

#### पर्यावरण, वन एवं जलवायु परिवर्त्तन विभाग कार्यालय :- वन प्रमण्डल पदाधिकारी, मुंगेर वन प्रमण्डल मुंगेर।

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पत्रांक- १६६1

प्रेषक,

गौरव ओझा, (भा०व०से०) वन प्रमंडल पदाधिकारी, मुंगेर वन प्रमंडल मुंगेर।

सेवा में

वन संरक्षक, वन्यप्राणी अंचल, पटना।

मुंगेर, दिनांक-01/11/2022

विषय:- मुंगेर जिलान्तर्गत NH-80 मुंगेर-बरियारपुर-सुलतानगंज (70.150-121.025) पथांश चौड़ीकरण एवं सुदृढ़ीकरण हेतु वन (संरक्षण) अधिनियम, 1980 के तहत 34.212 है0 वन भूमि अपयोजन प्रस्ताव पर पृच्छा के संबंध में।

प्रसंग :- कार्यपालक अभियंता, राष्ट्रीय उच्च पथ प्रमंडल लखीसराय, मु0-मुंगेर का पत्रांक-690 दिनांक-20.10.2022

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के माध्यम से सूचित करना है कि मुंगेर जिलान्तर्गत NH-80 मुंगेर-बरियारपुर-सुलतानगंज (70.150–121.025) पथांश चौड़ीकरण एवं सुदृढ़ीकरण हेतु वन (संरक्षण) अधिनियम, 1980 के तहत 34.212 हे0 वन भूमि अपयोजन प्रस्ताव पर वृक्षों के पुर्नस्थापन हेतु Tree Translocate Plan, Translocation की विधि, Arborist द्वारा नियमित अंतराल पर अनुश्रवण तथा संपोषण कार्य हेतु Tree Translocate Plan समर्पित की गई है। जिसे इस पत्र के साथ संलग्न कर भवदीय को समर्पित की जा रही है।

अनु० :- यथोक्त।

वन प्रमंडल प्रवाधिकारी, मुंगेर वर्न प्रमंडल मुंगेर।

विश्वासभाजन

ज्ञापांक-1662 /दिनांक-01/11/2022

प्रतिलिपि: - अपर प्रधान मुख्य वन संरक्षक (कैम्पा)-सह-नोडल पदाधिकारी (वन संरक्षण) बिहार,

पटना को सूचनार्थ एवं आवश्यक कार्रवाई हेतु समर्पित।

वन प्रमंडल पदाधिकारी, मुंगेड वर्न प्रमंडल मुंगेर।

स्मार्थियालक अभिद्यान का कार्यालम शांक्टीम उर्य प्रा प्रशंधा, याना निर्माण लियान ल्यमेख्यान Prosited Res

E Mail-eenhlakhisanciat munger 10 gmail. com MobiNo. 947000134

HAIB 670(2047)

fa-113 20-10-2027

AND:

कार्यपालक अगियन्ता राष्ट्रीय उठा पथ प्रगण्डले लखीसराय, गुं0-मुंगेर

राता क्षे

वन अमेडल प्रतिकारी

निवम: - क्रेंग्रेट रवं आगलम जिलाक्राई प्रम- 80 द्रेंग्रेट् विमाल -7980क १६५ 31.37 हु० श्रीम अतमात्म न्यान तर तत्त्व प्रक्रिम्म न्यारीय व द्वारा कि श्री प्रमण प्रति के प्रमण प्रति विकास भी कि मान प्राप्ति (मिन श्री प्रमण प्रति के प्रमण प्रति विकास भी कि मान प्रति के प्रमण प्रति के प्रति के प्रमण प्रति के प्र के देवहा भें।

अंता:- अवदीप नशंक 1458 दिनांत्र 17-09-9022

2181212

अपरोक रिपपाक आदंशित पम के दंदर्भ में की गई व्रस्टबन on formation es Tree translocation plan, translocation of the अर्थित हैं हैं कार्य किर्याहर कार्यात हैं हैं कार्यात हैं हैं कार्यात हैं हैं कार्यात कार्या KINGS/

अनुर यथील

नियाम आज कार्यपालक अभियन्ता । राष्ट्रीय उच्च पथ प्रमण्डल लखीतराय, गुंव-गुंगेर 20/10/2022

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# TRANSLOCATION OF TREES PLAN

MUNGER TO BHAGALPUR, FROM KM 70.150 TO 121.025 OF NH-80

For Munger Div. From km 70.150 to km 93.000 part of project

#### **Contents**

- 1. Introduction
- 2. Tree Protection Plan
- 3. Methodology of Tree Translocation
- 4. List of felling / Translocation of trees.
- 5. Calculation Table of Tree Translocation within ROW.

#### 1. INTRODUCTION:

The Authority has awarded the project "Rehabilitation & Widening work for 2 – Lane with paved shoulder of existing National Highway 80 Alignment from KM 70.150 to Km 121.025 Munger – Sultanganj - Bhagalpur section in the state of Bihar" to the EPC Contractor.

This report explains Avenue Tree Translocation Planning & its Estimate for Munger – Bariarpur from km 70.150 to 93.000 which is part of above project.

For this purpose the total **1185** number of trees are found within proposed toe line of the project highway. Out of that **804** no. of trees are proposed for **Translocation** and **381** no. of trees are proposed for **felling**.

To counterbalance the loss of trees and other changes resulted into the surroundings; there is a need to follow the approach of "Corridor Development & Management", rather than "Highway Development". Apart from mitigating the environmental losses, it must plan to enhance the aesthetics of the highway corridor from all possible angles. Highways should not be looked upon merely as a means of transportation, but as a part and parcel of the environmental and socio-economic milieu.



#### 2. Translocated Tree Protection Plan

**Project Name:** Rehabilitation & Widening work for 2 – Lane with paved shoulder of existing National Highway - 80 Alignment from KM 70.150 to Km 121.025 Munger – Sultanganj - Bhagalpur section in the state of Bihar.

#### Brief Information about the Project:-

The Government of Bihar has decided to take up the development of various road stretches/Corridors in the various parts of the State to upgrade the road network to meet the growing traffic requirement in of the State by augmenting the road capacity for safe and efficient movement of the traffic of selected road stretches for NH connectivity to stone quarries at Mirzachowki (Jharkhand) for fulfillment of requirement of Stone metal and chips required for ongoing infrastructure development projects. Further Kahalgaon Thermal Power Station also serves the major supply of Fly-Ash in this region.

In pursuance of the above the Road Construction Department on behalf of MoRTH have decided to take up "Rehabilitation and Widening to 2-Lane with Paved Shoulder Configuration and Strengthening of existing Road Munger – Sultanganj – Bhagalpur from Km 70.150 to Km 121.025 under the District of Munger and Bhagalpur, in the State of Bihar. Total length is 50.875 km (22.85 km lying in Munger District from Munger to Bariyarpur) under EPC Mode" to improve the efficiency of freight movement having a total length 50.875 km and proposed Right of Way (ROW) varies between 10 m to 40 m.

Project stretch falls in the state of Bihar an Indian state considered to be a part of South Bihar Patna to Bhagalpur.

The Project will result in fast economic growth to the region as it will connect to capital Patna and generally traverses in the East-West direction and start from T-Junction Point at Munger i.e Ch. 69.400, passing through Herudiara, Sangrampur, Bishunpur, Fatmachak, Salempur, Nawagarhi, Brahamasthan, Binddiara, Mahdewa, Kalyanpur, Raghunathpur, Prem Tola, Ghorghat, Fatehpur, Kamarganj, Kushahi, Jhangira, Masdi, Sultanganj, Kasimpur, Afjuganj, Kalgama, Maheshi, Painenglish, Chichron, Alamgirpur, Akbarnagar, Basantpur, Ramchandarpur, Dogachi and Finally terminates at Ch. 121+025 at Start Point Jn. of Bhagalpur By-pass. (Bihar).

Absence of alternative mode of travel in the region between Munger to Bhagalpur leaves this Highway as the only means of communication.

This proposed project road will provide uninterrupted free flow of traffic and shall result in:-

- 1. Saving in travel time, cost and Natural resources (Fuel).
  - 2. Saving in foreign exchange due to less consumption of fuel.
  - 3. Increase in income of truck, bus, taxi etc. Owners as they will be able to communicate maximum distance in short time.
  - 4. Reduction in accidents as it will provide safe travel.
  - 5. Will act as catalyst to the Infrastructural & Industrial development.

Section from km 70.150 (Herudiara chowk) to km 93.000 (Bariyarpur) falls under the jurisdiction of Forest Division Munger having a length of 22.85 km. and km 93.000 (Bariyarpur) to km 121.025 (Bhagalpur) of proposed road falls under the jurisdiction of Forest Division Bhagalpur having a length of 28.025 km. Sufficient care has been taken during the design stage to keep the alignment along the existing road/highway to utilize its ROW. There is no forest areas located along the project road in view of the above.

The proposed alignment passing through the notified unprotected forest land from km 70.150 to km 93.000

The trees present in the proposed alignment have been jointly visited and the numeration list has been prepared. In total 1185 trees has been identified along the road/Highway alignment under Forest Division Munger, out of which 804 trees has been identified for the translocation and rest 381 trees has been marked to be cut.

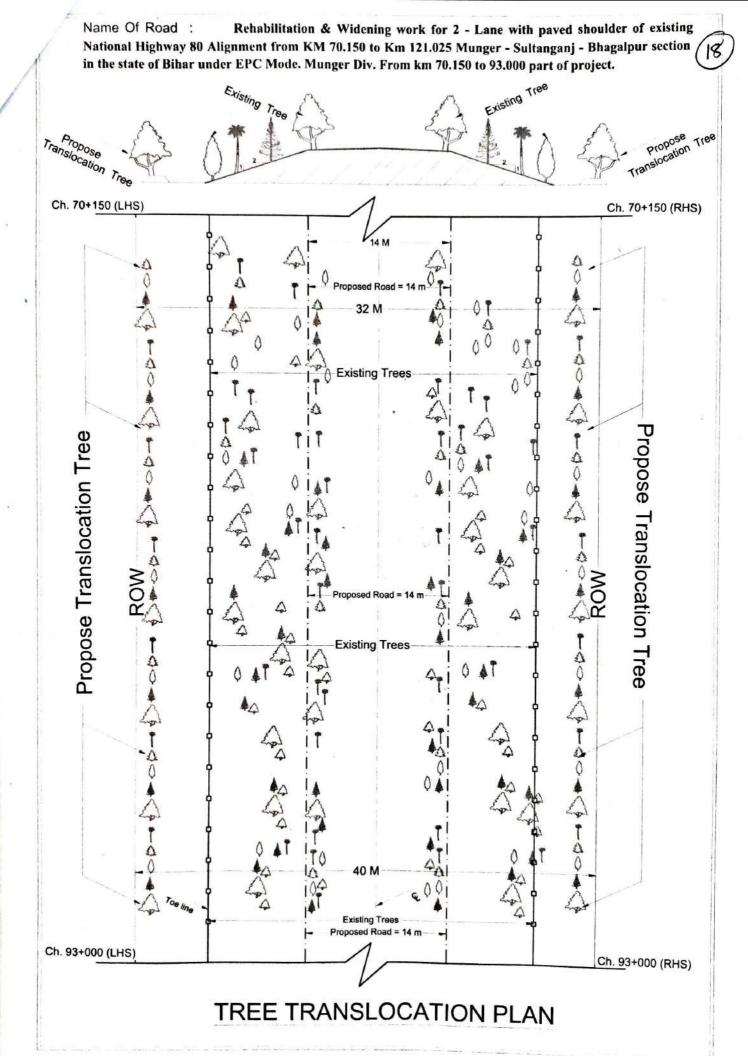
#### Details of trees affected and to be translocated:

Details including species, name and the size of the trees after joint enumeration and verification has been prepared and attached herewith separately. Affected trees would be translocated in the ROW of the Project Munger to Bariarpur

#### Tree protection:

Project Period: 2021-22 to 2022-23

Tree Protection Period: 2021-22 to 2023-24

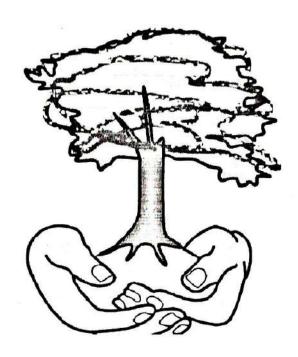




#### 3. METHODOLOGY OF TREE TRANSLOCATION

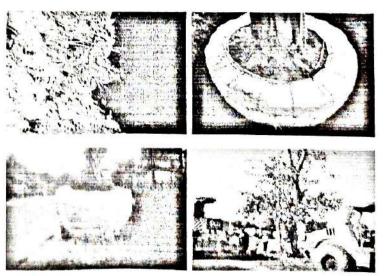
Name of Project: "Rehabilitation & Widening work for 2 — Lane with paved shoulder of existing National Highway 80 Alignment from KM 70.150 to Km 121.025 Munger — Sultanganj - Bhagalpur section in the state of Bihar" on EPC Mode. Bhagalpur Div. from km 93.00 to km 121.025 Part of Project.

Subject:- Methodology of Tree Translocation within ROW



### Methodology of Tree Translocation

- 1.General
- 2.Soil Testing
- 3.Tree Preparation
- 4.Root Excavation
- Method
- 5.Transport
- 6.Planting Procedure
- 7. Tree Support
- 8. Watering
- 9. Maintenance



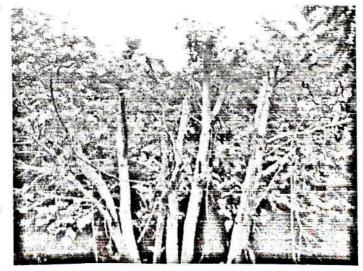
#### CONTENTS

- 1. General: Translocation or Transplantation of trees from one location to another site is a major operation. The work shall be executed & supervised by a well experienced person in this type of work. Roots investigation. Diagnosis of health & Treatment of infected area must be executed before initiation. The most difficult job is production of root ball by digging mechanically and manually all around the tree, carefully cutting the roots, then wrapping the root ball in netting. The difficulty is to handle the root ball without causing deformation
- 2. <u>Soil Testing</u>: The work shall be executed supervised by a well experienced person in this type of work. Analysis of the soil at the proposed transplant site where the tree has to be translocated and if require any, import backfill materials so that appropriate amendments applied. Analysis may include pH. Organic Matter, Major and Trace Elements and Exchangeable Cations.

#### 3.Tree Preparation:

3.1 Formative Pruning - Selectively remove specific branches to enhance form and improve structure, and to directionally shape the tree. With smaller

diameter branches it may be necessary to reduce the branch to a dormant bud. Formative pruning shall aim to reduce the development of structural weaknesses and to accommodate site constraints and reduce encroachment on utilities as the tree grows.

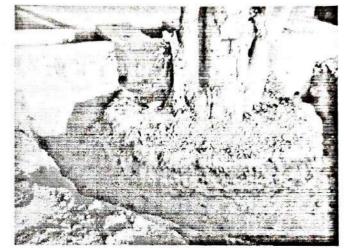


### 3.2 Root Preparation Requirements and Responsibilities -

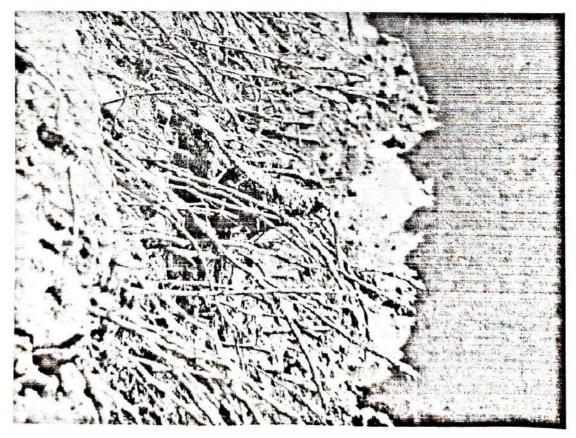
In all cases a preparation of the root system, that is to say, a circular partial cutting of the roots all around the tree is strongly recommended one to two months before transplanting.

This ring cutting has the objective of spreading the period of trauma to which the tree is subjected so as to permit it to react in the best way.

Root pruning and soaking shall be carried out a minimum of 1 months before transplanting.



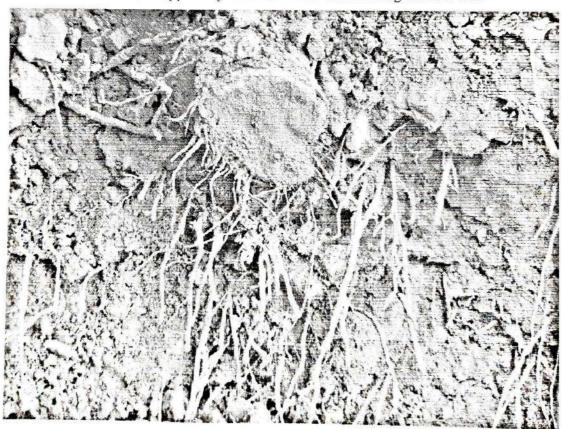
The pruning trench shall be backfilled with a sandy soil mixture and kept moist



leading up to the transplant date. The soil moisture content shall be maintained to adequately support the health of the tree. The remaining soil shall be used to build a water holding berm around the outside of the backfilled trenches.

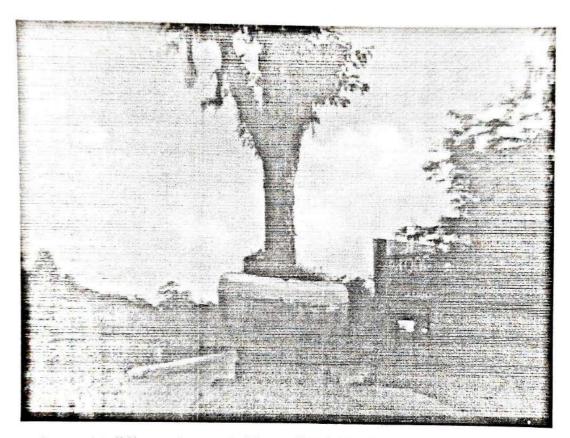
4. Root Excavation Method: Prior to digging, the soil around the root system shall be thoroughly moistened to help keep the root ball together.

The root ball shall be excavated around the outside of the root trench. All exposed roots shall be pruned flush with the face of the root ball. Sharp Biades shall be used to cut roots. Roots shall be cut in a way that will not jar and loosen the soil in the root ball. The depth of the root ball is depend on each individual tree species. Digging below the root ball shall occur when the amount of roots reduce considerably within the root ball trench. This will determine the depth of the root ball. Tension shall be applied by the crane while undercutting the root ball.



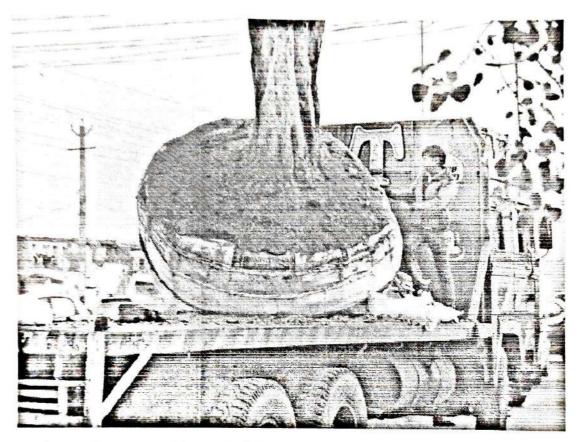
#### 5. Transportation:

5.1 **Lifting Technique** - Lifting of trees shall be carried out or supervised by a qualified and/or suitably experienced person and crane operator using a crane and supports



Appropriate lifting equipment shall be used. Suitable slings shall be attached around a balance point of the trunk and shall provide a support system around the root ball. When a sling is attached to the trunk, padding and protection is required to reduce possible damage. A qualified crane operator shall determine the support system to be used.

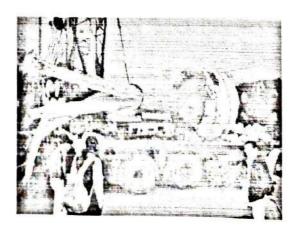
5.2 Preparation for Transport - Only natural fibre materials that have not been chemically treated shall be used to support the root ball. Synthetic materials shall not be used. Burlap shall be applied before moving the tree to protect the



shape and structure of the root ball during transport. Once the tree is lifted burlap shall be used to cover the base of the root ball.

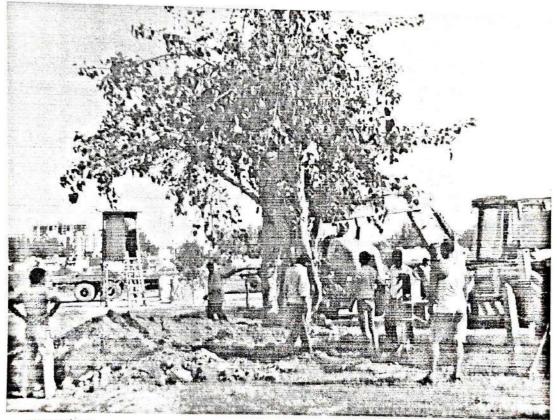
5.3 Transport Vehicle - The transport vehicle shall be adequate to transport the tree without damage.

6. Planting Procedure:



6.1 Preparation of Planting Hole - Excavated soil may be used as backfill if it is free of weeds, deleterious materials and particles larger than 25 mm. When backfilling, sedimentary layers in soil shall be observed so topsoil remains above the subsoil.

Remove from site any unsuitable material brought to the surface during



excavation.

The planting hole shall be excavated by spade. The hole shall be 600 mm wider than the diameter of the root ball and no deeper than the height of the proposed root ball. If the depth of the hole exceeds the root ball height, compacted soil shall be added to the hole to prevent settling after transplanting. The sides of the hole shall be roughened to create an irregular surface that will facilitate root penetration

The bottom of the hole shall be decompacted to a depth of 150 mm and lightly compacted.

6.2 **Orientation** - The tree shall be orientated at the new site in the same direction as at the original site.



6.3 Backfill - If excavated material is unsuitable for backfill, imported soil shall be used. Imported soil shall be as closely as practicable to the existing site soil. Organic matter shall not be added to the backfill material.

Any soil deficiencies shall be rectified prior to placing backfill.

6.4 Fertilizer and Soil Additives - Requirements of fertilizer and/or other soil additives as per experienced person.

#### (a)TerraCottem

TerraCottem shall be applied as required.

#### (b)Gypsum

Gypsum shall be applied in accordance with the requirements.

#### (c)Sugar

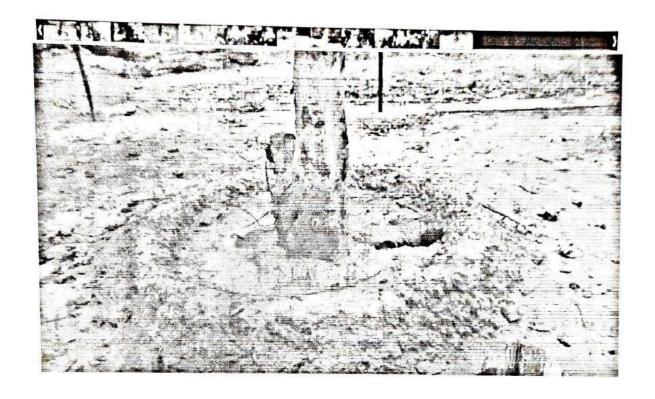
The backfill shall be soil injected with a sucrose solution at 20 grams per liter of water and approximately 100 liters of solution applied per tree. Soil injections of Sucrose Solutions have been shown to improve the defence systems of stressed trees and increase the volume of new roots.

#### (d)N-Fix

The backfill shall be soil injected with N-Fix at 10 ml N-Fix per 1 litre of water applying approximately 100 litres of solution per tree, evenly injected over the available root zone.

#### (e)Rooting Hormone

### Photographs:



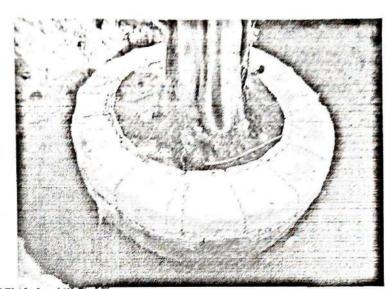


Rooting hormone shall be mixed with the backfill material before the tree is positioned.

#### 7. Tree Support:

Scaffoldings or hydraulic crane should be used to support pre and post translocation of the trees.

8. Watering: Immediately following planting, each tree shall be soaked to remove air pockets from the soil.





Ensure that trees maintain health and are free of water stress at all times.

Monitor moisture levels to determine the exact watering requirements to ensure tree survival.

Water shall be applied to the entire root area and not just the immediate trunk base.

9. Maintenance: The tree shall be maintained for a period of minimum one year. Regular inspection & strict schedule should be followed.

- H 20.10.22

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Executive Engineer
N. H. Division
Lakhisarai at Munger

Authors Signatury

LIST OF FELLING/ Translocation of Treer.

								— т		
	Total	1961		<u>cs</u>	381	4	Total	379	425	804
		>150 cm	23	15	28		>150 cm	89	19	129
Abstract of trees that are likely to be affected in NII-80 from KM 70,150 to 93,000		121 - 150 cm	=	18	29		121 - 150 ст	91	24	40
se affected in	Abstract of tree to be cutting	91 - 120 ст	25	29	54	anslocate	91 - 120 cm	40	46	98
it are likely to be affe KM 70,150 to 93,000	hatract of tree	m2 06 - 19	32	25	57	Abstract of tree to be translocate	61 - 90 cm	96	106	202
of trees that a	Commence and a second s	31 - 60 cm	101	82	183	Abstract	31 - 60 ст	144	173	317
Abstract	The second secon	0 - 30 cm	14	16	30		0 - 30 cm	15	15	30
		Girth Size	LHS	KHS	Total		Girth Size	CHS	RHS	Total
	4	Sl. Na.	and.	Fi		æ	S.Ve.		7	

Total nos. of trees that are likely to be affected in NH-80 = A+B

No states

Executive Engineer N.H. Division, Laklusarai at-Munger

5.4.22

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# पातित छोने वाले वृत्ती की प्रणातिवार पीवित्त विवरणी।

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	<u>!</u>	KUOIA	10	
-	2	गम्ल	07	
-	3	यतीन	14	
-	1	YIFF	8	
H	5	वीनवीन।	0	
F	6	आग .	60	
1	7	संस्रुआ	1	
1	8	गनिजरा	2	
+	9	वाताम	3	
1	10	जलेवी	2	
1	11	नारियल	3	
	12	फरव	2	
	13	जेहल	3	
	14	चकुण्डी	1	
	15	मीलेश्वरी	2	
	1	6 जहीर	1	
	1	7 गुलमोहर (150 से0 मी0 गोलाई से अधिक)	į <b>1</b>	
	1	8 शिरीस (150 से0 मी0 गोलाई से अधिक)	4	
19		9 शीशम (150 सेo मीo गोलाई से अधिक)	- 1	
		0 गम्हार (160 से0 मी0 गोलाई से अधिक)	4	
		· कुल-	196	

LHS	190
RHS	185
कुल-	
	381

	RIIR	***************************************
mo vlo	मृता की प्रकारि	यूक्षी की शंठ
1	रवर्गस	12
2	वव्स	61
3	यक्त	16
4	राा४	2
5	<b>ह</b> िनहींना	· · · · · · · · · · · · · · · · · · ·
в	अग	63
7	येर	1
8	लथोर	1
9	नारियल	5
10	जलेवी	3
11	जेहल	1
12	शीशम (150 से0 मी0 गोलाई से अधिक)	6
13	गुलमोहर (150 से0 गी0 गोलाई से अधिक)	1
14	अशोक (150 से0 गी0 गोलाई से अधिक)	1
15	शिरीस (150 से0 मी0 गोलाई से अधिक)	2
16	नीम (310 से0 मी0 गोलाई से अधिक)	1
17	गम्हार (150 से0 मी0 गोलाई से अधिक)	7
18	छतवन (150 से0 मी0 गोलाई से अधिक)	1
19	अर्जुन (310 से0 गी0 गोलाई से अधिक)	1
	कुल-	185

पुन प्रमंडल पदाधिकारी, भूगेर बन अमंडल, मुंगेर।

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# 5. CALCULATION OF TREE TRANSLOCATION AT AVAILABLE / VACANT LOCATION BEYOND ORNAMENTAL

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# 2

# CALCULATION OF TREE TRANSLOCATION AT AVAILABLE / VACANT LOCATION BEYOND ORNAMENTAL PLANTATION LINE

TEANTATION LINE						
SI. No.	Chainage From	Chainage To	Length (M)	Nos. of Sh plants at	10 20	Remark
				LHS	RHS	
39	81300	81500	200	27	15	
40	81500	81700	200	14	22	
41	81700	82000	300	30	-	
42	82000	82300	300	14	33	
43	82300	82500	200	9	8	
44	82500	82700	200	5	4	
45	82700	83000	300	-	-	
46	83000	83200	200	3	3	
47	83200	83500	300	-	3	
48	83500	83700	200	9	11	
49	83700	84000	300	3	15	
50	84000	84200	200	-	-	BUILTUP AREA
51	84200	84500	300	-	_	BUILTUP AREA
52	84500	84700	200	-	-	BUILTUP AREA
53	84700	85000	300	-	-	BUILTUP AREA
54	85000	85200	200	-	-	BUILTUP AREA
55	85200	85500	300	_	2	BUILTUP AREA
56	85500	85700	200	-	-	BUILTUP AREA
57	85700	85900	200	-	_	BUILTUP AREA
58	85900	86000	100	-	-	BUILTUP AREA
59	86000	86200	200	-	_	BUILTUP AREA
60	86200	86250	50	(;=	-	BUILTUP AREA
61	86250	86400	150	-	-	BUILTUP AREA
62	86400	86600	200	_	_	BUILTUP AREA
63	86600	86800	200	_	_	BUILTUP AREA
64	86800	87000	200	-	-	BUILTUP AREA
65	87000	87200	200		-	BUILTUP AREA
66	87200	87400	200	-	-	BUILTUP AREA
67	87400	87600	200		-	BUILTUP AREA
68	87600	87800	200	3	3	BOILTOF AREA
69	87800	88050	250	<del></del>		
70	88050	88250	200	-	_	BUILTUP AREA
71	88250	88450	200	1	2	BUILTUP AREA
72	88450	88650	200	2	1	
73	88650	88850	200	1	2	BUILTUP AREA
74	88850	89050	200	1	2	BUILTUP AREA
75	89050			-		BUILTUP AREA
/5	03030	89250	200	2	1	BUILTUP AREA

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# . CALCULATION OF TREE TRANSLOCATION AT AVAILABLE / VACANT LOCATION BEYOND ORNAMENTAL

PLANTATION L	INE
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SI. No.	Chainage From	l l nlants at one side			Remark	
				LHS	RHS	
76	89250	89350	100	1	2	BUILTUP AREA
77	89350	89450	100	1	1	BUILTUP AREA
78	89450	89650	200	2	2	BUILTUP AREA
79	89650	89850	200	1	1	BUILTUP AREA
80	89850	90050	200	2	1	BUILTUP AREA
81	90050	90250	200	3	5	
82	90250	90450	200		8	
83	90450	90650	200	17	16	
84	90650	90900	250	2	15	
85	90900	91200	300	-	-	
86	91200	91500	300	4	7	BUILTUP AREA
87	91500	91700	200	-	2	BUILTUP AREA
88	91700	92000	300		-	BUILTUP AREA
89	92000	92200	200		-	BUILTUP AREA
90	92200	92500	300	-	-	BUILTUP AREA
91	92500	92700	200	-	-	BUILTUP AREA
92	92700	93000	300	-	-	BUILTUP AREA
	To	tal length=	22850	417	387	

**EXECUTIVE ENGINEER** 

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N.H. DIVISION, MUNGER

For M.G. Contractors Pvt. Ltd.