

# SECTION - 1

TO RAMBAN

TO BANIHAL

NB	
HIP NO :	
HIP CH : 150+996.264	
E	518969.72
N	3679495.15
V	30 Kmph
$\Delta$	136° 04' 19.20"
R	35 m
Ts	86.79 m
Lc	83.12 m
Ls	
e	7.00
we	1.5

NB	
HIP NO :	
HIP CH : 151+143.788	
E	519097.19
N	3679640.518
V	40 Kmph
$\Delta$	27° 51' 03.60"
R	90 m
Ts	42.47 m
Lc	3.75 m
Ls	40.00
e	7.00
we	0.9

VIADUCT AT CH. 151+134	
Structure No.	152/1
Proposed Type	Viaduct
Proposed Size	5 X 35 m

MAJOR BRIDGE CH. 151+310	
Structure No.	152/2
Proposed Type	MAJOR BRIDGE
Proposed Size	1 X 13 + 1 X 40 + 1 X 17m

NB	
HIP NO :	
HIP CH : 151+342.696	
E	519030.369
N	3679786.931
V	30 Kmph
$\Delta$	60° 39' 36.00"
R	35 m
Ts	20.48 m
Lc	37.05 m
Ls	
e	7.00
we	1.5

NB	
HIP NO :	
HIP CH : 151+252.970	
E	519124.407
N	3679754.797
V	30 Kmph
$\Delta$	84° 31' 48.00"
R	45 m
Ts	40.9 m
Lc	66.39 m
Ls	
e	7.00
we	1.2

Curve without Transition.  
 $\frac{1}{3} / \frac{2}{3}$  Rule for Super Elevation is used,  
 can be seen in schematic

START OF PROJECT  
 DESIGN CH :- 150+920  
 HCC CH :- 150+920

END OF VIADUCT  
 CH. 151+223

Divisional Forest Officer  
 Ramban Forest Division  
 Ramban

परियोजना निदेशक  
 Project Director  
 भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पंजी. नं. इकाई रामबन  
 National Highway Authority of India, P.U., Ramban

Legend :-

North Bound Center Line	---
South Bound Center Line	---
Tunnel Tube (Edge)	---
Right of Way (ROW)	—ROW—ROW—
Proposed Right of Way (PROW)	—PROW—PROW—

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
 AUTHORITY OF INDIA

Project Title :-

Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

Plan  
 Ch. 150+920 To Ch.- 151+375  
 North Bound



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
 in Joint Venture with  
 ALTINOK Consulting Engineering Inc.  
 A-8, Green Park, New Delhi - 110016, India

Shawal Sharma  
 Prepared by

Madhusudhan Rao  
 Designed by

Manoj Kumar  
 Checked by

Sandip Bhattacharjee  
 Approved by

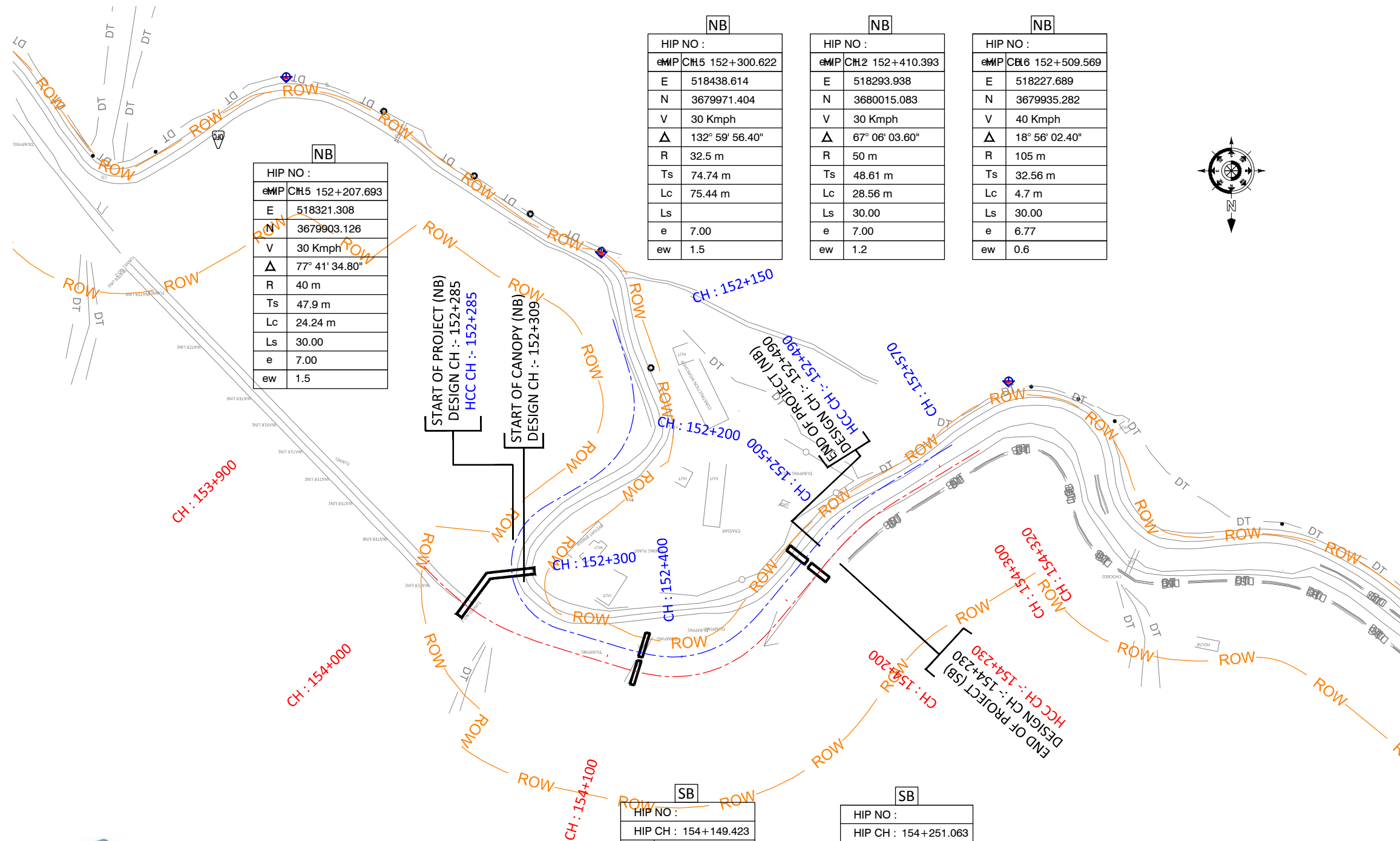
Drawing Title :- NHAI / RAM - BANI / PLAN / 01

Scale :- 1 : 1500 (on A2 Sheet)

Rev.  
R0

◀ TO RAMBAN

TO BANIHAL ►



  
परियोजना निर्देशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पी.एन. इन्फार्मेशन  
National Highway Authority of India, P.U. Ramnagar

Divisional Forest Officer  
Ramban Forest Division  
Ramban

Legend :-

North Bound Center Line	
South Bound Center Line	
Tunnel Tube (Edge)	
Right of Way (ROW)	
Proposed Right of Way (PROW)	

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

---

Project Title :-





Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-
-----------------

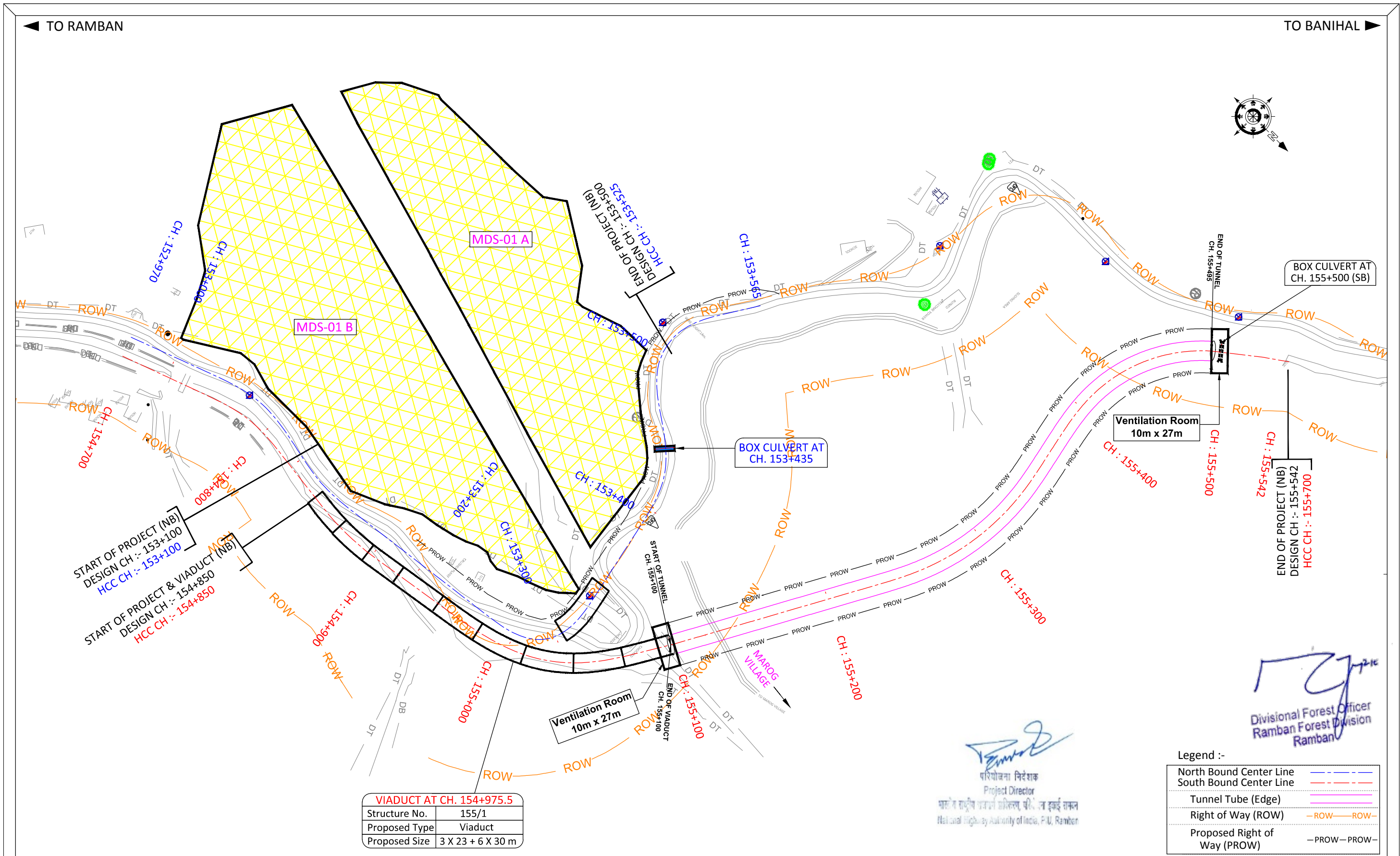
PLAN  
North Bound  
Ch.-152+285 To Ch.-152+490  
and  
South Bound  
Ch.-154+020 To Ch.-154+230



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

 Shawal Sharma	 Madhusudhan Rao	 Manoj Kumar	 Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

Note: 1. All Dimensions are in meter, unless otherwise specified.		
R1	June - 2021	Plan
R0	March - 2021	Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM - BANI / PLAN / 02		Rev. R0
Scale :- 1 : 1500 (on A2 Sheet)		

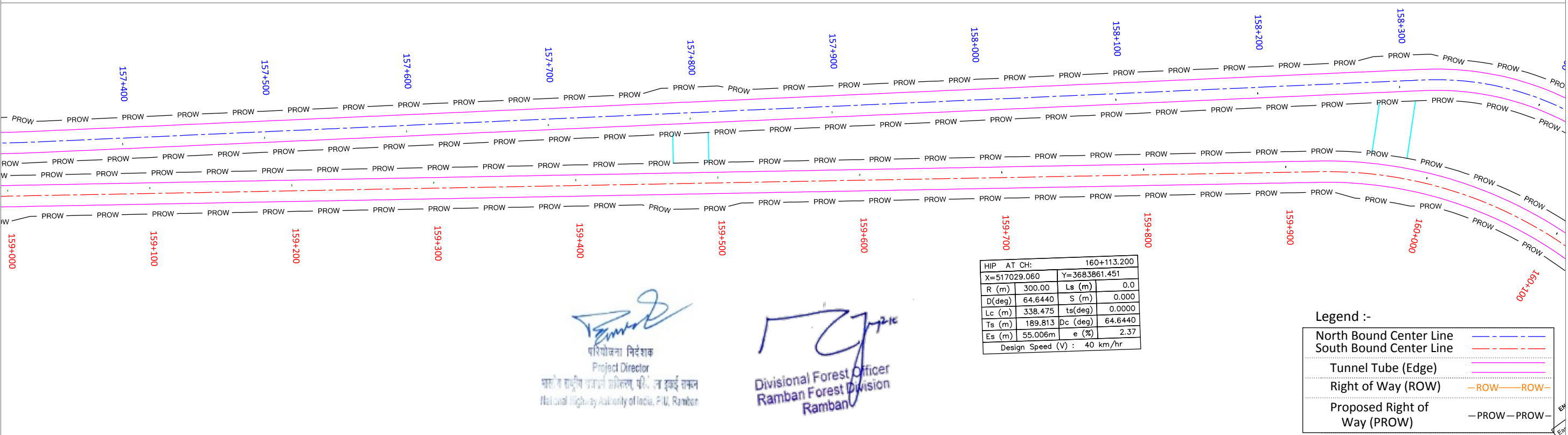
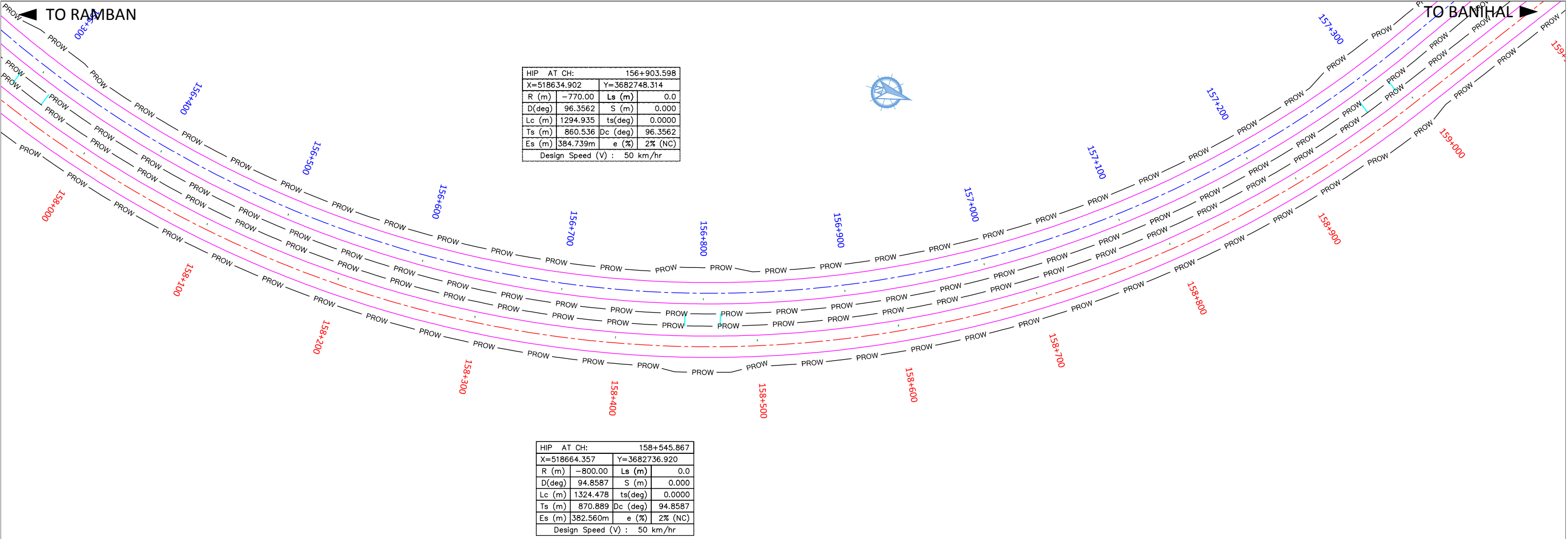


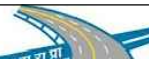


<p>Client :-</p> <p>NATIONAL HIGHWAYS AUTHORITY OF INDIA</p>	<p>Project Title :-</p> <p>Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu &amp; Kashmir on EPC mode</p>	<p>Drawing Name :-</p> <p>PLAN North Bound Ch.-153+100 To Ch.-153+500 and South Bound Ch.-154+850 To Ch.-155+542</p>	<p>Intercontinental Consultants &amp; Technocrats Pvt. Ltd., in Joint Venture with ALTINOK Consulting Engineering Inc. A-8, Green Park, New Delhi - 110016, India</p>	<p>Note:- 1. All Dimensions are in meter, unless otherwise specified.</p>		
				R1	June - 2021	Plan
				R0	March - 2021	Plan
				Revisions	Date	Description
				Revisions		
				Drawing Title :- NHAI / RAM - BANI / PLAN / 03		
				Scale :- 1 : 1500 (on A2 Sheet)		
				Rev. R0		



# PACKAGE - I

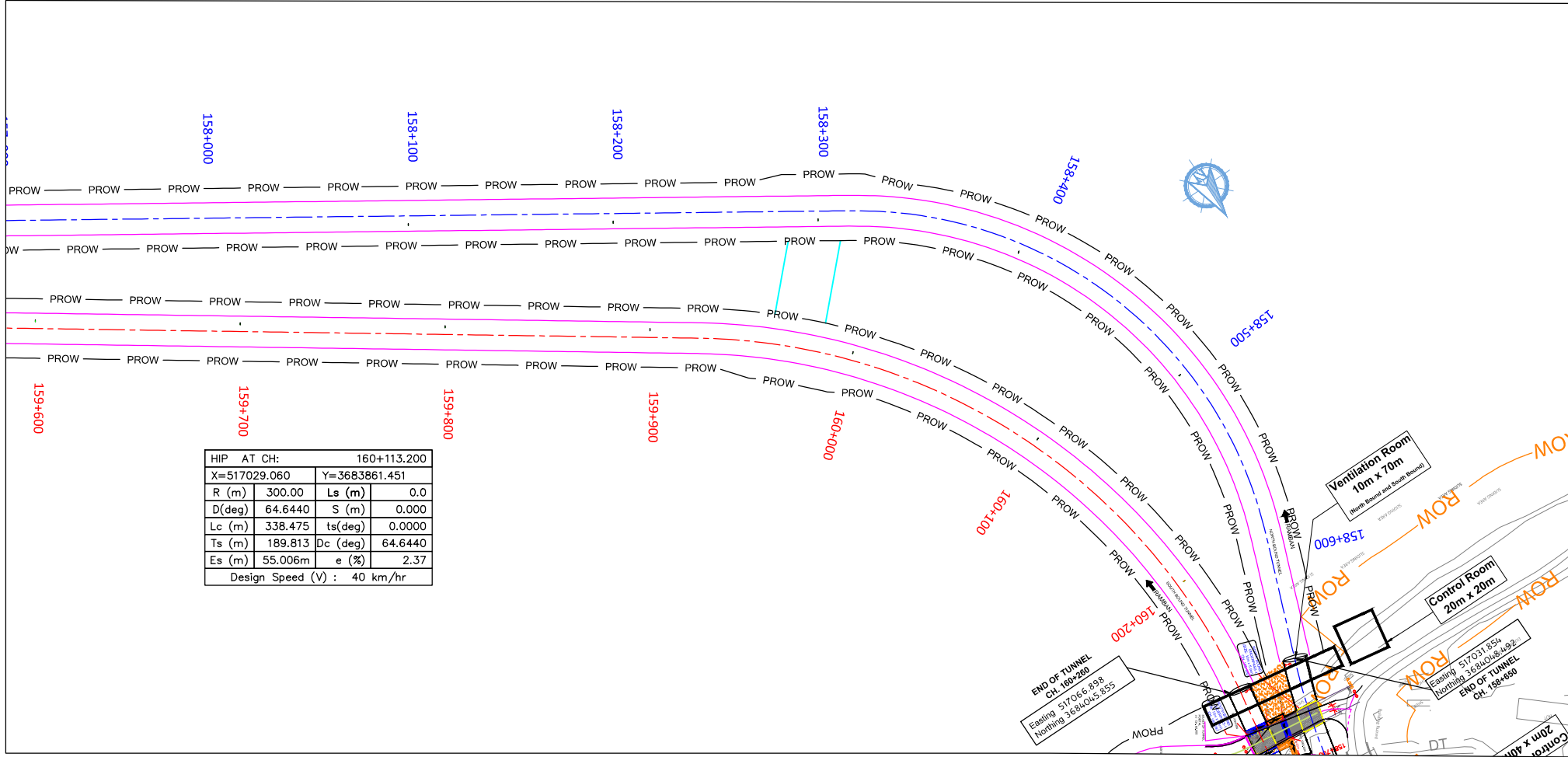




<div>Client :-</div> <div><div>NATIONAL HIGHWAYS AUTHORITY OF INDIA</div></div>	<div>Project Title :-</div> <div>Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu &amp; Kashmir on EPC Mode</div>	<div>Drawing Name :-</div> <div>PLAN TUNNEL Ch: 156+400 to Ch: 158+400</div>	<div><div>Intercontinental Consultants &amp; Technocrats Pvt. Ltd., in Joint Venture with ALTINOK Consulting Engineering Inc. A-8, Green Park, New Delhi - 110016, India</div></div> <div></div> <div><div><div><div>YGP</div><div>Prepared by</div></div><div><div>RC</div><div>Designed by</div></div><div><div>SWB</div><div>Checked by</div></div><div><div>Sandip Bhattacherjee</div><div>Approved by</div></div></div></div>	<div>R1</div> <div>June - 2021</div> <div>Initial Plan</div>		
				<div>R0</div> <div>March - 2021</div> <div>Initial Plan</div>		
				<div>Revisions</div> <div>Date</div> <div>Description</div>		
				<div>Revisions</div>		
				<div>Drawing Title :- NHAI / RAM-BANI / PLAN / 05</div> <div>Scale :- 1 : 2000</div>		
<div>Rev. R0</div>						

◀ TO RAMBAN

TO BANIHAL ▶



परियोजना निदेशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पी.यू. नई दिल्ली  
National Highway Authority of India, P.U., New Delhi

Divisional Forest Officer  
Ramban Forest Division  
Ramban

Legend :-

North Bound Center Line	— — — — —
South Bound Center Line	— — — — —
Tunnel Tube (Edge)	— — — — —
Right of Way (ROW)	— ROW — ROW —
Proposed Right of Way (PROW)	— PROW — PROW —

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-

PLAN  
TUNNEL  
Ch: 158+400 to Ch: 158+700



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India



Prepared by

Designed by

Checked by

Approved by

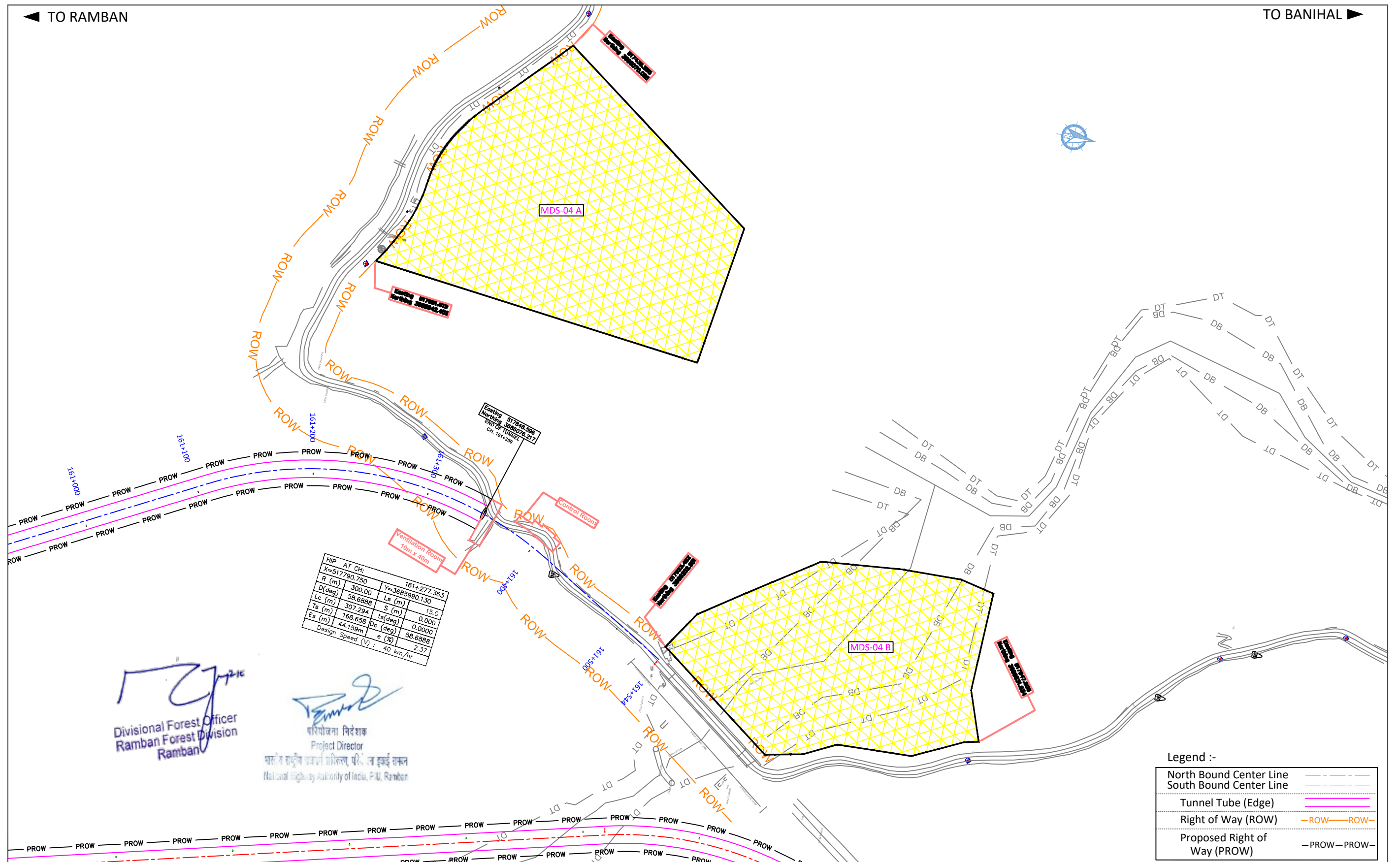
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R0	March - 2021	Initial Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM-BANI / PLAN / 06		
Scale :- 1 : 2000		
		Rev. R0





◀ TO RAMBAN

TO BANIHAL ▶



HIP AT CH:	
X=517790.750	Y=3685990.130
R (m)	300.00
D(deg)	58.6888
Lc (m)	307.294
ts (m)	168.658
Es (m)	44.159m
Design Speed (V) :	40 km/hr
e (%)	2.37
ts (deg)	0.0000
ts (deg)	0.0000
ts (deg)	0.0000

Divisional Forest Officer  
Ramban Forest Division  
Ramban

परियोजना निदेशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पंजीकृत इकाई रामबन  
National Highway Authority of India, P.U., Ramban

Legend :-

North Bound Center Line	---
South Bound Center Line	---
Tunnel Tube (Edge)	---
Right of Way (ROW)	---ROW---
Proposed Right of Way (PROW)	---PROW---



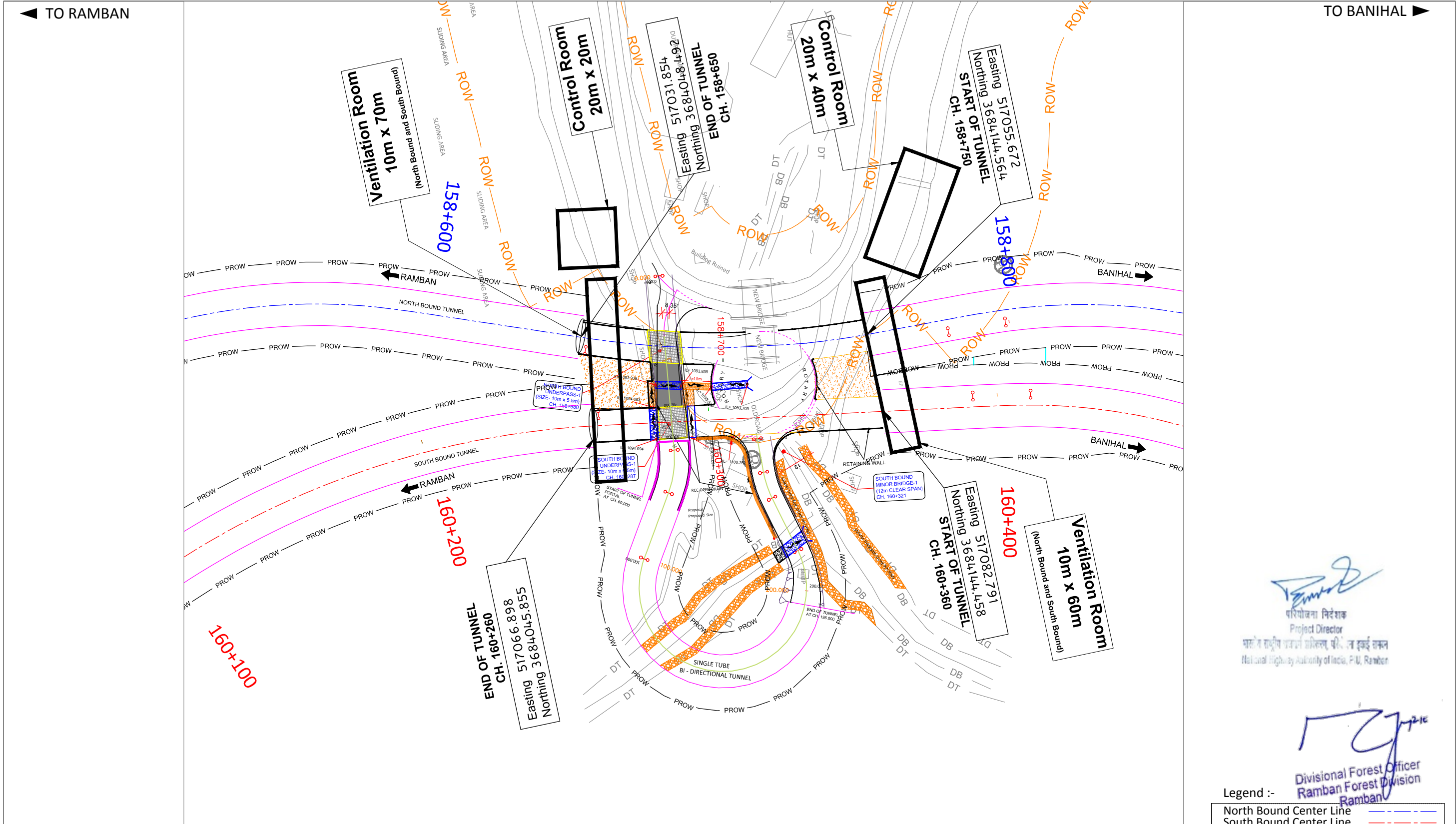
Client :-  
Project Title :-  
Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu & Kashmir on EPC Mode

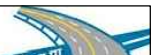

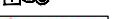




Drawing Name :-  
PLAN  
(MUCK DUMPING SITES)

Intercontinental Consultants & Technocrats Pvt. Ltd., in Joint Venture with ALTINOK Consulting Engineering Inc. A-8, Green Park, New Delhi - 110016, India			
YGP	RC	SWB	Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

R1	June - 2021	Initial Plan
R0	March - 2021	Initial Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM-BANI / PLAN / 10 (MDS)		
Scale :- 1 : 2000		
Rev. R0		

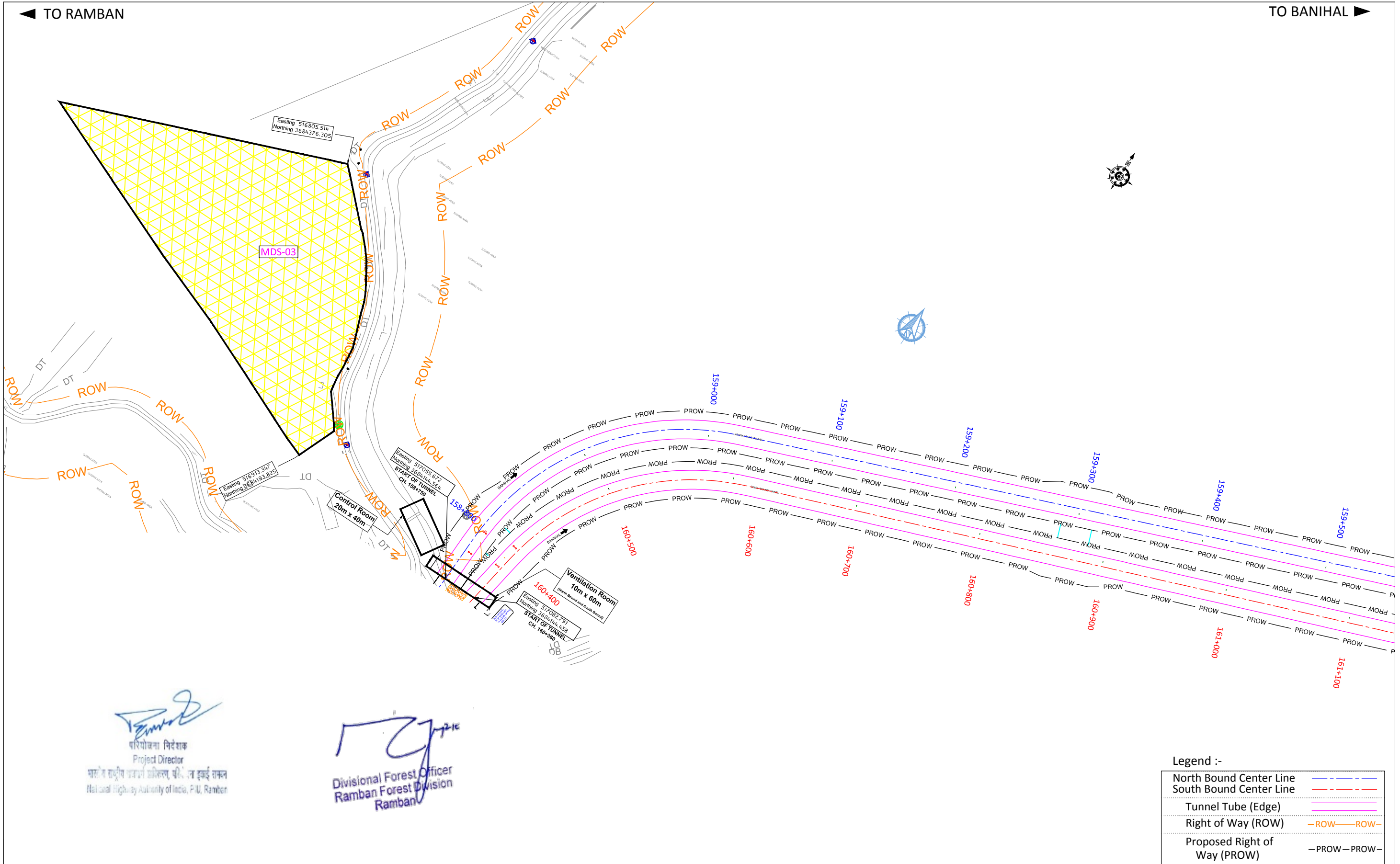






<div>Client :-</div> <div></div> <div>NATIONAL HIGHWAYS AUTHORITY OF INDIA</div>	<div>Project Title :-</div> <div>Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu &amp; Kashmir on EPC Mode</div>	<div>Drawing Name :-</div> <div>DIGDOL INTERCHANGE</div>	<div><div>Intercontinental Consultants &amp; Technocrats Pvt. Ltd., in Joint Venture with ALTINOK Consulting Engineering Inc. A-8, Green Park, New Delhi - 110016, India</div></div>	R1	June - 2021	Initial Plan
				R0	March - 2021	Initial Plan
				Revisions	Date	Description
				Revisions		
<div> YGP</div>	<div> RC</div>	<div> SWB</div>	<div> Sandip Bhattacharjee</div>	Drawing Title :- NHAI / RAM-BANI / PLAN / 07		Rev. R0
Prepared by	Designed by	Checked by	Approved by	Scale :- 1 : 2000		

## PACKAGE - II

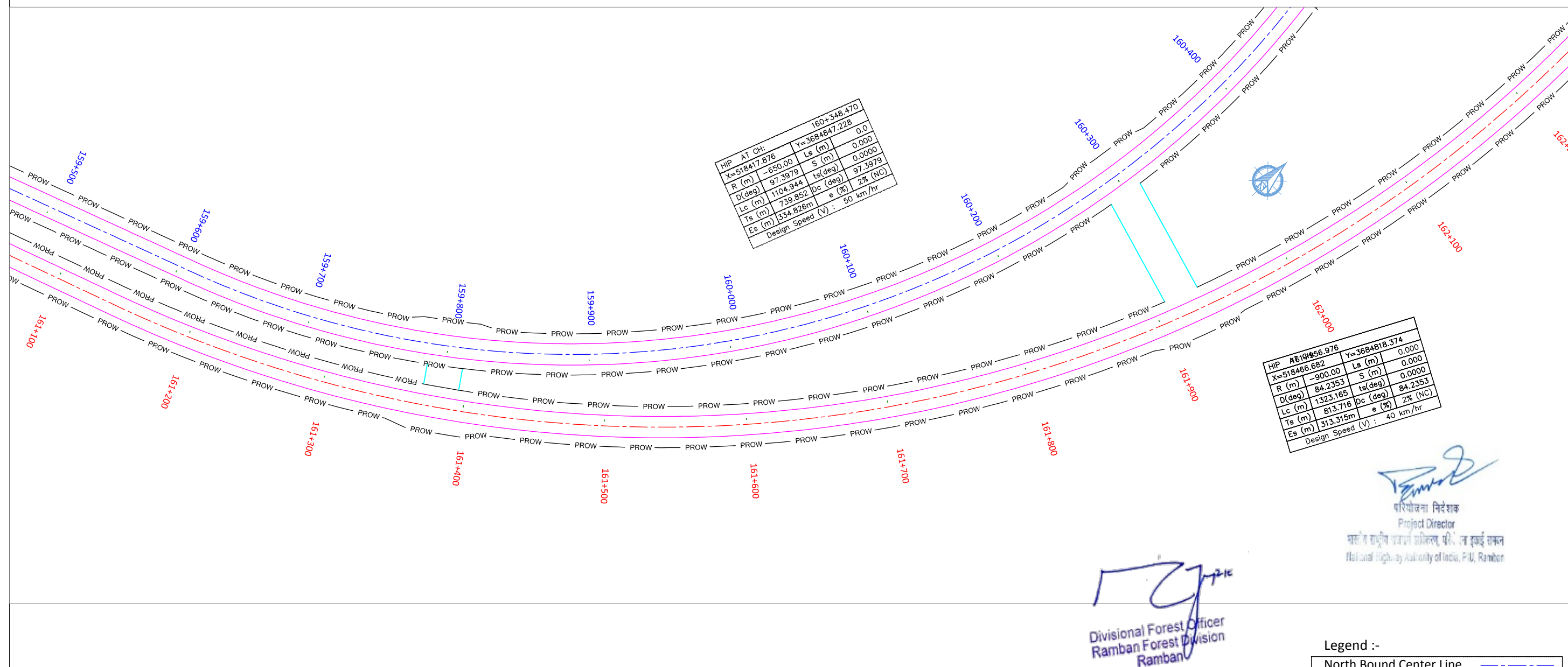




<div>Client :-</div> <div> NATIONAL HIGHWAYS AUTHORITY OF INDIA</div>	<div>Project Title :-</div> <div>Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu &amp; Kashmir on EPC Mode</div>	<div>Drawing Name :-</div> <div>PLAN TUNNEL Ch: 158+675 to Ch: 159+500</div>	<div> Intercontinental Consultants &amp; Technocrats Pvt. Ltd., in Joint Venture with ALTINOK Consulting Engineering Inc. A-8, Green Park, New Delhi - 110016, India</div>				R1	June - 2021	Initial Plan
							R0	March - 2021	Initial Plan
							Revisions	Date	Description
							Revisions		
							Drawing Title :- NHAI / RAM-BANI / PLAN / 08		
				Prepared by	Designed by	Checked by	Approved by	Scale :- 1 : 2000	

◀ TO RAMBAN

TO BANIHAL ▶



Legend :-

North Bound Center Line	---
South Bound Center Line	---
Tunnel Tube (Edge)	---
Right of Way (ROW)	---ROW---ROW---
Proposed Right of Way (PROW)	---PROW---PROW---

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-

PLAN  
TUNNEL  
Ch: 159+500 to Ch: 161+544



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

YGP

Prepared by

RC

Designed by

SWB

Checked by

Sandip Bhattacharjee

Approved by

R1

R0

Revisions

Revisions

Revisions

Revisions

Revisions

Revisions

Revisions

Revisions

Revisions

Revisions

June - 2021

March - 2021

Date

Date

Date

Date

Date

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Date

Date

Date

Initial Plan

Initial Plan

Initial Plan

Initial Plan

Initial Plan

Initial Plan

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Initial Plan

Initial Plan

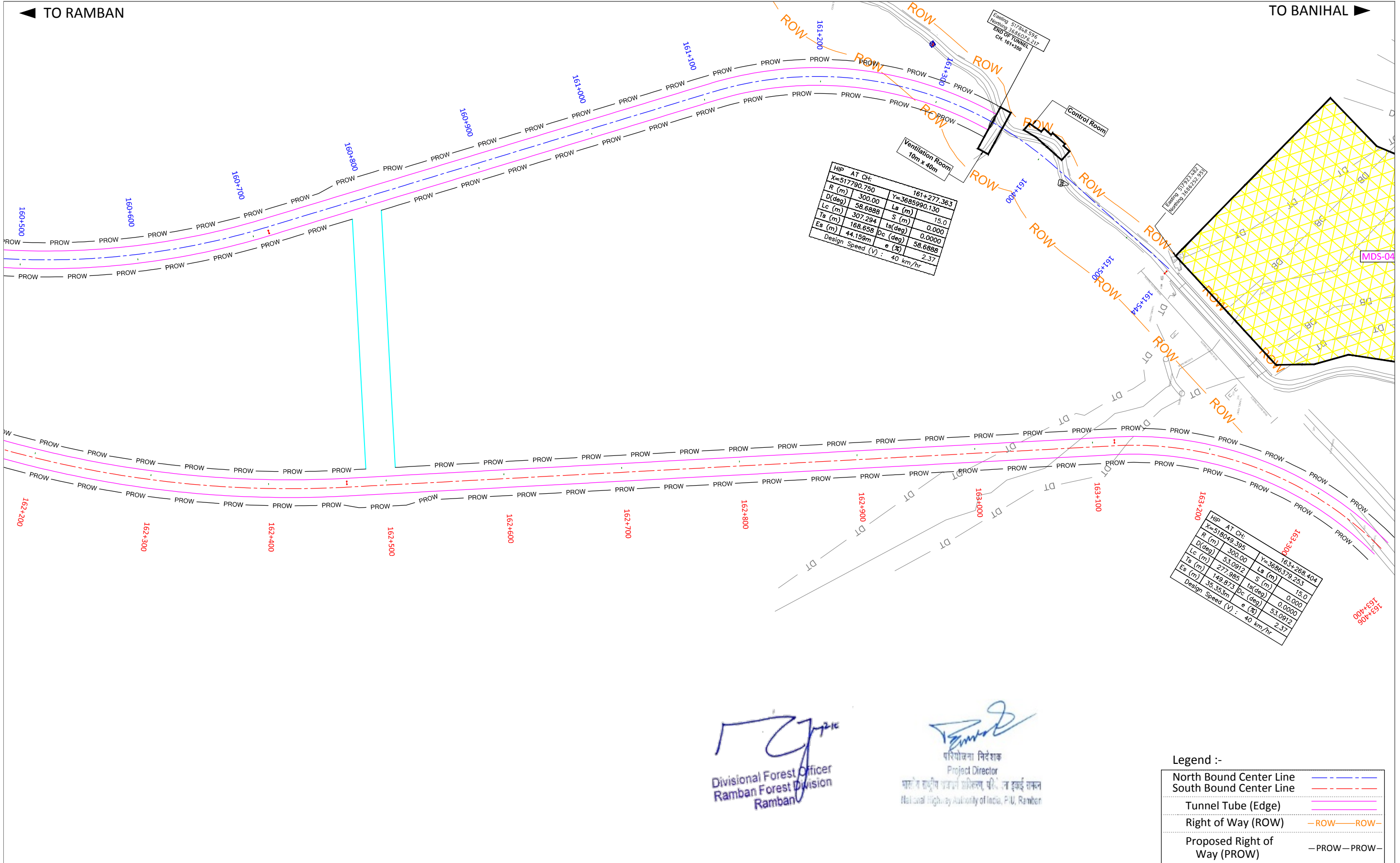
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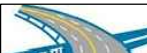





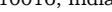
Initial Plan

Drawing Title :- NHAI / RAM-BANI / PLAN / 09

Scale :- 1 : 2000

Rev.  
R0



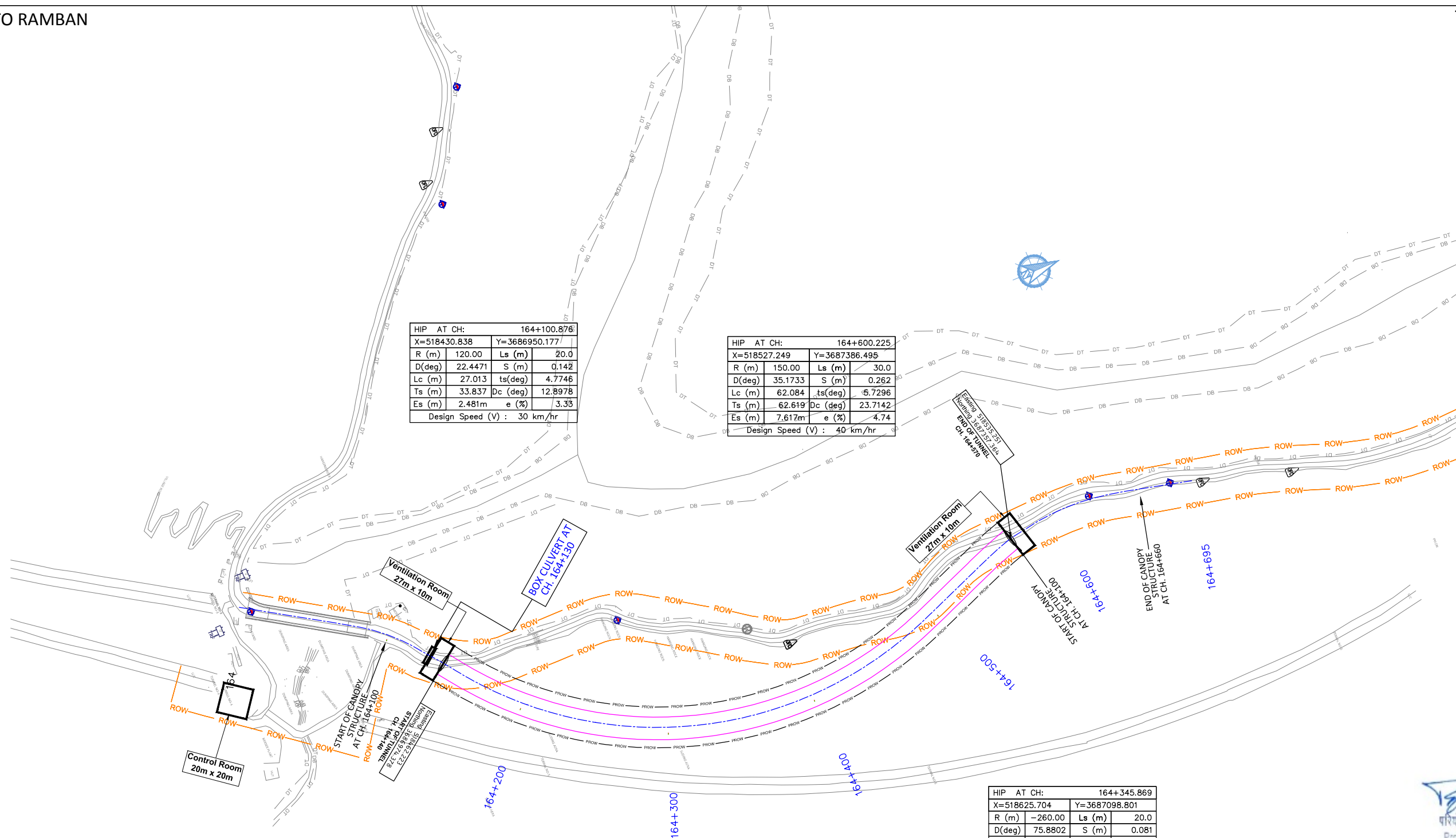
<div>Client :-</div> <div> NATIONAL HIGHWAYS AUTHORITY OF INDIA</div>	<div>Project Title :-</div> <div>Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu &amp; Kashmir on EPC Mode</div>	<div>Drawing Name :-</div> <div>PLAN TUNNEL Ch: 159+500 to Ch: 161+544</div>	<div> Intercontinental Consultants &amp; Technocrats Pvt. Ltd., in Joint Venture with  ALTINOK Consulting Engineering Inc. A-8, Green Park, New Delhi - 110016, India</div>	R1	June - 2021	Initial Plan
				R0	March - 2021	Initial Plan
				Revisions	Date	Description
				Revisions		
				Drawing Title :- NHAI / RAM-BANI / PLAN / 10		
<div> YGP</div>	<div> RC</div>	<div> SWB</div>	<div> Sandip Bhattacharjee</div>	Scale :- 1 : 2000		
Prepared by	Designed by	Checked by	Approved by			

PANTHYAL SECTION  
NORTH BOUND  
CH 164+100 TO CH 164+660



◀ TO RAMBAN

TO BANIHAL ▶



HIP AT CH:		164+100.876	
X=518430.838	Y=3686950.177		
R (m)	120.00	Ls (m)	20.0
D(deg)	22.4471	S (m)	0.142
Lc (m)	27.013	ts(deg)	4.7746
Ts (m)	33.837	Dc (deg)	12.8978
Es (m)	2.481m	e (%)	3.33
Design Speed (V) : 30 km/hr			

HIP AT CH:		164+600.225	
X=518527.249	Y=3687386.495		
R (m)	150.00	Ls (m)	30.0
D(deg)	35.1733	S (m)	0.262
Lc (m)	62.084	ts(deg)	5.7296
Ts (m)	62.619	Dc (deg)	23.7142
Es (m)	7.617m	e (%)	4.74
Design Speed (V) : 40 km/hr			

HIP AT CH:		164+345.869	
X=518625.704	Y=3687098.801		
R (m)	260.00	Ls (m)	20.0
D(deg)	75.8802	S (m)	0.081
Lc (m)	324.333	ts(deg)	2.2037
Ts (m)	212.746	Dc (deg)	71.4728
Es (m)	69.757m	e (%)	2.74
Design Speed (V) : 40 km/hr			

  
परियोजना निर्देशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पी.यू. रामबन  
National Highway Authority of India, P.U. Ramban

  
Divisional Forest Officer  
Ramban Forest Division  
Ramban

Legend :-

North Bound Center Line	— — — — —
South Bound Center Line	— — — — —
Tunnel Tube (Edge)	— — — — —
Right of Way (ROW)	— ROW — ROW —
Proposed Right of Way (PROW)	— PROW — PROW —

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Lining of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-

PLAN  
FOR TUNNEL AT4 NB  
Ch: 164+100 to Ch: 164+660



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

YGP

Prepared by

RC

Designed by

SWB

Checked by

SB

Approved by

R1

R0

Revisions

June - 2021

March - 2021

Date

Revisions

Initial Plan

Initial Plan

Description

Drawing Title :- NHAI / RAM-BANI / PLAN / 11

Scale :- 1 : 2000

Rev.

R0

PACKAGE - III

## MAKARKOT - RAMSU SECTION

### NORTH BOUND

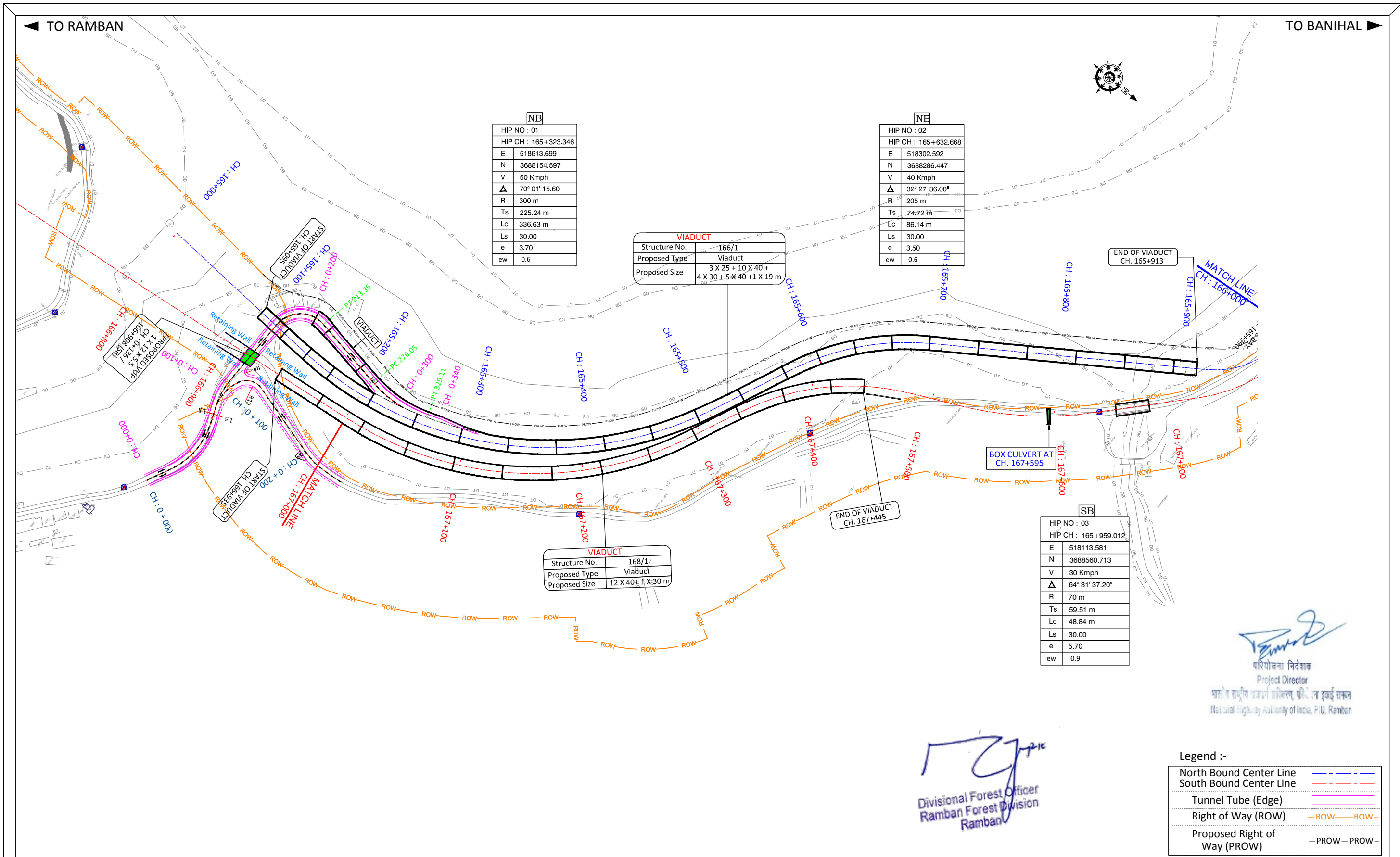
CH 165+092 TO CH 167+960

(EXCLUDING CH 166+610 TO CH 167+150 & CH 167+960 TO CH 168+168)

### SOUTH BOUND

CH 166+895 TO CH 169+745

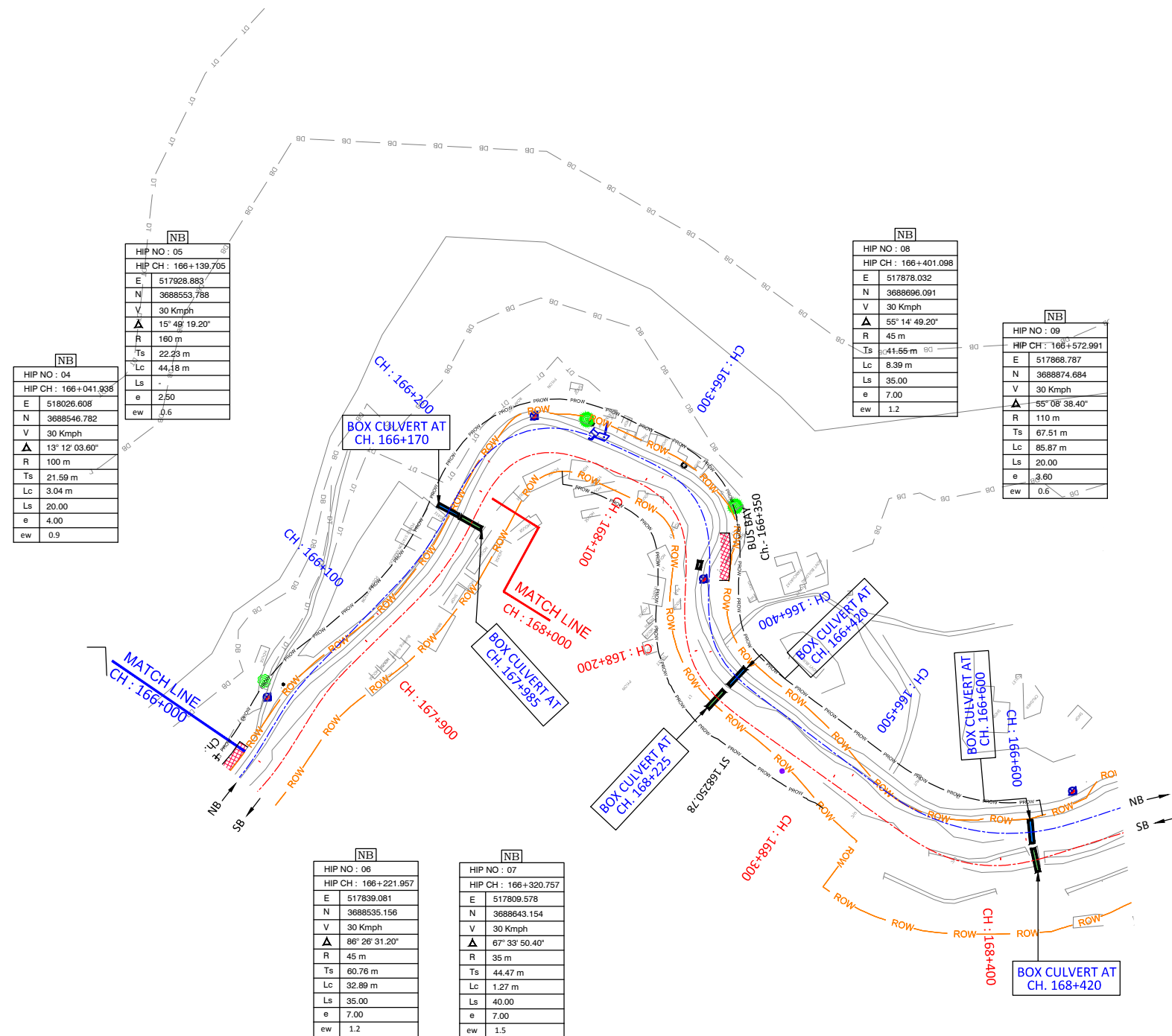
(EXCLUDING CH 168+425 TO CH 168+935 & CH 169+745 TO CH 169+951)





TO RAMBAN

TO BANIHAL



परियोजना निदेशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पिन कोड 180 001  
National Highway Authority of India, P.O., Ramban

Divisional Forest Officer  
Ramban Forest Division  
Ramban

Legend :-

North Bound Center Line	---
South Bound Center Line	---
Tunnel Tube (Edge)	---
Right of Way (ROW)	---ROW---
Proposed Right of Way (PROW)	---PROW---

PROFILE FOR NORTH BOUND

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Lining of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

Plan  
Ch.166+000 To 166+610  
Makarkot - Ramsu



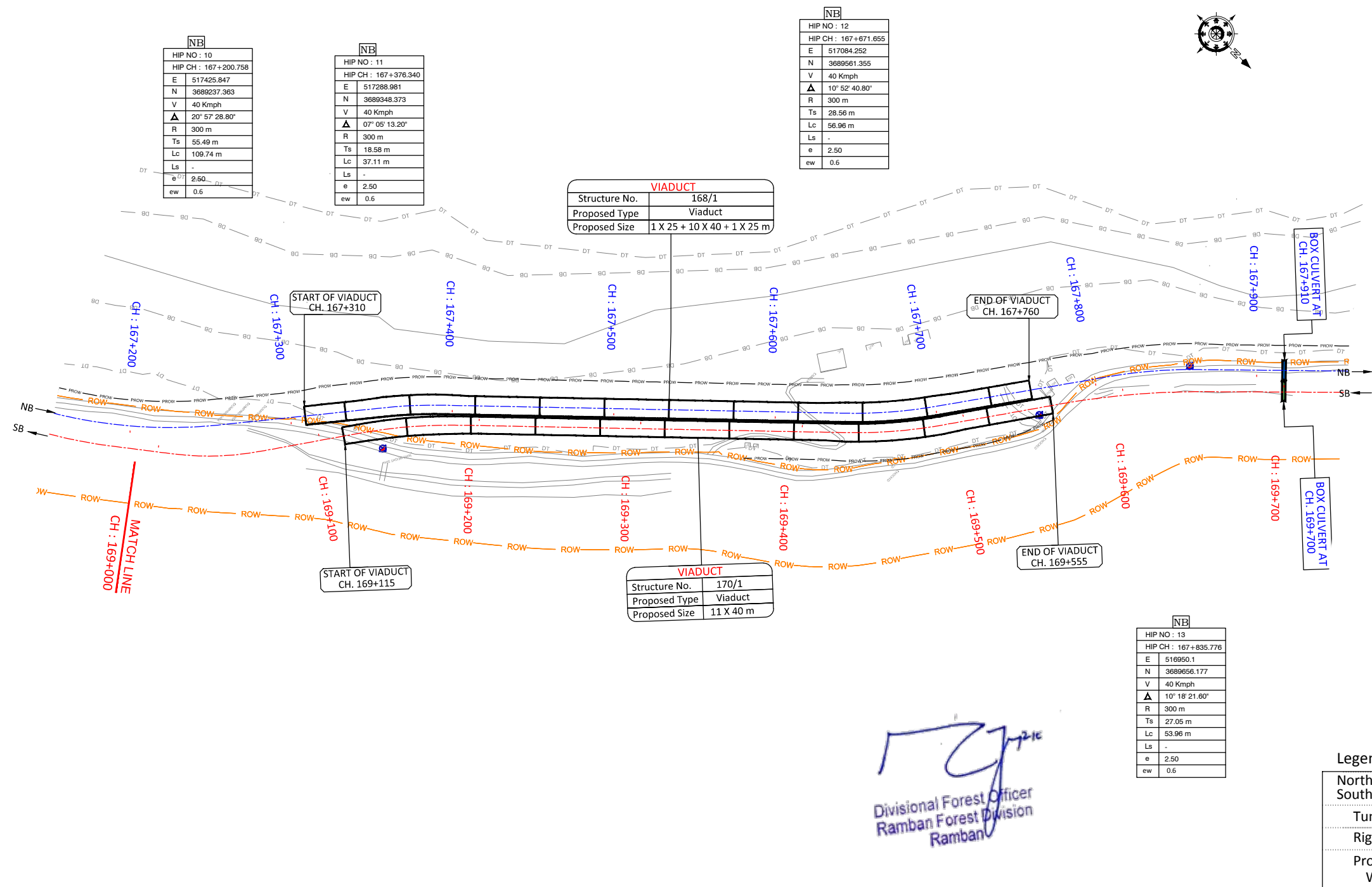
Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

Shawal Sharma	Madhusudhan Rao	Manoj Kumar	Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

R1	June - 2021	Plan
R0	March - 2021	Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM - BANI / PLAN / 13		
Scale :- 1 : 2000 (on A2 Sheet)		
Rev. R0		

TO RAMBAN

TO BANIHAL



Divisional Forest Officer  
Ramban Forest Division  
Ramban

परियोजना निदेशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पी.यू. रामबान  
National Highway Authority of India, P.U. Ramban

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

Plan  
Ch.167+150 To 167+960  
Makarkot - Ramsu ( Viaduct )



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

Shawal Sharma  
Prepared by

Madhusudhan Rao  
Designed by

Manoj Kumar  
Checked by

Sandip Bhattacharjee  
Approved by

Drawing Title :- NHAI / RAM - BANI / PLAN / 14

Scale :- 1 : 2000 (on A2 Sheet)

Rev.  
R0






## NACHLANA SECTION

NORTH BOUND  
CH 168+168 TO CH 171+855

SOUTH BOUND  
CH 169+951 TO CH 173+638

TO BANIHAL ►

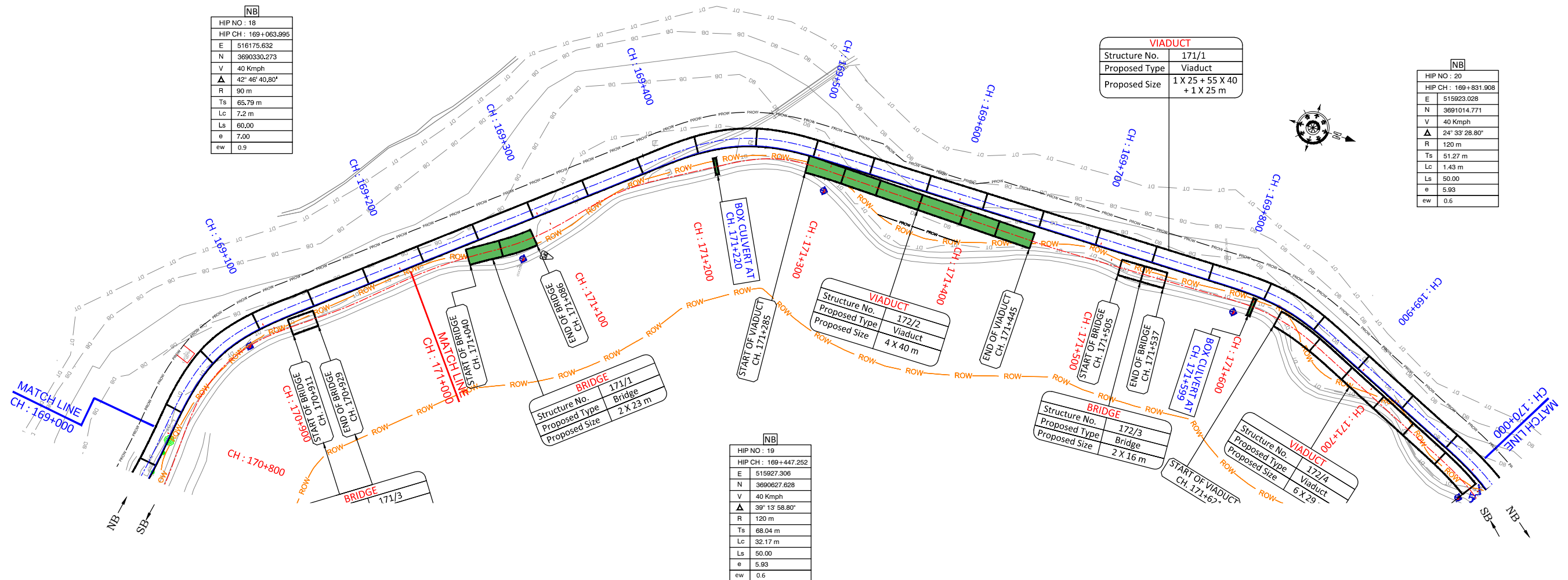


North Bound Center Line	
South Bound Center Line	
Tunnel Tube (Edge)	
Right of Way (ROW)	
Proposed Right of Way (PROW)	

R1	June - 2021	Plan
R0	March - 2021	Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM - BANI / PLAN / 15		Rev. R0
Scale :- 1 : 2000 (on A2 Sheet)		

TO RAMBAN

TO BANIHAL



परिपोषण निदेशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पी.यू. रांबन  
National Highway Authority of India, P.U. Ramban

Divisional Forest Officer  
Ramban Forest Division  
Ramban

Legend :-

North Bound Center Line	---
South Bound Center Line	---
Tunnel Tube (Edge)	---
Right of Way (ROW)	---ROW---
Proposed Right of Way (PROW)	---PROW---

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Lining of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

Plan  
Ch.169+000 To 170+000  
Nachlana ( Viaduct )



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

Shawal Sharma  
Prepared by

Madhusudhan Rao  
Designed by

Manoj Kumar  
Checked by

Sandip Bhattacharjee  
Approved by

Drawing Title :- NHAI / RAM - BANI / PLAN / 16  
Scale :- 1 : 2000 (on A2 Sheet)

Rev.  
R0



◀ TO RAMBAN

TO BANIHAL ►

NB	
HIP NO : 23	
HIP CH : 170+398.54	
E	516284.864
N	3691427.34
V	30 Kmph
Δ	71° 58' 40.80"
R	90 m
Ts	85.87 m
Lc	73.06 m
Ls	40.00
e	4.44
ew	0.9

NB	
HIP NO : 25	
HIP CH : 170+637.23	
E	516524.93
N	3691456.742
V	30 Kmph
Δ	56° 50' 49.20"
R	60 m
Ts	60.92 m
Lc	4.53 m
Ls	55.00
e	6.67
ew	1.2

NB	
HIP NO : 26	
HIP CH : 170+779.96	
E	516540.958
N	3691605.582
V	30 Kmph
Δ	53° 18' 50.40"
R	80 m
Ts	60.54 m
Lc	34.44 m
Ls	40.00
e	5.00
ew	0.9

NB	
HIP NO : 21	
HIP CH : 170+035.172	
E	516006.609
N	3691203.16
V	40 Kmph
Δ	42° 24' 28.80"
R	100 m
Ts	69.29 m
Lc	14.02 m
Ls	60.00
e	7.00
ew	0.9

VIADUCT	
Structure No.	171/1
Proposed Type	Viaduct
Proposed Size	1 X 25 + 55 X 40 + 1 X 25 m

VIADUCT	
Structure No.	172/1
Proposed Type	Viaduct
Proposed Size	1 X 35 + 27 X 40 + 1 X 35 m

H/P NO : 27	
H/P CH : 170+908.03	
E	516655.504
N	3691673.161
ROW = 30 Kmph	
Δ	40° 08' 06.00"
R	95 m
Ts	52.38 m
Lc	31.55 m
Ls	35.00
e	4.21
ew	0.9

NB	
HIP NO : 22	
HIP CH : 170+263.408	
E	516219.442
N	3691296.443
V	30 Kmph
▲	39° 46' 37.20"
R	120 m
Ts	58.52 m
Lc	53.31 m
Ls	30.00
e	3.33
ew	0.6

NB	
HIP NO : 24	
HIP CH : 170+530.634	
E	516425.764
N	3691406.199
V	30 Kmph
Δ	35° 32' 24.00"
R	80 m
Ts	45.86 m
Lc	9.62 m
Ls	40.00
e	5.00
ew	0.9

Diagram illustrating the structure and components of a bridge. The diagram shows a cross-section of a bridge with the following labels:

- ROW** (Right of Way) - Indicated by an orange line on the left side.
- BRIDGE** - Indicated by a red line across the top of the bridge structure.
- Structure No.** - 173/2
- Proposed Type** - Bridge
- Proposed Size** - 1 X 21 m






Structure No.	173/1
Proposed Type	Bridge
Proposed Size	1 X 16 m

Structure No.	172/5
Proposed Type	Viaduct
Proposed Size	4 X 41 m

  
परियोजना निदेशक  
Project Director  
भारत राष्ट्रीय राजमार्ग प्राधिकरण, पी.ओ. बॉक्स ६००००  
National Highway Authority of India, P.O. Bamber

Divisional Forest Officer  
Ramban Forest Division  
Ramban

Legend :-

North Bound Center Line	
South Bound Center Line	
Tunnel Tube (Edge)	
Right of Way (ROW)	
Proposed Right of Way (PROW)	

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

---

Project Title :-





Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

Plan  
Ch.170+000 To 171+000  
Nachlana ( Viaduct )



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

 Shawal Sharma	 Madhusudhan Rao	 Manoj Kumar	 Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

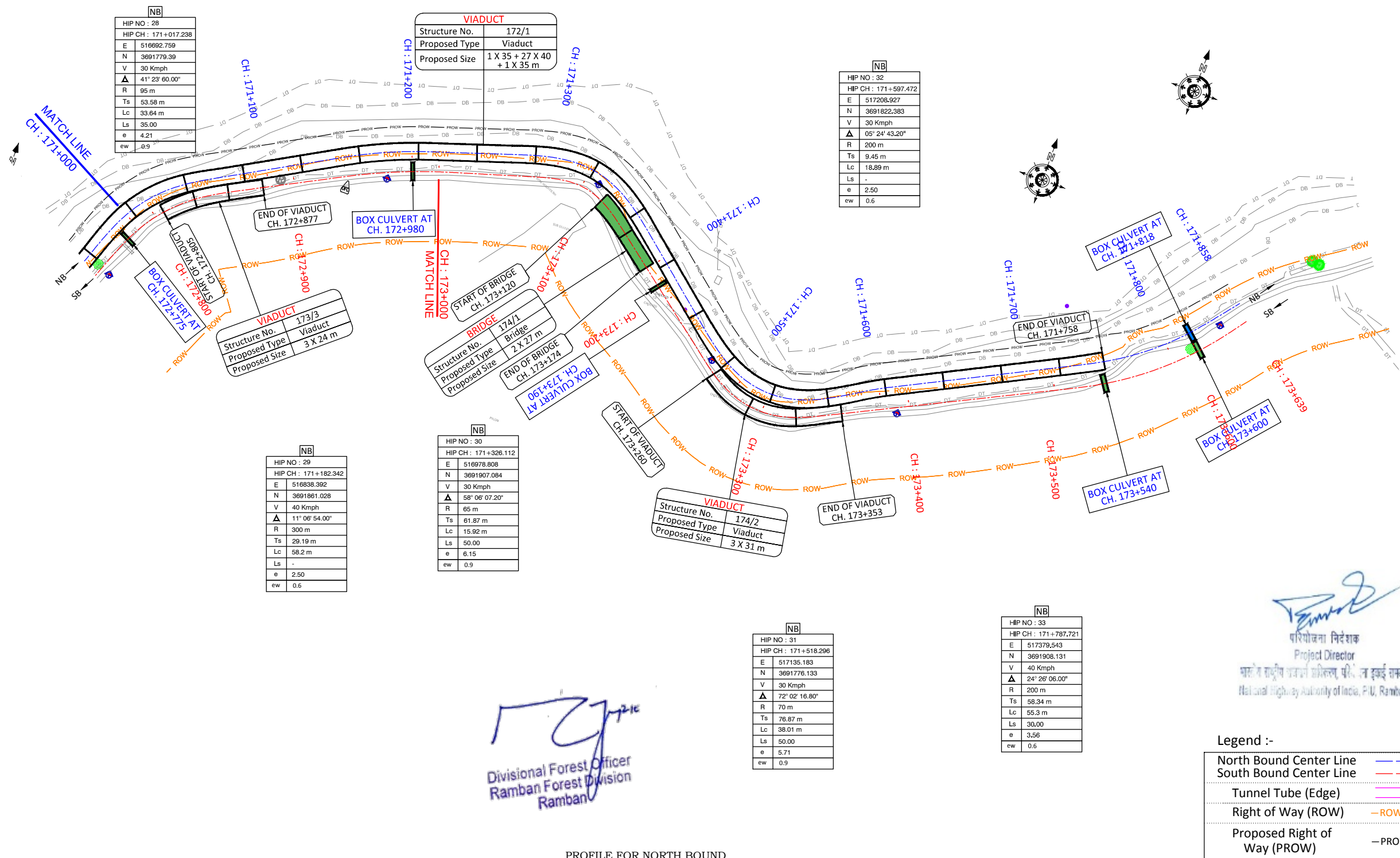
Drawing Title :- NHAI / RAM - BANI / PLAN / 17

Rev.  
R0

Scale :- 1 : 2000 (on A2 Sheet)

TO RAMBAN

TO BANIHAL



Divisional Forest Officer  
Ramban Forest Division  
Ramban

परिपोखना निदेशक  
Project Director  
भारत राष्ट्रीय राजमार्ग निदेशक, पी.एच.डी. रामबन  
National Highway Authority of India, P.U., Ramban

PROFILE FOR NORTH BOUND

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

Plan  
Ch.171+000 To 171+855  
Nachlana ( Viaduct )



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

Shawal Sharma  
Prepared by

Madhusudhan Rao  
Designed by

Manoj Kumar  
Checked by

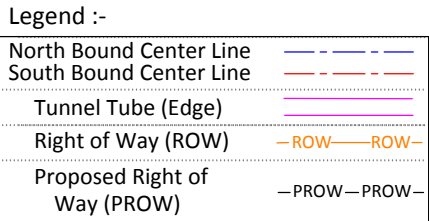
Sandip Bhattacharjee  
Approved by

Drawing Title :- NHAI / RAM - BANI / PLAN / 18

Scale :- 1 : 2000 (on A2 Sheet)

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R0

TO BANIHAL ►




Note:- 1. All Dimensions are in meter, unless otherwise specified.

Project Title :-

Drawing Name :-



Shawal Sharma  
Prepared by

 Madhusudhan Rao Designed by	
---	--

Manoj  
Manoj Kumar  
Checked by

Sandip  
Bhattacharjee  
Approved by

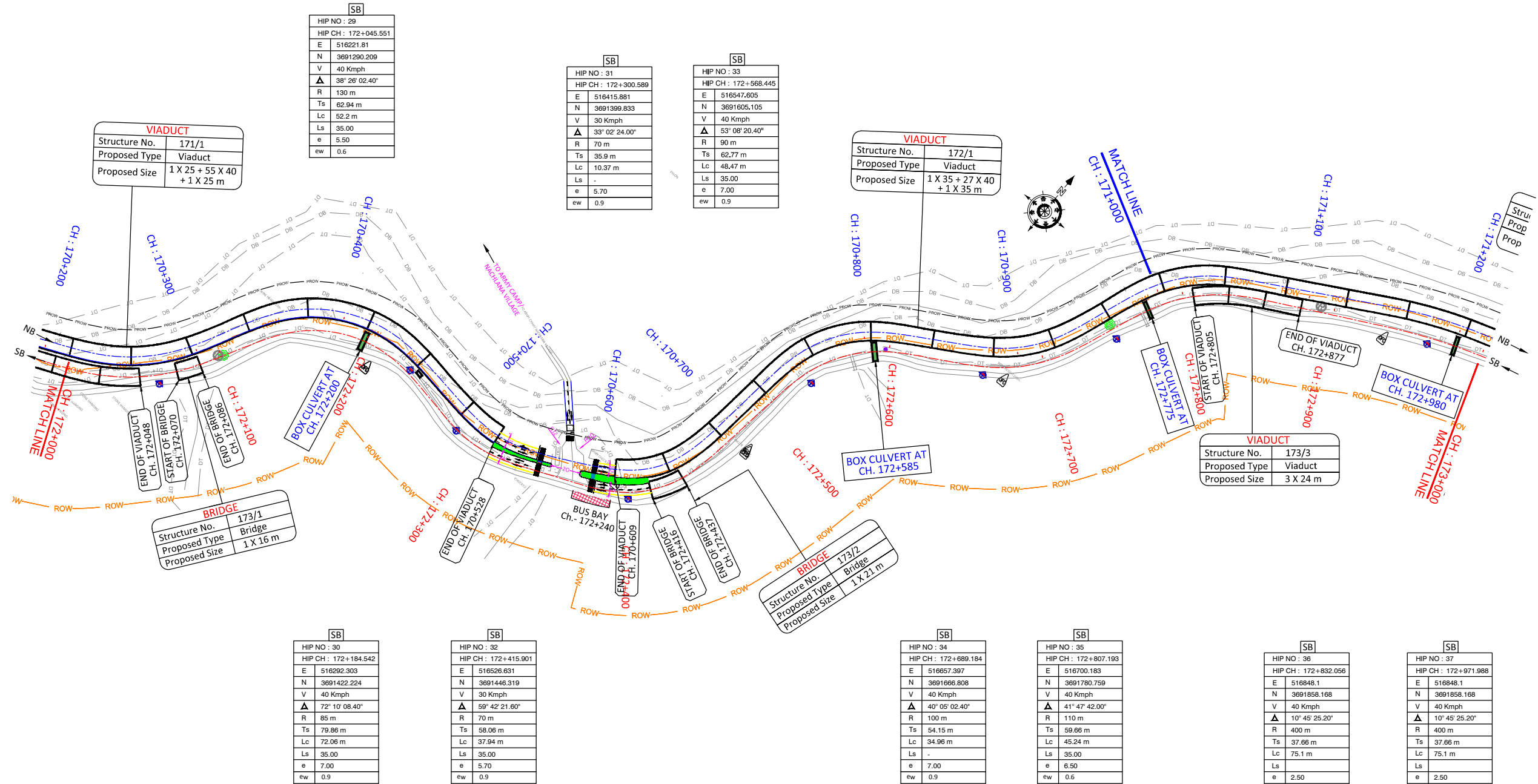
Drawing Title :- NHAI / RAM - BANI / 19

Rev  
R0



TO RAMBAN

TO BANIHAL



Legend :-

North Bound Center Line	---
South Bound Center Line	---
Tunnel Tube (Edge)	---
Right of Way (ROW)	—ROW—ROW—
Proposed Right of Way (PROW)	—PROW—PROW—

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-

NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Lining of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

Plan  
Ch.172+000 To 173+000  
Nachlana ( Viaduct )



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

Shawal Sharma  
Prepared by

Madhusudhan Rao  
Designed by

Manoj Kumar  
Checked by

Sandip Bhattacharjee  
Approved by

R1	June - 2021	Plan
R0	March - 2021	Plan
Revisions	Date	Description

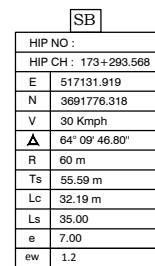
Revisions

Drawing Title :- NHAI / RAM - BANI / PLAN / 20

Rev.  
R0

Scale :- 1 : 2000 (on A2 Sheet)

TO BANIHAL ►



SB	
HIP NO : 38	
HIP CH : 173+103.844	
E	516976.745
N	3691897.173
V	30 Kmph
▲	54° 46' 48.00"
R	50 m
Ts	43.86 m
Lc	12.8 m
Ls	35.00
e	7.00
ew	1.2

SB	
HIP NO :	
HIP CH : 173+571.307	
E	517386.05
N	3691901.647
V	40 Kmph
Δ	27° 33' 00.00"
R	230 m
Ts	68.91 m
Lc	85.59 m
Ls	25.00
e	3.10
ew	0.6

  
परिपोषता निर्देशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पी.ओ. बॉक्स ६०००२, रायपुर  
National Highway Authority of India, P.O. Raipur

Divisional Forest Officer  
Ramban Forest Division  
Ramban

Legend :-

North Bound Center Line

South Bound Center Line

Tunnel Tube (Edge)

Right of Way (ROW)

Proposed Right of Way (PROW)

Note:- 1. All Dimensions are in meter, unless otherwise specified.





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Project Title :-

Plan  
Ch.173+000 To 173+638  
Nachlana ( Viaduct )



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

			
Shawal Sharma	Madhusudhan Rao	Manoj Kumar	Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

Drawing Title :- NHAI / RAM - BANI / PLAN / 21

Rev.  
R0

Scale :- 1 : 2000 (on A2 Sheet)



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode



## SECTION - 2

◀ TO RAMBAN

TO BANIHAL ►

HIP NO : 1	
HIP CH : 173+710.914	
E	518581.775
N	3693059.285
V	40 Kmph
$\Delta$	47° 52' 01.20"
R	100 m
Ts	54.46 m
Lc	63.54 m
Ls	20.00
e	7.00
Ew	0.9

HIP NO : 2	
HIP CH : 173+823.910	
E	518645.364
N	3693156.835
V	40 Kmph
Δ	29° 55' 01.20"
R	120 m
Ts	42.1 m
Lc	42.66 m
Ls	20.00
e	7.00
Ew	0.9

[NB]	
HIP NO : 3	
HIP CH : 173+956.877	
E	518652.833
N	3693291.209
V	40 Kmph
Δ	34° 31' 15.60"
R	80 m
Ts	37.45 m
Lc	23.2 m
Ls	25.00
e	7.00
Ew	0.9

HIP NO : 1	
HIP CH : 175+221.320	
E	518598.159
N	3693059.064
V	40 Kmph
$\Delta$	44° 00' 36.00"
R	90 m
Ts	48.98 m
Lc	44.13 m
Ls	25.00
e	7.00
Ew	0.9

	SB
HIP NO : 2	
HIP CH : 175+342.543	
E	518671.819
N	3693161.669
V	40 Kmph
$\Delta$	44° 37' 58.80"
R	150 m
Ts	69.09 m
Lc	101.85 m
Ls	15.00
e	4.7
Ew	0.9

5 x 30m		SB
HIP NO : 3		
HIP CH : 175 + 460.575		
E	518652.741	
N	3693282.686	
V	30 Kmph	
Δ	45° 07' 48.00"	
R	55 m	
Ts	32.97 m	
Lc	23.32 m	
Ls	20.00	
e	7.00	
Ew	1.2	

[SB]	
HIP NO : 4	
HIP CH : 175+551.814	
E	518708.877
N	3693359.465
V	40 Kmph
Δ	52° 25' 33.60"
R	60 m
Ts	50.01 m
Lc	14.9 m
Ls	40.00
e	7.00
Ew	0.9

Divisional Forest Officer  
Ramban Forest Division  
Ramban

परियोजना निदेशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना इकाई रामन  
National Highway Authority of India, P.U., Ramnagar

Legend :-

North Bound Center Line ————

South Bound Center Line ————

Tunnel Tube (Edge) ————

Right of Way (ROW) —ROW—ROW—

Proposed Right of Way (PROW) —PROW—PROW—

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

---

Project Title :-





Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

PLAN  
North Bound  
Ch.-173+630 To Ch.-174+000  
and  
South Bound  
Ch.-175+100 To Ch.-175+605



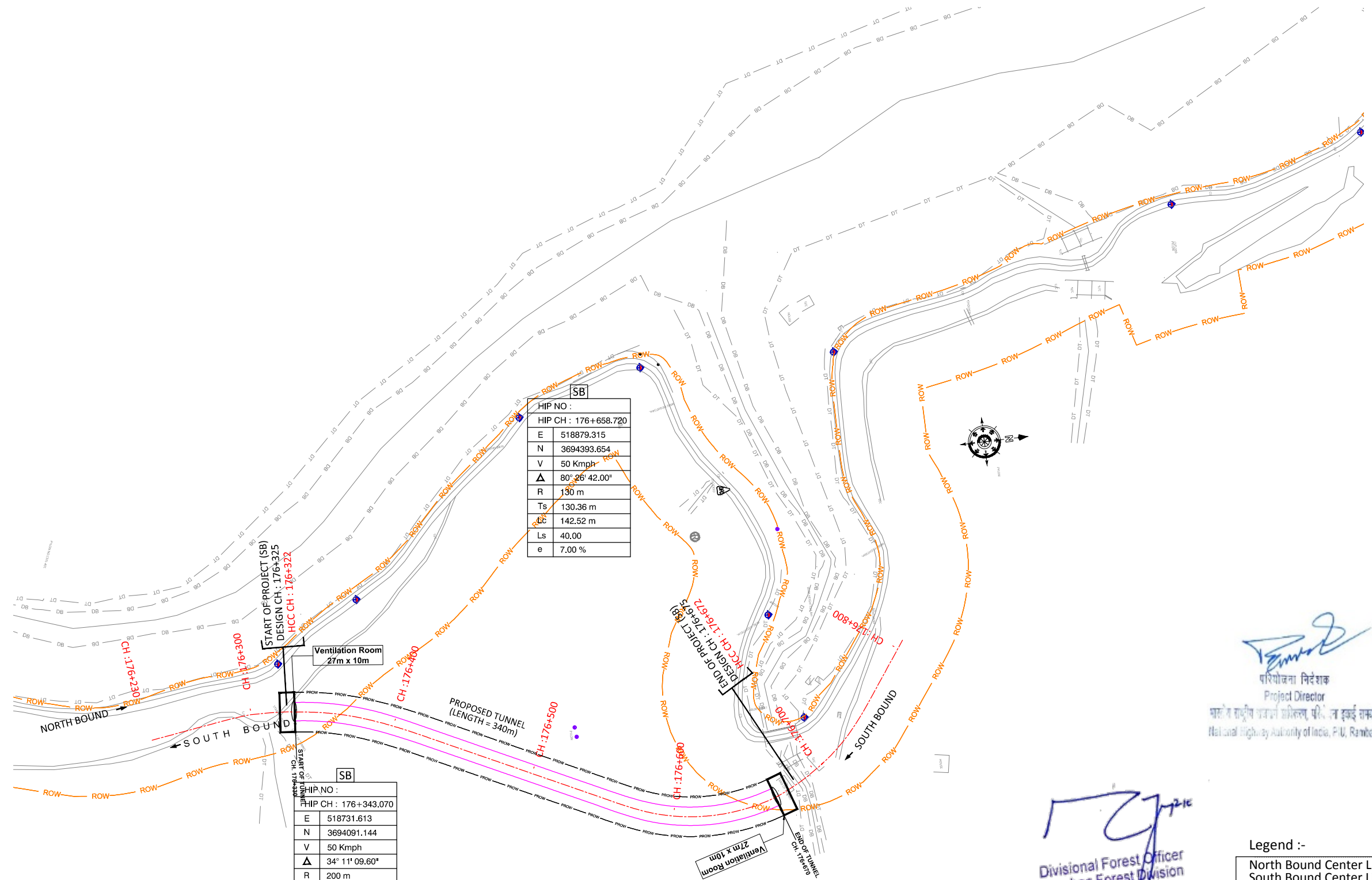
Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

 Shawal Sharma	 Madhusudhan Rao	 Manoj Kumar	 Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

R1	June - 2021	Plan
R0	March - 2021	Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHA / RAM - BANI / PLAN / 22		Rev. R0
Scale :- 1 : 2000 (on A2 Sheet)		

◀ TO RAMBAN

TO BANIHAL ►



  
परियोजना निदेशक  
Project Director  
भारत राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना इकाई, रामन  
National Highway Authority of India, PIU, Ramban

Divisional Forest Officer  
Ramban Forest Division  
Ramban

Legend :-

North Bound Center Line	— — — — —
South Bound Center Line	— — — — —
Tunnel Tube (Edge)	— — — — —
Right of Way (ROW)	— ROW — ROW —
Proposed Right of Way (PROW)	— PROW — PROW —

Note:- 1. All Dimensions are in meter, unless otherwise specified.

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

---

Project Title :-





Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.165+092 to Ch.171+855 (North Bound) and from Ch.166+895 to Ch.173+638 (South Bound) , excluding section from Ch.166+610 to Ch.167+150 (North Bound), Ch.168+425 to Ch.168+935 (South Bound) and Section from Ch.167+960 to Ch.168+168 (North Bound), Ch.169+745 to Ch.169+951 (South Bound) (Package-III) in the UT of Jammu & Kashmir on EPC mode

Drawing Name :-

Plan  
Ch.176+325 To Ch.176+675

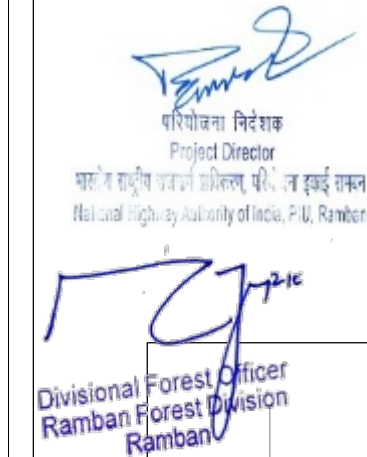


Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

 Shawal Sharma	 Madhusudhan Rao	 Manoj Kumar	 Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

Note: 1. All Dimensions are in meters, unless otherwise specified.		
R1	June - 2021	Plan
R0	March - 2021	Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM - BANI / PLAN / 23		Rev. R0
Scale :- 1 : 2000 (on A2 Sheet)		

# PORTAL DRAWING

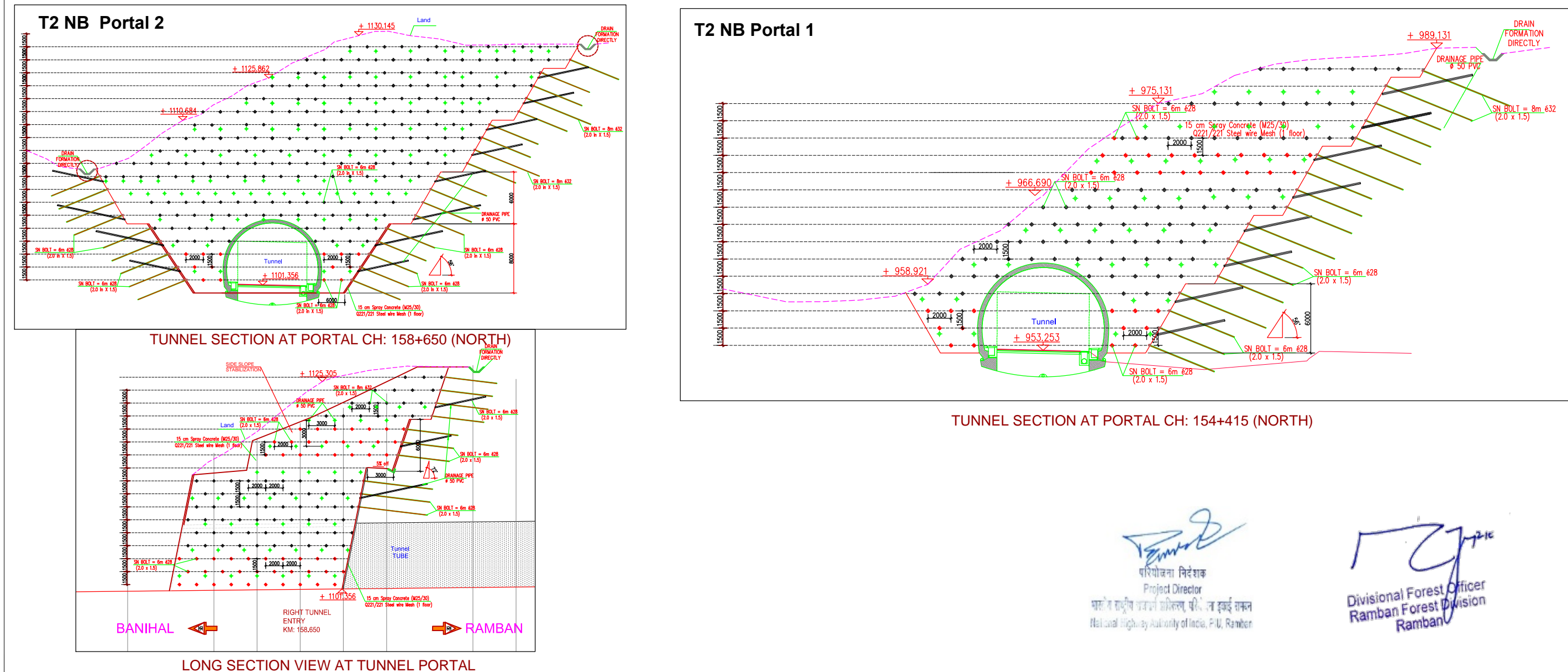
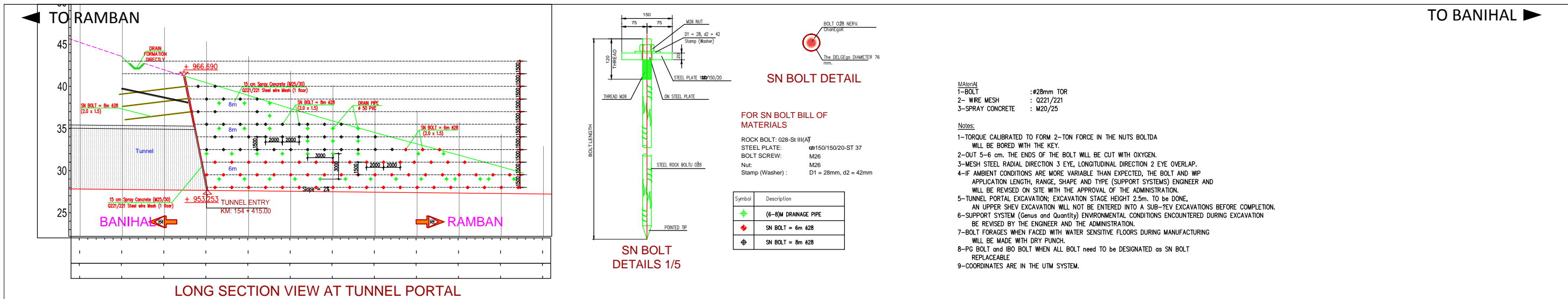









- 1-TORQUE CALIBRATED TO FORM 2-TON FORCE IN THE NUTS BOLTD  
WILL BE BORED WITH THE KEY.
- 2-OUT 5-6 cm. THE ENDS OF THE BOLT WILL BE CUT WITH OXYGEN.
- 3-MESH STEEL RADIAL DIRECTION 3 EYE, LONGITUDINAL DIRECTION 2 EYE OVERLAP.
- 4-IF AMBIENT CONDITIONS ARE MORE VARIABLE THAN EXPECTED, THE BOLT AND WIP  
APPLICATION LENGTH, RANGE, SHAPE AND TYPE (SUPPORT SYSTEMS) ENGINEER AND  
WILL BE REVISED ON SITE WITH THE APPROVAL OF THE ADMINISTRATION.
- 5-TUNNEL PORTAL EXCAVATION; EXCAVATION STAGE HEIGHT 2.5m. TO BE DONE,  
AN UPPER SHEV EXCAVATION WILL NOT BE ENTERED INTO A SUB-SHV EXCAVATIONS BEFORE COMPLETION.
- 6-SUPPORT SYSTEM (Genus and Quantity) ENVIRONMENTAL CONDITIONS ENCOUNTERED DURING EXCAVATION  
BE REVISED BY THE ENGINEER AND THE ADMINISTRATION.

MAterial

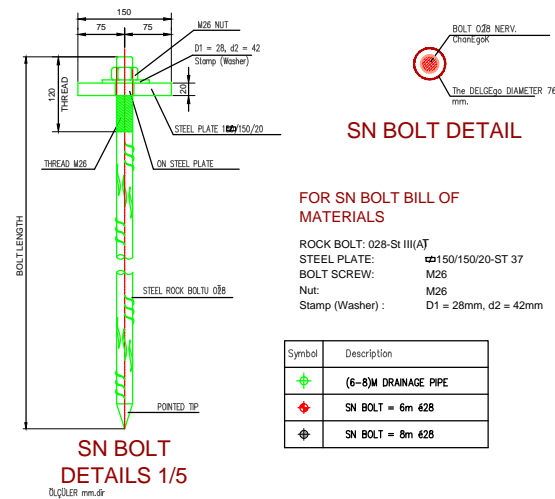
1-BOLT	: Ø28mm TOR
2- WIRE MESH	: Q221/221
3-SPRAY CONCRETE	: M20/25





<div>Client :-</div> <div><div>NATIONAL HIGHWAYS AUTHORITY OF INDIA</div></div>	<div>Project Title :-</div> <div>Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu &amp; Kashmir on EPC Mode</div>	<div>Drawing Name :-</div> <div>FINAL FEASIBILITY REPORT TUNNEL (AT2) CH:154 + 415.00-CH: 158 + 650.00 (NORTH) PORTAL EXCAVATION PLAN AND SECTIONS</div>	<div><div>Intercontinental Consultants &amp; Technocrats Pvt. Ltd., in Joint Venture with ALTINOK Consulting Engineering Inc. A-8, Green Park, New Delhi - 110016, India</div></div>	R1	June - 2021	Initial Plan	
				R0	March - 2021	Initial Plan	
				Revisions	Date	Description	
				Revisions			
				Drawing Title :- NHAI / RAM-BANI / NB/PD/ 01			Rev. R0
 <div>YGP</div>	 <div>RC</div>	 <div>SWB</div>	 <div>Sandip Bhattacharjee</div>	Drawing Title :- NHAI / RAM-BANI / NB/PD/ 01			Rev. R0
Prepared by	Designed by	Checked by	Approved by	Scale:- N.T.S			Sheet No :- 01 of 03

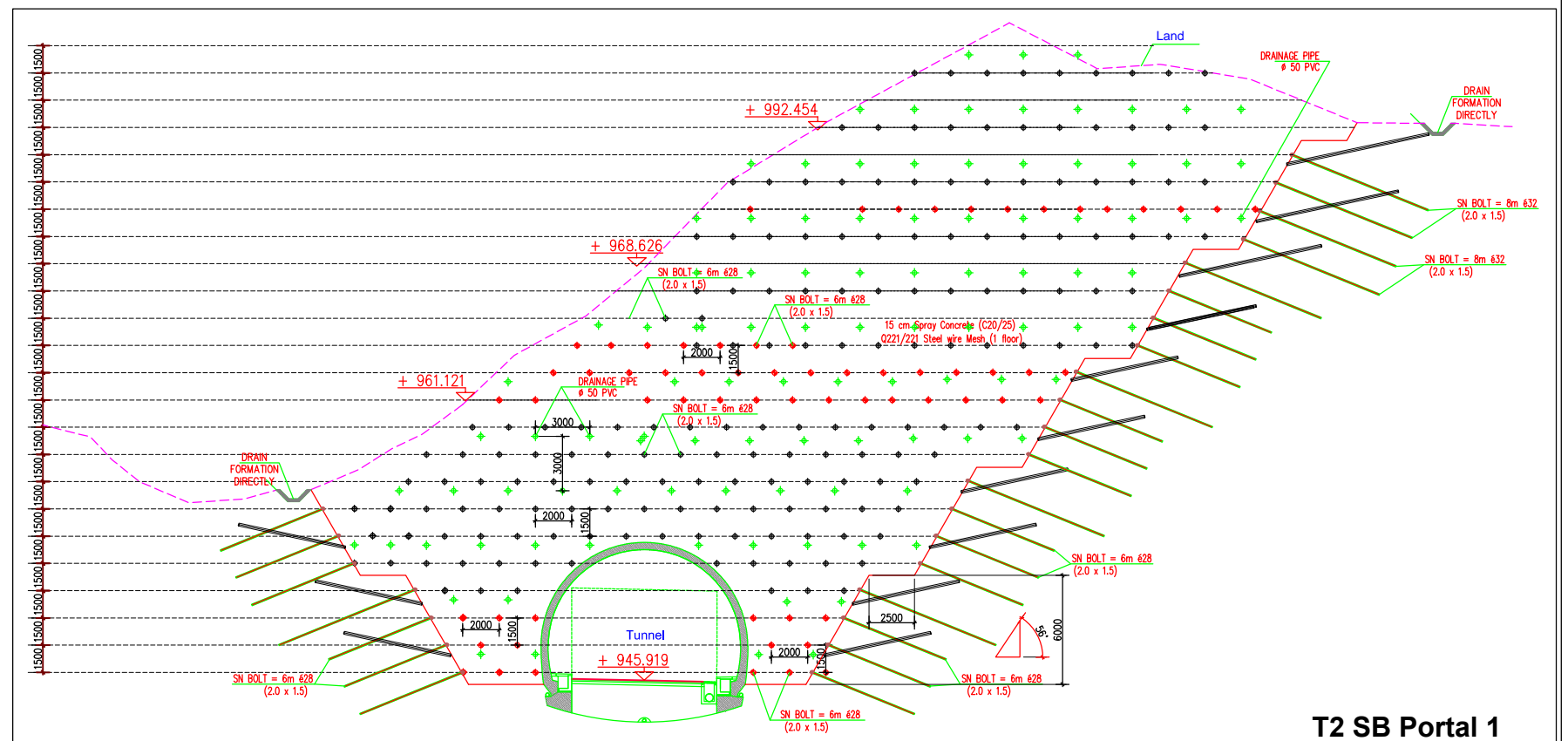
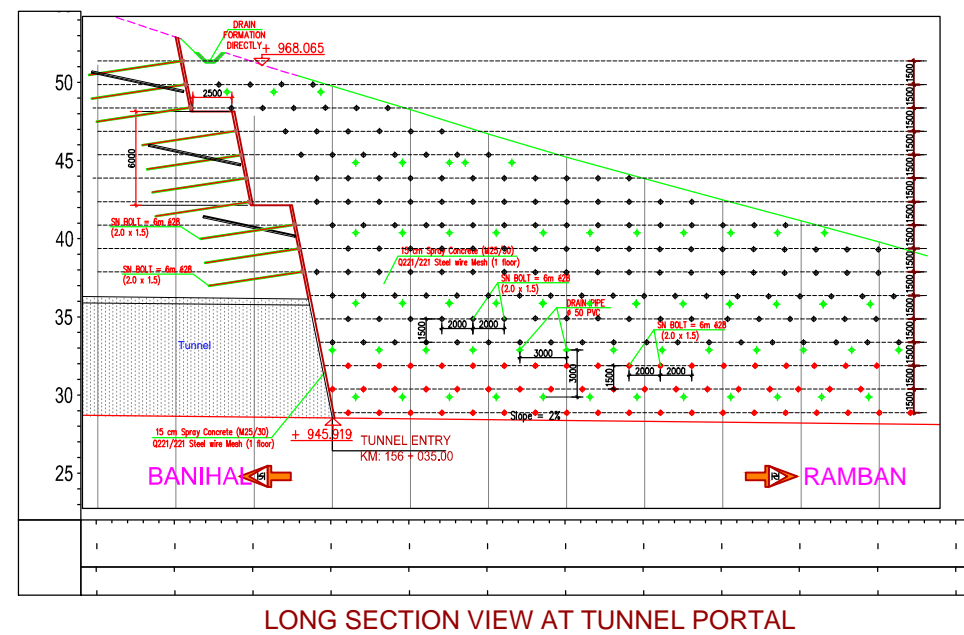
TO BANIHAL ►



<u>Material</u>	
1-BOLT	: Ø28mm TOR
2- WIRE MESH	: Q221/221
3-SPRAY CONCRETE	: M20/25

### Notes

- 1-TORQUE CALIBRATED TO FORM 2-TON FORCE IN THE NUTS BOLDTA WILL BE BORED WITH THE KEY.
- 2-OUT 5-6 cm. THE ENDS OF THE BOLT WILL BE CUT WITH OXYGEN.
- 3-MESH STEEL RADIAL DIRECTION 3 EYE, LONGITUDINAL DIRECTION 2 EYE OVERLAP.
- 4-IF AMBIENT CONDITIONS ARE MORE VARIABLE THAN EXPECTED, THE BOLT AND WIP APPLICATION LENGTH, RANGE, SHAPE AND TYPE (SUPPORT SYSTEMS) ENGINEER AND WILL BE REVISED ON SITE WITH THE APPROVAL OF THE ADMINISTRATION.
- 5-TUNNEL PORTAL EXCAVATION: EXCAVATION STAGE HEIGHT 2.5m. TO BE DONE, AN UPPER SHEV EXCAVATION WILL NOT BE ENTERED INTO A SUB-REV EXCAVATIONS BEFORE COMPLETION.
- 6-SUPPORT SYSTEM (Genus and Quantity) ENVIRONMENTAL CONDITIONS ENCOUNTERED DURING EXCAVATION BE REVISED BY THE ENGINEER AND THE ADMINISTRATION.
- 7-BOLT FORAGES WHEN FACED WITH WATER SENSITIVE FLOORS DURING MANUFACTURING WILL BE MADE WITH DRY PUNCH.
- 8-PG BOLT AND IBO BOLT WHEN ALL BOLT NEED TO be DESIGNATED as SN BOLT REPLACEABLE
- 9-COORDINATES ARE IN THE UTM SYSTEM.



TUNNEL SECTION AT PORTAL CH: 156+035 (SOUTH)

  
परियोजना निर्देशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पी.यू.आर. इकाई रामन  
National Highway Authority of India, P.U. Ramnagar

Divisional Forest Officer  
Ramban Forest Division  
Ramban

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-





Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-
-----------------

FINAL FEASIBILITY REPORT  
TUNNEL (AT2)  
CH:156 + 035.00 (SOUTH)  
PORTAL EXCAVATION PLAN  
AND SECTIONS



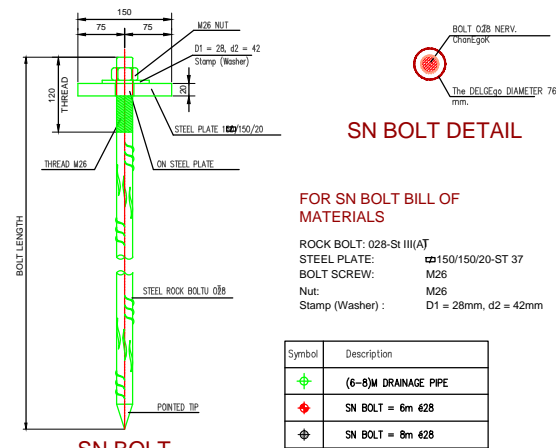
Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

 YGP	 RC	 SWB	 Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

R1	June - 2021	Initial Plan
R0	March - 2021	Initial Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM-BANI / SB/PD/ 03		Rev. R0
Scale:- N.T.S		Sheet No :- 03 of 03

◀ TO RAMBAN

TO BANIHAL ▶



### SN BOLT DETAIL

#### FOR SN BOLT BILL OF MATERIALS

ROCK BOLT: Q28-SI III(A)  
STEEL PLATE: 100/150/20-ST 37  
BOLT SCREW: M26  
Nut: M26  
Stamp (Washer): D1 = 28mm, d2 = 42mm

Symbol	Description
+	(6-8)M DRAINAGE PIPE
+	SN BOLT = 6m 428
+	SN BOLT = 8m 428

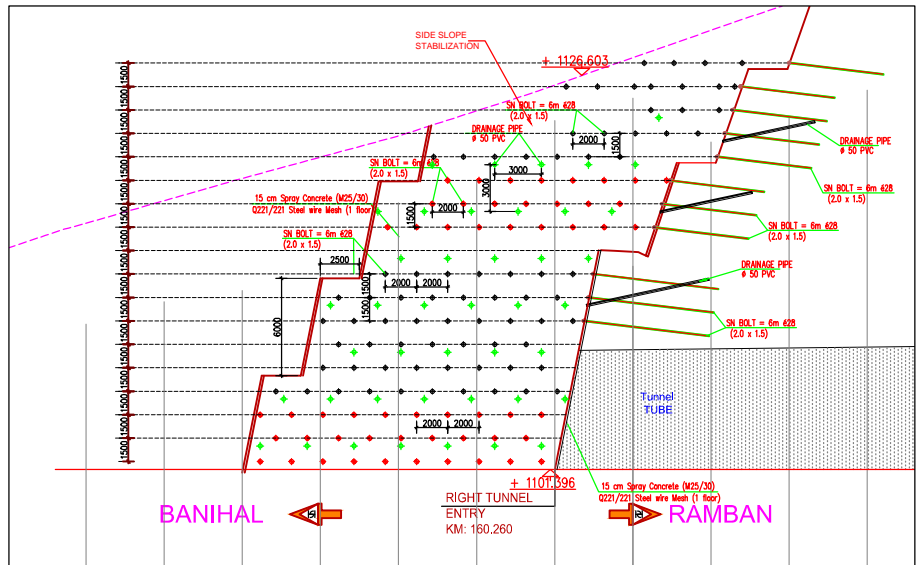
MATERIAL  
1-BOLT : #28mm TOR  
2- WIRE MESH : Q221/221  
3-SPRAY CONCRETE : M20/25

#### Notes:

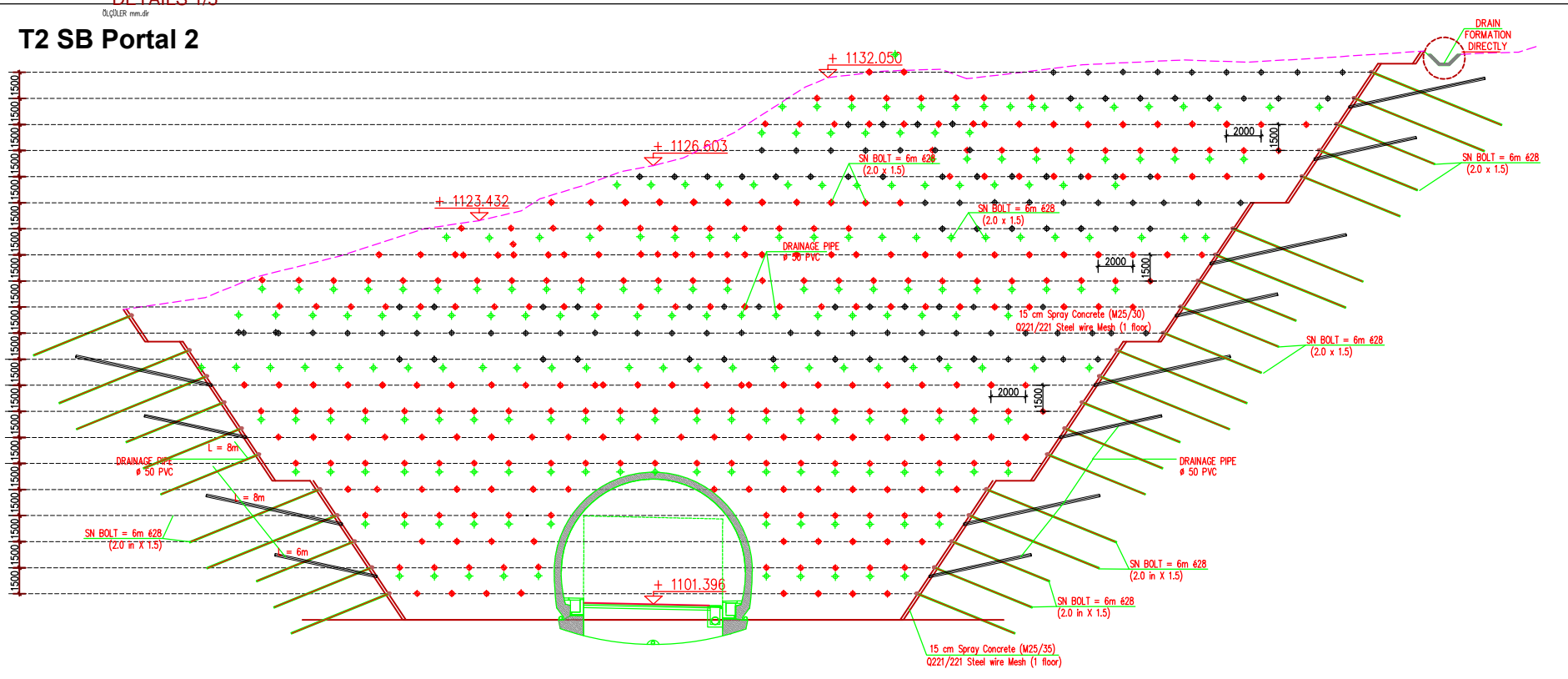
- 1-TORQUE CALIBRATED TO FORM 2-TON FORCE IN THE NUTS BOLTA WILL BE BORED WITH THE KEY.
- 2-OUT 5-6 cm. THE ENDS OF THE BOLT WILL BE CUT WITH OXYGEN.
- 3-MESH STEEL RADIAL DIRECTION 3 EYE, LONGITUDINAL DIRECTION 2 EYE OVERLAP.
- 4-IF AMBIENT CONDITIONS ARE MORE VARIABLE THAN EXPECTED, THE BOLT AND WIP APPLICATION LENGTH, RANGE, SHAPE AND TYPE (SUPPORT SYSTEMS) ENGINEER AND WILL BE REVISED ON SITE WITH THE APPROVAL OF THE ADMINISTRATION.
- 5-TUNNEL PORTAL EXCAVATION; EXCAVATION STAGE HEIGHT 2.5m. TO BE DONE, AN UPPER SHEV EXCAVATION WILL NOT BE ENTERED INTO A SUB-REV EXCAVATIONS BEFORE COMPLETION.
- 6-SUPPORT SYSTEM (Genus and Quantity) ENVIRONMENTAL CONDITIONS ENCOUNTERED DURING EXCAVATION BE REVISED BY THE ENGINEER AND THE ADMINISTRATION.
- 7-BOLT FORAGES WHEN FACED WITH WATER SENSITIVE FLOORS DURING MANUFACTURING WILL BE MADE WITH DRY PUNCH.
- 8-PG BOLT and IBO BOLT WHEN ALL BOLT need to be DESIGNATED as SN BOLT REPLACEABLE.
- 9-COORDINATES ARE IN THE UTM SYSTEM.

### SN BOLT DETAILS 1/5

### T2 SB Portal 2



LONG SECTION VIEW AT TUNNEL PORTAL



TUNNEL SECTION AT PORTAL CH: 160+260 (SOUTH)

परिचालना निर्देशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, पी.यू. नई दिल्ली  
National Highway Authority of India, PIU, Ramban

Divisional Forest Officer  
Ramban Forest Division

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.154+210 to Ch.158+675 (North Bound) and from Ch.155+940 to Ch.160+282 (South Bound) including Construction of Twin Tube Tunnel (Package-I) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-

FINAL FEASIBILITY REPORT  
TUNNEL (AT2)  
CH: 160 + 260.00 (SOUTH)  
PORTAL EXCAVATION PLAN  
AND SECTIONS



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India



Prepared by



Designed by



Checked by



Approved by

R1	June - 2021	Initial Plan
R0	March - 2021	Initial Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM-BANI / SB/PD/ 02		Rev. R0
Scale:- N.T.S		Sheet No :- 02 of 03

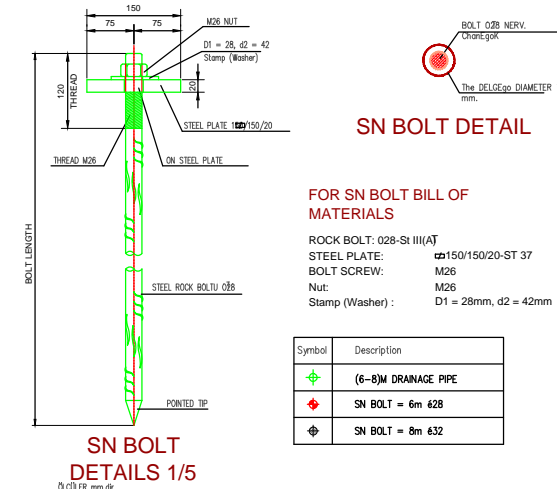


◀ TO RAMBAN

TO BANIHAL ►

Divisional Forest Officer  
Ramban Forest Division  
Ramban

परियोजना निदेशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना इकाई रामन  
National Highway Authority of India, P.U. Ramnagar

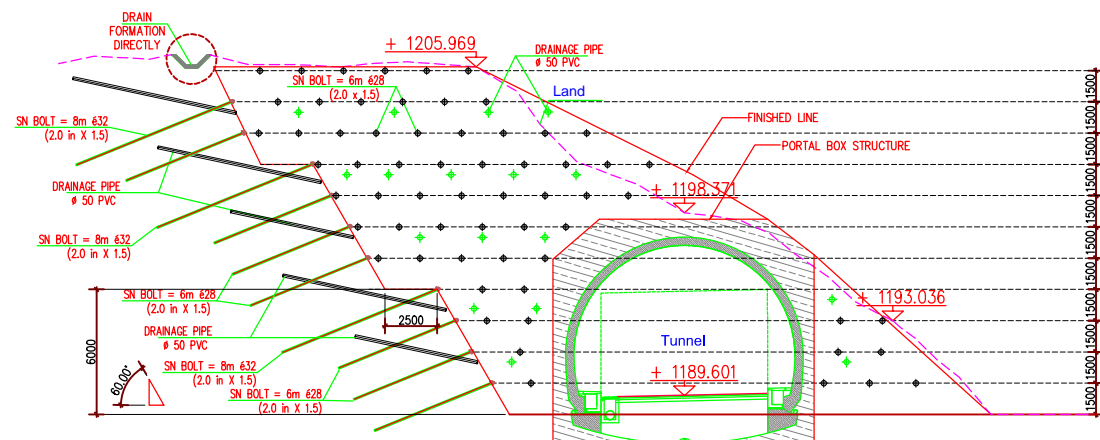


<u>Material</u>	
1-BOLT	: Ø28mm TOR
2- WIRE MESH	: Q221/221
3-SPRAY CONCRETE	: M20/25

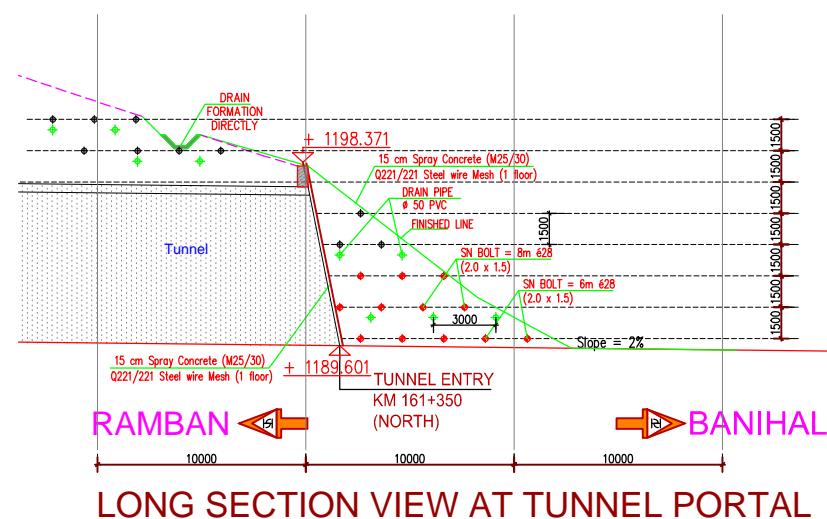
Notes:

- 1-TORQUE CALIBRATED TO FORM 2-TON FORCE IN THE NUTS BOLTDA  
WILL BE BORED WITH THE KEY.
- 2-OUT 5-6 cm. THE ENDS OF THE BOLT WILL BE CUT WITH OXYGEN.
- 3-MESH STEEL RADIAL DIRECTION 3 EYE, LONGITUDINAL DIRECTION 2 EYE. OVERLAP.
- 4-IF AMBIENT CONDITIONS ARE MORE VARIABLE THAN EXPECTED, THE BOLT AND WIP  
APPLICATION LENGTH, RANGE, SHAPE AND TYPE (SUPPORT SYSTEMS) ENGINEER AND  
WILL BE REVISED ON SITE WITH THE APPROVAL OF THE ADMINISTRATION.
- 5-TUNNEL PORTAL EXCAVATION; EXCAVATION SHAPE HEIGHT 2.5m. TO BE DONE,  
AN UPPER SHEV EXCAVATION WILL NOT BE ENTERED INTO A SUB-SEV EXCAVATIONS BEFORE COMPLETION.
- 6-SUPPORT SYSTEM (Genus and Quantity) ENVIRONMENTAL CONDITIONS ENCOUNTERED DURING EXCAVATION  
BE REVISYD BY THE ENGINEER AND THE ADMINISTRATION.
- 7-BOLT FORAGES WHEN FACED WITH WATER SENSITIVE FLOORS DURING MANUFACTURING  
WILL BE MADE WITH DRY PUNCH.
- 8-PC BOLT AND IBO BOLT WHEN ALL BOLT need to BE DESIGNATED AS SN BOLT  
REPLACEABLE
- 9-COORDINATES ARE IN THE UTM SYSTEM.

### T3 NB Portal 2

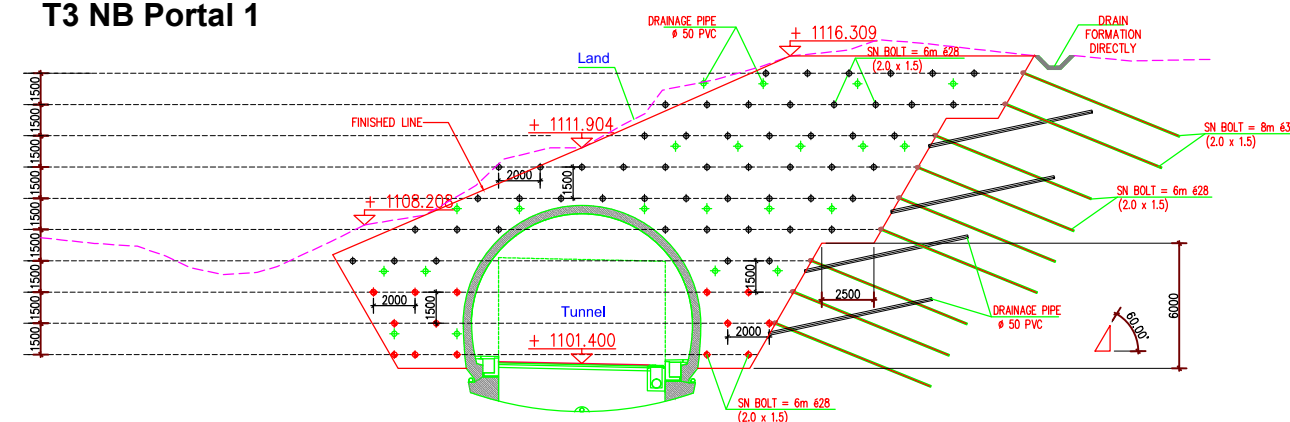


### TUNNEL SECTION AT PORTAL CH : 161+350 (NORTH)

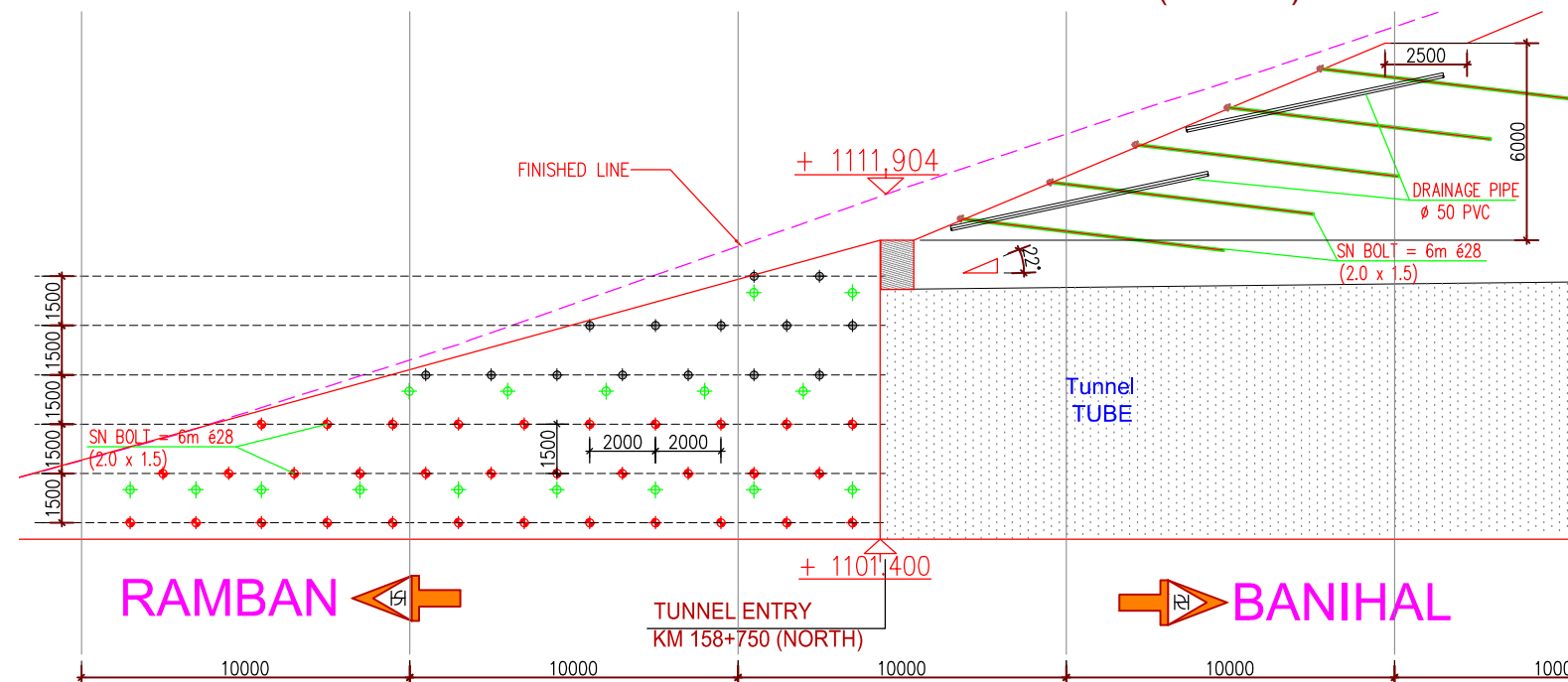


## LONG SECTION VIEW AT TUNNEL PORTAL

### T3 NB Portal 1



### TUNNEL SECTION AT PORTAL CH : 158+750 (NORTH)



### LONG SECTION VIEW AT TUNNEL PORTAL

Client :-
-----------



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

---

Project Title :-





Construction of Four Lining of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.158+675 to Ch.164+660 (North Bound) and Ch.160+282 to Ch.163+368 (South Bound) connecting with Existing Tunnel-T4) excluding Ch.161+544 to Ch.164+100 (North Bound) including Construction of Twin Tube Tunnel (Package-II) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-
-----------------

FINAL FEASIBILITY REPORT  
TUNNEL (AT3)  
CH:158 + 750.00-CH: 161 + 350.00 (NORTH)  
PORTAL EXCAVATION PLAN  
AND SECTIONS



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

 YGP	 ANP	 SWB	 Sandip Bhattacharjee
Prepared by	Designed by	Checked by	Approved by

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R1

June - 2021

Initial Plan

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R0

March - 2021

Initial Plan

## Revisions

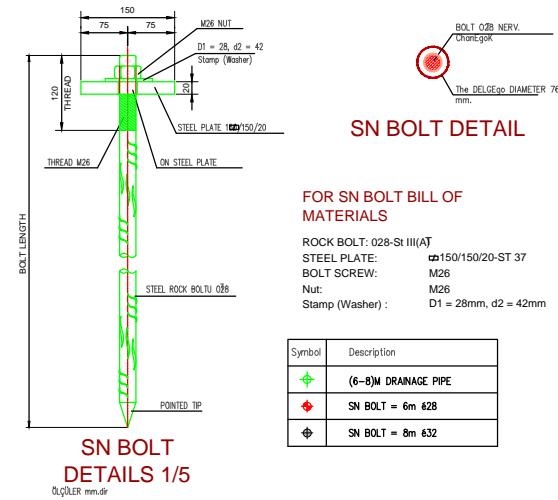
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Rev.	R0
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Scale:- N.T.S

◀ TO RAMBAN

TO BANIHAL ►

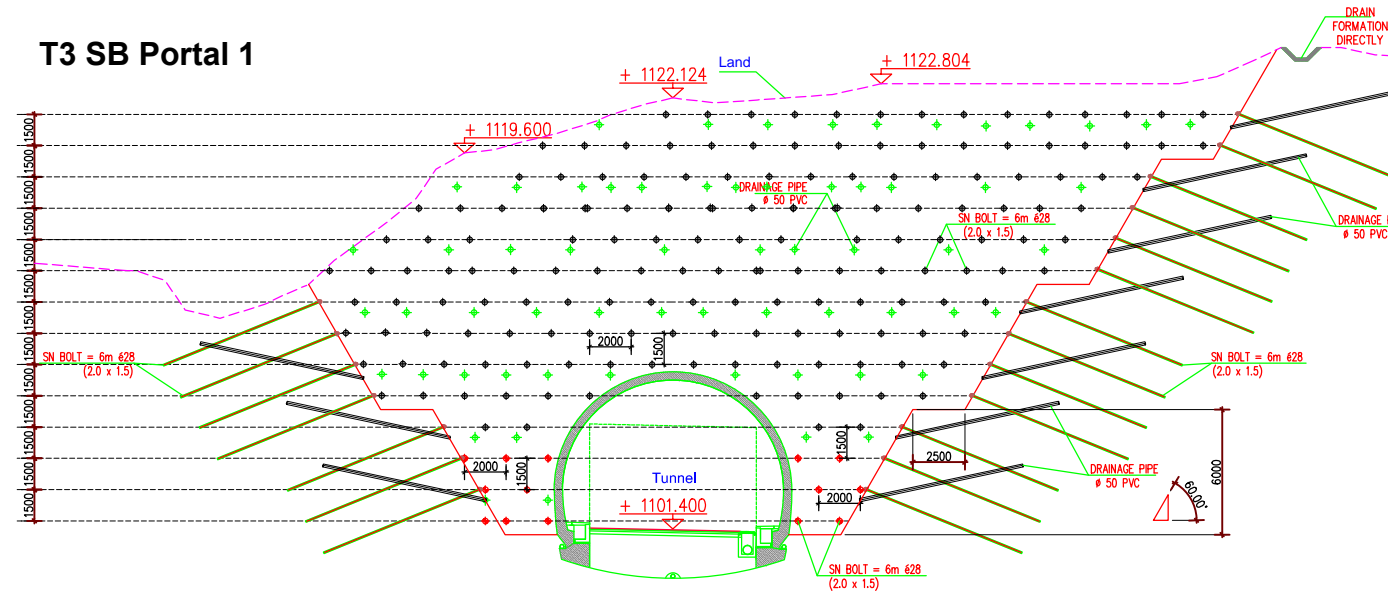


<u>Material</u>	
1-BOLT	: Ø28mm TOR
2- WIRE MESH	: Q221/221
3-SPRAY CONCRETE	: M20/25

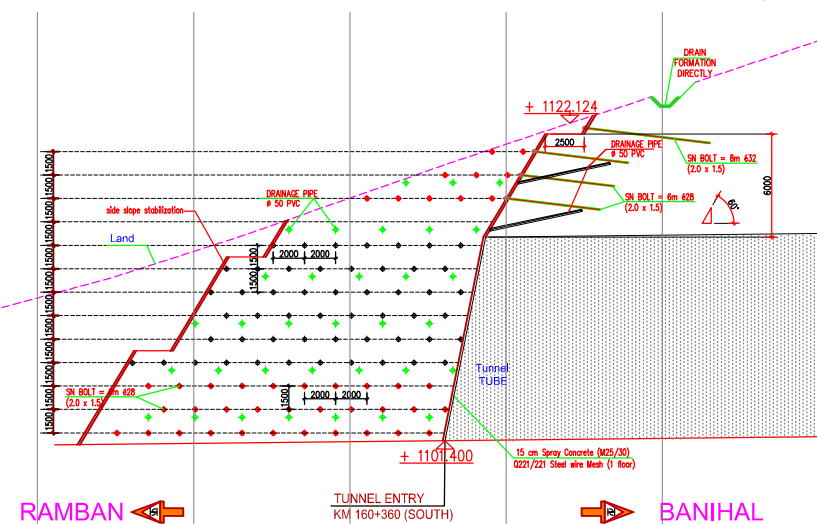
Notes:

- 1-TORQUE CALIBRATED TO FORM 2-TON FORCE IN THE NUTS BOLDTA WILL BE BORED WITH THE KEY.
- 2-OUT 5-6 cm. THE ENDS OF THE BOLT WILL BE CUT WITH OXYGEN.
- 3-MESH STEEL RADIAL DIRECTION 3 EYE, LONGITUDINAL DIRECTION 2 EYE OVERLAP.
- 4-IF AMBIENT CONDITIONS ARE MORE VARIABLE THAN EXPECTED, THE BOLT AND WIP APPLICATION LENGTH, RANGE, SHAPE AND TYPE (SUPPORT SYSTEMS) ENGINEER AND WILL BE REVISED ON SITE WITH THE APPROVAL OF THE ADMINISTRATION.
- 5-TUNNEL PORTAL EXCAVATION: EXCAVATION STAGE HEIGHT 2.5m. TO BE DONE, AN UPPER SHEV EXCAVATION WILL NOT BE ENTERED INTO A SUB-YEV EXCAVATIONS BEFORE COMPLETION.
- 6-SUPPORT SYSTEM (Genus and Quantity) ENVIRONMENTAL CONDITIONS ENCOUNTERED DURING EXCAVATION BE REVISED BY THE ENGINEER AND THE ADMINISTRATION.
- 7-BOLT FORAGES WHEN FACED WITH WATER SENSITIVE FLOORS DURING MANUFACTURING WILL BE MADE WITH DRY PUNCH.
- 8-PG BOLT AND IBO BOLT WHEN ALL BOLT need to be DESIGNATED as SN BOLT REPLACEABLE
- 9-COORDINATES ARE IN THE UTM SYSTEM.

### T3 SB Portal 1



### TUNNEL SECTION AT PORTAL CH: 160+360 (SOUTH)



## LONG SECTION VIEW AT TUNNEL PORTAL

Divisional Forest Officer  
Ramban Forest Division  
Ramban

  
परियोजना निर्देशक  
Project Director  
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना इकाई, बम्बैन  
National Highway Authority of India, P.U., Mumbai

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

---

Project Title :-

Construction of Four Lining of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.158+675 to Ch.164+660 (North Bound) and Ch.160+282 to Ch.163+368 (South Bound connecting with Existing Tunnel-T4) excluding Ch.161+544 to Ch.164+100 (North Bound) including Construction of Twin Tube Tunnel (Package-II) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-
-----------------


FINAL FEASIBILITY REPORT  
TUNNEL (AT3)  
CH: 160 + 360.00 (SOUTH)  
PORTAL EXCAVATION PLAN  
AND SECTIONS




Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

YGP
Prepared by

ANP
Designed by

	
	SWB
	Checked by

	 Sandip Bhattacharjee
	Approved by

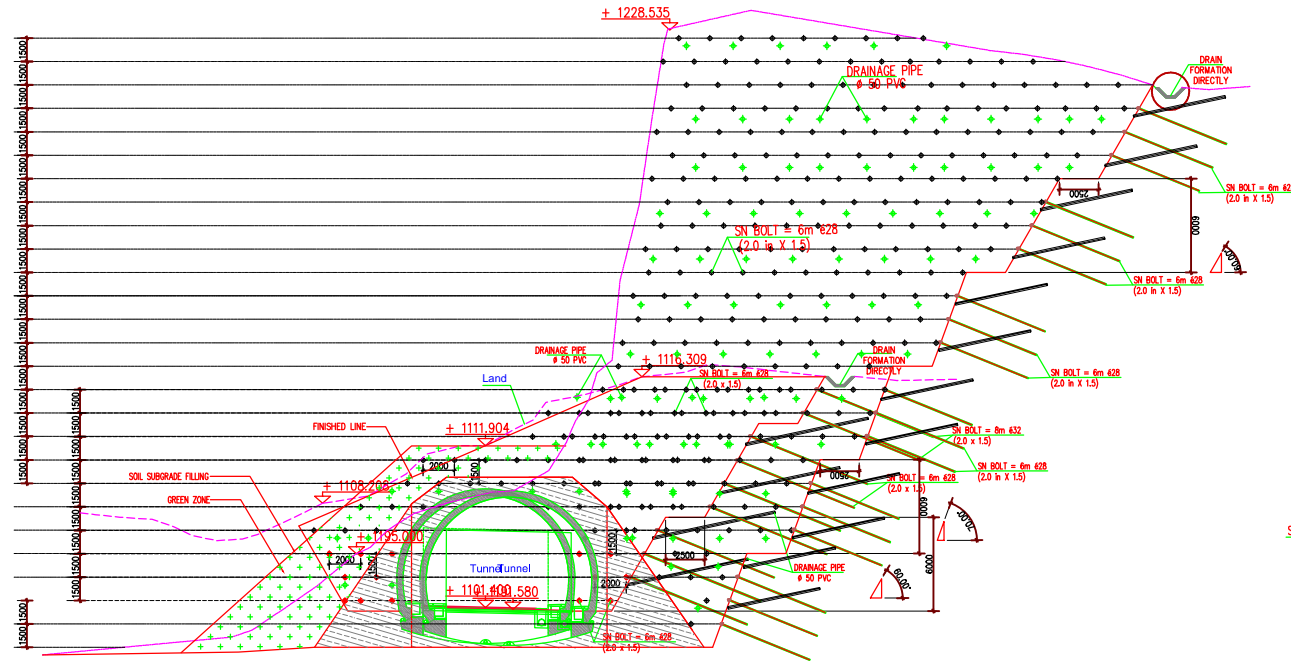
R1	June - 2021	Initial Plan
R0	March - 2021	Initial Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHA/ / RAM-BANI / SB/PD/ 02		Rev. R0
Scale:- N.T.S		



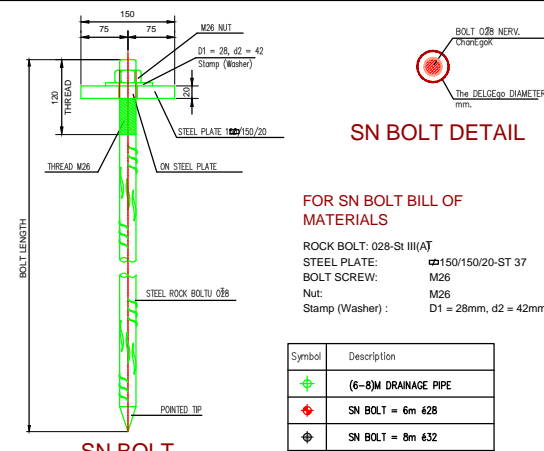
TO RAMBAN

TO BANIHAL

### T4 NB Portal 1



TUNNEL SECTION AT PORTAL CH: 164+140



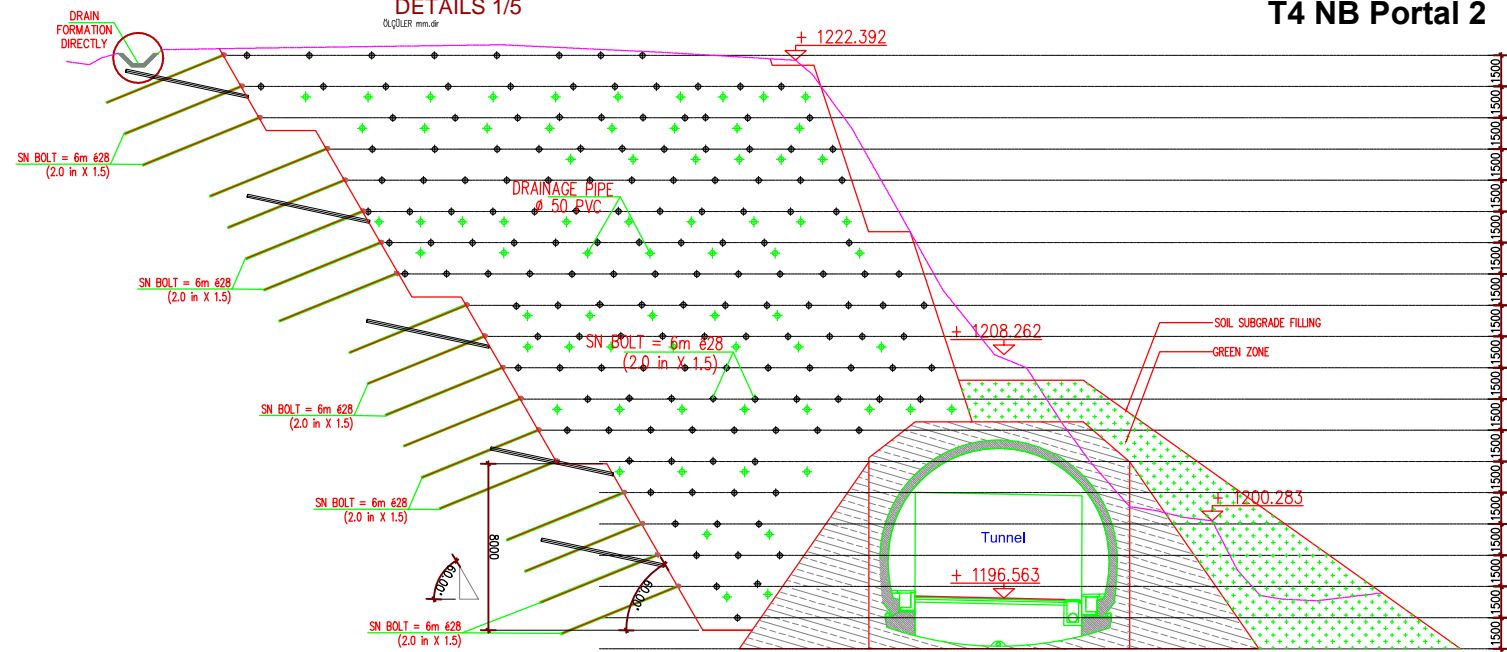
### FOR SN BOLT BILL OF MATERIALS

ROCK BOLT: 028-SI III(AT)  
STEEL PLATE: 150/150/20-ST 37  
BOLT SCREW: M26  
Nut: M26  
Stamp (Washer): D1 = 28mm, d2 = 42mm

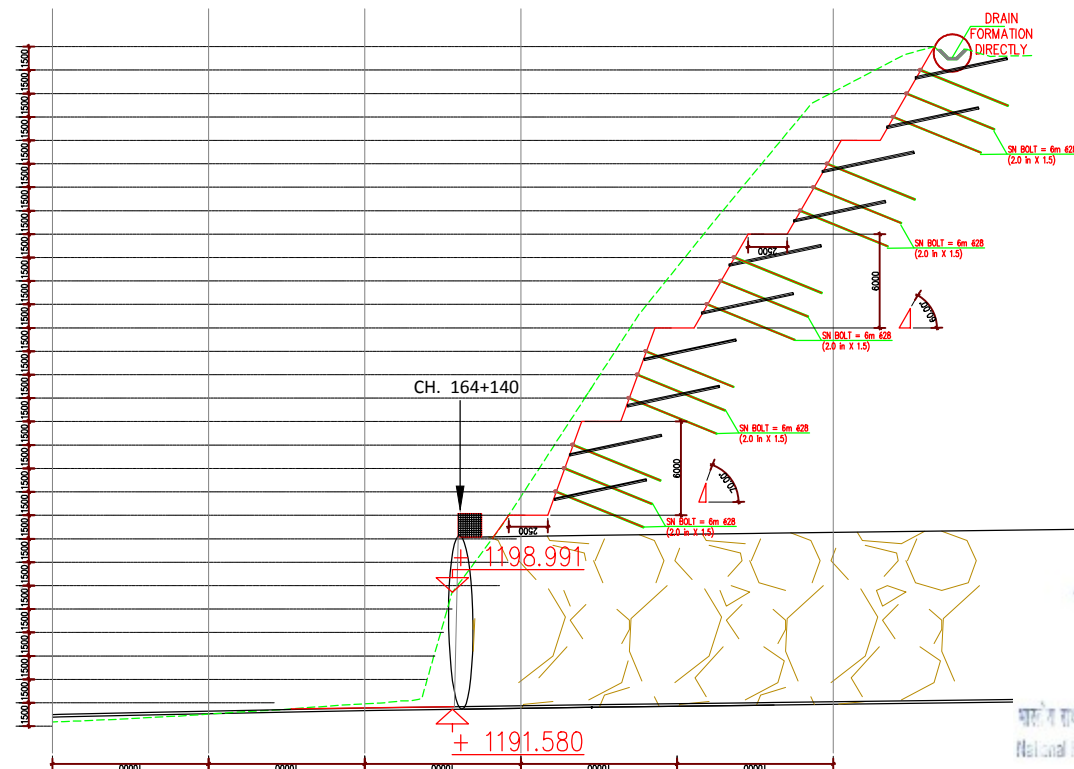
Symbol	Description
+	(6-8M) DRAINAGE PIPE
+	SN BOLT = 6m x 28
+	SN BOLT = 8m x 32

- Notes:
- 1-TORQUE CALIBRATED TO FORM 2-TON FORCE IN THE NUTS BOLTA WILL BE BORED WITH THE KEY.
  - 2-OUT 5-6 cm. THE ENDS OF THE BOLT WILL BE CUT WITH OXYGEN.
  - 3-MESH STEEL RADIAL DIRECTION 3 EYE, LONGITUDINAL DIRECTION 2 EYE OVERLAP.
  - 4-IF AMBIENT CONDITIONS ARE MORE VARIABLE THAN EXPECTED, THE BOLT AND WIP APPLICATION LENGTH, RANGE, SHAPE AND TYPE (SUPPORT SYSTEMS) ENGINEER AND WILL BE REVISED ON SITE WITH THE APPROVAL OF THE ADMINISTRATION.
  - 5-TUNNEL PORTAL EXCAVATION; EXCAVATION STAGE HEIGHT 2.5m. TO BE DONE. AN UPPER SHEV EXCAVATION WILL NOT BE ENTERED INTO A SUB-YEV EXCAVATIONS BEFORE COMPLETION.
  - 6-SUPPORT SYSTEM (Genus and Quantity) ENVIRONMENTAL CONDITIONS ENCOUNTERED DURING EXCAVATION BE REVISED BY THE ENGINEER AND THE ADMINISTRATION.
  - 7-BOLT FORAGES WHEN FACED WITH WATER SENSITIVE FLOORS DURING MANUFACTURING WILL BE MADE WITH DRY PUNCH.
  - 8-PG BOLT and IBO BOLT WHEN ALL BOLT need TO be DESIGNATED as SN BOLT REPLACEABLE
  - 9-COORDINATES ARE IN THE UTM SYSTEM.

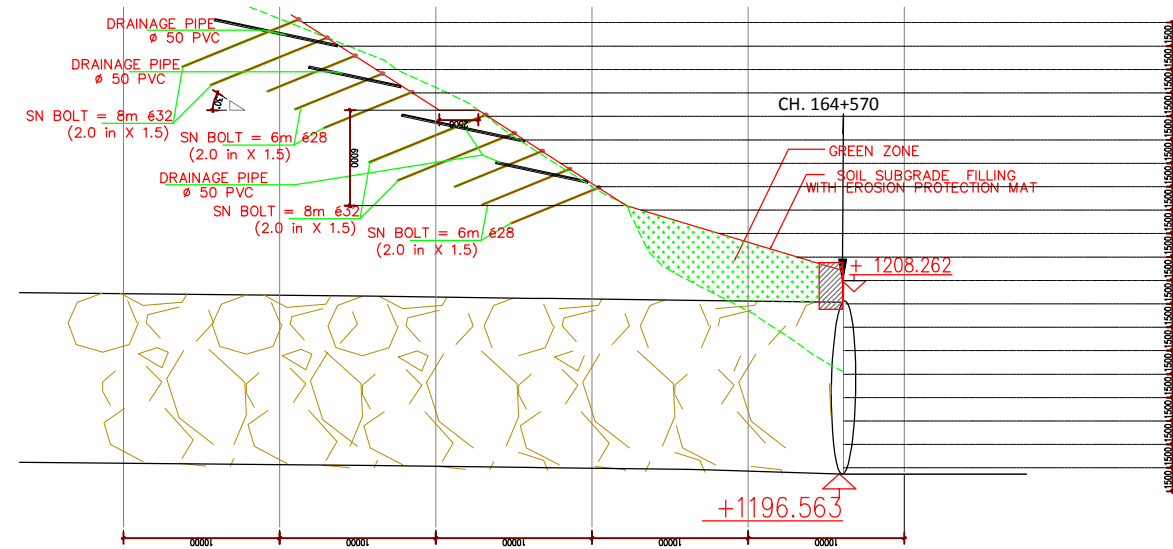
### T4 NB Portal 2



TUNNEL SECTION AT PORTAL CH: 164+570



LONG SECTION VIEW AT TUNNEL PORTAL CH: 164+140



LONG SECTION VIEW AT TUNNEL PORTAL CH: 164+570

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Lining of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.158+675 to Ch.164+660 (North Bound) and Ch.160+282 to Ch.163+368 (South Bound) connecting with Existing Tunnel-T4) excluding Ch.161+544 to Ch.164+100 (North Bound) including Construction of Twin Tube Tunnel (Package-II) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-

FINAL FEASIBILITY REPORT  
TUNNEL (AT4)  
CH: 164 + 140.00- CH: 164 + 570.00  
EXIT PORTAL EXCAVATION PLAN  
AND SECTIONS



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

Prepared by  
YGP

Designed by  
ANP

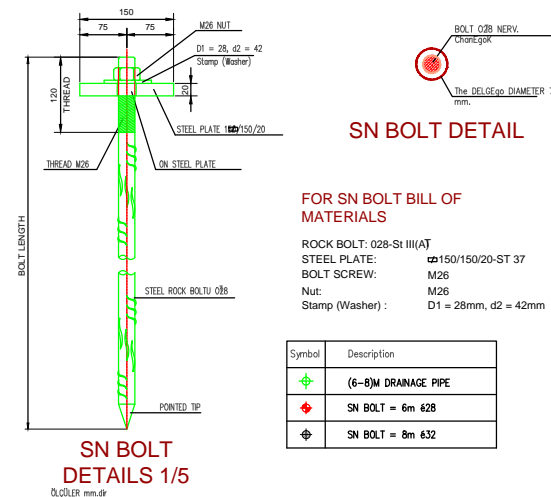
Checked by  
SWB

Approved by  
Sandip Bhattacharjee

R1	June - 2021	Initial Plan
R0	March - 2021	Initial Plan
Revisions	Date	Description
Revisions		
Drawing Title :- NHAI / RAM-BANI / NB/PD/ 03		
Scale:- N.T.S		
Rev. R0		

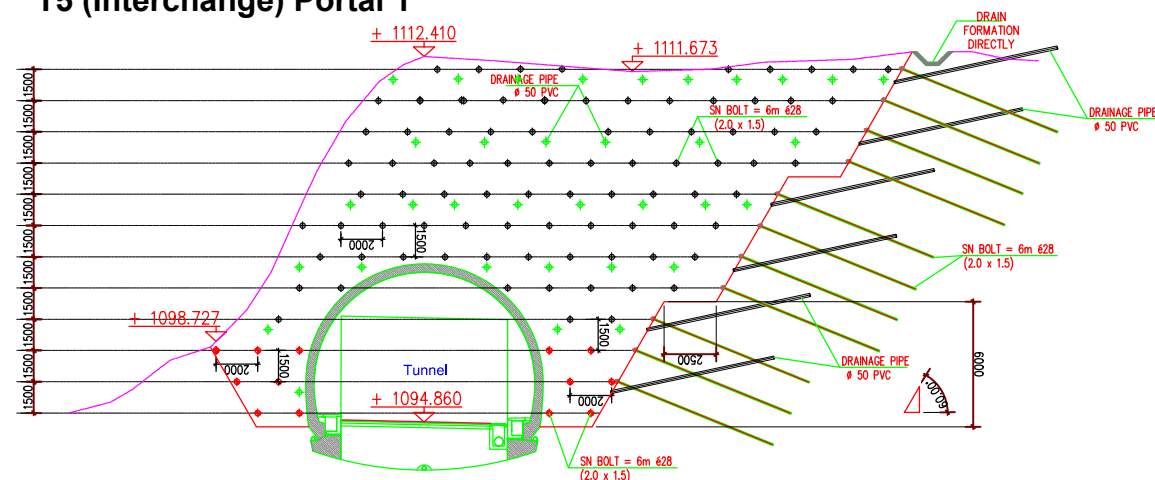
◀ TO RAMBAN

TO BANIHAL ▶

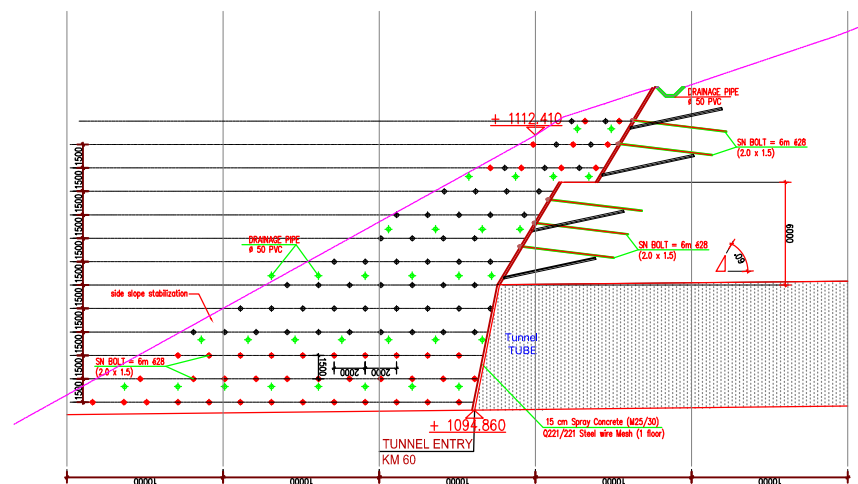


- Material:  
1-BOLT : ϕ28mm TOR  
2- WIRE MESH : Q221/221  
3-SPRAY CONCRETE : M20/25
- Notes:  
1-TORQUE CALIBRATED TO FORM 2-TON FORCE IN THE NUTS BOLTA WILL BE BORED WITH THE KEY.  
2-OUT 5-6 cm. THE ENDS OF THE BOLT WILL BE CUT WITH OXYGEN.  
3-MESH STEEL RADIAL DIRECTION 3 EYE, LONGITUDINAL DIRECTION 2 EYE OVERLAP.  
4-IF AMBIENT CONDITIONS ARE MORE VARIABLE THAN EXPECTED, THE BOLT AND WIP APPLICATION LENGTH, RANGE, SHAPE AND TYPE (SUPPORT SYSTEMS) ENGINEER AND WILL BE REVISED ON SITE WITH THE APPROVAL OF THE ADMINISTRATION.  
5-TUNNEL PORTAL EXCAVATION; EXCAVATION STAGE HEIGHT 2.5m. TO BE DONE, AN UPPER SHEV EXCAVATION WILL NOT BE ENTERED INTO A SUB-REV EXCAVATIONS BEFORE COMPLETION.  
6-SUPPORT SYSTEM (Genus and Quantity) ENVIRONMENTAL CONDITIONS ENCOUNTERED DURING EXCAVATION BE REVISED BY THE ENGINEER AND THE ADMINISTRATION.  
7-BOLT FORAGES WHEN FACED WITH WATER SENSITIVE FLOORS DURING MANUFACTURING WILL BE MADE WITH DRY PUNCH.  
8-PG BOLT AND IBO BOLT WHEN ALL BOLT need to be DESIGNATED as SN BOLT REPLACEABLE  
9-COORDINATES ARE IN THE UTM SYSTEM.

### T5 (Interchange) Portal 1

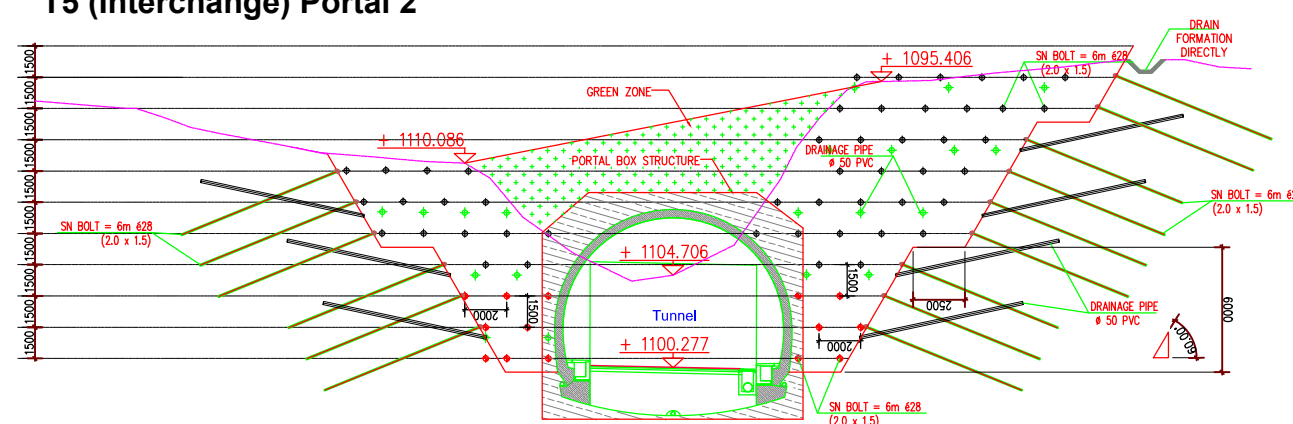


TUNNEL SECTION AT PORTAL CH : 0+060

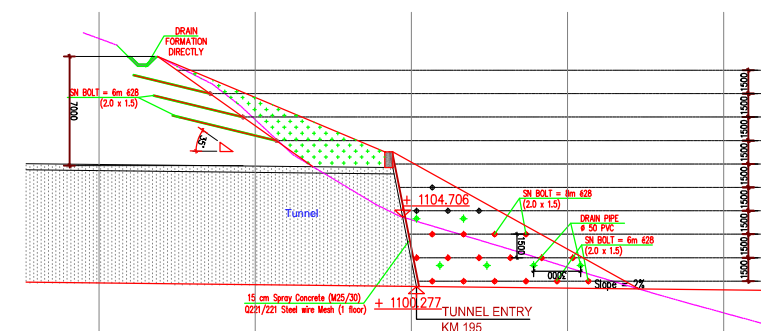


LONG SECTION VIEW AT TUNNEL PORTAL CH : 0+060

### T5 (Interchange) Portal 2



TUNNEL SECTION AT PORTAL CH : 0+195



LONG SECTION VIEW AT TUNNEL PORTAL CH : 0+195

Divisional Forest Officer  
Ramban Forest Division  
Ramban

परिपोषणा निदेशक  
Project Director  
भारत राष्ट्रीय राजमार्ग प्राधिकरण, पी.यू. रामबान  
National Highway Authority of India, P.U. Ramban

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

Construction of Four Laning of part of Ramban to Banihal Section of NH-1A (Now NH-44), from Ch.158+675 to Ch.164+660 (North Bound) and Ch.160+282 to Ch.163+368 (South Bound connecting with Existing Tunnel-T4) excluding Ch.161+544 to Ch.164+100 (North Bound) including Construction of Twin Tube Tunnel (Package-II) in the UT of Jammu & Kashmir on EPC Mode

Drawing Name :-

FINAL FEASIBILITY REPORT  
DIGDOL INTERCHANGE  
RAMP TUNNEL  
CH : - KM 0+060 - CH : 0+195  
PORTAL EXCAVATION PLAN  
AND SECTIONS



Intercontinental Consultants & Technocrats Pvt. Ltd.,  
in Joint Venture with  
ALTINOK Consulting Engineering Inc.  
A-8, Green Park, New Delhi - 110016, India

Prepared by  
YGP

Designed by  
ANP

Checked by  
SWB

Approved by  
Sandip Bhattacharjee

R1

June - 2021

Initial Plan

R0

March - 2021

Initial Plan

Revisions

Date

Description

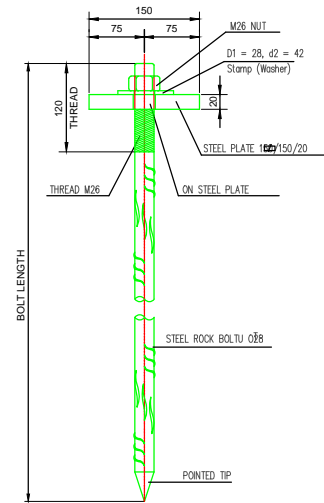
Revisions

Drawing Title :- NHAI / RAM-BANI / NB/PD/ 04

Rev.  
R0

Scale:- N.T.S



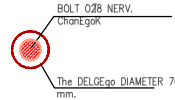


### SN BOLT DETAIL

#### FOR SN BOLT BILL OF MATERIALS

ROCK BOLT: 028-St III(A)  
STEEL PLATE: 150/150/20-ST 37  
BOLT SCREW: M26  
Nut: M26  
Stamp (Washer): D1 = 28mm, d2 = 42mm

Symbol	Description
	(6-8)M DRAINAGE PIPE
	SN BOLT = 6m 628
	SN BOLT = 8m 628



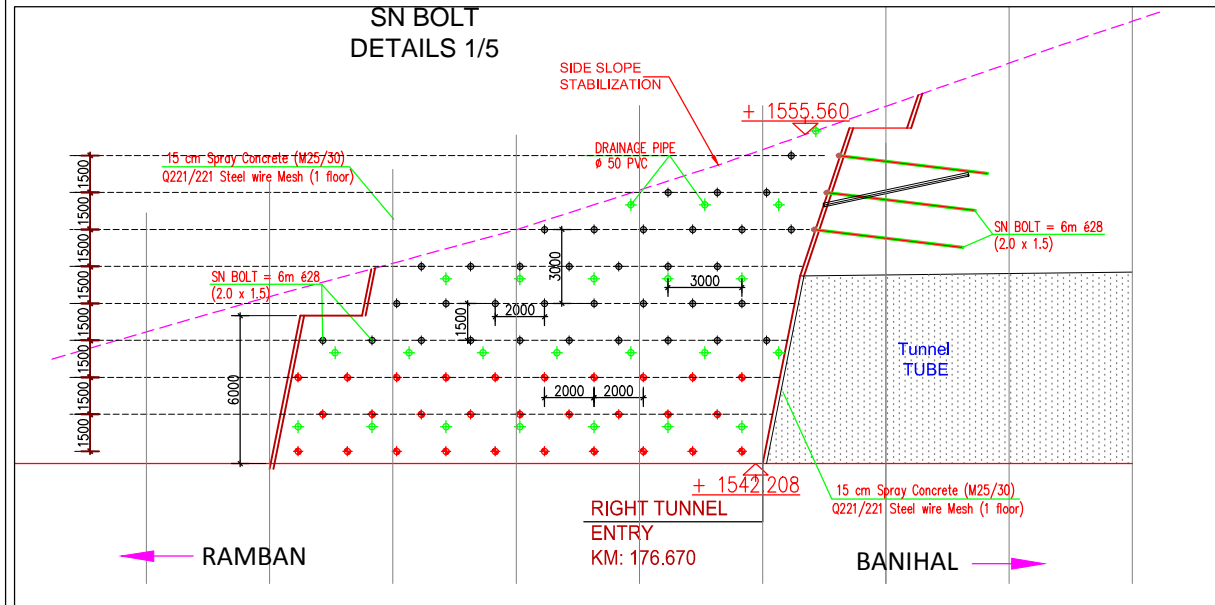
#### Notes:

- 1-TORQUE CALIBRATED TO FORM 2-TON FORCE IN THE NUTS BOLTD A WILL BE BORED WITH THE KEY.
- 2-OUT 5-6 cm. THE ENDS OF THE BOLT WILL BE CUT WITH OXYGEN.
- 3-MESH STEEL RADIAL DIRECTION 3 EYE, LONGITUDINAL DIRECTION 2 EYE OVERLAP.
- 4-IF AMBIENT CONDITIONS ARE MORE VARIABLE THAN EXPECTED, THE BOLT AND WIP APPLICATION LENGTH, RANGE, SHAPE AND TYPE (SUPPORT SYSTEMS) ENGINEER AND WILL BE REVISED ON SITE WITH THE APPROVAL OF THE ADMINISTRATION.
- 5-TUNNEL PORTAL EXCAVATION; EXCAVATION STAGE HEIGHT 2.5m. TO BE DONE, AN UPPER SHEV EXCAVATION WILL NOT BE ENTERED INTO A SUB-SHEV EXCAVATIONS BEFORE COMPLETION.
- 6-SUPPORT SYSTEM (Genus and Quantity) ENVIRONMENTAL CONDITIONS ENCOUNTERED DURING EXCAVATION BE REVISED BY THE ENGINEER AND THE ADMINISTRATION.

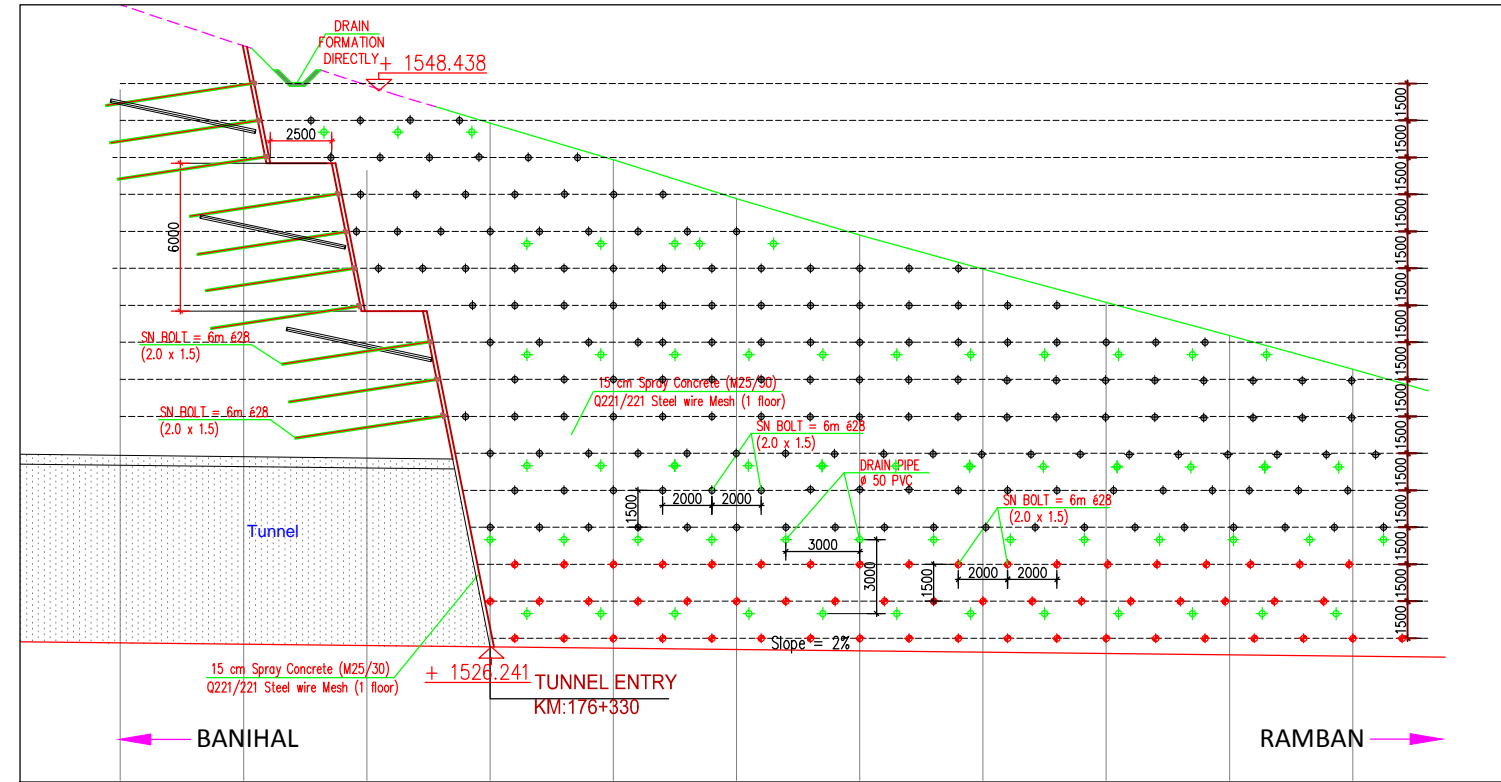
- 7-BOLT FORAGES WHEN FACED WITH WATER SENSITIVE FLOORS DURING MANUFACTURING WILL BE MADE WITH DRY PUNCH.  
8-PG BOLT and IBO BOLT WHEN ALL BOLT need TO be DESIGNATED as SN BOLT REPLACEABLE  
9-COORDINATES ARE IN THE UTM SYSTEM.

#### Material

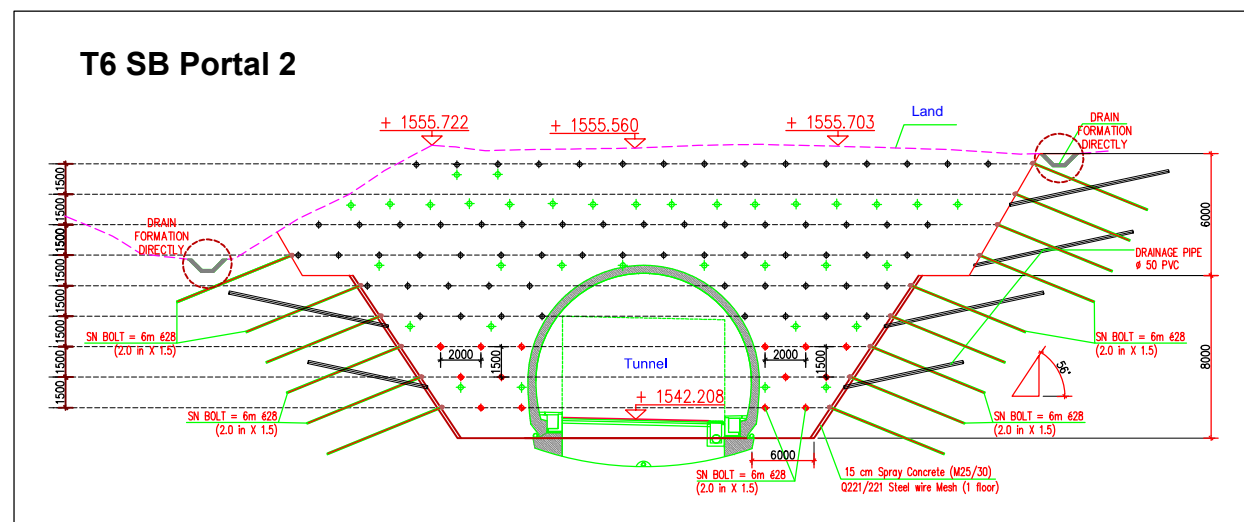
- 1-BOLT : Ø28mm TOR  
2- WIRE MESH : Q221/221  
3-SPRAY CONCRETE : M20/25



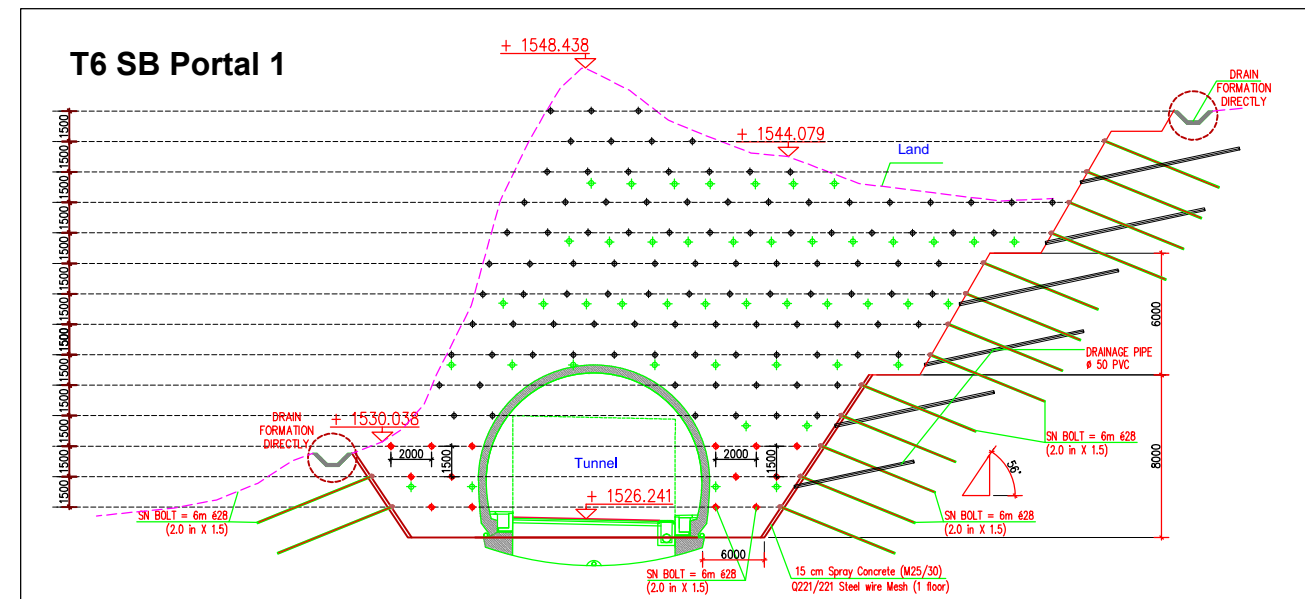
LONG SECTION VIEW AT TUNNEL PORTAL CH 176.670



LONG SECTION VIEW AT TUNNEL PORTAL CH 176+330



TUNNEL SECTION AT PORTAL CH 176+670



TUNNEL SECTION AT PORTAL CH 176+330

Divisional Forest Officer  
Ramban Forest Division  
Ramban

परिचालन विभाग  
परिचालन विभाग  
परिचालन विभाग

Client :-



NATIONAL HIGHWAYS  
AUTHORITY OF INDIA

Project Title :-

From Design Ch.171+855 (NB)/ Ch.173+638 (SB) to Existing  
Ch.180+300 (NB)/ Ch.181+700 (SB), (Section - II)

Drawing Name :-

FINAL FEASIBILITY REPORT  
TUNNEL (AT5)  
CH:176+670.00-CH: 176.330.00  
PORTAL EXCAVATION PLAN  
AND SECTIONS



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in Joint Venture with  
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R1

June - 2021

Initial Plan

R0

February - 2021

Initial Plan

Revisions

Date

Description

Revisions

Drawing Title :- NHAI / RAM - BAIN / PD / 01

Rev. R0

Scale - N.T.S.