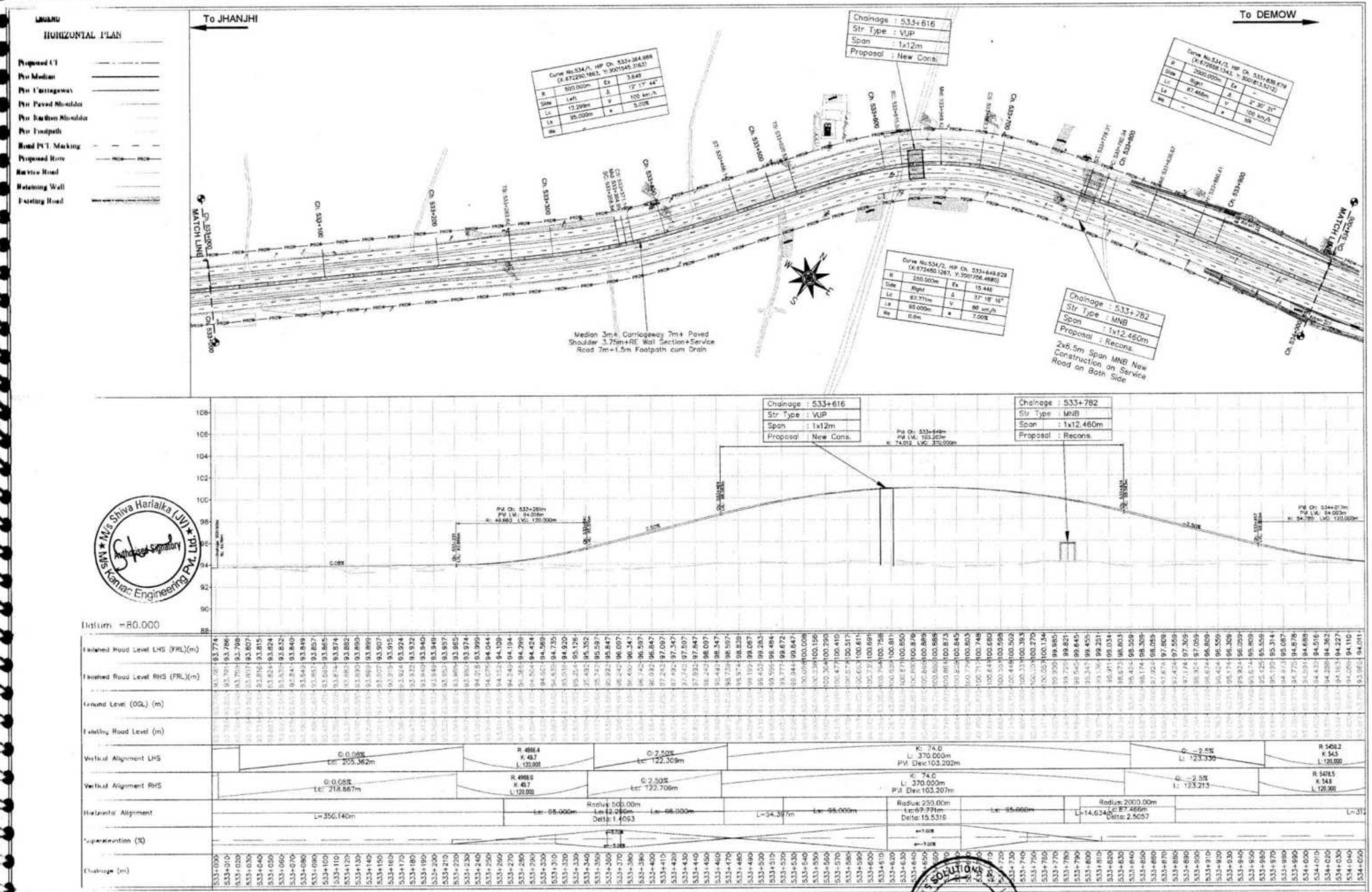
SCALE: VERTICAL –1: 200, HORIZONTAL –1: 2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/532

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE
CH.-KM.532.000 TO KM.533.000



CLIENT: National Highways & Infrastructure Development Corporation Limited.	PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+500) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	DESIGN DIRECTOR: Prateek Srivastava
PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092	AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.	SCALE: VERTICAL -1:200 HORIZONTAL -1:2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/533

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH.-KM.533.000 TO KM.534.000

LEGEND

HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro Carriageway
- Pro Paved Shoulder
- Pro Earthen Shoulder
- Pro Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road

To JHANJHI

To DEMOW

Curve No.535/1,HP Ch. 534+227.008 (X:673040.7084, Y:3001891.0061)			
R	3000.000m	Es	–
Side	Right	Δ	1° 17' 49"
Lc	67.909m	V	100 km/h
Ls	–	e	NR
We	–		

Curve No.535/2, HP Ch. 534+623.213 (X:673440.5567, Y:3001929.0087)			
R	2000.000m	Es	–
Side	Left	Δ	1° 17' 50"
Lc	45.284m	V	100 km/h
Ls	–	e	NR
We	–		

Curve No.535/3, HP Ch. 534+850.128 (X:673681.0880, Y:3002017.6822)			
R	500.000m	Es	7.465
Side	Left	Δ	18° 38' 41"
Lc	67.651m	V	100 km/h
Ls	90.000m	e	5.00%
We	–		

MATCH LINE Ch. 534+000

Ch. 534+100 | Ch. 534+193.95 PC | Ch. 534+200 | Ch. 534+227.01 PT | Ch. 534+260.96 | Ch. 534+300 | Ch. 534+400 | Ch. 534+500 | Ch. 534+600 | Ch. 534+610.67 PC | Ch. 534+630.21 PT | Ch. 534+635.65 | Ch. 534+700 | Ch. 534+761.15 | Ch. 534+800 | Ch. 534+835.15 PC | Ch. 534+903.15 PT | Ch. 534+914.73 | Ch. 534+900 CD | MATCH LINE Ch. 535+000

Median 3m+ Carriageway 7m+ Paved Shoulder 2m+Separator 0.5m+ Footpath 1.5m+Service Road 7m+1.5m Footpath cum Drain

N W E S

Chainage	: 534+717
Str Type	: MNB
Span	: 2x6.60m
Proposal	: New Cons.

2x6.6m Span MNB on Service Road on Both Side

Datum =80.000

PVI Ch: 534+017m, PVI LVL: 94.003m, K: 4.785, LVC: 120.000m
PVI Ch: 534+180m, PVI LVL: 93.499m, K: 191.905, LVC: 120.000m
PVI Ch: 534+641m, PVI LVL: 94.156m, K: 281.765, LVC: 150.000m
PVI Ch: 534+761m, PVI LVL: 94.785m, K: 120.838, LVC: 60.000m

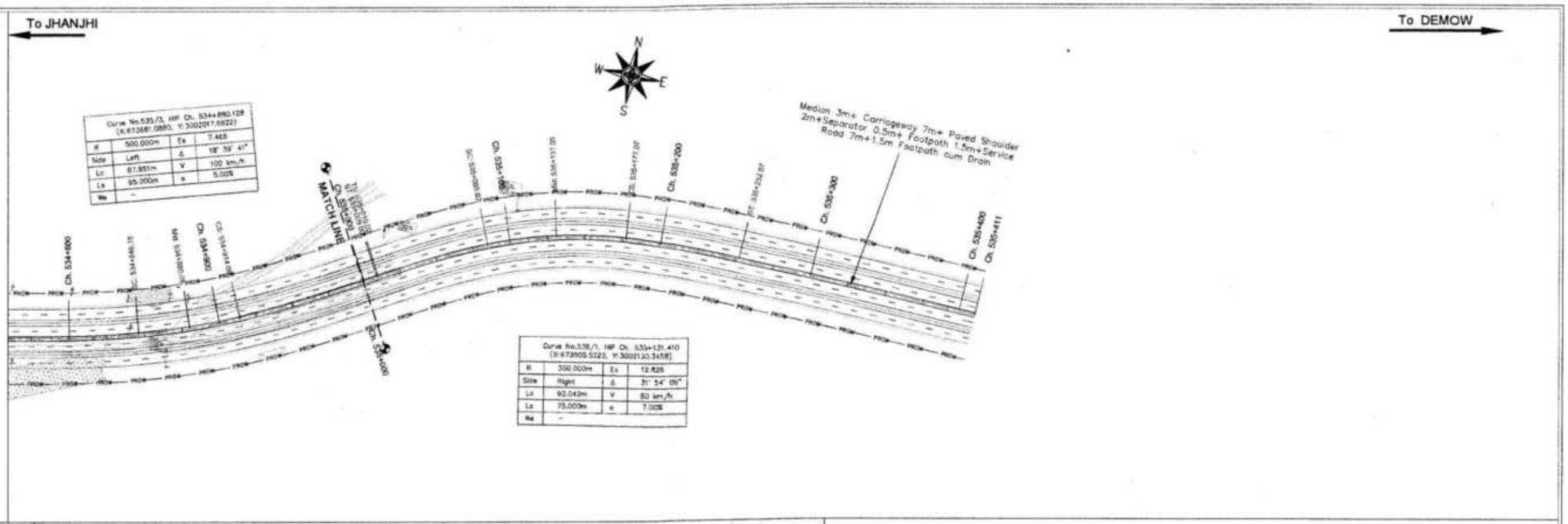
Chainage	: 534+717
Str Type	: MNB
Span	: 2x6.60m
Proposal	: New Cons.

Finished Road Level LHS (FRL)(m)	94.688 94.516 94.362 94.227 94.110 94.011 93.930 93.868 93.825 93.794 93.765 93.735 93.705 93.675 93.648 93.626 93.609 93.598 93.591 93.590 93.594 93.603 93.617 93.637 93.661 93.691 93.724 93.758 93.789 93.821 93.853 93.886 93.918 93.951 93.983 94.016 94.048 94.081 94.113 94.145 94.178 94.210 94.243 94.261 94.257 94.253 94.249 94.245 94.240 94.235 94.232 94.228 94.224 94.220 94.215 94.211 94.207 94.203 94.199 94.211 94.249 94.286 94.324 94.362 94.400 94.438 94.476 94.514 94.552 94.590 94.628 94.666 94.704 94.742 94.780 94.783 94.783 94.783

LEGEND

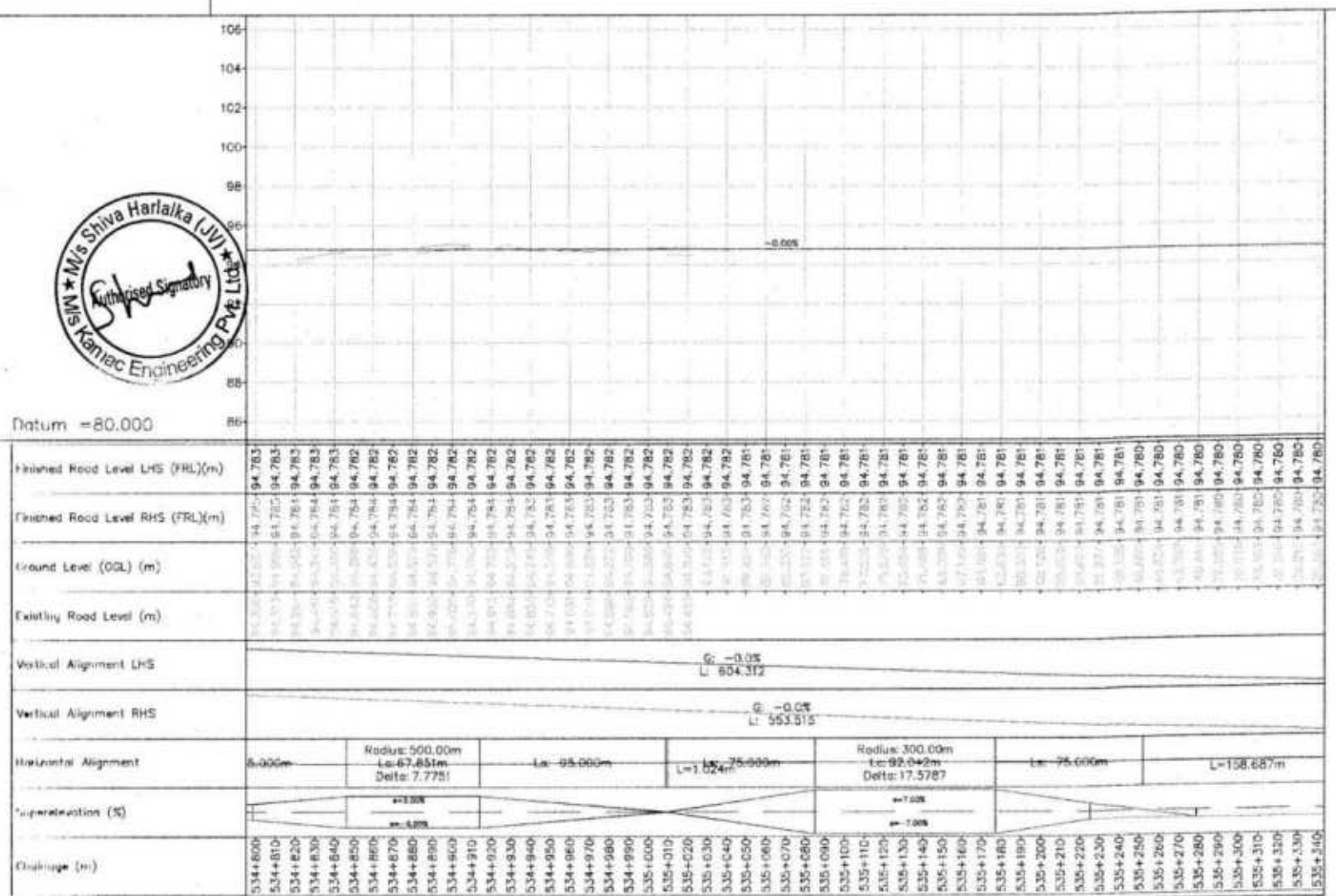
HORIZONTAL PLAN

- Proposed CL
- Pro Median
- Pro. Carriageway
- Pro. Paved Shoulder
- Pro. Earthen Shoulder
- Pro. Footpath
- Road PCL Marking
- Proposed Row
- Service Road
- Retaining Wall
- Existing Road



Curve No.535/3, HIP Ch. 534+880.128 (X:673681.0880, Y:3002017.6822)			
R	500.000m	Es	7.465
Side	Left	Δ	18° 39' 41"
Lc	67.851m	V	100 km/h
Ls	95.000m	e	5.00%
Re	-		

Curve No.535/1, HIP Ch. 535+131.410 (X:673900.5222, Y:3002130.3458)			
R	300.000m	Es	12.826
Side	Right	Δ	31° 54' 06"
Lc	92.042m	V	80 km/h
Ls	75.000m	e	7.00%
Re	-		



M/s Shiva Harlalka (JV) ★ M/s Kamac Engineering Pvt. Ltd. ★ Authorised Signatory

CLIENT:	PROJECT:	CONTRACTOR:	DESIGN DIRECTOR:	PROOF CONSULTANT:	SAFETY CONSULTANT:	AUTHORITY ENGINEER:
National Highways & Infrastructure Development Corporation Limited.	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 430+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.	M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).	Prateek Srivastava	TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092	UA INFRATECH LEGATO & CO NEW DELHI - 110092	VOYANTS SOLUTIONS PVT.LTD.

VOYANTS SOLUTIONS PVT. LTD. ★ SAGAR ASSAM ★

SCALE: VERTICAL -1: 200 HORIZONTAL -1: 2000

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/P&P/535

DATE :DEC. 2022 REVISION: R0

TITLE: PLAN & PROFILE CH:-KM 535.000 TO KM 535.340

TCS Schedule						
Sl No	From	To	Length	TCS Type	Median Width	Description
1	490+800	491+600	800	TCS-1C1	1.5	4 Lane Carriageway without Service Road Concentric Widening
2	491+600	492+150	550	TCS-1C1	1.5	4 Lane Carriageway without Service Road Concentric Widening
3	492+150	492+550	400	TCS-1CA	1.5	4 Lane Carriageway without Service Road RHS Widening
4	492+550	493+700	1150	TCS-1C1	1.5	4 Lane Carriageway without Service Road RHS Widening
5	493+700	493+800	100	TCS-1C1	5	4 Lane Carriageway without Service Road RHS Widening
6	493+800	497+100	3300	TCS-1B	5	4 Lane Carriageway without Service Road LHS Widening
7	497+100	497+500	400	TCS-1C1	5	4 Lane Carriageway without Service Road RHS Widening
8	497+500	500+000	2500	TCS-1B	5	4 Lane Carriageway without Service Road LHS Widening

REV | DATE | DESCRIPTION

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+600 TO 535+250 (DESIGN KM. 490+600 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER BARGP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONSULTANT: M/S KAMAC ENGINEERS PVT.LTD. M/S SHIVA HARLAKHA (JV) Pvt. Ltd. Authorised Signatory

DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT LTD GUWAHATI ASSAM

SCALE: NTS

DRC. NO. NHIDCL/KS/UA/TCS Schedule/7A

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DATE :DEC. 2022 | REVISION: R0

TITLE: TCS SCHEDULE

Horizontal Alignment Report

HIP/Curve No.	HIP		Deflection	Element	Start			End			Length	Radius	Speed Km/hr	Se	We	Hand Of Arc
	Easting	Northing			Chainage	Easting	Northing	Chainage	Easting	Northing						
				Straight	490+000.000	648672.493	2971757.459	490+285.457	648819.062	2972002.416	285.457					
1	648842.376	2972041.381	01° 29' 11.7261"	Arc	490+285.457	648819.062	2972002.416	490+376.268	648866.694	2972079.729	90.811	3500	100	NR		RIGHT
				Straight	490+376.268	648866.694	2972079.729	490+658.737	649017.968	2972318.276	282.469					
2	649040.945	2972354.509	02° 27' 28.3468"	Arc	490+658.737	649017.968	2972318.276	490+744.533	649065.455	2972389.724	85.796	2000	100	NR		RIGHT
				Straight	490+744.533	649065.455	2972389.724	490+749.667	649068.388	2972393.938	5.134					
3	649108.988	2972452.271	04° 04' 13.2494"	Arc	490+749.667	649068.388	2972393.938	490+891.749	649145.345	2972513.338	142.082	2000	100	NR		LEFT
				Straight	490+891.749	649145.345	2972513.338	490+898.675	649148.888	2972519.289	6.926					
4	649165.293	2972546.842	01° 50' 13.7496"	Arc	490+898.675	649148.888	2972519.289	490+962.803	649182.572	2972573.856	64.129	2000	100	NR		RIGHT
				Straight	490+962.803	649182.572	2972573.856	491+299.685	649364.1	2972857.645	336.881					
5	649370.386	2972867.473	00° 16' 02.5032"	Arc	491+299.685	649364.1	2972857.645	491+323.017	649376.626	2972877.329	23.332	5000	100	NR		LEFT
				Straight	491+323.017	649376.626	2972877.329	491+553.200	649499.754	2973071.813	230.183					
				Transition	491+553.200	649499.754	2973071.813	491+603.200	649526.205	2973114.242	50					
6	649581.846	2973206.319	10° 14' 45.7304"	Arc	491+603.200	649526.205	2973114.242	491+817.792	649620.222	2973306.825	214.592	1200	100	3.70%		LEFT
				Transition	491+817.792	649620.222	2973306.825	491+867.792	649637.407	2973353.778	50					
				Straight	491+867.792	649637.407	2973353.778	492+109.954	649719.057	2973581.76	242.162					
7	649729.619	2973611.253	01° 47' 41.2194"	Arc	492+109.954	649719.057	2973581.76	492+172.604	649741.1	2973640.401	62.65	2000	100	NR		RIGHT
				Straight	492+172.604	649741.1	2973640.401	492+237.146	649764.754	2973700.452	64.542					
8	649791.178	2973767.534	04° 07' 44.8953"	Arc	492+237.146	649764.754	2973700.452	492+381.280	649812.702	2973836.344	144.134	2000	100	NR		LEFT
				Straight	492+381.280	649812.702	2973836.344	492+397.914	649817.668	2973852.22	16.634					
9	649829.91	2973891.353	02° 20' 56.4326"	Arc	492+397.914	649817.668	2973852.22	492+479.910	649843.745	2973929.953	81.996	2000	100	NR		RIGHT
				Straight	492+479.910	649843.745	2973929.953	493+467.040	650176.813	2974859.195	987.13					
10	650187.543	2974889.132	01° 49' 18.9266"	Arc	493+467.040	650176.813	2974859.195	493+530.638	650199.22	2974918.712	63.597	2000	100	NR		RIGHT
				Straight	493+530.638	650199.22	2974918.712	493+549.848	650206.273	2974936.58	19.211					
11	650219.646	2974970.458	02° 05' 11.6978"	Arc	493+549.848	650206.273	2974936.58	493+622.684	650231.777	2975004.801	72.835	2000	100	NR		LEFT
				Straight	493+622.684	650231.777	2975004.801	493+630.921	650234.52	2975012.568	8.238					
12	650258.349	2975080.028	03° 16' 42.5688"	Arc	493+630.921	650234.52	2975012.568	493+773.972	650278.281	2975148.741	143.051	2500	100	NR		LEFT
				Straight	493+773.972	650278.281	2975148.741	493+823.418	650292.056	2975196.229	49.446					
13	650308.815	2975254.003	03° 26' 44.2026"	Arc	493+823.418	650292.056	2975196.229	493+943.693	650329.015	2975310.665	120.275	2000	100	NR		RIGHT
				Straight	493+943.693	650329.015	2975310.665	496+108.731	651056.052	2977349.981	2165.038					
				Transition	496+108.731	651056.052	2977349.981	496+203.731	651085.121	2977440.384	95					
14	651147.401	2977685.927	53° 16' 42.5743"	Arc	496+203.731	651085.121	2977440.384	496+673.323	650987.825	2977882.664	469.592	505	100	5.00%		LEFT
				Transition	496+673.323	650987.825	2977882.664	496+768.323	650923.499	2977952.522	95					
				Straight	496+768.323	650923.499	2977952.522	497+027.458	650742.078	2978137.555	259.135					
				Transition	497+027.458	650742.078	2978137.555	497+102.458	650691.289	2978192.701	75					
15	650552.74	2978363.407	57° 35' 23.1868"	Arc	497+102.458	650691.289	2978192.701	497+504.510	650622.595	2978571.869	402.052	400	80	5.00%		RIGHT
				Transition	497+504.510	650622.595	2978571.869	497+579.510	650650.81	2978641.328	75					
				Straight	497+579.510	650650.81	2978641.328	498+211.706	650906.913	2979219.327	632.196					
16	650926.884	2979264.4	00° 33' 53.7227"	Arc	498+211.706	650906.913	2979219.327	498+310.304	650946.41	2979309.668	98.598	10000	100	NR		LEFT
				Straight	498+310.304	650946.41	2979309.668	498+640.734	651077.283	2979613.075	330.43					
17	651105.513	2979678.523	00° 49' 00.3249"	Arc	498+640.734	651077.283	2979613.075	498+783.285	651134.674	2979743.562	142.551	10000	100	NR		RIGHT
				Straight	498+783.285	651134.674	2979743.562	498+938.903	651198.339	2979885.561	155.618					
18	651222.066	2979938.48	00° 39' 52.4497"	Arc	498+938.903	651198.339	2979885.561	499+054.892	651246.405	2979991.121	115.989	10000	100	NR		RIGHT
				Straight	499+054.892	651246.405	2979991.121	499+119.966	651273.715	2980050.187	65.074					
19	651307.273	2980122.767	00° 54' 58.6253"	Arc	499+119.966	651273.715	2980050.187	499+279.888	651339.666	2980195.875	159.922	10000	100	NR		LEFT
				Straight	499+279.888	651339.666	2980195.875	499+413.540	651393.809	2980318.069	133.652					

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JYANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALIKA (JV). Signatory

M/S Shiva Harlalika (JV) ★ Pvt. Ltd.

DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT LTD

SOLUTIONS PVT. LTD. ★ SAGAR ASSAM

SCALE: NTS

DRG. NO. NHIDCL/KS/UA/HOR/BA (Sh-1)

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DATE: DEC. 2022 | REVISION: R0

TITLE: HORIZONTAL REPORT

Horizontal Alignment Report

HIP/Curve No.	HIP		Deflection	Element	Start			End			Length	Radius	Speed Km/hr	Se	We	Hand Of Arc
	Easting	Northing			Chainage	Easting	Northing	Chainage	Easting	Northing						
20	651403.383	2980339.676	00° 32' 29.8379"	Arc	499+413.540	651393.809	2980318.069	499+460.805	651413.161	2980361.191	47.265	5000	100	NR		RIGHT
				Straight	499+460.805	651413.161	2980361.191	499+529.283	651441.492	2980423.534	68.478					
21	651452.569	2980447.91	00° 36' 49.0733"	Arc	499+529.283	651441.492	2980423.534	499+582.833	651463.385	2980472.403	53.549	5000	100	NR		LEFT
				Straight	499+582.833	651463.385	2980472.403	499+844.094	651568.923	2980711.399	261.261					
22	651579.271	2980734.833	00° 17' 36.7563"	Arc	499+844.094	651568.923	2980711.399	499+895.327	651589.738	2980758.213	51.233	10000	100	NR		RIGHT
				Straight	499+895.327	651589.738	2980758.213	500+100.000	651673.375	2980945.018	204.673					

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: Authorised Signatory M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI - 110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT. LTD. SAGAR ASSAM

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/JA/HOR/BA (Sh-2)

DATE : DEC. 2022 REVISION: R0

TITLE: HORIZONTAL REPORT

Vertical Alignment Report									
Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Left Side Alignment									
1	490+108.273	93.618	0.113%	-0.441%	0.55%	Crest	100	180.543	100
2	490+300.008	92.773	-0.441%	-0.081%	0.360%	Sag	100	277.804	100
3	490+483.644	92.625	-0.081%	-0.275%	0.194%	Crest	60	308.809	100
4	490+823.634	91.690	-0.275%	0.258%	0.533%	Sag	120	224.973	100
5	491+157.638	92.553	0.258%	-0.424%	0.682%	Crest	100	146.624	100
6	491+379.342	91.614	-0.424%	0.109%	0.533%	Sag	100	187.613	100
7	491+571.040	91.824	0.109%	-0.125%	0.235%	Crest	100	425.827	100
8	491+832.999	91.495	-0.125%	0.362%	0.488%	Sag	100	205.054	100
9	491+973.280	92.004	0.362%	0.086%	0.276%	Crest	110	397.873	100
10	492+070.020	92.087	0.086%	-0.135%	0.221%	Crest	60	271.633	100
11	492+347.695	91.711	-0.135%	-0.299%	0.164%	Crest	60	365.419	100
12	492457.086,	91.384	-0.299%	-0.310%	0.011%	Crest	60	5433.897	100
13	492+610.865	90.907	-0.310%	-0.043%	0.267%	Sag	60	224.334	100
14	492+747.657	90.848	-0.043%	0.374%	0.416%	Sag	145	348.233	100
15	493+010.699	91.831	0.374%	-0.767%	1.140%	Crest	120	105.241	100
16	493+170.996	90.602	-0.767%	-0.224%	0.542%	Sag	150	276.554	100
17	493+469.260	89.933	-0.224%	0.216%	0.440%	Sag	60	136.284	100
18	493+675.478	90.378	0.216%	-0.485%	0.701%	Crest	65	92.725	100
19	493+794.116	89.803	-0.485%	0.236%	0.721%	Sag	60	83.194	100
20	494+011.892	90.317	0.236%	-0.214%	0.450%	Crest	60	133.413	100
21	494+104.630	90.119	-0.214%	0.265%	0.479%	Sag	60	125.373	100
22	494+223.034	90.433	0.265%	-0.209%	0.474%	Crest	60	126.682	100
23	494+388.971	90.086	-0.209%	0.374%	0.583%	Sag	60	102.947	100
24	494478.546,	90.422	0.374%	-0.048%	0.423%	Crest	60	141.973	100
25	495+006.659	90.166	-0.048%	0.221%	0.269%	Sag	150	557.055	100
26	495+167.025	90.520	0.221%	0.321%	0.100%				100
27	495+344.850	91.090	0.321%	-0.229%	0.550%	Crest	60	109.092	100
28	495+490.000	90.757	-0.229%	0.190%	0.419%	Sag	60	143.040	100
29	495+616.680	90.998	0.190%	-0.185%	0.375%	Crest	60	159.789	100
30	495+880.000	90.510	-0.185%	0.072%	0.257%				100
31	496+109.966	90.675	0.072%	-0.216%	0.288%				100
32	496+252.435	90.367	-0.216%	-0.024%	0.192%				100
33	496+532.476	90.300	-0.024%	-0.182%	0.158%				100
34	496+717.382	89.963	-0.182%	0.043%	0.226%				100
35	496+885.357	90.036	0.043%	0.313%	0.269%				100
36	497+037.873	90.513	0.313%	-0.034%	0.347%	Crest	60	172.995	100
37	497+393.770	90.391	-0.034%	-0.182%	0.147%				100
38	497+696.803	89.841	-0.182%	-0.413%	0.231%	Crest	60	259.644	100
39	497+799.398	89.417	-0.413%	0.273%	0.685%	Sag	60	87.558	100
40	497+962.205	89.861	0.273%	0.468%	0.195%	Sag	60	307.577	100
41	498+093.321	90.474	0.468%	-0.225%	0.693%	Crest	100	144.330	100
42	498+319.881	89.963	-0.225%	0.372%	0.597%	Sag	100	167.429	100

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 431+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).

DEPUTY DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTIS SOLUTIONS PVT.LTD

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/VERT/94 Sh-1

DATE : DEC. 2022 REVISION: R0

TITLE: VERTICAL REPORT

Vertical Alignment Report									
Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Left Side Alignment									
43	498+500.275	90.634	0.372%	-0.057%	0.429%	Crest	60	139.886	100
44	498+649.056	90.550	-0.057%	0.057%	0.114%	Sag	60	527.004	100
45	498+790.000	90.030	0.057%	-0.319%	0.319%				100
46	499+048.208	89.806	-0.319%	-0.138%	0.181%	Sag	60	331.565	100
47	499+222.595	89.566	-0.138%	-0.250%	0.11%	Crest	60	534.679	100
48	499+483.161	88.913	-0.250%	0.117%	0.117%	Sag	150	407.983	100
49	499+821.170	89.310	0.117%	-0.143%	0.261%	Crest	60	230.004	100
50	499+976.116	89.088	-0.143%	0.245%	0.388%	Sag	60	154.454	100
51	500+070.000	89.318	0.245%						100

Vertical Alignment Report									
Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Right Side Alignment									
1	490+000.000	93.495		0.114%					100
2	490+108.921	93.619	0.114%	-0.443%	0.557%	Crest	100.000m	179.680	100
3	490+301.571	92.766	-0.443%	-0.071%	0.372%	Sag	100.000m	269.035	100
4	490+480.441	92.638	-0.071%	-0.276%	0.204%	Crest	100.000m	489.218	100
5	490+823.720	91.693	-0.276%	0.256%	0.532%	Sag	120.000m	225.691	100
6	491+157.650	92.548	0.256%	-0.421%	0.677%	Crest	100.000m	147.610	100
7	491+379.342	91.614	-0.421%	0.181%	0.602%	Sag	100.000m	166.015	100
8	491+565.921	91.952	0.181%	-0.157%	0.338%	Crest	100.000m	295.786	100
9	491+673.424	91.783	-0.157%	-0.111%	0.046%				100
10	491+846.764	91.591	-0.111%	0.303%	0.414%	Sag	65.000m	156.906	100
11	492+037.958	92.171	0.303%	-0.150%	0.453%	Crest	200.000m	441.475	100
12	492+345.028	91.712	-0.150%	-0.294%	0.144%	Crest	60.000m	415.300	100
13	492+623.362	90.894	-0.294%	-0.036%	0.258%	Sag	60.000m	232.949	100
14	492+747.492	90.849	-0.036%	0.373%	0.410%	Sag	150.000m	366.226	100
15	493+010.699	91.831	0.373%	-0.767%	1.140%	Crest	120.000m	105.285	100
16	493+170.996	90.602	-0.767%	-0.224%	0.542%	Sag	150.000m	276.597	100
17	493+469.260	89.933	-0.224%	0.119%	0.343%	Sag	60.000m	174.864	100
18	493+610.000	90.100	0.119%	-0.162%	0.280%				100
19	493+794.116	89.803	-0.162%	0.236%	0.398%	Sag	60.000m	150.841	100
20	494+011.892	90.317	0.236%	-0.214%	0.450%	Crest	60.000m	133.398	100
21	494+104.630	90.119	-0.214%	0.265%	0.479%	Sag	60.000m	125.373	100
22	494+223.034	90.433	0.265%	-0.209%	0.474%	Crest	60.000m	126.682	100
23	494+388.971	90.086	-0.209%	0.374%	0.583%	Sag	60.000m	102.947	100
24	494+478.546	90.422	0.374%	-0.061%	0.435%	Crest	60.000m	138.009	100
25	494+742.037	90.262	-0.061%	-0.015%	0.046%	Sag	60.000m	1311.643	100
26	495+001.931	90.223	-0.015%	0.190%	0.204%	Sag	60.000m	293.480	100
27	495+179.917	90.561	0.190%	0.321%	0.131%				100
28	495+344.850	91.090	0.321%	-0.229%	0.550%	Crest	60.000m	109.032	100
29	495+490.000	90.757	-0.229%	0.190%	0.420%	Sag	60.000m	143.022	100
30	495+616.680	90.998	0.190%	-0.185%	0.375%	Crest	60.000m	159.789	100
31	495+880.000	90.510	-0.185%	0.072%	0.257%				100
32	496+141.564	90.698	0.072%	-0.197%	0.269%				100
33	496+262.454	90.460	-0.197%	-0.022%	0.175%				100
34	496+532.265	90.401	-0.022%	-0.177%	0.155%				100
35	496+766.808	89.985	-0.177%	0.043%	0.220%				100
36	496+885.357	90.036	0.043%	0.313%	0.270%				100
37	496+975.471	90.318	0.313%	-0.122%	0.434%	Crest	60.000m	138.171	100
38	497+136.114	90.123	-0.122%	0.128%	0.250%	Sag	60.000m	240.085	100
39	497+306.950	90.342	0.128%	-0.065%	0.193%				100
40	497+440.014	90.256	-0.065%	-0.288%	0.223%				100
41	497+587.565	89.831	-0.288%	0.009%	0.297%				100
42	497+696.803	89.841	0.009%	-0.413%	0.422%	Crest	60.000m	142.272	100
43	497+799.398	89.417	-0.413%	0.273%	0.685%	Sag	60.000m	87.540	100
44	497+962.205	89.861	0.273%	0.468%	0.195%	Sag	60.000m	307.577	100
45	498+093.321	90.474	0.468%	-0.225%	0.693%	Crest	100.000m	144.330	100
46	498+319.881	89.963	-0.225%	0.372%	0.597%	Sag	100.000m	167.429	100

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LAINING OF JHANJHI TO DEMGAN SECTION FROM KM. 491+650 TO 535+280 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BARGP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S. RAMAC ENGINEERS PVT. LTD. M/S. SHIVA HARIJARA (JV) — Authorised Signatory

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL — TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI - 110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS — VOYANTS SAGAR, ASSAM

SCALE: NTS

DRG. NO. NHIDCL/KS/UA/VERT/9A Sh-3

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DATE : DEC. 2022 REVISION: R0

TITLE: VERTICAL REPORT

Vertical Alignment Report									
Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Right Side Alignment									
47	498+500.275	90.634	0.372%	-0.057%	0.429%	Crest	60.000m	139.886	100
48	498+649.056	90.550	-0.057%	0.057%	0.114%	Sag	60.000m	527.004	100
49	498+790.000	90.630	0.057%	-0.319%	0.376%				
50	499+048.208	89.806	-0.319%	-0.138%	0.181%	Sag	60.000m	331.565	100
51	499+222.595	89.566	-0.138%	-0.250%	0.112%	Crest	60.000m	534.679	100
52	499+483.161	88.913	-0.250%	0.117%	0.368%	Sag	150.000m	407.983	100
53	499+821.170	89.310	0.117%	-0.143%	0.261%	Crest	60.000m	230.004	100
54	499+974.465	89.090	-0.143%	0.238%	0.382%	Sag	60.000m	157.168	100
55	500+070.000	89.318	0.238%						

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+500) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KANAC ENGINEERS PVT.LTD M/S Shiva Harlalika (JV). Authorised Signatory

DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT. LTD. SAGAR, ASSAM

SCALE: NTS

DRG. NO. NHIDCL/KS/UA/VERT/BA Sh-4

DATE: DEC. 2022 REVISION: R0

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

TITLE: VERTICAL REPORT

TCS Schedule						
Sl No	From	To	Length	TCS Type	Median Width	Description
1	500+000	500+640	640	TCS-1B	5	4 Lane Road Without Service Road LHS Widening
2	500+640	501+280	640	TCS-7A	3	4 Lane VUP/PUP Approach with RE Wall and Service Road on Both Side
3	501+280	501+890	610	TCS-2A	3	4 Lane Road With Service Road Both Side Concentric Widening Built up Section
4	501+890	502+290	400	TCS-4	3	4 Lane Road with Service Road Both Side Built Up Section New/Reconstruction
5	502+290	502+810	520	TCS-7A	3	4 Lane VUP/PUP Approach with RE Wall and Service Road on Both Side
6	502+810	503+160	350	TCS-2C	3	4 Lane Road With Service Road Both Side RHS Widening Built up Section
7	503+160	504+680	1520	TCS-1C	3	4 Lane Road Without Service Road RHS Widening
8	504+680	505+460	780	TCS-7A	3	4 Lane VUP/PUP Approach with RE Wall and Service Road on Both Side
9	505+460	507+870	2410	TCS-1C	3	4 Lane Road Without Service Road RHS Widening
10	507+870	507+910	40	TCS-1A	3	4 Lane Road Without Service Road Concentric Widening
11	507+910	508+380	470	TCS-1B	3	4 Lane Road Without Service Road LHS Widening
12	508+380	508+830	450	TCS-3	3	4 Lane Road New/Reconstruction
13	508+830	509+590	760	TCS-1B	3	4 Lane Road Without Service Road LHS Widening
14	509+590	509+700	110	TCS-1A	3	4 Lane Road Without Service Road Concentric Widening
15	509+700	513+000	3300	TCS-1B	3	4 Lane Road Without Service Road LHS Widening

M/s Shiva Harlalka (JV) Pvt. Ltd. Authorised Signatory

DESCRIPTION

CLIENT: National Highways & Infrastructure Development Corporation Limited.

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+032 TO 539+250 (DESIGN KM. 493+800 TO KM. 534+803) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION (EPC) MODE.

CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA HARLALKA (JV).

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT. LTD. NEW DELHI-110092

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO NEW DELHI - 110092

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT. LTD.

SCALE: NTS				DRG. NO. NHIDCL/KS/UA/TCS Schedule/1
PREPARED	DESIGNED	CHECKED	APPROVED	DATE : DEC. 2022 REVISION: R0
K.R	G.R	P.S	P.S	TITLE: TCS SCHEDULE

Horizontal Alignment Report

HIP/Curve No.	HIP Chainage	HIP		Deflection	Element	Start			End			Length	Chord Length	Bearing	Radius	Speed Km/hr	e%	Extra Widening	Hand of Arc
		Easting	Northing			Chainage	Easting	Northing	Chainage	Easting	Northing								
					Straight	500+000.000	651632.512	2980853.748	500+145.190	651691.841	2980986.262	145.19		N 24° 07' 08.9031" E					
1	500+203.724	651715.76	2981039.686	02° 14' 07.9923"	Arc	500+145.190	651691.841	2980986.262	500+262.243	651737.577	2981094.003	117.053			3000	100	NR		LEFT
					Straight	500+262.243	651737.577	2981094.003	500+474.691	651816.761	2981291.142	212.447		N 21° 53' 00.9108" E					
2	500+515.924	651832.13	2981329.404	01° 53' 23.3347"	Arc	500+474.691	651816.761	2981291.142	500+557.149	651848.752	2981367.138	82.459			2500	100	NR		RIGHT
					Straight	500+557.149	651848.752	2981367.138	500+665.903	651892.592	2981466.663	108.753		N 23° 46' 24.2455" E					
					Transition	500+665.903	651892.592	2981466.663	500+755.903	651933.559	2981546.661	90	89.877						
3	500+859.965	651991.457	2981633.129	44° 05' 13.5647"	Arc	500+755.903	651933.559	2981546.661	500+953.655	652093.204	2981654.956	197.753			257	80	7.00%	0.6	RIGHT
					Transition	500+953.655	652093.204	2981654.956	501+043.655	652182.68	2981663.442	90	89.877						
					Straight	501+043.655	652182.68	2981663.442	501+076.410	652215.413	2981664.628	32.755		N 87° 55' 30.6218" E					
4	501+129.854	652268.822	2981666.563	03° 03' 40.8828"	Arc	501+076.410	652215.413	2981664.628	501+183.272	652322.051	2981671.347	106.861			2000	100	NR		LEFT
					Straight	501+183.272	652322.051	2981671.347	501+422.182	652560.002	2981692.735	238.911		N 84° 51' 49.7390" E					
5	501+441.852	652579.593	2981694.496	00° 27' 02.8759"	Arc	501+422.182	652560.002	2981692.735	501+461.522	652599.169	2981696.411	39.34			5000	100	NR		LEFT
					Straight	501+461.522	652599.169	2981696.411	501+568.317	652705.458	2981706.808	106.796		N 84° 24' 46.8630" E					
6	501+591.795	652728.824	2981709.094	00° 32' 17.0241"	Arc	501+568.317	652705.458	2981706.808	501+615.272	652752.21	2981711.16	46.955			5000	100	NR		RIGHT
					Straight	501+615.272	652752.21	2981711.16	501+795.518	652931.756	2981727.023	180.246		N 84° 57' 03.8871" E					
					Transition	501+795.518	652931.756	2981727.023	501+875.518	653011.002	2981737.531	80	79.939						
7	501+931.758	653065.895	2981749.764	20° 53' 42.4133"	Arc	501+875.518	653011.002	2981737.531	501+986.748	653112.815	2981780.77	111.23			305	80	7.00%		LEFT
					Transition	501+986.748	653112.815	2981780.77	502+066.748	653175.403	2981830.499	80	79.939						
					Straight	502+066.748	653175.403	2981830.499	502+268.790	653327.95	2981962.977	202.042		N 49° 01' 39.2296" E					
					Transition	502+268.790	653327.95	2981962.977	502+358.790	653398.883	2982018.204	90	89.897						
8	502+412.486	653444.536	2982046.471	21° 42' 42.3227"	Arc	502+358.790	653398.883	2982018.204	502+464.894	653497.408	2982055.843	106.104			280	80	7.00%	0.6	RIGHT
					Transition	502+464.894	653497.408	2982055.843	502+554.894	653587.095	2982061.978	90	89.897						
					Straight	502+554.894	653587.095	2982061.978	502+797.445	653829.62	2982065.551	242.551		N 89° 09' 20.9543" E					
9	502+870.157	653902.324	2982066.623	04° 09' 51.3889"	Arc	502+797.445	653829.62	2982065.551	502+942.806	653974.759	2982072.971	145.361			2000	100	NR		LEFT
					Straight	502+942.806	653974.759	2982072.971	503+582.546	654612.056	2982128.822	639.74		N 84° 59' 29.5654" E					
10	503+595.904	654625.364	2982129.988	00° 18' 22.1247"	Arc	503+582.546	654612.056	2982128.822	503+609.262	654638.677	2982131.083	26.716			5000	100	NR		RIGHT
					Straight	503+609.262	654638.677	2982131.083	503+806.448	654835.199	2982147.248	197.186		N 85° 17' 51.6901" E					
11	503+828.986	654857.661	2982149.096	00° 15' 29.7384"	Arc	503+806.448	654835.199	2982147.248	503+851.523	654880.131	2982150.842	45.075			10000	100	NR		RIGHT
					Straight	503+851.523	654880.131	2982150.842	504+672.126	655698.267	2982214.427	820.603		N 85° 33' 21.4286" E					
12	504+728.286	655754.257	2982218.778	02° 34' 25.4478"	Arc	504+672.126	655698.267	2982214.427	504+784.427	655809.996	2982225.64	112.3			2500	100	NR		LEFT
					Straight	504+784.427	655809.996	2982225.64	504+894.859	655919.602	2982239.132	110.433		N 82° 58' 55.9808" E					
					Transition	504+894.859	655919.602	2982239.132	505+009.859	656032.945	2982258.069	115	114.915						
13	505+242.708	656258.457	2982316.06	55° 14' 31.6663"	Arc	505+009.859	656032.945	2982258.069	505+438.909	656339.381	2982534.394	429.05			445	100	5.00%		LEFT
					Transition	505+438.909	656339.381	2982534.394	505+553.909	656369.899	2982645.183	115	114.915						
					Straight	505+553.909	656369.899	2982645.183	505+564.045	656372.167	2982655.062	10.136		N 12° 55' 59.9263" E					
14	505+612.571	656383.028	2982702.356	02° 46' 47.1377"	Arc	505+564.045	656372.167	2982655.062	505+661.077	656391.582	2982750.122	97.032			2000	100	NR		LEFT
					Straight	505+661.077	656391.582	2982750.122	506+759.905	656585.291	2983831.74	1098.828		N 10° 09' 12.7886" E					
					Arc	506+759.905	656585.291	2983831.74	506+861.298	656603.671	2983931.453	101.393			10000	100	NR		RIGHT
15	506+810.602	656594.228	2983881.643	00° 34' 51.3752"	Straight	506+861.298	656603.671	2983931.453	507+633.761	656747.549	2984690.399	772.464		N 10° 44' 04.1638" E					
					Transition	507+633.761	656747.549	2984690.399	507+693.761	656759.313	2984749.232	60	59.998						
16	507+777.831	656777.442	2984831.323	09° 36' 39.7171"	Arc	507+693.761	656759.313	2984749.232	507+861.506	656809.022	2984909.236	167.744			1000	100	4.40%		RIGHT
					Transition	507+861.506	656809.022	2984909.236	507+921.506	656832.668	2984964.377	60	59.998						
					Straight	507+921.506	656832.668	2984964.377	507+985.622	656858.525	2985023.049	64.117		N 23° 46' 59.7693" E					
					Transition	507+985.622	656858.525	2985023.049	508+065.622	656887.535	2985097.538	80	79.939						
17	508+166.362	656915.757	2985194.244	36° 33' 22.2179"	Arc	508+065.622	656887.535	2985097.538	508+260.220	656880.828	2985288.734	194.598			305	80	7.00%		LEFT
					Transition	508+260.220	656880.828	2985288.734	508+340.220	656846.67	2985361.008	80	79.939						
					Straight	508+340.220	656846.67	2985361.008	508+522.759	656761.533	2985522.476	182.538		N 27° 48' 04.6928" W					
					Transition	508+522.759	656761.533	2985522.476	508+602.759	656727.322	2985594.726	80	79.941						
18	508+692.004	656696.202	2985678.37	32° 07' 15.6351"	Arc	508+602.759	656727.322	2985594.726	508+776.550	656714.319	2985765.757	173.791			310	80	7.00%		RIGHT
					Transition	508+776.550	656714.319	2985765.757	508+856.550	656737.213	2985842.35	80	79.941						
					Straight	508+856.550	656737.213	2985842.35	509+439.852	656928.135	2986393.522	583.302		N 19° 06' 20.5696" E					
					Transition	509+439.852	656928.135	2986393.522	509+529.852	656962.588	2986476.526	90	89.87						
19	509+626.291	657009.958	2986560.529	42° 11' 19.2834"	Arc	509+529.852	656962.588	2986476.526	509+713.935	657101.471	2986590.957	184.083			250	80	7.00%	0.6	RIGHT
					Transition	509+713.935	657101.471	2986590.957	509+803.935	657189.532	2986608.899	90	89.87						
					Straight	509+803.935	657189.532	2986608.899	509+897.165	657281.836	2986622.001	93.23		N 81° 55' 15.1833" E					
20	509+995.874	657379.566	2986635.874	01° 07' 51.9122"	Arc	509+897.165	657281.836	2986622.001	510+094.577	657477.002	2986651.673	197.412			10000	100	NR		LEFT
					Straight	510+094.577	657477.002	2986651.673	510+418.831	657797.076	2986703.572	324.254		N 80° 47' 23.2711" E					
21	510+439.269	657817.251	2986706.844	00° 28' 06.2959"	Arc	510+418.831	657797.076	2986703.572	510+459.708	657837.398	2986710.28	40.877			5000	100	NR		LEFT
					Straight	510+459.708	657837.398	2986710.28	510+824.486	658196.985	2986771.607	364.779		N 80° 19' 16.9753" E					
22	510+861.616	658233.586	2986777.849	00° 25' 31.6952"	Arc	510+824.486	658196.985	2986771.607	510+898.745	658270.232	2986783.819	74.259			10000	100	NR		RIGHT
					Straight	510+898.745	658270.232	2986783.819	511+970.620	659328.16	2986956.173	1071.875		N 80° 44' 48.6705" E					
23	512+038.336	659394.994	2986967.062	00° 31' 02.2994"	Arc	511+970.620	659328.16	2986956.173	512+106.050	659461.924	2986977.347	135.43			15000	100	NR		RIGHT
					Straight	512+106.050	659461.924	2986977.347	512+555.610	659906.268	2987045.625	449.559		N 81° 15' 50.9698" E					
24	512+634.437	659984.181	2987057.597	00° 36' 07.8946"	Arc	512+555.610	659906.268	2987045.625	512+713.263	660061.964	2987070.388	157.654			15000	100	NR		LEFT
					Straight	512+713.263	660061.964	2987070.388	512+999.548	660344.456	2987116.84	286.285		N 80° 39' 43.0752" E					

M/S Shiva Harlalka (JV) ★ M/S Kamac Engineering Pvt. Ltd. ★ Authorised Signatory

CLIENT: National Highways & Infrastructure Development

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 431+050 TO 535+250 (DESIGN KM. 430+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BANOP ON ENGINEERING PROCUREMENT & CONSTRUCTION

CONTRACTOR: M/S KAMAC ENGINEERS PVT.LTD M/S SHIVA

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL TECHNOCRATS ADVISORY SERVICES PVT.

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/TCS Schedule/1

DATE : DEC. 2022 REVISION: R0

TITLE: TCS SCHEDULE

Vertical Alignment Report

Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
				Left Side Alignment					
1	500+000.000	89.146		0.246%					
2	500+160.898	89.542	0.246%	-0.062%	0.308%	Crest	60	195.042	100
3	500+355.313	89.422	-0.062%	1.499%	1.561%	Sag	100	64.057	100
4	500+511.936	91.771	1.499%	0.001%	1.499%	Crest	115	76.737	100
5	500+685.872	91.772	0.001%	2.500%	2.499%	Sag	120	48.020	100
6	500967.595	98.815	2.500%	-2.500%	5.000%	Crest	370	74.003	100
7	501+343.064	89.428	-2.500%	0.390%	2.890%	Sag	130	44.977	100
8	501+540.869	90.200	0.390%	0.013%	0.377%	Crest	60	158.954	100
9	501+993.577	90.258	0.013%	1.659%	1.646%	Sag	115	69.848	100
10	502+154.304	92.925	1.659%	-0.001%	1.660%	Crest	125	75.295	100
11	502+326.619	92.924	-0.001%	1.044%	1.045%	Sag	60	57.424	100
12	502+601.237	95.791	1.044%	-2.200%	3.244%	Crest	200	61.649	100
13	502+831.716	90.720	-2.200%	0.113%	2.313%	Sag	100	43.237	100
14	503+404.455	91.366	0.113%	-0.043%	0.155%				100
15	504+230.030	91.015	-0.043%	-0.099%	0.056%				100
16	504+510.000	90.738	-0.099%	0.052%	0.151%				100
17	504+740.000	90.858	0.052%	2.500%	2.448%	Sag	150	61.286	100
18	505+088.647	99.574	2.500%	-2.500%	5.000%	Crest	370	74.006	100
19	505+416.372	91.381	-2.500%	-0.168%	2.331%	Sag	120	51.470	100
20	505+690.242	90.920	-0.168%	0.133%	0.301%				100
21	505+903.236	91.203	0.133%	-0.011%	0.144%				100
22	506+679.975	91.119	-0.011%	0.113%	0.124%				100
23	506+870.000	91.334	0.113%	0.209%	0.096%				100
24	507+020.000	91.647	0.209%	-0.195%	0.404%				100
25	507+133.944	91.425	-0.195%	0.186%	0.381%				100
26	507+404.314	91.927	0.186%	0.096%	0.089%				100
27	507+675.000	92.188	0.096%	0.206%	0.110%				100
28	508+013.285	92.886	0.206%	2.150%	1.944%	Sag	160	82.312	100
29	508+321.777	99.519	2.150%	0.000%	2.150%	Crest	160	74.410	100
30	508+623.904	99.519	0.000%	-1.997%	1.997%	Crest	165	82.644	100
31	508+986.861	92.272	-1.997%	-0.312%	1.685%	Sag	170	100.913	100
32	509+264.913	91.405	-0.312%	0.070%	0.382%	Sag	60	157.233	100
33	509+787.964	91.769	0.070%	-0.152%	0.222%				100
34	509+987.805	91.465	-0.152%	-0.001%	0.151%				100
35	511+063.644	91.458	-0.001%	0.086%	0.086%				100
36	511+236.441	91.606	0.086%	-0.001%	0.087%				100
37	512+770.000	91.588	-0.001%	-0.001%	0.000%				100
38	512+999.548	91.585	-0.001%						

M/s Shiva Harialka (JV) Pvt. Ltd. M/s Kamac Engineering Pvt. Ltd. Authorised Signatory

CLIENT: National Highways & Infrastructure Development

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 536+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP-NE ON ENGINEERING PROCUREMENT & CONSTRUCTION

CONTRACTOR: M/S KAMAC ENGINEERS

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO

AUTHORITY ENGINEER: VOYANTS

SCALE: NTS

DRG. NO. NHIDCL/KS/JA/REP/2

DATE :DEC., 2022 REVISION: R0

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

TITLE: LHS VERTICAL REPORT

Vertical Alignment Report

Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
				Right Side Alignment					
1	500+000.000	89.146		0.246%					
2	500+161.124	89.543	0.246%	-0.062%	0.308%	Crest	60.000m	194.644	100
3	500+390.086	89.401	-0.062%	2.000%	2.062%	Sag	100.000m	48.498	100
4	500+533.632	92.272	2.000%	0.000%	2.000%	Crest	70.000m	34.999	100
5	500+705.872	92.272	0.000%	2.500%	2.500%	Sag	120.000m	48.007	100
6	500+967.595	98.814	2.500%	-2.500%	4.999%	Crest	370.000m	74.008	100
7	501+343.064	89.428	-2.500%	0.390%	2.890%	Sag	130.000m	44.979	100
8	501+540.869	90.2	0.390%	0.060%	0.331%	Crest	60.000m	181.486	100
9	501+999.131	90.474	0.060%	1.579%	1.519%	Sag	100.000m	65.820	100
10	502+154.304	92.924	1.579%	0.000%	1.579%	Crest	125.000m	79.156	100
11	502+340.660	92.924	0.000%	1.100%	1.100%	Sag	60.000m	54.553	100
12	502+601.237	95.79	1.100%	-2.199%	3.299%	Crest	200.000m	60.619	100
13	502+831.716	90.72	-2.199%	0.113%	2.312%	Sag	100.000m	43.248	100
14	503+404.455	91.366	0.113%	-0.043%	0.155%				100
15	504+230.030	91.015	-0.043%	-0.099%	0.056%				100
16	504+510.000	90.738	-0.099%	0.052%	0.151%				100
17	504+740.000	90.858	0.052%	2.500%	2.448%	Sag	150.000m	61.286	100
18	505+088.648	99.574	2.500%	-2.500%	5.000%	Crest	370.000m	74.003	100
19	505+428.437	91.079	-2.500%	-0.015%	2.485%	Sag	150.000m	60.361	100
20	506+294.460	90.949	-0.015%	-0.246%	0.231%				100
21	506+411.832	90.66	-0.246%	0.042%	0.288%				100
22	506+685.302	90.774	0.042%	0.148%	0.107%				100
23	507+036.865	91.295	0.148%	0.041%	0.107%				100
24	507+275.000	91.393	0.041%	0.180%	0.138%				100
25	507+716.570	92.186	0.180%	0.233%	0.053%				100
26	508+007.584	92.863	0.233%	2.142%	1.910%	Sag	160.000m	83.778	100
27	508+339.887	99.983	2.142%	0.013%	2.130%	Crest	160.000m	75.120	100
28	508+598.666	100.015	0.013%	-2.200%	2.212%	Crest	165.000m	74.581	100
29	508+973.715	91.765	-2.200%	0.020%	2.220%	Sag	170.000m	76.594	100
30	509+612.353	91.891	0.020%	-0.029%	0.049%				100
31	510+742.102	91.561	-0.029%	0.124%	0.153%				100
32	510+901.940	91.759	0.124%	0.007%	0.117%				100
33	511+440.008	91.795	0.007%	0.051%	0.044%				100
34	511+630.030	91.892	0.051%	-0.047%	0.098%				100
35	511+890.383	91.769	-0.047%	0.012%	0.059%				100
36	512+358.588	91.825	0.012%	-0.057%	0.069%				100
37	512+516.976	91.735	-0.057%	0.085%	0.142%				100
38	512+646.626	91.846	0.085%	-0.554%	0.639%	Crest	60.000m	93.832	100
39	512+729.572	91.386	-0.554%	0.350%	0.904%	Sag	60.000m	66.372	100
40	512+836.005	91.758	0.350%	0.018%	0.332%	Crest	60.000m	180.887	100
41	512+999.548	91.788	0.018%						100

For Shiva Harlalka (JV) Engineering Pvt. Ltd. Authorised Signatory

CLIENT: National Highways & Infrastructure Development Corporation Limited

PROJECT: FOUR LAINING OF JHANJHI TO DEMOW SECTION FROM KM. 491+950 TO 525+250 (DESIGN KM. 490+800 TO KM. 524+900) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING

CONTRACTOR: M/S KANAC ENGINEERS

DESIGN DIRECTOR: Proteek Srivastava

PROOF CONSULTANT: TASPL

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

SCALE: NTS

DRG. NO. NHIDCL/KS/JA/REP/3

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DATE : DEC. 2022 REVISION: R0

TITLE: RHS VERTICAL REPORT

Sl No	From	To	Length	Side	Construction Status	Remarks
1	500+100	500+480	380	LHS	Partial Subgrade Completed	
2	501+280	501+800	520	RHS	Subgrade Completed	
3	501+280	501+800	520	RHS	Partial GSB Completed	
4	501+390	501+800	410	LHS	Partial Subgrade Completed	
5	501+800	502+400	600	LHS	Partial Subgrade Completed	
6	501+870	502+240	370	RHS	Partial Subgrade Completed	
7	502+260	502+400	140	RHS	Partial Subgrade Completed	
8	502+400	502+590	190	LHS	Partial Subgrade Completed	
9	502+400	502+520	120	RHS	Partial Subgrade Completed	
10	502+840	504+720	1880	LHS	Subgrade Completed	
11	503+020	503+560	540	RHS	Subgrade Completed	
12	503+650	503+750	100	RHS	Partial Subgrade Completed	
13	503+750	504+980	1230	RHS	Subgrade Completed	
14	505+150	507+740	2590	LHS	Subgrade Completed	
15	505+455	507+500	2045	RHS	Subgrade Completed	
16	505+650	507+740	2090	LHS	GSB Completed	
17	505+650	505+800	150	RHS	Partial GSB Completed	
18	507+430	507+500	70	RHS	GSB Completed	
19	507+535	507+940	405	RHS	Subgrade Completed	
20	507+940	508+400	460	LHS	Partial Subgrade Completed	
21	508+470	508+540	70	LHS	Partial Subgrade Completed	
22	508+720	508+810	90	LHS	Partial Subgrade Completed	
23	508+810	509+060	250	LHS	Partial Subgrade Completed	
24	508+820	509+480	660	RHS	Subgrade Completed	
25	508+820	509+480	660	RHS	GSB Completed	
26	509+060	509+480	420	LHS	Subgrade Completed	
27	509+060	509+480	420	LHS	GSB Completed	
28	509+060	509+480	420	LHS	WMM Completed	
29	509+060	509+480	420	RHS	WMM Completed	
30	509+480	510+000	520	LHS	Subgrade Completed	
31	509+480	509+920	440	RHS	Subgrade Completed	
32	509+920	510+480	560	RHS	Subgrade Completed	
33	509+920	510+480	560	RHS	GSB Completed	
34	509+920	510+480	560	RHS	WMM Completed	
35	509+920	510+400	480	RHS	DBM Completed	
36	510+000	513+400	3400	LHS	Subgrade Completed	
37	510+000	510+440	440	LHS	GSB Completed	
38	510+000	510+440	440	LHS	WMM Completed	
39	510+500	513+650	3150	RHS	Subgrade Completed	
40	510+500	512+900	2400	RHS	GSB Completed	
41	511+160	513+000	1840	LHS	GSB Completed	
42	511+160	512+900	1740	LHS	WMM Completed	
43	511+210	512+900	1690	RHS	WMM Completed	
44	511+210	512+760	1550	LHS	DBM Completed	
45	511+210	512+900	1690	RHS	DBM Completed	
46	511+300	512+900	1600	RHS	BC Completed	

M/s Shiva Harlalka (JV) ★ M/s Kamac Engineering Pvt. Ltd. ★ Authorised Signatory

CLIENT: National Highways & Infrastructure Development

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+600 TO KM. 534+500) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING

CONTRACTOR: M/S KAMAC ENGINEERS

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL

SAFETY CONSULTANT: New Delhi

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT. LTD.

SCALE: NTS

PREPARED | DESIGNED | CHECKED | APPROVED

DRG. NO. NHIDCL/KS/UA/REP/4

DATE :DEC. 2022 | REVISION: R0

TCS Schedule						
Sl No	From	To	Length	TCS Type	Median Width	Description
1	512+500	512+890	390	TCS-1B	3	4 Lane Carriageway without Service Road LHS Widening
2	512+890	514+100	1210	TCS-7A	3	4 Lane Carriageway at VUP/PUP approaches with Service Road Both Side
3	514+100	514+360	260	TCS-1C	1.5	4 Lane Carriageway without Service Road RHS Widening
4	514+360	515+020	660	TCS-6	1.5	4 Lane Carriageway without Service Road RHS Widening with RHS side Retaining Wall
5	515+020	515+110	90	TCS-5	1.5	4 Lane Carriageway without Service Road RHS Widening with Both side Retaining Wall
6	515+110	515+390	280	TCS-6	1.5	4 Lane Carriageway without Service Road RHS Widening with RHS side Retaining Wall
7	515+390	515+500	110	TCS-1B	1.5	4 Lane Carriageway without Service Road LHS Widening
8	515+500	515+740	240	TCS-1A	1.5	4 Lane Carriageway without Service Road Concentric Widening
9	515+740	516+040	300	TCS-1B	1.5	4 Lane Carriageway without Service Road LHS Widening
10	516+040	516+090	50	TCS-1A	1.5	4 Lane Carriageway without Service Road Concentric Widening
11	516+090	516+260	170	TCS-1C	1.5	4 Lane Carriageway without Service Road RHS Widening
12	516+260	516+360	100	TCS-1A	1.5	4 Lane Carriageway without Service Road Concentric Widening
13	516+360	519+470	3110	TCS-1B	5	4 Lane Carriageway without Service Road LHS Widening
14	519+470	519+610	140	TCS-3	5	4 Lane Carriageway New Construction
15	519+610	520+880	1270	TCS-1B	5	4 Lane Carriageway without Service Road LHS Widening
16	520+880	520+960	80	TCS-1A	5	4 Lane Carriageway without Service Road Concentric Widening
17	520+960	525+000	4040	TCS-1B	5	4 Lane Carriageway without Service Road LHS Widening

M/s Shiva Harlalka (JV) Authorised Signatory M/s Kamac Engineering Pvt. Ltd.

CLIENT: National Highways & Infrastructure Development Corporation Limited

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 481+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SARDP ON ENGINEERING PROCUREMENT & CONSTRUCTION

CONTRACTOR: M/S KAMAC ENGINEERS PVT LTD. M/S SHIVA

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL

SAFETY CONSULTANT:

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT LTD

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED

DRG. NO. NHIDCL/KS/UA/TCS Schedule/1A

DATE :DEC. 2022 REVISION: R0

Horizontal Alignment Report

HIP/Curve No.	HIP		Deflection	Element	Start			End			Length	Chord Length	Bearing	Radius	Speed Km/hr	e%	Extra Widening	Hand Of Arc
	Easting	Northing			Chainage	Easting	Northing	Chainage	Easting	Northing								
				Straight	512+500.101	659851.304	2987037.179	512+555.804	659906.361	2987045.639	55.703		N 81° 15' 50.9698" E					
1	659984.181	2987057.597	00° 36' 05.3279"	Arc	512+555.804	659906.361	2987045.639	512+713.271	660061.872	2987070.372	157.467			15000	100	NR	NR	LEFT
				Straight	512+713.271	660061.872	2987070.372	513+056.450	660400.504	2987126.051	343.178		N 80° 39' 45.6419" E					
2	660425.377	2987130.141	00° 34' 39.7455"	Arc	513+056.450	660400.504	2987126.051	513+106.864	660450.291	2987133.98	50.414			5000	100	NR	NR	RIGHT
				Straight	513+106.864	660450.291	2987133.98	513+250.480	660592.231	2987155.851	143.616		N 81° 14' 25.3874" E					
3	660669.496	2987167.757	01° 47' 29.4949"	Arc	513+250.480	660592.231	2987155.851	513+406.820	660746.35	2987182.072	156.34			5000	100	NR	NR	LEFT
				Straight	513+406.820	660746.35	2987182.072	513+588.281	660924.744	2987215.3	181.462		N 79° 26' 55.8926" E					
				Transition	513+588.281	660924.744	2987215.3	513+683.281	661018.604	2987229.724	95	94.962						
4	661059.846	2987233.411	09° 28'-04.9855"	Arc	513+683.281	661018.604	2987229.724	513+765.906	661101.132	2987230.263	82.624			500	100	5.00%	NR	RIGHT
				Transition	513+765.906	661101.132	2987230.263	513+860.906	661195.173	2987217.065	95	94.962						
				Straight	513+860.906	661195.173	2987217.065	514+084.720	661415.719	2987178.958	223.815		S 80° 11' 48.8087" E					
5	661472.557	2987169.137	03° 18' 14.0454"	Arc	514+084.720	661415.719	2987178.958	514+200.048	661529.866	2987162.608	115.328			2000	100	NR	NR	LEFT
				Straight	514+200.048	661529.866	2987162.608	514+298.275	661627.462	2987151.49	98.227		S 83° 30' 02.8541" E					
6	661671.272	2987146.499	02° 31' 33.3600"	Arc	514+298.275	661627.462	2987151.49	514+386.447	661714.819	2987139.582	88.172			2000	100	NR	NR	RIGHT
				Straight	514+386.447	661714.819	2987139.582	515+314.285	662631.169	2986994.034	927.838		S 80° 58' 29.4941" E					
				Transition	515+314.285	662631.169	2986994.034	515+379.285	662695.504	2986984.799	65	64.994						
7	663115.029	2986937.321	60° 25' 43.3101"	Arc	515+379.285	662695.504	2986984.799	516+143.927	663363.361	2987278.769	764.643			725	100	5.00%	NR	LEFT
				Transition	516+143.927	663363.361	2987278.769	516+208.927	663400.002	2987332.451	65	64.994						
				Straight	516+208.927	663400.002	2987332.451	516+416.136	663514.246	2987505.32	207.209		N 33° 27' 34.4889" E					
8	663530.457	2987529.851	01° 07' 23.0773"	Arc	516+416.136	663514.246	2987505.32	516+474.941	663547.146	2987554.058	58.804			3000	100	NR	NR	RIGHT
				Straight	516+474.941	663547.146	2987554.058	516+528.665	663577.64	2987598.29	53.724		N 34° 34' 57.5662" E					
9	663597.027	2987626.411	01° 57' 24.5192"	Arc	516+528.665	663577.64	2987598.29	516+596.970	663615.442	2987655.177	68.306			2000	100	NR	NR	LEFT
				Straight	516+596.970	663615.442	2987655.177	516+613.825	663624.53	2987669.373	16.855		N 32° 37' 33.0470" E					
10	663667.938	2987737.182	04° 36' 38.0721"	Arc	516+613.825	663624.53	2987669.373	516+774.765	663716.657	2987801.282	160.939			2000	100	NR	NR	RIGHT
				Straight	516+774.765	663716.657	2987801.282	516+957.884	663827.463	2987947.071	183.119		N 37° 14' 11.1191" E					
				Transition	516+957.884	663827.463	2987947.071	517+072.884	663901.287	2988035.11	115	114.894						
11	663908.734	2988042.434	02° 59' 30.2353"	Arc	517+072.884	663901.287	2988035.11	517+093.770	663916.553	2988049.361	20.886			400	100	5.00%	NR	RIGHT
				Transition	517+093.770	663916.553	2988049.361	517+208.770	664009.453	2988116.966	115	114.894						
				Straight	517+208.770	664009.453	2988116.966	517+228.449	664025.901	2988127.77	19.679		N 56° 42' 02.4862" E					
				Transition	517+228.449	664025.901	2988127.77	517+303.449	664086.806	2988171.45	75	74.95						
12	664102.3	2988184.61	07° 37' 35.5168"	Arc	517+303.449	664086.806	2988171.45	517+344.047	664115.911	2988199.711	40.598			305	80	7.00%	NR	LEFT
				Transition	517+344.047	664115.911	2988199.711	517+419.047	664161.364	2988259.305	75	74.95						
				Straight	517+419.047	664161.364	2988259.305	517+616.219	664274.415	2988420.848	197.172		N 34° 59' 06.1154" E					
13	664276.699	2988424.112	00° 05' 28.6858"	Arc	517+616.219	664274.415	2988420.848	517+624.186	664278.988	2988427.372	7.968			5000	100	NR	NR	RIGHT
				Straight	517+624.186	664278.988	2988427.372	517+813.875	664387.996	2988582.612	189.689		N 35° 04' 34.8012" E					
14	664392.607	2988589.178	00° 11' 02.0059"	Arc	517+813.875	664387.996	2988582.612	517+829.923	664397.239	2988595.73	16.047			5000	100	NR	NR	RIGHT
				Straight	517+829.923	664397.239	2988595.73	518+148.115	664580.929	2988855.546	318.192		N 35° 15' 36.8071" E					
15	664582.689	2988858.035	00° 04' 11.5122"	Arc	518+148.115	664580.929	2988855.546	518+154.212	664584.451	2988860.522	6.097			5000	100	NR	NR	RIGHT
				Straight	518+154.212	664584.451	2988860.522	518+358.784	664702.753	2989027.419	204.573		N 35° 19' 48.3193" E					
16	664709.222	2989036.546	00° 15' 23.0100"	Arc	518+358.784	664702.753	2989027.419	518+381.159	664715.651	2989045.702	22.374			5000	100	NR	NR	LEFT
				Straight	518+381.159	664715.651	2989045.702	518+701.454	664899.702	2989307.836	320.295		N 35° 04' 25.3093" E					
17	664956.333	2989388.493	04° 30' 53.9790"	Arc	518+701.454	664899.702	2989307.836	518+898.457	665019.138	2989464.441	197.004			2500	100	NR	NR	RIGHT
				Straight	518+898.457	665019.138	2989464.441	519+198.281	665210.207	2989695.497	299.824		N 39° 35' 19.2883" E					
18	665219.338	2989706.539	00° 19' 42.1295"	Arc	519+198.281	665210.207	2989695.497	519+226.937	665228.405	2989717.632	28.656			5000	100	NR	NR	LEFT
				Straight	519+226.937	665228.405	2989717.632	519+344.091	665302.546	2989808.343	117.155		N 39° 15' 37.1588" E					
				Transition	519+344.091	665302.546	2989808.343	519+439.091	665360.284	2989883.736	95	94.962						
19	665414.526	2989964.708	22° 03' 35.8546"	Arc	519+439.091	665360.284	2989883.736	519+631.601	665434.386	2990060.125	192.509			500	100	5.00%	NR	LEFT
				Transition	519+631.601	665434.386	2990060.125	519+726.601	665447.812	2990154.133	95	94.962						
				Straight	519+726.601	665447.812	2990154.133	520+324.968	665513.621	2990748.871	598.367		N 06° 18' 50.9910" E					
20	665514.404	2990755.946	00° 04' 53.6433"	Arc	520+324.968	665513.621	2990748.871	520+339.204	665515.197	2990763.02	14.236			10000	100	NR	NR	RIGHT
				Straight	520+339.204	665515.197	2990763.02	520+530.228	665536.476	2990952.854	191.024		N 06° 23' 44.6343" E					
21	665536.797	2990955.72	00° 01' 58.9572"	Arc	520+530.228	665536.476	2990952.854	520+535.995	665537.116	2990958.586	5.767			10000	100	NR	NR	LEFT
				Straight	520+535.995	665537.116	2990958.586	520+737.254	665559.42	2991158.605	201.259		N 06° 21' 45.6771" E					
				Transition	520+737.254	665559.42	2991158.605	520+787.254	665565.375	2991208.248	50	49.999						

M/S Kanak Engineering Pvt. Ltd. Authorised Signatory

Horizontal Alignment Report

HIP/Curve No.	HIP		Deflection	Element	Start			End			Length	Chord Length	Bearing	Radius	Speed Km/hr	e%	Extra Widening	Hand Of Arc
	Easting	Northing			Chainage	Easting	Northing	Chainage	Easting	Northing								
22	665581.743	2991327.813	13° 45' 44.3679"	Arc	520+787.254	665565.375	2991208.248	521+027.452	665626.085	2991440.051	240.198			1000	100	4.40%	NR	RIGHT
				Transition	521+027.452	665626.085	2991440.051	521+077.452	665645.228	2991486.239	50	49.999						
				Straight	521+077.452	665645.228	2991486.239	521+295.754	665730.49	2991687.203	218.302		N 22° 59' 23.2853" E					
23	665735.149	2991698.184	00° 08' 12.1053"	Arc	521+295.754	665730.49	2991687.203	521+319.612	665739.782	2991709.177	23.858			10000	100	NR	NR	LEFT
				Straight	521+319.612	665739.782	2991709.177	521+795.064	665924.433	2992147.307	475.452		N 22° 51' 11.1801" E					
24	665934.957	2992172.277	00° 37' 15.6514"	Arc	521+795.064	665924.433	2992147.307	521+849.258	665945.209	2992197.36	54.194			5000	100	NR	NR	LEFT
				Straight	521+849.258	665945.209	2992197.36	522+090.993	666036.672	2992421.124	241.735		N 22° 13' 55.5287" E					
25	666048.907	2992451.058	00° 44' 28.0256"	Arc	522+090.993	666036.672	2992421.124	522+155.668	666061.529	2992480.831	64.675			5000	100	NR	NR	RIGHT
				Straight	522+155.668	666061.529	2992480.831	522+504.982	666197.866	2992802.44	349.314		N 22° 58' 23.5543" E					
26	666205.053	2992819.393	00° 25' 19.1985"	Arc	522+504.982	666197.866	2992802.44	522+541.808	666212.364	2992836.293	36.826			5000	100	NR	NR	RIGHT
				Straight	522+541.808	666212.364	2992836.293	522+651.241	666255.817	2992936.728	109.432		N 23° 23' 42.7527" E					
				Transition	522+651.241	666255.817	2992936.728	522+746.241	666296.264	2993022.646	95	94.962						
27	666304.173	2993037.009	03° 45' 23.3817"	Arc	522+746.241	666296.264	2993022.646	522+779.022	666313.005	2993050.823	32.782			500	80	5.00%	NR	RIGHT
				Transition	522+779.022	666313.005	2993050.823	522+874.022	666369.122	2993127.431	95	94.962						
				Straight	522+874.022	666369.122	2993127.431	522+911.798	666392.399	2993157.183	37.775		N 38° 02' 16.4476" E					
				Transition	522+911.798	666392.399	2993157.183	523+006.798	666445.998	2993235.433	95	94.848						
28	666461.008	2993264.7	14° 59' 24.5243"	Arc	523+006.798	666445.998	2993235.433	523+072.205	666467.938	2993296.853	65.407			250	80	7.00%	0.6	LEFT
				Transition	523+072.205	666467.938	2993296.853	523+167.205	666476.044	2993391.353	95	94.848						
				Straight	523+167.205	666476.044	2993391.353	523+361.383	666480.366	2993585.484	194.179		N 01° 16' 31.2969" E					
				Transition	523+361.383	666480.366	2993585.484	523+436.383	666485.102	2993660.284	75	74.95						
29	666497.857	2993747.5	32° 14' 17.7214"	Arc	523+436.383	666485.102	2993660.284	523+607.995	666555.17	2993814.467	171.612			305	80	7.00%	NR	RIGHT
				Transition	523+607.995	666555.17	2993814.467	523+682.995	666608.402	2993867.228	75	74.95						
				Straight	523+682.995	666608.402	2993867.228	523+878.710	666752.935	2993999.192	195.715		N 47° 36' 09.8723" E					
				Transition	523+878.710	666752.935	2993999.192	523+973.710	666821.001	2994065.41	95	94.962						
30	666855.279	2994103.266	11° 39' 49.1910"	Arc	523+973.710	666821.001	2994065.41	524+075.495	666881.195	2994147.27	101.785			500	100	5.00%	NR	LEFT
				Transition	524+075.495	666881.195	2994147.27	524+170.495	666924.11	2994231.982	95	94.962						
				Straight	524+170.495	666924.11	2994231.982	524+230.966	666949.717	2994286.764	60.471		N 25° 03' 10.3682" E					
31	666962.917	2994315.002	00° 42' 51.7829"	Arc	524+230.966	666949.717	2994286.764	524+293.308	666975.763	2994343.403	62.342			5000	100	NR	NR	LEFT
				Straight	524+293.308	666975.763	2994343.403	524+466.137	667046.991	2994500.873	172.829		N 24° 20' 18.5853" E					
32	667062.204	2994534.505	00° 50' 45.4785"	Arc	524+466.137	667046.991	2994500.873	524+539.962	667077.911	2994567.909	73.824			5000	100	NR	NR	RIGHT
				Straight	524+539.962	667077.911	2994567.909	524+615.977	667110.258	2994636.699	76.015		N 25° 11' 04.0638" E					
33	667113.086	2994642.713	00° 04' 34.1548"	Arc	524+615.977	667110.258	2994636.699	524+629.268	667115.906	2994648.73	13.291			10000	100	NR	NR	LEFT
				Straight	524+629.268	667115.906	2994648.73	524+925.467	667241.592	2994916.94	296.198		N 25° 06' 29.9089" E					
34	667250.716	2994936.409	01° 05' 41.9852"	Arc	524+925.467	667241.592	2994916.94	524+968.467	667259.466	2994956.049	43			2250	100	NR	NR	LEFT
				Straight	524+968.467	667259.466	2994956.049	525+099.755	667312.893	2995075.974	131.288		N 24° 00' 47.9237" E					

M/s Shiva Harlalka (JV) Pvt. Ltd. — Authorised Signatory

CLIENT: National Highways & Infrastructure

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER BHROP ON ENGINEERING

CONTRACTOR: M/S KAMAC ENGINEERS

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL

SAFETY CONSULTANT:

AUTHORITY ENGINEER: VOYANTS

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/HOR/2A (Sh--2)

DATE : DEC. 2022 REVISION: R0

TITLE: HORIZONTAL REPORT

Vertical Alignment Report

Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
			Left Side Alignment						
1	512+500.000	91.591		-0.001%					100
2	512+770.000	91.588	-0.001%	0.000%	0.001%				100
3	512+941.713	91.585	-0.001%	2.500%	2.502%	Sag	120	47.966	100
4	513+215.000	98.419	2.500%	-0.031%	2.531%	Crest	200	79.009	100
5	513+820.202	98.231	-0.031%	-2.500%	2.469%	Crest	200	80.995	100
6	514+088.321	91.527	-2.500%	0.042%	2.542%	Sag	120	47.202	100
7	514+534.654	91.714	0.042%	-0.002%	0.044%				100
8	515+352.179	91.700	-0.002%	0.013%	0.015%				100
9	516+007.705	91.786	0.013%	-0.146%	0.159%				100
10	516+229.052	91.462	-0.146%	-0.007%	0.139%				100
11	516+666.090	91.431	0.007%	1.773%	1.780%	Sag	95	53.358	100
12	516+861.737	94.900	1.773%	0.000%	1.773%	Crest	135	76.134	100
13	517+044.196	94.900	0.000%	-1.634%	1.634%	Crest	125	76.508	100
14	517+272.720	91.166	-1.634%	-0.154%	1.480%	Sag	80	54.060	100
15	517+488.062	90.835	-0.154%	-0.042%	0.112%				100
16	518+204.351	90.536	-0.042%	0.229%	0.270%				100
17	518+367.976	90.910	0.229%	-0.192%	0.421%				100
18	518+506.864	90.643	-0.192%	0.180%	0.372%	Sag	60	161.319	100
19	518+771.642	91.120	0.180%	-0.259%	0.439%				100
20	518+916.248	90.745	-0.259%	0.089%	0.348%				100
21	519+265.401	91.056	0.089%	0.209%	0.120%				100
22	519+417.659	91.374	0.209%	-0.044%	0.253%				100
23	519+584.579	91.300	-0.044%	0.336%	0.380%				100
24	519+766.756	91.912	0.336%	-0.084%	0.420%				100
25	519+988.127	91.727	-0.084%	0.105%	0.189%				100
26	520+421.989	92.184	0.105%	-1.016%	1.121%	Crest	100	89.214	100
27	520+578.293	90.596	-1.016%	0.475%	1.491%	Sag	150	100.617	100
28	520+815.589	91.724	0.475%	0.037%	0.438%	Crest	60	137.013	100
29	520+969.977	91.781	0.037%	-0.387%	0.424%	Crest	60	141.516	100
30	521+121.272	91.196	-0.387%	0.078%	0.464%				100
31	521+417.677	91.426	0.078%	-0.068%	0.145%				100
32	521+770.878	91.187	-0.068%	1.757%	1.825%	Sag	120	65.763	100
33	521+918.050	93.774	1.757%	0.058%	1.699%	Crest	150	88.296	100
34	522+069.499	93.862	0.058%	-0.161%	0.220%				100
35	522+241.255	93.585	-0.161%	0.359%	0.421%				100
36	522+430.208	94.264	0.359%	-0.019%	0.379%				100
37	522+939.956	94.165	-0.019%	1.992%	2.011%	Sag	100	49.723	100
38	523+173.659	98.820	1.992%	0.000%	1.992%	Crest	70	35.143	80
39	523+383.595	98.820	0.000%	-2.003%	2.003%	Crest	70	34.942	80
40	523+601.456	94.455	-2.003%	-0.294%	1.709%	Sag	150	87.751	100
41	523+925.720	93.502	-0.294%	0.051%	0.345%				100
42	524+093.192	93.587	0.051%	-0.542%	0.593%	Crest	60	101.230	100
43	524+272.351	92.617	-0.542%	0.291%	0.832%	Sag	60	72.087	100
44	524+466.265	93.180	0.291%	-0.193%	0.483%				100
45	524+744.652	92.643	-0.193%	-0.039%	0.154%				100
46	524+906.408	92.581	-0.039%	0.414%	0.452%	Sag	80	176.849	100
47	525+069.652	93.256	0.414%						100

M/s Shiva Harlalka (JV) * Authorised Signatory * M/s Kamac Engineering Pvt. Ltd.

CLIENT: National Highways & Infrastructure Development Corporation Limited

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+600 TO KM. 534+200) OF NH-37 IN THE STATE OF ASSAM UNDER

CONTRACTOR: M/S KAMAC ENGINEERS

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: SKM, TASPL

SAFETY CONSULTANT: UA INFRATECH LEGATO & CO

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT.LTD.

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	Q.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/VERT/4A SH-1

DATE : DEC. 2022 REVISION: R0

TITLE: VERTICAL REPORT

Vertical Alignment Report

Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Right Side Alignment									
1	512+500.000	91.745		-0.059%					100
2	512+516.976	91.735	-0.059%	0.086%	0.145%				100
3	512+646.626	91.846	0.086%	-0.555%	0.640%	Crest	60	93.772	100
4	512+729.572	91.386	-0.555%	0.350%	0.904%	Sag	60	66.365	100
5	512+836.005	91.758	0.350%	0.019%	0.331%	Crest	60	181.420	100
6	512+949.465	91.779	0.019%	2.500%	2.482%	Sag	120	48.357	100
7	513+215.000	98.419	2.500%	-0.031%	2.531%	Crest	200	79.009	100
8	513+820.202	98.231	-0.031%	-2.500%	2.469%	Crest	200	80.995	100
9	514+081.283	91.703	-2.500%	-0.039%	2.461%	Sag	120	48.756	100
10	514+257.265	91.634	-0.039%	-0.088%	0.049%				100
11	514+365.427	91.539	-0.088%	0.278%	0.365%				100
12	514+516.705	91.959	0.278%	-0.018%	0.296%				100
13	514+950.000	91.88	-0.018%	-0.047%	0.029%				100
14	515+155.347	91.784	-0.047%	0.014%	0.061%				100
15	515+999.424	91.901	0.014%	-0.146%	0.160%				100
16	516+198.379	91.611	-0.146%	0.010%	0.156%				100
17	516+674.234	91.658	0.010%	1.781%	1.771%	Sag	100	56.462	100
18	516+856.238	94.899	1.781%	0.000%	1.781%	Crest	135	75.817	100
19	517+032.605	94.9	0.000%	-1.632%	1.632%	Crest	125	76.597	100
20	517+260.007	91.19	-1.632%	-0.057%	1.574%	Sag	120	76.226	100
21	517+599.999	90.995	-0.057%	0.071%	0.128%				100
22	517+698.449	91.065	0.071%	-0.180%	0.251%				100
23	517+799.999	90.882	-0.180%	-0.175%	0.006%				100
24	517+913.085	90.685	-0.175%	0.059%	0.234%	Sag	60	256.517	100
25	517+994.512	90.733	0.059%	-0.014%	0.073%				100
26	518+081.390	90.721	-0.014%	0.102%	0.116%				100
27	518+159.999	90.801	0.102%	0.062%	0.039%				100
28	518+252.955	90.859	0.062%	0.269%	0.206%				100
29	518+353.025	91.128	0.269%	-0.179%	0.448%				100
30	518+501.938	90.861	-0.179%	0.197%	0.376%	Sag	60	159.391	100
31	518+590.454	91.036	0.197%	0.060%	0.137%	Crest	60	437.345	100
32	518+667.117	91.082	0.060%	0.352%	0.292%	Sag	60	205.691	100
33	518+773.069	91.455	0.352%	-0.589%	0.941%	Crest	60	63.785	100
34	518+858.970	90.949	-0.589%	0.011%	0.599%	Sag	60	100.093	100
35	519+014.386	90.965	0.011%	0.202%	0.192%	Sag	120	625.377	100
36	519+149.990	91.24	0.202%	0.000%	0.202%				100
37	519+311.242	91.24	0.000%	0.437%	0.437%				100
38	519+420.910	91.719	0.437%	-0.258%	0.694%	Crest	60	86.415	100
39	519+564.609	91.349	-0.258%	0.339%	0.597%				100
40	519+789.465	92.112	0.339%	-0.133%	0.472%				100
41	519+965.796	91.878	-0.133%	0.077%	0.209%				100
42	520+076.709	91.963	0.077%	0.183%	0.106%				100
43	520+243.601	92.268	0.183%	-0.092%	0.275%	Crest	60	218.289	100
44	520+397.437	92.126	-0.092%	-0.727%	0.635%	Crest	150	236.310	100
45	520+564.093	90.914	-0.727%	0.325%	1.052%	Sag	100	95.013	100
46	520+782.585	91.625	0.325%	0.030%	0.295%	Crest	60	203.146	100

M/s Shiva Harialka (JV) M/s Kamac Engineering Pvt. Ltd. Authorised Signatory

CLIENT: National Highways & Infrastructure Development Corporation Limited

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+900) OF NH-37 IN THE STATE OF ASSAM UNDER BARDP ON ENGINEERING

CONTRACTOR: M/S KAMAC ENGINEERS

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL

SAFETY CONSULTANT:

AUTHORITY ENGINEER: VOYANTS

SCALE: NTS				DRG. NO. NHIDCL/KS/JA/VERT/4A Sh-2
PREPARED	DESIGNED	CHECKED	APPROVED	DATE: DEC. 2022 / REVISION: R0
K.R	G.R	P.S	P.S	TITLE: VERTICAL REPORT

Vertical Alignment Report									
Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Right Side Alignment									
47	520+990.045	91.688	0.030%	-0.242%	0.272%				100
48	521+098.668	91.426	-0.242%	0.067%	0.309%	Sag	60	194.133	100
49	521+458.710	91.668	0.067%	-0.196%	0.263%	Crest	60	227.756	100
50	521+625.110	91.342	-0.196%	0.203%	0.399%				100
51	521+793.636	91.684	0.203%	1.688%	1.485%	Sag	80	53.872	100
52	521+909.945	93.648	1.688%	0.244%	1.444%	Crest	60	41.554	100
53	522+057.976	94.009	0.244%	-0.207%	0.452%	Crest	150	332.123	100
54	522+195.333	93.724	-0.207%	0.222%	0.429%				100
55	522+310.908	93.98	0.222%	0.450%	0.228%				100
56	522412.032.	94.435	0.450%	-0.194%	0.644%	Crest	60	93.120	100
57	522+510.263	94.244	-0.194%	-0.024%	0.171%				100
58	522+931.573	94.144	-0.024%	2.247%	2.271%	Sag	150	66.046	100
59	523+158.749	99.25	2.247%	0.000%	2.247%	Crest	80	35.596	80
60	523+386.474	99.25	0.000%	-1.995%	1.996%	Crest	70	35.079	80
61	523+633.336	94.324	-1.995%	-0.265%	1.731%	Sag	180	104.010	100
62	523+940.190	93.511	-0.265%	0.123%	0.388%				100
63	524+112.857	93.723	0.123%	-0.159%	0.282%				100
64	524+387.310	93.286	-0.159%	-0.438%	0.279%				100
65	524+506.555	92.764	-0.438%	0.216%	0.654%	Sag	60	91.686	100
66	524+609.861	92.987	0.216%	-0.166%	0.383%				100
67	524+789.576	92.688	-0.166%	0.308%	0.474%				100
68	524+977.365	93.266	0.308%	-0.012%	0.320%				100
69	525+090.000	93.252	-0.012%						100

M/s Shiva Harlalka (JV)

CLIENT: National Highways & Infrastructure

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+650 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER SAROP ON ENGINEERING

CONTRACTOR: M/S KAMAC ENGINEERS

DESIGN DIRECTOR: Prateek Srivastava

PROOF CONSULTANT: TASPL

SAFETY CONSULTANT:

AUTHORITY ENGINEER: VOYANTS

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED
K.R	G.R	P.S	P.S

DRG. NO. NHIDCL/KS/UA/VERT/4A Sh-3

DATE : DEC. 2022 REVISION: R0

TITLE: VERTICAL REPORT

TCS Schedule						
Sl No	From	To	Length	TCS Type	Median Width	Description
1	525+000	526+720	1720	TCS-1B	5	4 Lane Carriageway without Service Road LHS Widening
2	526+720	526+820	100	TCS-1A	5	4 Lane Carriageway without Service Road Concentric Widening
3	526+820	526+910	90	TCS-1C	5	4 Lane Carriageway without Service Road RHS Widening
4	526+910	527+500	590	TCS-3	5	4 Lane Carriageway New Construction
5	527+500	530+950	3450	TCS-1C	5	4 Lane Carriageway without Service Road RHS Widening
6	530+950	531+000	50	TCS-1A	5	4 Lane Carriageway without Service Road Concentric Widening
7	531+000	532+900	1900	TCS-1B	5	4 Lane Carriageway without Service Road LHS Widening
8	532+900	533+240	340	TCS-2B1	3	4 Lane Carriageway with Service Road Both Side LHS Widening
9	533+240	534+010	770	TCS-7A	3	4 Lane Carriageway at VUP/PUP approaches with Service Road Both Side
10	534+010	534+370	360	TCS-2A1	3	4 Lane Carriageway with Service Road Both Side Concentric Widening
11	534+370	534+810	440	TCS-2B	3	4 Lane Carriageway with Service Road Both Side LHS Widening

M/s Shiva Harlalka (JV) Pvt. Ltd. Authorised Signatory

CLIENT: | PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-27 | CONTRACTOR: | DESIGN DIRECTOR: | PROOF CONSULTANT: | SAFETY CONSULTANT: | AUTHORITY ENGINEER: YOJANIS

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED

DRG. NO. NHIDCL/KS/UA/TCS Schedule/6A

DATE : DEC. 2022

REVISION: R0

Horizontal Alignment Report

HIP/Curve No.	HIP		Deflection	Element	Start			End			Length	Radius	Speed Km/hr	Se	We	Hand Of Arc
	Easting	Northing			Chainage	Easting	Northing	Chainage	Easting	Northing						
				Straight	525+000.000	667272.298	2994984.853	525+174.608	667343.354	2995144.349	174.608					
1	667374.86	2995215.067	02° 29' 55.0879"	Arc	525+174.608	667343.354	2995144.349	525+329.421	667409.419	2995284.345	154.813	3550	100	NR		RIGHT
				Straight	525+329.421	667409.419	2995284.345	525+509.984	667490.019	2995445.92	180.563					
2	667506.606	2995479.171	01° 53' 32.2577"	Arc	525+509.984	667490.019	2995445.92	525+584.294	667522.086	2995512.951	74.310	2250	100	NR		LEFT
				Straight	525+584.294	667522.086	2995512.951	525+895.266	667651.634	2995795.653	310.971					
				Transition	525+895.266	667651.634	2995795.653	525+990.266	667693.908	2995880.687	95.000					
3	667703.654	2995897.525	04° 27' 23.4697"	Arc	525+990.266	667693.908	2995880.687	526+029.156	667714.679	2995913.554	38.890	500	100	5.00%		RIGHT
				Transition	526+029.156	667714.679	2995913.554	526+124.156	667773.336	2995988.234	95.000					
				Straight	526+124.156	667773.336	2995988.234	526+590.858	668073.092	2996345.945	466.702					
4	668117.166	2996398.541	01° 34' 21.3489"	Arc	526+590.858	668073.092	2996345.945	526+728.093	668159.781	2996452.327	137.235	5000	100	NR		LEFT
				Straight	526+728.093	668159.781	2996452.327	526+752.559	668174.975	2996471.504	24.466					
				Transition	526+752.559	668174.975	2996471.504	526+867.559	668250.109	2996558.456	115.000					
5	668257.092	2996565.269	02° 29' 02.1734"	Arc	526+867.559	668250.109	2996558.456	526+887.068	668264.365	2996571.772	19.509	450	100	5.00%		RIGHT
				Transition	526+887.068	668264.365	2996571.772	527+002.068	668356.233	2996640.809	115.000					
				Straight	527+002.068	668356.233	2996640.809	527+044.496	668391.205	2996664.831	42.428					
				Transition	527+044.496	668391.205	2996664.831	527+119.496	668451.195	2996709.761	75.000					
6	668497.208	2996750.511	22° 47' 14.0659"	Arc	527+119.496	668451.195	2996709.761	527+240.798	668523.847	2996805.901	121.302	305	80	7.00%		LEFT
				Transition	527+240.798	668523.847	2996805.901	527+315.798	668550.691	2996875.879	75.000					
				Straight	527+315.798	668550.691	2996875.879	527+385.694	668573.031	2996942.108	69.896					
				Transition	527+385.694	668573.031	2996942.108	527+440.694	668591.795	2996993.796	55.000					
7	668605.897	2997027.71	10° 29' 33.6981"	Arc	527+440.694	668591.795	2996993.796	527+513.947	668625.94	2997058.489	73.253	400	80	5.00%		RIGHT
				Transition	527+513.947	668625.94	2997058.489	527+568.947	668658.026	2997103.145	55.000					
				Straight	527+568.947	668658.026	2997103.145	527+714.414	668745.592	2997219.305	145.468					
				Transition	527+714.414	668745.592	2997219.305	527+764.414	668776.021	2997258.978	50.000					
8	668798.11	2997286.805	04° 04' 10.7069"	Arc	527+764.414	668776.021	2997258.978	527+835.443	668822.119	2997312.995	71.029	1000	100	4.40%		RIGHT
				Transition	527+835.443	668822.119	2997312.995	527+885.443	668856.515	2997349.282	50.000					
				Straight	527+885.443	668856.515	2997349.282	528+181.458	669061.94	2997562.415	296.015					
9	669069.572	2997570.334	00° 07' 33.7141"	Arc	528+181.458	669061.94	2997562.415	528+203.455	669077.222	2997578.236	21.997	10000	100	NR		RIGHT
				Straight	528+203.455	669077.222	2997578.236	528+367.798	669191.531	2997696.314	164.343					
10	669214.719	2997720.266	00° 45' 50.5162"	Arc	528+367.798	669191.531	2997696.314	528+434.472	669238.224	2997743.907	66.674	5000	100	NR		RIGHT
				Straight	528+434.472	669238.224	2997743.907	528+617.431	669367.222	2997873.651	182.959					
				Transition	528+617.431	669367.222	2997873.651	528+667.431	669402.178	2997909.399	50.000					
11	669474.198	2997985.551	11° 58' 01.6185"	Arc	528+667.431	669402.178	2997909.399	528+876.297	669528.862	2998074.982	208.866	1000	100	4.40%		LEFT
				Transition	528+876.297	669528.862	2998074.982	528+926.297	669554.224	2998118.071	50.000					
				Straight	528+926.297	669554.224	2998118.071	529+050.885	669616.524	2998225.964	124.588					
12	669638.453	2998263.941	01° 26' 08.6433"	Arc	529+050.885	669616.524	2998225.964	529+138.589	669659.424	2998302.457	87.704	3500	100	NR		LEFT
				Straight	529+138.589	669659.424	2998302.457	529+181.084	669679.744	2998339.778	42.495					
13	669695.24	2998368.237	01° 03' 39.2037"	Arc	529+181.084	669679.744	2998339.778	529+245.890	669711.259	2998396.404	64.806	3500	100	NR		RIGHT
				Straight	529+245.890	669711.259	2998396.404	529+592.698	669882.711	2998697.868	346.808					
14	669895.157	2998719.753	01° 18' 40.8860"	Arc	529+592.698	669882.711	2998697.868	529+643.050	669908.102	2998741.348	50.353	2200	100	NR		RIGHT
				Straight	529+643.050	669908.102	2998741.348	529+659.421	669916.519	2998755.389	16.370					
15	669932.972	2998782.838	01° 40' 00.5234"	Arc	529+659.421	669916.519	2998755.389	529+723.422	669948.621	2998810.754	64.001	2200	100	NR		LEFT
				Straight	529+723.422	669948.621	2998810.754	529+974.178	670071.232	2999029.489	250.756					
				Transition	529+974.178	670071.232	2999029.489	530+009.178	670088.465	2999059.953	35.000					
16	670122.592	2999119.204	05° 13' 11.8232"	Arc	530+009.178	670088.465	2999059.953	530+145.836	670161.968	2999175.104	136.658	1500	100	3.00%		RIGHT

M/s Shiva Haryalka Ltd. Authorised Signatory

CLIENT: | PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 539+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-37 | CONTRACTOR: | DESIGN DIRECTOR: | PROOF CONSULTANT: | SAFETY CONSULTANT: | AUTHORITY ENGINEER: | SCALE: NTS | DRG. NO. NHIDCL/KS/UA/HOR/7A (Sh-1)

PREPARED	DESIGNED	CHECKED	APPROVED

DATE : DEC. 2022 | REVISION: R0

Horizontal Alignment Report

HIP/Curve No.	HIP		Deflection	Element	Start			End			Length	Radius	Speed Km/hr	Se	We	Hand Of Arc
	Easting	Northing			Chainage	Easting	Northing	Chainage	Easting	Northing						
				Transition	530+145.836	670161.968	2999175.104	530+180.836	670182.346	2999203.56	35.000					
				Straight	530+180.836	670182.346	2999203.56	530+639.758	670450.988	2999575.636	458.922					
17	670454.95	2999581.123	00° 04' 39.1643"	Arc	530+639.758	670450.988	2999575.636	530+653.292	670458.904	2999586.615	13.534	10000	100	NR		LEFT
				Straight	530+653.292	670458.904	2999586.615	530+786.902	670536.969	2999695.046	133.610					
18	670578.986	2999753.407	04° 07' 06.8480"	Arc	530+786.902	670536.969	2999695.046	530+930.667	670616.704	2999814.636	143.765	2000	100	NR		LEFT
				Straight	530+930.667	670616.704	2999814.636	531+006.666	670656.564	2999879.343	75.999					
19	670696.658	2999944.429	04° 22' 40.0423"	Arc	531+006.666	670656.564	2999879.343	531+159.479	670741.602	3000006.265	152.814	2000	100	NR		RIGHT
				Straight	531+159.479	670741.602	3000006.265	531+380.151	670871.345	3000184.766	220.672					
20	670882.225	3000199.735	00° 25' 26.7749"	Arc	531+380.151	670871.345	3000184.766	531+417.161	670892.994	3000214.784	37.010	5000	100	NR		LEFT
				Straight	531+417.161	670892.994	3000214.784	531+467.057	670922.031	3000255.361	49.896					
21	670945.005	3000287.466	00° 54' 17.1559"	Arc	531+467.057	670922.031	3000255.361	531+546.013	670967.469	3000319.93	78.956	5000	100	NR		LEFT
				Straight	531+546.013	670967.469	3000319.93	531+896.235	671166.755	3000607.925	350.222					
				Transition	531+896.235	671166.755	3000607.925	531+956.235	671201.498	3000656.838	60.000					
22	671287.507	3000771.845	19° 59' 13.3585"	Arc	531+956.235	671201.498	3000656.838	532+240.540	671407.647	3000850.527	284.304	815	100	5.00%		RIGHT
				Transition	532+240.540	671407.647	3000850.527	532+300.540	671458.628	3000882.156	60.000					
				Straight	532+300.540	671458.628	3000882.156	532+310.154	671466.86	3000887.124	9.615					
				Transition	532+310.154	671466.86	3000887.124	532+360.154	671509.45	3000913.315	50.000					
23	671543.5	3000935.045	04° 37' 34.1867"	Arc	532+360.154	671509.45	3000913.315	532+440.896	671575.686	3000959.45	80.742	1000	100	4.40%		LEFT
				Transition	532+440.896	671575.686	3000959.45	532+490.896	671615.018	3000990.319	50.000					
				Straight	532+490.896	671615.018	3000990.319	532+540.039	671653.422	3001020.98	49.143					
24	671675.212	3001038.377	01° 03' 54.0153"	Arc	532+540.039	671653.422	3001020.98	532+595.802	671696.675	3001056.176	55.763	3000	100	NR		LEFT
				Straight	532+595.802	671696.675	3001056.176	532+852.233	671894.062	3001219.866	256.430					
25	671917.719	3001239.485	00° 42' 15.6465"	Arc	532+852.233	671894.062	3001219.866	532+913.698	671941.616	3001258.811	61.466	5000	100	NR		RIGHT
				Straight	532+913.698	671941.616	3001258.811	533+263.838	672213.864	3001478.99	350.140					
				Transition	533+263.838	672213.864	3001478.99	533+358.838	672285.773	3001541.013	95.000					
26	672290.166	3001545.316	01° 24' 33.6393"	Arc	533+358.838	672285.773	3001541.013	533+371.137	672294.452	3001549.726	12.299	500	100	5.00%		LEFT
				Transition	533+371.137	672294.452	3001549.726	533+466.137	672356.194	3001621.877	95.000					
				Straight	533+466.137	672356.194	3001621.877	533+520.534	672390.235	3001664.306	54.397					
				Transition	533+520.534	672390.235	3001664.306	533+615.534	672454.152	3001734.383	95.000					
27	672480.127	3001756.468	15° 31' 54.9728"	Arc	533+615.534	672454.152	3001734.383	533+683.305	672511.067	3001770.791	67.771	250	80	7.00%	0.6	RIGHT
				Transition	533+683.305	672511.067	3001770.791	533+778.305	672601.483	3001799.443	95.000					
				Straight	533+778.305	672601.483	3001799.443	533+792.940	672615.685	3001802.973	14.634					
28	672658.134	3001813.521	02° 30' 20.5624"	Arc	533+792.940	672615.685	3001802.973	533+880.405	672701.004	3001822.204	87.466	2000	100	NR		RIGHT
				Straight	533+880.405	672701.004	3001822.204	534+193.052	673007.428	3001884.266	312.646					
29	673040.708	3001891.006	01° 17' 49.0659"	Arc	534+193.052	673007.428	3001884.266	534+260.960	673074.133	3001896.992	67.909	3000	100	NR		RIGHT
				Straight	534+260.960	673074.133	3001896.992	534+610.571	673418.268	3001958.617	349.610					
30	673440.557	3001962.609	01° 17' 50.2368"	Arc	534+610.571	673418.268	3001958.617	534+655.854	673462.749	3001967.104	45.284	2000	100	NR		LEFT
				Straight	534+655.854	673462.749	3001967.104	534+751.150	673556.148	3001986.021	95.296					
				Transition	534+751.150	673556.148	3001986.021	534+846.150	673648.577	3002007.809	95.000					
31	673681.088	3002017.682	07° 46' 30.3570"	Arc	534+846.150	673648.577	3002007.809	534+914.001	673711.965	3002031.863	67.851	500	100	5.00%		LEFT
				Transition	534+914.001	673711.965	3002031.863	535+009.001	673795.579	3002076.879	95.000					
				Straight	535+009.001	673795.579	3002076.879	535+010.025	673796.465	3002077.393	1.024					
				Transition	535+010.025	673796.465	3002077.393	535+085.025	673862.808	3002112.26	75.000					
32	673905.522	3002130.346	17° 34' 43.1699"	Arc	535+085.025	673862.808	3002112.26	535+177.066	673951.704	3002134.687	92.042	300	80	7.00%	0.6	RIGHT
				Transition	535+177.066	673951.704	3002134.687	535+252.066	674026.648	3002135.466	75.000					
				Straight	535+252.066	674026.648	3002135.466	535+410.753	674185.257	3002130.506	158.687					

M/s Shiva Harlalka (JV) Pvt. Ltd. Authorised Signatory

CLIENT: National Highways & | PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 431+050 TO 535+250 (DESIGN KM. 480+800 TO KM. 534+800) OF NH-37 IN THE STATE OF ASSAM UNDER | CONTRACTOR: | DESIGN DIRECTOR | PROOF CONSULTANT: TASPL | SAFETY CONSULTANT | AUTHORITY ENGINEER: YOJANA

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED

DRG. NO. NHIDCL/KS/UA/HOR/7A (Sh-2)

DATE : DEC. 2022 | REVISION: R0

TITLE: HORIZONTAL REPORT

Vertical Alignment Report									
Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Left Side Alignment									
1	525+000.000	92.968		0.414%					
2	525+069.649	93.256	0.414%	-0.011%	0.425%				100
3	525+615.922	93.196	-0.011%	-0.495%	0.484%	Crest	60	123.904	100
4	525+772.293	92.421	-0.495%	0.499%	0.994%	Sag	160	160.941	100
5	526+010.900	93.612	0.499%	-0.252%	0.751%				100
6	526+149.650	93.262	-0.252%	0.133%	0.385%				100
7	526+277.907	93.433	0.133%	-0.219%	0.352%				100
8	526+413.309	93.137	-0.219%	0.202%	0.420%				100
9	526+568.135	93.449	0.202%	-0.029%	0.231%				100
10	526+787.000	93.385	-0.029%	0.136%	0.165%				100
11	526+965.000	93.672	0.136%	-0.149%	0.285%				100
12	527+288.720	93.146	-0.149%	0.204%	0.352%				100
13	527+436.118	93.446	0.204%	0.135%	0.069%				100
14	527+654.473	93.740	0.135%	-0.612%	0.747%	Crest	70	93.754	100
15	527+767.728	93.047	-0.612%	0.905%	1.517%	Sag	65	42.844	100
16	527+844.061	93.738	0.905%	0.425%	0.480%	Crest	60	125.030	100
17	528+061.058	94.661	0.425%	-0.093%	0.518%				100
18	528+209.799	94.523	-0.093%	-0.455%	0.362%	Crest	60	165.530	100
19	528+355.000	93.862	-0.455%	0.346%	0.801%	Sag	60	74.865	100
20	528+538.171	94.497	0.346%	-0.255%	0.601%	Crest	60	99.796	100
21	528+710.463	94.058	-0.255%	0.339%	0.594%	Sag	60	101.002	100
22	529+005.329	95.058	0.339%	-0.219%	0.558%	Crest	100	179.292	100
23	529+186.093	94.663	-0.219%	-0.041%	0.178%	Sag	60	337.899	100
24	529+292.690	94.619	-0.041%	-0.912%	0.871%	Crest	60	68.879	100
25	529+439.419	93.280	-0.912%	0.852%	1.764%	Sag	100	56.682	100
26	529565.I00	94.351	0.852%	-0.185%	1.037%	Crest	100	96.435	100
27	529+693.236	94.115	-0.185%	0.193%	0.378%	Sag	60	158.614	100
28	529+901.301	94.517	0.193%	-0.193%	0.387%				100
29	530+046.665	94.236	-0.193%	-0.037%	0.156%				100
30	530+264.595	94.155	-0.037%	-0.567%	0.530%	Crest	60	113.252	100
31	530+392.625	93.429	-0.567%	0.026%	0.593%	Sag	100	168.508	100
32	530+877.982	93.557	0.026%	-0.112%	0.138%				100
33	531+058.733	93.355	-0.112%	0.079%	0.191%				100
34	531+341.905	93.579	0.079%	-0.049%	0.128%				100
35	531+564.999	93.469	-0.049%	-0.095%	0.046%				100
36	531898.0IO	93.152	-0.095%	0.259%	0.354%				100
37	532+056.326	93.562	0.259%	-0.065%	0.324%				100
38	532+559.999	93.234	-0.065%	0.123%	0.188%				80
39	533+021.598	93.800	0.123%	0.083%	0.039%				80
40	533+286.960	94.021	0.083%	2.500%	2.416%	Sag	120	49.664	100
41	533+654.269	103.202	2.500%	-2.500%	4.999%	Crest	370	74.013	100
42	534+022.599	93.995	-2.500%	-0.298%	2.202%	Sag	120	54.502	100
43	534+189.999	93.497	-0.298%	0.324%	0.622%	Sag	120	192.840	100
44	534+426.256	94.263	0.324%	-0.042%	0.366%				100
45	534+586.194	94.196	-0.042%	0.380%	0.422%				100
46	534+740.784	94.783	0.380%	0.000%	0.380%				100
47	535+345.096	94.780	0.000%						100

M/s Shiva Harlalka (JV) Pvt. Ltd. Authorised Signatory

CLIENT: | PROJECT: FOUR LANING OF JHANJHI TO DEMON SECTION FROM KM. 491+650 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+600) OF NH-37 | CONTRACTOR: | DESIGN DIRECTOR: | PROOF CONSULTANT: | SAFETY CONSULTANT: | AUTHORITY ENGINEER: VOYANTS

SCALE: NTS

PREPARED	DESIGNED	CHECKED	APPROVED

DRG. NO. NHIDCL/KS/UA/VERT/BA Sh-1

DATE : DEC. 2022 | REVISION: R0

Vertical Alignment Report									
Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Right Side Alignment									
1	525+000.000	93.263		-0.011%					100
2	525+577.240	93.200	-0.011%	0.109%	0.120%				100
3	525+699.005	93.333	0.109%	-0.096%	0.205%				100
4	525+798.459	93.238	-0.096%	0.391%	0.487%				100
5	525+906.527	93.661	0.391%	-0.145%	0.537%				80
6	526+130.521	93.336	-0.145%	0.213%	0.358%				100
7	526+290.777	93.677	0.213%	-0.370%	0.583%				80
8	526+384.521	93.330	-0.370%	0.182%	0.552%	Sag	80	144.907	100
9	526+568.296	93.664	0.182%	-0.125%	0.307%				100
10	526+792.739	93.384	-0.125%	0.140%	0.265%				100
11	526+970.993	93.634	0.140%	-0.154%	0.295%				100
12	527+289.726	93.142	-0.154%	0.245%	0.399%				100
13	527+402.040	93.417	0.245%	0.003%	0.242%				100
14	527+692.276	93.426	0.003%	0.248%	0.245%				100
15	528+029.114	94.260	0.248%	-0.092%	0.339%	Crest	80	235.860	100
16	528+459.416	93.866	-0.092%	0.142%	0.234%				100
17	528+732.414	94.255	0.142%	0.321%	0.179%				100
18	528+994.679	95.098	0.321%	-0.327%	0.649%	Crest	100	154.168	100
19	529+426.835	93.683	-0.327%	-0.061%	0.266%				100
20	529+740.523	93.491	-0.061%	0.325%	0.387%	Sag	150	388.037	100
21	529+896.911	94.000	0.325%	0.068%	0.258%				100
22	530+001.559	94.071	0.068%	-0.131%	0.199%				100
23	530+132.920	93.899	-0.131%	-0.307%	0.176%				100
24	530+306.798	93.366	-0.307%	-0.390%	0.083%				100
25	530+467.482	92.740	-0.390%	0.286%	0.676%	Sag	135	199.700	100
26	530+688.436	93.373	0.286%	0.017%	0.269%				100
27	530+993.360	93.426	0.017%	0.088%	0.071%				100
28	531+099.936	93.520	0.088%	0.000%	0.088%				100
29	531+254.995	93.520	0.000%	0.280%	0.280%				100
30	531+388.061	93.893	0.280%	-0.157%	0.437%	Crest	60	137.293	100
31	531+565.000	93.616	-0.157%	-0.089%	0.068%				100
32	531+659.831	93.532	-0.089%	0.290%	0.379%				100
33	531+800.813	93.941	0.290%	-0.494%	0.785%	Crest	65	82.835	100
34	531+882.509	93.538	-0.494%	0.192%	0.686%	Sag	60	87.473	100
35	532+009.670	93.781	0.192%	-0.279%	0.470%	Crest	60	127.533	100
36	532+120.899	93.471	-0.279%	0.150%	0.429%				100
37	532+227.845	93.632	0.150%	-0.264%	0.414%	Crest	150	362.242	100
38	532+427.457	93.105	-0.264%	0.293%	0.557%	Sag	60	107.772	100
39	532+620.000	93.669	0.293%	-0.029%	0.322%				100
40	532+854.097	93.600	-0.029%	0.124%	0.154%				100
41	533+002.073	93.784	0.124%	0.083%	0.041%				100
42	533+280.960	94.016	0.083%	2.500%	2.416%	Sag	120	49.660	100
43	533+648.666	103.207	2.500%	-2.500%	4.999%	Crest	370	74.012	100
44	534+016.879	94.003	-2.500%	-0.309%	2.190%	Sag	120	54.785	100
45	534+179.914	93.499	-0.309%	0.316%	0.625%	Sag	120	191.905	100
46	534+422.576	94.266	0.316%	-0.037%	0.353%				100

M/s Shiva Harlalka (JV) M/s Kanjac Engineering Pvt. Ltd. Authorised Signatory

CLIENT: National Highways & Infrastructure

PROJECT: FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 491+050 TO 535+250 (DESIGN KM. 490+800 TO KM. 534+800) OF NH-27 IN THE STATE OF ASSAM UNDER

CONTRACTOR: M/S KANJAC ENGINEERS

DESIGN DIRECTOR: Pratesh Srivastava

PROOF CONSULTANT: SKM TASPL

SAFETY CONSULTANT:

AUTHORITY ENGINEER: VOYANTS SOLUTIONS PVT. LTD.

SCALE: NTS

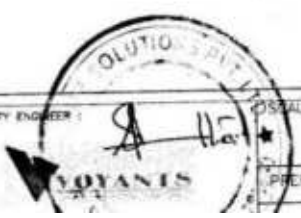
DRG. NO. NHIDCL/KS/JA/VERT/8A Sh-2

DATE : DEC. 2022 REVISION: R0

PREPARED	DESIGNED	CHECKED	APPROVED
K.R.	G.B.	P.S.	P.S.

TITLE: VERTICAL REPORT

Vertical Alignment Report									
Sl No	PVI Station	Elevation (m)	Grade IN (%)	Grade Out (%)	Algebric Diff	Curve type	Curve Length (m)	K Value	Speed km/hr
Right Side Alignment									
47	534+640.639	94.186	-0.037%	0.496%	0.532%	Sag	150	281.765	100
48	534+761.485	94.785	0.496%	-0.001%	0.497%	Crest	60	120.839	100
49	535+345.000	94.780	-0.001%						



CLIENT :	PROJECT :	CONTRACTOR :	DESIGN DIRECTOR :	PMCOP CONSULTANT :	SAFETY CONSULTANT :	AUTHORITY ENGINEER :	SCALE: NTS	DRG. NO. NHIDCL/KS/UA/MERT/BA Sh-3
	FOUR LANING OF JHANJHI TO DEMOW SECTION FROM KM. 431+650 TO 535+250 (DESIGN KM.						PREPARED / DESIGNED / CHECKED / APPROVED	DATE : DEC. 2022 / REVISION: R0