



पटना - जल्ला - यासाराम-

NH-119-A Forest File No-2

o/c

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण National Highways Authority of India

परियोजना कार्यान्वयन इकाई, पटना
Project Implementation Unit, Patna

क्लासिकॉन शिवमित्रा (Classicon's Shivmitra)
विवेकानन्द मार्ग, बोरिंग रोड, पटना - 800 013

Vivekanand Marg, Boring Road,
Patna - 800 013. Ph. : 0612-2571184

Email : patna@nhai.org | nhaipatna@gmail.com



NO. NHAI/PIU/Patna/NH-119-A/Forest/2022/ 1180

Date: 27.12.2022

To,

Divisional Forest Officer
Patna Forest Division, Patna
Sanyukt Van Bhawan, Nehru Nagar,
Patna, Bihar 800013

Sub: Preparation of DPR for development of Economic Corridors and Inter corridor, Feeder Routes to improve the efficiency of freight movement in India under Bharatmala Pariyojana (Lot-7/ Package-2) – **Submission of Tree Protection Plan for Forest Clearance. – Reg.**

Ref: - DPR Consultant M/s MSV letter C-165 dated 24.12.2022

Sir,

This has reference to subject cited above and letter u/r vide which DPR Consultant M/s MSV has submitted Tree Protection Plan (TPP).

In light of this duly vetted TPP is hereby submitted for further necessary action.

Encl: Tree Protection Plan (TPP)

(A. R. Chitranshi)
Project Director

Copy to: - DPR Consultant M/s MSV



MSV INTERNATIONAL INC.

In Association with

**MSV INTERNATIONAL TECH
PVT. LTD.**

MSV International, Inc.
3rd Floor, C/O Shri BK Tiwari,
Banker's Colony, Kothwan Road
near Kashyap Green City,
PO- Khagoual (Danapur)
Dist.- Patna - 802205
Email: msv.patnadpr@gmail.com
CIN: F04214

PREPARATION OF DPR FOR BHIDCHANPURA - BEGUSARAL ARA-MOHANIA AND KHELANGANJ - EKAUNA HIGHWAY UNDER BHARATMALA PARIYOJANA (LOT-7/PACKAGE-2)

Ref: - MSV/BM-PJ/002/NHAI/DPR/LOT-7/PKG-2/BH/2018/C-165

Dated: 24/12/2022

To,
The Project Director,
National Highway Authority of India,
Classicon's Shivmitra,
Vivekanand Marg,
Bording Road, Patna-800013,
E-mail Id _patna@nhai.org / nhaipatna@gmail.com.

Sub: Consultancy Services for preparation of DPR for development of Economic Corridors, Inter Corridors, Feeder Routes and Border to improve the efficiency of freight movement in India under Bharatmala Pariyojana Lot-7/Package-2 NH-119A (Ara-Sasaram-Patna-Section) in state of Bihar.

Reg. Submission of Tree Protection Plan for Forest Clearence.

Dear Sir,

We are hereby submitting Tree Protection Plan for Forest Clearence of Ara-Patna (Ring Road) 0+000km to 34+800km for preparation of DPR for development of Economic Corridors, Inter Corridors, Feeder Routes and Border to improve the efficiency of freight movement in India under Bharatmala Pariyojana Lot-7/Package-2 NH-119A (Ara-Sasaram-Patna-Section) in state of Bihar.

Thanking and assuring you our best services all the times.

Thanking you

For MSV International Inc.

N.C. Mishra
(Authorized Signatory)

Enclosure:- Tree Protection Plan.

TREE PROTECTION PLAN

Project Title: Construction of 4/6 Laning of Arrah-Sasaram-Patna Road section of NH-119A from Km 00+000 to Km 34+800 (Ring Road) under Bharatmala Pariyojana (Lot-7/Package-2) in the State of Bihar (Package-III)

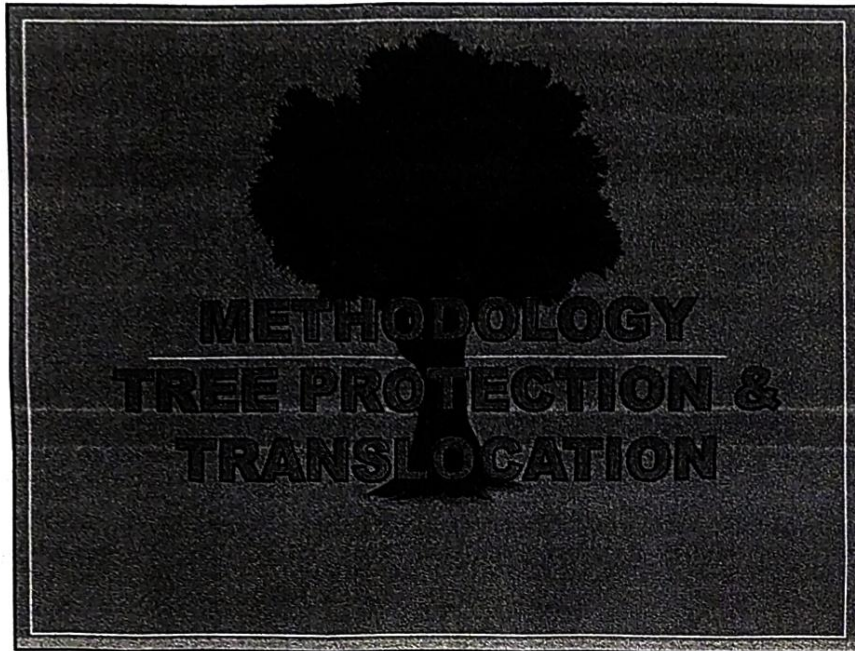
Forest Proposal No. : FP/BR/ROAD/157408/2022
Area of Forest Land : 1.964 Hectare
Forest Division Patna : 0.978 Hectare

Name of Work

Diversion of 1.964 Ha Forest land for Construction of 4/6 Laning of Arrah-Sasaram-Patna Road section of NH-119A from Km 00+000 to Km 34+800 (Ring Road) under Bharatmala Pariyojana (Lot-7/Package-2) in the State of Bihar (Package-III)

Executing Agency

National Highway Authority of India
(Ministry of Road Transport & Highways, Government of India)
Project Implementation Unit (PIU) – Patna
Shivmitra Apartment, B Block, Vivekanand Marg
Boring Road, Patna – 800013 (Bihar)



Needs for the transplantation

- To conserve the large sized trees as well to avoid green felling
- To conserve rare endangered and threatened trees
- To provide shelter and food for the birds
- To conserve the ecosystem



Chetray

CRITERIA FOR SELECTION OF TREES FOR TRANSPLANTING

- BASED ON GIRTH – 0.3 m to 1.5 m
- BASED ON HEIGHT – 4 m to 11 m
- BASED ON AGE – 15 years to 45 years (younger trees perform well than the older trees)
- BASED ON ROOTSYSTEM - Fibrous root system (more survival rate)
- BASED ON CHARACTERS OF ADOPTABILITY (adoptable for climatic and edaphic conditions)
- BASED ON THE SILVICULTURAL CHARACTERS – (root suckering, coppicing)

Shocks observed during the transplantation to the tree

Mainly 4 times shocks observed during the transplanting

- Exposure to sun – Sudden exposure cause damage to roots
- Uprooting of trees – since it is positively shows geotrophic nature which cause sudden shock while uprooting
- Transportation shocks- while transporting disturbance to trees
- While planting in another new place and soil

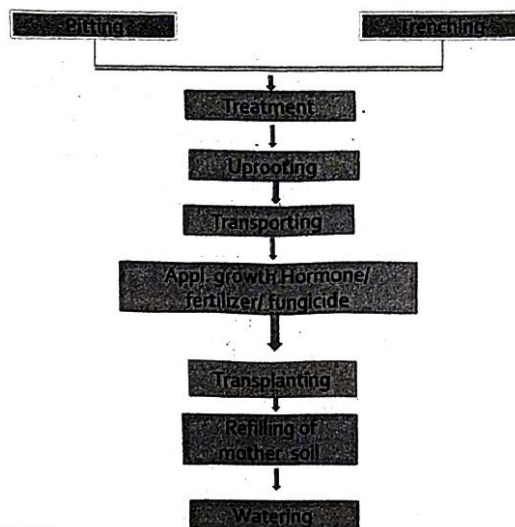


Chetray

Season for the transplanting

Rainy and winter season is prescribed for successful transplantation.

Overview of process



Chetna

1) Pitting (planting site):

- Size of pit : 3 x 3 x 3 m (depends on root stock and ball of earth)
- Time of pitting : 5 days before transplanting
- Watering: 1 tanker (5000 ltr) of watering per day is done up to 5 days to facilitate easy working (uplifting site and translocation site)



Pit size

S. No.	Pit size (m ³)	Girth class (m)	Size of the tree
1	2×2×2	0.3 to 0.5	Small
2	2.5×2.5×2.5	0.51 to 1.0	Medium
3	3×3×3	1.01 to 1.5	Large

Based on the size of the tree the pit size is decided and excavated



Chetana

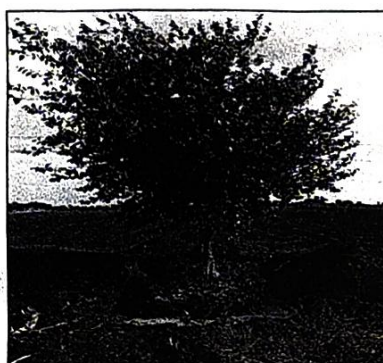
2) Trenching:

Purpose: facilitate easy working

Time of Trenching: 5 days before transplanting

Size: 2 x 2 m, 2.5 x 2.5 m or 3 x 3 m (depends on root system and size of the tree)

Watering: should be daily once



3) Pre Treatment:

S. No.	Name of Agent	Chemical Name	Application	Quantity/tree (liters)
1	Anti termite	Chloropyrifos 20% EC	4 ml / 3 liter of water	8
2	Antibacterial	Bactinash 200	17 gms / 3 liter of water	2
3	Antifungal	Corbondazim (Bavistin)	2 gms / 3 liter of water	15
4	Root hormone	IBM	20 ml	
5	Vermicompost	----	15 kg / pit	



Chetraj

Cushioning

In order to protect the outer layer of the tree (bark) the trees are covered with gunny bags and tied with ropes at breast height by which cushioning effect can be ensured.

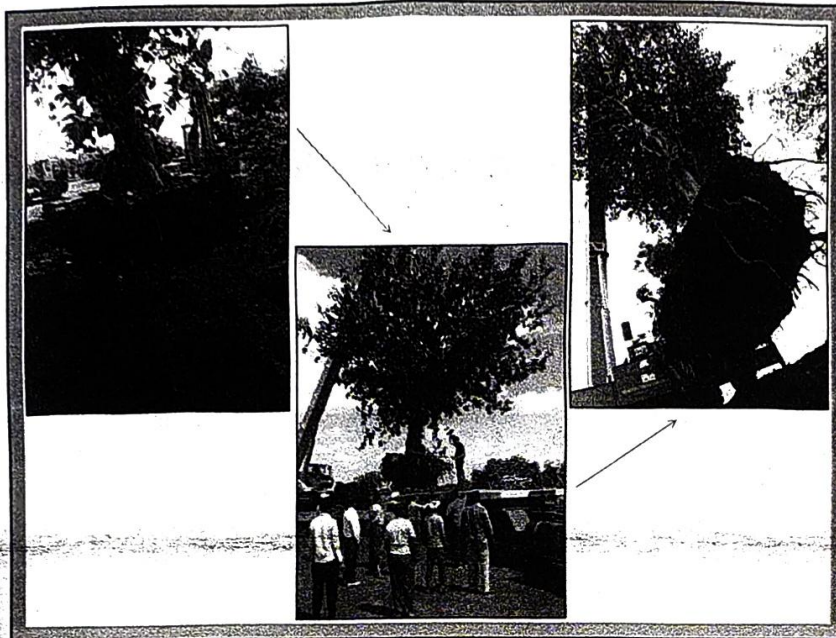


4) Uprooting:

- Watering in advance will facilitate easy working
- Precaution should be taken so that branches and mother roots are least damaged
- Cloth belt is tied at breast height level
- With the help of crane whole tree is pulled upwards and placed over the transporting vehicle

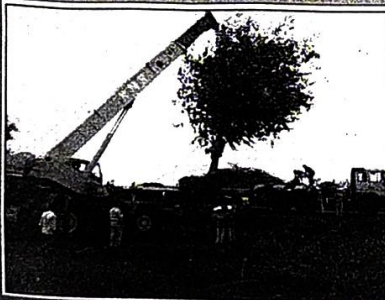


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5) Transporting

- Since the trees are negatively geo-trophic the ball of earth is covered with wet gunny bags and also ball of earth can be transported without any damage.
- Once the tree is lifted, then the entire ball with tree is tilted to rest on the transporting vehicle.
- Adequate precaution are taken during transit.
- Branches tied/trimmed properly to avoid any hindrance during transportation.
- Support of Traffic police.

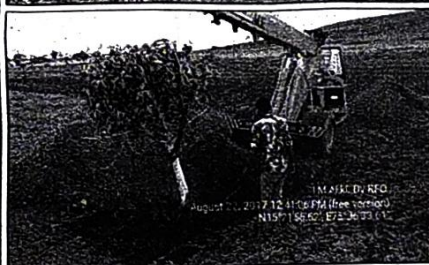


Chetany

6) Transplanting:

- At the transplanting site half the pit is filled with mother earth and Anti termite, Anti bacteria, Anti fungal, Root hormone such as GA3 is applied along with vermicompost in order to boost the growth of newly transplanted trees.
- With the help of crane tree is aligned vertically in the pit which is excavated to translocate a tree.
- To make the pit compact soil is refilled from all side.
- Water is poured till the soil reaches its saturation.
- Damaged branches /roots are treated with cow dung for new sprouting.

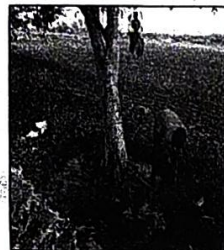
Transplanting in other location



Chetraj

Post treatment

- Damaged branch part cutting
- Regular watering
- Burrowing
- Cow dung slurry application
- Fertilizer application



Initial reactions after translocation

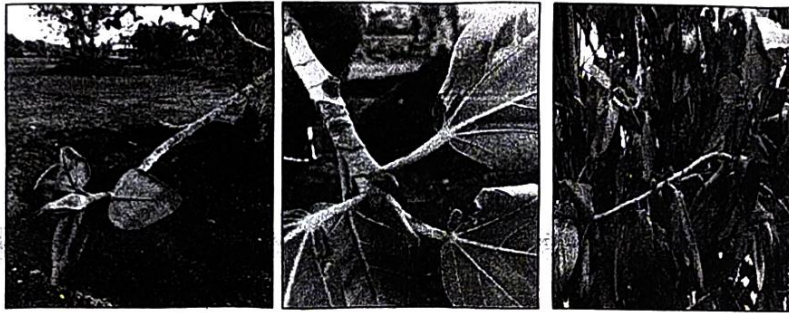
- Leaf shedding
- Drying of leaves and branches
- Fungal / Bacterial / insect attack



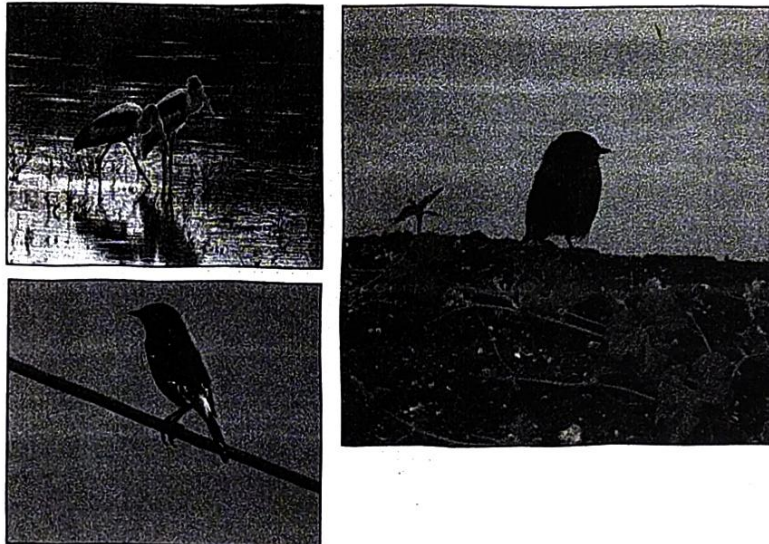
Chetrag

Signs of successful establishment

- New sprouting – leaves and branches
- Fruiting in translocated trees



Successful in case of creating Habitat for birds



Chetrag

Requirement of resources

Machines: J C B
Tractor
Hitachi
Crane
Water tanker

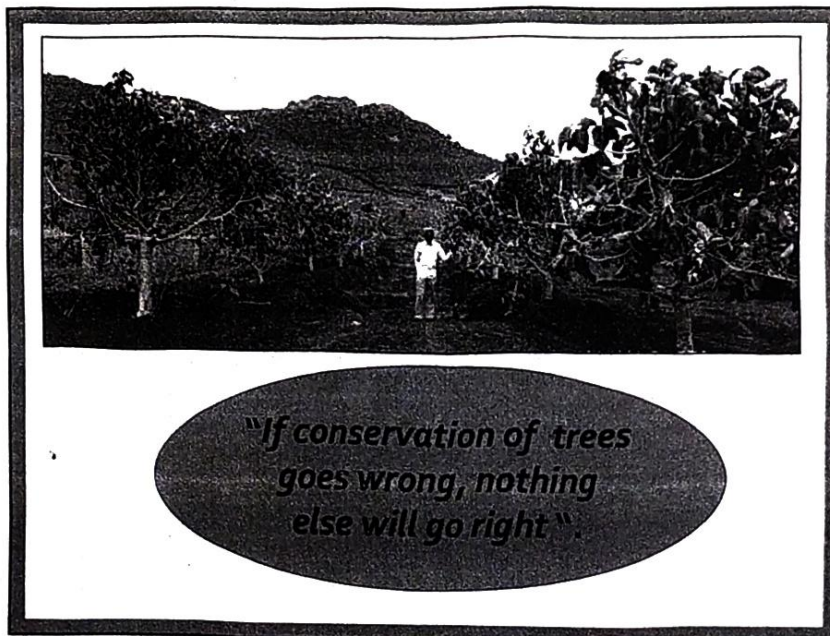
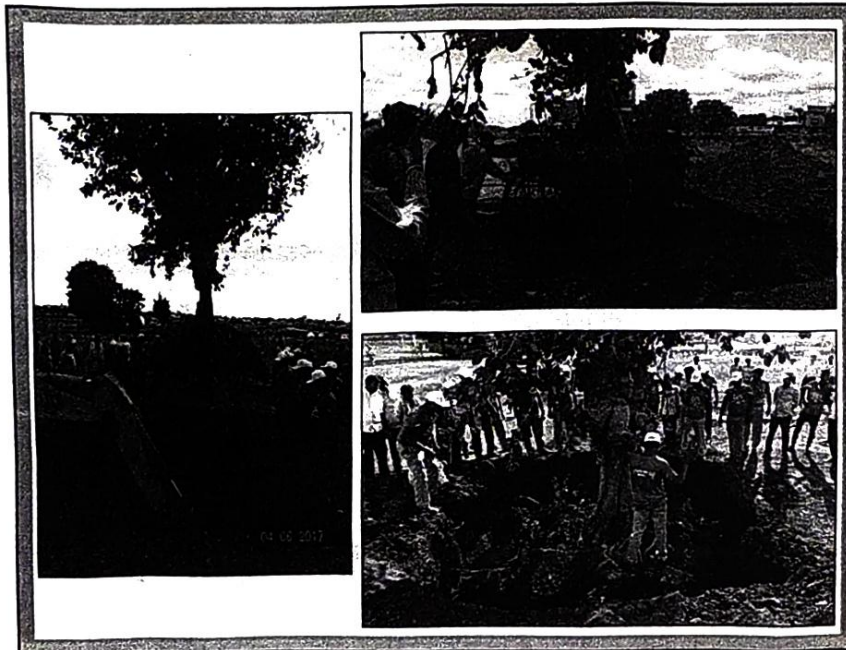
Materials: Rope
Packing materials (Gunny Bags)
Bedding materials (Vermicompost,
pesticide, fungicide, growth promoter)

FACTORS RESPONSIBLE FOR SUCCESS OR FAILURE OF TRANSPLANTING

- Distance of travelling
- Treatment
- Exposure
- Season



Chetana



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Affected Trees Details for Tree Protection Plan (TPP)

Project Name: Construction of 4/6 Laning of Arrah-Sasaram-Patna Road section of NH-119A from Km 00+000 to Km 34+800 (Ring Road) under Bharatmala Pariyojana (Lot-7/Package-2) in the State of Bihar (Package-III).

Forest Proposal No.: FP/BR/ROAD/157408/2022

S. No.	Tree Name	Tree No.	Girth (cm)	LHS/ RHS	Chainage	Status	To be Cut/ Translocate
(1) Name of Reach - Bikram - Bihta Road, Village Name - Jamnapur							
1	Arjun	1	180/210	LHS	Arrah- Sasaram-Patna Road section of NH-119A - Proposed Design Chainage (Km)- 07+300 - 07+400	Green	To be Translocate
2	Siris	2	52	LHS		Green	To be Translocate
3	Siris	3	64	LHS		Green	To be Translocate
4	Siris	4	75	LHS		Green	To be Translocate
5	Siris	5	72	LHS		Green	To be Translocate
6	Arjun	6	30	LHS		Green	To be Translocate
7	Siris	7	45	LHS		Green	To be Translocate
8	Siris	8	50	LHS		Green	To be Translocate
9	Chatvan	9	30	LHS		Green	To be Translocate
10	Siris	10	110	LHS		Green	To be Translocate
11	Siris	11	50	LHS		Green	To be Translocate
12	Chatvan	12	40	LHS		Green	To be Translocate
13	Chatvan	13	16	LHS		Green	To be Translocate
14	Siris	14	140	RHS		Green	To be Translocate
15	Chatvan	15	10	RHS		Green	To be Translocate
16	Chatvan	16	30	RHS		Green	To be Translocate
17	Chatvan	17	40	RHS		Green	To be Translocate
18	Chatvan	18	20	RHS		Green	To be Translocate
19	Siris	19	60	RHS		Green	To be Translocate
20	Chatvan	20	30	RHS		Green	To be Translocate
21	Chatvan	21	25	RHS		Green	To be Translocate
22	Chatvan	22	25	RHS		Green	To be Translocate
23	Chatvan	23	20	RHS		Green	To be Translocate
24	Chatvan	24	10	RHS		Green	To be Translocate
25	Chatvan	25	25	RHS		Green	To be Translocate
26	Chatvan	26	30	RHS		Green	To be Translocate
27	Siris	27	50	RHS		Green	To be Translocate
28	Siris	28	90	RHS		Green	To be Translocate
29	Chatvan	29	15	RHS		Green	To be Translocate
30	Chatvan	30	20	RHS		Green	To be Translocate
31	Chatvan	31	20	RHS		Green	To be Translocate
32	Chatvan	32	40	RHS		Green	To be Translocate
33	Arjun	33	20	RHS		Green	To be Translocate
34	Chatvan	34	20	RHS		Green	To be Translocate
(2) Name of Reach - Bihta Kanpa Road, Village Name - Parri							



Chatvan

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Project Director
National Highways Authority of India
PIU-Patna

S. No.	Tree Name	Tree No.	Girth (cm)	LHS/ RHS	Chainage	Status	To be Cut/ Translocate
1	Gulmohar	83	165	LHS	Arrah- Sasaram-Patna Road section of NH-119A - Proposed Design Chainage (Km)- 09+400 - 09+500	Green	To be Translocate
2	Jamun	84	260	LHS		Green	To be Translocate
3	Aam	85	35	LHS		Green	To be Translocate
4	Aam	86	90	LHS		Green	To be Translocate
5	Aam	87	50	LHS		Green	To be Translocate
6	Pipal	88	470	LHS		Green	To be Translocate
7	Neem	89	29	LHS		Green	To be Translocate
8	Neem	90	25	LHS		Green	To be Translocate
9	Mohabali	91	33	LHS		Green	To be Translocate
10	Shisham	92	60	LHS		Green	To be Translocate
11	Chatvan	93	30	LHS		Green	To be Translocate
12	Semal	94	100	LHS		Green	To be Translocate
13	Gulmohar	95	38	LHS		Green	To be Translocate
14	Bel	96	80	LHS		Green	To be Translocate
15	Jamun	97	240	RHS		Green	To be Translocate
16	Chatvan	98	35	RHS		Green	To be Translocate
17	Chatvan	99	35	RHS		Green	To be Translocate
18	Chatvan	100	40	RHS		Green	To be Translocate
19	Chatvan	101	25	RHS		Green	To be Translocate
20	Chatvan	102	35	RHS		Green	To be Translocate
21	Mohabali	103	50	RHS		Green	To be Translocate
22	Chatvan	104	18	RHS		Green	To be Translocate
23	Siris	105	77	RHS		Green	To be Translocate
24	Mohabali	106	90	RHS		Green	To be Translocate
25	Mohabali	107	85	RHS		Green	To be Translocate
26	Siris	108	25	RHS		Green	To be Translocate
27	Siris	109	25	RHS		Green	To be Translocate
28	Chatvan	110	30	RHS		Green	To be Translocate
29	Chatvan	111	35	RHS		Green	To be Translocate
30	Mohabali	112	50	RHS		Green	To be Translocate
31	Chatvan	113	35	RHS		Green	To be Translocate
32	Chatvan	114	38	RHS		Green	To be Translocate

(3) Name of Reach - Gobind Pur Road (Maner Distributary), Village Name - Ramtari

1	Mahua	115	180	RHS	Arrah- Sasaram-Patna Road section of NH-119A - Proposed Design Chainage (Km)- 11+000 - 11+300	Green	To be Translocate
2	Semal	116	65	RHS		Green	To be Translocate
3	Semal	117	70	RHS		Green	To be Translocate
4	Raat Rani	118	35	RHS		Green	To be Cut
5	Siris	119	20	RHS		Green	To be Translocate
6	Neem	120	120	RHS		Green	To be Translocate
7	Shisham	121	120	RHS		Green	To be Translocate
8	Pipal (4 Root)	122	200, 170, 170, 200	RHS		Green	To be Cut
9	Semal	123	30	RHS		Green	To be Translocate
10	Pakhar	124	150	RHS		Green	To be Translocate



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Project Director
National Highways Authority of India
PIU-Patna

S. No.	Tree Name	Tree No.	Girth (cm)	LHS/ RHS	Chainage	Status	To be Cut/ Translocate
11	Pipal	125	200, 180, 180, 240, 230	RHS		Green	To be Cut
12	Raat Rani	126	50	RHS		Green	To be Cut
13	Pipal	127	30	RHS		Green	To be Translocate
14	Bankat	128	55	RHS		Green	To be Translocate
15	Shisham	129	40	RHS		Green	To be Translocate
(4) Name of Reach - Bihta - Lai Road, Village Name - Nagarbihta							
1	Siris	130	70	RHS	Arrah- Sasaram-Patna Road section of NH-119A - Proposed Design Chainage (Km)- 12+300 - 12+500	Green	To be Translocate
2	Siris	131	80	RHS		Green	To be Translocate
3	Siris	132	65	RHS		Green	To be Translocate
4	Siris	133	125	RHS		Green	To be Translocate
5	Siris	134	80	RHS		Green	To be Translocate
6	Siris	135	155	RHS		Green	To be Translocate
7	Siris	136	65	RHS		Green	To be Translocate
8	Chakundi	137	40	RHS		Green	To be Translocate
9	Chakundi	138	75	RHS		Green	To be Translocate
10	Chakundi	139	45	RHS		Green	To be Translocate
11	Semal	140	115	RHS		Green	To be Translocate
12	Siris	141	40	RHS		Green	To be Translocate
13	Siris	142	120	RHS		Green	To be Translocate
14	Shisham	143	135, 85	RHS		Green	To be Translocate
15	Chakundi	144	50	RHS		Green	To be Translocate
16	Chakundi	145	140	LHS		Green	To be Translocate
17	Chakundi	146	145	LHS		Green	To be Translocate
18	Chakundi	147	50	LHS		Green	To be Translocate
19	Semal	148	35	LHS		Green	To be Translocate
20	Chakundi	149	145	LHS		Green	To be Translocate
21	Mahua	150	230	LHS		Green	To be Translocate
22	Chakundi	151	165	LHS		Green	To be Translocate
23	Siris	152	150	LHS		Green	To be Translocate
24	Siris	153	100	LHS		Green	To be Translocate
25	Chakundi	154	100	LHS		Green	To be Translocate
26	Chakundi	155	90	LHS		Green	To be Translocate
(5) Name of Reach - Pareo - Bindoul Road, Village Name - Etwa							
1	Semal	156	100	LHS	Arrah- Sasaram-Patna Road section of NH-119A - Proposed Design Chainage (Km)-13+200 - 13+300	Green	To be Translocate
2	Shisham	157	70	LHS		Green	To be Translocate
3	Arjun	158	450	LHS		Green	To be Translocate
4	Shisham	159	70	LHS		Green	To be Translocate
5	Shisham	160	30	LHS		Green	To be Translocate
6	Shisham	161	30	LHS		Green	To be Translocate
7	Green Simal	162	100	LHS		Green	To be Translocate
8	Green Simal	163	100	LHS		Green	To be Translocate
9	Shisham	164	70	LHS		Green	To be Translocate



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S. No.	Tree Name	Tree No.	Girth (cm)	LHS/RHS	Chainage	Status	To be Cut/Translocate
10	Shisham	165	85	RHS		Green	To be Translocate
11	Shisham	166	130	RHS		Green	To be Translocate
12	Taar	167	100	RHS		Green	To be Cut
13	Green Simal	168	120	RHS		Green	To be Translocate
14	Green Simal	169	110	RHS		Green	To be Translocate
15	Green Simal	170	120	RHS		Green	To be Translocate
16	Green Simal	171	90	RHS		Green	To be Translocate
17	Green Simal	172	90	RHS		Green	To be Translocate
18	Taar	173	100	RHS		Green	To be Cut
19	Taar	174	100	RHS		Green	To be Cut
20	Taar	175	150	RHS		Green	To be Cut
21	Taar	176	130	RHS		Green	To be Cut
22	Taar	177	100	RHS		Green	To be Cut
23	Semal	178	130	RHS		Green	To be Translocate
24	Taar	179	100	RHS		Green	To be Cut
25	Taar	180	100	RHS		Green	To be Cut
26	Green Simal	181	100	RHS		Green	To be Translocate
27	Taar	182	90	RHS		Green	To be Cut
28	Green Simal	183	100	RHS		Green	To be Translocate
29	Taar	184	130	RHS		Green	To be Cut
30	Green Simal	185	110	RHS		Green	To be Translocate
31	Taar	186	130	RHS		Green	To be Cut
32	Shisham	187	40	RHS		Green	To be Translocate
33	Shisham	188	25	RHS		Green	To be Translocate
34	Green Simal	189	150	RHS		Green	To be Translocate
35	Green Simal	190	150	RHS		Green	To be Translocate

Summary:

- 1) Total Number of Affected Trees = 142
2) Number of Affected Trees to be cut = 15
3) Number of Affected Trees to be translocate = 127



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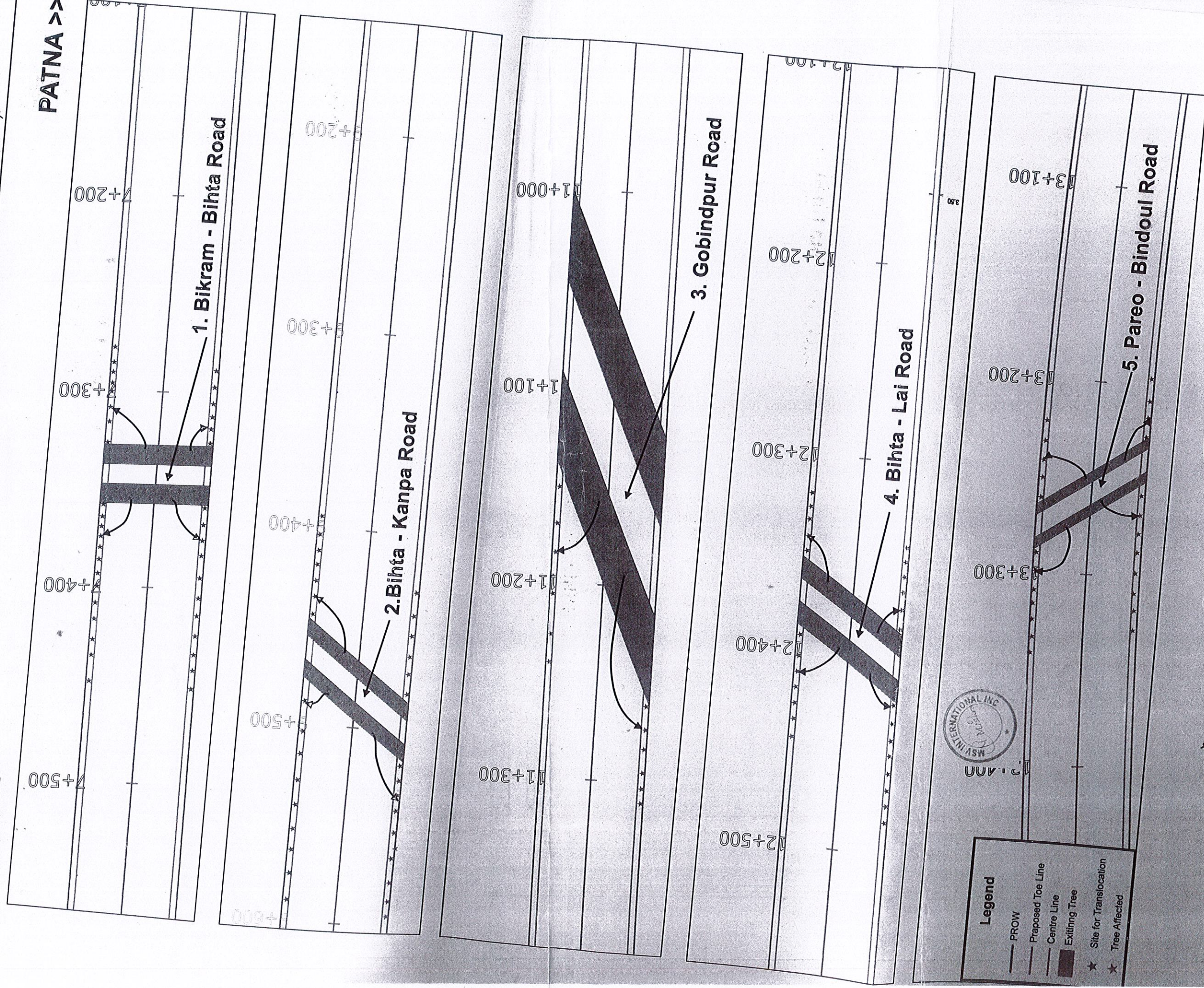
Ar
Project Director
National Highways Authority of India
PIU-Patna

TREE PROTECTION PLAN

Project Name: Construction of 4/6 Lining of Arrah-Sasaram-Patna Road section of NH-119A from Km 00+000 to Km 34+800 (Ring Road) under Bharatmala Pariyojana (Lot-7/Package-2) in the State of Bihar (Package-III).

<<< ARRAH

PATNA >>>



Chaitany