### Office of Superintending Engineer World Bank Project Circle P.W.D., Kanpur

E-mail: - sewbpwdkanpur@gmail.com

Letter No.:- 801 / 5C-WBPCK / 2023

Date: - 08.05.2023

Wank Project Circle P.W.D., Kanpur

To,

The Divisional Forest Officer, Forest Department Hamirpur.

Sub:

Construction of 2-lane missing link road from Rath Bypass (Hamirpur District) to Garautha (Jhansi District) of SH-42 in the State of Uttar Pradesh— (Online Forest Proposal No.-FP/UP/ROAD/117342/2020) Regarding Regional Empowered Committee's (REC), IRO(MoEF&CC), Lucknow EDS Compliance Status Report.

Ref.:

- REC (MoEFCC), IRO Lucknow MOM No. 11/1092/REC/2014/U.P./2191 dated 27.02.2023

- DFO, Hamirpur to UPPWD letter No. 2137/33-1 Dated 03.03.2023

Sir,

We refer to the above REC Minutes of Meeting (MoM) and the discussions we had on subject matter. Kindly find a point wise reply of user agency on the essential details sought by the Regional Empowered Committee's REC, IRO(MOEFCC) Lucknow as below:

SI.	Observation of REC, MOEFCC (Lucknow)	Compliance by User Agency
1.	As per the DSS and SOI topo sheet, the demarcation of forest area proposed for diversion is undervalued. Some parts of the Reserve Forest area in the KML file are demarcated as Non-forest. This needs rectification/clarification.	Hamirpur Forest Department on 22 <sup>nd</sup> & 23 <sup>rd</sup> Feb 2023 has reconducted the joint ground verification along with the UA with respect to the KML file and other maps ( <b>Annexure-1</b> ) submitted with the proposal. It has been re-verified and confirmed that the measurement of forest area under each land survey number is correct.
		Also a number of existing side roads joining the main carriageway belong to UPPWD hence not forest land.
		Based on the assessment, you are requested to submit the clarification to Nodal Officer/ REC, MoEFCC conforming that the proposed forest area under diversion is not undervalued and is matching with the area submitted for the division in the proposal i.e. 5.1364 Ha. out of Total Forest Diversion under Proposal i.e. 18.1854 ha.
		It was communicated earlier while submitting letter for CE that there was a Joint ground verification reconducted along with DFO, Hamirpur on 22nd and 23rd Feb, 2023.
		It was concluded after verification that Forest area in proposal as submitted earlier is correct and not undervalued. DFO assured that he will submit his clarification to the REC Committee while forwarding the letter to higher ups.
2.	As per the DSS and SOI toposheet, the proposed NFL CA land polygon falls under the Kuchhechha R.F and Durkhuru R.F area. This needs rectification/ clarification.	A new fresh Non-Forest land for CA Purpose has been allocated by DM, Hamirpur vide its letter No. 856/ DLRC-12A-Punargrahan (2022-23) dated 01.05.2023. The copy of same along with the Georeferenced map, SOI and KML for the same land is enclosed as Annexure-2.1.
3.	As per part-ii of the proposal, total no. of trees proposed for felling is 2454 trees but in State Govt. forwarding letter, it is mentioned as 2554 trees. This needs rectification/	This typological error is committed in the Letter forwarded which was issued by the State Government and can be corrected while submitting the compliance to REC, MOEFCC.

lms 5/2023

	clarification.	The total number of affected trace is someoffer
	ciai incation.	The total number of affected trees is correctly mentioned in part-II of the proposal i.e. 2454 and
	*	division wise details are as below:
		1. Hamirpur Division- 327 (PF-41 & RF-286)
		2. Jhansi Division - 2127 (RF)
4.	NOC from irrigation dept. needs to be	NOC from Irrigation Department is not required as
7.	submitted since the propose diverted route is	the major bridge over the river Dhasan has been
	crossing the river.	
	crossing the river.	already constructed and is under maintenance of
		UPPWD (Provisional Division) Jhansi since 2015.
		This structure does not belong to the Irrigation
		Department. The existing structure has to be retained
		as it is and the existing structure shall be retained in
-	It is not along from the appearant that what is	its current condition.
5.	It is not clear from the proposal that what is	The widening varies throughout the alignment
	the status of widening before and what is after	proposed under project. The list of the Existing
	proposed alignment.	ROW, Proposed ROW is enclosed herewith as <b>Annexure-3</b> for reference.
	Detailed Medical and different and different	
6.	Detailed Muck calculation and muck disposal	Muck disposal certificate duly certified by the DFO is
	scheme as approved by concerned DFO needs to be submitted.	already submitted in the Forest diversion proposal.
	to be submitted.	However, as per the REC, MoEFCC comments, a
		detailed calculation of muck and its disposal plan is
		finalized by the consultant and enclosed as
7	Details of evicting DOW Decreed DOW 1	Annexure-4 for your reference.
7.	Details of existing ROW, Proposed ROW and	The widening varies throughout the alignment
	land width (ROW) availability for road side	proposed under project. The list of the Existing
	plantation needs to be submitted and	ROW, Proposed ROW is enclosed herewith as
	accordingly plantation scheme for roadside	Annexure-3 for reference. The Tree Plantation shall
	plantation needs to be submitted.	be carried out based on the availability of space
		within ROW. A detailed roadside plantation scheme
		on Typical Cross Sections is enclosed herewith as
		Annexure-5.

You are requested to review and take necessary actions so that the Forest clearance for this project can be obtained MoEF&CC at the earliest.

Encl.: As above.

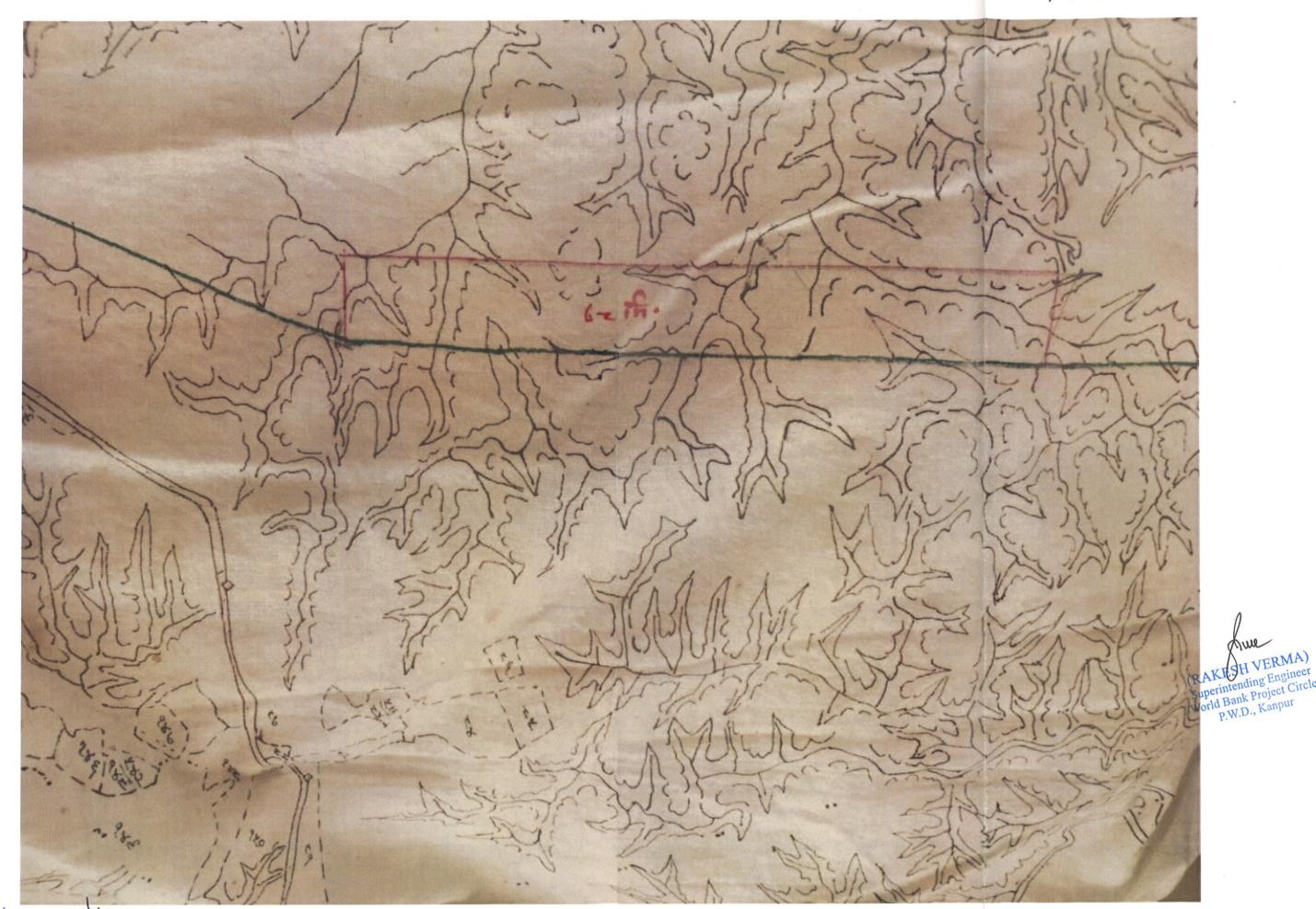
(Rakesh Verma)

Superintending Engineer A)
World Bank Project Gircle er
world Bankanpurect Circle
P.W.D., Kanpur

Copy- To the following for information and necessary action.

- 1. Executive Engineer, PWD-WB Division, Kanpur.
- 2. TL(PMC), Egis India Consulting Engineers Pvt. Ltd., Lucknow.
- 3. Dr. Seema Srivastava, Environment Expert-ESDC, Lucknow.

Superintending Engineer World Bank Project Circle P.W.D., Kanpur



079° 25' 08.21596923" E

79°25'28"E

25° 33' 43,30079473" N

4

79°25'32"E

25°33

25°33'38"N

### Digital Georeferenced GIS Map of Proposed CA Land in the Range of Kuchecha, District Hamirpur Under Proposed UPCRNDP-SH42 Missing Link 79°25'4"E

79°25'10"E 79°25'12"E 79°25'14"E 79°25'16"E 79°25'18"E 79°25'20"E 79°25'22"E 79°25'24"E 79°25'26"E

Compenstory Area (CA) Village Net Area Plot No. District **Tahsil** Name Gross Area (ha) (ha) 71.841 4.06800 Rath Kuchecha 78 Hamirpur Longitude (dms) GPS No. Latitude (dms) 25° 33' 24.26307998" N 079° 25' 06.43611479" E 079° 25' 04.13729872" E 25° 33' 24.32055052" N 2 25° 33' 43.33030246" N 079° 25' 05.64025470" E 3

Superimenting Engineer World Bank Project Circle

79°25'18"E 79°25'28"E 79°25'30"E 79°25'32"E 79°25'34"E 79°25'10"E 79°25'12"E 79°25'14"E 79°25'16"E 79°25'20"E 79°25'22"E 79°25'24"E 79°25'26"E 79°24'54"E 79°24'56"E 79°25'2"E 79°25'4"E 79°25'6"E 79°25'8"E 79°24'58"E 79°25'0"E **USER AGENCY** CONSULTANT MAP SCALE **LEGEND** 

Kale SE

**UP Core Road Network** Development Project (UPCRNDP) Public Work Department (PWD)

Government of Uttar Pradesh

79°24'58"E

25°33'44"N

25°33'42"N

25°33'38"N

25°33'36"N

79°25'0"E

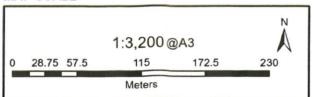
79°25'2"E

79°25'6"E

79°25'8"E

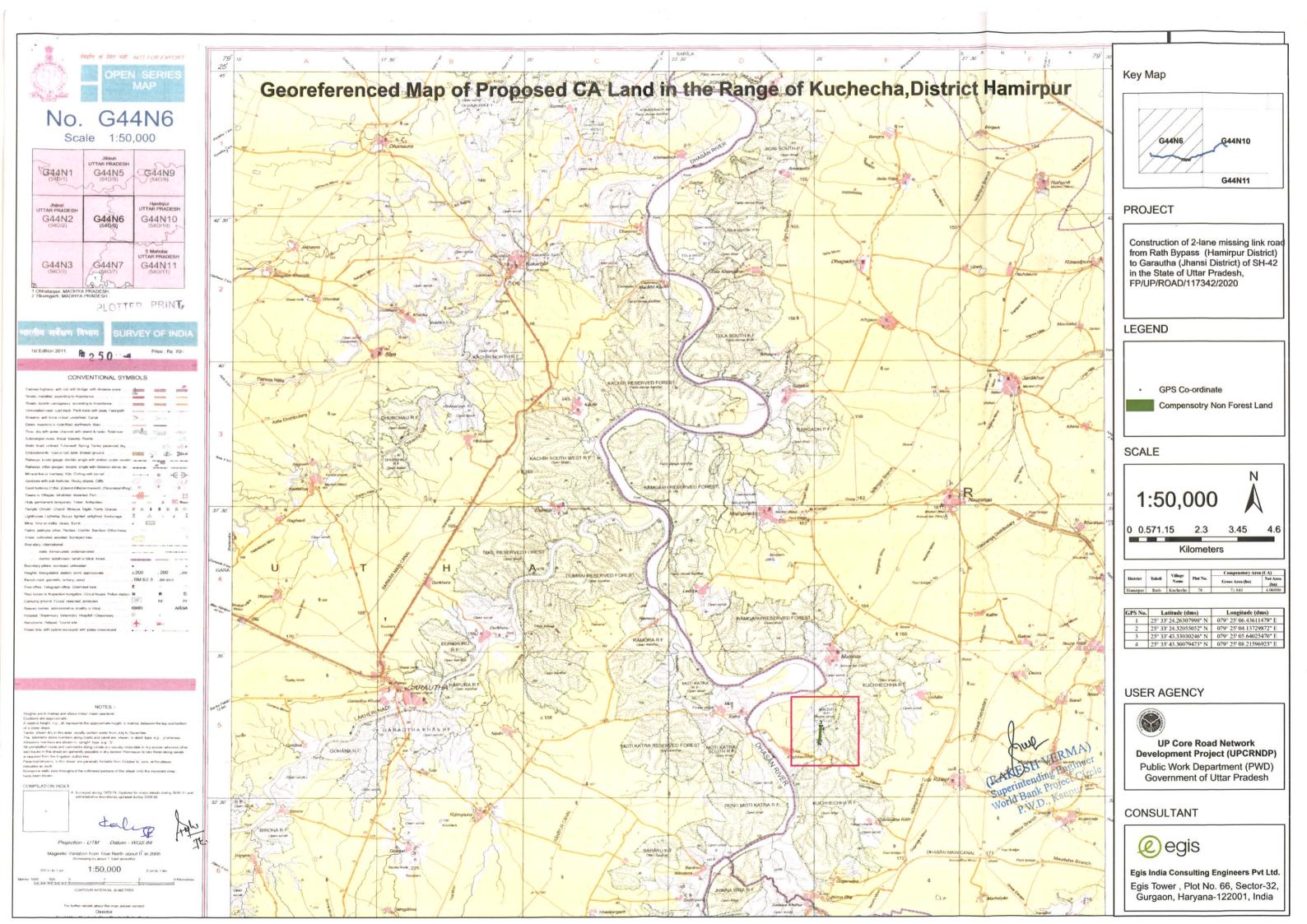
egis 🖉

Egis India Consulting Engineers Pvt Ltd. Egis Tower . Plot No. 66, Sector-32. Gurgaon, Haryana-122001, India





Project :Construction of 2-lane missing link road from Rath Bypass (Hamirpur District) to Garautha (Jhansi District) of SH-42 in the State of Uttar Pradesh, FP/UP/ROAD/117342/2020



## कार्यालय जिलाधिकारी हमीरपुर संख्या—85 4/ डी०एल०आर०सी०—12ए— पुनर्ग्रहण (2022—23)

विनांक 01-05-23

#### आदेश

. शासनादेश संख्या ७(1) राजस्य 1/3-3(1)-74 दिनांक 25.01.1974 तथा शासनादेश संख्या 68/(3)/राजस्व 1/3-2(6)/1797 दिनांक 01.09.1979 का आंशिक परिष्कार करते हुये और उत्तर प्रदेश राजस्व संहिता 2006 (उ०प्र० अधिनियम संख्या-8 सन् 2012) की घारा-59 की उपघारा-(4) के खण्ड 1 (ग) तथा उत्तर प्रदेश राजस्व संहिता नियमावती 2016 के नियम 55 द्वारा प्राप्त शक्तियो एवं शासनादेश संख्या-744/एक-1बी-(5)/2016 दिनांक 03.06.2016 द्वारा प्रतिनिहित अधिकारों का प्रयोग करते हुये मै डॉं० चन्द्र भूषण, जिलाधिकारी हमीरपुर निम्न प्रस्तावित भूमि स्थित ग्राम कुछेछा परगना राठ तहसील राठ जिला हमीरपुर के गाटा संख्या 78मि० एकवा 71.841 है0 में से 4.068 है0 श्रेणी बंजर, मालियत 32,54,400 /- (मु0 बत्तीस लाख चौवन हजार चार सौ फपये) को विश्व बैंक खण्ड लोक निर्माण विभाग झाँसी के पक्ष में पुनर्ग्रहण किये जाने हेतु उपजिलाधिकारी राठ की संस्तुति सहित आख्या दिनांक 28.04.2023 के आलोक एवं शासनादेश दिनांक 03.06.2018 में दिये गये प्राविधानों के कम में उक्त भूमि इस प्रतिबन्ध के साथ पुनर्गहीत करता हूँ कि उक्त भूमि का प्रयोजन सम्बंधित विमाग/संस्था किसी अन्य प्रयोजन में नहीं करेगे तथा उनको उक्त भूमि को विकय करने/ किसी अन्य को कब्जे में देने का अधिकार नहीं होगा। यदि सम्बन्धित विभाग / संस्था द्वारा उक्त प्रतिबन्धों का उल्लंघन किया जाता है तो उक्त पुनर्ग्रहण आदेश स्वतः ही समाप्त समझा जायेगा। इसके अतिरिक्त यदि भविष्य में किन्ही कारणो/नियम के अर्न्तगत उपवर्णित धनराशि देय होती है तो उसे अदा करने के लिये सम्बन्धित विभाग/संस्था पूर्ण रूप से बाध्य रहेगे। उक्त प्रतिबन्धों के अधीन गांव सभा से पुनर्ग्रहण करके निःशुल्क दिये जाने हेतु की प्रस्तावित भूमि का विवरण निम्नवत् है:-

अनुसूची

क0	जिला	तहसील	परगना	भौजा	गाटा संख्या	क्षेत्रफल (हे0)	भूमि की श्रेणी / प्रकृति	विवरण (प्रयोजन जिसके लिए भूमि पुनर्ग्रहीत की जा रही है)
1	2	3	4	5	6	7	8	9
1	हमीरपुर	राठ	राठ	कुछेछा	78Pi0	71.841 हे0 में से 4.068हे0	बंजर	विश्व बैंक खण्ड़ लोक निर्माण विभाग झॉसी के पक्ष में।

AKIOH VERMA)

AK

(डॉंठ कद पूषण) जिलाधिकारी टिंट हमीरपुर

Shot on OnePlus
Powered by Triple Camera

प्रतिलिपि:- निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित। संख्या व दिनांक उपरोक्त

01. आयुक्त एवं सचिव, राजस्व परिषद, उ०प्र० अनुभाग-5, लखनऊ।

02. मां0 आयुक्त, चित्रकूट धाम मण्डल बादा । 03. निदेशक, राजकीय मुद्रणालय एवं लेखन सामग्री उ०प्र० इलाहाबाद को आगामी गजट में प्रकाशन हेत्।

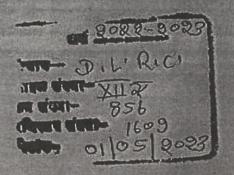
04. प्रभागीय वनाधिकारी, हमीरपुर।

05. अधिशाषी अभियन्ता, विश्व बैंक खण्ड लोक निर्माण विमाग झॉसी /कानपुर।

०६. उपजिलाधिकारी राठ।

07. तहसीलदार राठ को इस निर्देश के साथ कि उक्त आदेश को राजस्व अभिलेखों में दर्जा कर सुरक्षित रखा जाये।

जिलाधिकारी



Annexure-3

#### **Existing and Proposed ROW**

S. No.	Chainage		Length	Evicting DOW	Droposed DOW
S. 140.	From	То	in Km.	Existing ROW	Proposed ROW
1	74.550	81.887	7.337	0	30
2	81.887	83.500	1.613	14	30
3	83.500	83.700	0.200	0	30
4	83.700	84.450	0.750	22	30
5	84.450	88.200	3.750	0	30
6	88.200	89.600	1.400	10	30
7	89.600	90.430	0.830	0	30
8	90.430	90.800	0.370	15	30
9	90.800	91.030	0.230	0	30
10	91.030	91.400	0.370	12	30
11	91.400	91.600	0.200	0	30
12	91.600	92.500	0.900	14	30
13	92.500	92.700	0.200	0	30
14	92.700	93.500	0.800	8	30
15	93.500	94.130	0.630	0	30
16	94.130	94.320	0.190	8	30
17	94.320	94.800	0.480	0	30
18	94.800	96.000	1.200	0	30
19	96.000	96.570	0.570	9	30
20	96.570	97.820	1.250	0	30
21	97.820	97.920	0.100	10	30
22	97.920	98.400	0.480	0	30
23	98.400	98.435	0.035	0	30
24	98.435	99.075	0.640	0	50
25	99.075	99.415	0.340	0	30
26	99.415	100.044	0.629	0	40
27	100.044	100.423	0.379	0	30
28	100.423	100.694	0.271	0	40
29	100.694	102.400	1.706	0	30
30	102.400	103.080	0.680	0	30
31	103.080	103.400	0.320	10	30
32	103.400	103.600	0.200	0	30
33	103.600	103.800	0.200	10	30
34	103.800	104.150	0.350	0	30
35	104.150	104.600	0.450	8	30
36	104.600	106.290	1.690	0	30
37	106.290	106.400	0.110	15	40

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Superintending Engineer

Superintending Engineer

Superintending Engineer

World Bank Project Circle

World Bank Project

P.W.D., Kanpur

Name of Project Construction of 2-lane missing link road from Rath Bypass (Hamirpur District) to Garautha (Jhansi District) of SH-42 in the State of Uttar Pradesh (FP/UP/ROAD/117342/2020)

#### Annexure-3

S. No.	Chainage From To		Length	Evicting DOW	Proposed ROW	
3. NO.			in Km.	Existing ROW		
38	106.400	107.020	0.620	0	30	
39	107.020	107.100	0.080	0	30	
40	107.100	108.582	1.482	0	30	
41	108.582	109.084	0.502	0	50	
42	109.084	109.233	0.149	0	30	
43	109.233	109.395	0.162	0	0	
44	109.395	109.445	0.050	13	50	
45	109.445	110.360	0.915	13	19.50	

(RAKESH VERMA)
Superintending Engineer

# **MUCK DISPOSAL PLAN**

Name of

Construction of 2-lane missing link road from Rath Bypass (Hamirpur District) to Garautha (Jhans District) of SH-42 in the State of Ultair Pradesh (FRIUPIROAD/117342/2020)

#### Checklist Serial No. -9.29

#### Muck Disposal Plan

This is certified that entire quantity of this excevated material will be reused for construction of subgrade and earthen shoulders of the project road. No muck for the proposed project is envisaged and therefore no disposal is required for it.

S.No	Details	Quantity	Unit	
	Materials received from Hillside cutting	NI	Cum	
	Materials received from cutting including 40% of swell factor	Ni	Cur	
	Total	Nii	Cur	
	Disposal & Use of Material	Ni	Cut	
1.	R.R. stone Masonry laid in 1.5	Nil	Cur	
2	R.R. stone Masonry laid dry	NI	Cur	
3.	Hand packed stone filling	NI	Cun	
4.	Construction of wire Crete	NI	Cum	
5.	Construction of parapet	NE	Cun	
6.	Construction of Granular sub-base /base/surface	Ni	Cum	
7.	Construction scupper	Ni	Cum	
8.	Construction of roadside drain	Ni	Cum	
9.	Super elevation & Patri Filling	NE	Cum	
10.	Concrete work	Ni	Cum	
11.	Total	Ni	Cum	
12	Material Disposal by Carriage	Ni	Om	

#### Summary of Debris Disposal

S. No	Total	Material	Resided Material	Total Disposal in
	Material	Disposal	for road construction	Dumping zone
1.	NI	NI	Ni	Nil

#### Details of Muck Disposal Site

S. No	Location of Dumping Yard	Owner of the Land	Khasra No	Area (Ha.)	Height of the Dumping Zone (m)	Capacity of the Dumping Zone Yard	
1.	NI	NI	NI	Ni	NE	, Nil	NI

RAKESTVERNA)

Date: Place: Lucknow Superintanding Engineer, Kalteur Circle
Ultar Pradesh Public Works Department (UPPWD),
Govt. of Ultar Pradesh

) egis



construction of 2-lane missing link road from Rath Bypass (Hamirpur, District) to Garautha (Jhanei District) of SH-42 in the State of Ultar Prodesh (FPUI/PROAD)\*173-42702001

#### Checklist Serial No. -9.29

#### Muck Disposal Plan

This is certified that entire quantity of this excavated material will be reused for construction of subgrade and earthen shoulders of the project road. No muck for the proposed project is envisaged and therefore no disposal is required for it.

S.No	Details	Quantity	Unit
	Materials received from Hillside cutting	NI	Cum
	Materials received from cutting including 40% of swell factor	Ni	Cum
	Total	NI	Cum
	Disposal & Use of Material	Ni	Cum
1.	R.R. stone Masonry laid in 1.5	Ni	Cum
2	R.R. stone Masonry laid dry	Ni	Cum
3	Hand packed stone filling	NI	Cum
4	Construction of wire Crete	Ni	Cum
5.	Construction of parapet	NI	Cum
6.	Construction of Granular sub-base (base/surface	Ni	Cum
7.	Construction scupper	Ni	Cum
8.	Construction of roadside drain	Ni	Cum
9.	Super elevation & Patri Filling	N	Cum
10.	Concrete work	M	Cum
11.	Total	M	Cum
12	Material Disposal by Carriage	M	Cum

#### Summary of Debris Disposal

S. No	Total Material	Material Disposal	Resided Material for road construction	
1.	NI	NI	NII	NI

#### Details of Muck Disposal Site

S. No	Location of Dumping Yard	Owner of the Land	Khasra No	Area (Ha.)	Height of the Dumping Zone (m)	Capacity of the Dumping Zone Yard	Latitude and Longitude
1.	Ni	NE	NI	Ni	Nii	NI	NI

Date: ₹5-8-2+2

Place: Lucknow

Superintending Engineer, Kampur Circle
Ultar Pradesh Public Works Department (UPPWD),
Govt. of Ultar Pradesh
(2004), Name

# No Hillside cutting;

However, Earth generated from roadway cutting & drain excavation that shall be reused for embankment construction.

Estimated Qty. generated

506131 cum

for

Usable for Embankment Not suitable for Embankment

354500 cum

151631 cum

Estimated Qty. for Emb. Construction

882936 cum

Source of Emb. Material

Fly Ash

212800 cum

Borrow Earth 315636 cum Shall be reused for Grass Turfing on embankment slope i.e approx. area is about 619218 sqm Material Obtained from Dismantling of Existing C/w

Annexure-4

Bitumen Crust

GSB/Agreegate Crust

3149 Cum

18556 Cum

Reuse as RAP Material Reuse as GSB Construction

Estimated Required Qty. for Project

44721 Cum

179831 Cum

Shall be Procured from Quarry

41572 Cum

161275 Cum

**Total 202847 Cum** 

No surplus materials or muck will be available

for disposal in to dumping land out site of Project area. 13.1 MDP





#### TREE PLANTATION STRATEGY

The sustainable economic development depends on the rational use of environmental resources and minimizing, to the extent possible, adverse environmental impacts through improved project selection and more responsible project planning and design. Under this strategy the development must be environmentally sound in the broadest sense. In highway development, environmental planning is concerned with good blending of improvements of physical, social, and economic parameters. It involves not only the environmental (land, water, and air) but is also concerned with integration to local, regional and national socio-economic development.

Road development can have wide ranging environmental impacts. This is because roads extend over long distance and by promoting rapid communication they can catalyze dramatic changes in land use patterns. Soil degradation, loss of top soil and reduction of the productive capacity of the soil covered by the road, which is significantly reduced further as a result of compaction with heavy machinery during construction, is one of the most immediate effects. Landscape and aesthetic distortions due to road development leads to modifications in the regional landscape and changes in the natural relief and morphology of the, vegetation, inclusive of avenue trees and recreational areas. But these impacts can often be significantly reduced through environmentally-sound construction and operation management practices. Careful consideration and assessment of the surrounding environment in road construction and improvement will reduce disruption costs and harmful effects while increasing usage and benefits. Therefore a proper landscape plan should be made which will protect the road from soil erosion, sinking and also to maintain the aesthetic beauty. It will also reduce land, water, air and noise pollutions as well.

#### Aim and Objective of Tree Plantation:-

- To create green belt and avenues for meeting aesthetic recreational needs to the people.
- · To beautify the areas for scenic beauty.
- To reduce the surface run-off discharge and checking soil erosion along the embankments.
- To reduce the encroachment of road reserve areas.
- To reduce temperature and increase humidity.
- To reduce noise pollution to the neighboring household population.
- To reduce the impacts of air pollution and dust as trees and shrubs are known to be natural sink for air pollutants.
- To provide much needed shade on glaring hot roads during summer.
- Moderating the effect of wind and incoming radiation.
- To define the ROW especially highlight sharp horizontal curves during night.
- To promote road development as eco friendly activity.

#### Tree Plantation Strategy

Plantation is one of the most important constituents of soft landscaping. Trees, shrubs and climbers have been used to enhance the soft natural ambience against harsh elements in most of the enhancement schemes. The planting species are decided based on the physical growth characteristics of trees, like form and shape, foliage pattern, growth rate, branching pattern, soil characteristics etc. While selecting the species of trees for landscaping a great care should be taken to choose the species, which already exist on the project corridor. The tree plantation will be carried out in accordance with the IRC: SP: 21:2009 guidelines and specifications.

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#### **Plantation Pattern**

Depending on the availability of the ROW, plantation pattern is worked out as follows:-

- 1. The first row along the highway to be planted with small to medium sized ornamental trees.
- Subsequent rows depending on the availability of land will comprise of ornamental or shade bearing species of more height than those in the first row. Since the proposed Highway section is passing through the rural sections, the last row will always be of shade bearing tall trees. Five rows of trees are proposed to be planted on either side.
- 3. Planting of shrubs in the median.
- 4. Planting of herbaceous species as ground cover in the median, special landscapes on embankment slopes.
- 5. Turfing with grasses in the median and embankment slopes.
- 6. The last row to be planted with tall shade bearing trees for better road safety and for enhancing aesthetics.

#### **Tree Plantation along the Highway Section**

#### 1st Row

The first row of plantation along the highway section should be worked out by ornamental species. Since the proposed highway section is passing through the rural areas, the following species are recommended for the 1st row of avenue plantation.

**Table 1.0 Species recommended for 1st row plantation** 

S. No.	Botanical Name	Local Name
1	Cassia fistula	Amaltas
2	Terminalia arjuna	Arjun
3	Delonix regia	Gulmohar
4	Bauhinia sps	Kachnar
5	Cassia nodusa	Cassia

#### 2nd Row

The 2nd row of plantation along the Project stretch should be worked out by ornamental species of more height i.e. medium height trees, than the first row. The following species are recommended:-

**Table 2.0: Species recommended for subsequent row plantation** 

S. No.	Botanical Name	Local Name Bakain	
1	Melia azadiracta		
2	Pongamia pinnata	Kanji	
3	Gravillea robusta	Silver Oak	
4 Albizzia lebbek		Kala siris	
5 Dalbergia sissoo		Shisham	

#### **Subsequent Rows**

The subsequent rows of plantation along the Highway section have been worked out. The tall shade trees like Peepal, Neem, Mango, Shisham etc have high crown and secure better visibility. They have a long gestation period and has rapid growth and capacity to resist disease and pests attack are therefore ideal. These shaded trees should be planted at a spacing of 12m C/C.

The tree species recommended as shade plants for roadside avenues are given the following table:-



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RAKESH VERMA)

**Table 3.0: Species recommended for Subsequent rows** 

S. No.	Botanical Name	Local Name	
1	Ficus religiosa	Peepal	
2 Ficus infectoria		Paker	
3	Madhuca indica	Mahua	
4	Dalbergia Sissoo	Shisham	
5 Azadirachta indica		Neem	
6 Mangifera indica		Mango	
7 Tamarindus indica		Imli	
8 Syzynium cuminij		Jamun	

#### Shrub plantation for Median

The species to be planted in median would be of low or medium height with ornamental value to enhance the visual experience of the road corridor. It will also act as a screen to prevent glare from the incoming vehicles. Depending on the width of the median, which is 6.0 m, two rows of flowering shrubs will be provided. Some herbaceous species may also be planted as a ground cover on the median.

**Table 4.0: Species recommended for Median** 

S. No.	Botanical Name	Local Name
1	Thaventia nerifolia	Kaner
2	Bouganvillea sps.	Bouganvillea
3	Ipomia	

#### **Plantation along the Embankments**

On the embankment slopes, some herbaceous species followed by grasses turf will be provided. The species proposed for the purpose of turfing are Cynodon dactylon, Cythocline perpurea, Solanum Nigrum, Alternanthera, Chlorophytum, Eupatorium, Wedelia, Duranta, Portulacca, Ipomea, Pelia Cadrii, Asparagus, Opheopogon grass etc.

#### Technical specifications for planting along the Highway section are as follows:

#### 1. Ornamental plants except last row

Distance from embankment

: 1.0m away from the toe of the embankment

Spacing between plant to plant

: 3m : 3m

Spacing between rows

. 3111

Size of the pits

: 60x60x60 cms

For alkaline soils

: By auger

Water logged areas

: mounds with height varying depending on the water level

Species recommended

: Listed in Table 1.0 and Table 2.0.

No of plants per Km

: 333

Height of plant

: 1.5 to 2m

#### 2. Shaded plants (Last row)

Distance from the preceding row

: 3.0m

Spacing between plant to plant: 12m

Size of the pits

Normal size

: 60x60x60 cms

For alkaline soils

: By auger

Water logged areas

: mounds

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#### **ANNEXURE-5**

Species recommended : Listed in Table 3.0

No of plants per Km : 84

Height of plant : more than 2m

In localities where a really bad patch of USAR occurs recommendations are to be strictly followed for better survival of plants. Deep pits to be dug and soil amender Gypsum 1 Kg to 3 kg with 2 kg compost and sand are to be filled before planting the plants.

For multiple row plantations, five strand barbed wire fencing, with cross strands, stretched on angle iron poles fixed at a distance of 4 meters from one another are to be provided as per recommendations. Live fencing/ bamboo fencing/ thorn fencing may also be used where protection can be ensured through these.

#### 3. Shrubs (For Median/ Embankment)

The surface is to be prepared adequately for shrubs planting or grass sowing. The grasses and shrub planting is done to provide a strong surface cover but needs a well-prepared surface. All masses of loose debris will be removed.

Size of the pits for planting shrubs : 45x45x45 cms

Species recommended : Listed in Table 4.0

No of plants per Km
 : 666 (For two rows in the median)

Use of compost and manure : 1/3 of volume of pit mixed with soil and refilled

The contractor will be required to water the area in case of insufficient rains after planting.

#### Plantation at Road Junctions/ Intersection and Traffic Islands

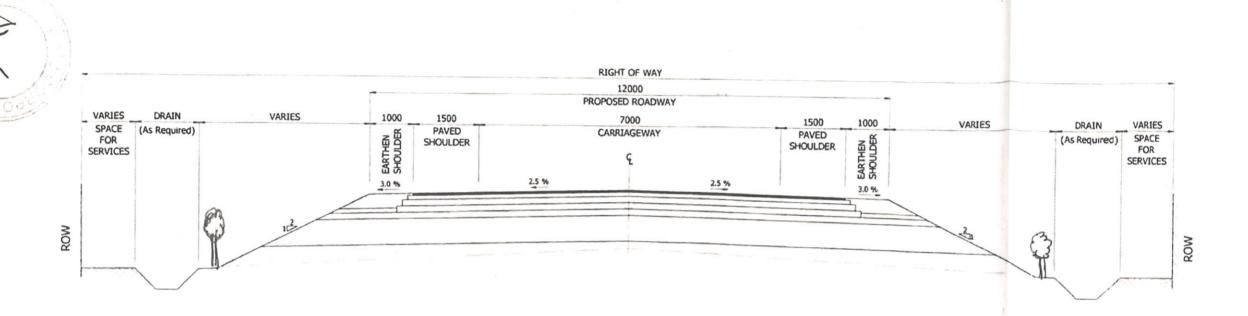
Road intersections are main nodal spaces and are of vital importance in terms of road aesthetics. Proper landscaping of the traffic islands and the surrounding areas shall integrate these features with surrounding landscape. The layout of traffic intersections shall be fixed by the traffic needs of the junction.

#### **Plantation at the Sensitive noise receptors**

All along the project corridor were sensitive receptors for noise such as educational institutions, hospitals, religious structure of community importance situated, the trees known for behaving as "noise barrier" will be proposed like- Neem (*Azadirachta indica*), Shisham (*Dalbergia sisso*), Imli (*Tamarindus indica*). Some flowering trees like Amaltas, Gulmohar, Kachnar, Asoka etc. can also done. Tall trees with thick canopies create a wind screen through which the air can be filtered and noise levels be considerably reduced. Some such trees are *Acacia auriculiformis* and *Greavillea Robusta*. At the sensitive noise receptors, tall shrubs of 1.5 – 3 m height like *Cassia biflora*, *Hamelia Patens* etc. can also be provided for maximum possible screening.

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# TCS-1A - NEW CONSTRUCTION + BYPASS IN RURAL SECTION

Design Chainage (Km)		Cross section
Start	End	Type
74550	81959	1A
83460	83900	1A
84330	91660	1A
92400	95000	1A
96400	97840	1A
98460	98700	1A
99080	99420	1A
100020	100460	1A
100680	100800	1A
101200	101770	1A
102200	103200	1A
103350	103600	1A
103760	104240	1A
104500	105700	1A
106000	106280	1A
106380	106860	1A
107730	107860	1A
108080	108860	1A

Notes: -

Not to Scale.

2. All dimensions are in mm unless otherwise mentioned.

3. Sofety Barrier as per Standard Drawing. TERM Section of Earthen Drain as per

Public Works Department

Sovernment of Uttar Pradesh

CONSULTANT:

@ egis India

Uttar Pradesh Core Road Network Development Program (UPCRNDP) Part-A: Project Preparation (Rath-Garautha Section of SH-42)

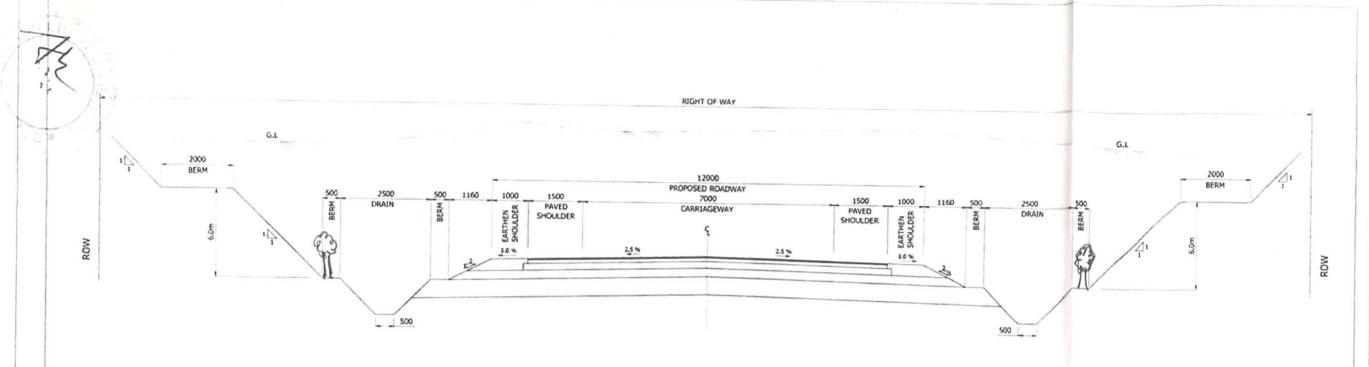
N	.T.S

Prepared by	transder Vacuum	Revisions		TITLE	
Designed by	Nata Kumar	Rev.	Date	Description	_
Checked by	Saryay Number	R9	Apr 2021	FOR TENDER PURPOSE	
Approved by	Muhamed Ayaz Beg	-	-		DRG
Date	Apr 2021				

TYPICAL CROSS SECTIONS

NO. EGIS/DPR/EIRH1UP020/DPR/TCS- 001

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TCS-1D - NEW CONSTRUCTION + REALIGNMENT / BYPASS IN CUT SECTIONS (RURAL SECTION)

Typical	Typical Cross Section Schedule			
Design Cha	Design Chainage (Km)			
Start	End	Туре		
98700	99080	10		
99420	100020	1D		
100460	100680	1D		
105700	106000	1D		
106280	106380	10		
106860	107730	10		
107860	108080	1D		

Notes:

CLIENT.

1. Not to Scare

2 All dimensions are in mm unless otherwise mentioned.

Safety Barrier as per Standard Drawing. ae Wall as per Standard Drawing ection of Earthen Drain as per

Government of Uttar Pradesh Public Works Department

CONSULTANT -

@ egis India

PROJECT:-

Uttar Pradesh Core Road Network Development Program (UPCRNDP) Part-A: Project Preparation (Rath-Garautha Section of SH-42)

SCALE:-

Prepared by Revisions Designed by Rev. Date RD Apr 202 Description Checked by N.T.S Approved by

TITLE TYPICAL CROSS SECTIONS

DRG. NO. EGIS/DPR/EIRH1UP020/DPR/TCS- 004