

Alternative Option Analysis

Sheikhpura Bypass

Table: Alternative analysis of Sheikhpura Bypass

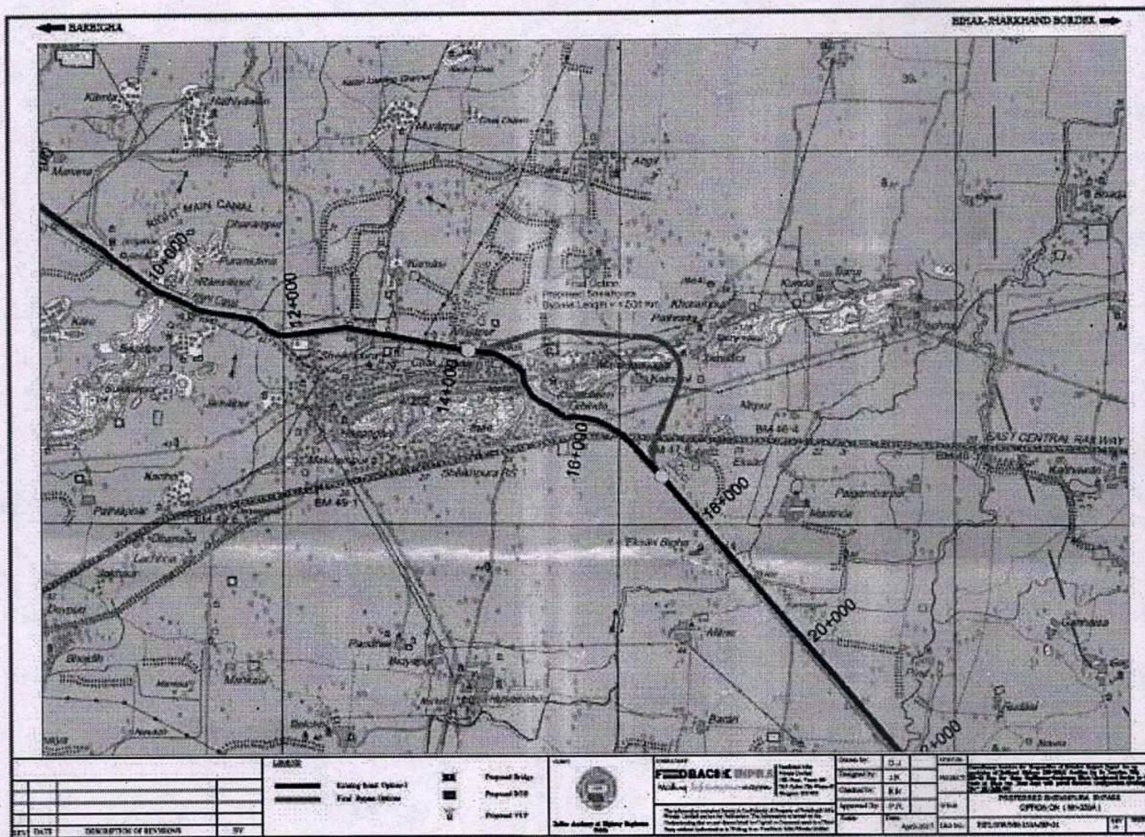
S. No	Description	Option-1	Option-2	Option-3
1.	Route Alignment	Along SH-6/ NH333	Along SH-6/ NH333	LHS
2.	Take off Chainage	16+900	17+750	14+900
3.	End Chainage	20+400	18+750	20+400
4.	Existing Road Length	3.5 Km	1.0 Km	4.5 Km
5.	Proposed Bypass Length		0.291 km	4.342 Km
6.	Right of way (ROW)	10-30m	45 m	60m
7.	Land Acquisition in ha.	-	1.3	26
8.	Design speed Adopted	100/80/20 Kmph	100/80 Kmph	100 Kmph
9.	No . Of Curves	5	2	4
10.	Major at grade junction	1	1	2
11.	Minor at grade junction	2	1	1
12.	Culvert	12	3	18
13.	Minor Bridge	1	1	1
14.	Major Bridge	-	-	-
15.	VUP/PUP	-	-	1
16.	ROB	1	1	1
17.	Social Impact	Alignment passes through built up sections and junctions so free movement of traffic cannot be possible.	Around 26 buildings will be demolished.	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact, during construction phase impact will be maximum, Forest clearance may be required which will be finalized after joint verification with Forest department	Limited impact, during construction phase impact will be maximum, Forest clearance may be required which will be finalized after joint verification with Forest department
19.	Tree Felling	Tree felling proposed along the existing road	Very less no of trees coming in bypass section	Very less no of trees coming in bypass section
20.	Effect of Built up Area	Affected	Nil	Nil
21.	Effect of Water Bodies	Nil	Nil	Nil
22.	Civil construction cost	21.52 crores	1.8 crores	26.7 crores

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Alternative Option Analysis

S. No	Description	Option-1	Option-2	Option-3
23.	Land Acquisition Cost	-	16.55 crores	17.62 crores
24.	Total Cost	21.52 crores	18.35 crores	44.32 crores

Figure: Proposed Sheikhpura Bypass



Jamui Bypass

Table: Alternative Analysis of Jamui Bypass option

S. No	Description	Option-1	Option-2	Option-3
1.	Route Alignment	Along NH333	RHS	RHS
2.	Take off Chainage	62+405	63+150	62+405
3.	End Chainage	68+485	68+480	68+485
4.	Existing Road Length	6.08 Km	5.33 Km	6.08 Km
5.	Proposed Bypass Length	-	4.35Km	4.31 Km
6.	Right of way (ROW)	45m	60m	60m
7.	Land Acquisition in	0.73	26.1	25.86

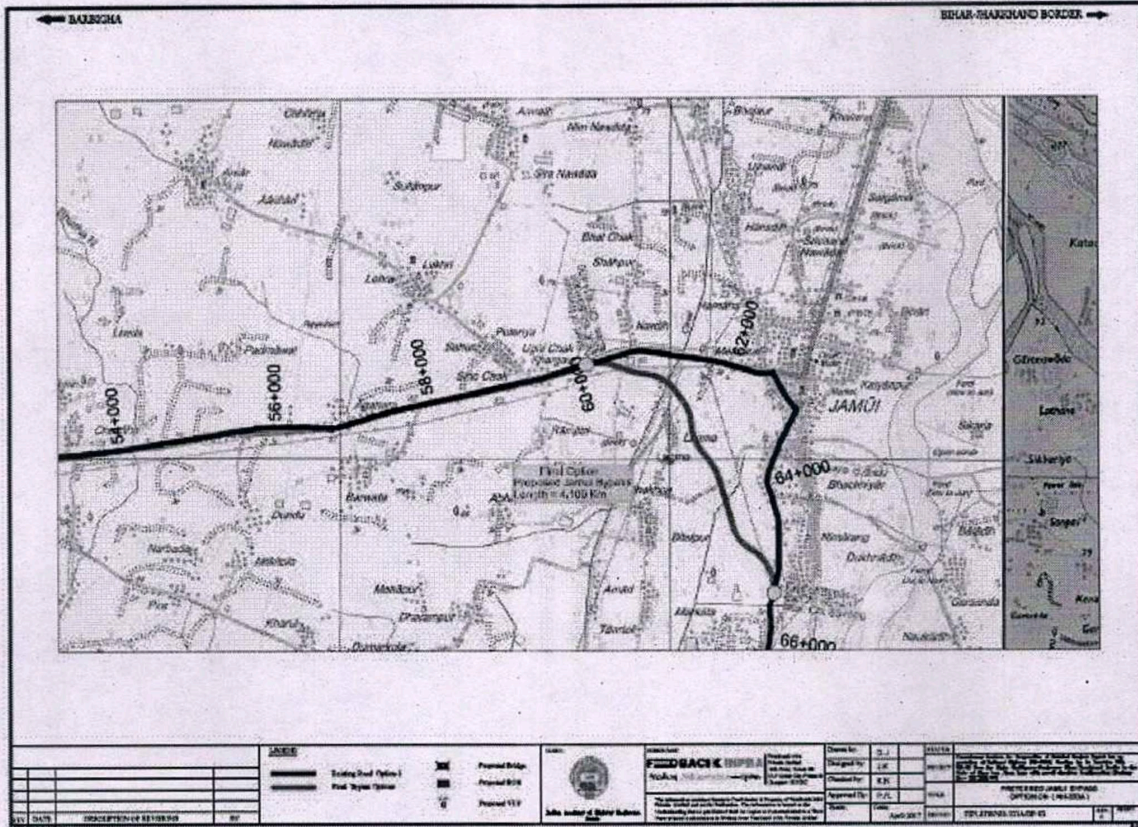
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Alternative Option Analysis

S. No	Description	Option-1	Option-2	Option-3
	hect			
8.	Design speed Adopted	100/80/20(junction) Kmph	100 Kmph	100 Kmph
9.	No . Of Curves	25	7	2
10.	Major at grade junction	2	2	2
11.	Minor at grade junction	-	-	1
12.	Culvert	17	8	8
13.	Minor Bridge	1	1	1
14.	Major Bridge	-	-	-
15.	VUP/PUP	-	-	-
16.	ROB	-	-	-
17.	Social Impact	Alignment passes through heavy built up sections and few major junctions so free movement of traffic cannot be possible	Rehabilitation required is minimum	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact, during construction phase impact will be maximum	Limited impact, during construction phase impact will be maximum
19.	Tree Felling	Tree felling proposed along the existing road	Very less no of trees coming in bypass section	Very less no of trees coming in bypass section
20.	Effect of Built up Area	Affected	Nil	Nil
21.	Effect of Water Bodies	Nil	Nil	Nil
22.	Civil construction cost	37.4 crores	26.75 crores	26.5 crores
23.	Land Acquisition Cost	5.4 crores	4.42 crores	4.38 crores
24.	Total Cost	42.8 crores	31.17 crores	30.88 crores

Alternative Option Analysis

Figure: Proposed Jamui Bypass



Khaira/Nariana Bypass

Table: Alternative Analysis of Khaira/Nariana Bypass option

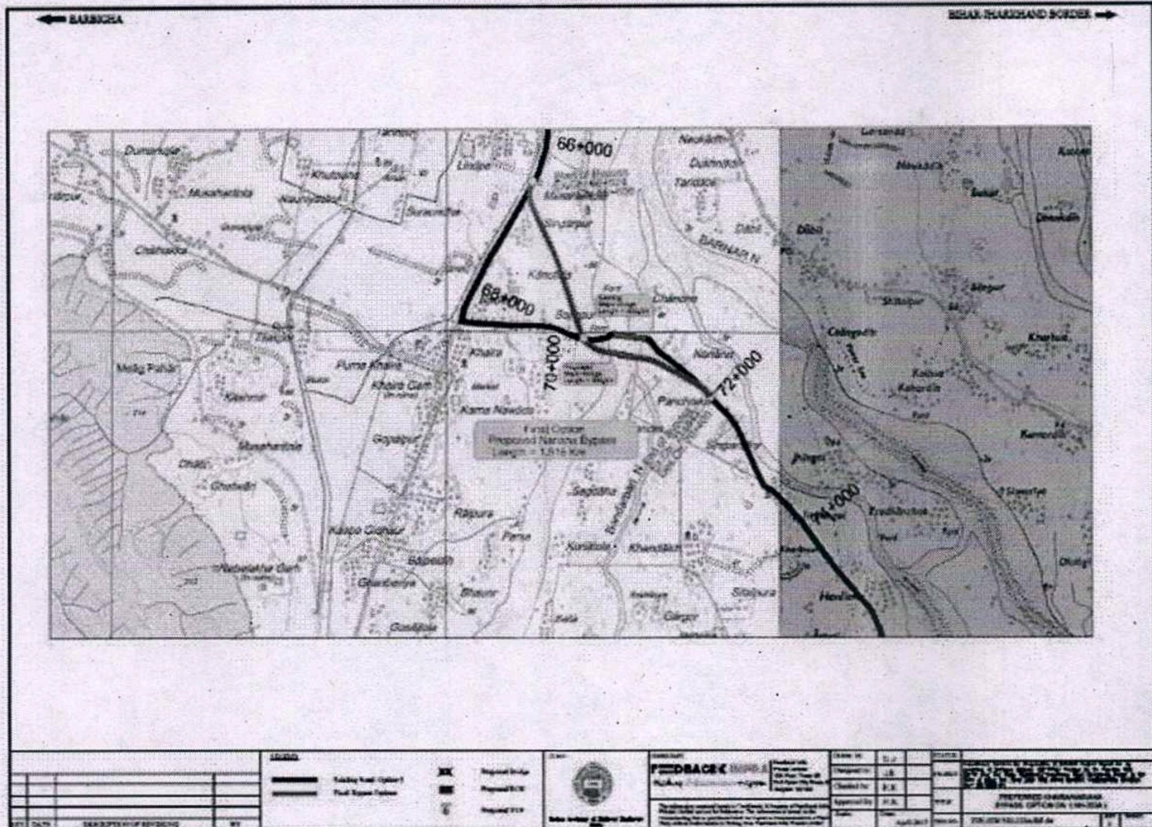
S. No	Description	Option-1	Option-2
1.	Route Alignment	Along SH-82/ NH333	RHS
2.	Take off Chainage	69+836	69+836
3.	End Chainage	71+961	71+961
4.	Existing Road Length	2.1 Km	2.1 Km
5.	Proposed Bypass Length		2.05 km
6.	Right of way (ROW)	30 m	60m
7.	Land Acquisition in hect	-	9.51
8.	Design speed	100/80/20 Kmph	100/80 Kmph

Alternative Option Analysis

S. No	Description	Option-1	Option-2
	Adopted		
9.	No . Of Curves	6	4
10.	Major at grade junction	-	2
11.	Minor at grade junction	-	-
12.	Culvert	4	4
13.	Minor Bridge	-	-
14.	Major Bridge	1	1
15.	VUP/PUP	-	-
16.	ROB	-	-
17.	Social Impact	Alignment passes through built up sections and bridge, so free movement of traffic cannot be possible.	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact, during construction phase impact would be maximum. Mitigation measure should be adopted to avoid overburden in riverbed.
19.	Tree Felling	Tree felling proposed along the existing road	Very less no of trees coming in bypass section
20.	Effect of Built up Area	Nil	Nil
21.	Effect of Water Bodies	Nil	Nil
22.	Civil construction cost	12.915 crores	12.607 crores
23.	Land Acquisition Cost	-	1.85 crores
24.	Total Cost	12.915 crores	14.46 crores

Alternative Option Analysis

Figure: Proposed Khaira/Nariyana Bypass



Mangobandar Bypass

Table: Alternative Analysis of Mangobandar Bypass option

S. No	Description	Option-1	Option-2
1.	Route Alignment	Along SH-82/ NH333	LHS
2.	Take off Chainage	77+943	77+943
3.	End Chainage	79+899	79+899
4.	Existing Road Length	1.956 Km	1.956 Km
5.	Proposed Bypass Length		1.954 km
6.	Right of way (ROW)	30 m	60m
7.	Land Acquisition in hect	-	11.72
8.	Design Adopted speed	100/80/20 Kmph	100/80 Kmph

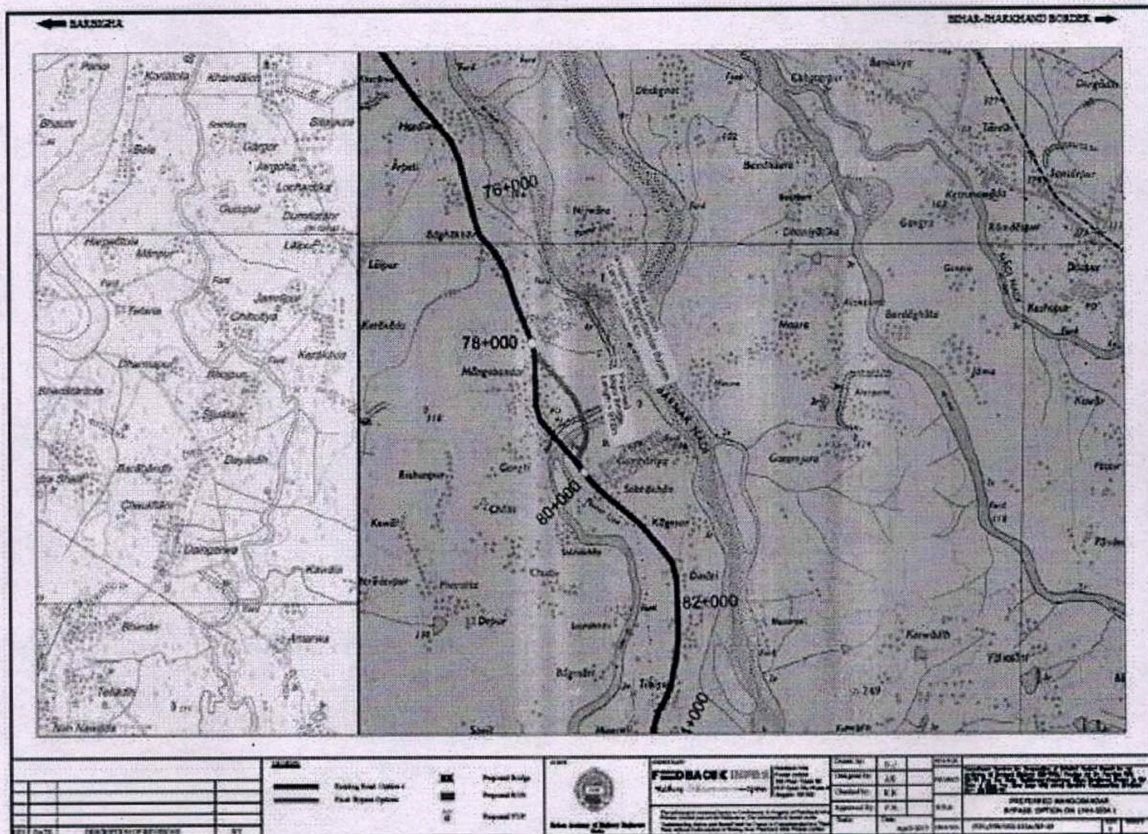
Alternative Option Analysis

S. No	Description	Option-1	Option-2
9.	No . Of Curves	5	4
10.	Major at grade junction	-	2
11.	Minor at grade junction	2	-
12.	Culvert	4	4
13.	Minor Bridge	-	-
14.	Major Bridge	1	1
15.	VUP/PUP	-	-
16.	ROB	-	-
17.	Social Impact	Alignment passes through built up sections and bridge, so free movement of traffic cannot be possible.	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact, during construction phase impact would be maximum. Mitigation measure should be adopted to avoid overburden in riverbed.
19.	Tree Felling	Tree felling proposed along the existing road	Very less no of trees coming in bypass section
20.	Effect of Built up Area	Nil	Nil
21.	Effect of Water Bodies	Nil	Nil
22.	Civil construction cost	12.0 crores	12.0 crores
23.	Land Acquisition Cost	-	1.9 crores
24.	Total Cost	12.0 crores	13.9 crores

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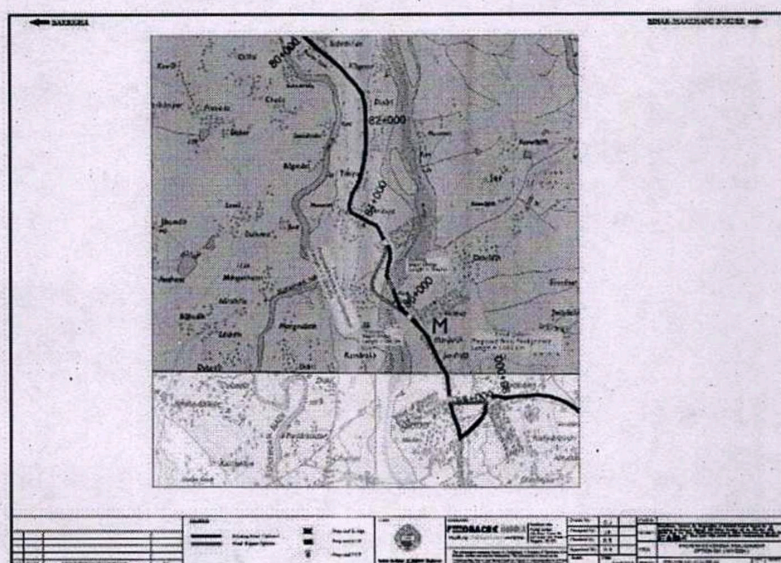
Alternative Option Analysis

Figure : Proposed Mangobandar Bypass



.Kendua/Sono bypass

Figure: Proposed Kendua/Sono Bypass



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Alternative Option Analysis

Alternative Analysis of Kendua/Sono Bypass option

S. No	Description	Option-1	Option-2
1.	Route Alignment	Along SH-82/ NH333	RHS
2.	Take off Chainage	84+727	84+727
3.	End Chainage	86+009	86+009
4.	Existing Road Length	1.28 Km	1.28 Km
5.	Proposed Bypass Length		1.48 km
6.	Right of way (ROW)	45 m	60m
7.	Land Acquisition in hect	0.80	7.2
8.	Design speed Adopted	100/80/20 Kmph	100/80 Kmph
9.	No. Of Curves	3	1
10.	Major at grade junction	-	2
11.	Minor at grade junction	1	-
12.	Culvert	4	4
13.	Minor Bridge	-	-
14.	Major Bridge	1	1
15.	VUP/PUP	-	-
16.	ROB	-	-
17.	Social Impact	Alignment passes through built up sections and bridge, so free movement of traffic cannot be possible.	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact, during construction phase impact would be maximum. Mitigation measure should be adopted to avoid overburden in riverbed.
19.	Tree Felling	Tree felling proposed along the existing road	Very less no of trees coming in bypass section
20.	Effect of Built up Area	Nil	Nil
21.	Effect of Water Bodies	Nil	Nil
22.	Civil construction cost	7.96 crores	9.225 crores
23.	Land Acquisition Cost	0.14 crores	1.26 crores
24.	Total Cost	8.1 crores	10.48 crores

Jhajha Bypass

Alternative Analysis of Jhajha Bypass option

S. No	Description	Option-1	Option-2	Option-3
1.	Route Alignment	Along SH-18 &	RHS	RHS

Alternative Option Analysis

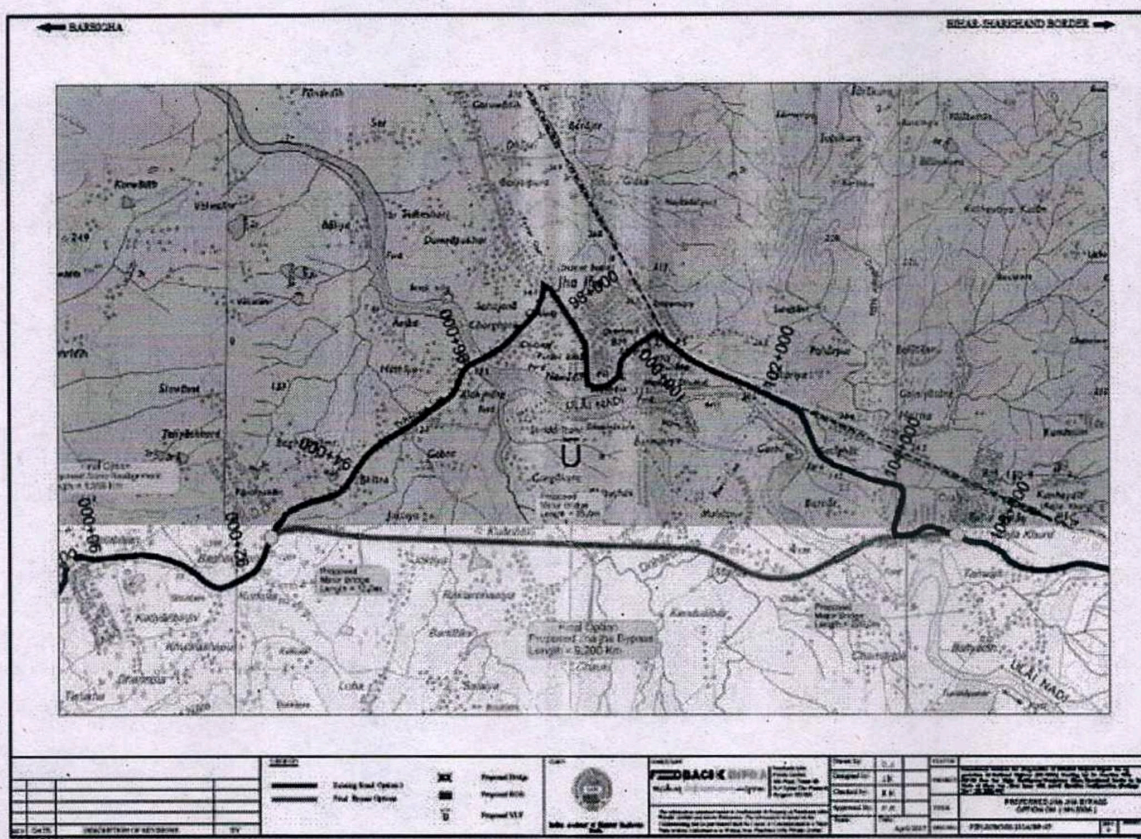
S. No	Description	Option-1	Option-2	Option-3
		NH-333		
2.	Take off Chainage	95+200	97+255	95+200
3.	End Chainage	108+170	106+400	108+170
4.	Existing Road Length	12.97 Km	9.145 Km	12.97 Km
5.	Proposed Bypass Length		6.573 km	9.265 Km
6.	Right of way (ROW)	45m	60m	60m
7.	Land Acquisition in hect	7.16	39.44	55.6
8.	Design speed Adopted	100/80/20 Kmph	100 Kmph	100 Kmph
9.	No . Of Curves	37	11	5
10.	Major at grade junction	1	2	2
11.	Minor at grade junction	1	1	-
12.	Culvert	10	12	18
13.	Minor Bridge	1	2	3
14.	Major Bridge	1	-	-
15.	VUP/PUP	-	-	-
16.	ROB	-	-	-
17.	Social Impact	Alignment passes through heavy built up sections and few major junctions so free movement of traffic cannot be possible.	Rehabilitation required is minimum	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact; during construction phase impact will be maximum, Mitigation measure should be taken to avoid overburden in the river bed. Forest clearance may be required which will be finalized after joint verification with Forest department	Limited impact; during construction phase impact will be maximum, Mitigation measure should be taken to avoid overburden in the river bed. Forest clearance may be required which will be finalized after joint verification with Forest department

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Alternative Option Analysis

S. No	Description	Option-1	Option-2	Option-3
19.	Tree Felling	Tree felling proposed along the existing road	Very less no of trees coming in bypass section	Very less no of trees coming in bypass section
20.	Effect of Built up Area	Affected	Nil	Nil
21.	Effect of Water Bodies	Nil	Nil	Nil
22.	Civil construction cost	79.76 crores	40.42 crore	56.98 crores
23.	Land Acquisition Cost	38.66 crores	6.71 crores	9.452 crores
24.	Total Cost	118.42 crores	47.13 crores	66.43 crores

Proposed Jhajha Bypass



Katoria Bypass

Alternative Analysis of Katoria Bypass option

S.No.	Description	Option-1	Option-2	Option-3
1.	Route Alignment	Along NH333A/SH22	RHS	RHS
2.	Take off Chainage	144+100	144+100	144+100
3.	End	146+250	146+250	146+075

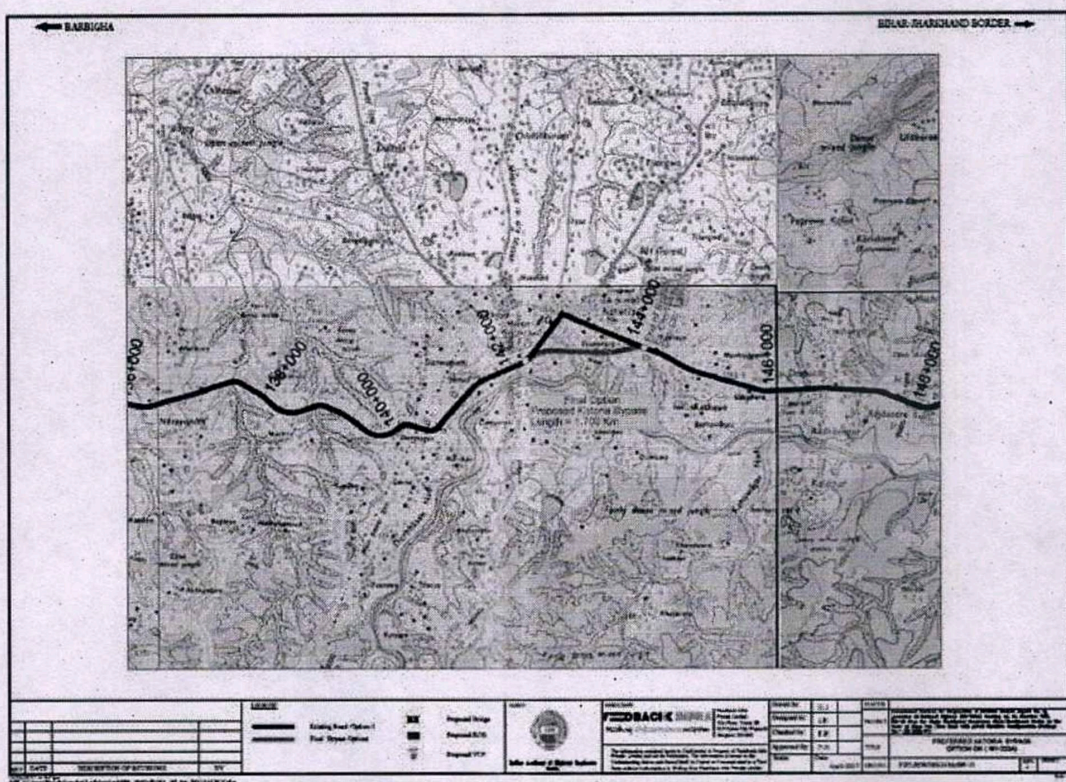
Alternative Option Analysis

S.No.	Description	Option-1	Option-2	Option-3
	Chainage			
4.	Existing Road Length	2.15 Km	2.15 Km	1.985 Km
5.	Proposed Bypass Length		1.81 km	1.68 Km
6.	Right of way (ROW)	45m	60m	60m
7.	Land Acquisition in hect	0	10.86	10.08
8.	Design speed Adopted	100/80/20 Kmph	100 Kmph	100 Kmph
9.	No . Of Curves	2	3	3
10.	Major at grade junction	1	2	2
11.	Minor at grade junction	-	-	-
12.	Culvert	10	6	4
13.	Minor Bridge	-	-	-
14.	Major Bridge	-	-	-
15.	VUP/PUP	-	-	-
16.	ROB	-	-	-
17.	Social Impact	Alignment passes through heavy built up sections and junctions so free movement of traffic cannot be possible.	Rehabilitation required is minimum	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact, during construction phase impact will be maximum, Forest clearance may be required which will be finalized after joint verification with Forest department	Limited impact, during construction phase impact will be maximum, Forest clearance may be required which will be finalized after joint verification with Forest department
19.	Tree Felling	Tree felling proposed along the existing road	Very less no of trees coming in bypass section	Very less no of trees coming in bypass section
20.	Effect of Built	Affected	Nil	Nil

Alternative Option Analysis

S.No.	Description	Option-1	Option-2	Option-3
	up Area			
21.	Effect of Water Bodies	Nil	Nil	Nil
22.	Civil construction cost	13.22 crores	11.13 crores	10.33 crores
23.	Land Acquisition Cost	-	1.6 crores	1.46 crores
24.	Total Cost	13.22 crores	12.73 crores	11.79 crores

Proposed Katoria Bypass



Banka Bypass

Alternative Analysis of Banka Bypass option

S. No	Description	Option-1	Option-2	Option-3
1.	Route Alignment	Along SH-25 & ODR	RHS	RHS
2.	Take Chainage off	170+525	170+880	170+525

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Alternative Option Analysis

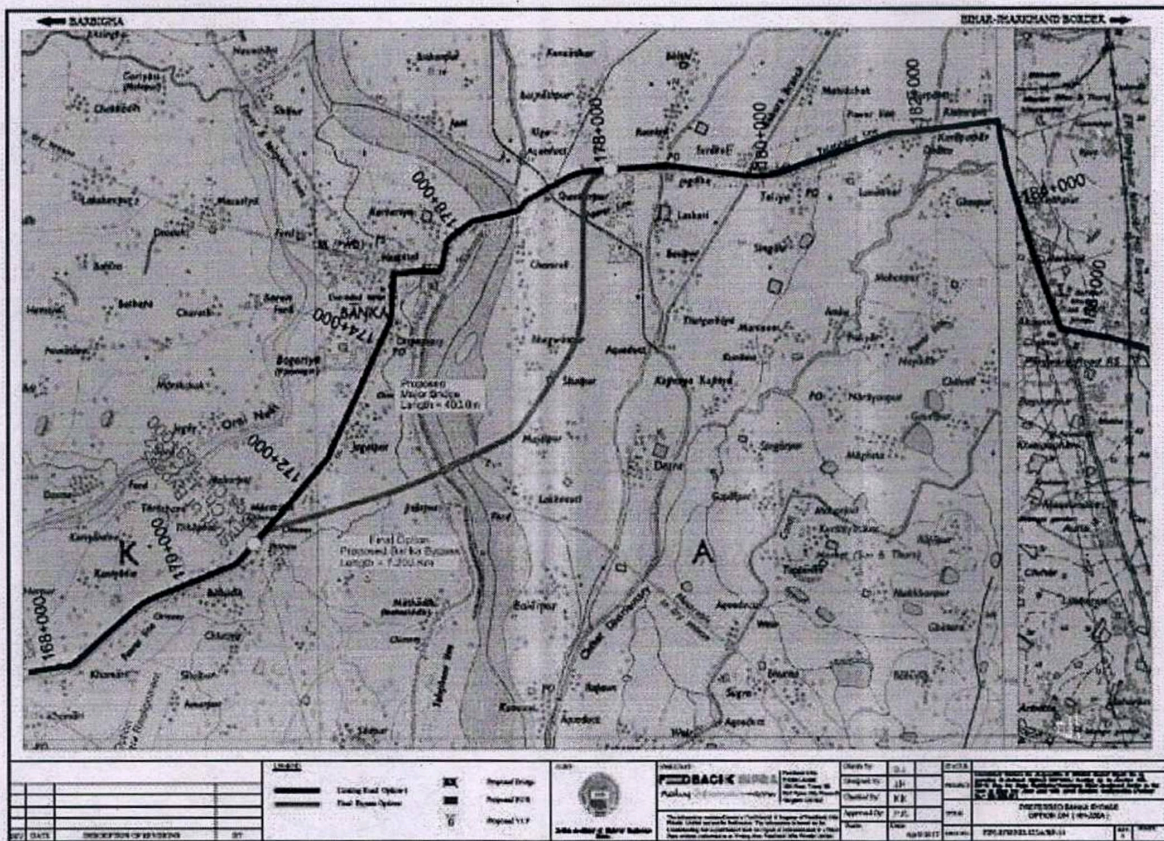
3.	End Chainage	178+655	178+655	178+650
4.	Existing Road Length	8.13 Km	7.775 Km	8.125 Km
5.	Proposed Bypass Length		7.598 km	10.935 Km
6.	Right of way (ROW)	45m	60m	60m
7.	Land Acquisition in hect	0	45.59	48.75
8.	Design speed Adopted	100/80/20 Kmph	100 Kmph	100 Kmph
9.	No . Of Curves	13	4	6
10.	Major at grade junction	2	2	2
11.	Minor at grade junction	-	-	-
12.	Culvert	15	15	15
13.	Minor Bridge	2	1	-
14.	Major Bridge	1	1	1
15.	VUP/PUP	-	-	-
16.	ROB	-	-	-
17.	Social Impact	Alignment passes through heavy built up sections and few major junctions so free movement of traffic cannot be possible.	Rehabilitation required is minimum	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact, during construction phase impact will be maximum, Mitigation measure should be taken to avoid overburden in the river bed. Forest clearance may be required which will be finalized after joint verification with Forest department	Limited impact, during construction phase impact will be maximum, Mitigation measure should be taken to avoid overburden in the river bed. Forest clearance may be required which will be finalized after joint verification with Forest department
19.	Tree Felling	Tree felling proposed along the existing	Very less no of trees coming in bypass section	Very less no of trees coming in bypass section

Alternative Option Analysis

		road		
20.	Effect of Built up Area	Affected	Nil	Nil
21.	Effect of Water Bodies	Nil	Nil	Nil
22.	Civil construction cost	50 crores	46.7 crores	67.25 crores
23.	Land Acquisition Cost	-	6.62 crores	7.08 crores
24.	Total Cost	50 crores	53.32 crores	74.33 crores

Figure of Banka Bypass

Proposed Banka Bypass



Lakhpura and Panjwara bypass

Alternative Analysis of Lakhpura/Panjwara bypass_Bypass option

S. No	Description	Option-1	Option-2	Option-3
1.	Route Alignment	Along SH84	RHS	RHS & Along SH84
2.	Take off Chainage	193+400	193+400	193+400

2

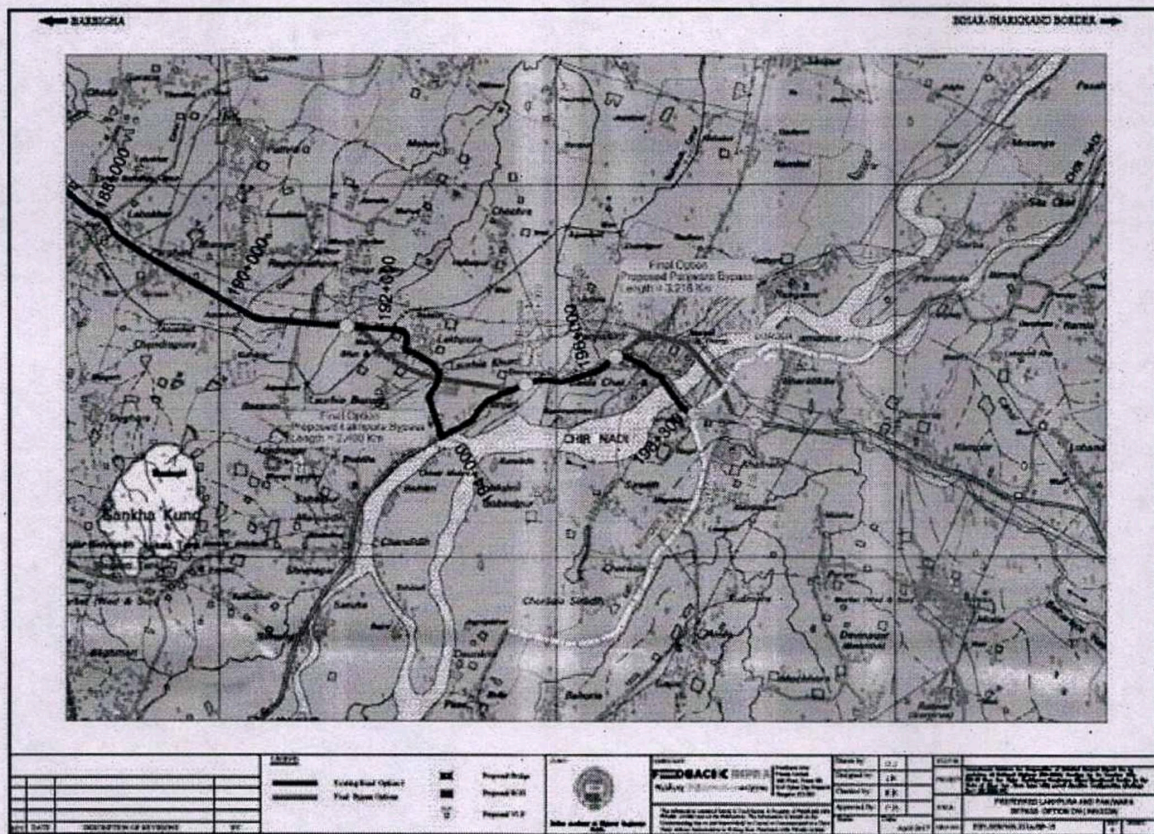
Alternative Option Analysis

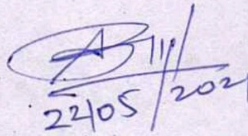
S. No	Description	Option-1	Option-2	Option-3
3.	End Chainage	199+500	199+500	199+500
4.	Existing Road Length	6.1 Km	6.1 Km	6.1 Km
5.	Proposed Bypass Length		6.0 km	5.1 Km
6.	Right of way (ROW)	45m	60m	60m
7.	Land Acquisition in hect	0	36	30.6
8.	Design speed Adopted	100/80/20 Kmph	100 Kmph	100 Kmph
9.	No . Of Curves	16	9	9
10.	Major at grade junction	2	3	3
11.	Minor at grade junction	-	-	-
12.	Culvert	12	12	10
13.	Minor Bridge	-	-	1
14.	Major Bridge	-	-	1
15.	VUP/PUP	-	-	1
16.	ROB	-	-	-
17.	Social Impact	Alignment passes through heavy built up sections and junctions so free movement of traffic cannot be possible.	Rehabilitation required is minimum	Rehabilitation required is minimum
18.	Environmental Impact	Limited impact, Forest clearance required.	Limited impact, during construction phase impact will be maximum, Mitigation measure should be taken to avoid overburden in the river bed. Forest clearance may be required which will be finalized after joint verification with Forest department	Limited impact, during construction phase impact will be maximum, Mitigation measure should be taken to avoid overburden in the river bed. Forest clearance may be required which will be finalized after joint verification with Forest department
19.	Tree Felling	Tree felling proposed along the existing	Very less no of trees coming in bypass section	Very less no of trees coming in bypass section

Alternative Option Analysis

S. No	Description	Option-1	Option-2	Option-3
		road		
20.	Effect of Built up Area	Affected	Nil	Nil
21.	Effect of Water Bodies	Nil	Nil	Nil
22.	Civil construction cost	37.5 crores	36.9 crores	31.36 crores
23.	Land Acquisition Cost	-	5.23 crores	4.45 crores
24.	Total Cost	37.5 crores	42.13 crores	35.81 crores

Proposed Panjawara and Lakhpura Bypass




 22/05/2021
Executive Engineer
 N. H. Division
 Lakhisarai At- Munger