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Forest and Bio-diversity Conservation for Climate Change Response in West Bengal (WB-FBCCCR)

FUNDED BY JAPANESE ODA LOAN

CATCHMENT AREA TREATMENT (CAT) PLAN OF KANGSABATI NORTH FOREST DIVISION

Prepared by

ICAR-Indian Institute of Soil and Water Conservation (ICAR-IISWC)
218 Kaulagarh Road, Dehradun – 248 195, Uttarakhand, India

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Consultancy Project: Preparation of Catchment Area Treatment Plan (CAT Plan) for 13 Forest Divisions in West Bengal under JICA Funded WB-FBCCCR

Consultant: ICAR-Indian Institute of Soil and Water Conservation (ICAR-IISWC)
218 Kaulagarh Road, Dehradun- 248 195, Uttarakhand, India

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Disclaimer

All input data / information *pertaining to status of DMU, existing and proposed interventions with respect to DLT, WHS and Land Treatments reported in this CAT plan were provided by the concerned officials of the DMU with technical support of the consultant. Thematic layers in terms of different maps are generated in GIS environment using basic inputs from topological maps of Survey of India, soil map of NBSS&LUP, DEM data of Copernicus, watershed boundary from SLUSI and, DMU boundaries and forest cover maps provided by WB-FBCCCR. Design, cost estimation and mapping of the said proposed measures were carried out by the consultant (Scientists and Technical) from ICAR-Indian Institute of Soil and Water Conservation (ICAR-IISWC), H/Q, Dehradun (Uttarakhand) and its Research Centres. This report is only for official purpose of the client and consultant.*

Sponsored by:

Chief Project Director, Forest and Bio-diversity Conservation for Climate Change Response in West Bengal (WB-FBCCCR), Block LB-2, Sector-III, Salt Lake City, Kolkata – 700 106, West Bengal, India

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Glossary of Abbreviations

ICAR	Indian Council of Agricultural Research
IISWC	Indian Institute of Soil & Water Conservation
WB - FBCCCR	West Bengal - Forest and Bio - diversity Conservation for Climate Change Response
JICA	Japan International Cooperation Agency
ODA	Official Development Assistant
JFMC	Joint Forest Management Committees
CAT	Catchment Area Treatment
DMU	Divisional Management Unit
DLT	Drainage Line Treatment
WHS	Water Harvesting System
LT	Land Treatment
SLUSI	Soil & Land Use Survey of India
GIS	Geographical Information System
NBSS&LUP	National Bureau of Soil Survey and Land Use Planning
IFS	Indian Forest Service
Addl. PCCF	Additional Principal Chief Conservator of Forests
CCF	Chief Conservator of Forests
CF	Conservator of Forests
Addl. PD	Additional Project Director
Deputy CF	Deputy Conservator of Forests
JPD	Joint Project Director
DFO	Divisional Forest Officer
ADFO	Additional Divisional Forest Officer
RO's	Range Officers
BO's	Beat Officers
H/Q	Head Quarter
PI	Principal Investigator
Sr. Scientist	Senior Scientist
ACTO	Assistant Chief Technical Officer
TO	Technical Officer
STA	Senior Technical Assistant
ST	Senior Technician
JRF	Junior Research Fellow
YP - II	Young Professional - II
PA	Personal Assistant
HCN	Hydrologic Cover Complex
ESI	Erosion Susceptibility Index
HFL	Height Flood Level
BCD	Brushwood Check Dam

LBCD	Loose Boulder Check Dam
GC	Gabion Check
GCD	Gabion Check Dam
RRMCD	Random Rubble Masonry Check Dam
EP	Embankment Pond
PR	Pond Renovation
PP	Percolation Pond
DP	Dugout Pond
CST	Contour Staggered Trenching
CCT	Continuous Contour Trench
RT	Riser Trench
DD	Diversion Draine
FP	Forest Plantation
GF %	Gap Filling Percentage
NFP	New Forest Plantation
SGP	Shrub and Grasses Planning
H.I.	Horizontal Interval
V.I.	Vertical Interval
F.D.	Foundation Depth
m	Meter
sqm	Square meter
cm	Centimeter
gm	Gram
kg	Kilogram
Rs/m	Rupees per meter
cum	cubic meter
m^3	Cubic Meter
ha	hectare
NA	Not Applicable
Qty	Quantity
LS	Lump sum
C	Runoff Coefficient
Q	Peak Discharge
I	Rainfall Intensity
A	Catchment Area
L	Length of Weir
F	Fall/Drop
h	Depth of Flow
LB	Length of Basin

1. CAT plan at a Glance

(A) Kangsabati North Forest Division

Area Statistics

Division	No. of ranges	No. Of beats	Reported area (ha)	GIS calculated area (ha)	Difference b/w reported vs GIS calculated (ha)
Kangsabati North	5	18	27104.17	24416.08	-2688.09

Area statistics of different forest cover classes in Kangsabati North Division

Forest cover class	Divisional total area (ha)	% to total forest area
Water	325.21	1.34
Other forest area (no canopy)	14593.97	60.25
Scrub (tree canopy density < 10%)	170.37	0.70
Open forest (tree canopy density 10- 40%)	5754.59	23.76
Moderately dense forest (tree canopy density 40 - 70%)	3177.71	13.12
Very dense forest (tree canopy density >70%	325.32	1.34

Area statistics of different slope classes of Kangsabati North Division

Slope class	0 - 1	1 - 3	3 - 5	5 - 10	10 - 15	15 - 25	25 - 33	33 - 50	> 50	Total area (ha)
Divisional area (ha)	959.8	6572	7225.6	6939.7	1114.8	695.7	306	328.5	274	**24416**
% to total area	3.93	26.92	29.59	28.42	4.57	2.85	1.25	1.35	1.12	**100**

Area statistics of different ESI classes spread over Kangsabati North Division

Forest division	Area (ha) under different classes of Erosion Susceptibility Index					Total area (ha)
	Non critical (< 0.33)	Slightly critical (0.33 - 0.47)	Moderately critical (0.48 - 0.62)	Critical (0.63 - 0.79)	Very critical (> 0.79)	
Total Area (ha)	3259.53	10.06	11404.44	7944.34	727.43	**23345.79**
% of total forest division area	13.96	0.04	48.85	34.03	3.12	**100.00**

Existing Drainage Line Treatment

Condition	Check Dam	Loose Boulder Check Dam
Breached	-	4
Breached/purpose served	3	8
Functional	-	1
Not functional	-	2
Total	**3**	**15**

Existing Water Harvesting Structure

Condition	Earthen Dam	Pond	Ring Well	Dug Well
Fair	8	47	16	10
Good	-	1	-	-
Poor	41	12	-	-
TOTAL	**49**	**60**	**16**	**10**

(B) Proposed action plan

Physical and financial summary of action plan

Beat	DLT Structures		Water Harvesting Structures		Trenching (CST, CPT, CCT etc.)		Forest Plantation		Total estimated cost (in lakh ₹) * except forest plantation
	No. of structures	Estimated cost (in lakh ₹)	No. of structures	Estimated cost (in lakh ₹)	Area to be covered (ha)	Estimated cost (in lakh ₹)	Total area for plantation (ha)	Estimated cost (in lakh ₹)	
Bishpuria	55	85.62	-	-	386.74	37.75	386.74	Department norms may be adopted	123.37
Hura	94	131.54	-	-	451.37	48.74	451.37		180.28
Keshargarh	8	7.26	-	-	775.75	82.50	775.75		89.76
Rakab	13	11.42	-	-	840.35	76.71	840.35		88.13
Gourangdih	39	27.23	-	-	107.36	10.49	107.36		37.72
Kashipur	7	5.84	-	-	32.38	4.15	32.38		9.99
Sonathali	33	10.02	-	-	76.87	8.57	76.87		18.59
Damodarpur	126	74.87	-	-	1358.76	135.97	1358.76		210.84
Gopalpur	2	0.18	6	8.85	324.91	32.80	324.91		41.83
Jambad	130	97.01	33	143.22	1821.32	164.79	1821.32		405.02
Panipathar	33	12.81	8	22.85	771.05	74.71	771.05		110.37
Para	9	7.25	6	14.58	137.37	14.44	137.37		36.27
Purulia I	3	7.47	6	28.38	117.42	13.30	117.42		49.15
Purulia II	3	0.36	2	1.22	49.64	4.52	49.64		6.1
Neturia	21	17.97	6	10.06	39.15	5.11	39.15		33.14
Raghunathpur-I	2	0.39	6	14.09	165.03	20.41	165.03		34.89
Raghunathpur-II	3	0.79	5	12.23	27.59	2.50	27.59		15.52
Santuri	5	1.44	13	32.85	78.64	9.56	78.64		43.85
Grand total	**586**	**499.47**	**91**	**292.66**	**7561.69**	**747.03**	**7561.69**		**1539.16**

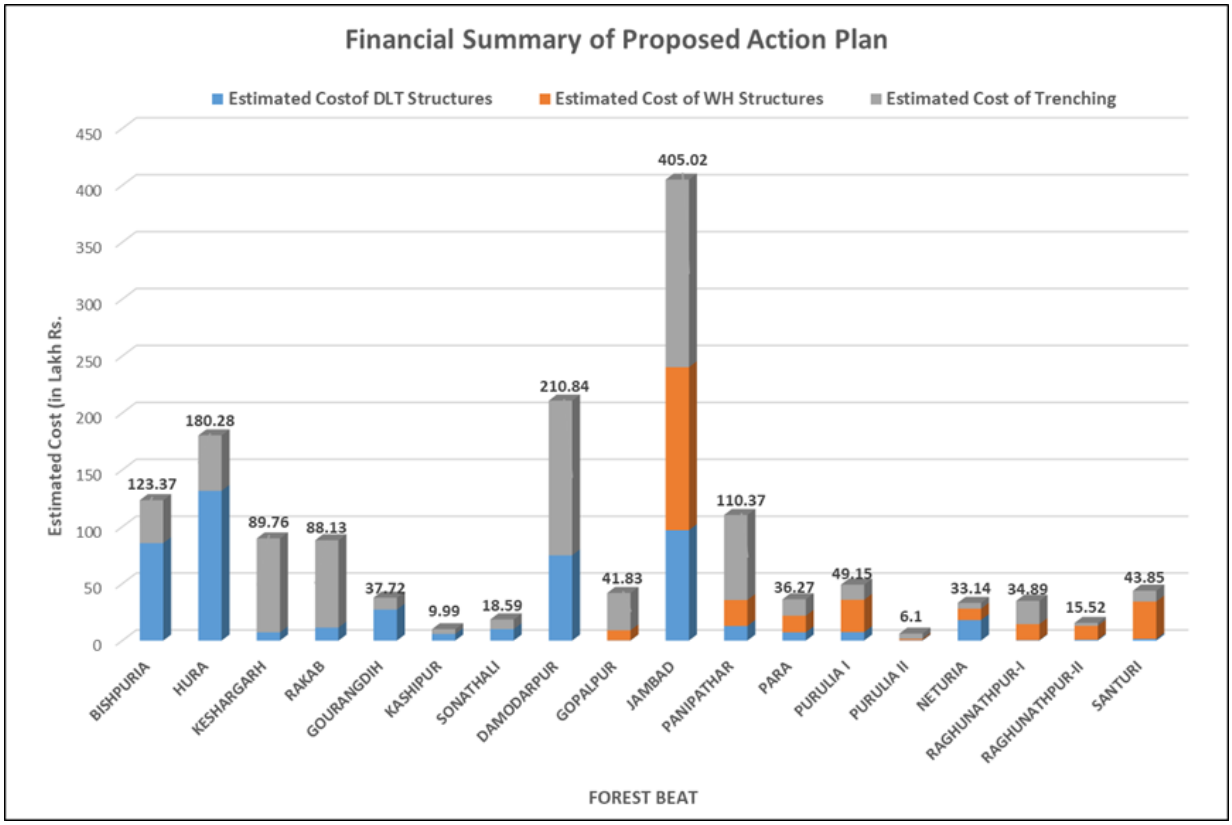

Fig 1.1: Beat wise financial summary of proposed action plan for Kangsabati North forest division

2. About WB-FBCCCR

Based on the Exchange of Notes between the Government of Japan and Government of India (GOI), Japan International Cooperation Agency (JICA) has extended a loan to implement the "Project for Forest and Biodiversity Conservation for Climate Change Response in West Bengal (WB-FBCCCR)". Total outlay of the project is ₹650 crore (₹520 crore loan component and ₹130 crore state share) for duration of 8 years starting from 2023-24 to 2030-31. The Govt. of West Bengal vide its Resolution No. 710-FOR/13099/18/2023, dated 4th May, 2023, the West Bengal Forest & Biodiversity Conservation Society has been established to get the project implemented by its Project Management Unit (PMU). Various offices of the West Bengal Forest Department (WBFD) at the Circle, Division and Range levels are implementing the Project. At the field level, 34 nos. of Division Management Units (DMU) and 90 nos. of Field Management Units (FMU) have been established. A total of 600 numbers Joint Forest Management Committees (JFMC) have been formed as per the extant resolutions/regulations issued by Government of West Bengal.

Broad objectives of this project are to mitigate and adapt to climate change, conserve and restore ecosystems by ecosystem based climate change measures, biodiversity conservation and restoration, livelihood improvement activities and institutional strengthening, thereby contributing to sustainable socio-economic development in West Bengal. There are four major components of work being implemented under this project viz. Ecosystem Based Climate Change Measures, Biodiversity Conservation, Livelihood Improvement and Institutional Strengthening. Disaster risk reduction is intended to achieve by Catchment Area Treatment (CAT) which is part of Ecosystem Based Climate Change Measures.

3. Brief about ICAR-IISWC

The ICAR-Indian Institute of Soil and Water Conservation (ICAR-IISWC), (Formerly CSWCRTI) was established on 1st April,1974 with Headquarters at Dehradun by combining Soil and Water Conservation Research, Demonstration and Training Centres which were established in 1950's at Dehradun, Kota, Bellary, Udhagamandalam, Vasad, Agra and Chandigarh. These centres were initially established by the Govt. of India and transferred to the Indian Council of Agricultural Research (ICAR) on 1st October, 1967. Subsequently two new Research Centres were added to the CSWCRTI, one at Datia in M.P. (18th September, 1986) to tackle soil and water conservation problems of Bundelkhand region and another at Koraput in Orissa (31st January, 1992) to address the problems of shifting cultivation areas. The institute with the national mandate and multi-disciplinary team of scientists and paraphernalia vehemently involved in research, training, consultancy and demonstration on various aspects of soil and water conservation, watershed management and natural resource management as pioneer. The Institute was renamed as Indian Institute of Soil and Water Conservation (ICAR-IISWC) by ICAR on April 7, 2014.

4. Brief Introduction about Consultancy Project

Chief Project Director, WB-FBCCCR (Forest and Bio-diversity Conservation for Climate Change Response in West Bengal), JICA Funded Project has proposed to prepare Catchment Area Treatment Plan (CAT Plans) for13 Forest Divisions in West Bengal. Forest Department, Govt. of West Bengal is implementing a Japanese ODA loan assisted project FBCCCR which includes an activity of preparation of CAT plans for 13 Forest divisions located in dry lateritic southern part of West Bengal (Details are provided in Table 4.1). The total project area is 4,66,654 ha which spread over thirteen forest divisions in West Bengal. Forest areas are being managed with respective working plans which will be more meaningful and effective if an integrated approach of watershed management is adopted. Hence the present project on Preparation of Catchment Area Treatment Plan (CAT Plans) for13 Forest Divisions in West Bengal under JICA Funded WB-FBCCCR was taken up by ICAR-IISWC as a consultancy project in accordance with MoU signed between both the parties.

Table 4.1: Project Area - Information on forest divisions, ranges and beats

S. No.	Name of Circle	District	Forest Division	Area (ha)	No. of ranges	No. of beats
1	Central	Bankura	Bankura North	54594	10	33
2			Bankura South	56300	12	38
3			Panchet	33850	5	21
4	South West	Purulia	Purulia	51173	8	24
5			Kangsabati north	26883	5	18
6			Kangsabati south	27862	6	15
7	South East	Purba Burdwan	Burdwan	21845	7	20
8		Pashim Burdwan	Durgapur	4963	3	8
9		Birbhum	Birbhum	16645	7	20
10	Western	Pashchim Madnipur	Mednipur	51358	9	29
11			Rupnarayan	29139	5	18
12			Kharagpur	32544	6	17
13		Jhargram	Jhargram	59498	12	36
Total				**466654**	**95**	**297**

5. Brief about Kangsabati North Forest Division

Initially, to reduce the inflow of sediment carried by Kangsabati, Kumari, and Damodar, it was decided to concentrate soil conservation works in the entire catchment area of the Kangsabati and part of the Damodar River. To combat such hazardous erosion, Kangsabati Soil Conservation Division-I, Kangsabati Soil Conservation Division-II, and Panchet Soil Conservation Division were opened in the year 1964.

Kangsabati North Division was created in 1964 as a non-territorial Division having task of Soil Conservation works on River valley Project Scheme on the Catchment areas of Kangsabati, Damodar etc. and Water Conservation in Watershed concept. After that, this Division has got the territorial jurisdiction through re-organization of the forests of Purulia district in the year 1992 with five

territorial Ranges, namely – Purulia Para, Puncha, Hura, Kashipur and Raghunathpur covering 10 Panchayet samities/Blocks, vide G.O. No. 8756-FOR, dated 20-11.1991. The name of the Division had been changed as Kangsabati North Division from Kangsabati Soil Conservation Division-I with effect from 30.04.2008 vide Govt. Notification No. 1373-For/FR/0/G/4A-01/05 dt.19.03.08.

The objective of creation was the well protection of forests and to increase the close relation with forest fringe population through the Joint Forest Management. Also to well performance for making green in all denuded forest land. The boundaries of Eastern side Bankura (South) Division. Western Purulia Division and Jharkhand State, Northern – Bankura (North) Division and Part of Damodar River, Panchet Dam, Southern- Purulia Division and Kangsabati Soil Conservation Division-II with No. of Hillocks, 22^0 45' latitude and 86^0 15'E to 86^0 45'E longitude (Fig. 5.1).

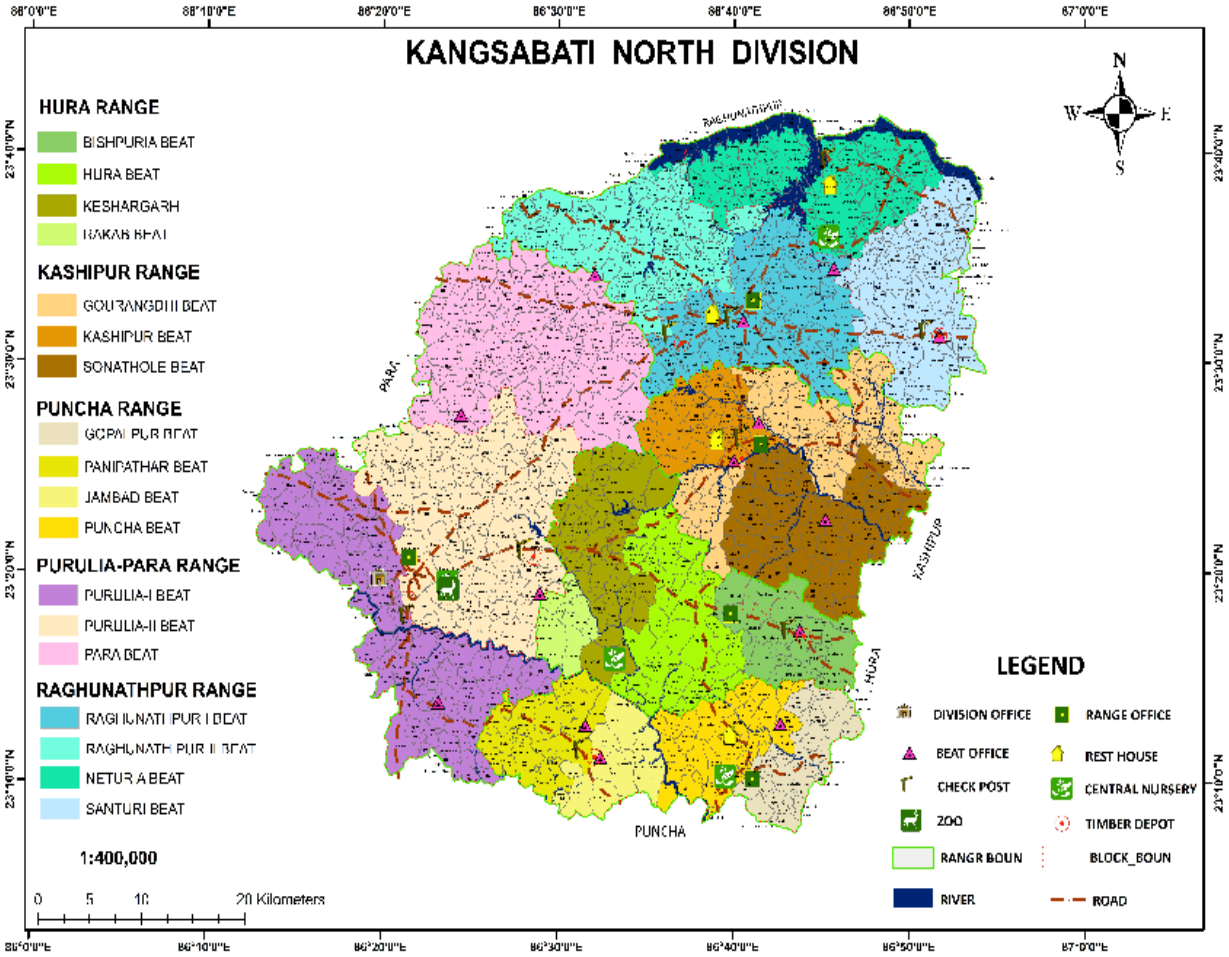

Fig. 5.1: Location map of Kangsabati North Forest Division

Table 5.1: Information on range and beats of Kangsabati North Forest Division

S. No.	Range	Beats	Range Officer (RO)	RO's mobile number	Beat Officer
1	Purulia Para	Purulia-I	Ashit Baran Singh Sardar	9564327029	Samar Mahato
		Purulia-II			Kashinath Sen
		Para			SK. Nizamuddin
2	Raghunathpur	Raghunathpur-I	Niladri Shakha	9474450605	Simanta Beltharia
		Raghunathpur-II			Naba Gopal Banerjee
		Neturia			Sadhan Sikdar
		Santuri			Dulal Chandra Bauri
3	Kashipur	Kashipur	Rajesh Karmakar	9933950327	Rajesh Karmakar
		Gourandi			Jiten Mahato
		Sonathole			Ranjit Sing Sardar
4	Hura	Bishpuria	Sanjoy Pati	8918820389	Avinash Singh Sardar
		Hura			Sanjoy Pati
		Keshargarh			Sudip Routh
		Rakab			Sanjoy Pati
5	Puncha	Damodarpur/ Puncha	Provash Halder	8918171285	Dhrubananda Mahato
		Gopalpur			Provash Halder
		Jambad			Provash Halder
		Panipathar			Provash Halder

Table 5.2: Beat area and forest cover comparison

S. No.	Range	Beats	Area (ha) as reported by the division	Area (ha) as derived by GIS for boundary provided by the Client	Forest Cover (canopy %) reported by the division	Forest Cover (canopy %) arrived by GIS analysis (wt. area av.)
1	Purulia Para	Purulia-I	2085.59	1491.93	60	25.59
		Purulia-II	1348.57	935.14	55	28.15
		Para	2057.56	1844.38	60	26.61
2	Raghunathpur	Raghunathpur-I	983.34	812.31	10	36.41
		Raghunathpur-II	692.60	361.28	5	25.33
		Neturia	2114.48	2445.81	46	48.81
		Santuri	2590.79	1396.78	47	37.00
3	Kashipur	Kashipur	1573.33	1511.18	50	32.91
		Gourangdih	262.70	268.37	30	29.04
		Sonathali	1811.21	1885.73	45	34.83
4	Hura	Bishpuria	1273.30	1426.06	30	31.41
		Hura	1568.37	1555.60	25	31.28
		Keshargarh	2112.85	2334.76	50	37.64
		Rakab	1665.67	1836.22	50	39.35

5	Puncha	Damodarpur/ Puncha	1524.65	1080.89	42	27.52
		Gopalpur	687.94	769.82	30	37.49
		Jambad	1262.68	1134.75	45	28.78
		Panipathar	1488.54	1325.06	40	27.40

Table 5.3: Meteorological data in the Kangsabati North Forest Division (average of last 10 years)

S. No.	Met. Station	Place	Latitude	Longitude
1.	Purulia	Purulia Town	23.342257	86.362839

Month	No. of rainy days	Rainfall (mm)	Max. Temp. (ºC)	Min. Temp. (ºC)	Wind velocity (km/hr)	Bright sunshine hours (hrs/day)	Humidity (%)	
							0723 hrs.	1423 hrs.
JAN	2	13	24.2	10.5	3	9.2	20	60
FEB	2	20	28.3	14.1	4	9.6	18	52
MAR	3	21	33.5	18.5	6	10.6	13	40
APR	5	30	37.8	23..2	8	11.1	12	39
MAY	9	83	37.3	25.7	10	10.9	19	55
JUN	16	262	34.1	26.2	10	9.6	24	71
JUL.	20	341	30.6	25.0	9	7.5	27	84
AUG	20	303	30.4	24.7	8	6.9	28	85
SEP	16	224	30.2	24.0	7	7.3	28	85
OCT	8	88	29.4	20.7	4	8.4	25	77
NOV	1	11	27.5	15.9	3	9.1	22	65
DEC	1	10	24.5	11.8	3	9.0	20	62
Total / Av.	**9**	**1406**	**30.7**	**18.1**	**6**	**9.1**	**21**	**65**

6. Geology and landform of Purulia District

Purulia district is located in the western most part of West Bengal and forms the eastern fringe of the Chhotanagpur Plateau. It spans approximately 6,259 square kilometers and contains rock formations ranging from the Archaean to the Quaternary periods. The region is rich in mineral resources but faces significant challenges such as soil degradation, deforestation, and unsustainable land use. The geology of Purulia is dominated by the Chhotanagpur Gneissic Complex, which primarily consists of high-grade metamorphic rocks like gneisses and schists. Other major rock types include plutonic rocks such as gabbro and anorthosite, along with granitic intrusions like the Kuilapal and Manbhum granites. The Singhbhum Group includes meta-sedimentary and meta-basic rocks, while the Dalma Group features basic volcanic formations. Gondwana sedimentary rocks, found in faulted basins, contain valuable coal seams, and Quaternary deposits are present in the valleys. This geological variety reflects a long history of tectonic activity, igneous intrusions, sedimentation, and weathering.

7. Drainage and contours

This thematic layer has been prepared for all 13 forest divisions in GIS environment with basic inputs for topological maps of Survey of India. Forest beat wise soft and hard copies of these maps have been provided to three forest divisions (Purulia, Kangsabati North and Kangsabati South) where field survey have been completed. These features are depicted in Map-1 as base map of Kangsabati North division.

8. Land slope

This thematic layer has been prepared with utilizing DEM input of 30 m resolution of Copernicus available on Open Topography which is an open source of topographical data worldwide. This feature is depicted in Map-2. Beat wise area statistics of different slope groups present in Kangsabati North division is given in Table 8.1.

Table 8.1. Area (ha) of different beat fall under different Slope classes in Kangsabati North Division

Beat name	Area (ha) under different slope (%) classes									Total area (ha)
	0 – 1	1 – 3	3 - 5	5 - 10	10 - 15	15 - 25	25 - 33	33 - 50	> 50	
Bishpuria	46.21	441.09	500.22	373.06	47.91	13.31	3.73	0.54		1426.06
Damodarpur	47.48	355.85	387.23	261.95	25.69	2.69	-	-	-	1080.89
Gopalpur	27.87	234.81	253.86	219.22	30.65	3.40	-	-	-	769.82
Gourangdih	7.70	69.32	87.42	93.80	8.80	1.34	-	-	-	268.37
Hura	49.06	428.49	517.73	499.79	52.68	5.40	0.87	1.57	-	1555.60
Jambad	33.69	350.74	421.54	307.89	20.00	0.89	-	-	-	1134.75
Kashipur	58.35	463.56	530.57	426.77	28.32	3.60	-	-	-	1511.18
Keshargarh	60.54	529.80	668.72	872.36	156.12	26.84	6.62	8.60	5.17	2334.76
Neturia	206.07	263.22	275.34	410.26	254.13	393.94	194.89	222.44	225.52	2445.81
Panipathar	39.37	355.18	453.81	434.37	36.43	5.90	-	-	-	1325.06
Para	100.48	721.17	609.40	364.36	33.44	6.45	2.61	3.37	3.10	1844.38
Purulia i	71.19	581.64	486.67	307.07	32.62	11.62	1.03	0.07	-	1491.93
Purulia ii	40.11	280.21	287.72	294.73	27.70	4.59	0.08	-	-	935.14
Raghunathpur-i	20.06	165.86	184.97	247.52	59.43	60.00	28.86	28.22	17.40	812.31
Raghunathpur-ii	20.09	138.83	107.03	90.13	5.13	0.08	-	-	-	361.29
Rakab	40.40	367.19	508.01	809.75	100.54	10.33	-	-	-	1836.22
Santuri	21.42	231.56	292.36	407.64	148.56	141.57	67.28	63.65	22.74	1396.78
Sonathali	69.75	593.47	653.02	519.02	46.68	3.78	-	-	-	1885.73
Division total	**959.83**	**6572.00**	**7225.64**	**6939.68**	**1114.84**	**695.73**	**305.98**	**328.47**	**273.92**	**24416.08**
Percent to total	**3.93**	**26.92**	**29.59**	**28.42**	**4.57**	**2.85**	**1.25**	**1.35**	**1.12**	**100**

9. Soils of Kangsabati North Forest Division

Data / information on soil parameters like soil units, depth and texture were collected from ICAR-NBSS&LUP, Nagpur. Forest boundaries provided by WB-FBCCCR in terms of shape files were used to extract maps and data tables on these soil parameters restricting to forest areas alone. The following Table 9.1.1 shows the distribution of different soil types present in the Kangsabati North Forest Division which excludes the area of water bodies and rock outcrops. Each range, such as Bishpuria, Hura, Keshargarh, and others, has a unique combination of soils differing in depth, texture, drainage and erosion levels. The soils of Purulia division are predominantly very deep to deep, occurring mostly on gently sloping to undulating terrains, which offer potential for productive land use if proper soil conservation is adopted. However, significant areas are characterized by shallow and gravelly soils with high erosion risk, particularly on ridges and slopes, limiting bio-mass productivity. Spatial distribution of different soils in Purulia division is given in Map-3.

9.1 Soil depth

The soils of Kangsabati North division exhibit considerable spatial variability in depth with very shallow soils being the most widespread, covering nearly 42.57% of the total soil area. Deep soils follow, occupying about 19.01%, indicating a predominance of limited-depth soils across the region. Moderately shallow and very deep soils are less extensive, found mainly in localized patches, offering better potential of plant growth in these areas (Table 9.1.2). Map-4 shows spatial distribution of soil depth in Kangsabati North division.

Table 9.1.1. Area statistics of different soil units in Kangsabati North Forest Division

Unit code	Description	Area (ha)	Percent to total (%)
W094	Deep, well-drained soils on gentle to moderate plains	4174.13	17.16
W095	Shallow, coarse soils on gently sloping plains	2484.17	10.21
W096	Shallow, gravelly soils on undulating terrain with moderate erosion	3751.27	15.42
W097	Deep, imperfectly drained fine soils on gentle plains with loamy, eroded surfaces	5769.19	23.71
W098	Very deep, fine loamy soils on gentle plains with loamy surface, moderate erosion	3129.36	12.86
W099	Shallow, gravelly loamy soils on gentle granite-gneiss plains with moderate erosion	109.09	0.45
W102	Very deep, well-drained soils on undulating plains	1125.77	4.63
W104	Very deep, imperfectly drained soils on elevated plateaus	143.75	0.59
W105	Shallow, gravelly loamy soils on gentle plateaus with moderate erosion and rock outcrops	303.34	1.25
W106	Very deep, fine loamy soils on gentle plateaus with loamy surface, moderate erosion	843.22	3.47
W107	Very deep, coarse loamy soils on gentle valley plateaus with loamy surface, moderate erosion	749.02	3.08
W113	Shallow, coarse loamy soils on gentle plains with gravelly surface and moderate erosion	1639.09	6.74
W115	Shallow, gravelly loamy soils on gentle plateaus with moderate erosion and drainage variation	108.42	0.45
Total		**24329.86**	**100.00**

Table 9.1.2. Soil depth classification in Kangsabati North Forest Division

Depth class	(in cm)	Area (ha)	Percent (%)
Very shallow	< 10	10000.45	42.57
Shallow	10 – 25	3211.31	13.66
Moderately shallow	25 -50	916.52	3.90
Moderately deep	50 – 75	3189.27	13.57
Deep	75 -100	4466.48	19.01
Very deep	>100	1712.35	7.29
Total		**23500.48**	**100.00**

Table 9.1.3. Beat wise area statistics of different soil depth classes in Kangsabati North Division

Beat	Deep	Mod. deep	Mod. shallow	Shallow	Very deep	Very shallow	Total area (ha)
Bishpuria	27.59	318.66	209.97	341.95	-	521.81	1419.98
Damodarpur	24.81	252.54	159.85	284.96	-	340.68	1062.83
Gopalpur	34.77	192.44	180.58	148.23	-	209.28	765.30
Gourandi	5.98	24.99		9.89	-	213.42	254.27
Hura	43.52	523.82	79.80	41.88	-	844.79	1533.81
Jambad	-	62.42	29.46	48.37	-	990.67	1130.92
Kashipur	1300.87	12.00	-	-	158.60	12.15	1483.62
Keshargarh	530.60	113.93	-	-	387.26	1222.38	2254.17
Neturia	451.83	284.69	-	1260.19	4.72	-	2001.42
Panipathar	118.25	140.21	-	9.07	50.10	999.43	1317.07
Para	645.25	185.26	26.76	145.47	274.01	469.43	1746.19
Purulia i	543.62	94.84	-	32.51	334.42	436.97	1442.36
Purulia ii	147.64	18.16	-	28.36	46.13	670.08	910.37
Raghunathpur-i	282.02	101.02	10.74	267.26	108.32	31.84	801.21
Raghunathpur-ii	107.65	-	-	85.67	163.47	2.04	358.83
Rakab	29.47	7.58	-	-	3.30	1771.50	1811.85
Santuri	28.90	354.61	108.94	306.11	178.86	369.35	1346.77
Sonathali	143.70	502.08	110.42	201.40	3.17	898.74	1859.51
Grand total (ha)	**4466.48**	**3189.27**	**916.52**	**3211.31**	**1712.35**	**10004.55**	**23500.48**

9.2 Soil texture

Purulia Division's soil texture is predominantly coarse to moderately fine, with sandy loam texture covering nearly half (46.70%) of the area. Sandy loam to sandy clay loam is the second most widespread texture, comprising about 12.23% of the area. Finer textures like loamy sand and sandy loam to clay loam occupy smaller proportions, indicating generally low water retention and moderate fertility levels across the region (Table 9.2.1). Map-5 shows spatial distribution of soil textural classes present in Kangsabati North division.

Table 9.2.1. Area (ha) of different soil textural class distribution in Kangsabati North Division

Soil textural class	Area (ha)	Percent (%)
Loam	917.03	3.90
Loam to clay loam	149.19	0.63
Loamy sand	25.42	0.11
Sandy clay loam	1407.74	5.99
Sandy clay loam to clay	1368.06	5.48
Sandy clay loam to clay loam	1286.93	5.48
Sandy loam	10973.76	46.70
Sandy loam to clay loam	132.68	0.56
Sandy loam to sandy clay loam	2873.31	12.23
Sandy loam to loam	491.12	2.09
Sandy loam to loamy sand	885.66	3.77
Silty clay loam to clay loam	175.48	0.75
Gravelly sandy loam	2814.09	11.97
Grand total	**23500.48**	**100.00**

Table 9.2.2. Beat wise area statistics of different soil texture classes in Kangsabati North Division

Beat	Gravelly sandy loam	Loam	Loam to clay loam	Loamy sand	Sandy clay loam	Sandy clay loam to clay	Sandy clay loam to clay loam	Sandy loam	Sandy loam to clay loam	Sandy loam to loam	Sandy loam to loamy sand	Sandy loam to sandy clay loam	Silty clay loam to clay loam	Total Area (ha)
Bishpuria	339.38	-	-	-	30.16	222.08	297.10	490.07	-	-	19.66	21.53	-	1419.98
Damodarpur	284.96	-	-	-	24.81	229.62	162.23	340.68	-	-	17.25	3.30	-	1062.83
Gopalpur	148.23	-	-	-	16.82	185.15	149.19	209.28	-	-	-	56.64	-	765.30
Gourandi	9.89	2.69	-	-	3.29	12.59	2.19	213.42	-	-	10.21		-	254.27
Hura	41.88	11.62	-	-	-	86.97	200.59	744.80	14.62	-	432.91	0.42	-	1533.81
Jambad	48.37		-	-	-	35.94	34.37	969.62	-	-	20.78	21.86	-	1130.92
Kashipur	-	444.89	-	-	367.23	-	12.00	500.90	-	-	-	158.60	-	1483.62
Keshargarh	-	157.98	-	-	121.38	-	107.45	1352.04	14.13	-	113.93	387.26	-	2254.17
Neturia	1216.82		83.47	-	43.36	-			-	349.71	-	289.40	18.64	2001.42
Panipathar	9.07	27.43	-	-	3.16	5.51	40.10	1032.87	14.12	-	134.70	50.10	-	1317.07
Para	78.81	160.93	-	-	211.58	123.87	94.18	609.89	46.18	31.06	-	309.89	79.81	1746.19
Purulia i		34.57	32.51	-	170.30	0.28	0.71	644.03	9.29	-	94.84	455.83	-	1442.36
Purulia ii	21.88	33.59	6.48	-	57.03	0.37	10.96	687.28	31.62	-	15.03	46.13	-	910.37
Raghunathpur-i	122.81	17.86	-	25.42	157.13	-	48.62	121.40	2.73	79.59	-	189.13	36.52	801.21
Raghunathpur-ii	-	0.45	23.43	-	101.05	-	2.04	17.90	-	30.75	-	168.29	14.91	358.83
Rakab	-	25.01	-	-	4.45	-		1771.50	-	-	7.58	3.30	-	1811.85
Santuri	290.60		3.30	-	15.51	17.75	78.71	369.35	-	-	-	545.95	25.60	1346.77
Sonathali	201.40		-	-	80.48	447.95	46.49	898.74	-	-	18.76	165.69	-	1859.51
Grand total (ha)	**2814.09**	**917.03**	**149.19**	**25.42**	**1407.74**	**1368.06**	**1286.93**	**10973.76**	**132.68**	**491.12**	**885.66**	**2873.31**	**175.48**	**23500.48**

10. Forest cover in Kangsabati North Division

Spatial data on forest cover showing different classes like non-forest, scrub, open forest, moderate forest and dense forest cover was generated using shape files on Forest Cover and Forest Boundary provided by WB-FBCCCR in GIS environment. Beat wise area statistics of different forest cover classes are given in Table 10.1 and their spatial distribution is depicted in Map 6. Information on predominant species of trees, shrubs and grasses was provided by Kangsabati North division and presented below.

Predominant species of trees, shrubs and grasses in Kangsabati North Division

Dominant tree species: Piasal, Simul, Jagya Dumur, Bot, Challa, Sirish, Kadam, Mahua, Aswatha, Karam, Karanj, Kusum, Tetul, Kend, Bel, Amra, Jam, Haritoki, Arjun, Amloki, Bahera, Neem, Sissoo, Chhatim, Babul, Kul, Sal, Haldu, Jungle Jalebi, Seindure, Rahara, Chalta, Khejur, Piyara, Jamrul, Ashok, Bakul, Aam, Sabeda, Gamar, Minjiri, Palash,Tal, Segun, Mahogany, Akashmoni.

Dominant shrub species: Bainchi, Bhuru, Kurchi, Hatha Jori, Nisinda, Ankar, Karonda, Basak, Ban Kapas, Akanda, Karamcha, Swetkanchan, Nayantara, Manasa, Dhutra, Bherenda, Mehendi, Tulsi, Aswagandha, Kutush.

Dominant grass species: Citronela, Durba, Mutha, Nirbish, Kush, Bena, Gandhabena, Kattang, Magar bans, Nal Bans, Behur Bans, Makur Jali, Marna, Koal, Yoni, Pit-Chura, Jinkua, Shar, Bhabar, Sabri,Bachhom, Mararo Marudi, Petinar, Balkua, Tulda, Jowa, Mitenga, Matela Bans, Jhore – Kanta, Kans.

Table 10.1: Beat wise area statistics of different forest cover classes in Kangsabati North Division

Beat	Other forest area (no canopy)	Scrub (tree canopy density < 10%)	Open forest (tree canopy density 10-40%)	Moderately dense forest (tree canopy density 40 - 70%)	Very dense forest (tree canopy density >70%
Bishpuria	869.02	8.16	410.15	120.65	-
Damodarpur	812.94	-	222.31	20.38	-
Gopalpur	479.95	-	161.13	115.01	-
Gourandi	153.18	3.17	94.21	17.60	-
Hura	1045.69	-	371.40	98.36	-
Jambad	822.69	0.17	268.17	38.79	-
Kashipur	862.03	-	470.28	168.46	-
Keshargarh	1418.30	14.56	491.88	385.48	-
Neturia	638.14	117.23	307.32	926.90	199.53
Panipathar	915.12	-	375.50	32.63	-
Para	1464.20	1.17	306.33	18.28	-
Purulia i	1240.64		240.44	4.79	-
Purulia ii	663.48	2.39	233.25	29.46	-

Raghunathpur-i	373.30	4.72	261.92	168.72	-
Raghunathpur-ii	284.09	2.44	64.52	2.38	-
Rakab	889.72	-	487.08	446.85	-
Santuri	659.67	2.52	425.60	288.07	-
Sonathali	1001.82	13.84	563.09	294.92	-
Divisional total	**14593.97**	**170.37**	**5754.57**	**3177.71**	**199.53**
% To total	**61.07%**	**0.71%**	**24.08%**	**13.30%**	**0.83%**

11. Surface runoff

Surface runoff has been assessed employing Hydrologic Cover Complex (HCN) method. Entire forest division area was first divided into homogenous hydrologic response units by over laying and intersecting forest cover, land slope and soil type. Runoff potential with 15 years average rainfall was calculated and forest range wise maps were generated (Map 7).

Table 11.1. Beat wise area statistics of surface runoff in Kangsabati North Division

Beat name	Annual surface runoff (mm)					Grand total area (ha)
	<50	50 - 100	100 - 150	150 - 200	> 200	
Bishpuria	216.87	191.05	132.11	100.44	758.98	1399.44
Damodarpur	157.10	115.72	81.29	71.93	630.55	1056.58
Gopalpur	119.96	99.61	61.13	64.29	414.18	759.19
Gourandi	52.69	40.16	27.49	16.41	131.19	267.95
Hura	275.27	211.41	125.97	120.35	790.95	1523.96
Jambad	155.87	128.91	93.68	75.41	678.99	1132.87
Kashipur	163.97	140.37	114.75	75.33	762.36	1256.79
Keshargarh	458.20	284.49	206.45	145.44	1169.51	2264.09
Neturia	251.22	206.74	166.18	128.76	1425.45	2178.35
Panipathar	190.11	160.51	121.68	88.83	758.66	1319.78
Para	179.24	169.74	137.48	117.19	1169.94	1773.59
Purulia-I	172.21	144.13	123.41	90.65	958.97	1489.38
Purulia-II	127.56	104.71	75.26	60.42	561.46	929.41
Raghunathpur-I	107.89	92.54	68.52	65.17	432.00	766.13
Raghunathpur-II	33.72	36.81	34.76	23.11	218.79	347.18
Rakab	286.85	194.35	146.89	122.99	1076.75	1827.84
Santuri	123.18	110.96	94.93	64.17	528.30	921.54
Sonathali	332.66	267.12	188.64	135.24	919.22	1842.87
Grand total area (ha)	**3404.58**	**2699.34**	**2000.61**	**1566.13**	**13386.26**	**23056.92**

12. Existing engineering structures and other information

In order to collect information on existing engineering structures in different forest division, data collection format were designed and circulated among all 13 forest divisions. This information was collected with geo-coordinates of each structure as to delineate them on map in GIS environment. Details on existing engineering structures (DLT and WHS) are provided in Tables 12.1 and 12.2 and their spatial distribution are provided in Map 8a,Map 8b, Map 8c, Map 8d and Map 8e. Similarly information on land treatments carried out in Kangsabati North division was collected and presented in Table 12.3. Information on earlier works carried out and dependency on forests were also sought from forest division and what so ever information received is presented in Table 12.4 and 12.5.

Table 12.1: Drainage line treatments: Loose boulder check dam/brush wood check dam/ masonry check dam etc.

S. No.	Type of measure	Beat and mouza No.	Condition (breached / silted-up / functional)	Order of gully	Latitude	Longitude	Remarks*
Raghunathpur range							
1	Rock Check Dam /Loose Boulder Check Dam	Raghunathpur-I - Senera	Breached	1st Order	23°34'15.47''	86°44'47.09''	Purpose served
		Raghunathpur-I - Shyamsundarpur	Breached	1st Order	23°33'57.36''	86°45'3.91''	Purpose served
		Raghunathpur-II-Bamarrah	Breached	1st Order	23°37'12.33''	86°34'54.25''	Purpose served
		Neturia-Garpanchakot	Breached	1st Order	23°37'0.48''	86°44'51.17''	Purpose served
		Santuri-Baranti	Breached	1st Order	23°34'21.39''	86°50'38.89''	Purpose served
		Santuri-Nimtikuri	Breached	1st Order	23°33'41.72''	86°51'22.07''	Purpose served
		Santuri-Ramchandrapur	Breached	1st Order	23°34'19.13''	86°48'22.57''	Purpose served
		Santuri-Lalgarh	Breached	1st Order	23°34'31.27''	86°47'12.78''	Purpose served
2	Check Dams	Raghunathpur-I-Sikratar	Breached	1st Order	23°34'37.86''	86°42'46.05''	Purpose served
		Santuri-Lalgarh	Breached	1st Order	23°34'51.30''	86° 47'8.61''	Purpose served
		Santuri-Brindabanpur	Breached	1st Order	23°34'17.97''	86° 47'0.63''	Purpose served
Kashipur range							
3	Loose Boulder Check Dam	Beat -Sonathali, Mouza- Painja - 150	Silted-up	1st Order	23°22'44.87"	86°43'51.76"	Re-construction required
		Beat -Kashipur, Mouza- Chuna - 7	Breached	1st Order	23°24'39˝	86°37'59.5˝	Repairing required
		Beat -Kashipur, Mouza-	Functional	1st Order	23°25'37˝	86°37'39˝	Repairing required

		Bansraya- 8					
		Beat -Kashipur, Mouza- Bansraya- 8	Breached	1st Order	23°25'34″	86°37'36″	Repairing required
		Beat -Kashipur, Mouza- Bansraya- 8	Breached	1st Order	23°25'37″	86°37'37″	Repairing required
		Beat -Kashipur, Mouza- Bansraya- 8	Silted-up	1st Order	23°25'37″	86°37'38″	Repairing required
		Beat - Gourangdih, Mouza- Jagannathdih - 84	Breached	1st Order	23°27'0.15"	86°47'52.89"	New Construction required

Table 12.2: Water harvesting structures (pond/well/tank/percolation pond/small dam etc.)

S. No.	Type of Structure	Beat and mouza No.	Condition (Good / Fair /Poor)	Approx. capacity (cum)	Latitude	Longitude	Remarks*
Raghunathpur range							
1	Earthen Dam/ Small Dam	Santuri-Dandahit	Poor	4500	23°34'27''	86°51'44''	Improvement needed
2		Santuri-Pirorgioria	Poor	9600	23°33'28''	86°51'52''	Improvement needed
3		Santuri-Manjuri	Fair	4500	23°32'58''	86°51'32''	Improvement needed
4		Santuri-Chatapathar	Poor	3125	23°31'52''	86°52'44''	Improvement needed
5		Santuri-Ramjibanpur	Fair	6000	23°34'15''	86°50'50''	Improvement needed
6		Santuri-Ambari	Poor	1250	23°32'43.8''	86°50'35.47''	Improvement needed
7		Santuri-Poroli	Poor	7200	23°34'20.94''	86°48'51.37''	Improvement needed
8		Santuri-Lalgarh	Poor	2700	23°34'37.65''	86°47'43.74''	Improvement needed
9		Santuri-Kendthol	Fair	2100	23°29'27.33''	86°51'54.92''	Improvement needed
10		Santuri-Palashpahari	Fair	3600	23°29'56.07''	86°49'47.51''	Improvement needed
11		Santuri-Goalberia	Poor	5400	23°28'50.4''	86°49'48.77''	Improvement needed
12		Santuri-Matidundra	Poor	1875	23°29'54.94''	86°49'32.14''	Improvement needed
13		Raghunathpur-I-Namodi	Poor	1200	23°28'42.59''	86°36'15.97''	Improvement needed
14		Raghunathpur-I-	Poor	6750	23°35'35.87''	86°41'32.24''	Improvement

		Daikeary					needed
15		Raghunathpur-I-Talsankra	Poor	4800	23°34'17.48''	86°42'17.48''	Improvement needed
16		Raghunathpur-I-Senera	Fair	13500	23°34'21.05''	86°43'0.26''	Improvement needed
17	Earthen Dam/ Small Dam	Raghunathpur-I-Shyamsundarpur	Poor	3600	23°33'42.9''	86°45'32.17''	Improvement needed
18		Raghunathpur-II-Barakanali	Fair	13440	23°34'54.97''	86°33'15.85''	Improvement needed
19		Raghunathpur-II-Dandua	Poor	4200	23°34'46.79''	86°32'29.26''	Improvement needed
20		Neturia-Garpanchakot	Poor	900	23°36'39.02''	86°45'56.47''	Improvement needed
21		Neturia-Pahariberia	Poor	1064	23°38'2.99''	86°46'44.7''	Improvement needed
22		Neturia-Radhamadhabpur	Fair	1125	23°37'12.16''	86°47'15.82''	Improvement needed
23		Neturia-Parbatpur	Poor	1250	23°37'42.65''	86°47'5.07''	Improvement needed
24		Neturia-Bagmara	Poor	800	23°38'29.17''	86°45'27.19''	Improvement needed
1	Pond	Raghunathpur-I-Senera	Poor	12000	23°34'18.73''	86°43'6.71''	Improvement needed
2		Neturia-Garpanchakot	Poor	3200	23°37'45.99''	86°46'49.70''	Improvement needed
3		Neturia-Erakusum	Poor	8100	23°36'21.86''	86°47'20.80''	Improvement needed
4		Santuri-Dhaneshdih	Poor	54000	23°34'28.34''	86°52'44.03''	improvement needed
5		Santuri-Nimtikuri	Poor	8100	23°33'41.72''	86°51'22.07''	Improvement needed
6		Santuri-Ramchandrapur	Fair	21000	23°34'19.13''	86°48'22.57''	Improvement needed
7		Santuri-Lalgarh	Poor	10000	23°34'31.27''	86°47'12.78''	Improvement needed
8		Santuri-Ramjibanpur	Poor	40000	23°34'13''	86°50'55''	Improvement needed
9		Santuri-Dandahit	Fair	9000	23°34'29''	86°51'29''	Improvement needed
10		Santuri-Patharbandh	Poor	14400	23°33'56.77''	86°49'06.32''	Improvement needed
11		Santuri-Ambari	Fair	7500	23°33'1.92''	86°49'49.91''	Improvement needed
Puncha range							
1	Ring well	Jambad-Jambad/35	Fair	11	23°12’47.8”	86°34’12.6”	Improvement Needed
2	Ring well	Jambad-Pirrah/15	Fair	13	23°10’57.2”	86°32’98.1”	Improvement Needed
3	Pond	Puncha-Baraghutu/85	Good	2500	23.234	86.715	
4	Pond	Jambad-Jambad/35	Fair	1200	23°11’47.2”	86°34’16.5”	Improvement Needed

5	Pond	Panipathar-Deorang/11	Fair	3500	23.171302	86.495281	Improvement Needed
6	Pond	Jambad-Dharampur/16	Fair	750	23°12’07.1”	86°33.25.6”	Improvement Needed
7	Pond	Gopalpur-Dewli/113	Fair	600	23°07’57”	86°43’03”	Improvement Needed
8	Pond	Gopalpur-Chakia/73	Fair	600	23°11’06”	86°43’08”	Improvement Needed
9	Pond	Puncha-Baraghutu/85	Fair	3200	23°13’47”	86°43’05”	Improvement Needed
10	Pond	Puncha-Rangametya/70	Fair	1150	23.2375368	86.6545719	Improvement Needed
11	Pond	Jambad-Maheshpur/36	Fair	900	23.194335	86.572035	Improvement Needed
12	Pond	Jambad-Maheshpur/36	Fair	400	23.19365	86.575364	Improvement Needed
13	Pond	Jambad-Jambad/35	Fair	600	23.196101	86.571308	Improvement Needed
14	Pond	Jambad-Jambad/35	Fair	600	23.199442	86.573343	Improvement Needed
15	Pond	Jambad-Jambad/35	Fair	600	23.200482	86.573918	Improvement Needed
16	Pond	Jambad-Jambad/35	Fair	900	23.228827	86.565018	Improvement Needed
17	Pond	Jambad-Jambad/35	Fair	600	23.22962	86.563077	Improvement Needed
18	Pond	Jambad-Jambad/35	Fair	600	23.217879	86.56118	Improvement Needed
19	Pond	Jambad-Jambad/35	Fair	700	23.204204	86.535968	Improvement Needed
20	Pond	Jambad-Dharampur/16	Fair	600	23.204199	86.535959	Improvement Needed
21	Pond	Panipathar-Kenda/17	Fair	960	23°11’38”	86°31’34”	Improvement Needed
22	Pond	Panipathar-Kenda/17	Fair	1125	23°12’00”	86°31’24”	Improvement Needed
23	Pond	Panipathar-Kenda/17	Fair	600	23°11’47”	86°31’15”	Private Land Pond
24	Pond	Panipathar-Kenda/17	Fair	1000	23°11’27”	86°31’44”	Improvement Needed
25	Pond	Panipathar-Kenda/17	Fair	1100	23°11’24”	86°31’43”	Improvement Needed
26	Pond	Panipathar-Kenda/17	Fair	300	23°11’03”	86°31’55”	Improvement Needed
27	Pond	Panipathar-Hariharpur/30	Fair	300	23°12’56”	86°31’34”	Improvement Needed
28	Pond	Panipathar-Hariharpur/30	Fair	400	23°12’31”	86°32’02”	Improvement Needed
29	Pond	Panipathar-Balakdih/29	Fair	800	23°12’36”	86°30’30”	Improvement Needed
30	Pond	Panipathar-Panipathar/28	Fair	520	23°12’43”	86°29’56”	Improvement Needed
31	Pond	Panipathar-Palma/4	Fair	400	23°12’46”	86°26’02”	Improvement Needed
32	Pond	Panipathar-	Fair	900	23°10’26”	86°27’18”	Improvement

		Dhabani/8					Needed
33	Pond	Panipathar-Deorang/11	Fair	800	23°09’16”	86°29’44”	Improvement Needed
34	Pond	Panipathar-Deorang/11	Fair	750	23°09’27”	86°29’45”	Improvement Needed
35	Pond	Panipathar-Konapara/33	Fair	750	23°14’24”	86°30’23”	Improvement Needed
36	Pond	Panipathar-Konapara/33	Fair	1000	23°14’34”	86°32’03”	Improvement Needed
37	Pond	Panipathar-Konapara/33	Fair	350	23°14’34”	86°30’47”	Improvement Needed
38	Pond	Panipathar-Sourang/31	Fair	300	23°13’59”	86°31’28”	Improvement Needed
39	Pond	Panipathar-Punura/26	Fair	450	23°13’25”	86°28’04”	Improvement Needed
40	Pond	Panipathar-Punura/26	Fair	400	23°13’07”	86°28’01”	Improvement Needed
41	Pond	Damodarpur-Damodarpur/48	Fair	8962	23°13’30.341”	86°39’25.822”	Improvement Needed
42	Pond	Damodarpur-Damodarpur/48	Fair	576	23°13’30.341”	86°39’25.822”	Improvement Needed
43	Pond	Damodarpur-Bankanali/79	Fair	1260	23°14’9.079”	86°39’52.149”	Improvement Needed
44	Pond	Damodarpur-Bankanali/79	Fair	1320	23°13’30.341”	86°39’25.822”	Improvement Needed, it is Rayati land
45	Pond	Damodarpur-Bankanali/79	Fair	880	23°13’48.269”	86°40’0.168”	Improvement Needed
46	Pond	Damodarpur-Saragora/80	Fair	1150	23°14’12.678”	86°40’27.960”	Improvement Needed
Purulia Para range							
1	Earthen Dam	Purulia-I - Bungera	Poor	720	23.223379^{o}	86.416009^{o}	Improvement needed
2	Earthen Dam	Purulia-I - Suklara	Poor	2660	23^{o}11’50.70912’’	86^{o}18’55.193’’	Improvement needed
3	Earthen Dam	Purulia-II - Jambad	Poor	850	23.290551^{o}	86.458302^{o}	Improvement needed
4	Earthen Dam	Purulia-II - Lukuidih	Poor	7050	23.275513^{o}	86.474567^{o}	Improvement needed
5	Earthen Dam	Para - Suruliya	Poor	3600	23.459421^{o}	86.40819^{o}	Improvement needed
6	Earthen Dam	Para - Mahuda-Gobindapur	Poor	4550	23^{o}33’34.3746’’	86^{o}31’53.109’’	Improvement needed
Hura range							
1	Ring Well	Karrudoba (Rakab-53)	Fair	15	N 23^{0}16’46.0”	E 86^{0}31’07.0”	Need Repair
2	Dug Well	Rakab (Karrudoba-53)	Fair	10	N 23^{0}16’35.0”	E 86^{0}31’04.0”	Need Repair
3	Ring Well	Bishpuria (Pukhuriathole-	Fair	15	N 23^{0}19’02.5”	E 86^{0}41’42.1”	Need Repair

		196)					
4	Dug Well	Bishpuria (Pukhuriathole-196)	Fair	12	N 23^{0}19’11.9”	E 86^{0}41’29.6”	Need Repair
5	Dug Well	Bishpuria (Pukhuriathole-196)	Fair	14	N 23^{0}18’58.5”	E 86^{0}41’36.2”	Need Repair
6	Ring Well	Bishpuria (Ichamara- 200)	Fair	13	N 23^{0}19’44.1”	E 86^{0}43’52.4”	Need Repair
7	Ring Well	Bishpuria (Ichamara- 200)	Fair	12	N 23^{0}20’07.3”	E 86^{0}43’51.2”	Need Repair
8	Dug Well	Bishpuria (Ichamara- 200)	Fair	12	N 23^{0}19’23.3”	E 86^{0}43’52.7”	Need Repair
9	Pond	Hura (Manpur-74)	Poor	1025	N 23^{0}17’18.2”	E 86^{0}35’50.5”	Need Redigging
10	Ring Well	Bishpuria (Samukgoria-103)	Fair	12	N 23^{0}17’00.7”	E 86^{0}42’12.6”	Need Repair
11	Dug Well	Bishpuria (Samukgoria-103)	Fair	15	N 23^{0}17’26.0”	E 86^{0}42’31.1”	Need Repair
12	Ring Well	Bishpuria (Samukgoria-103)	Fair	15	N 23^{0}15’05.2”	E 86^{0}43’08.2”	Need Repair
13	Dug Well	Bishpuria (Samukgoria-103)	Fair	20	N 23^{0}15’22.0”	E 86^{0}42’50.9”	Need Repair
14	Dug Well	Bishpuria (Samukgoria-103)	Fair	20	N 23^{0}15’05.1”	E 86^{0}43’08.2”	Need Repair
15	Earten Dam	Bishpuria (Samukgoria-103)	Fair	1000	N 23^{0}16’46.7”	E 86^{0}41’41.4”	Need Redigging
16	Ring Well	Bishpuria (Ichamara- 200)	Fair	20	N 23^{0}19’44.1”	E 86^{0}43’52.4”	Need Repair
17	Ring Well	Bishpuria (Ichamara- 200)	Fair	18	N 23^{0}20’07.3”	E 86^{0}43’51.2”	Need Repair
18	Dug Well	Bishpuria (Ichamara- 200)	Fair	13	N 23^{0}19’23.3”	E 86^{0}43’52.7”	Need Repair
19	Ring Well	Keshargarh (Chorgali-55)	Fair	12	N 23^{0}16’33.4”	E 86^{0}32’50.3”	Need Repair
20	Dug Well	Keshargarh (Chorgali-55)	Fair	10	N 23^{0}16’31.6”	E 86^{0}32’57.8”	Need Repair
21	Ring Well	Keshargarh (Keshargarh-54)	Fair	14	N 23^{0}16’05.9”	E 86^{0}33’17.4”	Need Repair
22	Ring Well	Keshargarh (Keshargarh-54)	Fair	12	N 23^{0}16’07.5”	E 86^{0}33’18.5”	Need Repair
23	Pond	Keshargarh (Keshargarh-54) Karkata JFMC	Fair	1025	N 23^{0}15’47.5”	E 86^{0}32’34.4”	Need Redigging
24	Ring Well	Keshargarh (Keshargarh-54) Karkata JFMC	Fair	15	N 23^{0}15’43.1”	E 86^{0}32’25.2”	Need Repair
25	Dug Well	Keshargarh (Keshargarh-54) Karkata JFMC	Fair	20	N 23^{0}15’15.6”	E 86^{0}32’24.5”	Need Repair

26	Pond	Keshargarh (Keshargarh-54) Karkata JFMC	Poor	1025	N 23^{0}15’47.5”	E 86^{0}32’34.4”	Need Redigging
27	Pond	Keshargarh (Hatikundar-56)	Poor	1025	N 23^{0}17’10.5”	E 86^{0}34’14.7”	Need Redigging
28	Pond	Keshargarh (Hatikundar-56)	Poor	1200	N 23^{0}17’10.4”	E 86^{0}34’13.2”	Need Redigging
29	Ring Well	Keshargarh (Hatikundar-56)	Fair	1100	N 23^{0}16’46.0”	E 86^{0}31’07.0”	Need Repair
30	Ring Well	Keshargarh (Hatikundar-56)	Fair	1200	N 23^{0}15’29.5”	E 86^{0}31’43.7”	Need Repair
31	Earten Dam	Rakab (Beshamtar-50)	Poor	1200	N 23° 17' 57.6”	E 86° 30' 8.3”	Need Redigging
32	Earten Dam	Rakab (Kudlung-52)	Poor	1250	N 23^{0}17’11.04”	E 86^{0}29’20.24”	Need Redigging
33	Earten Dam	Rakab (Kudlung-52)	Poor	1225	N 23^{0}16’41.37”	E 86^{0}29’37.73”	Need Redigging
34	Earten Dam	Rakab (Kudlung-52)	Poor	1340	N 23^{0}16’34.26”	E 86^{0}29’36.58”	Need Redigging
35	Earten Dam	Rakab (Kudlung-52)	Poor	1240	N 23^{0}16’05.81”	E 86^{0}29’55.79”	Need Redigging
36	Earten Dam	Bishpuria (Kaliabasa-98)	Poor	1020	N 23^{0}15’25.03”	E 86^{0}41’01.0”	Need Redigging
37	Earten Dam	Bishpuria (Chirugora-99)	Poor	1100	N 23^{0}14’48. 8”	E 86^{0}42’18.6”	Need Redigging
38	Earten Dam	Bishpuria (Chirugora-99)	Poor	1200	N 23^{0}14’45.6”	E 86^{0}42’09.3”	Need Redigging
39	Earten Dam	Bishpuria (Chanchipathar-115)	Poor	1300	N 23^{0}14’30.1”	E 86^{0}44’54.0”	Need Redigging
40	Earten Dam	Bishpuria (Ichamara-200)	Poor	1200	N 23^{0}19’09.0”	E 86^{0}43’53.5”	Need Redigging
41	Earten Dam	Bishpuria (Ichamara-200)	Poor	1300	N 23^{0}19’26.3”	E 86^{0}43’22.5”	Need Redigging
42	Earten Dam	Bishpuria (Ichamara-200)	Poor	1300	N 23^{0}19’25.5”	E 86^{0}43’20.9”	Need Redigging
43	Earten Dam	Bishpuria (Ichamara-200)	Poor	1100	N 23^{0}19’26.6”	E 86^{0}43’17.4”	Need Redigging
44	Earten Dam	Bishpuria (Ichamara-200)	Poor	1020	N 23^{0}19’00.5”	E 86^{0}43’07.3”	Need Redigging
45	Earten Dam	Bishpuria (Ichamara-200)	Poor	1200	N 23^{0}19’14.2”	E 86^{0}42’57.9”	Need Redigging
46	Earten Dam	Bishpuria (Ichamara-200)	Poor	1100	N 23^{0}19’18.6”	E 86^{0}42’59.0”	Need Redigging
47	Earten Dam	Bishpuria (Ichamara-200)	Poor	1050	N 23^{0}19’15.9”	E 86^{0}42’59.5”	Need Redigging
48	Earten Dam	Bishpuria (Ichamara-200)	Poor	1020	N 23^{0}19’01.7”	E 86^{0}42’54.6”	Need Redigging

Table 12.3. Existing Land Treatment

S. No.	Type of measure	Beat and mouza No.	Condition (Good / Fair /Poor)	Approx. area (ha)	Number or running meter per ha	Approx. size	Remarks*
Raghunathpur range							
1	Trenching	Raghunathpur-I - Babugram	Poor	15	7500	5 m x 0.45m x 0.45m	Maintenance needed
2	Trenching	Raghunathpur-I - Kelahi	Poor	20	10000	5 m x 0.45m x 0.45m	Maintenance needed
3	Trenching	Raghunathpur-I-Talsankra	Poor	15	7500	5 m x 0.45m x 0.45m	Maintenance needed
4	Trenching	Raghunathpur-II-Dandua	Poor	7	3500	5 m x 0.45m x 0.45m	Maintenance needed
5	Trenching	Santuri-Matidundra	Poor	9	4500	5 m x 0.45m x 0.45m	Maintenance needed
6	Trenching	Santuri-Bhagabandh	Poor	8	4000	5 m x 0.45m x 0.45m	Maintenance needed
7	Trenching	Santuri-Bhagabandh	Poor	8	4000	5 m x 0.45m x 0.45m	Maintenance needed
8	Trenching	Santuri-Dhekshila	Poor	8	4000	5 m x 0.45m x 0.45m	Maintenance needed
9	Trenching	Santuri-Goalberia	Poor	20	10000	5 m x 0.45m x 0.45m	Maintenance needed
10	Trenching	Santuri-Ramchandrapur	Poor	7	3500	5 m x 0.45m x 0.45m	Maintenance needed
11	Trenching	Santuri-Santuri	Poor	3	1500	5 m x 0.45m x 0.45m	Maintenance needed
12	Trenching	Raghunathpur-I -,Senera	Poor	25	12500	5 m x 0.45m x 0.45m	Maintenance needed
13	Trenching	Raghunathpur-I-Simlon	Poor	6	3000	5 m x 0.45m x 0.45m	Maintenance needed
14	Trenching	Raghunathpur-I,-Hurra	Poor	12	6000	5 m x 0.45m x 0.45m	Maintenance needed
15	Trenching	Raghunathpur-I-Babugram	Poor	13	6500	5 m x 0.45m x 0.45m	Maintenance needed
16	Trenching	Raghunathpur-I-Bundla	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
17	Trenching	Raghunathpur-II-Barda	Poor	14	7000	5 m x 0.45m x 0.45m	Maintenance needed
18	Trenching	Santuri - Chatapathar	Poor	31	15500	5 m x 0.45m x 0.45m	Maintenance needed
19	Trenching	Santuri-Palashpahari	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
20	Trenching	Santuri-Talberia	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
21	Trenching	Santuri-Vety	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
22	Trenching	Santuri-Kalipathar	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
23	Trenching	Santuri-Muradih	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
24	Trenching	Raghunathpur-I,Nanduara	Poor	1	500	5 m x 0.45m x 0.45m	Maintenance needed
25	Trenching	Raghunathpur-I-Salanchi	Poor	19	9500	5 m x 0.45m x 0.45m	Maintenance needed
26	Trenching	Santuri-Lalgarh	Poor	20	10000	5 m x 0.45m x 0.45m	Maintenance needed
27	Trenching	Santuri-Dandahit,	Poor	40	20000	5 m x 0.45m	Maintenance needed

		Dhaneshdih				x 0.45m	
28	Trenching	Santuri-Dubrajpur	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
29	Trenching	Santuri-Malibana	Poor	10	5000	5 m x 0.45m x 0.45m	Maintenance needed
30	Trenching	Raghunathpur-II-Dandua	Poor	1.1	550	5 m x 0.45m x 0.45m	Maintenance needed
31	Trenching	Raghunathpur-II-Dandua	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
32	Trenching	Raghunathpur-II-Barakanali	Poor	6	3000	5 m x 0.45m x 0.45m	Maintenance needed
33	Trenching	Raghunathpur-II-Barra	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
34	Trenching	Raghunathpur-II-Lalpur	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
35	Trenching	Neturia-Deoli/ Maheshnadi	Poor	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
36	Trenching	Raghunathpur I-Babugram	Fair	10	5000	5 m x 0.45m x 0.45m	Maintenance needed
37	Trenching	Raghunathpur II-Bamarrah	Fair	5	2500	5 m x 0.45m x 0.45m	Maintenance needed
Kashipur range							
1	Cattle Proof Trech	Beat - Gourangadih, Mouza - Kadori - 133	Fair	20	8000	1.5 m x 1.00 m x 1.00 m	Maintenance needed
2	Box Trench	Beat - Kashipur, Mouza - Parasole - 6	Fair	20	500 Mtr. Per Ha.	5 m x 0.45m x 0.45m	Maintenance needed
3	Cattle Proof Trech	Beat - Gourangadih, Mouza - Babirdih - 71	Poor	10	4000	1.5 m x 1.00 m x 1.00 m	Maintenance needed
Hura range							
1	Contour Trench	Biahpuria (Samukgoria-103)	Poor	05 Ha	500 mtr. per Ha	5 m x 0.45m x 0.45m	Improvement needed
2	Box Trench	Biahpuria (Samukgoria-103)	Poor	05 Ha	500 mtr. per Ha	5 m x 0.45m x 0.45m	Improvement needed
3	Contour Trench	Hura (Ledadi-71)	Poor	10 Ha	500 mtr. per Ha	5 m x 0.45m x 0.45m	Improvement needed
4	Box Trench	Hura (Ledadi-71)	Poor	10 Ha	500 mtr. per Ha	5 m x 0.45m x 0.45m	Improvement needed
5	Box Trench	Hura (Chirugora-99)	Poor	15 Ha	500 mtr. per Ha	5 m x 0.45m x 0.45m	Improvement needed

Table 12.4. Forest plantation works carried out in recent years (last five years) in Kangsabati North Division

Plantation Year -2019-20 Under Raghunathpur Range										
SL.No.	Range	Beat	Mouza & J.L No.		F.P.C	Area in Ha	Pltn. Type	Scheme	Lat	Long
1	Raghunathpur	Raghunathpur-I	Jamtoria	156	Jamtoria	5	Akashmoni with Misc.	Namami Gange	23°34'11.58"	086°40'48.66"
2		Raghunathpur-I	Joradih (Bundla)	160	Bundla	8	Akashmoni with Misc.	Namami Gange	23°33'36.02"	086°40'30.12"
3		Raghunathpur-I	Namodi	105	Juludi-	1	Akashmoni with Misc.	SFDA	23°28'38.10"	086°35'46.61"
4		Raghunathpur-II	Dandua	23	Dandua	9	Akashmoni with Misc.	Namami Gange	23°35'4.85"	086°31'37.87"
5		Neturia	Natundih-Pahariberia	66, 67	Natundih-Pahariberia	40	Akashmoni with Misc.	State Plan	23°38'23.88"	086°46'41.10"
6		Neturia	Saltore	89	Gangtikuri	5	Sal	CAMPA	23°41'10.52"	086°48'15.96"
7		Neturia	Saltore	89	Gangtikuri	4	Akashmoni with Misc.	Namami Gange	23°4'12.53"	086°48'13.93"
8		Santuri	Pirorgoria	54	Manjuri- Pirorgoria	9	Akashmoni with Misc.	State Plan	23°33'31.49"	086°51'43.11"
9		Santuri	Ledium	90	Ledium	5	Sal	State Plan	23°33'31.00"	086°52'8.41"
10		Santuri	Santuri	55	Santuri	2	Sal	CAMPA	23°31'57.54"	086°51'15.86"
					Total	**88**				

Plantation Year -2020-21 Under Raghunathpur Range										
SL.No.	Range	Beat	Mouza & J.L No.		F.P.C	Area in Ha	Pltn. Type	Scheme	Lat	Long
1	Raghunathpur	Raghunathpur-I	Babugram	93	Babugram	15	Akashmoni with Misc.	State Plan	23°32'39.91"	086°36'54.96"
2		Raghunathpur-I	Kelahi	152	Nutandi-Kelahi	20	Akashmoni with Misc.	State Plan	23°34'33.89"	086°42'9.29"
3		Raghunathpur-I	Talsankra	163	Mahulbari	15	Akashmoni with Misc.	State Plan	23°34'12.54"	086°42'10.69"
4		Raghunathpur-II	Dandua	23	Dandua	7	Akashmoni with Misc.	State Plan	23°35'2.11"	086°32'18.11"
5		Santuri	Matidundra	99	Matidundra	9	Akashmoni with Misc.	State Plan	23°29'52.59"	086°49'46.57"
6		Santuri	Bhagabandh	86	Bhagabandh	8	Akashmoni with Misc.	State Plan	23°31'8.90"	086°49'5.31"
7		Santuri	Bhagabandh	86	Bhagabandh	8	Akashmoni with Misc.	State Plan	23°31'8.90"	086°49'5.31"
8		Santuri	Dhekshila	62	Dhekshila	8	Akashmoni with Misc.	State Plan	23°31'55.31"	086°50'16.94"
9		Santuri	Goalberia	100	Goalberia	20	Akashmoni with Misc.	State Plan	23°28'53.96"	086°49'45.10"
10		Santuri	Ramchandrapur	47	Ramchandrapur	7	Akashmoni with Misc.	State Plan	23°34'34.02"	086°48'39.05"
11		Santuri	Santuri	90	Santuri	3	Akashmoni with Misc.	State Plan	23°32'4.65"	086°51'38.40"
					Total	**120**				

Plantation Year -2021-22 Under Raghunathpur Range										
SL.No.	Range	Beat	Mouza & J.L No.		F.P.C	Area in Ha	Pltn. Type	Scheme	Lat	Long
1	Raghunathpur	Raghunathpur-I	Senera	185	Lalpur	25	Misc	State Plan	23°34'10.19"	086°44'41.47"
2		Raghunathpur-I	simlon	148	simlon	6	Misc	State Plan	23°35'14.41"	086°42'39.71"
3		Raghunathpur-I	Hurra	130	Hurra	12	Misc	State Plan	23°35'57.20"	086°40'8.73"
4		Raghunathpur-I	Babugram	93	Babugram	13	Misc	State Plan	23°32'41.91"	086°36'18.20"
5		Raghunathpur-I	Bundla	160	Bundla	5	Misc	State Plan	23°33'35.09"	086°40'29.73"
6		Raghunathpur-II	Barda	53	Dhanara-Boldi-Changuri	14	Misc	State Plan	23°33'23.32"	086°35'20.85"
7		Santuri	Chatapathar	57	Chatapathar	31	Misc	State Plan	23°32'12.95"	086°52'9.56"
8		Santuri	Palashpahari	101	Palashpahari	5	Misc	State Plan	23°29'2.29"	086°50'3.77"
9		Santuri	Talberia	51	Talberia	5	Misc	State Plan	23°33'14.70"	086°50'19.80"
10		Santuri	Vety	48	Vety	5	Misc	State Plan	23°34'15.08"	086°49'26.86"
11		Santuri	Kalipathar	93	Kalipathar	5	Misc	State Plan	23°31'7.95"	086°52'45.54"
12		Santuri	Muradih	35	Muradih	5	Sal	State Plan	23°35'15.63"	086°49'59.44"
					Total	**131**				

Plantation Year -2022-23 Under Raghunathpur Range										
SL.No.	Range	Beat	Mouza & J.L No.		F.P.C	Area in Ha	Pltn. Type	Scheme	Lat	Long
1	Raghunathpur	Raghunathpur I	Nanduara	127	Nanduara	1	Misc	Namami Gange	23°31'22.77"	086°40'47.12"
2		Raghunathpur I	Salanchi	141	Salanchi	19	Misc	State Plan	23°36'18.26"	086°42'23.33"
3		Santuri	Lalgarh	44	Lalgarh	20	Misc	GIM	23°34'27.45"	086°47'39.37"
4		Santuri	Dandahit, Dhaneshdih	29,30	Dhaneshdih	40	Misc	GIM	23°34'28.21"	086°52'2.41"
5		Santuri	Dubrajpur	68	Dubrajpur	5	Misc	State Plan	23°33'23.74"	086°48'0.08"
6		Santuri	Malibana	67	Malibana	10	Misc	GIM	23°33'42.58"	086°48'25.84"
7		Raghunathpur II	Dandua	23	Dandua	1.1	Misc	Campa	23°35'5.91"	086°31'35.22"
8		Raghunathpur II	Dandua	23	Dandua	5	Misc	Namami Gange	23°35'12.15"	086°32'5.22"
9		Raghunathpur II	Barakanali	44	Barakanali	6	Bamboo	State Plan	23°35'28.2"	086°33'12.04"
10		Raghunathpur II	Barra	65	Barra	5	Misc	Namami Gange	23°37'28.62"	086°36'45.11"
11		Raghunathpur II	Lalpur	54	Lalpur	5	Misc	Namami Gange	23°33'33.49"	086°35'41.74"
12		Neturia	Deoli/Maheshnadi	88	Maheshnadi	5	Misc	Namami Gange	23°40'58.89"	086°47'27.63"
					Total	122.1				

Plantation Year -2023-24 Under Raghunathpur Range										
SL.No.	Range	Beat	Mouza & J.L No.		F.P.C	Area in Ha	Pltn. Type	Scheme	Lat	Long
1	Raghunathpur	Raghunathpur I	Babugram	93	Babugram	10	Bamboo	State Plan (Bamboo)	23°32'29.57"	086°34'24.09"
2		Raghunathpur II	Bamarrah	35	Bamarrah	5	Misc	Campa (NPV)-(Misc)	23°37'7.23"	086°34'51.43"
					Total	15				

Plantation year -2019-20 under Kashipur range										
S.No.	Range	Beat	Mouza & J.L No.		F.P.C	Area in ha	Pltn. Type	Scheme	Lat	Long
1	Kashipur	Kashipur	Jihurbona	5	Jihurbona	10	QGS	State Plan	23°26'19.6"	086°35'58.5"
2		Kashipur	Rudra	10	Rudra	20	QGS	State Plan	23°26'06.5"	086°38'28.1"
3		Gourangadih	Boykara	164	Boykara	15	QGS	State Plan	23°24'42.3"	086°40'09.0"
4		Kashipur	Gopalpur	32	Napara - Ramboni	10	QGS	Nabami Ganga	23°26'11.8"	086°38'41.3"
5		Gourangadih	Sumaidih	166	Sumaidih	10	QGS	Nabami Ganga	23°23'43.3"	086°40'11.1"
6		Gourangadih	Dhanara	168	Dhanara	8	QGS	Nabami Ganga	23°24'38.6"	086°38'25.6"
7		Gourangadih	Dhanara	168	Dhanara	10	BAMBOO	Nabami Ganga	23°24'34.9"	086°38'03.3"
8		Sonathali	Dhatla	156	Dhatla	5	QGS	Sal	23°24'19.9"	086°42'27.1"
9		Gourangadih	Jagannathdih	84	Jagannathdih	2	QGS	Recovered	23°26'47.4"	086°48'03.7"
10		Gourangadih	Sumaidih	166	Sumaidih	2	CAMPA	Sal	23°23'44.0"	086°40'10.4"
11		SonatHali	Kustore	208	Kustore	2.5	CAMPA	Sal	23°20'03.1"	086°45'58.7"
12		SonatHali	LajHana	186	LajHana	2.5	CAMPA	Sal	23°23'26.2"	086°41'41.9"
13		SonatHali	Ranjandih	187	Ranjandih	2	CAMPA	Sal	23°23'19.4"	086°42'13.8"
Total						99				

Plantation year -2020-21 under Kashipur range										
S.No.	Range	Beat	Mouza & J.L No.		F.P.C	Area in ha	Pltn. Type	Scheme	Lat	Long
1	Kashipur	Kashipur	Jihurbona	5	Jihurbona	20	QGS	State Plan & NREGS	23°26'25.7"	086°35'42.8"
2		Kashipur	Chuna	7	Chuna	15	QGS	State Plan & NREGS	23°24'962"	086°37'029"
3		SonatHali	Ranjandih	187	Ranjandih	10	QGS	State	23°23'580"	086°41'789"

								Plan & NREGS		
4		SonatHali	Ranjandih	187	Ranjandih	10	QGS	State Plan & NREGS	23°23'008''	086°72'013''
5		SonatHali	Kustore	208	Kustore	15	QGS	State Plan & NREGS	23°19'351''	086°46'730''
6		SonatHali	Kustore	208	Kustore	5	QGS	State Plan & NREGS	23°20'009''	086°46'428''
7		Kashipur	Rudra	10	Rudra	10	QGS	State Plan & NREGS	23°26'34.0''	086°38'04.0''
8		Gourangadih	Tara	182	Tara	10	QGS	State Plan & NREGS	23°23'380''	086°40'14.3''
9		Gourangadih	Simla	175	Simla	7	QGS	State Plan & NREGS	23°23'45.7''	086°39'31.2''
10		Gourangadih	Damankryari	176	Damankiyari	5	QGS	State Plan & NREGS	23°20'22.2''	086°38'52.2''
11		Gourangadih	Sumaidih	166	Sumaidih	5	QGS	State Plan & NREGS	23°23'43.3''	086°40'11.1''
12		SonatHali	Kustore	208	Kustore	6	Bamboo	State Plan & NREGS	23°19'616''	086°46'842''
13		SonatHali	Nafarmandaldi	185	Nafarmandaldih	4	Bamboo	State Plan & NREGS	23°23'513''	086°41'418''
14		Kashipur	Parasol	6	Parasol	12.5	QGS	I.W.M.P.	23°25'40.7''	086°36'35.4''
15		Kashipur	Parasol	6	Parasol	8	QGS	I.W.M.P.	23°25'30.2''	086°36'53.0''
16		Kashipur	Dalanbani	9	Jorapukur	12.5	QGS	I.W.M.P.	23°26'50.2''	086°37'31.1''
17		Kashipur	Jorapukur	11	Jorapukur	9.5	QGS	I.W.M.P.	23°26'52.7''	086°37'42.0''
18		Kashipur	Parasol	6	Parasol	5	Sal	Campa	23°25'38.9''	086°36'59.1''
19		Kashipur	Dalanbani	9	Parasol	5	Sal	Campa	23°26'25.5''	086°37'07.0''
20		SonatHali	Ranjandih	187	Ranjandih	5	Sal	Campa	23°23'30.6''	086°42'53.2''
Total						**179.5**				

Plantation year -2021-22 under Kashipur range										
SL.No.	**Range**	**Beat**	**Mouza & J.L No.**		**F.P.C**	**Area in ha**	**Pltn. Type**	**Scheme**	**Lat**	**Long**
1	Kashipur	Kashipur	Sonaijuri	1	Kashidih	21	QGS	State Plan	23°26'776''	086°36'591''
2			Chuna	7	Chuna	10	QGS	State Plan	23°24'892''	086°37'445''
3		SonatHali	Dalalata	163	Dalalata	25	QGS	State Plan	23°24'680''	086°40'975''
4			Painja	150	Bhurkura	15	QGS	State Plan	23°22'977''	086°43'929''
5			Laxmipur	191	Laxmipur	10	QGS	State Plan	23°21'452''	086°42'664''
6		Gourangadih	Damankeyari	176	Damankeyari	6	QGS	State Plan	23°20'935''	086°38'804''
7			Sumaidih	166	Sumaidih	2	QGS	State Plan	23°23'478''	086°39'710''
8			Sumaidih	166	Sumaidih	10	Sal	State Plan	23°23'479''	086°39'416''
9		SonatHali	Dhatla	156	Dhatla	5	Sal	Campa	23.407754°	086.691120°
Total						**104**				

Plantation year -2022-23 under Kashipur range										
Sl.No.	**Range**	**Beat**	**Mouza & J.L No.**		**F.P.C**	**Area in ha**	**Pltn. Type**	**Scheme**	**Lat**	**Long**
1	Kashipur	Kashipur	Sonaijuri	1	Ramsini	30	QGS	State Plan	23°26'98.6''	086°35'77.7''
2		Kashipur	Jihurbona	5	Jihurbona	10	QGS	State Plan	23°25'81.5''	086°35'98.0''
3		Kashipur	Rangilidih	31	Rangiladih	5	QGS	State Plan	23°26.504	086°39.286''
4		Kashipur	Gopalpur	32	Napara - Ramboni	6	Misc.	State Plan	23°25.446	086°39.454
5		SonatHali	Kustore	208	Kustore	5	QGS	State Plan	23°19'23.5''	086°46'82.8''
6		SonatHali	Painja	150	Painja	10	Misc.	State Plan	23°22'74.2''	086°43'82.6''
7		SonatHali	KHarikagora	202	KHarikagora	15	QGS	State Plan	23°19'68.5''	086°45'55.0''
8		SonatHali	Dhatla	156	Dhatla	20	QGS	State Plan	23°40'60.2''	086°70'56.3''
9		Gourangadih	Jagannathdih	84	Jagannathdih	8	QGS	State Plan	23°26'90.1''	086°48'01.3''
10		Gourangadih	Sumaidih	166	Sumaidih	10	QGS	State Plan	23°23'31.2''	086°39'42.8''
11		SonatHali	Kustore	208	Kustore	5	Bamboo	State Plan	23.317595°	086.778909°
12		Gourangadih	Babirdih	71	Babirdih	4	Bamboo	State Plan	23°27.764	086°45.958
13		SonatHali	Laxmipur	191	Laxmipur	5	Misc.	Nabami Ganga	23°21.458	086°42.419
14		Kashipur	Sonaijuri	1	Kashidih	5	Misc.	G.I.M (Type- B)	23°26'35''	086°35'48''
15		Kashipur	Rangilidih	31	Rangiladih	5	Misc.	G.I.M (Type- B)	23°26'54''	086°38'59''
16		Sonathali	Dhatla	156	Dhatla	5	Misc.	G.I.M (Type- B)	23.402083°	086.707133°
17		Sonathali	Kustore	208	Kustore	10	Misc.	G.I.M (Type- A)	23.328136°	086.763904°
18		Sonathali	Lajhana	186	Lajhana	5	Misc.	G.I.M (Type- B)	23.385192°	086.697833°
19		Gourangadih	Sumaidih	166	Sumaidih	10	Misc.	G.I.M (Type- B)	23°23.352	086°39.664
20		Gourangadih	Sumaidih	166	Sumaidih	10	Misc.	G.I.M (Type- A)	23°23.632	086°39'.565
Total						**183**				
Plantation year -2023-24 under Kashipur range										
Sl.No.	**Range**	**Beat**	**Mouza & JL.No.**		**JFMC**	**Area in ha**	**Pltn. Type**	**Scheme**	**Lat**	**Long**
1	Kashipur	Sonathali	Painja	150	Painja	16	Misc. Plant	State Plan	23°22'37.0''	086°43'43.0''
2		Sonathali	Kustore	208	Kustore	12	Misc. Plant	State Plan	23°19'44.1''	086°45'44.1''
3		Sonathali	Kharikagora	202	Kharikagora	9	Misc. Plant	State Plan	23°19'49.6''	086°45'23.6''
Total						**37**				

Plantation work under Purulia Para range								
Year	**Beat**	**Mouza with JL No.**	**Name of FPC**	**Area (ha)**	**Pltn. Type**	**Scheme**	**Latitude**	**Longitude**
2019-20	Purulia I	Penrra- 187	Penrra	10	QGS plant.	State Plan	N23°13'51''	E86°26'14.7''
		Bhursa- 218	Bhursa	20	QGS plant.	State Plan	N23°11'1.7''	E86°25'46''

	Purulia II	Jambaid- 173	Jambaid	20	QGS plant.	Namami Ganga	N23.274298^{o}	E86.470782^{o}
		Lukuidih- 174	Lukuidih	10	QGS plant.	Namami Ganga	N23.27619^{o}	E86.47480^{o}
	Para	Tentuliabad-121	Tentuliabad	23	QGS plant.	State Plan	N23^{o}27’24’’	E86^{o}31’60’’
		Tentuliabad-121	Tentuliabad	5	Sal Plant.	State Plan	N23^{o}27’34’’	E86^{o}31’56’’
2020-21	Purulia I	Koldih- 186	Koldih	10	Akashmani & others	State Plan and MGNREGA	N23^{o}14’16’’	E86^{o}26’4’’
		Penrra- 187	Penrra	10	Akashmani & others	State Plan and MGNREGA	N23^{o}13’48’’	E86^{o}26’12’’
		Chipida- 189	Chipida	20	Akashmani & others	State Plan and MGNREGA	N23^{o}14’24’’	E86^{o}24’37.2’’
	Purulia II	Jambad- 173	Jambad	25	Akashmani & others	State Plan and MGNREGA	N23^{o}15’47.1’’	E86^{o}28’08.1’’
		Jambad- 173	Jambad	5	Sal & associates	State Plan and MGNREGA	N23^{o}16’3’’	E86^{o}28’5’’
	Para	Gobindapur-83	Gobindapur	10	Akashmani & others	State Plan and MGNREGA	N23^{o}33’50.1’’	E86^{o}32’02.1’’
2021-22	Purulia I	Penrra- 187	Penrra	5	Mise.	State Plan	N23.2256100^{o}	E86.4345790^{o}
		Kumiya- 188	Kumiya	5	Mise	State Plan	N23.225532^{o}	E86.43299^{o}
	Purulia II	Jambaid- 173	Jambaid	15	Mise	State Plan	N23^{o}16’52’’	E86^{o}27’57’’
		Lukuidih- 174	Lukuidih	15	Mise	State Plan	N23^{o}16’24’’	E86^{o}28’25’’
	Para	Gobindapur-83	Gobindapur	5	Mise	State Plan	N23^{o}33’32.4’’	E86^{o}31’55.2’’
		Charpatia- 15	Charpatia	20	Mise	State Plan	N23.5127940^{o}	E86.3862840^{o}
2022-23	Purulia I	Pichasi- 191	Pichasi	5	Mise	Namami Ganga	N23^{o}16’14.24’’	E86^{o}25’20.43’’
		Pichasi- 191	Pichasi	20	Mise	State Plan	N23^{o}16’20.68’’	E86^{o}25’14.71’’
		Dandudih-04	Dandudih	10	Mise	State Plan	N23^{o}10’34.26’’	E86^{o}20’19.69’’
	Purulia II	Loharsol- 60	Loharsol	10	Mise	Namami Ganga	N23^{o}18’16.32’’	E86^{o}24’3.37’’
		Dubcharka-162	Dubcharka	5	Mise	Namami Ganga	N23^{o}18’31.28’’	E86^{o}27’15.64’’
		Jambad- 173	Jambad	5	Mise	GIM(Type A)	N23^{o}16’59.32’’	E86^{o}28’26.081’’
	Para	Fushrabaid-123	Fushrabaid	10	Mise	State Plan	N23^{o}26’32.19’’	E86^{o}33’06.79’’
		Bagalia- 122	Bagalia	10	Mise	State Plan	N23^{o}26’22.95’’	E86^{o}32’56.91’’
		Bagalia- 122	Bagalia	8	Mise	GIM(Type B)	N23^{o}26’25.18’’	E86^{o}31’38.86’’
		Mahuda- 84	Mahuda	5	Sal & associates	State Plan	N23^{o}30’46.05’’	E86^{o}23’10.6224’’
2023-24	Purulia I	Penrra- 187	Penrra	9	Mise	State Plan	N23^{o}14’0.946’’	E86^{o}26’11.66244’’
	Para	Fushrabaid-123	Fushrabaid	10	Bamboo	State Plan	N23^{o}26’25.27’’	E86^{o}33’15.69432’’

Plantation work under Puncha range									
S. No.	**Year**	**Beat**	**Mouza/J.L No**	**Name of FPC**	**Area in ha**	**Species**	**Scheme**	**Lat**	**Long**
1	2019-20	Panipathar	Kenda/17	Kenda sardardih	20	QGS	State Plan	23°11’47.7”	86°31’31.5”
2		Gopalpur	Chandanpur/96	Chandanpur	20	QGS	State plan	23°13’06.8”	86°44’37.3”
3		Jambad	Maheshpur/36	Maheshpur	15	QGS	SPAP	23°11’41.2”	86°34’28.9”
4		Puncha	Shyamakata/81	Shyamakata	10	QGS	SPAP	23°13.911’	86°41.777”
5		Jambad	Jambad/35	Jambad	10	Bamboo	SPAP	23°11.987’	86°34.482’
6		Paipathar	Deorang/11	Deorang	10	QGS	NG	23°09.402’	86°29.790’
7		Jambad	Jambad/35	Jambad	30	QGS	NG	23°11.666’	86°34.242’
8		Gopalpur	Gholkurd/88	Gholkurd	10	QGS	NG	23°13.692’	86°34.222’
9		Puncha	Agaya/83	Agaya	10	QGS	NG	23°13.457’	86°42.724’
10		Panipathar	Hariharpur/30	Hariharpur	10	QGS	NG	23°12.194’	86°31.533’
11		Puncha	Chatalalpur/46	Chatalalpur	2	SAL	CAMPA	23°21’91.0”	86°63’06.1”
12		Jambad	Jambad/35	Jambad	5	QGS	SFDA	23°19’37.1”	86°56’09.6”
13		Puncha	Damodarpur/48	Damodarpur	2	QGS	SFDA	23°21’21.4”	86°63’06.1”
14	2020-21	Gopalpur	Gholkurd/88	Gholkurd	10	QGS	SPAP	23°13’31.1”	86°42’53.22 ”
15		Gopalpur	Dewli/113	Dewli	10	QGS	SPAP	23°7’53.78”	86°42’57.2”
16		Puncha	Agaya/83	Agaya	10	QGS	SPAP	23°12’47.9”	86°42’5.4”
17		Puncha	Chatalalpur/46	Chatalalpur	10	SAL	SPAP	23°13.086’	86°37.335’
18		Jambad	Maheshpur/36	Maheshpur	8	QGS	SPAP	23°11.516’	86°34.308’
19		Panipathar	Panipathar/28	Panipathar	20	QGS	SPAP	23°12’41.8”	86°30’0.15”
20		Panipathar	Kenda/17	Kenda	5	QGS	SPAP	23°11’58.1”	86°31’24.9”
21		Jambad	Jambad/35	Jambad	20	QGS	SPAP	23°12.612’	86°33.412’
22		Chandanpur	Chandanpur/96	Chandanpur	5	QGS	SPAP	23°12’39.6”	86°44’46.3”
23		Deorang	Deorang/11	Deorang	15	QGS	SPAP	23.1555855	86.4975001
24		Konapara	Konapara/33	Konapara	15	QGS	SPAP	23.2529850	86.5236214
25	2021-22	Puncha	Damodarpur/48	Damodarpur	5	QGS	SPAP	23°12’56.1”	86°40’07.7”
26		Puncha	Saragora/80	Saragora	5	QGS	SPAP	23°14’50.1”	86°40’45.8”

27		Puncha	Shyamakata/81	Shimagora	8	QGS	SPAP	23°13’47.7”	86°41’25.2”
28		Gopalpur	Dhangakend/93	Dhangakend	8	QGS	SPAP	23°13’15.0”	86°46’10.7”
29		Jambad	Jambad/35	Jambad	10	QGS	SPAP	23°12’56.8”	86°32’57.1”
30		Panipathar	Panipathar/28	Panipathar	15	QGS	SPAP	23°13’25.8”	86°29’50.8”
31		Panipathar	Hariharpur/30	Hariharpur	15	QGS	SPAP	23°12’51.6”	86°31’25.3”
32		Panipathar	Hariharpur/30	Hariharpur	5.5	Sal	CAMPA	23°12’08.3”	86°31’25.3”
33		Panipathar	Dhabani/8	Dhabani	9	Sal	CAMPA	23°10’23.3”	86°27’14.6”
34	2022-23	Puncha	Damodarpur/48	Damodarpur	10	Misc	NG	23°13’03.8”	86°39’58.8”
35		Puncha	Damodarpur/48	Damodarpur	5	Sal	NG	23°13’05.5”	86°39’55.2”
36		Gopalpur	Chhirudih/91	Chhirudih	5	Misc	NG	23°13’35.4”	86°45’56.7”
37		Gopalpur	Chandnpur/96	Chandnpur	30	QGS	SPAP	23°12’52.7”	86°45’09.3”
38		Gopalpur	Chakia/73	Chakia	20	QGS	SPAP	23°11’09.15”	86°43’16.08”
39		Puncha	Gangardih/45	Gangardih	5	QGS	SPAP	23°12’30.1”	86°37’23.3”
40		Puncha	Bankanali/79	Kundhurka	20	QGS	SPAP	23°13’50.7”	86°39’43.9”
41	2023-24	Jambad	Dharampur/16	Dharampur	10	QGS	SPAP	23°12’08.5”	86°32’05.0”
42		Panipathar	Sourang/31	Sourang	10	QGS	SPAP	23°13’38.1”	86°32’05.0”
43		Puncha	Bhutam/44	Bhutam	10	Bamboo	SPAP	23°13’26.2”	86°35’55.8”
44		Panipathar	Shyamdih/32	Shyamdih	7	QGS	NPV	23°14’01.1”	86°30’00.2”

Plantation work under Hura range									
Range	**Beat**	**Mouza**	**JL No.**	**Name of FPC**	**Area (ha)**	**Pltn. Type**	**Scheme**	**Latitude**	**Longitude**
Year of Plantation 2019-2020									
Hura	Hura	Pukhuriathole	196	Hunnyagora	10	QGS	State Plan	N 23^{0}18’36.9”	E 86^{0}40’36.5”
Hura	Hura	Pukhuriathole	196	Hunnyagora	5	Bamboo	State Plan	N 23^{0}18’50.5”	E 86^{0}40’40.9”
Hura	Hura	Motipur	90	Motipur	10	QGS	State Plan	N 23^{0}19’18.7”	E 86^{0}40’34.7”
Hura	Hura	Kundrudi	97	Kundrudi	10	QGS	N.Gange	N 23^{0}16’04.2”	E 86^{0}40’37.1”
Hura	Hura	Ledadi	71	Ledadi	3	Sal Misc.	CAMPA	N 23^{0}26’13.0”	E 86^{0}43’28.0”
Hura	Bishpuria	Ichamara	200	Ichamara	10	QGS	State Plan	N 23^{0}19’07.8”	E 86^{0}32’43.0”

Hura	Bishpuria	Kaliabasa	98	Kaliabasa	5	Sal	State Plan	N 23^{0}15’52.3”	E 86^{0}42’00.6”
Hura	Bishpuria	Kaliabasa	98	Kaliabasa	10	QGS	State Plan	N 23^{0}15’30.1”	E 86^{0}42’20.6”
Hura	Bishpuria	Samukgoria	103	Samukgoria	5	QGS	N.Gange	N 23^{0}16’52.4”	E 86^{0}42’18.5”
Hura	Bishpuria	Chanchipathar	115	Chanchipathar	10	Sal Misc.	N.H.	N 23^{0}28’38.5”	E 86^{0}34’42.2”
Hura	Bishpuria	Chanchipathar	115	Chanchipathar	10	QGS	State Plan	N 23^{0}28’38.0”	E 86^{0}34’42.8”
Hura	Bishpuria	Kaliabasa	98	Kaliabasa	3	QGS	State Plan	N 23^{0}18’43.3”	E 86^{0}48’43.0”
Hura	Bishpuria	Samukgoria	103	Samukgoria	2.5	QGS	State Plan	N 23^{0}16’32.4”	E 86^{0}42’22.1”
Hura	Bishpuria	Chirugora	99	Chirugora	15	QGS	State Plan	N 23^{0}15’06.2”	E 86^{0}42’17.0”
Hura	Kesharga rh	Pirorlaya	62	Pirorlaya	20	QGS	State Plan	N 23^{0}14’24.0”	E 86^{0}33’47.2”
Hura	Kesharga rh	Kesahargarh	54	Kesahargarh	9	QGS	State Plan	N 23^{0}16’45.0”	E 86^{0}33’49.9”
Hura	Kesharga rh	Chorgali	55	Chorgali	12	QGS	State Plan	N 23^{0}20’42.0”	E 86^{0}32’30.0”
Hura	Kesharga rh	Dumkadih	43	Dumkadih	9	QGS	State Plan	N 23^{0}16’11.3”	E 86^{0}33’17.0”
Hura	Kesharga rh	Kulabahal	47	Kulabahal	10	QGS	N.Gange	N 23^{0}20’31.0”	E 86^{0}32’43.0”
Hura	Kesharga rh	Gundlubari	34	Gundlubari	12	QGS	N.Gange	N 23^{0}18’34.0”	E 86^{0}33’28.0”
Hura	Kesharga rh	Punchadih	35	Punchadih	15	QGS	N.Gange	N 23^{0}17’34.0”	E 86^{0}32’43.0”
Hura	Kesharga rh	Panchudih	31	Panchudih	10	Sal Misc.	N.H.	N 23^{0}20’31.0”	E 86^{0}33’46.0”
Hura	Kesharga rh	Sijumakhana	49	Sijumakhana	40	QGS	State Plan	N 23^{0}20’42.0”	E 86^{0}32’30.0”
Hura	Kesharga rh	Chorgali	55	Chorgali	9.5	Sal Misc.	CAMPA	N 23^{0}16’11.0”	E 86^{0}33’17.0”
Year of plantation 2020-2021									
Hura	Hura	Ledadi	71	Ledadi	10	QGS	State Plan	N 23^{0}15’14.5”	E 86^{0}39’34.5”
Hura	Hura	Pratappur	93	Pratappur	10	QGS	State Plan	N 23^{0}16’41.7”	E 86^{0}39’39.2”
Hura	Hura	Ledadi	71	Ledadi	3	Sal Misc.	CAMPA	N 23^{0}15’15.8”	E 86^{0}39’50.5”
Hura	Bishpuria	Kaliabasa	98	Kaliabasa	22	QGS	State Plan	N 23^{0}16’23.8”	E 86^{0}42’01.8”
Hura	Bishpuria	Parasiya	116	Parasiya	10	QGS	State Plan	N 23^{0}15’27.4”	E 86^{0}46’43.0”
Hura	Kesharga rh	Dumkadih	43	Dumkadih	9	QGS	State Plan	N 23^{0}17’26.5”	E 86^{0}34’14.0”
Hura	Kesharga rh	Kulgora	42	Kulgora	18	QGS	State Plan	N 23^{0}19’24.2”	E 86^{0}34’27.2”
Hura	Kesharga rh	Panchudih	31	Panchudih	12	QGS	State Plan	N 23^{0}18’48.9”	E 86^{0}32’12.7”
Hura	Kesharga rh	Panchudih	31	Panchudih	5	Sal Misc.	State Plan	N 23^{0}18’47.5”	E 86^{0}32’12.2”
Hura	Kesharga rh	Chorgali	55	Chorgali	5	Sal Misc.	CAMPA	N 23^{0}17’02.3”	E 86^{0}33’16.2”
Hura	Rakab	Karrudoba	53	Karrudoba	10	QGS	State Plan	N 23^{0}16’27.0”	E 86^{0}30’47.8”
Hura	Kesharga rh	Kudlung	52	Kudlung	30	QGS	State Plan	N 23^{0}18’14.8”	E 86^{0}29’15.0”
Hura	Rakab	Arjunjora	51	Arjunjora	15	QGS	State Plan	N 23^{0}18’13.9”	E 86^{0}29’14.8”
Hura	Rakab	Kudlung	52	Laosenbera	10	QGS	MGNREGA	N 23^{0}16’50.3”	E 86^{0}29’49.1”
Hura	Rakab	Kudlung	52	Mahulbera	10	QGS	MGNREGA	N 23^{0}16’48.4”	E 86^{0}29’36.4”
Hura	Rakab	Basamtare	50	Basamtare	20	QGS	MGNREGA	N 23^{0}17’53.5”	E 86^{0}30’33.7”
Hura	Rakab	Kudlung	52	Kudlung	5	Sal Misc.	CAMPA	N 23^{0}16’23.1”	E 86^{0}29’13.5”
Year of plantation 2021-2022									
Hura	Hura	Ledadi	71	Ledadi	10	QGS	State Plan	N 23^{0}15’23.7”	E 86^{0}39’43.5”
Hura	Hura	Nowadi	96	Beniakanali	5	QGS	State Plan	N 23^{0}15’49.4”	E 86^{0}31’19.2”
Hura	Bishpuria	Chirugora	99	Chirugora	20	QGS	State Plan	N 23^{0}14’53.9”	E 86^{0}42’12.5”
Hura	Bishpuria	Dhabani	105	Dhabani	14	QGS	State Plan	N 23^{0}18’22.5”	E 86^{0}43’54.0”
Hura	Bishpuria	Pabra Pahari	197	Pabra Pahari	10	QGS	State Plan	N 23^{0}18’25.9”	E 86^{0}42’11.9”

Hura	Kesharga rh	Raisa	61	Raisa	10	QGS	State Plan	N 23^{0}15’00.8”	E 86^{0}33’58.5”
Hura	Kesharga rh	Gundlubari	34	Gundlubari	5	Sal	State Plan	N 23^{0}19’21.5”	E 86^{0}32’59.0”
Hura	Kesharga rh	Gundlubari	34	Gundlubari	5	Fruit	GIM	N 23^{0}19’21.6”	E 86^{0}33’20.8”
Hura	Kesharga rh	Tilaboni	4	Tilaboni	8.73	Sal Misc.	C.A. Land CAMPA	N 23^{0}24’77.0”	E 86^{0}32’43.0”
Hura	Kesharga rh	Madhabpur	5	Madhabpur	7.02	Sal Misc.	C.A. Land CAMPA	N 23^{0}25’08.0”	E 86^{0}32’11.0”
Hura	Kesharga rh	Saharjuri	22	Saharjuri	9.66	Sal Misc.	C.A. Land CAMPA	N 23^{0}22’18.0”	E 86^{0}31’18.6”
Hura	Kesharga rh	Basamtare	50	Basamtare	10	QGS	State Plan	N 23^{0}17’58.3”	E 86^{0}32’59.0”
Hura	Kesharga rh	Keshargarh	54	Kalipur	10	QGS	CAMPA	N 23^{0}14’01.9”	E 86^{0}32’51.7”
Year of plantation 2022-2023									
Hura	Hura	Layabadi Pukhuriathol e	196	Layabadi Pukhuriathole	20	QGS	State Plan	N 23^{0}19’01.4”	E 86^{0}40’48.9”
Hura	Hura	Motipur	90	Hunnyagora	14	QGS	State Plan	N 23^{0}18’36.6”	E 86^{0}40’34.1”
Hura	Bishpuria	Chirugora	99	Chirugora	12	QGS	State Plan	N 23^{0}15’09.7”	E 86^{0}42’09.9”
Hura	Bishpuria	Ichamara	200	Ichamara	35	QGS	State Plan	N 23^{0}19’07.7”	E 86^{0}43’17.3”
Hura	Bishpuria	Kaliabasa	98	Kaliabasa (Amtard	25	QGS	State Plan	N 23^{0}15’36.4”	E 86^{0}41’07.7”
Hura	Kesharga rh	Chorgali	55	Chorgali	7	QGS	State Plan	N 23^{0}16’45.4”	E 86^{0}33’20.8”
Hura	Kesharga rh	Keshargarh	54	Dudhpania	10	QGS	State Plan	N 23^{0}15’43.0”	E 86^{0}31’45.9”
Hura	Kesharga rh	Keshargarh	54	Aralkocha	18	QGS	State Plan	N 23^{0}15’46.7”	E 86^{0}31’33.2”
Hura	Kesharga rh	Kulabahal	47	Kulabahal	20	QGS	State Plan	N 23^{0}17’27.4”	E 86^{0}32’31.6”
Hura	Kesharga rh	Chorgali	55	Bandartanga	5	QGS	State Plan	N 23^{0}17’14.3”	E 86^{0}33’17.9”
Hura	Kesharga rh	Keshargarh	54	Karkata	8	QGS	State Plan	N 23^{0}14’01.9”	E 86^{0}32’51.7”
Hura	Rakab	Sijumakhana	49	Baghatar	15	QGS	State Plan	N 23^{0}17’30.0”	E 86^{0}30’48.2”
Hura	Kesharga rh	Keshargarh	54	Karkata	10	QGS	CAMPA	N 23^{0}14’02.4”	E 86^{0}32’48.2”
Hura	Rakab	Sijumakhana	49	Sijumakhana	10	QGS	N. Gange	N 23^{0}17’48.5”	E 86^{0}31’15.6”
Hura	Rakab	Dapang	48	Dapang	10	QGS	GIM(QGS)	N 23^{0}17’22.8”	E 86^{0}31’46.6”
Hura	Rakab	Kudlung	52	Lousenbera	17	QGS	GIM(QGS)	N 23^{0}16’46.3”	E 86^{0}29’45.5”
Hura	Kesharga rh	Hatikundar	56	Haritar	2.5	QGS	N. Gange	N 23^{0}16’51.5”	E 86^{0}33’54.7”
Hura	Kesharga rh	Hatikundar	56	Haritar	2.5	QGS	N. Gange	N 23^{0}16’52.4”	E 86^{0}33’53.6”
Hura	Kesharga rh	Keshargarh	54	Keshargarh	4	Sandal	CAMPA	N 23^{0}15’52.4”	E 86^{0}33’14.9”
Plantation – 2023-2024									
Hura	Bishpuria	Ichamara	200	Ichamara	10	QGS	State Plan	N 23^{0}19’09.2”	E 86^{0}43’07.6”
Hura	Bishpuria	Chirugora	99	Chirugora	10	Sal	State Plan	N 23^{0}14’42.8”	E 86^{0}42’29.8”
Hura	Bishpuria	Chirugora	99	Chirugora	5	QGS	State Plan	N 23^{0}14’35.0”	E 86^{0}42’25.4”
Hura	Hura	Pukhuriathol e	196	Dariakata	10	QGS	State Plan	N 23^{0}17’54.5”	E 86^{0}41’02.4”
Hura	Kesharga rh	Chorgali	55	Bandartanga	8	QGS	State Plan	N 23^{0}17’15.4”	E 86^{0}33’19.9”
Hura	Kesharga rh	Keshargarh	54	Keshargarh Puranobasti	5	QGS	State Plan	N 23^{0}15’19.8”	E 86^{0}33’19.2”
Hura	Kesharga rh	Hatikundar	56	Haritar	25	QGS	State Plan	N 23^{0}16’55.0”	E 86^{0}34’00.5”
Hura	Rakab	Karrudoba	53	Karrudoba	15	QGS	State Plan	N 23^{0}17’26.2”	E 86^{0}30’49.2”
Hura	Kesharga rh	Karandi	64	Karandi	18	QGS	CAMPA	N 23^{0}14’01.9”	E 86^{0}35’04.4”
Hura	Rakab	Kudlung	52	Kudlung West	20	QGS	CAMPA	N 23^{0}16’03.1”	E 86^{0}28’55.7”

Dependency on forest in Kangsabati North division:

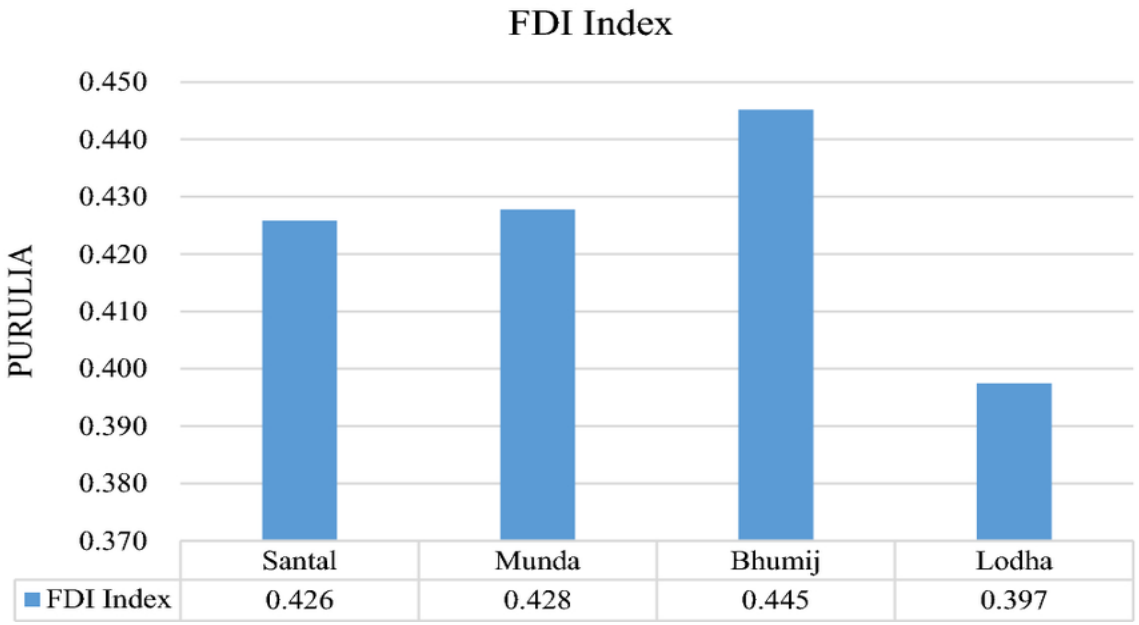

Fig. 12.1: Forest dependence index of Kangsabati North Forest Division

The above figure shows the forest dependence index of tribes based on forest product collection for livelihood generation and how social security programmes have impacted on forest dependence index. Besides, it tries to identify the factors influencing forest dependency and its implication for tribal livelihood. This is based on primary data collected from the Purulia forest division in the district of Purulia, one of the tribal-dominated districts of West Bengal during 2019 across tribal communities of Santal, Munda, Bhumij and Lodha. The results of the study showed that forest dependence index of Purulia district is found to be 0.42. Bhumij tribes are highly forest dependent than others. The forest dependency has been negatively influenced by social security programmes implies that the getting proper benefits of social security programmes has led to low forest dependence of the tribal community of Purulia district. The forest dependency also explained by family size, age of headed household, education, distance from market and land holdings.

Dependency on forest in Raghunathpur range, Kangsabati North Division:

1. Collection of Fire wood (Dry Stacks) : 25% of total population
2. Collection of Kendu leaves : 15% of total population
3. Collection of Aturi climbers : 10% of total population
4. Collection of Mahul : 05% of total population
5. Collection Sal leaves : 20% of total population
6. Collection Ful Jharu : 5% of total population
7. Collection of Medicinal Plant : 10% of total population
8. Cattle grazing : Grazing takes place by approx. 5000 domestic

Dependency on Forest in Purulia Para Range, Kangsabati North Division:

1. Collection of Firewood(Dry Stacks) : 20% of total population.

2. Collection of Dry Leaves : 15% of total population
3. Collection of Mahul : 20%of t-tal population
4. Collection of Sal Leaves : 10% of total population
5. Collection of Medicinal Plant : 05%of total population
6. Cattle Grazing : Grazing takes place by approx. 7500 domestic.

Dependency on forest in Puncha range, Kangsabati North Division:

1. Collection of Firewood(Dry Stacks) : 22% of total population
2. Collection of KenduLeaves : 3% of total population
3. Collection of Aturi Climber : 2% of total population
4. Collection of Mahul : 4%of total population
5. Collection of Sal Leaves : 8% of total population
6. Collection of Medicinal Plant : 1%of total population
7. Cattle Grazing : Grazing takes place by approx.8000 domestic.

Dependency on forest in Hura range under Kangsabati North Division:

1) Collection of Firewood- Dry stack : 15% of total population
2) Collection of Kendu Leaf : 10 % of total population
3) Collection of Mahul flowers : 10 % of total population
4) Collection Sal Leaf : 10 % of total population
5) Collection of Medicinal Plant : 05 % of total population
6) Cattle Grazing : Grazing takes place by approx. 10000 domestic

13. Erosion Susceptibility Index in Kangsabati North Forest Division

Major factors responsible for assessing relative degree of soil erosion are identified as forest cover, land slope, soil texture and soil depth. These factors were classified in different groups and each of these groups was assigned numerical values as to reflect the severity of erosion. Finally Erosion Susceptibility Index (ESI) was computed for different erosion response units arrived by over laying and intersecting four thematic layers viz. forest cover, land slope, soil depth and soil texture. Range wise area statistics of different ESI classes spread over Kangsabati North division is given in Table 13.1. Spatial distribution of these ESI classes is depicted in range wise ESI maps number Map 9a, Map 9b, Map 9c, Map 9d and Map 9e. Further beat wise priority table is also prepared by computing weighted area average ESI value and presented in Table 13.2.

Table 13.1. Range wise area statistics of different ESI classes spread over Kangsabati North Division

Forest range	Area (ha) under different classes of Erosion Susceptibility Index					Total area (ha)
	Non critical (< 0.33)	Slightly critical (0.33 - 0.47)	Moderately critical (0.48 - 0.62)	Critical (0.63 - 0.79)	Very critical (> 0.79)	
Hura	818.48	4.48	3640.26	2255.79	276.11	6995.11
Kashipur	751.33	-	1784.27	967.46	72.88	3575.95
Puncha	265.26	0.02	2096.11	1805.02	85.78	4252.19
Purulia para	781.34	-	1901.78	1286.90	84.89	4054.92
Raghunathpur	643.11	5.56	1982.01	1629.17	207.77	4467.62
Total Area (ha)	**3259.53**	**10.06**	**11404.44**	**7944.34**	**727.43**	**23345.79**
% of Total forest division area	**13.96**	**0.04**	**48.85**	**34.03**	**3.12**	**100.00**

Table 13.2: Beat wise priority for taking up CAT interventions in Kangsabati North Forest Division

Beat	ESI	Priority
Purulia - I	0.3905	Low priority ↓ High priority
Kashipur	0.3913	
Raghunathpur - II	0.4028	
Sonathali	0.4181	
Keshargarh	0.4216	
Raghunathpur - I	0.4313	
Para	0.4328	
Hura	0.4344	
Panipathar	0.4377	
Rakab	0.4381	
Gourandi	0.4388	
Purulia - II	0.4426	
Santuri	0.4445	
Gopalpur	0.4488	
Bishpuria	0.4526	
Jambad	0.4531	
Damodarpur	0.4579	
Neturia	0.4799	

14. Proposed action plan

"In all the following calculations the estimated amount has arrived using Schedule of Rates 2018 of Irrigation & Waterways Department, Government of West Bengal and is indicative only. The actual amount is the vetted estimates may vary."

14.1 Brushwood Check Dam

Input parameters:

- ✓ Structure No
- ✓ Order of gully
- ✓ Type of DLT
- ✓ Availability of Stone
- ✓ Shape of Gully (1=V, 2=U and 3=Parabolic)
- ✓ Gully width (m) at Highest Flood Level (HFL)
- ✓ Gully depth in centre at HFL (m)
- ✓ General clearance Rate (Rs/Sqm) @ Rs. 171
- ✓ Collecting poles about 8-10 cm dia of required height including driving poles (2 rows)- Rate (Rs/m) @ Rs. 33
- ✓ Collecting horizontal sticks about 4-6 cm dia of required length including placing sticks (for 2 vertical rows) – Rate (Rs/m) @ Rs. 6
- ✓ GI wire for binding poles and sticks @ 50 gm per node – Rate (Rs/kg) @ Rs. 85.55
- ✓ Collecting and spreading brushes – Rate (Rs/cum) @ Rs. 492.48
- ✓ Planting seedlings & maintenance charges including watering (LS) – Rate @ Rs. 500

Design logic used

i. For design width:

Gully width (m) at HFL	Design width (m)	Gully width (m) at HFL	Design width (m)
<=1	1.0	>3.5 but <=4	4.0
>1 but <=1.5	1.5	<4 but <=4.5	4.5
>1.5 but <=2,	2.0	>4.5 but <=5	5.0
>2 but <=2.5	2.5	>5 but <=5.5	5.5
>2.5 but <=3	3.0	>5.5 but <=6	6.0
>3 but <=3.5	3.5		

ii. For design height:

Gully depth in center at HFL (m)	Design height (m)
<0.5	NA
>=0.5 but <=0.75	0.5
>0.75 but <=1.75	Gully depth-0.25
>1.75	1.5

iii. For depth of driving vertical poles inside the earth(m): Design height * 0.6

iv. **Breath (m) - spacing between two rows:**

Design width (m)	Breath (m) - spacing between two rows
<=2.5	0.5
>2.5 but <=4.5	0.75
>4.5 but <=6	1.0

v. **General clearance Qty:**
(Design width * Breath (m) - Spacing between two rows) * 1.5

vi. **Collecting poles about 8-10 cm dia of required height including driving poles (2 rows):**

No of poles of design height: Round ((Design width/0.4),0) *2
Total length of Poles (m): (Design height + Depth of driving Vertical Poles inside the earth) * No of Poles of design height

vii. **Collecting horizontal sticks about 4-6 cm dia of required length including placing sticks (for 2 vertical rows):**
No of Sticks of design width: Round ((Design height/0.25),0) *2
Total Length of Sticks (m): Design width + No of Sticks of design width

viii. **GI wire for binding poles and sticks @ 50 gm per node- Qty:**
Round (((No of Poles of design height * No of Sticks of design width) / 2) * 0.05,1)

ix. **Collecting and spreading brushes – Qty:**
Round ((Design width * Design height * Breath Spacing between two rows),1)

x. **Total cost:**
(General clearance Qty * Rate) + (Total Length of Poles * Rate) + (Total Length of Sticks * rate) + (GI wire for binding poles and sticks @ 50 gm per node- Qty * Rate) + (Collecting and spreading brushes – Qty *Rate)

xi. **Unforeseen items if any @3%:**

Total Cost * 0.03

xii. **Grand total:**
Total Cost + Unforeseen items if any @3%

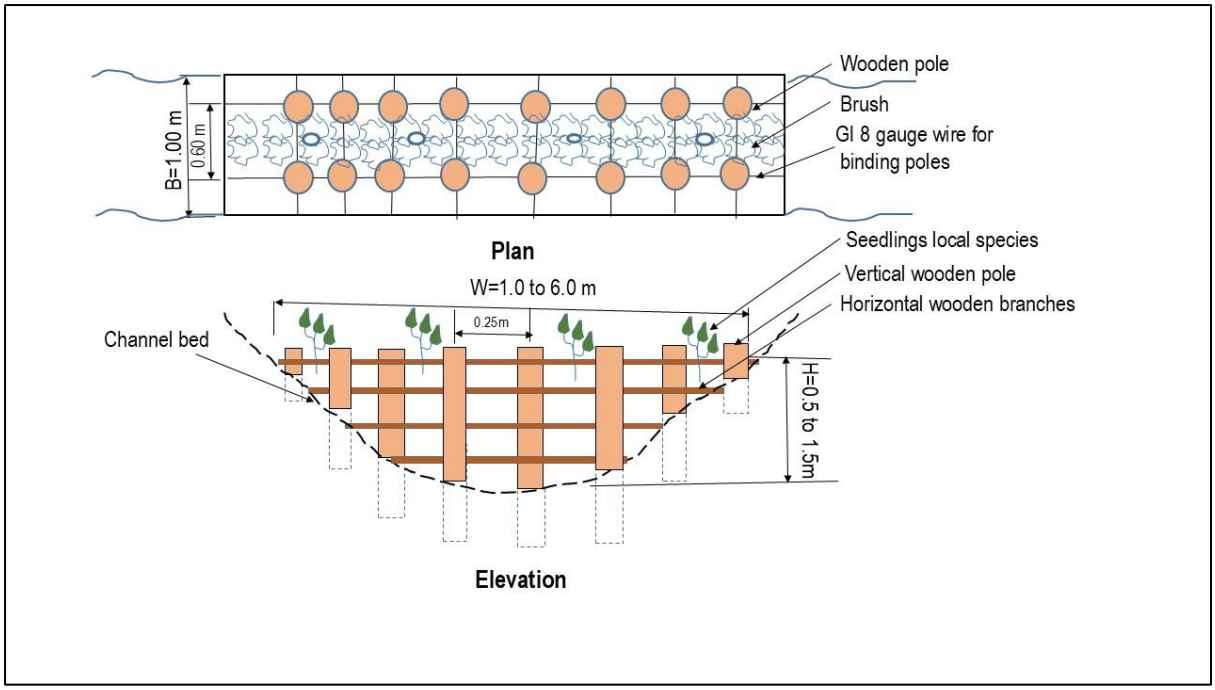

Fig.14.1: General design and drawing of Brush wood Check Dam

14.2 Loose Boulder Check Dam (LBCD)

Input parameters:

- ✓ Structure No.
- ✓ Order of gully
- ✓ Type of DLT
- ✓ Availability of Stone
- ✓ Shape of Gully (1=V, 2=U and 3=Parabolic)
- ✓ Gully width (m) at HFL
- ✓ Gully depth in centre at HFL (m)
- ✓ Earth work Rate (Rs/cum) @ Rs. 82.98
- ✓ Boulder Rate (Rs/cum) @ Rs. 1998
- ✓ Labour Charges @ Rs. 380

Design logic used

i. For design width:

Gully width at HFL (m)	Design width (m)	Gully width (m) at HFL	Design width (m)
<1 and >8.5	NA	>= 4.5 but <5	5.5
>= 1 but <1.5	2.0	>= 5 but <5.5	6.0
>= 1.5 but <2	2.5	>= 5.5 but <6	6.5
>= 2 but <2.5	3.0	>= 6 but <6.5	7.0
>= 2.5 but <3	3.5	>= 6.5 but <7	7.5
>= 3 but <3.5	4.0	>= 7 but <7.5	8.0
>= 3.5 but <4	4.5	>= 7.5 but <8	8.5
>= 4 but <4.5	5.0	>= 8 but <8.5	9.0

ii. For design height:

Gully depth at centre (m) of HFL	Design height (m)	Gully depth at centre (m) of HFL	Design height (m)
<0.5	NA	>=1.5 but <1.75	1.0
>=0.5 but <0.75	0.5	>=1.75 but <2	1.05
>=0.75 but <1	0.6	>=2 but<2.25	1.2
>=1 but <1.25	0.75	>=2.25 but <2.75	1.35
>=1.25 but <1.5	0.90	>=2.75	1.5

iii. Top width:

Design height (m)	Top width
<=0.75	0.4
>0.75 but <=1	0.5
>1 but <=1.5	0.6

iv. Bottom width:

Round ((Design height *0.5 + Design height * Top width),1)

v. Foundation depth (m):

Round ((Design height *0.3),1)

vi. Earth work qty:

(0.5 * Design width * Bottom width * Foundation depth)

vii. Boulder qty:

((Design width * Bottom width * Foundation depth) + (((Top Width + Bottom width) / 2) * Design height * Design width)) * 1.2

viii. Total cost:

(Earth work Qty * Earth work Rate) + (Boulder Qty * Boulder Rate) + (Boulder Qty * Labour Charges)

ix. Unforeseen items if any @3%:

Total Cost * 0.03

x. Grand total:

Total Cost + Unforeseen items if any @3%

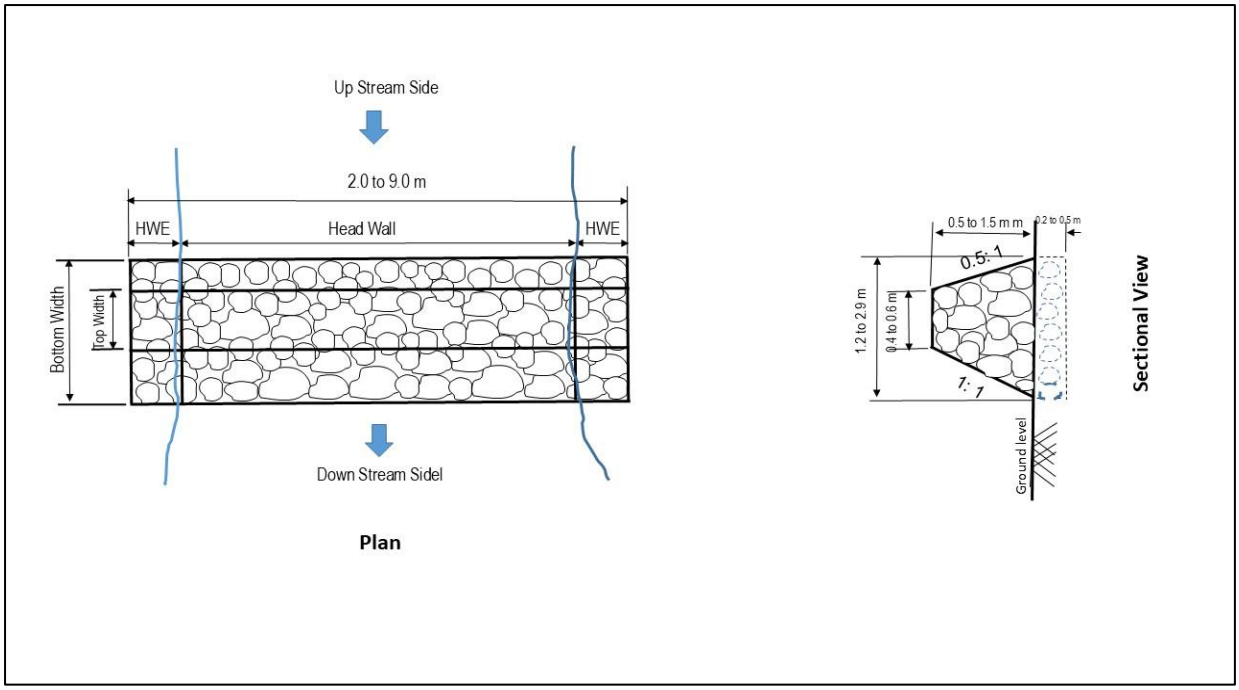

Fig. 14.2: General drawing of Loose Boulder Check Dam (LBCD)

14.3 Gabion Check (GC)

Input parameters:

- ✓ Structure No
- ✓ Order of gully
- ✓ Type of DLT
- ✓ Availability of Stone
- ✓ Shape of Gully (1=V, 2=U and 3=Parabolic)
- ✓ Gully width (m) at HFL
- ✓ Gully depth (m) in centre at HFL
- ✓ Earth work Rate (Rs/cum) @ Rs. 82.98
- ✓ Gabion wire Rate (Rs/kg) @ Rs. 85.55
- ✓ Labour Charges for wire netting (Rs/sqm) @ Rs.70.29
- ✓ Boulder Rate (Rs/cum) @ Rs. 1998
- ✓ Labour Charges @ Rs. 380

Design logic used

i. For design width:

Gully width (m)	Design width (m)
<1.5 and >8.5	NA
>= 1.5 but <2.5	3
>= 2.5 but <3.5	4
>= 3.5 but <4.5	5
>= 4.5 but <5.5	6
>= 5.5 but <6.5	7

>= 6.5 but <7.5	8
>= 7.5 but <8.5	9

ii. For design height:

Gully depth (m)	Design height (m)
<0.55	NA
>=0.55 but <1	0.6
>=1 but <1.5	1
>=1.5 but <2	1.2
>=2 but <3	1.5
>=3	1.8

iii. Foundation depth (m):

Design height (m)	Foundation depth (m)
0.6	0.3
1.0	0.4
1.2	0.4
1.5	0.5
1.8	0.6

iv. Gabion boxes height (m):

Bottom row:

If (Design height + Foundation Depth) > 1 then height of bottom row is 1 otherwise (Design height + Foundation Depth)

Middle row:

If (Design height + Foundation Depth) <1 then height of middle row is 0,
If (Design height + Foundation Depth) - 1 <1 then height of middle row is (Design height + Foundation Depth) – 1 otherwise 1

Top row:

(Design height + Foundation Depth) - Bottom Row height – Top Row height

v. Earth work qty:

0.5 * (Design Width * Foundation Depth * Design Breath)
(Design Breath taken as 1 m)

vi. Wire netting qty:

Design width * {(2 * 1 * Bottom Row Height) + (2 * 1 * Design Breath) + (2 * Design Breath * Bottom Row Height)} + Design width * {(2 * 1 * Middle Row Height) + (2 * 1 * Design Breath) + (2 * Design Breath * Middle Row Height)} + Design width * {(2 * 1 * Top Row Height) + (2 * 1 * Design Breath) + (2 * Design Breath * Top Row Height)}

vii. Gabion wire qty:

1.2 * Wire netting Qty *1.28

viii. Boulder qty:

(Design Width * Design Breath) * (Design Height + Foundation Depth)) * 1.2

ix. Total cost:

(Earth Work Qty * Earth Work Rate) + (Wire netting Qty * Labour Charges for wire netting) + (Gabion Wire Qty * Gabion wire Rate) + (Boulder Qty * Boulder Rate) + (Boulder Qty * Labour Charges)

x. Unforeseen items if any @3%:

Total Cost * 0.03

xi. Grand total:

Total Cost + Unforeseen items if any @3%

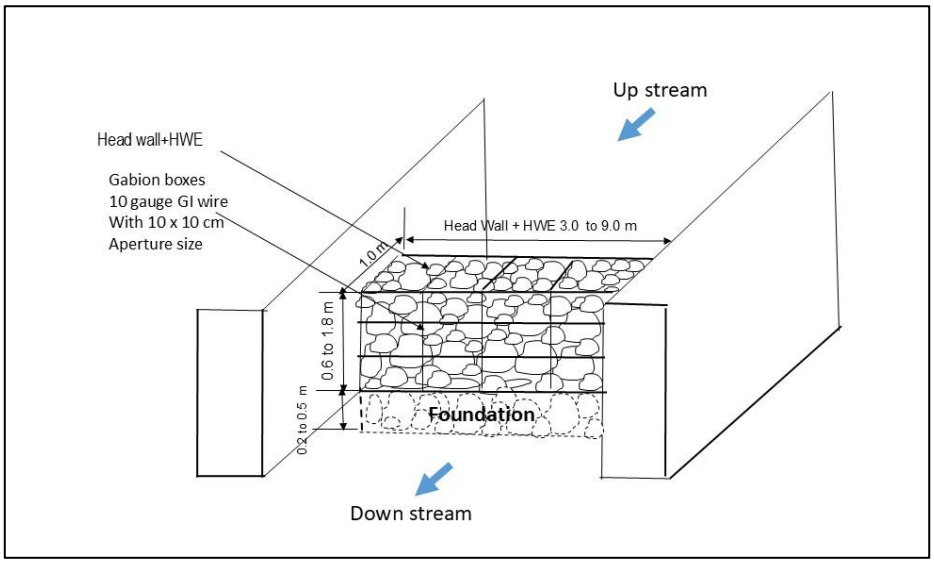

Fig.14.3. Isometric view of Gabion Check

14.4 Gabion Check Dam (GCD)

Input parameters:

- ✓ Structure No
- ✓ Order of gully
- ✓ Type of DLT
- ✓ Availability of Stone
- ✓ Shape of Gully (1=V, 2=U and 3=Parabolic)
- ✓ Gully width (m) at HFL
- ✓ Gully depth in centre at HFL (m)
- ✓ Earth work Rate (Rs/cum) @ Rs.82.98
- ✓ Gabion wire Rate (Rs/kg) @ Rs. 85.55
- ✓ Labour Charges for wire netting (Rs/sqm) @ Rs.70.29
- ✓ Boulder Rate (Rs/cum) @ Rs.1998

✓ Labour Charges @ Rs. 380

Design logic used

For Head Wall:

i. For design width:

Gully width at HFL (m)	Design width (m)	Gully at HFL width (m)	Design width (m)
<6 and >13	NA	>= 9.5 but <10	10.0
>= 6 but <6.5	6.5	>= 10 but <10.5	10.5
>= 6.5 but <7	7.0	>= 10.5 but <11	11.0
>= 7 but <7.5	7.5	>=11 but <11.5	11.5
>= 7.5 but <8	8.0	>= 11.5 but <12	12.0
>= 8 but <8.5	8.5	>= 12 but <12.5	12.5
>= 8.5 but <9	9.0	>= 12.5 but <=13	13.0
>= 9 but <9.5	9.5		

ii. For design height:

Gully depth (m)	Design height (m)
<1 and >6	NA
>=1 but <1.2	1
>=1.2 but <1.5	1.2
>=1.5 but <1.8	1.5
>=1.8 but <2.1	1.8
>=2.1 but <=6	2.1

iii. Design breath (m): taken as 1 m

iv. Foundation depth (m):

Round ((Design height * 0.35),1)

v. Gabion boxes height including foundation depth (m):

1st Row:

If Design height + Foundation depth >1 then height of 1st Row is 1 otherwise Design height + Design breath

2nd Row:

If Design height + Foundation depth <1 then height of 2nd Row is 0

If (Design height + Foundation depth)-1 <1 then height of 2nd Row is (Design height + Foundation depth)-1 otherwise 1

3rd Row:

If (Design height + Foundation depth) - 1st Row height - 2nd Row height

For Side Wall:

i. For design length:

Design width (m) of Head wall	Design length (m)
>=6.5 but <7.5	2 * 1.5
>=7.5 but <9.5	2 * 2.0
>=9.5 but <11.5	2 * 2.5
>=11.5	2 * 3.0

ii. For design height:

Design Height of Headwall +1

iii. design breath: it takes as 1 m

iv. Foundation depth (m):

Round ((Design Height * 0.35),1)

v. Gabion Boxes Height including foundation depth (m):

1st Row:

If Side wall Design height + Side wall Foundation depth > 1, then height of 1st Row is 1 otherwise Side wall Design height + Side wall Foundation depth

2nd Row:

If Side wall Design height + Side wall Foundation depth < 1, then height of 2nd Row is 0 If (Side wall Design height + Side wall Foundation depth)-1 < 1, then height of 2nd Row is (Side wall Design height + Side wall Foundation depth)-1 otherwise 1

3rd Row:

If (Side wall Design height + Side wall Foundation depth) - 1st Row height – 2nd Row Height < 1, then height of 3nd Row is (Side wall Design height + Side wall Foundation depth) - 1st Row height – 2nd Row Height otherwise 1

4th Row:

(Side wall Design height + Side wall Foundation depth) - 1st Row height – 2nd Row Height – 3rd Row height

vi. For Apron:

Design length (m): Design width - 2
Apron height (m): taken as 0.3 m
Design breath – Lb (m): (Side wall design length / 2) -0.5
Foundation depth (m): taken as 0.2 m

vii. For Toe Wall:

Design length (m): Design width - 2
Toe Wall height (m): taken as 0.3 m
Design breath (m): taken as 0.4 m
Foundation depth (m): Round (Head wall design height * 0.35,1)

viii. 1 cum. on both side of HW to raise it up to SW:

Design length (m): taken as 1 m
Design height (m): taken as 1 m

ix. <u>For earth work qty:</u>

(0.5 * Headwall Design Width * Headwall Design Breath * Headwall Foundation Depth) + (2 * (Side wall Design length * Side wall Design breath * Side wall Foundation depth)) + (Apron Design length * Apron Design breath * Apron Foundation depth) + (Toe wall Design length * Toe wall Design Breath * Toe wall Foundation depth)

x. For wire netting qty:

(Headwall Design width -0.5) * ((2 * 1 * Headwall Gabion box 1st row height) + (2 * 1 * Headwall Design breath) + (2 * Headwall Design breath * Headwall Gabion box 1st row height)) +

(Headwall Design width -0.5) * ((2 * 1 * Headwall Gabion box 2nd row height) + (2 * 1 * Headwall Design breath) + (2 * Headwall Design breath * Headwall Gabion box 2nd row height)) +

0.5 * ((2 * 1 * Headwall Gabion box 1st row height) + (2 * 1 * Headwall Design breath) + (2 * Headwall Design breath * Headwall Gabion box 1st row height)) +

0.5 * * ((2 * 1 * Headwall Gabion box 2nd row height) + (2 * 1 * Headwall Design breath) + (2 * Headwall Design breath * Headwall Gabion box 2nd row height)) +

Side wall Design length * 2 * ((2 * 1 * Side wall Gabion box 1st row height) + (2 * 1 * Side wall Design breath) + (2 * Side wall Gabion box 1st row height * Side wall Design breath)) +

Side wall Design length * 2 * (2 * 1 * Side wall Gabion box 2nd row height) + (2 * 1 * Side wall Design breath) + (2 * Side wall Gabion box 2nd row height * Side wall Design breath)) +

Side wall Design length * 2 * (2 * 1 * Side wall Gabion box 3rd row height) + (2 * 1 * Side wall Design breath) + (2 * Side wall Gabion box 3rd row height * Side wall Design breath)) +

(2 * Toe wall design length * (Toe wall Foundation depth + Toe wall Design height)) +

(2 * Toe wall design length * Toe wall Design breath) + (2 * (Toe wall Foundation depth + Toe wall Design height) * Toe wall Design breath)

xi. For Gabion wire qty:

1.2 * Wire Netting Qty * 1.28

xii. For Boulder qty:

1.2 * ((Head wall Design Width * 2 *1.7) + (Head wall Design Width * 1 * 1) + 2 * ((12 * 2 * Side wall Design breath * 1)) + (Apron Design length * Apron design Breath Lb * Apron Foundation depth) + (Toe wall Design length * Toe wall Design breath * (Toe wall Foundation depth + Toe wall height)) + (1 cum. on both side of HW to raise it up to SW- Design length * 1 cum. on both side of HW to raise it up to SW- Design Height * Headwall Design breath))

xiii. For total cost:

(Earth Work Qty * Earth Work Rate) + (Wire Netting Qty * Labour Charges for Wire Netting) + (Gabion Wire Qty * Gabion Wire Rate) + (Boulder Qty * Boulder Rate) + (Boulder Qty * Labour Charges)

xiv. For unforeseen items if any @3%:

Total Cost * 0.03

xv. For grand total:

Total cost + Unforeseen items if any @3%

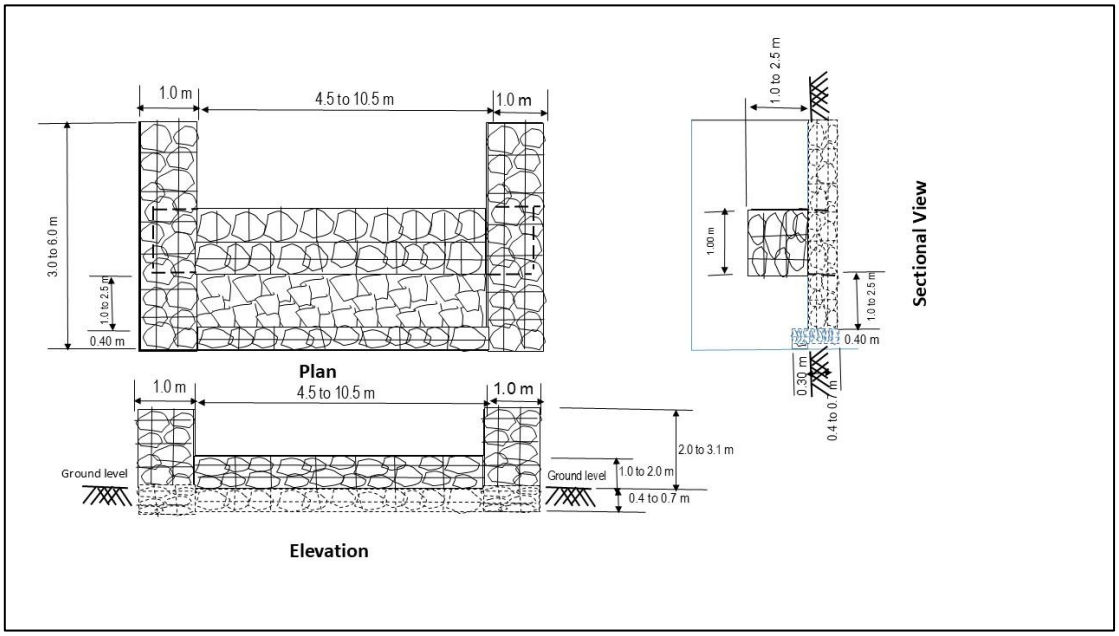

Fig.14.4: Drawing of Gabion Check Dam

14.5 Contour Staggered Trenching

Input parameters:

- ✓ Forest Cover Class
- ✓ Area (ha) of the polygon
- ✓ Soil depth class
- ✓ Slope Class

Design logic used

i. For Horizontal Interval (H.I.):

Slope Class	H.I.
<=5	6.5
>5 but <=10	5.8
>10 but <=25	5.5
>25 but <=33	5.2
>33 but <=50	5.0
>50	NA

ii. For no. of lines of 100 m length/ha:

Round(100/H.I.,0)

iii. For no. of trenches per ha:

No. of Lines of 100 m Length/ha * 16

iv. For no. of trenches for polygon:

Round (No of trenches for polygon * Area,0)

v. For soil depth class

Depth (cm)	Trench design (LxWxD)
< 50	Type I (3.0x0.45x0.30)
> 50	Type II (3.0x0.45x0.45)

vi. For cross-sectional area:

Trench design	Cross section area (m)
Type I	0.45 * 0.30
Type II	0.45 * 0.45

vii. For volume (m^3):

No of trenches for polygon * 3 * Cross-sectional Area

viii. For cost calculation:

Volume (m^3) * Rate (Rs.)

Cost/ha = Volume (m^3) / Area

ix. For plantation (GF):

Forest cover class	Plantation (GF)
Non-forest	100 %
Scrub	90 %
Open forest	50 %

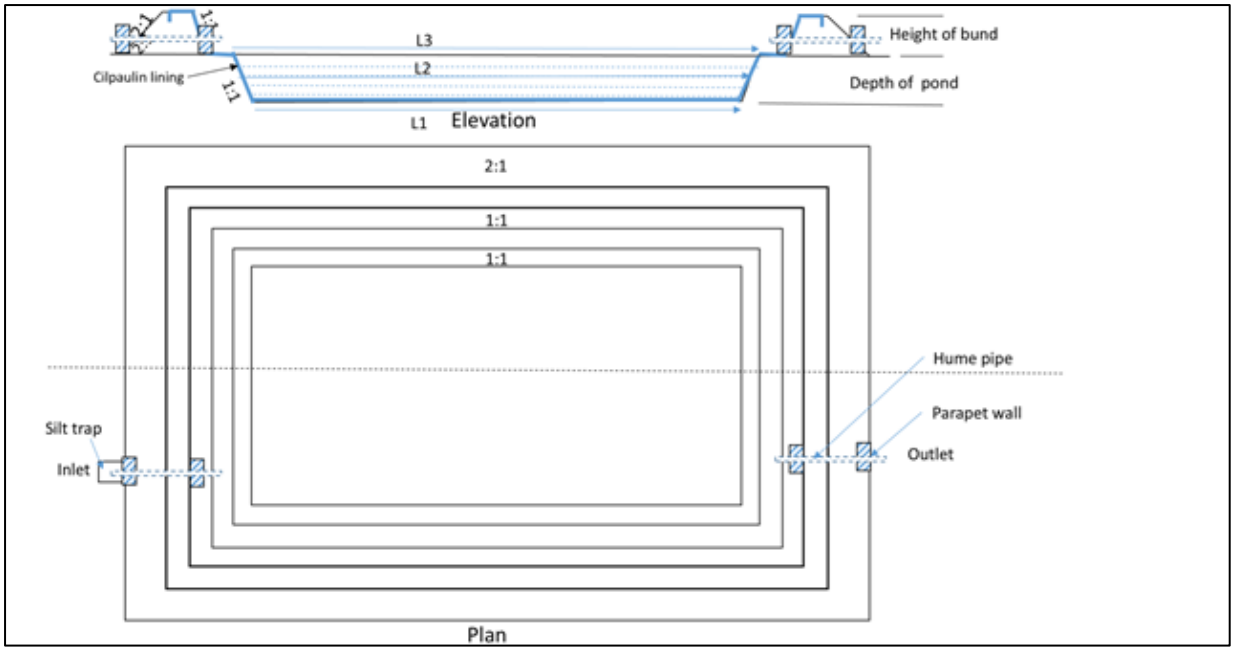

Fig. 14.5: Drawing of Dugout pond to be constructed in the Kangsabati North Forest Division under JICA consultancy project at West Bengal

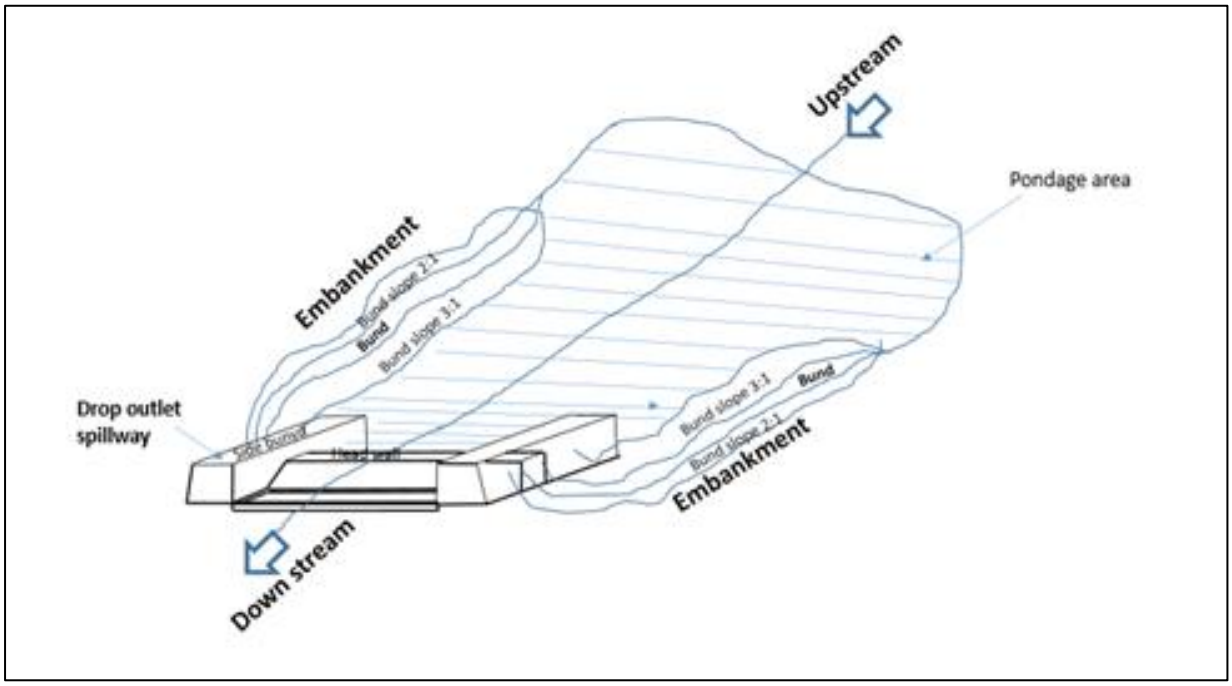

Fig. 14.6: Embankment pond with drop outlet spillway to be constructed in the Kangsabati North Forest Division under JICA consultancy project at West Bengal

15. Summary of proposed action plan

Table No. 15.1. Summary of proposed Loose Boulder Check Dam

Beat	Design width (m)	No. of structures	Cost (in lakhs ₹)	Total cost (in lakhs ₹)
Bishpuria	2.5	13	2.35	8.78
	3	5	1.10	
	3.5	1	0.19	
	4	2	0.21	
	5	1	0.60	
	6	5	0.90	
	8	7	2.41	
	9	2	1.01	
Gopalpur	3	2	0.18	0.18
Gourangdih	3	4	0.47	10.62
	4	8	1.56	
	5	18	6.13	
	7	3	1.15	
	8	2	1.31	
Hura	2	7	0.28	9.13
	2.5	16	1.57	
	3	8	0.99	
	4	1	0.22	
	6	10	1.83	
	7	1	0.21	
	8	3	1.14	
	9	10	2.90	
Jambad	2	20	0.86	12.07
	2.5	17	1.53	
	3	1	0.24	
	3.5	1	0.19	
	4	4	0.66	
	5	7	0.72	
	6	16	1.97	
	7	23	3.59	
	8	11	1.78	
	9	3	0.51	
Kashipur	5	2	0.23	1.33
	7	1	0.21	
	8	2	0.90	
Neturia	3	1	0.07	3.36
	4	3	0.76	
	5	1	0.41	
	6	1	0.49	
	7	1	0.21	
	8	1	0.44	

	9	2	0.99	
Panipathar	2.5	1	0.06	5.42
	3	2	0.11	
	4	6	0.54	
	5	8	1.16	
	6	3	0.65	
	7	4	0.71	
	8	2	0.68	
	9	5	1.51	
Para	5	1	0.47	7.25
	7	2	1.41	
	8	1	0.65	
	9	5	4.71	
Puncha	2	2	0.12	14.61
	4	4	0.65	
	5	13	2.43	
	6	9	1.57	
	7	12	3.76	
	8	9	3.57	
	9	7	2.51	
Purulia-II	9	1	0.27	0.27
Raghunathpur-I	6	1	0.18	0.39
	7	1	0.21	
Raghunathpur-II	6	2	0.36	0.79
	8	1	0.44	
Santuri	4	1	0.12	0.27
	5	1	0.15	
Sonathali	4	2	0.24	9.68
	5	8	1.45	
	6	9	2.37	
	7	9	3.30	
	8	2	1.10	
	9	2	1.23	
Grand total		**383**	**84.14**	**84.14**

Table No.15.2. Summary of proposed Gabion Check Dam

BEAT	Design width (m)	No. of structures	Cost (in lakhs ₹)	Total cost (in lakhs ₹)
Bishpuria	9.5	2	6.76	77.18
	10.5	15	54.19	
	11.5	1	3.82	
	12.5	2	8.32	
	13	1	4.09	

Gourangdih	12.5	4	16.61	16.61
Hura	9.5	1	3.41	120.68
	10.5	26	93.09	
	11.5	1	3.86	
	12.5	3	12.14	
	13	2	8.18	
Jambad	9.5	3	10.20	79.25
	10.5	8	28.50	
	12.5	8	32.32	
	13	2	8.22	
Kashipur	12.5	1	4.14	4.14
Keshargarh	9.5	1	3.52	3.52
Neturia	9.5	3	10.49	10.49
Panipathar	10.5	2	7.39	7.39
Puncha	9.5	3	10.20	41.08
	10.5	3	10.78	
	11.5	1	3.96	
	12.5	4	16.14	
Purulia-I	10.5	2	7.38	7.38
Rakab	6.5	1	2.79	6.49
	10.5	1	3.70	
Grand Total		**101**	**374.19**	**374.20**

Table No.15.3. Summary of proposed Gabion Check

BEAT	Design width (m)	No. of structures	Cost (in thousand ₹)	Total cost (in thousand ₹)
Hura	3	4	67.82	178.10
	9	2	110.27	
Jambad	3	1	18.38	616.21
	6	4	156.32	
	7	2	96.67	
	8	3	159.03	
	9	3	185.81	
Kashipur	6	1	36.71	36.71
Keshargarh	5	2	68.76	374.61
	6	1	41.23	
	7	1	58.67	
	8	1	54.97	
	9	2	150.97	
Neturia	4	1	24.47	24.47

Puncha	3	3	49.42	1904.03
	4	4	82.91	
	5	14	411.90	
	6	20	671.49	
	7	9	388.28	
	8	6	300.03	
Rakab	4	1	27.49	480.43
	5	3	125.78	
	6	1	50.36	
	7	1	58.67	
	8	1	67.06	
	9	2	151.07	
Santuri	4	1	24.51	117.06
	5	1	30.63	
	9	1	61.92	
Sonathali	5	1	34.36	34.36
Grand Total		**97**	**3765.97**	**3765.97**

Table No.15.4. Summary of proposed Brushwood Check Dam

BEAT	Design width (m)	No. of structures	Cost (in thousand ₹)	Total cost (in thousand ₹)
Neturia	2	4	7.58	16.18
	3	1	4.78	
	4	1	3.81	
Puncha	3	2	5.11	16.28
	4	1	4.47	
	4.5	1	6.70	
Purulia-I	6	1	9.21	9.21
Purulia-II	3	1	3.04	9.50
	6	1	6.46	
Rakab	4	1	6.05	12.75
	4.5	1	6.70	
Grand Total		**15**	**63.92**	**63.92236**

Table No.15.5. Summary of proposed Random Rubble Masonry Check Dam

Name of beat	Length of weir, L.m	Height of dam, F	Estimated cost (in lakh ₹)	Total Estimated cost of beat (in lakh ₹)
Raghunathpur	7	1.5	3.71	3.71
Grand Total			**3.71**	**3.71**

Table No.15.6. No DLT structure is being recommended for below given dataset due to inconsistent data.

Sr. No.	Range	Beat	Map_Id	Latitude	Longitude
171	Puncha	Jambad	DLT/86	23.14649	86.50249
350	Kashipur	Kashipur	DLT-1	23.42333	86.6575
363	Kashipur	Gourangdih	DLT-6	23.39178	86.66239
21	Raghunathpur	Neturia	DLT-1	23.64258	86.75147

Table No.15.7. Summary of Water Harvesting Structures

#Cost in Lakh ₹

Beat	Dugout Pond		Embankment Pond		Percolation Pond		Pond Renovation		Total estimated cost of WHS in beat
	No. of DP	Estimated cost	No. of EP	Estimated cost	No. of PP	Estimated cost	No. of PR	Estimated cost	
Jambad	24	111.03	6	8.46	3	23.73	-	-	143.22
Para	1	4.75	2	0.4	-	-	3	9.43	14.58
Neturia	-	-	1	0.25	5	9.81	-	-	10.06
Purulia-I	-	-	6	28.38	-	-	-	-	28.38
Purulia-II	-	-	2	1.22	-	-	-	-	1.22
Raghunathpur-II	-	-	-	-	5	12.23	-	-	12.23
Raghunathpur-I	-	-	-	-	-	-	6	14.09	14.09
Gopalpur	-	-	-	-	-	-	6	8.85	8.85
Panipathar	-	-	-	-	-	-	8	22.85	22.85
Santuri	-	-	2	4.33	-	-	11	32.85	32.85
Grand Total	**25**	**115.78**	**19**	**43.04**	**13**	**45.77**	**34**	**88.07**	**292.66**

Table No.15.8. Beat wise Summary of Land Treatment SWC measures

Beat name	Tench density/ha	Total No. of trenches	Area (ha)	Total estimated cost (in lakh ₹)	Grand total of estimated cost (in lakh ₹)
Bishpuria	240	76137	317.23	30.60	37.75
	272	14721	54.12	5.53	
	288	4434	15.39	1.62	
Gopalpur	240	61303	255.41	25.11	32.80
	272	15606	57.38	6.39	
	288	3492	12.12	1.29	
Gourangdih	240	17317	72.14	6.79	10.49
	272	9580	35.22	3.70	
Hura	240	73179	304.91	32.05	48.74
	272	35720	131.32	14.67	
	288	3914	13.59	1.84	

	320	492	1.54	0.17	
Jambad	240	348826	1453.41	128.50	164.80
	272	97805	359.57	35.35	
	288	2401	8.34	0.94	
Kashipur	240	7190	29.96	3.81	4.15
	272	656	2.41	0.35	
Keshargarh	240	122750	511.44	54.63	82.50
	272	65393	240.43	25.37	
	288	6875	23.88	2.50	
Neturia	240	5746	23.95	2.87	5.11
	272	2535	9.32	1.34	
	288	1695	5.88	0.90	
Panipathar	240	137640	573.52	53.68	74.71
	272	52626	193.48	20.62	
	288	1170	4.06	0.41	
Para	240	30068	125.28	12.76	14.44
	272	3288	12.09	1.69	
Puncha	240	255948	1066.42	103.92	135.97
	272	76242	280.30	30.33	
	288	3467	12.04	1.72	
Purulia-I	240	23416	97.57	10.81	13.30
	272	5400	19.85	2.48	
Purulia-II	240	9900	41.25	3.72	4.52
	272	2280	8.38	0.80	
Raghunathpur-I	240	10392	43.30	5.45	20.41
	272	14749	54.22	6.93	
	288	18613	64.63	7.71	
	304	346	1.14	0.12	
	320	558	1.74	0.20	
Raghunathpur-II	240	5685	23.69	2.12	2.50
	272	1063	3.91	0.38	
Rakab	240	92466	385.28	32.81	76.71
	272	113001	415.45	39.87	
	288	11410	39.62	4.03	
Santuri	240	4320	18.00	1.90	9.56
	272	4296	15.80	1.97	
	288	12060	41.87	5.31	
	304	569	1.87	0.20	
	320	351	1.10	0.19	
Sonathali	240	13902	57.92	6.20	8.57
	272	5153	18.95	2.36	

Table No.15.9. Beat wise summary of forest plantation (Gap filling-GF or new forest plantation – NFP) recommended

Beat name	GF (50%)	GF (80%)	NFP (100%)	Total area (ha)	Total estimated cost (in lakh ₹)
Bishpuria	236.34	-	150.40	386.74	Calculation As per Regulations of the department
Gopalpur	121.23	-	203.68	324.91	
Gourangdih	44.71	3.48	59.17	107.36	
Hura	163.04	12.49	275.84	451.37	
Jambad	253.53	14.69	1553.09	1821.32	
Kashipur	7.12	-	25.26	32.38	
Keshargarh	364.39	-	411.37	775.75	
Neturia	22.26	-	16.89	39.15	
Panipathar	189.77	-	581.29	771.05	
Para	45.27	6.36	85.74	137.37	
Puncha	409.31	-	949.45	1358.76	
Purulia-I	4.67	-	112.75	117.42	
Purulia-II	0.90	-	48.74	49.64	
Raghunathpur-I	120.39	8.02	36.61	165.03	
Raghunathpur-II	-	-	27.59	27.59	
Rakab	401.54	-	438.81	840.35	
Santuri	46.51	-	32.13	78.64	
Sonathali	45.13	-	31.74	76.87	
Grand Total	**2476.10**	**45.04**	**5040.55**	**7561.69**	

BEAT WISE DETAILED PROPOSED SWC MEASURES DESIGN & COST ESTIMATES - KANGSABATI NORTH FOREST DIVISION

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(1)Bishpuria Beat (Hura range)

Drainage Line Treatment Measures Open Map

1.1.1 Loose Boulder Check Dam- Bishpuria Beat (Hura range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
435	(D.L.T) 5	2A2D5c3	1	23.25916	86.6818	8.0	0.75	0.4	1.50	0.20	24041.18
440	(D.L.T) 10	2A2D5c3	2	23.25253	86.6842	6.0	0.75	0.4	1.50	0.20	18033.20
442	(D.L.T) 12	2A2D5c3	2	23.25134	86.68387	8.0	0.75	0.4	1.50	0.20	24045.50
443	(D.L.T) 13	2A2D5c3	1	23.25746	86.68215	9.0	0.75	0.4	1.50	0.20	27051.89
444	(D.L.T) 14	2A2D5c3	1	23.25762	86.68159	8.0	0.75	0.4	1.50	0.20	24046.74
465	(D.L.T) 35	2A2D5c2	1	23.25521	86.70069	8.0	0.75	0.4	1.50	0.20	24059.72
472	(D.L.T) 42	2A2D5c2	1	23.24706	86.71376	8.0	1.50	0.6	2.90	0.50	97057.73
474	(D.L.T) 44	2A2D5c2	1	23.24645	86.71295	8.0	0.75	0.4	1.50	0.20	24065.28
475	(D.L.T) 45	2A2D5c2	1	23.24675	86.71119	6.0	0.75	0.4	1.50	0.20	18049.42
476	(D.L.T) 46	2A2D5c2	1	23.24626	86.71088	6.0	0.75	0.4	1.50	0.20	18049.89
477	(D.L.T) 47	2A2D5c2	2	23.24601	86.71097	9.0	1.20	0.6	2.40	0.40	73944.30
478	(D.L.T) 48	2A2D5c2	2	23.24534	86.71097	6.0	0.75	0.4	1.50	0.20	18050.81
479	(D.L.T) 49	2A2D5c2	1	23.24618	86.70937	6.0	0.75	0.4	1.50	0.20	18051.28
480	(D.L.T) 50	2A2D5c2	1	23.2462	86.70931	8.0	0.75	0.4	1.50	0.20	24068.99
448	(D.L.T) 18	2A2D5c3	1	23.25344	86.68583	3.0	1.20	0.6	2.40	0.40	24424.14
451	(D.L.T) 21	2A2D5c3	1	23.25115	86.69424	2.5	1.20	0.6	2.40	0.40	20354.06
453	(D.L.T) 23	2A2D5c3	1	23.25031	86.69457	2.5	1.00	0.5	2.00	0.30	13640.18
456	(D.L.T) 26	2A2D5c2	1	23.25252	86.69917	2.5	1.00	0.5	2.00	0.30	13640.57
457	(D.L.T) 27	2A2D5c2	1	23.25217	86.70162	2.5	1.20	0.6	2.40	0.40	20355.92
458	(D.L.T) 28	2A2D5c2	1	23.25181	86.70155	2.5	1.20	0.6	2.40	0.40	20356.54
459	(D.L.T) 29	2A2D5c2	1	23.25138	86.7016	2.5	1.00	0.5	2.00	0.30	13641.72
460	(D.L.T) 30	2A2D5c2	1	23.25101	86.70173	3.0	1.20	0.6	2.40	0.40	24429.33

466	(D.L.T) 36	2A2D5c2	1	23.24727	86.71066	3.0	1.50	0.6	2.90	0.50	36072.93
467	(D.L.T) 37	2A2D5c2	1	23.24702	86.71083	5.0	1.50	0.6	2.90	0.50	60123.42
471	(D.L.T) 41	2A2D5c2	1	23.24698	86.71398	2.5	1.50	0.6	2.90	0.50	30062.64
482	(D.L.T) 52	2A2D5c2	1	23.24493	86.70534	4.0	0.75	0.4	1.50	0.20	11943.96
483	(D.L.T) 53	2A2D5c2	1	23.24507	86.70515	2.5	1.20	0.6	2.40	0.40	20361.48
485	(D.L.T) 55	2A2D5c2	1	23.24555	86.70497	2.5	1.20	0.6	2.40	0.40	20362.10
486	(D.L.T) 56	2A2D5c2	1	23.24574	86.70494	3.0	1.00	0.5	2.00	0.30	16374.24
432	(D.L.T) 2	2A2D5c3	1	23.2575	86.67917	4.0	0.60	0.4	1.30	0.20	9102.30
436	(D.L.T) 6	2A2D5c3	1	23.25888	86.68119	3.0	0.75	0.4	1.50	0.20	8971.87
439	(D.L.T) 9	2A2D5c3	2	23.25232	86.68417	3.5	1.00	0.5	2.00	0.30	19135.18
441	(D.L.T) 11	2A2D5c3	2	23.25126	86.68373	2.5	0.75	0.4	1.50	0.20	7477.14
468	(D.L.T) 38	2A2D5c2	1	23.24711	86.71125	2.5	1.20	0.6	2.40	0.40	20401.03

1.1.2 Gabion Check Dam Bishpuria Beat (Hura range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
431	(D.L.T) 1	2A2D5c3	1	23.2575	86.67861	10.5	1.2	1.0	0.40	5	2.20	1.0	0.40	358819.11
433	(D.L.T) 3	2A2D5c3	1	23.25778	86.67889	10.5	1.2	1.0	0.40	5	2.20	1.0	0.40	358819.11
434	(D.L.T) 4	2A2D5c3	2	23.25611	86.67917	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
437	(D.L.T) 7	2A2D5c3	1	23.25914	86.68121	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
438	(D.L.T) 8	2A2D5c3	1	23.25864	86.68138	9.5	1.0	1.0	0.40	5	2.00	1.0	0.40	337923.00
446	(D.L.T) 16	2A2D5c3	1	23.25623	86.68319	13.0	1.0	1.0	0.40	6	2.00	1.0	0.40	408866.54
447	(D.L.T) 17	2A2D5c3	2	23.25347	86.68386	12.5	1.5	1.0	0.50	6	2.50	1.0	0.50	414210.87
449	(D.L.T) 19	2A2D5c3	1	23.25328	86.68822	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
450	(D.L.T) 20	2A2D5c3	1	23.25006	86.6918	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
452	(D.L.T) 22	2A2D5c3	1	23.24904	86.69435	10.5	1.5	1.0	0.50	5	2.50	1.0	0.50	367244.78
454	(D.L.T) 24	2A2D5c3	1	23.25076	86.6967	10.5	1.8	1.0	0.60	5	2.80	1.0	0.60	368773.30

455	(D.L.T) 25	2A2D5c2	1	23.25203	86.69965	10.5	1.5	1.0	0.50	5	2.50	1.0	0.50	367244.78
462	(D.L.T) 32	2A2D5c2	1	23.25157	86.70208	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
463	(D.L.T) 33	2A2D5c2	1	23.25544	86.7019	11.5	1.0	1.0	0.40	6	2.00	1.0	0.40	382241.54
464	(D.L.T) 34	2A2D5c2	1	23.2555	86.70245	9.5	1.0	1.0	0.40	5	2.00	1.0	0.40	337923.00
469	(D.L.T) 39	2A2D5c2	1	23.24718	86.71393	10.5	1.8	1.0	0.60	5	2.80	1.0	0.60	368773.30
470	(D.L.T) 40	2A2D5c2	1	23.24708	86.71406	12.5	2.1	1.0	0.70	6	3.10	1.0	0.70	417969.33
473	(D.L.T) 43	2A2D5c2	1	23.2464	86.71347	10.5	1.2	1.0	0.40	5	2.20	1.0	0.40	358819.11
484	(D.L.T) 54	2A2D5c2	1	23.24538	86.70525	10.5	1.5	1.0	0.50	5	2.50	1.0	0.50	367244.78
487	(D.L.T) 57	2A2D5c2	1	23.24591	86.7047	10.5	1.5	1.0	0.50	5	2.50	1.0	0.50	367244.78
445	(D.L.T) 15	2A2D5c3	2	23.25648	86.68233	10.5	1.2	1.0	0.40	5	2.20	1.0	0.40	358819.11

1.2.1 Land Treatment and Forest Plantation measures- Bishpuria Beat (Hura range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
86	L.T.23	CPT / Boundary Trench	Encroachment	1.73018	6.5	15	240	3×0.45×0.45	21966	100%	NFP
87	L.T.25	CPT / Boundary Trench	Encroachment	1.274064	6.5	15	240	3×0.45×0.45	16197	100%	NFP
125	L.T.15	CPT / Boundary Trench	NFP	1.67724	6.5	15	240	3×0.45×0.45	21331	100%	NFP
146	L.T.23	CPT / Boundary Trench	Encroachment	1.178183	5.8	17	272	3×0.45×0.30	11292	100%	NFP
150	L.T.22	CPT / Boundary Trench	No Plantation Required	1.759867	5.8	17	272	3×0.45×0.30	16903	100%	NFP
227	L.T.7	CPT / Boundary Trench	GF-30%	1.704648	5.5	18	288	3×0.45×0.30	17326	100%	NFP
237	L.T.7	CPT / Boundary Trench	GF-30%	1.00188	5.8	17	272	3×0.45×0.30	9633	100%	NFP

239	L.T.8	CPT / Boundary Trench	No Plantation Required	0.936726	5.8	17	272	3×0.45×0.30	8998	100%	NFP
243	L.T.11	CPT / Boundary Trench	NFP	1.253267	5.8	17	272	3×0.45×0.30	12033	100%	NFP
247	L.T.9	CPT / Boundary Trench	NFP	1.635101	5.8	17	272	3×0.45×0.30	15703	100%	NFP
417	L.T.18	CPT / Boundary Trench	No Plantation Required	4.097533	6.5	15	240	3×0.45×0.30	34687	100%	NFP
418	L.T.25	CPT / Boundary Trench	Encroachment	1.102286	6.5	15	240	3×0.45×0.30	9351	100%	NFP
419	L.T.26.A	CPT / Boundary Trench	NFP	3.229574	6.5	15	240	3×0.45×0.30	27348	100%	NFP
464	L.T.10	CPT / Boundary Trench	NFP	1.21761	6.5	15	240	3×0.45×0.30	10304	100%	NFP
514	L.T.1	CPT / Boundary Trench	No Plantation Required	5.958814	6.5	15	240	3×0.45×0.45	75691	50%	GF
515	L.T.27	CPT / Boundary Trench	No Plantation Required	1.602847	6.5	15	240	3×0.45×0.45	20378	50%	GF
516	L.T.30	CPT / Boundary Trench	No Plantation Required	4.846758	6.5	15	240	3×0.45×0.45	61559	50%	GF
530	L.T.4	CPT / Boundary Trench	No Plantation Required	5.055611	6.5	15	240	3×0.45×0.45	64205	50%	GF
531	L.T.14	CPT / Boundary Trench	No Plantation Required	7.853824	6.5	15	240	3×0.45×0.45	99775	50%	GF
546	L.T.26	CPT / Boundary Trench	No Plantation Required	2.094129	5.8	17	272	3×0.45×0.30	20114	50%	GF
549	L.T.28	CPT / Boundary Trench	GF-20%	1.026432	5.8	17	272	3×0.45×0.30	9845	50%	GF
556	L.T.17	CPT / Boundary Trench	No Plantation Required	2.356765	6.5	15	240	3×0.45×0.30	19973	50%	GF
568	L.T.19	CPT / Boundary Trench	Shamukgoria Hill	1.185684	5.8	17	272	3×0.45×0.30	11398	50%	GF
580	L.T.13	CPT / Boundary Trench	No Plantation Required	1.208888	5.8	17	272	3×0.45×0.30	11610	50%	GF
587	L.T.2	CPT / Boundary Trench	GF-80%	2.121425	5.8	17	272	3×0.45×0.30	20361	50%	GF
673	L.T.16	CPT / Boundary Trench	No Plantation Required	3.222374	6.5	15	240	3×0.45×0.30	27277	50%	GF

721	L.T.27	CPT / Boundary Trench	No Plantation Required	1.990164	5.8	17	272	3×0.45×0.45	28636	100%	NFP
728	L.T.14	CPT / Boundary Trench	No Plantation Required	1.192234	5.8	17	272	3×0.45×0.45	17150	100%	NFP
827	L.T.1	CPT / Boundary Trench	No Plantation Required	3.123792	6.5	15	240	3×0.45×0.45	39698	100%	NFP
828	L.T.1	CPT / Boundary Trench	No Plantation Required	1.873821	6.5	15	240	3×0.45×0.45	23819	100%	NFP
829	L.T.22	CPT / Boundary Trench	No Plantation Required	1.093922	6.5	15	240	3×0.45×0.45	13921	100%	NFP
830	L.T.29	CPT / Boundary Trench	No Plantation Required	4.755419	6.5	15	240	3×0.45×0.45	60394	100%	NFP
831	L.T.30	CPT / Boundary Trench	No Plantation Required	2.813594	6.5	15	240	3×0.45×0.45	35728	100%	NFP
915	L.T.4	CPT / Boundary Trench	No Plantation Required	1.270659	6.5	15	240	3×0.45×0.45	16144	100%	NFP
916	L.T.12	CPT / Boundary Trench	Encroachment	2.213778	6.5	15	240	3×0.45×0.45	28106	100%	NFP
917	L.T.12	CPT / Boundary Trench	Encroachment	3.631015	6.5	15	240	3×0.45×0.45	46103	100%	NFP
940	L.T.24	CPT / Boundary Trench	No Plantation Required	2.643213	5.8	17	272	3×0.45×0.30	25372	100%	NFP
942	L.T.22	CPT / Boundary Trench	No Plantation Required	7.885522	5.8	17	272	3×0.45×0.30	75691	100%	NFP
1058	L.T.7	CPT / Boundary Trench	GF-30%	1.389239	5.8	17	272	3×0.45×0.30	13339	100%	NFP
1066	L.T.7	CPT / Boundary Trench	GF-30%	1.266534	5.8	17	272	3×0.45×0.30	12139	100%	NFP
1353	L.T.2	CPT / Boundary Trench	GF-80%	1.132358	6.5	15	240	3×0.45×0.30	9598	100%	NFP
1354	L.T.7	CPT / Boundary Trench	GF-30%	1.055122	6.5	15	240	3×0.45×0.30	8928	100%	NFP
1355	L.T.7	CPT / Boundary Trench	GF-30%	3.699586	6.5	15	240	3×0.45×0.30	31335	100%	NFP
1356	L.T.7	CPT / Boundary Trench	GF-30%	12.865409	6.5	15	240	3×0.45×0.30	108967	100%	NFP
1357	L.T.16	CPT / Boundary Trench	No Plantation Required	5.707206	6.5	15	240	3×0.45×0.30	48344	100%	NFP

1358	L.T.20	CPT / Boundary Trench	No Plantation Required	11.245628	6.5	15	240	3×0.45×0.30	95240	100%	NFP
1359	L.T.20	CPT / Boundary Trench	No Plantation Required	4.140653	6.5	15	240	3×0.45×0.30	35076	100%	NFP
1360	L.T.21	CPT / Boundary Trench	NFP	4.041359	6.5	15	240	3×0.45×0.30	34229	100%	NFP
1361	L.T.22	CPT / Boundary Trench	No Plantation Required	1.61029	6.5	15	240	3×0.45×0.30	13621	100%	NFP
1362	L.T.22	CPT / Boundary Trench	No Plantation Required	4.008656	6.5	15	240	3×0.45×0.30	33946	100%	NFP
1363	L.T.22	CPT / Boundary Trench	No Plantation Required	1.173428	6.5	15	240	3×0.45×0.30	9951	100%	NFP
1364	L.T.24	CPT / Boundary Trench	No Plantation Required	8.376096	6.5	15	240	3×0.45×0.30	70927	100%	NFP
1365	L.T.26	CPT / Boundary Trench	No Plantation Required	1.746488	6.5	15	240	3×0.45×0.30	14785	100%	NFP
1366	L.T.27	CPT / Boundary Trench	No Plantation Required	7.685075	6.5	15	240	3×0.45×0.30	65070	100%	NFP
1573	L.T.3	CPT / Boundary Trench	GF-80%	3.14571	6.5	15	240	3×0.45×0.30	26642	100%	NFP
1574	L.T.5	CPT / Boundary Trench	GF-40%	2.831592	6.5	15	240	3×0.45×0.30	23995	100%	NFP
1575	L.T.9	CPT / Boundary Trench	NFP	5.60662	6.5	15	240	3×0.45×0.30	47497	100%	NFP
1576	L.T.11	CPT / Boundary Trench	NFP	6.783426	6.5	15	240	3×0.45×0.30	57448	100%	NFP
1577	L.T.12	CPT / Boundary Trench	Encroachment	1.451094	6.5	15	240	3×0.45×0.30	12280	100%	NFP
1578	L.T.12	CPT / Boundary Trench	Encroachment	1.156601	6.5	15	240	3×0.45×0.30	9810	100%	NFP
1616	L.T.28	CPT / Boundary Trench	GF-20%	2.456423	5.8	17	272	3×0.45×0.45	35358	50%	GF
1627	L.T.14	CPT / Boundary Trench	No Plantation Required	1.040473	5.5	18	288	3×0.45×0.45	15879	50%	GF
1629	L.T.2	CPT / Boundary Trench	GF-80%	1.423926	5.8	17	272	3×0.45×0.45	20484	50%	GF
1662	L.T.2	CPT / Boundary Trench	GF-80%	3.201817	6.5	15	240	3×0.45×0.45	40651	50%	GF

1663	L.T.28	CPT / Boundary Trench	GF-20%	19.81127	6.5	15	240	3×0.45×0.45	251686	50%	GF
1664	L.T.28	CPT / Boundary Trench	GF-20%	3.017386	6.5	15	240	3×0.45×0.45	38322	50%	GF
1665	L.T.29	CPT / Boundary Trench	No Plantation Required	2.820353	6.5	15	240	3×0.45×0.45	35834	50%	GF
1701	L.T.12	CPT / Boundary Trench	Encroachment	6.205734	6.5	15	240	3×0.45×0.45	78814	50%	GF
1702	L.T.12	CPT / Boundary Trench	Encroachment	2.365496	6.5	15	240	3×0.45×0.45	30065	50%	GF
1732	L.T.22	CPT / Boundary Trench	No Plantation Required	3.007243	5.8	17	272	3×0.45×0.30	28865	50%	GF
1742	L.T.19	CPT / Boundary Trench	Shamukgoria Hill	12.648011	5.5	18	288	3×0.45×0.30	128551	50%	GF
1822	L.T.6	CPT / Boundary Trench	No Plantation Required	2.002255	5.8	17	272	3×0.45×0.30	19232	50%	GF
1837	L.T.7	CPT / Boundary Trench	GF-30%	3.512676	5.8	17	272	3×0.45×0.30	33699	50%	GF
1838	L.T.7	CPT / Boundary Trench	GF-30%	1.009461	5.8	17	272	3×0.45×0.30	9704	50%	GF
1840	L.T.7	CPT / Boundary Trench	GF-30%	3.947232	5.8	17	272	3×0.45×0.30	37899	50%	GF
1841	L.T.7	CPT / Boundary Trench	GF-30%	2.559969	5.8	17	272	3×0.45×0.30	24560	50%	GF
1848	L.T.7	CPT / Boundary Trench	GF-30%	2.431828	5.8	17	272	3×0.45×0.30	23325	50%	GF
1996	L.T.1	CPT / Boundary Trench	No Plantation Required	1.8252	6.5	15	240	3×0.45×0.30	15456	50%	GF
1997	L.T.2	CPT / Boundary Trench	GF-80%	21.37299	6.5	15	240	3×0.45×0.30	181024	50%	GF
1998	L.T.7	CPT / Boundary Trench	GF-30%	29.919316	6.5	15	240	3×0.45×0.30	253398	50%	GF
1999	L.T.7	CPT / Boundary Trench	GF-30%	8.833264	6.5	15	240	3×0.45×0.30	74809	50%	GF
2000	L.T.19.A	CPT / Boundary Trench	No Plantation Required	4.919991	6.5	15	240	3×0.45×0.30	41674	50%	GF
2001	L.T.19.A	CPT / Boundary Trench	No Plantation Required	1.544938	6.5	15	240	3×0.45×0.30	13092	50%	GF

2002	L.T.22	CPT / Boundary Trench	No Plantation Required	9.415527	6.5	15	240	3×0.45×0.30	79749	50%	GF
2003	L.T.22	CPT / Boundary Trench	No Plantation Required	2.430575	6.5	15	240	3×0.45×0.30	20572	50%	GF
2004	L.T.26	CPT / Boundary Trench	No Plantation Required	7.090569	6.5	15	240	3×0.45×0.30	60059	50%	GF
2005	L.T.28	CPT / Boundary Trench	GF-20%	1.679789	6.5	15	240	3×0.45×0.30	14221	50%	GF
2118	L.T.6	CPT / Boundary Trench	No Plantation Required	10.640016	6.5	15	240	3×0.45×0.30	90124	50%	GF
2119	L.T.9	CPT / Boundary Trench	NFP	1.871048	6.5	15	240	3×0.45×0.30	15844	50%	GF
2120	L.T.12	CPT / Boundary Trench	Encroachment	2.397195	6.5	15	240	3×0.45×0.30	20290	50%	GF
2121	L.T.13	CPT / Boundary Trench	No Plantation Required	18.004182	6.5	15	240	3×0.45×0.30	152476	50%	GF
2122	L.T.14	CPT / Boundary Trench	No Plantation Required	2.398896	6.5	15	240	3×0.45×0.30	20325	50%	GF

(2)Hura Beat (Hura range)

Drainage Line Treatment Measures

Open Map

2.1.1 Loose Boulder Check Dam- Hura Beat (Hura range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
501	(D.L.T) 14	2A2D5c4	1	23.2544	86.6669	8.0	1.20	0.6	2.40	0.40	65752.00
502	(D.L.T) 15	2A2D5c4	1	23.2536	86.6669	9.0	0.75	0.4	1.50	0.20	27084.56
506	(D.L.T) 19	2A2D5o3	1	23.2567	86.6656	8.0	0.75	0.4	1.50	0.20	24077.64
507	(D.L.T) 20	2A2D5o3	1	23.2567	86.6653	8.0	0.75	0.4	1.50	0.20	24078.26

508	(D.L.T) 21	2A2D5o3	1	23.2564	86.665	6.0	0.75	0.4	1.50	0.20	18059.16
509	(D.L.T) 22	2A2D5c4	2	23.2633	86.6575	6.0	0.75	0.4	1.50	0.20	18059.62
510	(D.L.T) 23	2A2D5c4	2	23.2633	86.6572	7.0	0.75	0.4	1.50	0.20	21070.10
512	(D.L.T) 25	2A2D5c4	1	23.2619	86.6558	9.0	0.60	0.4	1.30	0.20	20635.63
514	(D.L.T) 27	2A2D5c4	1	23.2608	86.6558	9.0	0.75	0.4	1.50	0.20	27092.91
517	(D.L.T) 30	2A2D5c4	1	23.2606	86.6564	6.0	0.50	0.4	1.20	0.20	11452.67
537	(D.L.T) 50	2A2D5c8*	1	23.3247	86.6597	9.0	0.50	0.4	1.20	0.20	17190.13
540	(D.L.T) 53	2A2D5c8	1	23.2781	86.6583	6.0	0.75	0.4	1.50	0.20	18073.99
545	(D.L.T) 58	2A2B4j3	1	23.2922	86.6083	9.0	0.75	0.4	1.50	0.20	27114.46
549	(D.L.T) 62	2A2B4j3	1	23.2911	86.6092	6.0	0.50	0.4	1.20	0.20	11464.54
554	(D.L.T) 67	2A2D5p8	1	23.3108	86.6758	9.0	1.00	0.5	2.00	0.30	49612.18
555	(D.L.T) 68	2A2D5p8	1	23.3097	86.6778	9.0	1.00	0.5	2.00	0.30	49613.57
558	(D.L.T) 71	2A2D5p8	2	23.3125	86.6781	6.0	0.75	0.4	1.50	0.20	18082.33
559	(D.L.T) 72	2A2D5p8	2	23.3122	86.6778	6.0	0.75	0.4	1.50	0.20	18082.79
560	(D.L.T) 73	2A2D5p8	1	23.3125	86.6772	9.0	0.75	0.4	1.50	0.20	27124.89
562	(D.L.T) 75	2A2D5p8	1	23.3203	86.6775	9.0	0.50	0.4	1.20	0.20	17204.03
566	(D.L.T) 79	2A2D5p8	1	23.3231	86.6786	9.0	0.75	0.4	1.50	0.20	27129.06
574	(D.L.T) 87	2A2D5c9	3	23.32	86.6489	6.0	0.75	0.4	1.50	0.20	18089.75
575	(D.L.T) 88	2A2D5c9	2	23.2986	86.6456	6.0	1.00	0.5	2.00	0.30	33094.25
581	(D.L.T) 94	2A2D5p9	1	23.3114	86.6381	6.0	0.75	0.4	1.50	0.20	18092.99
505	(D.L.T) 18	2A2D5o3	1	23.2558	86.6658	2.5	0.75	0.4	1.50	0.20	7465.75
520	(D.L.T) 33	2A2D5c4	1	23.2608	86.6575	3.0	0.75	0.4	1.50	0.20	8959.13
522	(D.L.T) 35	2A2D5c4	1	23.2608	86.6583	2.5	0.75	0.4	1.50	0.20	7466.13
526	(D.L.T) 39	2A2D5o3*	4	23.2528	86.6778	2.5	1.00	0.5	2.00	0.30	13646.75
527	(D.L.T) 40	2A2D5o3	1	23.2531	86.6775	4.0	1.00	0.5	2.00	0.30	21835.41
528	(D.L.T) 41	2A2D5o3	2	23.2536	86.6767	3.0	0.75	0.4	1.50	0.20	8960.05
533	(D.L.T) 46	2A2D5o3	1	23.2544	86.6772	2.5	1.00	0.5	2.00	0.30	13647.90
534	(D.L.T) 47	2A2D5o3	2	23.2556	86.6761	2.5	0.75	0.4	1.50	0.20	7467.10
536	(D.L.T) 49	2A2D5o3	1	23.2561	86.6764	2.5	0.75	0.4	1.50	0.20	7467.29
539	(D.L.T) 52	2A2D5c8*	1	23.3256	86.6597	3.0	1.00	0.5	2.00	0.30	16378.88
544	(D.L.T) 57	2A2D5c8	1	23.2778	86.6617	3.0	0.75	0.4	1.50	0.20	8961.21
547	(D.L.T) 60	2A2B4j3	1	23.2936	86.6097	2.5	0.75	0.4	1.50	0.20	7467.87

551	(D.L.T) 64	2A2B4j3	1	23.29	86.6064	2.5	1.00	0.5	2.00	0.30	13650.22
552	(D.L.T) 65	2A2B4j3	1	23.2897	86.6067	2.5	1.00	0.5	2.00	0.30	13650.61
556	(D.L.T) 69	2A2D5p8	1	23.3111	86.6786	3.0	0.75	0.4	1.50	0.20	8962.14
567	(D.L.T) 80	2A2D5p9	1	23.3239	86.68	2.5	0.75	0.4	1.50	0.20	7468.64
570	(D.L.T) 83	2A2D5p9	1	23.3217	86.6481	2.5	1.00	0.5	2.00	0.30	13651.77
571	(D.L.T) 84	2A2D5p9	1	23.3214	86.6483	2.5	0.75	0.4	1.50	0.20	7469.03
579	(D.L.T) 92	2A2D5c9	2	23.2978	86.6442	2.5	0.75	0.4	1.50	0.20	7469.22
511	(D.L.T) 24	2A2D5c4	2	23.2631	86.6572	2.0	0.60	0.4	1.30	0.20	4549.27
518	(D.L.T) 31	2A2D5c4	1	23.2606	86.6567	2.0	0.50	0.4	1.20	0.20	3783.44
519	(D.L.T) 32	2A2D5c4	1	23.2608	86.6569	2.0	0.50	0.4	1.20	0.20	3783.57
525	(D.L.T) 38	2A2D5o3	1	23.2517	86.6783	2.0	0.50	0.4	1.20	0.20	3783.69
541	(D.L.T) 54	2A2D5c8	1	23.2792	86.66	2.0	0.50	0.4	1.20	0.20	3783.94
577	(D.L.T) 90	2A2D5c9	2	23.2981	86.645	2.0	0.50	0.4	1.20	0.20	3784.06
523	(D.L.T) 36	2A2D5c4	2	23.2631	86.6589	3.0	0.50	0.4	1.20	0.20	5677.76
542	(D.L.T) 55	2A2D5c8	1	23.2792	86.6603	2.5	0.75	0.4	1.50	0.20	7475.98
572	(D.L.T) 85	2A2D5p9	1	23.3208	86.6486	2.5	1.00	0.5	2.00	0.30	13666.83
580	(D.L.T) 93	2A2D5p9	1	23.3117	86.6381	3.0	1.20	0.6	2.40	0.40	24478.27
530	(D.L.T) 43	2A2D5o3	1	23.2542	86.6769	3.0	1.00	0.5	2.00	0.30	16403.90
564	(D.L.T) 77	2A2D5p8	1	23.32278	86.67806	2.5	0.75	0.4	1.50	0.20	7478.68

* Outside shapefile boundary of the Beat. Shapefile Boundary or proposed DLT Lat-Long. need to verify.

2.1.2 Gabion Check Hura Beat (Hura range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
489	(D.L.T) 2	2A2D5o3	1	23.25167	86.66417	9	1	0.40	55137.09
493	(D.L.T) 6	2A2D5o3	1	23.25306	86.66778	9	1	0.40	55137.09
495	(D.L.T) 8	2A2D5o3	1	23.25333	86.66833	3	1	0.40	18353.39

491	(D.L.T) 4	2A2D5o3	1	23.25139	86.66472	3	1	0.40	18379.03
499	(D.L.T) 12	2A2D5c4	1	23.25417	86.66722	3	1	0.40	18379.03
492	(D.L.T) 5	2A2D5o3	1	23.25139	86.66472	3	0.6	0.30	12710.92

2.1.3 Gabion Check Dam Hura Beat (Hura range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
490	(D.L.T) 3	2A2D5o3	1	23.25167	86.66417	9.5	1.2	1.0	0.40	5	2.20	1.0	0.40	341205.38
494	(D.L.T) 7	2A2D5o3	1	23.25333	86.66833	13.0	1.0	1.0	0.40	6	2.00	1.0	0.40	408866.54
496	(D.L.T) 9	2A2D5o3	1	23.25306	86.66889	13.0	1.0	1.0	0.40	6	2.00	1.0	0.40	408866.54
497	(D.L.T) 10	2A2D5o3	1	23.25028	86.66917	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
498	(D.L.T) 11	2A2D5c4	1	23.25333	86.66889	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
500	(D.L.T) 13	2A2D5c4	1	23.25417	86.66722	10.5	1.8	1.0	0.60	5	2.80	1.0	0.60	368773.30
488	(D.L.T) 1	2A2D5o3	2	23.25194	86.66417	11.5	1.2	1.0	0.40	6	2.20	1.0	0.40	386188.71
503	(D.L.T) 16	2A2D5c4	2	23.25333	86.66694	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
504	(D.L.T) 17	2A2D5o3	1	23.25639	86.66917	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
513	(D.L.T) 26	2A2D5c4	1	23.26083	86.65528	10.5	1.2	1.0	0.40	5	2.20	1.0	0.40	358819.11
515	(D.L.T) 28	2A2D5c4	1	23.26083	86.65611	10.5	1.2	1.0	0.40	5	2.20	1.0	0.40	358819.11
516	(D.L.T) 29	2A2D5c4	1	23.26056	86.65583	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
521	(D.L.T) 34	2A2D5c4	1	23.26083	86.65778	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
524	(D.L.T) 37	2A2D5o3	4	23.25167	86.67861	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
529	(D.L.T) 42	2A2D5o3	1	23.25389	86.67694	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
531	(D.L.T) 44	2A2D5o3	1	23.25444	86.67667	10.5	1.5	1.0	0.50	5	2.50	1.0	0.50	367244.78
532	(D.L.T) 45	2A2D5o3	1	23.25472	86.67722	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
538	(D.L.T) 51	2A2D5c8	1	23.325	86.65972	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53

543	(D.L.T) 56	2A2D5c8	1	23.27889	86.66111	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
546	(D.L.T) 59	2A2B4j3	1	23.29333	86.60944	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
550	(D.L.T) 63	2A2B4j3	1	23.29	86.60639	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
553	(D.L.T) 66	2A2D5p8	1	23.30861	86.67528	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
557	(D.L.T) 70	2A2D5p8	2	23.3125	86.67833	10.5	1.5	1.0	0.50	5	2.50	1.0	0.50	367244.78
561	(D.L.T) 74	2A2D5p8	1	23.31556	86.67778	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
563	(D.L.T) 76	2A2D5p8	1	23.32139	86.6775	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
565	(D.L.T) 78	2A2D5p8	1	23.32306	86.67806	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
568	(D.L.T) 81	2A2D5p9	1	23.32222	86.64583	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
569	(D.L.T) 82	2A2D5p9	1	23.32194	86.6475	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
573	(D.L.T) 86	2A2D5p9	1	23.32028	86.64889	12.5	1.5	1.0	0.50	6	2.50	1.0	0.50	414210.87
576	(D.L.T) 89	2A2D5c9	2	23.29833	86.64528	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
578	(D.L.T) 91	2A2D5c9	2	23.29778	86.64472	10.5	1.5	1.0	0.50	5	2.50	1.0	0.50	367244.78
582	(D.L.T) 95	2A2D5p9	1	23.31111	86.63833	10.5	1.8	1.0	0.60	5	2.80	1.0	0.60	368773.30
546	(D.L.T) 59	2A2B4j3	1	23.29333	86.60944	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53

2.2.1 Land Treatment and Forest Plantation measures- Hura Beat (Hura range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
8	L.T.42	CPT / Boundary Trench	GF-60%	2.379334	5.8	17	272	3×0.45×0.45	34246	100%	NFP
10	L.T.21	CPT / Boundary Trench	No Plantation Required	0.548217	5.8	17	272	3×0.45×0.45	7887	100%	NFP
14	L.T.47	CPT / Boundary Trench	NFP	1.247546	5.8	17	272	3×0.45×0.45	17944	100%	NFP

17	L.T.49	CPT / Boundary Trench	GF-80%	1.391581	5.8	17	272	3×0.45×0.45	20061	100%	NFP
18	L.T.48	CPT / Boundary Trench	GF-90%	2.111054	5.8	17	272	3×0.45×0.45	30382	100%	NFP
19	L.T.48	CPT / Boundary Trench	GF-90%	1.533377	5.5	18	288	3×0.45×0.45	23395	100%	NFP
20	L.T.6	CPT / Boundary Trench	NFP	1.79044	5.8	17	272	3×0.45×0.45	25777	100%	NFP
21	L.T.2.B	CPT / Boundary Trench	No Plantation Required	2.061627	5.8	17	272	3×0.45×0.45	29694	100%	NFP
22	L.T.6	CPT / Boundary Trench	NFP	1.349614	5.8	17	272	3×0.45×0.45	19426	100%	NFP
23	L.T.1.A	CPT / Boundary Trench	No Plantation Required	1.550024	5.8	17	272	3×0.45×0.45	22337	100%	NFP
24	L.T.3	CPT / Boundary Trench	GF-20%	2.049253	5.8	17	272	3×0.45×0.45	29482	100%	NFP
25	L.T.3	CPT / Boundary Trench	GF-20%	1.147789	5.8	17	272	3×0.45×0.45	16514	100%	NFP
88	L.T.8	CPT / Boundary Trench	GF-80%	1.452679	6.5	15	240	3×0.45×0.45	18473	100%	NFP
89	L.T.11	CPT / Boundary Trench	NFP	1.854101	6.5	15	240	3×0.45×0.45	23554	100%	NFP
90	L.T.23	CPT / Boundary Trench	NFP	6.539127	6.5	15	240	3×0.45×0.45	83049	100%	NFP
91	L.T.28	CPT / Boundary Trench	NFP	3.096128	6.5	15	240	3×0.45×0.45	39328	100%	NFP
92	L.T.31	CPT / Boundary Trench	NFP	3.634025	6.5	15	240	3×0.45×0.45	46156	100%	NFP
93	L.T.35	CPT / Boundary Trench	Encroachment	3.169801	6.5	15	240	3×0.45×0.45	40280	100%	NFP
94	L.T.47	CPT / Boundary Trench	NFP	5.723883	6.5	15	240	3×0.45×0.45	72727	100%	NFP
137	L.T.43	CPT / Boundary Trench	GF-50%	5.495795	5.8	17	272	3×0.45×0.30	52754	100%	NFP
138	L.T.36	CPT / Boundary Trench	NFP	1.343103	5.8	17	272	3×0.45×0.30	12880	100%	NFP
139	L.T.30	CPT / Boundary Trench	Encroachment	2.439882	5.8	17	272	3×0.45×0.30	23431	100%	NFP

140	L.T.38	CPT / Boundary Trench	GF-80%	4.091003	5.8	17	272	3×0.45×0.30	39275	100%	NFP
141	L.T.41	CPT / Boundary Trench	GF-80%	1.453567	5.8	17	272	3×0.45×0.30	13938	100%	NFP
142	L.T.28	CPT / Boundary Trench	NFP	1.407805	5.8	17	272	3×0.45×0.30	13515	100%	NFP
143	L.T.25	CPT / Boundary Trench	NFP	2.338387	5.8	17	272	3×0.45×0.30	22443	100%	NFP
144	L.T.24	CPT / Boundary Trench	GF-50%	0.709242	5.5	18	288	3×0.45×0.30	7199	100%	NFP
145	L.T.21	CPT / Boundary Trench	No Plantation Required	1.150195	5.8	17	272	3×0.45×0.30	11045	100%	NFP
147	L.T.17	CPT / Boundary Trench	NFP	1.045347	5.8	17	272	3×0.45×0.30	10022	100%	NFP
149	L.T.19	CPT / Boundary Trench	GF-20%	0.607129	5.8	17	272	3×0.45×0.30	5822	100%	NFP
199	L.T.48	CPT / Boundary Trench	GF-90%	4.389916	5.8	17	272	3×0.45×0.30	42133	100%	NFP
204	L.T.48	CPT / Boundary Trench	GF-90%	1.537129	5	20	320	3×0.45×0.30	17361	100%	NFP
211	L.T.5.B	CPT / Boundary Trench	No Plantation Required	2.373423	5.8	17	272	3×0.45×0.30	22796	100%	NFP
420	L.T.26	CPT / Boundary Trench	NFP	4.720476	6.5	15	240	3×0.45×0.30	39980	100%	NFP
421	L.T.29	CPT / Boundary Trench	NFP	6.885597	6.5	15	240	3×0.45×0.30	58330	100%	NFP
422	L.T.39	CPT / Boundary Trench	NFP	2.626034	6.5	15	240	3×0.45×0.30	22231	100%	NFP
423	L.T.40	CPT / Boundary Trench	GF-80%	1.108161	6.5	15	240	3×0.45×0.30	9386	100%	NFP
424	L.T.45	CPT / Boundary Trench	NFP	2.59321	6.5	15	240	3×0.45×0.30	21949	100%	NFP
482	L.T.7	CPT / Boundary Trench	No Plantation Required	4.869442	5.8	17	272	3×0.45×0.45	70080	50%	GF
483	L.T.5.A	CPT / Boundary Trench	NFP	1.135082	5.5	18	288	3×0.45×0.45	17308	50%	GF
484	L.T.5.B	CPT / Boundary Trench	No Plantation Required	1.118735	5.8	17	272	3×0.45×0.45	16091	50%	GF

517	L.T.1	CPT / Boundary Trench	No Plantation Required	6.346926	6.5	15	240	3×0.45×0.45	80614	50%	GF
518	L.T.4	CPT / Boundary Trench	No Plantation Required	4.540933	6.5	15	240	3×0.45×0.45	57695	50%	GF
519	L.T.9	CPT / Boundary Trench	No Plantation Required	3.215174	6.5	15	240	3×0.45×0.45	40863	50%	GF
544	L.T.43	CPT / Boundary Trench	GF-50%	1.250842	5.8	17	272	3×0.45×0.30	11998	50%	GF
545	L.T.43	CPT / Boundary Trench	GF-50%	1.491511	5.8	17	272	3×0.45×0.30	14327	50%	GF
547	L.T.24	CPT / Boundary Trench	GF-50%	2.520342	6.5	15	240	3×0.45×0.30	21349	50%	GF
548	L.T.21	CPT / Boundary Trench	No Plantation Required	1.162768	5.8	17	272	3×0.45×0.30	11151	50%	GF
550	L.T.20	CPT / Boundary Trench	No Plantation Required	1.614647	5.8	17	272	3×0.45×0.30	15491	50%	GF
552	L.T.27	CPT / Boundary Trench	No Plantation Required	3.718469	6.5	15	240	3×0.45×0.30	31476	50%	GF
553	L.T.27	CPT / Boundary Trench	No Plantation Required	9.20771	5.8	17	272	3×0.45×0.30	88359	50%	GF
555	L.T.14	CPT / Boundary Trench	GF-40%	5.699191	5.8	17	272	3×0.45×0.30	54695	50%	GF
590	L.T.4	CPT / Boundary Trench	No Plantation Required	1.156175	5.8	17	272	3×0.45×0.30	11080	50%	GF
674	L.T.5	CPT / Boundary Trench	No Plantation Required	3.039115	6.5	15	240	3×0.45×0.30	25724	50%	GF
675	L.T.9	CPT / Boundary Trench	No Plantation Required	1.042524	6.5	15	240	3×0.45×0.30	8822	50%	GF
676	L.T.22	CPT / Boundary Trench	No Plantation Required	1.718925	6.5	15	240	3×0.45×0.30	14574	50%	GF
720	L.T.22	CPT / Boundary Trench	No Plantation Required	0.715127	5.8	17	272	3×0.45×0.45	10322	100%	NFP
725	L.T.13	CPT / Boundary Trench	GF-70 %	1.44757	5.8	17	272	3×0.45×0.45	20855	100%	NFP
726	L.T.13	CPT / Boundary Trench	GF-70 %	4.469524	5.5	18	288	3×0.45×0.45	68122	100%	NFP
727	L.T.48	CPT / Boundary Trench	GF-90%	3.297768	5.8	17	272	3×0.45×0.45	47479	100%	NFP

832	L.T.1.A	CPT / Boundary Trench	No Plantation Required	10.186015	6.5	15	240	3×0.45×0.45	129416	100%	NFP
833	L.T.3	CPT / Boundary Trench	GF-20%	4.654902	6.5	15	240	3×0.45×0.45	59124	100%	NFP
834	L.T.3	CPT / Boundary Trench	GF-20%	4.216054	6.5	15	240	3×0.45×0.45	53566	100%	NFP
835	L.T.6	CPT / Boundary Trench	NFP	2.798752	6.5	15	240	3×0.45×0.45	35570	100%	NFP
836	L.T.7	CPT / Boundary Trench	No Plantation Required	1.937689	6.5	15	240	3×0.45×0.45	24613	100%	NFP
837	L.T.10	CPT / Boundary Trench	NFP	1.702151	6.5	15	240	3×0.45×0.45	21649	100%	NFP
838	L.T.15	CPT / Boundary Trench	GF-40%	8.916322	6.5	15	240	3×0.45×0.45	113272	100%	NFP
839	L.T.29	CPT / Boundary Trench	NFP	3.875694	6.5	15	240	3×0.45×0.45	49226	100%	NFP
840	L.T.32	CPT / Boundary Trench	NFP	10.563386	6.5	15	240	3×0.45×0.45	134180	100%	NFP
841	L.T.33	CPT / Boundary Trench	NFP	5.313245	6.5	15	240	3×0.45×0.45	67487	100%	NFP
842	L.T.34	CPT / Boundary Trench	GF-20%	9.892269	6.5	15	240	3×0.45×0.45	125658	100%	NFP
843	L.T.42	CPT / Boundary Trench	GF-60%	2.913688	6.5	15	240	3×0.45×0.45	36999	100%	NFP
844	L.T.45	CPT / Boundary Trench	NFP	7.785046	6.5	15	240	3×0.45×0.45	98875	100%	NFP
845	L.T.48	CPT / Boundary Trench	GF-90%	1.924211	6.5	15	240	3×0.45×0.45	24454	100%	NFP
846	L.T.48	CPT / Boundary Trench	GF-90%	2.413907	6.5	15	240	3×0.45×0.45	30647	100%	NFP
847	L.T.49	CPT / Boundary Trench	GF-80%	4.918743	6.5	15	240	3×0.45×0.45	62458	100%	NFP
935	L.T.37	CPT / Boundary Trench	NFP	1.323635	5.8	17	272	3×0.45×0.30	12703	100%	NFP
936	L.T.40	CPT / Boundary Trench	GF-80%	2.212492	5.8	17	272	3×0.45×0.30	21243	100%	NFP
937	L.T.46	CPT / Boundary Trench	GF-60%	1.421199	5.8	17	272	3×0.45×0.30	13656	100%	NFP

938	L.T.46	CPT / Boundary Trench	GF-60%	7.464227	5.8	17	272	3×0.45×0.30	71633	100%	NFP
939	L.T.42	CPT / Boundary Trench	GF-60%	1.315067	5.8	17	272	3×0.45×0.30	12633	100%	NFP
1015	L.T.48	CPT / Boundary Trench	GF-90%	3.796762	5.5	18	288	3×0.45×0.30	38569	100%	NFP
1016	L.T.48	CPT / Boundary Trench	GF-90%	1.378683	5.8	17	272	3×0.45×0.30	13233	100%	NFP
1367	L.T.10	CPT / Boundary Trench	NFP	2.368885	6.5	15	240	3×0.45×0.30	20078	100%	NFP
1368	L.T.12	CPT / Boundary Trench	NFP	3.215048	6.5	15	240	3×0.45×0.30	27242	100%	NFP
1369	L.T.14	CPT / Boundary Trench	GF-40%	2.382397	6.5	15	240	3×0.45×0.30	20184	100%	NFP
1370	L.T.17	CPT / Boundary Trench	NFP	6.998436	6.5	15	240	3×0.45×0.30	59283	100%	NFP
1371	L.T.19	CPT / Boundary Trench	GF-20%	0.566596	6.5	15	240	3×0.45×0.30	4799	100%	NFP
1372	L.T.20	CPT / Boundary Trench	No Plantation Required	0.858871	6.5	15	240	3×0.45×0.30	7269	100%	NFP
1373	L.T.28	CPT / Boundary Trench	NFP	7.290566	6.5	15	240	3×0.45×0.30	61753	100%	NFP
1374	L.T.30	CPT / Boundary Trench	Encroachment	2.718695	6.5	15	240	3×0.45×0.30	23007	100%	NFP
1375	L.T.34	CPT / Boundary Trench	GF-20%	1.779345	6.5	15	240	3×0.45×0.30	15068	100%	NFP
1376	L.T.38	CPT / Boundary Trench	GF-80%	4.753315	6.5	15	240	3×0.45×0.30	40263	100%	NFP
1377	L.T.41	CPT / Boundary Trench	GF-80%	1.370597	6.5	15	240	3×0.45×0.30	11610	100%	NFP
1378	L.T.42	CPT / Boundary Trench	GF-60%	1.147362	6.5	15	240	3×0.45×0.30	9704	100%	NFP
1379	L.T.44	CPT / Boundary Trench	NFP	6.675546	6.5	15	240	3×0.45×0.30	56530	100%	NFP
1380	L.T.46	CPT / Boundary Trench	GF-60%	1.183191	6.5	15	240	3×0.45×0.30	10022	100%	NFP
1381	L.T.46	CPT / Boundary Trench	GF-60%	1.435651	6.5	15	240	3×0.45×0.30	12174	100%	NFP

1382	L.T.46	CPT / Boundary Trench	GF-60%	4.114161	6.5	15	240	3×0.45×0.30	34829	100%	NFP
1383	L.T.47	CPT / Boundary Trench	NFP	5.121615	6.5	15	240	3×0.45×0.30	43368	100%	NFP
1384	L.T.48	CPT / Boundary Trench	GF-90%	9.968376	6.5	15	240	3×0.45×0.30	84407	100%	NFP
1586	L.T.22	CPT / Boundary Trench	No Plantation Required	1.114904	6.5	15	240	3×0.45×0.30	9457	80%	GF
1587	L.T.22	CPT / Boundary Trench	No Plantation Required	9.073191	6.5	15	240	3×0.45×0.30	76856	80%	GF
1588	L.T.23	CPT / Boundary Trench	NFP	2.301273	6.5	15	240	3×0.45×0.30	19479	80%	GF
1615	L.T.34	CPT / Boundary Trench	GF-20%	1.603265	5.8	17	272	3×0.45×0.45	23078	50%	GF
1623	L.T.13	CPT / Boundary Trench	GF-70 %	2.79739	5.8	17	272	3×0.45×0.45	40280	50%	GF
1624	L.T.14	CPT / Boundary Trench	GF-40%	0.981517	5.8	17	272	3×0.45×0.45	14133	50%	GF
1626	L.T.5	CPT / Boundary Trench	No Plantation Required	1.949224	5.5	18	288	3×0.45×0.45	29694	50%	GF
1628	L.T.5	CPT / Boundary Trench	No Plantation Required	5.149421	5.8	17	272	3×0.45×0.45	74156	50%	GF
1630	L.T.1	CPT / Boundary Trench	No Plantation Required	1.76487	5.8	17	272	3×0.45×0.45	25407	50%	GF
1631	L.T.1	CPT / Boundary Trench	No Plantation Required	1.664705	5.8	17	272	3×0.45×0.45	23978	50%	GF
1666	L.T.7	CPT / Boundary Trench	No Plantation Required	1.334499	6.5	15	240	3×0.45×0.45	16938	50%	GF
1667	L.T.19	CPT / Boundary Trench	GF-20%	2.819127	6.5	15	240	3×0.45×0.45	35834	50%	GF
1668	L.T.19	CPT / Boundary Trench	GF-20%	2.000766	6.5	15	240	3×0.45×0.45	25407	50%	GF
1669	L.T.34	CPT / Boundary Trench	GF-20%	11.340869	6.5	15	240	3×0.45×0.45	144078	50%	GF
1724	L.T.39	CPT / Boundary Trench	NFP	3.175364	6.5	15	240	3×0.45×0.30	26889	50%	GF
1725	L.T.46	CPT / Boundary Trench	GF-60%	5.457761	5.8	17	272	3×0.45×0.30	52402	50%	GF

1726	L.T.46	CPT / Boundary Trench	GF-60%	1.160667	5.8	17	272	3×0.45×0.30	11151	50%	GF
1727	L.T.39	CPT / Boundary Trench	NFP	2.241261	5.8	17	272	3×0.45×0.30	21525	50%	GF
1728	L.T.20	CPT / Boundary Trench	No Plantation Required	2.147892	5.8	17	272	3×0.45×0.30	20608	50%	GF
1729	L.T.20	CPT / Boundary Trench	No Plantation Required	1.031871	5.8	17	272	3×0.45×0.30	9916	50%	GF
1730	L.T.20	CPT / Boundary Trench	No Plantation Required	1.727012	5.8	17	272	3×0.45×0.30	16585	50%	GF
1731	L.T.20	CPT / Boundary Trench	No Plantation Required	5.339457	5.8	17	272	3×0.45×0.30	51237	50%	GF
1733	L.T.27	CPT / Boundary Trench	No Plantation Required	1.02661	5.8	17	272	3×0.45×0.30	9845	50%	GF
1821	L.T.2	CPT / Boundary Trench	GF-20%	3.320532	5.8	17	272	3×0.45×0.30	31864	50%	GF
2006	L.T.2	CPT / Boundary Trench	GF-20%	1.584772	6.5	15	240	3×0.45×0.30	13409	50%	GF
2007	L.T.14	CPT / Boundary Trench	GF-40%	1.122893	6.5	15	240	3×0.45×0.30	9492	50%	GF
2008	L.T.14	CPT / Boundary Trench	GF-40%	5.014012	6.5	15	240	3×0.45×0.30	42451	50%	GF
2009	L.T.19	CPT / Boundary Trench	GF-20%	3.326841	6.5	15	240	3×0.45×0.30	28159	50%	GF
2010	L.T.20	CPT / Boundary Trench	No Plantation Required	9.318986	6.5	15	240	3×0.45×0.30	78938	50%	GF
2011	L.T.20	CPT / Boundary Trench	No Plantation Required	6.295649	6.5	15	240	3×0.45×0.30	53319	50%	GF
2012	L.T.21	CPT / Boundary Trench	No Plantation Required	1.200622	6.5	15	240	3×0.45×0.30	10163	50%	GF
2013	L.T.21	CPT / Boundary Trench	No Plantation Required	4.282877	6.5	15	240	3×0.45×0.30	36275	50%	GF
2014	L.T.21	CPT / Boundary Trench	No Plantation Required	1.017478	6.5	15	240	3×0.45×0.30	8610	50%	GF
2015	L.T.34	CPT / Boundary Trench	GF-20%	5.576026	6.5	15	240	3×0.45×0.30	47214	50%	GF
2016	L.T.43	CPT / Boundary Trench	GF-50%	2.386318	6.5	15	240	3×0.45×0.30	20220	50%	GF

2017	L.T.46	CPT / Boundary Trench	GF-60%	7.031646	6.5	15	240	3×0.45×0.30	59565	50%	GF
2127	L.T.15	CPT / Boundary Trench	GF-40%	2.357123	6.5	15	240	3×0.45×0.45	29959	100%	NFP
2128	L.T.15	CPT / Boundary Trench	GF-40%	1.13562	6.5	15	240	3×0.45×0.45	14450	100%	NFP
2129	L.T.15	CPT / Boundary Trench	GF-40%	1.587256	6.5	15	240	3×0.45×0.45	20167	100%	NFP
2130	L.T.15	CPT / Boundary Trench	GF-40%	1.007964	6.5	15	240	3×0.45×0.45	12809	100%	NFP

(3)Keshargarh Beat (Hura range)

Drainage Line Treatment Measures Open Map

3.1.1 Gabion Check Keshargarh Beat (Hura range) Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
583	DLT1	2A2B4j6	1	23.27589	86.53653	5	1.2	0.40	34401.91
585	DLT3	2A2B4j6	1	23.27419	86.53375	9	1.5	0.50	75534.58
584	DLT2	2A2B4j6	1	23.27586	86.53481	6	1.2	0.40	41231.01
586	DLT4	2A2B4j6	1	23.27419	86.53319	8	1.2	0.40	54974.68
587	DLT5	2A2B4j6	1	23.26811	86.53089	7	1.5	0.50	58674.33
588	DLT6	2A2B4j6	1	23.26561	86.53553	5	1.2	0.40	34359.17
589	DLT7	2A2B4j6	1	23.25733	86.54006	9	1.5	0.50	75438.43

3.1.2 Gabion Check Dam Keshargarh Beat (Hura range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
590	DLT8	2A2B4j6	1	23.25611	86.53792	9.5	2.1	1.0	0.70	5	3.10	1.0	0.70	351855.27

3.2.1 Land Treatment and Forest Plantation measures- Keshargarh Beat (Hura range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
7	L.T.88	CPT / Boundary Trench	GF-30%	1.142123	5.8	17	272	3×0.45×0.45	16462	100%	NFP
9	L.T.47	CPT / Boundary Trench	GF-80%	2.069678	5.8	17	272	3×0.45×0.45	29800	100%	NFP
11	L.T.47	CPT / Boundary Trench	GF-80%	1.738267	5.8	17	272	3×0.45×0.45	25036	100%	NFP
12	L.T.45	CPT / Boundary Trench	GF-90%	1.936978	5.8	17	272	3×0.45×0.45	27895	100%	NFP
13	L.T.71	CPT / Boundary Trench	GF-90%	4.829795	5.8	17	272	3×0.45×0.45	69551	100%	NFP
15	L.T.73	CPT / Boundary Trench	GF-80%	1.411326	5.8	17	272	3×0.45×0.45	20325	100%	NFP
16	L.T.53	CPT / Boundary Trench	GF-80%	1.470905	5.5	18	288	3×0.45×0.45	22443	100%	NFP

30	L.T.67	CPT / Boundary Trench	GF-20%	5.926291	5.8	17	272	3×0.45×0.45	85325	100%	NFP
95	L.T.44	CPT / Boundary Trench	GF-20%	22.190187	6.5	15	240	3×0.45×0.45	281910	100%	NFP
96	L.T.49	CPT / Boundary Trench	GF-50%	3.531431	6.5	15	240	3×0.45×0.45	44885	100%	NFP
161	L.T.32	CPT / Boundary Trench	GF-30%	1.3999	5.5	18	288	3×0.45×0.30	14221	100%	NFP
162	L.T.33	CPT / Boundary Trench	GF-80%	2.144821	6.5	15	240	3×0.45×0.30	18173	100%	NFP
166	L.T.14	CPT / Boundary Trench	GF-80%	1.543772	5.5	18	288	3×0.45×0.30	15703	100%	NFP
172	L.T.29	CPT / Boundary Trench	GF-30%	0.594518	5.5	18	288	3×0.45×0.30	6034	100%	NFP
173	L.T.30	CPT / Boundary Trench	GF-30%	2.150325	5.5	18	288	3×0.45×0.30	21843	100%	NFP
180	L.T.29	CPT / Boundary Trench	GF-30%	0.737471	5.5	18	288	3×0.45×0.30	7481	100%	NFP
201	L.T.10	CPT / Boundary Trench	GF-40%	1.290971	6.5	15	240	3×0.45×0.30	10939	100%	NFP
207	L.T.18	CPT / Boundary Trench	GF-70 %	2.558238	6.5	15	240	3×0.45×0.30	21666	100%	NFP
212	L.T.17	CPT / Boundary Trench	GF-20%	1.568871	5.5	18	288	3×0.45×0.30	15950	100%	NFP
216	L.T.22	CPT / Boundary Trench	GF-20%	1.005737	5.8	17	272	3×0.45×0.30	9669	100%	NFP
224	L.T.21	CPT / Boundary Trench	GF-20%	1.933614	5.8	17	272	3×0.45×0.30	18561	100%	NFP
225	L.T.21	CPT / Boundary Trench	GF-20%	3.508367	5.5	18	288	3×0.45×0.30	35640	100%	NFP
229	L.T.62	CPT / Boundary Trench	GF-30%	1.32997	5.8	17	272	3×0.45×0.30	12774	100%	NFP
230	L.T.63	CPT / Boundary Trench	GF-40%	1.356509	5.8	17	272	3×0.45×0.30	13021	100%	NFP
231	L.T.17	CPT / Boundary Trench	GF-20%	1.32794	5.8	17	272	3×0.45×0.30	12739	100%	NFP
244	L.T.57	CPT / Boundary Trench	GF-50%	1.016	6.5	15	240	3×0.45×0.30	8610	100%	NFP

265	L.T.66	CPT / Boundary Trench	GF-20%	2.238706	5.8	17	272	3×0.45×0.30	21490	100%	NFP
281	L.T.68	CPT / Boundary Trench	GF-40%	1.237991	5.8	17	272	3×0.45×0.30	11892	100%	NFP
425	L.T.1	CPT / Boundary Trench	GF-70 %	1.887813	6.5	15	240	3×0.45×0.30	15985	100%	NFP
426	L.T.30	CPT / Boundary Trench	GF-30%	4.087999	6.5	15	240	3×0.45×0.30	34617	100%	NFP
427	L.T.34	CPT / Boundary Trench	GF-30%	2.551278	6.5	15	240	3×0.45×0.30	21596	100%	NFP
428	L.T.42	CPT / Boundary Trench	GF-80%	3.645014	6.5	15	240	3×0.45×0.30	30876	100%	NFP
429	L.T.87	CPT / Boundary Trench	GF-30%	1.706183	6.5	15	240	3×0.45×0.30	14432	100%	NFP
478	L.T.51	CPT / Boundary Trench	GF-20%	1.119428	5.8	17	272	3×0.45×0.45	16091	50%	GF
479	L.T.46	CPT / Boundary Trench	GF-30%	1.405397	5.8	17	272	3×0.45×0.45	20220	50%	GF
480	L.T.72	CPT / Boundary Trench	GF-30%	1.511635	5.8	17	272	3×0.45×0.45	21755	50%	GF
481	L.T.77	CPT / Boundary Trench	GF-30%	1.143394	5.8	17	272	3×0.45×0.45	16462	50%	GF
520	L.T.27	CPT / Boundary Trench	GF-20%	2.304015	6.5	15	240	3×0.45×0.45	29271	50%	GF
521	L.T.47	CPT / Boundary Trench	GF-80%	3.860206	6.5	15	240	3×0.45×0.45	49014	50%	GF
522	L.T.50	CPT / Boundary Trench	GF-50%	6.330303	6.5	15	240	3×0.45×0.45	80402	50%	GF
523	L.T.55	CPT / Boundary Trench	GF-50%	5.26295	6.5	15	240	3×0.45×0.45	66852	50%	GF
524	L.T.56	CPT / Boundary Trench	GF-70 %	1.263367	6.5	15	240	3×0.45×0.45	16038	50%	GF
525	L.T.66	CPT / Boundary Trench	GF-20%	6.020641	6.5	15	240	3×0.45×0.45	76485	50%	GF
526	L.T.69	CPT / Boundary Trench	GF-20%	1.617274	6.5	15	240	3×0.45×0.45	20537	50%	GF
559	L.T.37	CPT / Boundary Trench	GF-20%	1.047878	6.5	15	240	3×0.45×0.30	8857	50%	GF

565	L.T.32	CPT / Boundary Trench	GF-30%	0.542714	5.5	18	288	3×0.45×0.30	5505	50%	GF
567	L.T.1	CPT / Boundary Trench	GF-70 %	1.224141	6.5	15	240	3×0.45×0.30	10374	50%	GF
569	L.T.32	CPT / Boundary Trench	GF-30%	1.722952	5.8	17	272	3×0.45×0.30	16550	50%	GF
570	L.T.33	CPT / Boundary Trench	GF-80%	4.128395	6.5	15	240	3×0.45×0.30	34970	50%	GF
573	L.T.35	CPT / Boundary Trench	GF-90%	1.198645	5.8	17	272	3×0.45×0.30	11504	50%	GF
574	L.T.3	CPT / Boundary Trench	GF-50%	1.856633	5.8	17	272	3×0.45×0.30	17820	50%	GF
575	L.T.6	CPT / Boundary Trench	GF-20%	1.108609	5.5	18	288	3×0.45×0.30	11257	50%	GF
578	L.T.6	CPT / Boundary Trench	GF-20%	1.374828	5.8	17	272	3×0.45×0.30	13197	50%	GF
579	L.T.28	CPT / Boundary Trench	GF-50%	1.081574	5.5	18	288	3×0.45×0.30	10974	50%	GF
581	L.T.10	CPT / Boundary Trench	GF-40%	1.324884	5.8	17	272	3×0.45×0.30	12703	50%	GF
583	L.T.26	CPT / Boundary Trench	GF-30%	2.636462	5.5	18	288	3×0.45×0.30	26783	50%	GF
584	L.T.4	CPT / Boundary Trench	GF-80%	2.031108	5.8	17	272	3×0.45×0.30	19479	50%	GF
585	L.T.17	CPT / Boundary Trench	GF-20%	2.075098	6.5	15	240	3×0.45×0.30	17573	50%	GF
589	L.T.62	CPT / Boundary Trench	GF-30%	1.560888	5.5	18	288	3×0.45×0.30	15879	50%	GF
598	L.T.57	CPT / Boundary Trench	GF-50%	1.165379	5.8	17	272	3×0.45×0.30	11186	50%	GF
599	L.T.57	CPT / Boundary Trench	GF-50%	1.734112	5.5	18	288	3×0.45×0.30	17608	50%	GF
600	L.T.60	CPT / Boundary Trench	GF-20%	2.12364	5.8	17	272	3×0.45×0.30	20396	50%	GF
603	L.T.60	CPT / Boundary Trench	GF-20%	1.40344	5.8	17	272	3×0.45×0.30	13480	50%	GF
677	L.T.26	CPT / Boundary Trench	GF-30%	1.195849	6.5	15	240	3×0.45×0.30	10127	50%	GF

678	L.T.27	CPT / Boundary Trench	GF-20%	1.408473	6.5	15	240	3×0.45×0.30	11927	50%	GF
679	L.T.38	CPT / Boundary Trench	No Plantation Required	3.036342	6.5	15	240	3×0.45×0.30	25724	50%	GF
680	L.T.69	CPT / Boundary Trench	GF-20%	1.648135	6.5	15	240	3×0.45×0.30	13974	50%	GF
692	L.T.70	CPT / Boundary Trench	GF-20%	12.142786	6.5	15	240	3×0.45×0.30	102827	50%	GF
694	L.T.83	CPT / Boundary Trench	GF-90%	1.099397	5.8	17	272	3×0.45×0.45	15826	100%	NFP
697	L.T.83	CPT / Boundary Trench	GF-90%	2.75076	6.5	15	240	3×0.45×0.45	34934	100%	NFP
698	L.T.83	CPT / Boundary Trench	GF-90%	1.359301	6.5	15	240	3×0.45×0.45	17255	100%	NFP
719	L.T.51	CPT / Boundary Trench	GF-20%	2.442039	5.8	17	272	3×0.45×0.45	35146	100%	NFP
722	L.T.43	CPT / Boundary Trench	GF-80%	0.806721	5.8	17	272	3×0.45×0.45	11592	100%	NFP
723	L.T.74	CPT / Boundary Trench	GF-70 %	1.704708	5.8	17	272	3×0.45×0.45	24560	100%	NFP
724	L.T.53	CPT / Boundary Trench	GF-80%	2.66932	5.8	17	272	3×0.45×0.45	38428	100%	NFP
734	L.T.66	CPT / Boundary Trench	GF-20%	1.211267	5.8	17	272	3×0.45×0.45	17414	100%	NFP
848	L.T.43	CPT / Boundary Trench	GF-80%	14.954622	6.5	15	240	3×0.45×0.45	189969	100%	NFP
849	L.T.45	CPT / Boundary Trench	GF-90%	5.205627	6.5	15	240	3×0.45×0.45	66111	100%	NFP
850	L.T.47	CPT / Boundary Trench	GF-80%	5.296039	6.5	15	240	3×0.45×0.45	67275	100%	NFP
851	L.T.47	CPT / Boundary Trench	GF-80%	3.996101	6.5	15	240	3×0.45×0.45	50761	100%	NFP
852	L.T.48	CPT / Boundary Trench	GF-90%	1.188676	6.5	15	240	3×0.45×0.45	15085	100%	NFP
853	L.T.50	CPT / Boundary Trench	GF-50%	1.003677	6.5	15	240	3×0.45×0.45	12756	100%	NFP
854	L.T.50	CPT / Boundary Trench	GF-50%	3.955426	6.5	15	240	3×0.45×0.45	50231	100%	NFP

855	L.T.51	CPT / Boundary Trench	GF-20%	12.482532	6.5	15	240	3×0.45×0.45	158581	100%	NFP
856	L.T.53	CPT / Boundary Trench	GF-80%	3.158429	6.5	15	240	3×0.45×0.45	40122	100%	NFP
857	L.T.56	CPT / Boundary Trench	GF-70 %	4.051857	6.5	15	240	3×0.45×0.45	51449	100%	NFP
858	L.T.65	CPT / Boundary Trench	GF-20%	5.050367	6.5	15	240	3×0.45×0.45	64152	100%	NFP
859	L.T.66	CPT / Boundary Trench	GF-20%	1.706619	6.5	15	240	3×0.45×0.45	21702	100%	NFP
860	L.T.67	CPT / Boundary Trench	GF-20%	1.02193	6.5	15	240	3×0.45×0.45	12968	100%	NFP
861	L.T.71	CPT / Boundary Trench	GF-90%	11.107465	6.5	15	240	3×0.45×0.45	141114	100%	NFP
862	L.T.71	CPT / Boundary Trench	GF-90%	1.703467	6.5	15	240	3×0.45×0.45	21649	100%	NFP
863	L.T.72	CPT / Boundary Trench	GF-30%	2.469374	6.5	15	240	3×0.45×0.45	31388	100%	NFP
864	L.T.73	CPT / Boundary Trench	GF-80%	4.17936	6.5	15	240	3×0.45×0.45	53090	100%	NFP
865	L.T.74	CPT / Boundary Trench	GF-70 %	1.6734	6.5	15	240	3×0.45×0.45	21278	100%	NFP
866	L.T.74	CPT / Boundary Trench	GF-70 %	1.400102	6.5	15	240	3×0.45×0.45	17785	100%	NFP
867	L.T.75	CPT / Boundary Trench	GF-70 %	5.235656	6.5	15	240	3×0.45×0.45	66534	100%	NFP
868	L.T.76	CPT / Boundary Trench	NFP	6.149312	6.5	15	240	3×0.45×0.45	78126	100%	NFP
869	L.T.77	CPT / Boundary Trench	GF-30%	11.220167	6.5	15	240	3×0.45×0.45	142543	100%	NFP
870	L.T.78	CPT / Boundary Trench	GF-30%	1.09755	6.5	15	240	3×0.45×0.45	13921	100%	NFP
871	L.T.83	CPT / Boundary Trench	GF-90%	2.694287	6.5	15	240	3×0.45×0.45	34246	100%	NFP
872	L.T.88	CPT / Boundary Trench	GF-30%	20.669101	6.5	15	240	3×0.45×0.45	262590	100%	NFP
944	L.T.39	CPT / Boundary Trench	No Plantation Required	4.435737	5.8	17	272	3×0.45×0.30	42592	100%	NFP

949	L.T.40	CPT / Boundary Trench	No Plantation Required	3.190899	5.8	17	272	3×0.45×0.30	30629	100%	NFP
951	L.T.40	CPT / Boundary Trench	No Plantation Required	1.547069	5.8	17	272	3×0.45×0.30	14856	100%	NFP
952	L.T.41	CPT / Boundary Trench	GF-20%	0.669462	5.8	17	272	3×0.45×0.30	6422	100%	NFP
953	L.T.41	CPT / Boundary Trench	GF-20%	1.07033	5.8	17	272	3×0.45×0.30	10269	100%	NFP
954	L.T.41	CPT / Boundary Trench	GF-20%	1.291497	5.8	17	272	3×0.45×0.30	12386	100%	NFP
966	L.T.36	CPT / Boundary Trench	GF-30%	5.769105	5.8	17	272	3×0.45×0.30	55366	100%	NFP
967	L.T.14	CPT / Boundary Trench	GF-80%	1.319336	5.8	17	272	3×0.45×0.30	12668	100%	NFP
972	L.T.1	CPT / Boundary Trench	GF-70 %	2.699919	5.8	17	272	3×0.45×0.30	25901	100%	NFP
985	L.T.30	CPT / Boundary Trench	GF-30%	1.262833	5.8	17	272	3×0.45×0.30	12104	100%	NFP
988	L.T.82	CPT / Boundary Trench	GF-30%	2.795153	5.8	17	272	3×0.45×0.30	26818	100%	NFP
992	L.T.3	CPT / Boundary Trench	GF-50%	1.419779	5.8	17	272	3×0.45×0.30	13621	100%	NFP
1011	L.T.16	CPT / Boundary Trench	GF-30%	1.764638	5.8	17	272	3×0.45×0.30	16938	100%	NFP
1012	L.T.28	CPT / Boundary Trench	GF-50%	2.146024	5.8	17	272	3×0.45×0.30	20608	100%	NFP
1030	L.T.4	CPT / Boundary Trench	GF-80%	4.19508	5.8	17	272	3×0.45×0.30	40263	100%	NFP
1031	L.T.4	CPT / Boundary Trench	GF-80%	6.878585	5.8	17	272	3×0.45×0.30	66022	100%	NFP
1032	L.T.10	CPT / Boundary Trench	GF-40%	5.001613	5.8	17	272	3×0.45×0.30	47991	100%	NFP
1033	L.T.4	CPT / Boundary Trench	GF-80%	6.937551	6.5	15	240	3×0.45×0.30	58753	100%	NFP
1034	L.T.54	CPT / Boundary Trench	GF-30%	1.005188	5.8	17	272	3×0.45×0.30	9633	100%	NFP
1042	L.T.62	CPT / Boundary Trench	GF-30%	1.058807	5.8	17	272	3×0.45×0.30	10163	100%	NFP

1045	L.T.8	CPT / Boundary Trench	GF-20%	1.770841	5.8	17	272	3×0.45×0.30	17008	100%	NFP
1046	L.T.9	CPT / Boundary Trench	GF-20%	1.41222	5.8	17	272	3×0.45×0.30	13550	100%	NFP
1047	L.T.9	CPT / Boundary Trench	GF-20%	1.341498	5.8	17	272	3×0.45×0.30	12880	100%	NFP
1048	L.T.56	CPT / Boundary Trench	GF-70 %	2.052858	5.8	17	272	3×0.45×0.30	19690	100%	NFP
1049	L.T.56	CPT / Boundary Trench	GF-70 %	1.106432	5.8	17	272	3×0.45×0.30	10621	100%	NFP
1050	L.T.65	CPT / Boundary Trench	GF-20%	1.43297	5.8	17	272	3×0.45×0.30	13762	100%	NFP
1053	L.T.18	CPT / Boundary Trench	GF-70 %	2.673221	5.8	17	272	3×0.45×0.30	25654	100%	NFP
1054	L.T.19	CPT / Boundary Trench	GF-20%	2.222242	5.8	17	272	3×0.45×0.30	21313	100%	NFP
1055	L.T.19	CPT / Boundary Trench	GF-20%	4.259117	5.8	17	272	3×0.45×0.30	40863	100%	NFP
1056	L.T.22	CPT / Boundary Trench	GF-20%	2.436676	5.8	17	272	3×0.45×0.30	23395	100%	NFP
1057	L.T.25	CPT / Boundary Trench	GF-20%	1.004957	5.8	17	272	3×0.45×0.30	9633	100%	NFP
1067	L.T.57	CPT / Boundary Trench	GF-50%	2.748915	5.8	17	272	3×0.45×0.30	26395	100%	NFP
1076	L.T.61	CPT / Boundary Trench	GF-30%	5.865901	5.8	17	272	3×0.45×0.30	56318	100%	NFP
1088	L.T.67	CPT / Boundary Trench	GF-20%	3.381597	5.8	17	272	3×0.45×0.30	32464	100%	NFP
1089	L.T.67	CPT / Boundary Trench	GF-20%	2.989347	5.8	17	272	3×0.45×0.30	28689	100%	NFP
1094	L.T.67	CPT / Boundary Trench	GF-20%	1.173319	5.8	17	272	3×0.45×0.30	11257	100%	NFP
1385	L.T.3	CPT / Boundary Trench	GF-50%	2.848198	6.5	15	240	3×0.45×0.30	24136	100%	NFP
1386	L.T.3	CPT / Boundary Trench	GF-50%	5.037001	6.5	15	240	3×0.45×0.30	42662	100%	NFP
1387	L.T.3	CPT / Boundary Trench	GF-50%	3.968693	6.5	15	240	3×0.45×0.30	33593	100%	NFP

1388	L.T.3	CPT / Boundary Trench	GF-50%	1.741809	6.5	15	240	3×0.45×0.30	14750	100%	NFP
1389	L.T.31	CPT / Boundary Trench	GF-30%	2.100204	6.5	15	240	3×0.45×0.30	17785	100%	NFP
1390	L.T.31	CPT / Boundary Trench	GF-30%	6.853121	6.5	15	240	3×0.45×0.30	58048	100%	NFP
1391	L.T.35	CPT / Boundary Trench	GF-90%	2.70971	6.5	15	240	3×0.45×0.30	22937	100%	NFP
1392	L.T.37	CPT / Boundary Trench	GF-20%	1.841854	6.5	15	240	3×0.45×0.30	15597	100%	NFP
1393	L.T.39	CPT / Boundary Trench	No Plantation Required	2.669075	6.5	15	240	3×0.45×0.30	22619	100%	NFP
1394	L.T.41	CPT / Boundary Trench	GF-20%	0.729153	6.5	15	240	3×0.45×0.30	6175	100%	NFP
1395	L.T.56	CPT / Boundary Trench	GF-70 %	1.796398	6.5	15	240	3×0.45×0.30	15209	100%	NFP
1396	L.T.56	CPT / Boundary Trench	GF-70 %	3.901425	6.5	15	240	3×0.45×0.30	33029	100%	NFP
1397	L.T.57	CPT / Boundary Trench	GF-50%	4.061672	6.5	15	240	3×0.45×0.30	34405	100%	NFP
1398	L.T.61	CPT / Boundary Trench	GF-30%	3.157954	6.5	15	240	3×0.45×0.30	26748	100%	NFP
1399	L.T.63	CPT / Boundary Trench	GF-40%	1.962416	6.5	15	240	3×0.45×0.30	16620	100%	NFP
1400	L.T.65	CPT / Boundary Trench	GF-20%	1.888655	6.5	15	240	3×0.45×0.30	15985	100%	NFP
1401	L.T.66	CPT / Boundary Trench	GF-20%	2.684013	6.5	15	240	3×0.45×0.30	22725	100%	NFP
1402	L.T.66	CPT / Boundary Trench	GF-20%	1.144028	6.5	15	240	3×0.45×0.30	9704	100%	NFP
1403	L.T.67	CPT / Boundary Trench	GF-20%	3.406823	6.5	15	240	3×0.45×0.30	28865	100%	NFP
1404	L.T.67	CPT / Boundary Trench	GF-20%	1.965349	6.5	15	240	3×0.45×0.30	16656	100%	NFP
1405	L.T.68	CPT / Boundary Trench	GF-40%	1.160603	6.5	15	240	3×0.45×0.30	9845	100%	NFP
1406	L.T.69	CPT / Boundary Trench	GF-20%	8.087034	6.5	15	240	3×0.45×0.30	68493	100%	NFP

1407	L.T.79	CPT / Boundary Trench	GF-20%	1.38197	6.5	15	240	3×0.45×0.30	11715	100%	NFP
1408	L.T.80	CPT / Boundary Trench	GF-30%	1.007719	6.5	15	240	3×0.45×0.30	8540	100%	NFP
1409	L.T.80	CPT / Boundary Trench	GF-30%	2.845807	6.5	15	240	3×0.45×0.30	24101	100%	NFP
1410	L.T.82	CPT / Boundary Trench	GF-30%	1.605617	6.5	15	240	3×0.45×0.30	13586	100%	NFP
1411	L.T.82	CPT / Boundary Trench	GF-30%	1.560673	6.5	15	240	3×0.45×0.30	13233	100%	NFP
1412	L.T.86	CPT / Boundary Trench	GF-40%	3.703521	6.5	15	240	3×0.45×0.30	31370	100%	NFP
1579	L.T.70	CPT / Boundary Trench	GF-20%	2.371039	6.5	15	240	3×0.45×0.30	20078	100%	NFP
1580	L.T.70	CPT / Boundary Trench	GF-20%	1.059152	6.5	15	240	3×0.45×0.30	8963	100%	NFP
1617	L.T.51	CPT / Boundary Trench	GF-20%	2.706743	5.8	17	272	3×0.45×0.45	38957	50%	GF
1618	L.T.51	CPT / Boundary Trench	GF-20%	1.876189	5.8	17	272	3×0.45×0.45	26995	50%	GF
1619	L.T.53	CPT / Boundary Trench	GF-80%	1.225641	5.8	17	272	3×0.45×0.45	17626	50%	GF
1620	L.T.52	CPT / Boundary Trench	GF-80%	0.641106	5.8	17	272	3×0.45×0.45	9210	50%	GF
1621	L.T.52	CPT / Boundary Trench	GF-80%	6.491944	6.5	15	240	3×0.45×0.45	82466	50%	GF
1622	L.T.76	CPT / Boundary Trench	NFP	1.341015	5.8	17	272	3×0.45×0.45	19320	50%	GF
1625	L.T.75	CPT / Boundary Trench	GF-70 %	2.84882	5.8	17	272	3×0.45×0.45	41021	50%	GF
1632	L.T.64	CPT / Boundary Trench	GF-20%	1.931901	5.8	17	272	3×0.45×0.45	27789	50%	GF
1636	L.T.68	CPT / Boundary Trench	GF-40%	1.050949	5.8	17	272	3×0.45×0.45	15138	50%	GF
1670	L.T.46	CPT / Boundary Trench	GF-30%	4.589452	6.5	15	240	3×0.45×0.45	58277	50%	GF
1671	L.T.51	CPT / Boundary Trench	GF-20%	15.494116	6.5	15	240	3×0.45×0.45	196850	50%	GF

1672	L.T.51	CPT / Boundary Trench	GF-20%	1.155124	6.5	15	240	3×0.45×0.45	14662	50%	GF
1673	L.T.62	CPT / Boundary Trench	GF-30%	1.732483	6.5	15	240	3×0.45×0.45	22019	50%	GF
1674	L.T.62	CPT / Boundary Trench	GF-30%	3.038396	6.5	15	240	3×0.45×0.45	38587	50%	GF
1675	L.T.62	CPT / Boundary Trench	GF-30%	5.719401	6.5	15	240	3×0.45×0.45	72674	50%	GF
1676	L.T.64	CPT / Boundary Trench	GF-20%	2.979876	6.5	15	240	3×0.45×0.45	37846	50%	GF
1677	L.T.64	CPT / Boundary Trench	GF-20%	5.719488	6.5	15	240	3×0.45×0.45	72674	50%	GF
1678	L.T.68	CPT / Boundary Trench	GF-40%	10.912948	6.5	15	240	3×0.45×0.45	138626	50%	GF
1679	L.T.72	CPT / Boundary Trench	GF-30%	2.017729	6.5	15	240	3×0.45×0.45	25619	50%	GF
1680	L.T.74	CPT / Boundary Trench	GF-70 %	2.509265	6.5	15	240	3×0.45×0.45	31864	50%	GF
1681	L.T.75	CPT / Boundary Trench	GF-70 %	1.508963	6.5	15	240	3×0.45×0.45	19161	50%	GF
1682	L.T.75	CPT / Boundary Trench	GF-70 %	4.049594	6.5	15	240	3×0.45×0.45	51449	50%	GF
1683	L.T.76	CPT / Boundary Trench	NFP	1.494467	6.5	15	240	3×0.45×0.45	19002	50%	GF
1684	L.T.76	CPT / Boundary Trench	NFP	2.552612	6.5	15	240	3×0.45×0.45	32447	50%	GF
1685	L.T.78	CPT / Boundary Trench	GF-30%	1.942976	6.5	15	240	3×0.45×0.45	24666	50%	GF
1686	L.T.78	CPT / Boundary Trench	GF-30%	2.243552	6.5	15	240	3×0.45×0.45	28477	50%	GF
1687	L.T.84	CPT / Boundary Trench	GF-90%	1.958753	6.5	15	240	3×0.45×0.45	24878	50%	GF
1740	L.T.41	CPT / Boundary Trench	GF-20%	4.069282	5.8	17	272	3×0.45×0.30	39063	50%	GF
1758	L.T.37	CPT / Boundary Trench	GF-20%	3.547378	5.8	17	272	3×0.45×0.30	34052	50%	GF
1759	L.T.80	CPT / Boundary Trench	GF-30%	1.441217	5.8	17	272	3×0.45×0.30	13833	50%	GF

1760	L.T.32	CPT / Boundary Trench	GF-30%	5.8698	6.5	15	240	3×0.45×0.30	49720	50%	GF
1783	L.T.30	CPT / Boundary Trench	GF-30%	3.704755	6.5	15	240	3×0.45×0.30	31370	50%	GF
1786	L.T.31	CPT / Boundary Trench	GF-30%	1.751119	5.8	17	272	3×0.45×0.30	16797	50%	GF
1787	L.T.31	CPT / Boundary Trench	GF-30%	3.229004	5.8	17	272	3×0.45×0.30	30982	50%	GF
1791	L.T.3	CPT / Boundary Trench	GF-50%	1.756359	5.8	17	272	3×0.45×0.30	16867	50%	GF
1797	L.T.5	CPT / Boundary Trench	GF-20%	5.447384	6.5	15	240	3×0.45×0.30	46120	50%	GF
1800	L.T.2	CPT / Boundary Trench	GF-80%	3.160488	5.8	17	272	3×0.45×0.30	30347	50%	GF
1803	L.T.5	CPT / Boundary Trench	GF-20%	2.078868	5.8	17	272	3×0.45×0.30	19937	50%	GF
1804	L.T.5	CPT / Boundary Trench	GF-20%	1.260017	5.8	17	272	3×0.45×0.30	12104	50%	GF
1805	L.T.5	CPT / Boundary Trench	GF-20%	2.026516	5.8	17	272	3×0.45×0.30	19443	50%	GF
1808	L.T.16	CPT / Boundary Trench	GF-30%	3.969578	5.8	17	272	3×0.45×0.30	38110	50%	GF
1809	L.T.28	CPT / Boundary Trench	GF-50%	3.38015	5.8	17	272	3×0.45×0.30	32429	50%	GF
1810	L.T.28	CPT / Boundary Trench	GF-50%	1.586012	5.8	17	272	3×0.45×0.30	15209	50%	GF
1812	L.T.11	CPT / Boundary Trench	GF-20%	2.239457	5.5	18	288	3×0.45×0.30	22760	50%	GF
1818	L.T.10	CPT / Boundary Trench	GF-40%	5.025038	5.8	17	272	3×0.45×0.30	48238	50%	GF
1819	L.T.54	CPT / Boundary Trench	GF-30%	1.669896	5.8	17	272	3×0.45×0.30	16020	50%	GF
1820	L.T.19	CPT / Boundary Trench	GF-20%	1.076398	6.5	15	240	3×0.45×0.30	9104	50%	GF
1826	L.T.11	CPT / Boundary Trench	GF-20%	3.886384	5.8	17	272	3×0.45×0.30	37299	50%	GF
1827	L.T.23	CPT / Boundary Trench	GF-20%	1.896172	6.5	15	240	3×0.45×0.30	16056	50%	GF

1828	L.T.62	CPT / Boundary Trench	GF-30%	1.086296	5.8	17	272	3×0.45×0.30	10410	50%	GF
1829	L.T.8	CPT / Boundary Trench	GF-20%	2.876403	5.8	17	272	3×0.45×0.30	27595	50%	GF
1830	L.T.9	CPT / Boundary Trench	GF-20%	2.050457	5.8	17	272	3×0.45×0.30	19690	50%	GF
1831	L.T.17	CPT / Boundary Trench	GF-20%	1.093502	5.8	17	272	3×0.45×0.30	10480	50%	GF
1832	L.T.17	CPT / Boundary Trench	GF-20%	2.47525	5.8	17	272	3×0.45×0.30	23748	50%	GF
1833	L.T.20	CPT / Boundary Trench	GF-30%	2.208236	5.8	17	272	3×0.45×0.30	21208	50%	GF
1834	L.T.21	CPT / Boundary Trench	GF-20%	3.779093	5.8	17	272	3×0.45×0.30	36275	50%	GF
1835	L.T.21	CPT / Boundary Trench	GF-20%	0.751819	5.8	17	272	3×0.45×0.30	7199	50%	GF
1836	L.T.56	CPT / Boundary Trench	GF-70 %	1.533921	5.8	17	272	3×0.45×0.30	14715	50%	GF
1842	L.T.18	CPT / Boundary Trench	GF-70 %	1.059839	5.8	17	272	3×0.45×0.30	10163	50%	GF
1843	L.T.23	CPT / Boundary Trench	GF-20%	1.069037	5.8	17	272	3×0.45×0.30	10269	50%	GF
1844	L.T.24	CPT / Boundary Trench	GF-30%	2.507119	5.8	17	272	3×0.45×0.30	24066	50%	GF
1845	L.T.25	CPT / Boundary Trench	GF-20%	2.032448	5.8	17	272	3×0.45×0.30	19514	50%	GF
1847	L.T.60	CPT / Boundary Trench	GF-20%	2.34033	5.8	17	272	3×0.45×0.30	22478	50%	GF
1854	L.T.59	CPT / Boundary Trench	GF-20%	3.572622	5.8	17	272	3×0.45×0.30	34299	50%	GF
1858	L.T.61	CPT / Boundary Trench	GF-30%	1.403414	5.8	17	272	3×0.45×0.30	13480	50%	GF
1859	L.T.61	CPT / Boundary Trench	GF-30%	1.765794	5.8	17	272	3×0.45×0.30	16938	50%	GF
1860	L.T.61	CPT / Boundary Trench	GF-30%	3.172644	5.8	17	272	3×0.45×0.30	30453	50%	GF
2018	L.T.2	CPT / Boundary Trench	GF-80%	6.343581	6.5	15	240	3×0.45×0.30	53707	50%	GF

2019	L.T.3	CPT / Boundary Trench	GF-50%	1.720764	6.5	15	240	3×0.45×0.30	14574	50%	GF
2020	L.T.3	CPT / Boundary Trench	GF-50%	1.494254	6.5	15	240	3×0.45×0.30	12668	50%	GF
2021	L.T.28	CPT / Boundary Trench	GF-50%	2.281922	6.5	15	240	3×0.45×0.30	19337	50%	GF
2022	L.T.31	CPT / Boundary Trench	GF-30%	1.183152	6.5	15	240	3×0.45×0.30	10022	50%	GF
2023	L.T.35	CPT / Boundary Trench	GF-90%	4.377521	6.5	15	240	3×0.45×0.30	37087	50%	GF
2024	L.T.37	CPT / Boundary Trench	GF-20%	6.480242	6.5	15	240	3×0.45×0.30	54872	50%	GF
2025	L.T.39	CPT / Boundary Trench	No Plantation Required	1.785374	6.5	15	240	3×0.45×0.30	15103	50%	GF
2026	L.T.41	CPT / Boundary Trench	GF-20%	5.074719	6.5	15	240	3×0.45×0.30	42980	50%	GF
2027	L.T.54	CPT / Boundary Trench	GF-30%	4.929148	6.5	15	240	3×0.45×0.30	41745	50%	GF
2028	L.T.56	CPT / Boundary Trench	GF-70 %	1.369257	6.5	15	240	3×0.45×0.30	11610	50%	GF
2029	L.T.58	CPT / Boundary Trench	GF-30%	2.107818	6.5	15	240	3×0.45×0.30	17855	50%	GF
2030	L.T.59	CPT / Boundary Trench	GF-20%	1.173287	6.5	15	240	3×0.45×0.30	9951	50%	GF
2031	L.T.59	CPT / Boundary Trench	GF-20%	6.066221	6.5	15	240	3×0.45×0.30	51378	50%	GF
2032	L.T.60	CPT / Boundary Trench	GF-20%	3.017951	6.5	15	240	3×0.45×0.30	25548	50%	GF
2033	L.T.61	CPT / Boundary Trench	GF-30%	1.036297	6.5	15	240	3×0.45×0.30	8787	50%	GF
2034	L.T.61	CPT / Boundary Trench	GF-30%	1.94501	6.5	15	240	3×0.45×0.30	16479	50%	GF
2035	L.T.62	CPT / Boundary Trench	GF-30%	1.982038	6.5	15	240	3×0.45×0.30	16797	50%	GF
2036	L.T.62	CPT / Boundary Trench	GF-30%	2.149197	6.5	15	240	3×0.45×0.30	18208	50%	GF
2037	L.T.65	CPT / Boundary Trench	GF-20%	3.483492	6.5	15	240	3×0.45×0.30	29500	50%	GF

2038	L.T.66	CPT / Boundary Trench	GF-20%	1.435826	6.5	15	240	3×0.45×0.30	12174	50%	GF
2039	L.T.68	CPT / Boundary Trench	GF-40%	2.648514	6.5	15	240	3×0.45×0.30	22443	50%	GF
2040	L.T.78	CPT / Boundary Trench	GF-30%	2.074143	6.5	15	240	3×0.45×0.30	17573	50%	GF
2041	L.T.78	CPT / Boundary Trench	GF-30%	9.428177	6.5	15	240	3×0.45×0.30	79855	50%	GF
2042	L.T.79	CPT / Boundary Trench	GF-20%	4.53829	6.5	15	240	3×0.45×0.30	38428	50%	GF
2043	L.T.80	CPT / Boundary Trench	GF-30%	6.274616	6.5	15	240	3×0.45×0.30	53143	50%	GF
2044	L.T.81	CPT / Boundary Trench	GF-50%	2.792171	6.5	15	240	3×0.45×0.30	23642	50%	GF

(4) Rakab Beat (Hura range)

Drainage Line Treatment Measures Open Map

4.1.1 Brushwood Check Dam- Rakab Beat (Hura range)

Open Design Detailed Excel File

Survey No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design Width (m)	Design Height (m)	Depth of driving Vertical Poles inside the earth(m)	Breath (m) Spacing between two rows	Cost (₹)
594	DLT 4	2A2B4n3	3	23.27414	86.50658	4.0	1.5	0.9	0.75	6047.09
601	DLT 11	2A2B4n2	1	23.27269	86.52219	4.5	1.5	0.9	0.75	6703.62

4.1.2 Gabion Check Rakab Beat (Hura range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
591	DLT 1	2A2B4n3	3	23.27156	86.51031	9	1.5	0.50	75534.58
596	DLT 6	2A2B4n3	1	23.265	86.49944	6	1.5	0.50	50356.39
599	DLT 9	2A2B4n2	1	23.26944	86.51717	9	1.5	0.50	75534.58
603	DLT 13	2A2B4n2	1	23.29008	86.51122	5	1.5	0.50	41963.66
595	DLT 5	2A2B4n3	1	23.27494	86.49447	4	1.2	0.40	27487.34
597	DLT 7	2A2B4n3	1	23.26506	86.49956	5	1.5	0.50	41910.24
598	DLT 8	2A2B4n3	1	23.26094	86.50339	8	1.5	0.50	67056.38
600	DLT 10	2A2B4n2	1	23.26108	86.50397	7	1.5	0.50	58674.33
602	DLT 12	2A2B4n2	1	23.27722	86.53336	5	1.5	0.50	41910.24

4.1.3 Gabion Check Dam Rakab Beat (Hura range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
593	DLT 3	2A2B4n3	3	23.27608	86.50478	6.5	2.1	1.0	0.70	3	3.10	1.0	0.70	278596.40
592	DLT 2	2A2B4n3	3	23.27411	86.50661	10.5	2.1	1.0	0.70	5	3.10	1.0	0.70	370301.82

4.2.1 Land Treatment and Forest Plantation measures- Rakab Beat (Hura range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
97	L.T.1	CPT / Boundary Trench	NFP	4.271123	6.5	15	240	3×0.45×0.45	54254	100%	NFP
148	L.T.2	CPT / Boundary Trench	GF-30%	1.077024	5.8	17	272	3×0.45×0.30	10339	100%	NFP
151	L.T.36	CPT / Boundary Trench	GF-80%	1.741869	6.5	15	240	3×0.45×0.30	14750	100%	NFP
152	L.T.11	CPT / Boundary Trench	No Plantation Required	1.389218	5.8	17	272	3×0.45×0.30	13339	100%	NFP
153	L.T.46	CPT / Boundary Trench	GF-80%	1.152017	6.5	15	240	3×0.45×0.30	9739	100%	NFP
154	L.T.15	CPT / Boundary Trench	GF-80%	1.223107	5.5	18	288	3×0.45×0.30	12421	100%	NFP
155	L.T.11	CPT / Boundary Trench	No Plantation Required	1.71269	5.8	17	272	3×0.45×0.30	16444	100%	NFP
156	L.T.15	CPT / Boundary Trench	GF-80%	1.223703	5.8	17	272	3×0.45×0.30	11751	100%	NFP
157	L.T.15	CPT / Boundary Trench	GF-80%	1.060543	6.5	15	240	3×0.45×0.30	8998	100%	NFP
158	L.T.15	CPT / Boundary Trench	GF-80%	1.713184	6.5	15	240	3×0.45×0.30	14503	100%	NFP
159	L.T.15	CPT / Boundary Trench	GF-80%	1.223702	6.5	15	240	3×0.45×0.30	10374	100%	NFP
160	L.T.6	CPT / Boundary Trench	NFP	1.806663	5.8	17	272	3×0.45×0.30	17326	100%	NFP
163	L.T.18	CPT / Boundary Trench	GF-20%	1.780289	5.5	18	288	3×0.45×0.30	18102	100%	NFP
164	L.T.15	CPT / Boundary Trench	GF-80%	7.668312	5.8	17	272	3×0.45×0.30	73609	100%	NFP

165	L.T.10	CPT / Boundary Trench	GF-20%	3.230237	6.5	15	240	3×0.45×0.30	27348	100%	NFP
167	L.T.40	CPT / Boundary Trench	GF-20%	1.160971	6.5	15	240	3×0.45×0.30	9845	100%	NFP
168	L.T.35	CPT / Boundary Trench	GF-20%	1.07714	5.8	17	272	3×0.45×0.30	10339	100%	NFP
169	L.T.16	CPT / Boundary Trench	GF-20%	1.722216	5.8	17	272	3×0.45×0.30	16514	100%	NFP
170	L.T.54	CPT / Boundary Trench	GF-30%	0.850107	5.8	17	272	3×0.45×0.30	8151	100%	NFP
171	L.T.40	CPT / Boundary Trench	GF-20%	1.111695	5.5	18	288	3×0.45×0.30	11292	100%	NFP
176	L.T.40	CPT / Boundary Trench	GF-20%	1.829416	5.5	18	288	3×0.45×0.30	18596	100%	NFP
177	L.T.42	CPT / Boundary Trench	GF-30%	1.083414	5.8	17	272	3×0.45×0.30	10410	100%	NFP
179	L.T.40	CPT / Boundary Trench	GF-20%	2.808278	5.5	18	288	3×0.45×0.30	28547	100%	NFP
181	L.T.16	CPT / Boundary Trench	GF-20%	1.997874	5.8	17	272	3×0.45×0.30	19161	100%	NFP
182	L.T.17	CPT / Boundary Trench	GF-20%	3.258872	5.5	18	288	3×0.45×0.30	33135	100%	NFP
183	L.T.40	CPT / Boundary Trench	GF-20%	0.630213	5.5	18	288	3×0.45×0.30	6422	100%	NFP
185	L.T.40	CPT / Boundary Trench	GF-20%	4.790214	5.5	18	288	3×0.45×0.30	48696	100%	NFP
186	L.T.17	CPT / Boundary Trench	GF-20%	2.348241	6.5	15	240	3×0.45×0.30	19902	100%	NFP
190	L.T.8	CPT / Boundary Trench	GF-50%	3.928938	5.8	17	272	3×0.45×0.30	37722	100%	NFP
191	L.T.40	CPT / Boundary Trench	GF-20%	4.584675	5.5	18	288	3×0.45×0.30	46579	100%	NFP
192	L.T.7	CPT / Boundary Trench	GF-20%	1.620775	5.8	17	272	3×0.45×0.30	15562	100%	NFP
193	L.T.42	CPT / Boundary Trench	GF-30%	4.731337	5.5	18	288	3×0.45×0.30	48097	100%	NFP
194	L.T.17	CPT / Boundary Trench	GF-20%	4.74837	6.5	15	240	3×0.45×0.30	40227	100%	NFP

195	L.T.21	CPT / Boundary Trench	GF-30%	1.481404	6.5	15	240	3×0.45×0.30	12562	100%	NFP
196	L.T.9	CPT / Boundary Trench	GF-30%	2.760671	6.5	15	240	3×0.45×0.30	23395	100%	NFP
197	L.T.21	CPT / Boundary Trench	GF-30%	0.737905	6.5	15	240	3×0.45×0.30	6246	100%	NFP
198	L.T.24	CPT / Boundary Trench	GF-30%	1.390539	6.5	15	240	3×0.45×0.30	11786	100%	NFP
200	L.T.22	CPT / Boundary Trench	GF-20%	4.552568	6.5	15	240	3×0.45×0.30	38569	100%	NFP
202	L.T.22	CPT / Boundary Trench	GF-20%	1.223703	6.5	15	240	3×0.45×0.30	10374	100%	NFP
203	L.T.26	CPT / Boundary Trench	GF-60%	3.500318	5.8	17	272	3×0.45×0.30	33593	100%	NFP
205	L.T.34	CPT / Boundary Trench	GF-50%	4.79331	5.8	17	272	3×0.45×0.30	46015	100%	NFP
206	L.T.22	CPT / Boundary Trench	GF-20%	4.301009	6.5	15	240	3×0.45×0.30	36416	100%	NFP
208	L.T.27	CPT / Boundary Trench	GF-30%	1.367295	5.8	17	272	3×0.45×0.30	13127	100%	NFP
209	L.T.34	CPT / Boundary Trench	GF-50%	2.244243	6.5	15	240	3×0.45×0.30	19020	100%	NFP
210	L.T.34	CPT / Boundary Trench	GF-50%	1.474579	6.5	15	240	3×0.45×0.30	12492	100%	NFP
213	L.T.42	CPT / Boundary Trench	GF-30%	1.051688	6.5	15	240	3×0.45×0.30	8892	100%	NFP
214	L.T.33	CPT / Boundary Trench	GF-70 %	1.316804	6.5	15	240	3×0.45×0.30	11151	100%	NFP
217	L.T.31	CPT / Boundary Trench	GF-10%	2.822464	5.8	17	272	3×0.45×0.30	27101	100%	NFP
219	L.T.28	CPT / Boundary Trench	GF-30%	4.077651	5.8	17	272	3×0.45×0.30	39134	100%	NFP
220	L.T.31	CPT / Boundary Trench	GF-10%	0.774112	5.8	17	272	3×0.45×0.30	7446	100%	NFP
221	L.T.34	CPT / Boundary Trench	GF-50%	1.228676	5.8	17	272	3×0.45×0.30	11786	100%	NFP
223	L.T.30	CPT / Boundary Trench	GF-30%	1.279001	5.5	18	288	3×0.45×0.30	12986	100%	NFP

430	L.T.28	CPT / Boundary Trench	GF-30%	1.567114	6.5	15	240	3×0.45×0.30	13268	100%	NFP
551	L.T.4	CPT / Boundary Trench	GF-20%	2.907329	5.8	17	272	3×0.45×0.30	27912	50%	GF
554	L.T.43	CPT / Boundary Trench	GF-20%	2.020767	5.8	17	272	3×0.45×0.30	19408	50%	GF
557	L.T.45	CPT / Boundary Trench	GF-20%	5.385968	5.8	17	272	3×0.45×0.30	51696	50%	GF
558	L.T.5	CPT / Boundary Trench	GF-20%	2.121086	6.5	15	240	3×0.45×0.30	17961	50%	GF
560	L.T.36	CPT / Boundary Trench	GF-80%	1.166175	5.8	17	272	3×0.45×0.30	11186	50%	GF
561	L.T.5	CPT / Boundary Trench	GF-20%	1.051105	5.5	18	288	3×0.45×0.30	10692	50%	GF
562	L.T.51	CPT / Boundary Trench	GF-30%	1.087839	6.5	15	240	3×0.45×0.30	9210	50%	GF
563	L.T.39	CPT / Boundary Trench	GF-20%	8.666504	6.5	15	240	3×0.45×0.30	73397	50%	GF
564	L.T.41	CPT / Boundary Trench	GF-30%	1.05981	6.5	15	240	3×0.45×0.30	8963	50%	GF
566	L.T.41	CPT / Boundary Trench	GF-30%	1.78264	5.8	17	272	3×0.45×0.30	17114	50%	GF
571	L.T.12	CPT / Boundary Trench	GF-20%	1.060542	6.5	15	240	3×0.45×0.30	8998	50%	GF
572	L.T.9	CPT / Boundary Trench	GF-30%	2.599121	6.5	15	240	3×0.45×0.30	22019	50%	GF
576	L.T.40	CPT / Boundary Trench	GF-20%	3.033913	6.5	15	240	3×0.45×0.30	25689	50%	GF
577	L.T.42	CPT / Boundary Trench	GF-30%	1.730356	6.5	15	240	3×0.45×0.30	14644	50%	GF
582	L.T.42	CPT / Boundary Trench	GF-30%	7.062804	5.8	17	272	3×0.45×0.30	67787	50%	GF
586	L.T.32	CPT / Boundary Trench	GF-10%	1.678009	6.5	15	240	3×0.45×0.30	14221	50%	GF
588	L.T.25	CPT / Boundary Trench	GF-40%	4.235983	5.8	17	272	3×0.45×0.30	40651	50%	GF
591	L.T.30	CPT / Boundary Trench	GF-30%	3.812072	6.5	15	240	3×0.45×0.30	32288	50%	GF

681	L.T.26	CPT / Boundary Trench	GF-60%	1.79934	6.5	15	240	3×0.45×0.30	15244	50%	GF
682	L.T.29	CPT / Boundary Trench	GF-30%	2.288628	6.5	15	240	3×0.45×0.30	19373	50%	GF
683	L.T.31	CPT / Boundary Trench	GF-10%	1.079417	6.5	15	240	3×0.45×0.30	9139	50%	GF
699	L.T.17	CPT / Boundary Trench	GF-20%	3.18201	5.5	18	288	3×0.45×0.30	32323	100%	NFP
700	L.T.17	CPT / Boundary Trench	GF-20%	1.467022	5.8	17	272	3×0.45×0.30	14080	100%	NFP
705	L.T.17	CPT / Boundary Trench	GF-20%	1.236062	5.8	17	272	3×0.45×0.30	11857	50%	GF
708	L.T.17	CPT / Boundary Trench	GF-20%	1.410505	5.8	17	272	3×0.45×0.30	13550	100%	NFP
941	L.T.3	CPT / Boundary Trench	GF-80%	2.667275	5.8	17	272	3×0.45×0.30	25583	100%	NFP
943	L.T.44	CPT / Boundary Trench	GF-20%	2.144837	5.8	17	272	3×0.45×0.30	20572	100%	NFP
945	L.T.50	CPT / Boundary Trench	GF-20%	1.017155	5.8	17	272	3×0.45×0.30	9775	100%	NFP
946	L.T.50	CPT / Boundary Trench	GF-20%	1.835034	5.8	17	272	3×0.45×0.30	17608	100%	NFP
947	L.T.45	CPT / Boundary Trench	GF-20%	1.668838	5.8	17	272	3×0.45×0.30	16020	100%	NFP
948	L.T.45	CPT / Boundary Trench	GF-20%	1.588841	5.8	17	272	3×0.45×0.30	15244	100%	NFP
950	L.T.38	CPT / Boundary Trench	GF-20%	1.035518	6.5	15	240	3×0.45×0.30	8787	100%	NFP
955	L.T.53	CPT / Boundary Trench	GF-60%	1.424819	6.5	15	240	3×0.45×0.30	12068	100%	NFP
956	L.T.39	CPT / Boundary Trench	GF-20%	1.54996	5.8	17	272	3×0.45×0.30	14891	100%	NFP
957	L.T.39	CPT / Boundary Trench	GF-20%	1.392859	5.8	17	272	3×0.45×0.30	13374	100%	NFP
958	L.T.11	CPT / Boundary Trench	No Plantation Required	2.10372	5.8	17	272	3×0.45×0.30	20184	100%	NFP
959	L.T.45	CPT / Boundary Trench	GF-20%	10.640295	6.5	15	240	3×0.45×0.30	90124	100%	NFP

960	L.T.46	CPT / Boundary Trench	GF-80%	2.393766	6.5	15	240	3×0.45×0.30	20290	100%	NFP
961	L.T.15	CPT / Boundary Trench	GF-80%	1.139322	5.8	17	272	3×0.45×0.30	10939	100%	NFP
962	L.T.38	CPT / Boundary Trench	GF-20%	5.520051	5.8	17	272	3×0.45×0.30	52966	100%	NFP
963	L.T.10	CPT / Boundary Trench	GF-20%	1.109758	5.8	17	272	3×0.45×0.30	10657	100%	NFP
964	L.T.10	CPT / Boundary Trench	GF-20%	1.272471	6.5	15	240	3×0.45×0.30	10763	100%	NFP
965	L.T.41	CPT / Boundary Trench	GF-30%	6.188678	5.8	17	272	3×0.45×0.30	59388	100%	NFP
968	L.T.18	CPT / Boundary Trench	GF-20%	5.060656	5.8	17	272	3×0.45×0.30	48555	100%	NFP
969	L.T.46	CPT / Boundary Trench	GF-80%	2.139066	5.8	17	272	3×0.45×0.30	20537	100%	NFP
970	L.T.46	CPT / Boundary Trench	GF-80%	14.723217	5.8	17	272	3×0.45×0.30	141325	100%	NFP
971	L.T.46	CPT / Boundary Trench	GF-80%	1.238834	5.8	17	272	3×0.45×0.30	11892	100%	NFP
973	L.T.50	CPT / Boundary Trench	GF-20%	1.369266	5.8	17	272	3×0.45×0.30	13127	100%	NFP
974	L.T.52	CPT / Boundary Trench	GF-30%	1.350483	5.8	17	272	3×0.45×0.30	12950	100%	NFP
975	L.T.53	CPT / Boundary Trench	GF-60%	1.11782	5.8	17	272	3×0.45×0.30	10727	100%	NFP
976	L.T.53	CPT / Boundary Trench	GF-60%	3.226739	5.8	17	272	3×0.45×0.30	30982	100%	NFP
977	L.T.16	CPT / Boundary Trench	GF-20%	1.107897	6.5	15	240	3×0.45×0.30	9386	100%	NFP
978	L.T.16	CPT / Boundary Trench	GF-20%	1.488195	5.8	17	272	3×0.45×0.30	14291	100%	NFP
979	L.T.40	CPT / Boundary Trench	GF-20%	2.043945	5.8	17	272	3×0.45×0.30	19620	100%	NFP
980	L.T.15	CPT / Boundary Trench	GF-80%	12.245056	5.8	17	272	3×0.45×0.30	117542	100%	NFP
981	L.T.15	CPT / Boundary Trench	GF-80%	2.215383	5.8	17	272	3×0.45×0.30	21278	100%	NFP

982	L.T.40	CPT / Boundary Trench	GF-20%	2.806522	5.5	18	288	3×0.45×0.30	28512	100%	NFP
983	L.T.7	CPT / Boundary Trench	GF-20%	3.167238	5.8	17	272	3×0.45×0.30	30382	100%	NFP
984	L.T.9	CPT / Boundary Trench	GF-30%	1.067249	5.8	17	272	3×0.45×0.30	10233	100%	NFP
986	L.T.16	CPT / Boundary Trench	GF-20%	3.176046	5.8	17	272	3×0.45×0.30	30488	100%	NFP
987	L.T.13	CPT / Boundary Trench	GF-20%	0.913158	6.5	15	240	3×0.45×0.30	7728	100%	NFP
989	L.T.42	CPT / Boundary Trench	GF-30%	1.398882	5.5	18	288	3×0.45×0.30	14221	100%	NFP
990	L.T.40	CPT / Boundary Trench	GF-20%	1.02226	5.5	18	288	3×0.45×0.30	10374	100%	NFP
991	L.T.40	CPT / Boundary Trench	GF-20%	1.631577	5.8	17	272	3×0.45×0.30	15668	100%	NFP
993	L.T.35	CPT / Boundary Trench	GF-20%	2.29901	6.5	15	240	3×0.45×0.30	19479	100%	NFP
994	L.T.19	CPT / Boundary Trench	GF-30%	1.125062	5.8	17	272	3×0.45×0.30	10798	100%	NFP
995	L.T.19	CPT / Boundary Trench	GF-30%	1.617749	5.8	17	272	3×0.45×0.30	15526	100%	NFP
996	L.T.17	CPT / Boundary Trench	GF-20%	1.952098	5.8	17	272	3×0.45×0.30	18738	100%	NFP
998	L.T.42	CPT / Boundary Trench	GF-30%	3.50909	6.5	15	240	3×0.45×0.30	29712	100%	NFP
999	L.T.5	CPT / Boundary Trench	GF-20%	2.390822	5.8	17	272	3×0.45×0.30	22937	100%	NFP
1000	L.T.5	CPT / Boundary Trench	GF-20%	1.545385	5.8	17	272	3×0.45×0.30	14821	100%	NFP
1001	L.T.8	CPT / Boundary Trench	GF-50%	6.236845	5.8	17	272	3×0.45×0.30	59847	100%	NFP
1002	L.T.42	CPT / Boundary Trench	GF-30%	1.33986	6.5	15	240	3×0.45×0.30	11362	100%	NFP
1003	L.T.5	CPT / Boundary Trench	GF-20%	1.989142	6.5	15	240	3×0.45×0.30	16832	100%	NFP
1004	L.T.6	CPT / Boundary Trench	NFP	3.815513	6.5	15	240	3×0.45×0.30	32323	100%	NFP

1005	L.T.7	CPT / Boundary Trench	GF-20%	3.479716	6.5	15	240	3×0.45×0.30	29465	100%	NFP
1006	L.T.8	CPT / Boundary Trench	GF-50%	10.304561	6.5	15	240	3×0.45×0.30	87265	100%	NFP
1007	L.T.8	CPT / Boundary Trench	GF-50%	2.252136	6.5	15	240	3×0.45×0.30	19090	100%	NFP
1008	L.T.42	CPT / Boundary Trench	GF-30%	4.754567	5.8	17	272	3×0.45×0.30	45626	100%	NFP
1009	L.T.42	CPT / Boundary Trench	GF-30%	1.59866	6.5	15	240	3×0.45×0.30	13550	100%	NFP
1010	L.T.21	CPT / Boundary Trench	GF-30%	2.163014	6.5	15	240	3×0.45×0.30	18314	100%	NFP
1013	L.T.17	CPT / Boundary Trench	GF-20%	3.99826	5.8	17	272	3×0.45×0.30	38393	100%	NFP
1014	L.T.17	CPT / Boundary Trench	GF-20%	1.366763	5.8	17	272	3×0.45×0.30	13127	100%	NFP
1017	L.T.42	CPT / Boundary Trench	GF-30%	1.392613	5.8	17	272	3×0.45×0.30	13374	100%	NFP
1018	L.T.9	CPT / Boundary Trench	GF-30%	1.704249	5.8	17	272	3×0.45×0.30	16373	100%	NFP
1019	L.T.9	CPT / Boundary Trench	GF-30%	4.040752	5.8	17	272	3×0.45×0.30	38781	100%	NFP
1020	L.T.10	CPT / Boundary Trench	GF-20%	1.045039	5.8	17	272	3×0.45×0.30	10022	100%	NFP
1021	L.T.10	CPT / Boundary Trench	GF-20%	2.923321	5.8	17	272	3×0.45×0.30	28053	100%	NFP
1022	L.T.10	CPT / Boundary Trench	GF-20%	2.225837	5.8	17	272	3×0.45×0.30	21349	100%	NFP
1023	L.T.12	CPT / Boundary Trench	GF-20%	2.74097	5.8	17	272	3×0.45×0.30	26324	100%	NFP
1024	L.T.12	CPT / Boundary Trench	GF-20%	1.116228	5.8	17	272	3×0.45×0.30	10727	100%	NFP
1025	L.T.13	CPT / Boundary Trench	GF-20%	3.83626	5.8	17	272	3×0.45×0.30	36805	100%	NFP
1026	L.T.20	CPT / Boundary Trench	GF-20%	3.099761	5.8	17	272	3×0.45×0.30	29747	100%	NFP
1027	L.T.20	CPT / Boundary Trench	GF-20%	1.323458	5.8	17	272	3×0.45×0.30	12703	100%	NFP

1028	L.T.21	CPT / Boundary Trench	GF-30%	2.897279	5.8	17	272	3×0.45×0.30	27806	100%	NFP
1029	L.T.22	CPT / Boundary Trench	GF-20%	7.117077	5.8	17	272	3×0.45×0.30	68316	100%	NFP
1035	L.T.21	CPT / Boundary Trench	GF-30%	1.025875	5.5	18	288	3×0.45×0.30	10410	100%	NFP
1036	L.T.24	CPT / Boundary Trench	GF-30%	3.535279	5.8	17	272	3×0.45×0.30	33946	100%	NFP
1037	L.T.27	CPT / Boundary Trench	GF-30%	4.917568	5.8	17	272	3×0.45×0.30	47214	100%	NFP
1038	L.T.29	CPT / Boundary Trench	GF-30%	1.750102	5.8	17	272	3×0.45×0.30	16797	100%	NFP
1039	L.T.32	CPT / Boundary Trench	GF-10%	1.204645	5.8	17	272	3×0.45×0.30	11574	100%	NFP
1040	L.T.33	CPT / Boundary Trench	GF-70 %	5.100659	5.8	17	272	3×0.45×0.30	48943	100%	NFP
1041	L.T.30	CPT / Boundary Trench	GF-30%	4.093108	5.8	17	272	3×0.45×0.30	39275	100%	NFP
1044	L.T.30	CPT / Boundary Trench	GF-30%	1.207128	5.8	17	272	3×0.45×0.30	11574	100%	NFP
1413	L.T.2	CPT / Boundary Trench	GF-30%	0.839558	6.5	15	240	3×0.45×0.30	7093	100%	NFP
1414	L.T.2	CPT / Boundary Trench	GF-30%	11.055826	6.5	15	240	3×0.45×0.30	93617	100%	NFP
1415	L.T.3	CPT / Boundary Trench	GF-80%	16.686376	6.5	15	240	3×0.45×0.30	141325	100%	NFP
1416	L.T.4	CPT / Boundary Trench	GF-20%	12.571833	6.5	15	240	3×0.45×0.30	106462	100%	NFP
1417	L.T.4	CPT / Boundary Trench	GF-20%	1.081219	6.5	15	240	3×0.45×0.30	9139	100%	NFP
1418	L.T.4	CPT / Boundary Trench	GF-20%	1.164919	6.5	15	240	3×0.45×0.30	9880	100%	NFP
1419	L.T.4	CPT / Boundary Trench	GF-20%	1.572637	6.5	15	240	3×0.45×0.30	13303	100%	NFP
1420	L.T.5	CPT / Boundary Trench	GF-20%	2.162533	6.5	15	240	3×0.45×0.30	18314	100%	NFP
1421	L.T.10	CPT / Boundary Trench	GF-20%	4.452014	6.5	15	240	3×0.45×0.30	37687	100%	NFP

1422	L.T.11	CPT / Boundary Trench	No Plantation Required	8.40364	6.5	15	240	3×0.45×0.30	71174	100%	NFP
1423	L.T.12	CPT / Boundary Trench	GF-20%	1.014656	6.5	15	240	3×0.45×0.30	8610	100%	NFP
1424	L.T.15	CPT / Boundary Trench	GF-80%	1.492369	6.5	15	240	3×0.45×0.30	12633	100%	NFP
1425	L.T.16	CPT / Boundary Trench	GF-20%	2.614341	6.5	15	240	3×0.45×0.30	22125	100%	NFP
1426	L.T.37	CPT / Boundary Trench	GF-20%	1.94316	6.5	15	240	3×0.45×0.30	16444	100%	NFP
1427	L.T.43	CPT / Boundary Trench	GF-20%	1.147667	6.5	15	240	3×0.45×0.30	9704	100%	NFP
1428	L.T.47	CPT / Boundary Trench	GF-20%	9.263907	6.5	15	240	3×0.45×0.30	78444	100%	NFP
1429	L.T.47	CPT / Boundary Trench	GF-20%	1.096559	6.5	15	240	3×0.45×0.30	9281	100%	NFP
1430	L.T.50	CPT / Boundary Trench	GF-20%	1.410033	6.5	15	240	3×0.45×0.30	11927	100%	NFP
1431	L.T.55	CPT / Boundary Trench	GF-30%	5.035895	6.5	15	240	3×0.45×0.30	42662	100%	NFP
1734	L.T.50	CPT / Boundary Trench	GF-20%	3.093601	6.5	15	240	3×0.45×0.30	26183	50%	GF
1735	L.T.50	CPT / Boundary Trench	GF-20%	2.282778	5.8	17	272	3×0.45×0.30	21913	50%	GF
1736	L.T.50	CPT / Boundary Trench	GF-20%	3.085056	5.8	17	272	3×0.45×0.30	29606	50%	GF
1737	L.T.50	CPT / Boundary Trench	GF-20%	2.769331	5.8	17	272	3×0.45×0.30	26571	50%	GF
1738	L.T.37	CPT / Boundary Trench	GF-20%	5.310716	5.8	17	272	3×0.45×0.30	50990	50%	GF
1739	L.T.55	CPT / Boundary Trench	GF-30%	1.100918	5.8	17	272	3×0.45×0.30	10551	50%	GF
1741	L.T.53	CPT / Boundary Trench	GF-60%	3.864045	6.5	15	240	3×0.45×0.30	32711	50%	GF
1743	L.T.41	CPT / Boundary Trench	GF-30%	1.929723	5.8	17	272	3×0.45×0.30	18526	50%	GF
1744	L.T.39	CPT / Boundary Trench	GF-20%	2.001009	5.8	17	272	3×0.45×0.30	19196	50%	GF

1745	L.T.10	CPT / Boundary Trench	GF-20%	1.826574	5.8	17	272	3×0.45×0.30	17538	50%	GF
1746	L.T.36	CPT / Boundary Trench	GF-80%	4.193479	6.5	15	240	3×0.45×0.30	35499	50%	GF
1747	L.T.36	CPT / Boundary Trench	GF-80%	0.996251	6.5	15	240	3×0.45×0.30	8434	50%	GF
1748	L.T.45	CPT / Boundary Trench	GF-20%	2.698663	6.5	15	240	3×0.45×0.30	22866	50%	GF
1749	L.T.46	CPT / Boundary Trench	GF-80%	1.281801	6.5	15	240	3×0.45×0.30	10868	50%	GF
1750	L.T.46	CPT / Boundary Trench	GF-80%	1.172406	6.5	15	240	3×0.45×0.30	9916	50%	GF
1751	L.T.38	CPT / Boundary Trench	GF-20%	3.011552	5.8	17	272	3×0.45×0.30	28900	50%	GF
1752	L.T.38	CPT / Boundary Trench	GF-20%	3.013061	5.8	17	272	3×0.45×0.30	28936	50%	GF
1753	L.T.39	CPT / Boundary Trench	GF-20%	1.534776	5.8	17	272	3×0.45×0.30	14715	50%	GF
1754	L.T.39	CPT / Boundary Trench	GF-20%	2.722606	5.8	17	272	3×0.45×0.30	26148	50%	GF
1755	L.T.10	CPT / Boundary Trench	GF-20%	3.023662	5.8	17	272	3×0.45×0.30	29006	50%	GF
1756	L.T.41	CPT / Boundary Trench	GF-30%	2.557032	6.5	15	240	3×0.45×0.30	21666	50%	GF
1757	L.T.41	CPT / Boundary Trench	GF-30%	4.057733	5.8	17	272	3×0.45×0.30	38957	50%	GF
1761	L.T.18	CPT / Boundary Trench	GF-20%	1.192757	5.8	17	272	3×0.45×0.30	11433	50%	GF
1762	L.T.35	CPT / Boundary Trench	GF-20%	3.497485	5.8	17	272	3×0.45×0.30	33558	50%	GF
1763	L.T.36	CPT / Boundary Trench	GF-80%	6.084286	5.8	17	272	3×0.45×0.30	58400	50%	GF
1764	L.T.36	CPT / Boundary Trench	GF-80%	1.244835	5.8	17	272	3×0.45×0.30	11962	50%	GF
1765	L.T.46	CPT / Boundary Trench	GF-80%	6.407181	5.8	17	272	3×0.45×0.30	61506	50%	GF
1766	L.T.46	CPT / Boundary Trench	GF-80%	1.754995	5.8	17	272	3×0.45×0.30	16832	50%	GF

1767	L.T.49	CPT / Boundary Trench	GF-20%	3.377611	5.8	17	272	3×0.45×0.30	32429	50%	GF
1768	L.T.50	CPT / Boundary Trench	GF-20%	1.798189	5.8	17	272	3×0.45×0.30	17255	50%	GF
1769	L.T.50	CPT / Boundary Trench	GF-20%	2.210827	5.8	17	272	3×0.45×0.30	21208	50%	GF
1770	L.T.50	CPT / Boundary Trench	GF-20%	2.862634	5.8	17	272	3×0.45×0.30	27489	50%	GF
1771	L.T.50	CPT / Boundary Trench	GF-20%	4.536659	5.8	17	272	3×0.45×0.30	43544	50%	GF
1772	L.T.51	CPT / Boundary Trench	GF-30%	3.026261	5.8	17	272	3×0.45×0.30	29041	50%	GF
1773	L.T.51	CPT / Boundary Trench	GF-30%	7.689543	5.8	17	272	3×0.45×0.30	73821	50%	GF
1774	L.T.52	CPT / Boundary Trench	GF-30%	2.264935	5.8	17	272	3×0.45×0.30	21737	50%	GF
1775	L.T.53	CPT / Boundary Trench	GF-60%	1.216746	5.8	17	272	3×0.45×0.30	11680	50%	GF
1776	L.T.55	CPT / Boundary Trench	GF-30%	4.333499	5.8	17	272	3×0.45×0.30	41604	50%	GF
1777	L.T.55	CPT / Boundary Trench	GF-30%	2.799377	5.8	17	272	3×0.45×0.30	26854	50%	GF
1778	L.T.55	CPT / Boundary Trench	GF-30%	2.437523	5.8	17	272	3×0.45×0.30	23395	50%	GF
1779	L.T.55	CPT / Boundary Trench	GF-30%	1.312209	5.8	17	272	3×0.45×0.30	12598	50%	GF
1780	L.T.35	CPT / Boundary Trench	GF-20%	3.500019	5.8	17	272	3×0.45×0.30	33593	50%	GF
1781	L.T.12	CPT / Boundary Trench	GF-20%	2.029161	5.8	17	272	3×0.45×0.30	19479	50%	GF
1782	L.T.16	CPT / Boundary Trench	GF-20%	1.927504	5.8	17	272	3×0.45×0.30	18491	50%	GF
1784	L.T.12	CPT / Boundary Trench	GF-20%	4.090896	6.5	15	240	3×0.45×0.30	34652	50%	GF
1785	L.T.16	CPT / Boundary Trench	GF-20%	2.664772	5.8	17	272	3×0.45×0.30	25583	50%	GF
1788	L.T.16	CPT / Boundary Trench	GF-20%	1.896181	5.8	17	272	3×0.45×0.30	18208	50%	GF

1789	L.T.35	CPT / Boundary Trench	GF-20%	6.091304	5.8	17	272	3×0.45×0.30	58471	50%	GF
1790	L.T.13	CPT / Boundary Trench	GF-20%	1.238611	6.5	15	240	3×0.45×0.30	10480	50%	GF
1792	L.T.35	CPT / Boundary Trench	GF-20%	3.703357	6.5	15	240	3×0.45×0.30	31370	50%	GF
1793	L.T.35	CPT / Boundary Trench	GF-20%	6.118069	6.5	15	240	3×0.45×0.30	51802	50%	GF
1794	L.T.35	CPT / Boundary Trench	GF-20%	1.553923	6.5	15	240	3×0.45×0.30	13162	50%	GF
1795	L.T.18	CPT / Boundary Trench	GF-20%	3.558681	6.5	15	240	3×0.45×0.30	30135	50%	GF
1796	L.T.42	CPT / Boundary Trench	GF-30%	6.44247	6.5	15	240	3×0.45×0.30	54554	50%	GF
1798	L.T.5	CPT / Boundary Trench	GF-20%	6.157831	5.8	17	272	3×0.45×0.30	59106	50%	GF
1799	L.T.5	CPT / Boundary Trench	GF-20%	9.874763	5.8	17	272	3×0.45×0.30	94782	50%	GF
1801	L.T.42	CPT / Boundary Trench	GF-30%	2.692433	6.5	15	240	3×0.45×0.30	22796	50%	GF
1802	L.T.14	CPT / Boundary Trench	GF-30%	4.971598	6.5	15	240	3×0.45×0.30	42098	50%	GF
1806	L.T.42	CPT / Boundary Trench	GF-30%	6.49356	5.8	17	272	3×0.45×0.30	62317	50%	GF
1807	L.T.42	CPT / Boundary Trench	GF-30%	1.105243	5.5	18	288	3×0.45×0.30	11221	50%	GF
1811	L.T.22	CPT / Boundary Trench	GF-20%	1.419493	5.8	17	272	3×0.45×0.30	13621	50%	GF
1813	L.T.12	CPT / Boundary Trench	GF-20%	4.433878	5.8	17	272	3×0.45×0.30	42556	50%	GF
1814	L.T.13	CPT / Boundary Trench	GF-20%	4.781067	5.8	17	272	3×0.45×0.30	45873	50%	GF
1815	L.T.13	CPT / Boundary Trench	GF-20%	1.05429	5.8	17	272	3×0.45×0.30	10127	50%	GF
1816	L.T.14	CPT / Boundary Trench	GF-30%	6.375596	5.8	17	272	3×0.45×0.30	61188	50%	GF
1817	L.T.21	CPT / Boundary Trench	GF-30%	4.997823	5.8	17	272	3×0.45×0.30	47955	50%	GF

1823	L.T.32	CPT / Boundary Trench	GF-10%	5.190489	5.8	17	272	3×0.45×0.30	49826	50%	GF
1824	L.T.32	CPT / Boundary Trench	GF-10%	3.047594	5.8	17	272	3×0.45×0.30	29253	50%	GF
1825	L.T.32	CPT / Boundary Trench	GF-10%	1.953485	5.8	17	272	3×0.45×0.30	18738	50%	GF
2045	L.T.4	CPT / Boundary Trench	GF-20%	1.920681	6.5	15	240	3×0.45×0.30	16267	50%	GF
2046	L.T.4	CPT / Boundary Trench	GF-20%	1.000075	6.5	15	240	3×0.45×0.30	8469	50%	GF
2047	L.T.4	CPT / Boundary Trench	GF-20%	5.586564	6.5	15	240	3×0.45×0.30	47320	50%	GF
2048	L.T.5	CPT / Boundary Trench	GF-20%	1.952283	6.5	15	240	3×0.45×0.30	16550	50%	GF
2049	L.T.5	CPT / Boundary Trench	GF-20%	1.850667	6.5	15	240	3×0.45×0.30	15668	50%	GF
2050	L.T.10	CPT / Boundary Trench	GF-20%	7.256068	6.5	15	240	3×0.45×0.30	61435	50%	GF
2051	L.T.10	CPT / Boundary Trench	GF-20%	1.114868	6.5	15	240	3×0.45×0.30	9457	50%	GF
2052	L.T.16	CPT / Boundary Trench	GF-20%	7.502328	6.5	15	240	3×0.45×0.30	63552	50%	GF
2053	L.T.16	CPT / Boundary Trench	GF-20%	5.562333	6.5	15	240	3×0.45×0.30	47108	50%	GF
2054	L.T.16	CPT / Boundary Trench	GF-20%	1.538506	6.5	15	240	3×0.45×0.30	13021	50%	GF
2055	L.T.25	CPT / Boundary Trench	GF-40%	2.899977	6.5	15	240	3×0.45×0.30	24560	50%	GF
2056	L.T.37	CPT / Boundary Trench	GF-20%	1.824292	6.5	15	240	3×0.45×0.30	15456	50%	GF
2057	L.T.37	CPT / Boundary Trench	GF-20%	1.015	6.5	15	240	3×0.45×0.30	8610	50%	GF
2058	L.T.37	CPT / Boundary Trench	GF-20%	2.456013	6.5	15	240	3×0.45×0.30	20784	50%	GF
2059	L.T.38	CPT / Boundary Trench	GF-20%	7.898877	6.5	15	240	3×0.45×0.30	66905	50%	GF
2060	L.T.39	CPT / Boundary Trench	GF-20%	2.598502	6.5	15	240	3×0.45×0.30	22019	50%	GF

2061	L.T.41	CPT / Boundary Trench	GF-30%	6.674403	6.5	15	240	3×0.45×0.30	56530	50%	GF
2062	L.T.43	CPT / Boundary Trench	GF-20%	12.458181	6.5	15	240	3×0.45×0.30	105509	50%	GF
2063	L.T.43	CPT / Boundary Trench	GF-20%	2.831934	6.5	15	240	3×0.45×0.30	23995	50%	GF
2064	L.T.44	CPT / Boundary Trench	GF-20%	7.834268	6.5	15	240	3×0.45×0.30	66340	50%	GF
2065	L.T.47	CPT / Boundary Trench	GF-20%	6.827874	6.5	15	240	3×0.45×0.30	57836	50%	GF
2066	L.T.47	CPT / Boundary Trench	GF-20%	1.780688	6.5	15	240	3×0.45×0.30	15068	50%	GF
2067	L.T.50	CPT / Boundary Trench	GF-20%	2.067674	6.5	15	240	3×0.45×0.30	17502	50%	GF
2068	L.T.50	CPT / Boundary Trench	GF-20%	9.93535	6.5	15	240	3×0.45×0.30	84125	50%	GF
2069	L.T.51	CPT / Boundary Trench	GF-30%	3.329945	6.5	15	240	3×0.45×0.30	28195	50%	GF
2070	L.T.55	CPT / Boundary Trench	GF-30%	2.033454	6.5	15	240	3×0.45×0.30	17220	50%	GF
2071	L.T.55	CPT / Boundary Trench	GF-30%	1.718012	6.5	15	240	3×0.45×0.30	14538	50%	GF
2072	L.T.55	CPT / Boundary Trench	GF-30%	1.845615	6.5	15	240	3×0.45×0.30	15632	50%	GF
2073	L.T.55	CPT / Boundary Trench	GF-30%	1.23885	6.5	15	240	3×0.45×0.30	10480	50%	GF
2136	L.T.17	CPT / Boundary Trench	GF-20%	1.179997	6.5	15	240	3×0.45×0.30	9986	50%	GF

(5) Gourangdih Beat (Kashipur range)

Drainage Line Treatment Measures Open Map

5.1.1 Loose Boulder Check Dam- Gourangdih Beat (Kashipur range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
358	DLT-1	2A2D5q2	1	23.3894	86.6553	8.0	1.20	0.6	2.40	0.40	65540.39
359	DLT-2	2A2D5q2	1	23.3894	86.6551	8.0	1.20	0.6	2.40	0.40	65542.37
360	DLT-3	2A2D5q2	4	23.3904	86.655	4.0	0.75	0.4	1.50	0.20	12004.83
368	DLT-11	2A2D5q2	1	23.394	86.6551	5.0	0.60	0.4	1.30	0.20	11425.74
371	DLT-14	2A2D5q2	1	23.3934	86.6564	3.0	0.60	0.4	1.30	0.20	6855.65
372	DLT-15	2A2D5q2	1	23.3935	86.6571	3.0	0.60	0.4	1.30	0.20	6855.85
377	DLT-20	2A2D5q2	1	23.3909	86.6614	5.0	1.20	0.6	2.40	0.40	40970.16
380	DLT-23*	2A2D5j4	1	23.45	86.6647	7.0	1.00	0.5	2.00	0.30	38423.94
381	DLT-24	2A2D5q7 /	1	23.3365	86.6422	5.0	1.00	0.5	2.00	0.30	27446.45
382	DLT-25	2A2D5q7	1	23.3365	86.6425	5.0	1.20	0.6	2.40	0.40	40976.34
383	DLT-26	2A2D5q7	1	23.3364	86.6419	5.0	1.00	0.5	2.00	0.30	27447.99
384	DLT-27	2A2D5q7	1	23.3488	86.6474	5.0	1.20	0.6	2.40	0.40	40978.81
385	DLT-28	2A2D5q7	1	23.3492	86.6468	5.0	1.20	0.6	2.40	0.40	40980.05
386	DLT-29*	2A2D5q7	1	23.3475	86.647	5.0	1.20	0.6	2.40	0.40	40981.29
389	DLT-32*	2A2D5j4	1	23.45	86.6647	7.0	1.00	0.5	2.00	0.30	38433.68
390	DLT-33	2A2D5q7	1	23.3365	86.6422	5.0	1.00	0.5	2.00	0.30	27453.40
391	DLT-34	2A2D5q7	1	23.3365	86.6425	5.0	1.20	0.6	2.40	0.40	40987.47
392	DLT-35	2A2D5q7	1	23.3364	86.6419	5.0	1.00	0.5	2.00	0.30	27454.94
393	DLT-36	2A2D5q7	1	23.3488	86.6474	5.0	1.20	0.6	2.40	0.40	40989.94
394	DLT-37	2A2D5q7*	1	23.3492	86.6468	5.0	1.20	0.6	2.40	0.40	40991.17
395	DLT-38	2A2D5q7*	1	23.3475	86.647	5.0	1.20	0.6	2.40	0.40	40992.41
396	DLT-39	2A2D5r3*	1	23.4079	86.6313	4.0	1.00	0.5	2.00	0.30	21966.43

397	DLT-40	2A2D5r3*	1	23.4082	86.6306	5.0	1.00	0.5	2.00	0.30	27458.81
362	DLT-5	2A2D5q2	1	23.39047	86.66218	4.0	0.75	0.4	1.50	0.20	11968.99
364	DLT-7	2A2D5q2	1	23.39068	86.66269	3.0	1.00	0.5	2.00	0.30	16412.25
365	DLT-8	2A2D5q2	1	23.39055	86.66271	4.0	1.00	0.5	2.00	0.30	21884.23
366	DLT-9	2A2D5q2	1	23.39029	86.66309	4.0	1.00	0.5	2.00	0.30	21885.47
367	DLT-10	2A2D5q2	1	23.39001	86.66321	4.0	1.20	0.6	2.40	0.40	32667.36
361	DLT-4	2A2D5q2	1	23.39036	86.66161	5.0	1.20	0.6	2.40	0.40	40836.67
374	DLT-17	2A2D5q2	1	23.39139	86.66076	4.0	1.00	0.5	2.00	0.30	21889.18
375	DLT-18	2A2D5q2	1	23.39167	86.66072	5.0	1.00	0.5	2.00	0.30	27363.02
373	DLT-16	2A2D5q2	1	23.39349	86.65736	3.0	1.00	0.5	2.00	0.30	16418.74
376	DLT-19	2A2D5q2	1	23.39186	86.66135	5.0	1.00	0.5	2.00	0.30	27383.10
369	DLT-12	2A2D5q2	1	23.39227	86.65601	7.0	1.00	0.5	2.00	0.30	38347.34
370	DLT-13	2A2D5q2	1	23.39344	86.65674	4.0	0.75	0.4	1.50	0.20	11985.57

* Outside shapefile boundary of the Beat. Shapefile Boundary or proposed DLT Lat-Long. need to verify.

5.1.2 Gabion Check Dam Gourangdih Beat (Kashipur range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
378	DLT-21	2A2D5j4	1	23.45004	86.79681	12.5	1.8	1.0	0.60	6	2.80	1.0	0.60	416090.10
379	DLT-22	2A2D5j4	1	23.45014	86.79757	12.5	1.5	1.0	0.50	6	2.50	1.0	0.50	414210.87
387	DLT-30	2A2D5j4	1	23.45004	86.79681	12.5	1.8	1.0	0.60	6	2.80	1.0	0.60	416090.10
388	DLT-31	2A2D5j4	1	23.45014	86.79757	12.5	1.5	1.0	0.50	6	2.50	1.0	0.50	414210.87

5.2.1 Land Treatment and Forest Plantation measures- Gourangdih Beat (Kashipur range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
83	L- 3	CCT	GF-30%	2.829549	6.5	15	240	3×0.45×0.45	35940	100%	NFP
84	L- 4	CCT	GF-40%	5.822677	6.5	15	240	3×0.45×0.45	73944	100%	NFP
85	L-5	CCT	GF-20%	3.757452	6.5	15	240	3×0.45×0.45	47744	100%	NFP
135	L-1	CCT	GF-30%	1.565789	5.8	17	272	3×0.45×0.30	15032	100%	NFP
416	L-5	CCT	GF-20%	1.741301	6.5	15	240	3×0.45×0.30	14750	100%	NFP
467	L-6	CCT	GF-30%	3.475488	6.5	15	240	3×0.45×0.30	29430	80%	GF
511	L- 4	CCT	GF-40%	1.23223	6.5	15	240	3×0.45×0.45	15668	50%	GF
717	L-1	CCT	GF-30%	1.312363	5.8	17	272	3×0.45×0.45	18896	100%	NFP
718	L-1	CCT	GF-30%	3.863446	5.8	17	272	3×0.45×0.45	55630	100%	NFP
823	L-1	CCT	GF-30%	1.074263	6.5	15	240	3×0.45×0.45	13656	100%	NFP
927	L- 2	CCT	NFP	2.179145	5.8	17	272	3×0.45×0.30	20925	100%	NFP
928	L- 2	CCT	NFP	1.835062	5.8	17	272	3×0.45×0.30	17608	100%	NFP
929	L-1	CCT	GF-30%	3.432465	6.5	15	240	3×0.45×0.30	29077	100%	NFP
930	L-1	CCT	GF-30%	2.631317	5.8	17	272	3×0.45×0.30	25266	100%	NFP
931	L-1	CCT	GF-30%	1.676462	5.8	17	272	3×0.45×0.30	16091	100%	NFP
932	L-1	CCT	GF-30%	4.330561	5.8	17	272	3×0.45×0.30	41568	100%	NFP
933	L-1	CCT	GF-30%	2.710325	5.8	17	272	3×0.45×0.30	26007	100%	NFP
1343	L-1	CCT	GF-30%	7.082645	6.5	15	240	3×0.45×0.30	59988	100%	NFP
1344	L-1	CCT	GF-30%	1.031862	6.5	15	240	3×0.45×0.30	8751	100%	NFP
1345	L-1	CCT	GF-30%	3.2362	6.5	15	240	3×0.45×0.30	27418	100%	NFP
1346	L-1	CCT	GF-30%	1.164846	6.5	15	240	3×0.45×0.30	9880	100%	NFP
1347	L-1	CCT	GF-30%	1.162284	6.5	15	240	3×0.45×0.30	9845	100%	NFP
1348	L- 2	CCT	NFP	4.734618	6.5	15	240	3×0.45×0.30	40086	100%	NFP
1612	L-6	CCT	GF-30%	1.530537	5.8	17	272	3×0.45×0.45	22019	50%	GF
1660	L-6	CCT	GF-30%	1.244253	6.5	15	240	3×0.45×0.45	15826	50%	GF
1718	L-1	CCT	GF-30%	4.196897	5.8	17	272	3×0.45×0.30	40298	50%	GF
1720	L-1	CCT	GF-30%	1.040107	5.8	17	272	3×0.45×0.30	9986	50%	GF
1721	L-1	CCT	GF-30%	3.897321	5.8	17	272	3×0.45×0.30	37404	50%	GF

1722	L-1	CCT	GF-30%	1.271696	5.8	17	272	3×0.45×0.30	12209	50%	GF
1723	L-1	CCT	GF-30%	1.176235	5.8	17	272	3×0.45×0.30	11292	50%	GF
1983	L-1	CCT	GF-30%	4.366056	6.5	15	240	3×0.45×0.30	36981	50%	GF
1984	L-1	CCT	GF-30%	2.231399	6.5	15	240	3×0.45×0.30	18914	50%	GF
1985	L-1	CCT	GF-30%	1.671131	6.5	15	240	3×0.45×0.30	14150	50%	GF
1986	L-1	CCT	GF-30%	6.211158	6.5	15	240	3×0.45×0.30	52613	50%	GF
1987	L-1	CCT	GF-30%	12.110422	6.5	15	240	3×0.45×0.30	102580	50%	GF
1988	L-1	CCT	GF-30%	2.0199	6.5	15	240	3×0.45×0.30	17114	50%	GF
1989	L- 2	CCT	NFP	0.509689	6.5	15	240	3×0.45×0.30	4305	50%	GF

(6) Kashipur Beat (Kashipur range)

Drainage Line Treatment Measures Open Map

6.1.1 Loose Boulder Check Dam- Kashipur Beat (Kashipur range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
352	DLT-3	2A2D5r1	1	23.4259	86.6563	5.0	0.60	0.4	1.30	0.20	11423.06
353	DLT-4	2A2D5r1	1	23.426	86.6559	5.0	0.60	0.4	1.30	0.20	11423.40
355	DLT-6	2A2D5r7 / 2A2D5r2	1	23.4408	86.5955	8.0	0.75	0.4	1.50	0.20	24006.57
357	DLT-8	2A2D5r2	1	23.429	86.6242	8.0	1.20	0.6	2.40	0.40	65538.42
351	DLT-2	2A2D5r1*	1	23.4259	86.6567	7.0	0.75	0.4	1.50	0.20	20975.56

*Outside shapefile boundary of the Beat. Shapefile Boundary or proposed DLT Lat-Long. need to verify.

6.1.2 Gabion Check Kashipur Beat (Kashipur range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
354	DLT-5	2A2D5r1	1	23.42569	86.6553	6	1	0.40	36706.78

6.1.3 Gabion Check Dam Kashipur Beat (Kashipur range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
356	DLT-7	2A2D5r2	1	23.42918	86.62307	12.5	1.5	1.0	0.50	6	2.50	1.0	0.50	414210.87

6.2.1 Land Treatment and Forest Plantation measures- Kashipur Beat (Kashipur range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
81	L-2	CST	NFP	4.98276	6.5	15	240	3×0.45×0.45	63305	100%	NFP
82	L-6	CST	NFP	4.096821	6.5	15	240	3×0.45×0.45	52031	100%	NFP
510	L-5	CST	NFP	2.875839	6.5	15	240	3×0.45×0.45	36522	50%	GF
819	L-1	Encroachment	Encroachment	2.766832	6.5	15	240	3×0.45×0.45	35146	100%	NFP
820	L-3	CST	GF-50%	3.303522	6.5	15	240	3×0.45×0.45	41974	100%	NFP
821	L-4	CST	GF-50%	6.918582	6.5	15	240	3×0.45×0.45	87865	100%	NFP
822	L-5	CST	NFP	3.189238	6.5	15	240	3×0.45×0.45	40492	100%	NFP
1610	L-4	CST	GF-50%	2.41321	5.8	17	272	3×0.45×0.45	34723	50%	GF
1659	L-4	CST	GF-50%	1.829493	6.5	15	240	3×0.45×0.45	23237	50%	GF

(7) Sonathali Beat (Kashipur range)

Drainage Line Treatment Measures Open Map

7.1.1 Loose Boulder Check Dam- Sonathali Beat (Kashipur range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
398	DLT-1	2A2D5q1	1	23.412	86.6845	4.0	0.75	0.4	1.50	0.20	12012.55
400	DLT-3	2A2D5t4	1	23.3749	86.7018	8.0	1.20	0.6	2.40	0.40	65595.77
403	DLT-6	2A2D5t4	1	23.3745	86.7016	7.0	1.00	0.5	2.00	0.30	38445.57
404	DLT-7	2A2D5t4	1	23.3738	86.7015	5.0	1.00	0.5	2.00	0.30	27461.90
405	DLT-8	2A2D5t4	1	23.3737	86.7017	8.0	1.00	0.5	2.00	0.30	43940.27
406	DLT-9	2A2D5t4	1	23.3731	86.7022	7.0	0.75	0.4	1.50	0.20	21024.67
407	DLT-10	2A2D5t4	1	23.3731	86.7022	9.0	1.00	0.5	2.00	0.30	49435.58
409	DLT-12	2A2D5p4	1	23.3775	86.7094	6.0	1.00	0.5	2.00	0.30	32957.98
411	DLT-14	2A2D5p4	1	23.3776	86.7091	7.0	1.00	0.5	2.00	0.30	38452.06
412	DLT-15	2A2D5p5	1	23.3577	86.6609	7.0	0.75	0.4	1.50	0.20	21026.84
415	DLT-18	2A2D5q1	2	23.4077	86.7033	5.0	0.75	0.4	1.50	0.20	15019.56
416	DLT-19	2A2D5q1	1	23.4076	86.704	6.0	1.00	0.5	2.00	0.30	32961.69
417	DLT-20	2A2D5q1	2	23.4076	86.7034	5.0	0.75	0.4	1.50	0.20	15020.33
418	DLT-21	2A2D5q1	3	23.4023	86.7049	7.0	1.00	0.5	2.00	0.30	38457.47
421	DLT-24	2A2D5q1	3	23.4018	86.7049	5.0	0.75	0.4	1.50	0.20	15021.10
422	DLT-25	2A2D5q1	3	23.4015	86.7046	7.0	1.00	0.5	2.00	0.30	38459.63
423	DLT-26	2A2D5p4	3	23.3982	86.7041	6.0	0.75	0.4	1.50	0.20	18026.25
425	DLT-28	2A2D5p4	1	23.3941	86.7029	6.0	1.00	0.5	2.00	0.30	32967.25
427	DLT-30	2A2D5p4	2	23.4051	86.7031	6.0	0.75	0.4	1.50	0.20	18027.17
428	DLT-31	2A2D5p2	1	23.3743	86.7318	5.0	0.75	0.4	1.50	0.20	15023.03
429	DLT-32	2A2D5p2	1	23.3747	86.7316	4.0	0.75	0.4	1.50	0.20	12018.73
430	DLT-33	2A2D5p2	2	23.3749	86.7314	6.0	1.00	0.5	2.00	0.30	32970.96

401	DLT-4	2A2D5t4	1	23.37549	86.70176	9.0	1.20	0.6	2.40	0.40	73523.81
402	DLT-5	2A2D5t4	1	23.37524	86.70137	7.0	1.20	0.6	2.40	0.40	57188.65
408	DLT-11	2A2D5t4	1	23.3737	86.70246	6.0	1.00	0.5	2.00	0.30	32843.04
410	DLT-13	2A2D5p4	1	23.37749	86.70968	5.0	1.00	0.5	2.00	0.30	27370.74
413	DLT-16	2A2D5p5	1	23.35887	86.66309	5.0	0.75	0.4	1.50	0.20	14972.05
414	DLT-17	2A2D5p5	1	23.35882	86.66307	5.0	0.75	0.4	1.50	0.20	14972.82
419	DLT-22	2A2D5q1	3	23.40222	86.70486	6.0	0.75	0.4	1.50	0.20	17968.31
420	DLT-23	2A2D5q1	3	23.40191	86.70484	7.0	1.00	0.5	2.00	0.30	38327.69
424	DLT-27	2A2D5p4	2	23.39814	86.70285	6.0	0.75	0.4	1.50	0.20	17970.16
426	DLT-29	2A2D5p4	1	23.39438	86.70294	7.0	1.00	0.5	2.00	0.30	38332.02

7.1.2 Gabion Check Sonathali Beat (Kashipur range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
399	DLT-2	2A2D5q1	1	23.41221	86.68399	5	1.2	0.40	34359.17

7.2.1 Land Treatment and Forest Plantation measures- Sonathali Beat (Kashipur range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
5	L-3	CPT / Boundary Trench	NFP	1.352911	5.8	17	272	3×0.45×0.45	19479	100%	NFP
6	L-5	CPT / Boundary Trench	GF-50%	2.761319	5.8	17	272	3×0.45×0.45	39751	100%	NFP
136	L-8	CPT / Boundary	GF-80%	0.589826	5.8	17	272	3×0.45×0.30	5646	100%	NFP

		Trench									
477	L-3	CPT / Boundary Trench	NFP	1.189198	5.8	17	272	3×0.45×0.45	17097	50%	GF
512	L-3	CPT / Boundary Trench	NFP	7.740626	6.5	15	240	3×0.45×0.45	98346	50%	GF
513	L-6	CPT / Boundary Trench	GF-50%	1.167848	6.5	15	240	3×0.45×0.45	14821	50%	GF
541	L-3	CPT / Boundary Trench	NFP	1.075509	5.8	17	272	3×0.45×0.30	10339	50%	GF
542	L-6	CPT / Boundary Trench	GF-50%	0.655504	5.8	17	272	3×0.45×0.30	6281	50%	GF
543	L-6	CPT / Boundary Trench	GF-50%	1.489549	5.8	17	272	3×0.45×0.30	14291	50%	GF
716	L-6	CPT / Boundary Trench	GF-50%	0.576453	5.8	17	272	3×0.45×0.45	8310	100%	NFP
824	L-4	CPT / Boundary Trench	GF-50%	3.246529	6.5	15	240	3×0.45×0.45	41233	100%	NFP
825	L-5	CPT / Boundary Trench	GF-50%	9.523665	6.5	15	240	3×0.45×0.45	121000	100%	NFP
826	L-6	CPT / Boundary Trench	GF-50%	2.153695	6.5	15	240	3×0.45×0.45	27365	100%	NFP
934	L-8	CPT / Boundary Trench	GF-80%	2.062686	5.8	17	272	3×0.45×0.30	19796	100%	NFP
1349	L-1	CPT / Boundary Trench	GF-50%	2.306566	6.5	15	240	3×0.45×0.30	19549	100%	NFP
1350	L-4	CPT / Boundary Trench	GF-50%	2.340535	6.5	15	240	3×0.45×0.30	19831	100%	NFP
1351	L-7	CPT / Boundary Trench	SGP	2.573444	6.5	15	240	3×0.45×0.30	21808	100%	NFP
1352	L-8	CPT / Boundary Trench	GF-80%	2.250344	6.5	15	240	3×0.45×0.30	19055	100%	NFP
1613	L-2	CPT / Boundary Trench	GF-20%	2.363425	5.8	17	272	3×0.45×0.45	34035	50%	GF
1614	L-6	CPT / Boundary Trench	GF-50%	3.094507	5.8	17	272	3×0.45×0.45	44568	50%	GF
1661	L-2	CPT / Boundary Trench	GF-20%	6.79381	6.5	15	240	3×0.45×0.45	86330	50%	GF
1719	L-6	CPT / Boundary	GF-50%	1.735633	5.8	17	272	3×0.45×0.30	16656	50%	GF

		Trench									
1990	L-1	CPT / Boundary Trench	GF-50%	9.484672	6.5	15	240	3×0.45×0.30	80314	50%	GF
1991	L-6	CPT / Boundary Trench	GF-50%	1.123264	6.5	15	240	3×0.45×0.30	9528	50%	GF
1992	L-6	CPT / Boundary Trench	GF-50%	1.64783	6.5	15	240	3×0.45×0.30	13938	50%	GF
1993	L-6	CPT / Boundary Trench	GF-50%	2.695853	6.5	15	240	3×0.45×0.30	22831	50%	GF
1994	L-6	CPT / Boundary Trench	GF-50%	1.138075	6.5	15	240	3×0.45×0.30	9633	50%	GF
1995	L-7	CPT / Boundary Trench	SGP	1.73314	6.5	15	240	3×0.45×0.30	14679	50%	GF

(8) Gopalpur Beat (Puncha range)

Drainage Line Treatment Measures Open Map

8.1.1 Loose Boulder Check Dam- Gopalpur Beat (Puncha range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
47	DLT-92	2A2D5b7	1	23.2183	86.7344	3.0	0.75	0.4	1.50	0.20	8953.10
48	DLT-93	2A2D5b7	1	23.2178	86.7439	3.0	0.75	0.4	1.50	0.20	8953.33

Water Harvesting Structure Measures - Gopalpur Beat (Puncha range) Open Map

8.2.1 Pond Renovation- Gopalpur Beat (Puncha range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
32	WR-2	2 A 2 C 8 h 6	1	23.132500	86.717500	135202.23
33	WR-14(A)	2 A 2 D 5 b 7	1	23.210556	86.747500	140359.18
32	WR-89	2 A 2 D 5 c 1	1	23.223889	86.721944	184090.81
33	WR-90	2 A 2 D 5 b 7	1	23.215000	86.755000	69199.98
32	WR-91	2 A 2 C 8 j 5	1	23.193333	86.723611	138910.74
33	WR-92	2 A 2 C 8 j 4	1	23.185278	86.718333	217009.89

8.3.1 Land Treatment and Forest Plantation measures- Gopalpur Beat (Puncha range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
37	19(A)/LT		No Plantation Required	0.669818	5.8	17	272	3×0.45×0.45	9633	100%	NFP
38	18/LT	CPT / Boundary Trench	No Plantation Required	1.537489	5.8	17	272	3×0.45×0.45	22125	100%	NFP
41	7/LT	CPT / Boundary Trench	No Plantation Required	1.04823	5.8	17	272	3×0.45×0.45	15085	100%	NFP
54	6/LT	CST	NFP	2.494516	6.5	15	240	3×0.45×0.45	31706	100%	NFP
55	2/LT	CST	No Plantation Required	1.195093	5.5	18	288	3×0.45×0.45	18208	100%	NFP
62	50/LT	CST & CCT	NFP	4.377203	6.5	15	240	3×0.45×0.45	55630	100%	NFP

99	11/LT	CST & CCT	NFP	2.852167	6.5	15	240	3×0.45×0.45	36258	100%	NFP
100	14/LT		GF-80%	1.041485	6.5	15	240	3×0.45×0.45	13233	100%	NFP
101	15/LT	Encroachment	Encroachment	7.179769	6.5	15	240	3×0.45×0.45	91200	100%	NFP
102	18/LT	CPT / Boundary Trench	No Plantation Required	1.35011	6.5	15	240	3×0.45×0.45	17150	100%	NFP
103	19/LT	CPT / Boundary Trench	No Plantation Required	1.09393	6.5	15	240	3×0.45×0.45	13921	100%	NFP
104	28/LT	CST	No Plantation Required	1.670688	6.5	15	240	3×0.45×0.45	21225	100%	NFP
105	30/LT	CST & CCT	NFP	2.963819	6.5	15	240	3×0.45×0.45	37634	100%	NFP
106	42/LT	CPT / Boundary Trench	No Plantation Required	3.117998	6.5	15	240	3×0.45×0.45	39592	100%	NFP
107	43/LT	CST & CCT	NFP	1.574854	6.5	15	240	3×0.45×0.45	20008	100%	NFP
108	55/LT	CST & CCT	NFP	0.982492	6.5	15	240	3×0.45×0.45	12492	100%	NFP
109	66/LT	CPT / Boundary Trench	NFP	5.602776	6.5	15	240	3×0.45×0.45	71192	100%	NFP
261	49/LT	CST & CCT	NFP	1.037829	5.8	17	272	3×0.45×0.30	9951	100%	NFP
275	40/LT	CPT / Boundary Trench	GF-50%	3.439609	5.8	17	272	3×0.45×0.30	33029	100%	NFP
279	27/LT	CST & CCT	NFP	1.07886	5.8	17	272	3×0.45×0.30	10339	100%	NFP
282	36/LT	CST & CCT	NFP	1.778536	5.8	17	272	3×0.45×0.30	17079	100%	NFP
285	51 (A)/LT		GF-70 %	3.164463	5.8	17	272	3×0.45×0.30	30382	100%	NFP
286	52/LT		No Plantation Required	4.114534	5.8	17	272	3×0.45×0.30	39486	100%	NFP
292	34/LT	NIL		1.200072	5.8	17	272	3×0.45×0.30	11504	100%	NFP
294	33/LT	CPT / Boundary Trench		0.666116	5.5	18	288	3×0.45×0.30	6775	100%	NFP
299	19(A)/LT		No Plantation Required	1.554328	5.8	17	272	3×0.45×0.30	14927	100%	NFP
317	9/LT	CPT / Boundary Trench	No Plantation Required	1.799788	5.8	17	272	3×0.45×0.30	17291	100%	NFP
378	1/LT	CST	No Plantation Required	1.860028	5.5	18	288	3×0.45×0.30	18914	100%	NFP
387	48/LT	CST & CCT	NFP	6.158859	6.5	15	240	3×0.45×0.30	52155	100%	NFP
388	49/LT	CST & CCT	NFP	5.093177	6.5	15	240	3×0.45×0.30	43121	100%	NFP
389	50/LT	CST & CCT	NFP	2.848132	6.5	15	240	3×0.45×0.30	24136	100%	NFP

431	13/LT	CPT / Boundary Trench	No Plantation Required	2.031121	6.5	15	240	3×0.45×0.30	17185	100%	NFP
432	16/LT	CST & CCT	NFP	3.740646	6.5	15	240	3×0.45×0.30	31688	100%	NFP
433	19(C)/LT		No Plantation Required	1.962045	6.5	15	240	3×0.45×0.30	16620	100%	NFP
434	23/LT	CST & CCT	NFP	7.769326	6.5	15	240	3×0.45×0.30	65811	100%	NFP
435	31/LT	CST & CCT	NFP	1.906252	6.5	15	240	3×0.45×0.30	16162	100%	NFP
436	43/LT	CST & CCT	NFP	1.32866	6.5	15	240	3×0.45×0.30	11257	100%	NFP
437	66/LT	CPT / Boundary Trench	NFP	1.073343	6.5	15	240	3×0.45×0.30	9104	100%	NFP
438	69/LT		GF-30%	1.007065	6.5	15	240	3×0.45×0.30	8540	100%	NFP
493	69/LT		GF-30%	3.536429	5.8	17	272	3×0.45×0.45	50919	50%	GF
494	5/LT	CST	GF-50%	1.406417	6.5	15	240	3×0.45×0.45	17891	50%	GF
495	6/LT	CST	NFP	3.11683	6.5	15	240	3×0.45×0.45	39592	50%	GF
496	6/LT	CST	NFP	4.868443	5.8	17	272	3×0.45×0.45	70080	50%	GF
497	2/LT	CST	No Plantation Required	4.752681	6.5	15	240	3×0.45×0.45	60394	50%	GF
503	57/LT		NFP	7.616737	6.5	15	240	3×0.45×0.45	96758	50%	GF
527	42/LT	CPT / Boundary Trench	No Plantation Required	4.731971	6.5	15	240	3×0.45×0.45	60129	50%	GF
528	87/LT		NFP	1.304834	6.5	15	240	3×0.45×0.45	16567	50%	GF
615	38/LT		GF-40%	2.609272	5.8	17	272	3×0.45×0.30	25054	50%	GF
619	40/LT	CPT / Boundary Trench	GF-50%	2.32406	5.5	18	288	3×0.45×0.30	23607	50%	GF
620	38/LT		GF-40%	2.229874	5.8	17	272	3×0.45×0.30	21419	50%	GF
629	62/LT	CPT / Boundary Trench	No Plantation Required	1.162674	5.8	17	272	3×0.45×0.30	11151	50%	GF
641	5/LT	CST	GF-50%	7.371994	6.5	15	240	3×0.45×0.30	62423	50%	GF
642	5/LT	CST	GF-50%	1.006453	5.5	18	288	3×0.45×0.30	10233	50%	GF
643	3/LT	CST	GF-30%	3.303508	6.5	15	240	3×0.45×0.30	27983	50%	GF
644	2/LT	CST	No Plantation Required	1.299367	5.8	17	272	3×0.45×0.30	12456	50%	GF
645	1/LT	CST	No Plantation Required	7.370455	6.5	15	240	3×0.45×0.30	62423	50%	GF
646	3/LT	CST	GF-30%	7.525722	6.5	15	240	3×0.45×0.30	63729	50%	GF
647	1/LT	CST	No Plantation Required	2.230866	5.8	17	272	3×0.45×0.30	21419	50%	GF

684	12/LT	CST & CCT	NFP	1.941526	6.5	15	240	3×0.45×0.30	16444	50%	GF
685	27/LT	CST & CCT	NFP	1.34048	6.5	15	240	3×0.45×0.30	11362	50%	GF
686	33/LT	CPT / Boundary Trench		9.123888	6.5	15	240	3×0.45×0.30	77279	50%	GF
687	56/LT	CST & CCT	NFP	2.206707	6.5	15	240	3×0.45×0.30	18702	50%	GF
743	42/LT	CPT / Boundary Trench	No Plantation Required	1.035801	5.8	17	272	3×0.45×0.45	14927	100%	NFP
745	34/LT	NIL		1.681269	5.8	17	272	3×0.45×0.45	24189	100%	NFP
778	48/LT	CST & CCT	NFP	1.930984	6.5	15	240	3×0.45×0.45	24507	100%	NFP
779	57/LT		NFP	5.423523	6.5	15	240	3×0.45×0.45	68916	100%	NFP
873	13/LT	CPT / Boundary Trench	No Plantation Required	0.584086	6.5	15	240	3×0.45×0.45	7410	100%	NFP
874	34/LT	NIL		2.296865	6.5	15	240	3×0.45×0.45	29165	100%	NFP
875	35/LT	CST & CCT	NFP	9.337143	6.5	15	240	3×0.45×0.45	118618	100%	NFP
1096	38/LT		GF-40%	1.683118	5.8	17	272	3×0.45×0.30	16162	100%	NFP
1101	53/LT	CST & CCT	NFP	2.809926	5.8	17	272	3×0.45×0.30	26959	100%	NFP
1113	33/LT	CPT / Boundary Trench		1.764334	5.5	18	288	3×0.45×0.30	17926	100%	NFP
1127	59/LT	CPT / Boundary Trench	No Plantation Required	0.78371	5.8	17	272	3×0.45×0.30	7516	100%	NFP
1182	51 (A)/LT		GF-70 %	9.572184	6.5	15	240	3×0.45×0.30	81055	100%	NFP
1183	52/LT		No Plantation Required	3.966413	6.5	15	240	3×0.45×0.30	33593	100%	NFP
1184	52/LT		No Plantation Required	2.049786	6.5	15	240	3×0.45×0.30	17361	100%	NFP
1185	53/LT	CST & CCT	NFP	8.858428	6.5	15	240	3×0.45×0.30	75021	100%	NFP
1432	7 (A)/LT	CPT / Boundary Trench	GF-80%	2.430489	6.5	15	240	3×0.45×0.30	20572	100%	NFP
1433	10/LT	CPT / Boundary Trench	GF-60%	2.506569	6.5	15	240	3×0.45×0.30	21243	100%	NFP
1434	18(A)/LT	CPT / Boundary Trench		2.347897	6.5	15	240	3×0.45×0.30	19867	100%	NFP
1435	19(B)/LT		GF-50%	1.832298	6.5	15	240	3×0.45×0.30	15526	100%	NFP
1436	20/LT	CPT / Boundary Trench	No Plantation Required	1.46575	6.5	15	240	3×0.45×0.30	12421	100%	NFP
1437	20/LT	CPT / Boundary	No Plantation	1.255263	6.5	15	240	3×0.45×0.30	10621	100%	NFP

		Trench	Required								
1438	27/LT	CST & CCT	NFP	2.745336	6.5	15	240	3×0.45×0.30	23254	100%	NFP
1439	27/LT	CST & CCT	NFP	3.609643	6.5	15	240	3×0.45×0.30	30559	100%	NFP
1440	35/LT	CST & CCT	NFP	1.549983	6.5	15	240	3×0.45×0.30	13127	100%	NFP
1441	36/LT	CST & CCT	NFP	18.564808	6.5	15	240	3×0.45×0.30	157240	100%	NFP
1442	38/LT		GF-40%	7.476154	6.5	15	240	3×0.45×0.30	63305	100%	NFP
1443	39/LT	CST & CCT	NFP	1.885772	6.5	15	240	3×0.45×0.30	15985	100%	NFP
1444	61/LT	CST & CCT	NFP	2.11342	6.5	15	240	3×0.45×0.30	17891	100%	NFP
1445	71/LT		No Plantation Required	2.754183	6.5	15	240	3×0.45×0.30	23325	100%	NFP
1639	42/LT	CPT / Boundary Trench	No Plantation Required	1.245506	5.8	17	272	3×0.45×0.45	17944	50%	GF
1642	60/LT	CST & CCT	NFP	2.831531	5.8	17	272	3×0.45×0.45	40757	50%	GF
1688	59/LT	CPT / Boundary Trench	No Plantation Required	3.406584	6.5	15	240	3×0.45×0.45	43297	50%	GF
1885	58/LT		GF-90%	1.326135	5.8	17	272	3×0.45×0.30	12739	50%	GF
1904	5/LT	CST	GF-50%	1.984171	5.8	17	272	3×0.45×0.30	19055	50%	GF
1905	5/LT	CST	GF-50%	0.558566	5.5	18	288	3×0.45×0.30	5681	50%	GF
1906	1/LT	CST	No Plantation Required	1.633416	5.8	17	272	3×0.45×0.30	15668	50%	GF
1907	1/LT	CST	No Plantation Required	2.749895	5.5	18	288	3×0.45×0.30	27947	50%	GF
1908	2/LT	CST	No Plantation Required	1.276707	6.5	15	240	3×0.45×0.30	10798	50%	GF
2074	38/LT		GF-40%	1.033024	6.5	15	240	3×0.45×0.30	8751	50%	GF
2075	38/LT		GF-40%	4.713384	6.5	15	240	3×0.45×0.30	39910	50%	GF
2076	40/LT	CPT / Boundary Trench	GF-50%	2.813234	6.5	15	240	3×0.45×0.30	23819	50%	GF
2077	58/LT		GF-90%	3.940108	6.5	15	240	3×0.45×0.30	33382	50%	GF
2078	58/LT		GF-90%	2.611157	6.5	15	240	3×0.45×0.30	22125	50%	GF
2079	59/LT	CPT / Boundary Trench	No Plantation Required	2.37064	6.5	15	240	3×0.45×0.30	20078	50%	GF
2080	61/LT	CST & CCT	NFP	0.612768	6.5	15	240	3×0.45×0.30	5187	50%	GF
2081	69/LT		GF-30%	1.740192	6.5	15	240	3×0.45×0.30	14750	50%	GF

(9) Jambad Beat (Puncha range)

Drainage Line Treatment Measures Open Map

9.1.1 Loose Boulder Check Dam- Jambad Beat (Puncha range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
69	DLT/12-A	2A2B4h1	1	23.2191	86.5531	6.0	0.50	0.4	1.20	0.20	11327.71
70	DLT/12-A	2A2B4h1	1	23.218	86.5528	8.0	0.50	0.4	1.20	0.20	15104.11
72	DLT/16-A	2A2B4h1	1	23.214	86.5606	6.0	0.50	0.4	1.20	0.20	11328.82
73	DLT/16-A	2A2B4h1	1	23.2141	86.5608	7.0	0.60	0.4	1.30	0.20	15896.22
75	DLT/18	2A2B4h1	1	23.2163	86.5599	4.0	0.75	0.4	1.50	0.20	11939.63
76	DLT/18	2A2B4h1	1	23.2163	86.5599	6.0	0.75	0.4	1.50	0.20	17909.91
77	DLT/18	2A2B4h1	2	23.2162	86.5601	6.0	0.50	0.4	1.20	0.20	11330.31
78	DLT/18	2A2B4h1	1	23.2165	86.5599	7.0	0.50	0.4	1.20	0.20	13219.12
80	DLT/21	2A2B4h1*	1	23.2078	86.5472	7.0	0.75	0.4	1.50	0.20	20897.06
82	DLT/21	2A2B4h1	1	23.2248	86.5475	8.0	0.50	0.4	1.20	0.20	15109.55
84	DLT/21	2A2B4h1	1	23.2275	86.5505	4.0	0.60	0.4	1.30	0.20	9086.23
85	DLT/21	2A2B4h1	1	23.2277	86.5506	9.0	0.50	0.4	1.20	0.20	16999.91
86	DLT/21	2A2B4h1	1	23.228	86.5508	5.0	0.50	0.4	1.20	0.20	9444.70
88	DLT/22	2A2B4h1	1	23.2321	86.553	6.0	0.50	0.4	1.20	0.20	11334.38
89	DLT/23	2A2B4h1	3	23.2326	86.5523	7.0	0.60	0.4	1.30	0.20	15903.25
90	DLT/21	2A2B4h1	1	23.2221	86.5482	6.0	0.50	0.4	1.20	0.20	11335.13
91	DLT/21	2A2B4h1	1	23.2243	86.5503	7.0	0.60	0.4	1.30	0.20	15904.18
92	DLT/21	2A2B4h1	1	23.2244	86.5502	6.0	0.50	0.4	1.20	0.20	11335.87
93	DLT/21	2A2B4h1	1	23.2233	86.5496	7.0	0.50	0.4	1.20	0.20	13225.61
95	DLT/21	2A2B4h1	1	23.2235	86.5502	7.0	0.60	0.4	1.30	0.20	15906.06
96	DLT/24	2A2B4h1	1	23.2222	86.5535	7.0	0.50	0.4	1.20	0.20	13226.91
98	DLT/25	2A2B4h1	2	23.229	86.5544	7.0	0.75	0.4	1.50	0.20	20906.79
102	DLT/24	2A2B4h1	1	23.2283	86.556	9.0	0.50	0.4	1.20	0.20	17009.36

103	DLT/24	2A2B4h1	1	23.228	86.556	8.0	0.50	0.4	1.20	0.20	15119.93
105	DLT/25	2A2B4h1	1	23.2315	86.5596	7.0	0.50	0.4	1.20	0.20	13230.80
107	DLT/26	2A2B4h1	1	23.2239	86.5598	6.0	0.60	0.4	1.30	0.20	13638.58
108	DLT/26	2A2B4h1	1	23.2236	86.56	5.0	0.75	0.4	1.50	0.20	14937.28
113	DLT/25	2A2B4h1	1	23.2295	86.5547	7.0	0.50	0.4	1.20	0.20	13234.26
114	DLT/25	2A2B4h1	1	23.2294	86.5547	7.0	0.50	0.4	1.20	0.20	13234.70
115	DLT/25	2A2B4h1	1	23.231	86.5544	8.0	0.50	0.4	1.20	0.20	15125.86
116	DLT/25	2A2B4h1	1	23.2311	86.5544	8.0	0.50	0.4	1.20	0.20	15126.36
118	DLT/25	2A2B4h1	2	23.2337	86.5576	8.0	0.60	0.4	1.30	0.20	18190.67
119	DLT/26	2A2B4h1	2	23.2238	86.5602	7.0	0.60	0.4	1.30	0.20	15917.31
120	DLT/26	2A2B4h1	2	23.2237	86.5604	6.0	0.75	0.4	1.50	0.20	17930.30
121	DLT/26	2A2B4h1	2	23.2236	86.5608	8.0	0.75	0.4	1.50	0.20	23907.69
123	DLT/26	2A2B4h1	1	23.2243	86.5622	7.0	0.60	0.4	1.30	0.20	15919.18
125	DLT/26	2A2B4h1	1	23.2271	86.5601	6.0	0.50	0.4	1.20	0.20	11348.10
129	DLT/27	2A2B4h1	1	23.2295	86.5638	7.0	0.60	0.4	1.30	0.20	15921.99
131	DLT/27	2A2B4h1	2	23.2277	86.5619	6.0	0.50	0.4	1.20	0.20	11350.33
134	DLT/27	2A2B4h1	1	23.2284	86.5647	5.0	0.50	0.4	1.20	0.20	9459.53
135	DLT/28	2A2B4h1	1	23.2278	86.5653	7.0	0.75	0.4	1.50	0.20	20926.80
137	DLT/27	2A2B4h1	1	23.2284	86.5645	8.0	0.50	0.4	1.20	0.20	15136.74
138	DLT/27	2A2B4h1	1	23.2285	86.5648	7.0	0.60	0.4	1.30	0.20	15926.21
141	DLT/28	2A2B4h1	1	23.223	86.5688	5.0	0.50	0.4	1.20	0.20	9461.70
143	DLT/29	2A2B4h1	1	23.1982	86.5727	8.0	0.50	0.4	1.20	0.20	15139.70
144	DLT/29	2A2B4h1	1	23.1981	86.5729	6.0	0.50	0.4	1.20	0.20	11355.15
159	DLT/75	2A2B2g1*	1	23.1583	86.5303	9.0	0.50	0.4	1.20	0.20	17041.07
161	DLT/80	2A2B2g1	1	23.1541	86.5202	7.0	0.60	0.4	1.30	0.20	15936.99
164	DLT/84B	2A2B2g1*	1	23.1411	86.5055	7.0	0.75	0.4	1.50	0.20	20942.48
184	DLT/95	2A2B2g1	2	23.1774	86.5227	5.0	0.50	0.4	1.20	0.20	9474.37
71	DLT/16-A	2A2B4h1	1	23.2119	86.6565	5.0	0.50	0.4	1.20	0.20	9433.27
126	DLT/27	2A2B4h1	1	23.2297	86.5635	6.0	0.50	0.4	1.20	0.20	11320.29
132	DLT/27	2A2B4h1	2	23.2276	86.5618	6.0	0.50	0.4	1.20	0.20	11320.66
106	DLT/25	2A2B4h1	1	23.2168	86.5601	7.0	0.50	0.4	1.20	0.20	13208.31
127	DLT/27	2A2B4h1	1	23.2299	86.5637	8.0	0.50	0.4	1.20	0.20	15095.70

142	DLT/28	2A2B4h1	1	23.223	86.5685	7.0	0.50	0.4	1.20	0.20	13209.17
104	DLT/24	2A2B4h1	1	23.2286	86.5572	2.0	0.75	0.4	1.50	0.20	5967.19
109	DLT/25	2A2B4h1	2	23.229	86.5546	2.5	0.90	0.5	1.90	0.30	12160.92
140	DLT/28	2A2B4h1	1	23.2282	86.568	2.5	1.00	0.5	2.00	0.30	13632.84
145	DLT/54	2A2B4g4	1	23.1488	86.5546	2.5	1.00	0.5	2.00	0.30	13633.23
147	DLT/54	2A2B4g4	1	23.1491	86.5536	3.5	1.00	0.5	2.00	0.30	19087.60
149	DLT/57	2A2B4g4	3	23.1472	86.546	2.5	0.75	0.4	1.50	0.20	7460.14
150	DLT/65	2A2B4g4	1	23.1596	86.5377	2.5	0.75	0.4	1.50	0.20	7460.34
152	DLT/70	2A2B4g5	1	23.1707	86.5416	2.5	0.75	0.4	1.50	0.20	7460.72
157	DLT/70	2A2B4g5	1	23.1716	86.5384	2.5	0.75	0.4	1.50	0.20	7461.11
158	DLT/73	2A2B2g1	2	23.1715	86.526	2.5	1.20	0.6	2.40	0.40	20349.12
160	DLT/80	2A2B2g1	1	23.1537	86.5203	2.5	0.75	0.4	1.50	0.20	7461.50
163	DLT/84	2A2B2g1	1	23.1489	86.5135	2.5	0.75	0.4	1.50	0.20	7461.69
169	DLT/86	2A2B2g2	1	23.1467	86.5031	2.5	0.90	0.5	1.90	0.30	12166.06
172	DLT/86	2A2B2g2	1	23.1462	86.5026	3.0	1.20	0.6	2.40	0.40	24421.91
83	DLT/21	2A2B4h1	1	23.2249	86.5482	2.0	0.50	0.4	1.20	0.20	3781.09
94	DLT/21	2A2B4h1	1	23.2242	86.5501	2.0	0.60	0.4	1.30	0.20	4547.00
101	DLT/24	2A2B4h1	1	23.2284	86.556	2.0	0.50	0.4	1.20	0.20	3781.34
110	DLT/25	2A2B4h1	2	23.2295	86.5551	2.0	0.50	0.4	1.20	0.20	3781.47
112	DLT/25	2A2B4h1	1	23.2294	86.5548	2.0	0.60	0.4	1.30	0.20	4547.40
117	DLT/25	2A2B4h1	2	23.2337	86.5576	2.0	0.60	0.4	1.30	0.20	4547.53
156	DLT/70	2A2B4g5	1	23.1703	86.5409	2.0	0.50	0.4	1.20	0.20	3781.84
162	DLT/84	2A2B2g1	1	23.1495	86.513	2.0	0.50	0.4	1.20	0.20	3781.96
167	DLT/86	2A2B2g2	1	23.1469	86.5037	2.0	0.50	0.4	1.20	0.20	3782.08
175	DLT/89	2A2B2g2	1	23.1501	86.4975	2.0	0.60	0.4	1.30	0.20	4548.07
176	DLT/89	2A2B2g2	1	23.1507	86.4975	2.0	0.60	0.4	1.30	0.20	4548.20
177	DLT/89	2A2B2g2	1	23.1513	86.4976	2.0	0.50	0.4	1.20	0.20	3782.45
178	DLT/89	2A2B2g2	1	23.1519	86.4976	2.0	0.60	0.4	1.30	0.20	4548.47
179	DLT/89	2A2B2g2	1	23.1521	86.4975	2.0	0.60	0.4	1.30	0.20	4548.61
182	DLT/95	2A2B2g1	2	23.177	86.5227	2.0	0.60	0.4	1.30	0.20	4548.74
185	DLT/95	2A2B2g1	1	23.1771	86.523	2.0	0.60	0.4	1.30	0.20	4549.01
99	DLT/25	2A2B4h1	2	23.2337	86.5573	2.5	0.60	0.4	1.30	0.20	5687.76

154	DLT/70	2A2B4g5	1	23.1705	86.5412	2.5	0.50	0.4	1.20	0.20	4730.54
180	DLT/90	2A2B2g2	1	23.1573	86.4977	2.5	0.60	0.4	1.30	0.20	5688.60
133	DLT/27	2A2B4h1	1	23.22702	86.56166	8.0	0.50	0.4	1.20	0.20	15147.12
181	DLT/91	2A2B2g2	1	23.1608	86.484	4.0	1.35	0.6	2.60	0.40	37839.29
49	DLT/1	2A2B4h1	1	23.2007	86.532	6.0	0.50	0.4	1.20	0.20	11385.80
50	DLT/1	2A2B4h1	1	23.2007	86.5318	5.0	0.50	0.4	1.20	0.20	9488.63
51	DLT/1	2A2B4h1	1	23.2005	86.5319	6.0	0.50	0.4	1.20	0.20	11386.91
58	DLT/4	2A2B4h1	1	23.2069	86.5359	4.0	0.50	0.4	1.20	0.20	7591.65
56	DLT/3	2A2B4h1	1	23.20671	86.53713	7.0	0.50	0.4	1.20	0.20	13286.03

*Outside shapefile boundary of the Beat. Shapefile Boundary or proposed DLT Lat-Long. need to verify.

9.1.2 Gabion Check Jambad Beat (Puncha range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
52	DLT/1	2A2B4h1	1	23.20163	86.53061	8	1	0.40	49010.75
53	DLT/1	2A2B4h1	1	23.20563	86.53589	9	1	0.40	55137.09
55	DLT/3	2A2B4h1	1	23.2067	86.53738	6	0.6	0.30	25421.85
60	DLT/10	2A2B4h1	1	23.20975	86.55253	9	1	0.40	55137.09
61	DLT/10	2A2B4h1	1	23.21335	86.55268	7	0.6	0.30	29658.82
64	DLT/11	2A2B4h1	2	23.21429	86.55403	8	1.2	0.40	55043.05
67	DLT/11-B	2A2B4h1	1	23.2198	86.54602	7	1.8	0.60	67008.81
68	DLT/11-B	2A2B4h1	1	23.22029	86.54549	6	1	0.40	36758.06
57	DLT/4	2A2B4h1	1	23.20736	86.53856	8	1.2	0.40	54974.68
63	DLT/11	2A2B4h1	2	23.21437	86.55442	6	1	0.40	36706.78
62	DLT/11	2A2B4h1	2	23.21432	86.55459	9	1.5	0.50	75534.58
66	DLT/11-B	2A2B4h1	1	23.21913	86.54646	3	1	0.40	18379.03
74	DLT/18	2A2B4h1	3	23.21608	86.55978	6	1.8	0.60	57436.13

9.1.3 Gabion Check Dam Jambad Beat (Puncha range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
54	DLT/3	2A2B4h1	1	23.20553	86.53594	10.5	1.2	1.0	0.40	5	2.20	1.0	0.40	358819.11
59	DLT/4	2A2B4h1	1	23.20975	86.53833	9.5	1.2	1.0	0.40	5	2.20	1.0	0.40	341205.38
65	DLT/11-B	2A2B4h1	1	23.21859	86.54595	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
79	DLT/21	2A2B4h1	1	23.22439	86.54709	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
81	DLT/21	2A2B4h1	1	23.20805	86.5473	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
87	DLT/21	2A2B4h1	1	23.22825	86.55107	9.5	1.0	1.0	0.40	5	2.00	1.0	0.40	337923.00
97	DLT/25	2A2B4h1	2	23.22891	86.55445	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
100	DLT/25	2A2B4h1	2	23.23366	86.55714	13.0	1.0	1.0	0.40	6	2.00	1.0	0.40	408866.54
122	DLT/26	2A2B4h1	1	23.22458	86.55983	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
130	DLT/27	2A2B4h1	1	23.22741	86.56198	9.5	1.2	1.0	0.40	5	2.20	1.0	0.40	341205.38
136	DLT/28	2A2B4h1	1	23.22799	86.56513	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
139	DLT/28	2A2B4h1	1	23.22871	86.56714	10.5	1.2	1.0	0.40	5	2.20	1.0	0.40	358819.11
148	DLT/54	2A2B4g4	1	23.1492	86.55353	13.0	1.2	1.0	0.40	6	2.20	1.0	0.40	413063.00
165	DLT/84B	2A2B2g1	4	23.13982	86.50546	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
168	DLT/86	2A2B2g2	1	23.14677	86.50336	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
170	DLT/86	2A2B2g2	1	23.16322	86.50291	12.5	1.2	1.0	0.40	6	2.20	1.0	0.40	404104.91
173	DLT/86	2A2B2g2	1	23.14619	86.50292	12.5	1.5	1.0	0.50	6	2.50	1.0	0.50	414210.87
174	DLT/86	2A2B2g2	1	23.14613	86.50304	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
187	DLT/95	2A2B2g1	1	23.17726	86.52293	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
188	DLT/96	2A2B2g1	1	23.174	86.52374	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
124	DLT/26	2A2B4h1	1	23.2242	86.56369	12.5	1.5	1.0	0.50	6	2.50	1.0	0.50	414210.87

Water Harvesting Structure Measures - Jambad Beat (Puncha range)

Open Map

9.2.1 Embankment Pond- Jambad Beat (Puncha range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
57	21/WR	2 A 2 B 4 h 2	2	23.22534	86.54806	180090.35
59	21/WR	2 A 2 B 4 h 2	1	23.2246	86.55028	25494.56
61	24/WR	2 A 2 B 4 h 1	1	23.22722	86.55466	209063.22
63	28/WR	2 A 2 B 4 h 1	2	23.22814	86.56525	180090.35
67	29/WR	2 A 2 B 4 g 9	1	23.19379	86.56953	42182.62
68	44/WR	2 A 2 B 4 g 5	1	23.15218	86.56048	209063.22

9.2.2 Dugout Pond- Jambad Beat (Puncha range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
52	3/WR	2 A 2 B 4 h 1	1	23.204142	86.536356	373706.51
54	8/WR (A)	2 A 2 B 4 g 9	1	23.1964	86.557353	410560.94
56	11/WR (A)	2 A 2 B 4 h 1	1	23.216575	86.549156	132419.08
58	21/WR	2 A 2 B 4 h 1	1	23.223278	86.548619	73939.58
60	21/WR	2 A 2 B 4 h 2	1	23.225025	86.549786	73939.58
62	27/WR	2 A 2 B 4 h 1	1	23.229464	86.562944	85635.48
64	29/WR	2 A 2 B 4 g 9	1	23.200503	86.557178	1232755.82
65	29/WR	2 A 2 B 4 g 8	1	23.198408	86.572617	85635.48
66	29/WR	2 A 2 B 4 g 9	1	23.196372	86.571364	311328.38
69	57/WR	2 A 2 B 4 g 4	3	23.146722	86.545175	4409593.02
70	58/WR	2 A 2 B 4 g 4	1	23.147508	86.539586	299043.57
71	62/WR	2 A 2 B 4 g 4	1	23.153528	86.5398	299043.57
72	70/WR	2 A 2 B 4 g 5	1	23.170767	86.541789	299043.57

73	70/WR	2 A 2 B 4 g 5	1	23.171708	86.538578	148721.78
74	72/WR	2 A 2 B 2 g 1	1	23.170272	86.531497	165024.49
75	72/WR	2 A 2 B 2 g 1	1	23.169125	86.529067	148721.78
76	72/WR	2 A 2 B 2 g 1	1	23.170567	86.529267	148721.78
77	75/WR	2 A 2 B 2 f 4	2	23.141614	86.530064	398276.13
78	78/WR	2 A 2 B 2 f 4	1	23.144428	86.522694	193023.09
79	79/WR	2 A 2 B 4 g 4	1	23.147261	86.527428	85635.48
80	80/WR	2 A 2 B 2 f 4	1	23.153589	86.520372	466319.62
81	84/WR	2 A 2 B 2 g 1	1	23.165503	86.513575	73939.58
82	84 A/WR	2 A 2 B 2 g 1	1	23.164756	86.511225	132419.08
83	84 B/WR	2 A 2 B 2 f 4	1	23.141297	86.505822	1055484.44

9.2.3 Percolation Pond - Jambad Beat (Puncha range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
51	1/WR	2 A 2 B 4 h 2	1	23.20179	86.53094	107800.27
52	4/WR	2 A 2 B 4 h 1	1	23.20727	86.53887	676338.99
53	11/WR (B)	2 A 2 B 4 h 1	2	23.21439	86.55397	1589193.36

9.3.1 Land Treatment and Forest Plantation measures- Jambad Beat (Puncha range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
44	LT/100	CCT	No Plantation Required	1.404595	5.8	17	272	3×0.45×0.45	20220	100%	NFP

48	LT/94	CST & CCT	No Plantation Required	4.324226	5.8	17	272	3×0.45×0.45	62247	100%	NFP
50	LT/77	CCT	No Plantation Required	1.807209	5.5	18	288	3×0.45×0.45	27524	100%	NFP
51	LT/77	CCT	No Plantation Required	1.138795	5.8	17	272	3×0.45×0.45	16409	100%	NFP
52	LT/79	CCT	No Plantation Required	2.027245	5.8	17	272	3×0.45×0.45	29165	100%	NFP
53	LT/76	CST & CCT	SGP	1.483252	5.8	17	272	3×0.45×0.45	21331	100%	NFP
110	LT/40	CST & CCT	NFP	3.959301	6.5	15	240	3×0.45×0.45	50284	100%	NFP
111	LT/57	CCT	SGP	1.789822	6.5	15	240	3×0.45×0.45	22760	100%	NFP
112	LT/84	CST & CCT	SGP	4.912081	6.5	15	240	3×0.45×0.45	62405	100%	NFP
269	LT/23	CCT	No Plantation Required	4.180354	5.8	17	272	3×0.45×0.30	40122	100%	NFP
270	LT/25	CCT	No Plantation Required	1.028796	5.8	17	272	3×0.45×0.30	9880	100%	NFP
276	LT/28	CCT	GF-50%	1.643004	5.8	17	272	3×0.45×0.30	15773	100%	NFP
278	LT/28	CCT	GF-50%	1.311712	5.8	17	272	3×0.45×0.30	12598	100%	NFP
287	LT/28	CCT	GF-50%	2.487136	5.8	17	272	3×0.45×0.30	23889	100%	NFP
289	LT/28	CCT	GF-50%	1.033697	5.8	17	272	3×0.45×0.30	9916	100%	NFP
290	LT/29	CCT	No Plantation Required	1.77142	5.8	17	272	3×0.45×0.30	17008	100%	NFP
293	LT/29	CCT	No Plantation Required	1.014573	5.8	17	272	3×0.45×0.30	9739	100%	NFP
295	LT/29	CCT	No Plantation Required	1.424865	5.8	17	272	3×0.45×0.30	13691	100%	NFP
301	10/LT	CST & CCT	NFP	1.615589	5.8	17	272	3×0.45×0.30	15491	100%	NFP
304	LT/17	CCT	NFP	2.053961	5.8	17	272	3×0.45×0.30	19726	100%	NFP
311	10/LT	CST & CCT	NFP	3.769008	5.8	17	272	3×0.45×0.30	36169	100%	NFP
312	LT/16A	CST & CCT	GF-30%	1.386863	5.8	17	272	3×0.45×0.30	13303	100%	NFP
314	10/LT	CST & CCT	NFP	1.259869	5.8	17	272	3×0.45×0.30	12104	100%	NFP
315	LT/16	CST & CCT	NFP	1.279973	5.8	17	272	3×0.45×0.30	12280	100%	NFP
319	7/LT	CST & CCT	NFP	1.054357	5.8	17	272	3×0.45×0.30	10127	100%	NFP
320	LT/31	CST & CCT	NFP	1.375372	5.8	17	272	3×0.45×0.30	13197	100%	NFP
321	LT/100	CCT	No Plantation Required	1.562931	5.8	17	272	3×0.45×0.30	14997	100%	NFP
322	LT/29 A	CST & CCT	NFP	5.417703	5.8	17	272	3×0.45×0.30	52013	100%	NFP

323	8/LT (A)	CCT	No Plantation Required	1.790294	5.8	17	272	3×0.45×0.30	17185	100%	NFP
324	8/LT (A)	CCT	No Plantation Required	5.465118	5.8	17	272	3×0.45×0.30	52472	100%	NFP
326	LT/31	CST & CCT	NFP	1.713183	5.8	17	272	3×0.45×0.30	16444	100%	NFP
329	LT/34	CCT	No Plantation Required	1.386864	5.8	17	272	3×0.45×0.30	13303	100%	NFP
331	LT/66	CCT	No Plantation Required	1.458015	5.8	17	272	3×0.45×0.30	14009	100%	NFP
332	LT/66	CCT	No Plantation Required	1.04805	5.8	17	272	3×0.45×0.30	10057	100%	NFP
333	LT/40	CST & CCT	NFP	1.985269	5.8	17	272	3×0.45×0.30	19055	100%	NFP
334	LT/70	CCT	No Plantation Required	1.931999	5.8	17	272	3×0.45×0.30	18561	100%	NFP
335	LT/98	CCT	SGP	2.364483	5.8	17	272	3×0.45×0.30	22690	100%	NFP
336	LT/70	CCT	No Plantation Required	1.301422	5.8	17	272	3×0.45×0.30	12492	100%	NFP
337	LT/41	CCT	Encroachment	2.326343	5.8	17	272	3×0.45×0.30	22337	100%	NFP
338	LT/92	CST & CCT	SGP	1.223704	5.8	17	272	3×0.45×0.30	11751	100%	NFP
339	LT/73	CCT	No Plantation Required	1.792061	5.8	17	272	3×0.45×0.30	17185	100%	NFP
340	LT/72	CST & CCT	SGP	4.521963	5.8	17	272	3×0.45×0.30	43403	100%	NFP
341	LT/97	CCT	SGP	2.34444	5.8	17	272	3×0.45×0.30	22513	100%	NFP
342	LT/78	CCT	No Plantation Required	1.193859	5.8	17	272	3×0.45×0.30	11468	100%	NFP
343	LT/43	CST & CCT	SGP	1.620609	5.8	17	272	3×0.45×0.30	15562	100%	NFP
344	LT/78	CCT	No Plantation Required	2.697692	5.8	17	272	3×0.45×0.30	25901	100%	NFP
345	LT/82 A	CST & CCT	NFP	1.21304	5.8	17	272	3×0.45×0.30	11645	100%	NFP
346	LT/80	CST & CCT	SGP	1.450831	5.8	17	272	3×0.45×0.30	13938	100%	NFP
347	LT/52	CCT	SGP	1.878821	5.8	17	272	3×0.45×0.30	18032	100%	NFP
348	LT/82 A	CST & CCT	NFP	2.513239	5.8	17	272	3×0.45×0.30	24136	100%	NFP
349	LT/83	CST & CCT	NFP	1.071211	5.8	17	272	3×0.45×0.30	10269	100%	NFP
350	LT/91	CST & CCT	SGP	1.023095	5.8	17	272	3×0.45×0.30	9810	100%	NFP
351	LT/83	CST & CCT	NFP	1.413125	5.5	18	288	3×0.45×0.30	14362	100%	NFP
352	LT/84 B	CCT	SGP	2.290133	5.8	17	272	3×0.45×0.30	21984	100%	NFP
353	LT/82 A	CST & CCT	NFP	3.834269	6.5	15	240	3×0.45×0.30	32464	100%	NFP

354	LT/65	CCT	SGP	1.426502	5.8	17	272	3×0.45×0.30	13691	100%	NFP
355	LT/46	CST & CCT	SGP	1.220607	5.8	17	272	3×0.45×0.30	11715	100%	NFP
356	LT/102	CST & CCT	SGP	2.631858	5.8	17	272	3×0.45×0.30	25266	100%	NFP
357	LT/102	CST & CCT	SGP	1.193695	5.8	17	272	3×0.45×0.30	11468	100%	NFP
358	LT/46	CST & CCT	SGP	2.088594	5.8	17	272	3×0.45×0.30	20043	100%	NFP
359	LT/46	CST & CCT	SGP	1.223702	5.8	17	272	3×0.45×0.30	11751	100%	NFP
360	LT/82	CST & CCT	NFP	1.698168	6.5	15	240	3×0.45×0.30	14397	100%	NFP
361	LT/90	CCT	No Plantation Required	2.902088	5.5	18	288	3×0.45×0.30	29500	100%	NFP
362	LT/62	CST & CCT	SGP	4.050625	5.8	17	272	3×0.45×0.30	38887	100%	NFP
363	LT/80	CST & CCT	SGP	1.216561	5.5	18	288	3×0.45×0.30	12351	100%	NFP
364	LT/84	CST & CCT	SGP	2.293065	5.8	17	272	3×0.45×0.30	22019	100%	NFP
365	LT/84 B	CCT	SGP	3.010807	5.8	17	272	3×0.45×0.30	28900	100%	NFP
366	LT/103	CST & CCT	SGP	4.555387	5.8	17	272	3×0.45×0.30	43721	100%	NFP
367	LT/55	CST & CCT	SGP	2.766104	5.8	17	272	3×0.45×0.30	26536	100%	NFP
368	LT/84	CST & CCT	SGP	1.957925	5.8	17	272	3×0.45×0.30	18808	100%	NFP
369	LT/89	CCT	No Plantation Required	0.99975	5.5	18	288	3×0.45×0.30	10163	100%	NFP
370	LT/45	CCT	SGP	1.200615	5.8	17	272	3×0.45×0.30	11539	100%	NFP
372	LT/86	CST & CCT	SGP	1.968686	5.8	17	272	3×0.45×0.30	18879	100%	NFP
373	LT/58	CCT	No Plantation Required	1.321513	5.8	17	272	3×0.45×0.30	12668	100%	NFP
374	LT/77	CCT	No Plantation Required	1.779685	5.8	17	272	3×0.45×0.30	17079	100%	NFP
375	LT/85	CCT	SGP	1.274753	6.5	15	240	3×0.45×0.30	10798	100%	NFP
376	LT/76	CST & CCT	SGP	1.223702	5.8	17	272	3×0.45×0.30	11751	100%	NFP
377	LT/76	CST & CCT	SGP	1.424713	6.5	15	240	3×0.45×0.30	12068	100%	NFP
390	1/LT	CCT	SGP	5.948272	6.5	15	240	3×0.45×0.30	50390	100%	NFP
391	12/LT (A)	CST & CCT	NFP	4.440851	6.5	15	240	3×0.45×0.30	37616	100%	NFP
392	LT/22	CCT	NFP	1.101952	6.5	15	240	3×0.45×0.30	9316	100%	NFP
393	LT/47	CCT	SGP	6.444254	6.5	15	240	3×0.45×0.30	54589	100%	NFP
394	LT/59	CCT	Encroachment	3.400602	6.5	15	240	3×0.45×0.30	28794	100%	NFP
395	LT/65	CCT	SGP	1.615665	6.5	15	240	3×0.45×0.30	13691	100%	NFP
396	LT/68	CCT	SGP	1.289262	6.5	15	240	3×0.45×0.30	10904	100%	NFP
439	LT/32	CST & CCT	NFP	15.624942	6.5	15	240	3×0.45×0.30	132327	100%	NFP
440	LT/36	CCT	No Plantation	4.271051	6.5	15	240	3×0.45×0.30	36169	100%	NFP

			Required								
441	LT/37	CST & CCT	NFP	4.573267	6.5	15	240	3×0.45×0.30	38745	100%	NFP
442	LT/38	CCT	SGP	2.962203	6.5	15	240	3×0.45×0.30	25089	100%	NFP
443	LT/39	CCT	SGP	5.169282	6.5	15	240	3×0.45×0.30	43791	100%	NFP
444	LT/51	CCT	No Plantation Required	4.979985	6.5	15	240	3×0.45×0.30	42168	100%	NFP
445	LT/57	CCT	SGP	11.7788	6.5	15	240	3×0.45×0.30	99757	100%	NFP
609	LT/27	CCT	No Plantation Required	1.526941	5.8	17	272	3×0.45×0.30	14644	50%	GF
613	LT/25	CCT	No Plantation Required	2.053689	5.8	17	272	3×0.45×0.30	19726	50%	GF
614	LT/26	CCT	No Plantation Required	1.037917	5.8	17	272	3×0.45×0.30	9951	50%	GF
616	LT/26	CCT	No Plantation Required	2.229317	5.8	17	272	3×0.45×0.30	21384	50%	GF
622	LT/21	CCT	No Plantation Required	6.120538	5.8	17	272	3×0.45×0.30	58753	50%	GF
623	LT/21	CCT	No Plantation Required	1.168253	5.8	17	272	3×0.45×0.30	11221	50%	GF
626	2/LT		SGP	1.176076	5.8	17	272	3×0.45×0.30	11292	50%	GF
628	LT/33	CCT	NFP	1.337436	5.8	17	272	3×0.45×0.30	12845	50%	GF
630	LT/29 B	CCT	No Plantation Required	1.747244	5.8	17	272	3×0.45×0.30	16761	50%	GF
632	LT/72	CST & CCT	SGP	1.383344	5.8	17	272	3×0.45×0.30	13268	50%	GF
633	LT/72	CST & CCT	SGP	3.27242	5.8	17	272	3×0.45×0.30	31406	50%	GF
636	LT/89	CCT	No Plantation Required	1.211915	5.8	17	272	3×0.45×0.30	11645	50%	GF
638	LT/58	CCT	No Plantation Required	1.648862	5.8	17	272	3×0.45×0.30	15809	50%	GF
639	LT/84 A	CST & CCT	GF-40%	1.384302	5.8	17	272	3×0.45×0.30	13303	50%	GF
640	LT/84 A	CST & CCT	GF-40%	1.59854	5.8	17	272	3×0.45×0.30	15350	50%	GF
653	14/LT	CST & CCT	NFP	1.051225	6.5	15	240	3×0.45×0.30	8892	50%	GF
654	LT/24	CCT	No Plantation Required	11.113032	6.5	15	240	3×0.45×0.30	94111	50%	GF
655	LT/52	CCT	SGP	1.142122	6.5	15	240	3×0.45×0.30	9669	50%	GF
656	LT/95	CST & CCT	SGP	4.579527	6.5	15	240	3×0.45×0.30	38781	50%	GF
657	LT/96	CST & CCT	SGP	1.942121	6.5	15	240	3×0.45×0.30	16444	50%	GF

688	LT/81 A	CST & CCT	NFP	4.191915	6.5	15	240	3×0.45×0.30	35499	50%	GF
703	14/LT	CST & CCT	NFP	2.21969	6.5	15	240	3×0.45×0.30	18808	100%	NFP
704	14/LT	CST & CCT	NFP	2.032803	6.5	15	240	3×0.45×0.30	17220	100%	NFP
753	LT/80	CST & CCT	SGP	1.167901	5.8	17	272	3×0.45×0.45	16832	100%	NFP
754	LT/81 A	CST & CCT	NFP	3.049797	5.8	17	272	3×0.45×0.45	43933	100%	NFP
755	LT/81 A	CST & CCT	NFP	2.860815	5.8	17	272	3×0.45×0.45	41180	100%	NFP
780	LT/29	CCT	No Plantation Required	7.176509	6.5	15	240	3×0.45×0.45	91147	100%	NFP
781	LT/94	CST & CCT	No Plantation Required	12.856487	6.5	15	240	3×0.45×0.45	163345	100%	NFP
782	LT/95	CST & CCT	SGP	1.623451	6.5	15	240	3×0.45×0.45	20643	100%	NFP
876	LT/76	CST & CCT	SGP	9.298462	6.5	15	240	3×0.45×0.45	118142	100%	NFP
877	LT/76	CST & CCT	SGP	1.599244	6.5	15	240	3×0.45×0.45	20325	100%	NFP
878	LT/76	CST & CCT	SGP	4.952408	6.5	15	240	3×0.45×0.45	62935	100%	NFP
879	LT/77	CCT	No Plantation Required	6.009939	6.5	15	240	3×0.45×0.45	76326	100%	NFP
880	LT/77	CCT	No Plantation Required	2.182742	6.5	15	240	3×0.45×0.45	27736	100%	NFP
881	LT/79	CCT	No Plantation Required	1.561433	6.5	15	240	3×0.45×0.45	19849	100%	NFP
882	LT/79	CCT	No Plantation Required	1.579778	6.5	15	240	3×0.45×0.45	20061	100%	NFP
883	LT/80	CST & CCT	SGP	62.062272	6.5	15	240	3×0.45×0.45	788405	100%	NFP
884	LT/81 A	CST & CCT	NFP	1.856599	6.5	15	240	3×0.45×0.45	23607	100%	NFP
885	LT/81 A	CST & CCT	NFP	2.856915	6.5	15	240	3×0.45×0.45	36311	100%	NFP
1097	LT/21	CCT	No Plantation Required	1.625656	5.8	17	272	3×0.45×0.30	15597	100%	NFP
1103	LT/24	CCT	No Plantation Required	2.791256	5.8	17	272	3×0.45×0.30	26783	100%	NFP
1110	LT/19	CST & CCT	NFP	1.725128	5.8	17	272	3×0.45×0.30	16550	100%	NFP
1111	LT/19	CST & CCT	NFP	4.521312	5.8	17	272	3×0.45×0.30	43403	100%	NFP
1112	11/LT	CCT	No Plantation Required	1.140395	5.8	17	272	3×0.45×0.30	10939	100%	NFP
1121	14/LT	CST & CCT	NFP	1.88446	5.8	17	272	3×0.45×0.30	18102	100%	NFP
1122	8/LT	CST & CCT	NFP	1.30901	5.8	17	272	3×0.45×0.30	12562	100%	NFP
1123	13/LT	CST & CCT	NFP	1.512121	5.8	17	272	3×0.45×0.30	14503	100%	NFP
1124	LT/100	CCT	No Plantation	1.286315	5.8	17	272	3×0.45×0.30	12351	100%	NFP

			Required								
1125	LT/101	CCT	No Plantation Required	1.197914	5.8	17	272	3×0.45×0.30	11504	100%	NFP
1126	LT/101	CCT	No Plantation Required	2.234806	5.8	17	272	3×0.45×0.30	21455	100%	NFP
1130	LT/74	CCT	Encroachment	1.116872	5.8	17	272	3×0.45×0.30	10727	100%	NFP
1131	LT/42	CCT	SGP	3.753664	5.8	17	272	3×0.45×0.30	36028	100%	NFP
1132	LT/72	CST & CCT	SGP	1.404043	5.8	17	272	3×0.45×0.30	13480	100%	NFP
1134	LT/72	CST & CCT	SGP	5.596418	5.8	17	272	3×0.45×0.30	53707	100%	NFP
1135	LT/92	CST & CCT	SGP	10.112307	5.8	17	272	3×0.45×0.30	97075	100%	NFP
1136	LT/92	CST & CCT	SGP	1.014841	5.8	17	272	3×0.45×0.30	9739	100%	NFP
1137	LT/48	CST & CCT	SGP	1.155625	5.8	17	272	3×0.45×0.30	11080	100%	NFP
1139	LT/78	CCT	No Plantation Required	3.209175	5.8	17	272	3×0.45×0.30	30806	100%	NFP
1140	LT/83	CST & CCT	NFP	2.84006	5.8	17	272	3×0.45×0.30	27242	100%	NFP
1141	LT/83	CST & CCT	NFP	1.555034	5.8	17	272	3×0.45×0.30	14927	100%	NFP
1142	LT/82 A	CST & CCT	NFP	10.325061	5.8	17	272	3×0.45×0.30	99087	100%	NFP
1143	LT/43	CST & CCT	SGP	1.503481	5.8	17	272	3×0.45×0.30	14432	100%	NFP
1144	LT/43	CST & CCT	SGP	4.519076	5.8	17	272	3×0.45×0.30	43368	100%	NFP
1145	LT/46	CST & CCT	SGP	1.663086	5.8	17	272	3×0.45×0.30	15950	100%	NFP
1146	LT/50	CCT	No Plantation Required	3.697733	5.8	17	272	3×0.45×0.30	35499	100%	NFP
1147	LT/61	CST & CCT	SGP	1.430557	5.8	17	272	3×0.45×0.30	13727	100%	NFP
1148	LT/61	CST & CCT	SGP	1.711996	5.8	17	272	3×0.45×0.30	16444	100%	NFP
1151	LT/81 A	CST & CCT	NFP	6.687207	5.8	17	272	3×0.45×0.30	64187	100%	NFP
1152	LT/82	CST & CCT	NFP	1.679512	5.8	17	272	3×0.45×0.30	16126	100%	NFP
1153	LT/82	CST & CCT	NFP	3.871844	5.8	17	272	3×0.45×0.30	37157	100%	NFP
1154	LT/87	CST & CCT	SGP	10.361097	5.8	17	272	3×0.45×0.30	99439	100%	NFP
1155	LT/88	CST & CCT	SGP	13.752642	5.8	17	272	3×0.45×0.30	132010	100%	NFP
1156	LT/102	CST & CCT	SGP	7.754902	5.8	17	272	3×0.45×0.30	74421	100%	NFP
1157	LT/58	CCT	No Plantation Required	1.864302	5.8	17	272	3×0.45×0.30	17891	100%	NFP
1158	LT/84 A	CST & CCT	GF-40%	1.404463	5.8	17	272	3×0.45×0.30	13480	100%	NFP
1159	LT/58	CCT	No Plantation Required	3.535644	5.8	17	272	3×0.45×0.30	33946	100%	NFP
1160	LT/79	CCT	No Plantation Required	2.577925	5.8	17	272	3×0.45×0.30	24736	100%	NFP

1161	LT/79	CCT	No Plantation Required	5.380562	5.8	17	272	3×0.45×0.30	51661	100%	NFP
1162	LT/76	CST & CCT	SGP	1.021653	5.8	17	272	3×0.45×0.30	9810	100%	NFP
1163	LT/79	CCT	No Plantation Required	1.13511	5.8	17	272	3×0.45×0.30	10904	100%	NFP
1164	LT/79	CCT	No Plantation Required	1.883647	5.8	17	272	3×0.45×0.30	18067	100%	NFP
1165	LT/77	CCT	No Plantation Required	7.737072	5.8	17	272	3×0.45×0.30	74244	100%	NFP
1166	LT/85	CCT	SGP	1.614064	5.8	17	272	3×0.45×0.30	15491	100%	NFP
1167	LT/86	CST & CCT	SGP	2.371138	5.8	17	272	3×0.45×0.30	22760	100%	NFP
1168	LT/76	CST & CCT	SGP	2.513473	5.8	17	272	3×0.45×0.30	24136	100%	NFP
1186	3/LT	CCT	SGP	2.497083	6.5	15	240	3×0.45×0.30	21137	100%	NFP
1187	5/LT	CCT	SGP	0.943669	6.5	15	240	3×0.45×0.30	7975	100%	NFP
1188	6/LT	CST & CCT	NFP	4.73229	6.5	15	240	3×0.45×0.30	40086	100%	NFP
1189	8/LT	CST & CCT	NFP	5.281197	6.5	15	240	3×0.45×0.30	44709	100%	NFP
1190	8/LT	CST & CCT	NFP	2.164163	6.5	15	240	3×0.45×0.30	18314	100%	NFP
1191	10/LT	CST & CCT	NFP	11.774111	6.5	15	240	3×0.45×0.30	99722	100%	NFP
1192	10/LT	CST & CCT	NFP	1.070438	6.5	15	240	3×0.45×0.30	9069	100%	NFP
1193	11/LT (B)	CST & CCT	NFP	6.123805	6.5	15	240	3×0.45×0.30	51872	100%	NFP
1194	13/LT	CST & CCT	NFP	1.114642	6.5	15	240	3×0.45×0.30	9457	100%	NFP
1195	13/LT	CST & CCT	NFP	4.023731	6.5	15	240	3×0.45×0.30	34087	100%	NFP
1196	14/LT	CST & CCT	NFP	8.708125	6.5	15	240	3×0.45×0.30	73750	100%	NFP
1197	11/LT (A)	CST & CCT	GF-30%	4.821963	6.5	15	240	3×0.45×0.30	40827	100%	NFP
1198	11/LT (A)	CST & CCT	GF-30%	1.959664	6.5	15	240	3×0.45×0.30	16585	100%	NFP
1199	11/LT	CCT	No Plantation Required	8.098525	6.5	15	240	3×0.45×0.30	68598	100%	NFP
1200	11/LT	CCT	No Plantation Required	1.210918	6.5	15	240	3×0.45×0.30	10269	100%	NFP
1201	12/LT	CCT	No Plantation Required	7.120773	6.5	15	240	3×0.45×0.30	60306	100%	NFP
1202	LT/15	CST & CCT	NFP	5.636967	6.5	15	240	3×0.45×0.30	47744	100%	NFP
1203	LT/16	CST & CCT	NFP	18.973114	6.5	15	240	3×0.45×0.30	160698	100%	NFP
1204	LT/16A	CST & CCT	GF-30%	24.962257	6.5	15	240	3×0.45×0.30	211406	100%	NFP

1205	LT/17	CCT	NFP	4.703749	6.5	15	240	3×0.45×0.30	39839	100%	NFP
1206	LT/18	CCT	No Plantation Required	6.595918	6.5	15	240	3×0.45×0.30	55860	100%	NFP
1207	LT/19	CST & CCT	NFP	8.828923	6.5	15	240	3×0.45×0.30	74774	100%	NFP
1208	LT/19	CST & CCT	NFP	1.242128	6.5	15	240	3×0.45×0.30	10516	100%	NFP
1209	LT/19	CST & CCT	NFP	1.354047	6.5	15	240	3×0.45×0.30	11468	100%	NFP
1210	LT/20	CCT	No Plantation Required	4.680253	6.5	15	240	3×0.45×0.30	39628	100%	NFP
1211	LT/21	CCT	No Plantation Required	4.881646	6.5	15	240	3×0.45×0.30	41357	100%	NFP
1212	LT/24	CCT	No Plantation Required	1.808656	6.5	15	240	3×0.45×0.30	15315	100%	NFP
1213	LT/24	CCT	No Plantation Required	5.657517	6.5	15	240	3×0.45×0.30	47920	100%	NFP
1214	LT/26	CCT	No Plantation Required	4.49669	6.5	15	240	3×0.45×0.30	38075	100%	NFP
1215	LT/26	CCT	No Plantation Required	8.797907	6.5	15	240	3×0.45×0.30	74491	100%	NFP
1216	LT/26	CCT	No Plantation Required	1.093761	6.5	15	240	3×0.45×0.30	9281	100%	NFP
1217	LT/28	CCT	GF-50%	14.331427	6.5	15	240	3×0.45×0.30	121388	100%	NFP
1218	LT/28	CCT	GF-50%	4.912443	6.5	15	240	3×0.45×0.30	41604	100%	NFP
1219	LT/29	CCT	No Plantation Required	13.6236	6.5	15	240	3×0.45×0.30	115389	100%	NFP
1220	LT/48	CST & CCT	SGP	1.835408	6.5	15	240	3×0.45×0.30	15526	100%	NFP
1221	LT/48	CST & CCT	SGP	1.084338	6.5	15	240	3×0.45×0.30	9175	100%	NFP
1222	LT/49	CCT	SGP	2.458392	6.5	15	240	3×0.45×0.30	20819	100%	NFP
1223	LT/52	CCT	SGP	1.197792	6.5	15	240	3×0.45×0.30	10127	100%	NFP
1224	LT/60	CST & CCT	No Plantation Required	3.773827	6.5	15	240	3×0.45×0.30	31970	100%	NFP
1225	LT/61	CST & CCT	SGP	2.581605	6.5	15	240	3×0.45×0.30	21878	100%	NFP
1226	LT/62	CST & CCT	SGP	2.831084	6.5	15	240	3×0.45×0.30	23960	100%	NFP
1227	LT/63	CCT	No Plantation Required	2.749839	6.5	15	240	3×0.45×0.30	23290	100%	NFP
1228	LT/64	CCT	No Plantation Required	8.153626	6.5	15	240	3×0.45×0.30	69057	100%	NFP
1229	LT/66	CCT	No Plantation	2.227319	6.5	15	240	3×0.45×0.30	18879	100%	NFP

			Required								
1230	LT/67	CST & CCT	SGP	4.32466	6.5	15	240	3×0.45×0.30	36628	100%	NFP
1231	LT/69	CCT	GF-50%	10.78465	6.5	15	240	3×0.45×0.30	91323	100%	NFP
1232	LT/70	CCT	No Plantation Required	6.654694	6.5	15	240	3×0.45×0.30	56354	100%	NFP
1233	LT/70	CCT	No Plantation Required	5.192627	6.5	15	240	3×0.45×0.30	43968	100%	NFP
1234	LT/70 A	CCT	GF-20%	3.243537	6.5	15	240	3×0.45×0.30	27453	100%	NFP
1235	LT/70 A	CCT	GF-20%	2.125333	6.5	15	240	3×0.45×0.30	17996	100%	NFP
1236	LT/72	CST & CCT	SGP	18.574596	6.5	15	240	3×0.45×0.30	157311	100%	NFP
1237	LT/72	CST & CCT	SGP	3.011579	6.5	15	240	3×0.45×0.30	25513	100%	NFP
1238	LT/74	CCT	Encroachment	3.039255	6.5	15	240	3×0.45×0.30	25724	100%	NFP
1239	LT/74	CCT	Encroachment	7.734935	6.5	15	240	3×0.45×0.30	65493	100%	NFP
1240	LT/75	CST & CCT	SGP	12.222537	6.5	15	240	3×0.45×0.30	103497	100%	NFP
1241	LT/93	CCT	No Plantation Required	18.345675	6.5	15	240	3×0.45×0.30	155370	100%	NFP
1242	LT/94	CST & CCT	No Plantation Required	9.457614	6.5	15	240	3×0.45×0.30	80102	100%	NFP
1243	LT/96	CST & CCT	SGP	8.506217	6.5	15	240	3×0.45×0.30	72021	100%	NFP
1244	LT/98	CCT	SGP	7.478274	6.5	15	240	3×0.45×0.30	63341	100%	NFP
1446	8/LT (A)	CCT	No Plantation Required	14.626963	6.5	15	240	3×0.45×0.30	123858	100%	NFP
1447	8/LT (A)	CCT	No Plantation Required	1.561694	6.5	15	240	3×0.45×0.30	13233	100%	NFP
1448	8/LT (A)	CCT	No Plantation Required	2.541613	6.5	15	240	3×0.45×0.30	21525	100%	NFP
1449	LT/29 A	CST & CCT	NFP	2.032999	6.5	15	240	3×0.45×0.30	17220	100%	NFP
1450	LT/29 A	CST & CCT	NFP	13.288881	6.5	15	240	3×0.45×0.30	112531	100%	NFP
1451	LT/29 B	CCT	No Plantation Required	5.373327	6.5	15	240	3×0.45×0.30	45521	100%	NFP
1452	LT/30	CCT	No Plantation Required	5.175176	6.5	15	240	3×0.45×0.30	43827	100%	NFP
1453	LT/30	CCT	No Plantation Required	8.775888	6.5	15	240	3×0.45×0.30	74315	100%	NFP
1454	LT/31	CST & CCT	NFP	20.515363	6.5	15	240	3×0.45×0.30	173754	100%	NFP
1455	LT/33	CCT	NFP	3.350156	6.5	15	240	3×0.45×0.30	28371	100%	NFP
1456	LT/33	CCT	NFP	1.381219	6.5	15	240	3×0.45×0.30	11680	100%	NFP

1457	LT/34	CCT	No Plantation Required	24.700533	6.5	15	240	3×0.45×0.30	209183	100%	NFP
1458	LT/35	CCT	No Plantation Required	2.971335	6.5	15	240	3×0.45×0.30	25160	100%	NFP
1459	LT/35	CCT	No Plantation Required	12.602111	6.5	15	240	3×0.45×0.30	106744	100%	NFP
1460	LT/40	CST & CCT	NFP	12.260502	6.5	15	240	3×0.45×0.30	103850	100%	NFP
1461	LT/43	CST & CCT	SGP	24.23336	6.5	15	240	3×0.45×0.30	205231	100%	NFP
1462	LT/44	CCT	No Plantation Required	5.45274	6.5	15	240	3×0.45×0.30	46191	100%	NFP
1463	LT/45	CCT	SGP	2.942502	6.5	15	240	3×0.45×0.30	24913	100%	NFP
1464	LT/45	CCT	SGP	2.84222	6.5	15	240	3×0.45×0.30	24066	100%	NFP
1465	LT/46	CST & CCT	SGP	42.358043	6.5	15	240	3×0.45×0.30	358730	100%	NFP
1466	LT/50	CCT	No Plantation Required	7.883241	6.5	15	240	3×0.45×0.30	66763	100%	NFP
1467	LT/53	CST & CCT	SGP	6.671788	6.5	15	240	3×0.45×0.30	56495	100%	NFP
1468	LT/54	CST & CCT	SGP	6.251766	6.5	15	240	3×0.45×0.30	52931	100%	NFP
1469	LT/55	CST & CCT	SGP	7.835271	6.5	15	240	3×0.45×0.30	66340	100%	NFP
1470	LT/55	CST & CCT	SGP	1.471376	6.5	15	240	3×0.45×0.30	12456	100%	NFP
1471	LT/56	CST & CCT	SGP	20.129053	6.5	15	240	3×0.45×0.30	170473	100%	NFP
1472	LT/58	CCT	No Plantation Required	2.304466	6.5	15	240	3×0.45×0.30	19514	100%	NFP
1473	LT/58	CCT	No Plantation Required	1.964597	6.5	15	240	3×0.45×0.30	16656	100%	NFP
1474	LT/58	CCT	No Plantation Required	4.787471	6.5	15	240	3×0.45×0.30	40545	100%	NFP
1475	LT/73	CCT	No Plantation Required	5.059061	6.5	15	240	3×0.45×0.30	42839	100%	NFP
1476	LT/73	CCT	No Plantation Required	1.1989	6.5	15	240	3×0.45×0.30	10163	100%	NFP
1477	LT/76	CST & CCT	SGP	15.476441	6.5	15	240	3×0.45×0.30	131057	100%	NFP
1478	LT/76	CST & CCT	SGP	5.090359	6.5	15	240	3×0.45×0.30	43121	100%	NFP
1479	LT/77	CCT	No Plantation Required	4.284344	6.5	15	240	3×0.45×0.30	36275	100%	NFP
1480	LT/77	CCT	No Plantation Required	2.226623	6.5	15	240	3×0.45×0.30	18843	100%	NFP
1481	LT/77	CCT	No Plantation	1.882929	6.5	15	240	3×0.45×0.30	15950	100%	NFP

			Required								
1482	LT/77	CCT	No Plantation Required	18.468991	6.5	15	240	3×0.45×0.30	156428	100%	NFP
1483	LT/78	CCT	No Plantation Required	12.224246	6.5	15	240	3×0.45×0.30	103533	100%	NFP
1484	LT/79	CCT	No Plantation Required	30.543813	6.5	15	240	3×0.45×0.30	258691	100%	NFP
1485	LT/79	CCT	No Plantation Required	1.186039	6.5	15	240	3×0.45×0.30	10057	100%	NFP
1486	LT/80	CST & CCT	SGP	39.471318	6.5	15	240	3×0.45×0.30	334276	100%	NFP
1487	LT/80	CST & CCT	SGP	7.829901	6.5	15	240	3×0.45×0.30	66305	100%	NFP
1488	LT/81	CCT	SGP	3.784275	6.5	15	240	3×0.45×0.30	32041	100%	NFP
1489	LT/81 A	CST & CCT	NFP	2.838432	6.5	15	240	3×0.45×0.30	24031	100%	NFP
1490	LT/81 A	CST & CCT	NFP	3.012657	6.5	15	240	3×0.45×0.30	25513	100%	NFP
1491	LT/81 A	CST & CCT	NFP	1.254807	6.5	15	240	3×0.45×0.30	10621	100%	NFP
1492	LT/82	CST & CCT	NFP	1.348269	6.5	15	240	3×0.45×0.30	11433	100%	NFP
1493	LT/82	CST & CCT	NFP	4.969127	6.5	15	240	3×0.45×0.30	42098	100%	NFP
1494	LT/82	CST & CCT	NFP	1.068739	6.5	15	240	3×0.45×0.30	9034	100%	NFP
1495	LT/82	CST & CCT	NFP	2.094467	6.5	15	240	3×0.45×0.30	17749	100%	NFP
1496	LT/82 A	CST & CCT	NFP	10.64612	6.5	15	240	3×0.45×0.30	90159	100%	NFP
1497	LT/82 A	CST & CCT	NFP	1.720092	6.5	15	240	3×0.45×0.30	14574	100%	NFP
1498	LT/83	CST & CCT	NFP	6.549739	6.5	15	240	3×0.45×0.30	55472	100%	NFP
1499	LT/83	CST & CCT	NFP	2.47267	6.5	15	240	3×0.45×0.30	20925	100%	NFP
1500	LT/83	CST & CCT	NFP	1.073006	6.5	15	240	3×0.45×0.30	9104	100%	NFP
1501	LT/84	CST & CCT	SGP	21.257853	6.5	15	240	3×0.45×0.30	180036	100%	NFP
1502	LT/84 A	CST & CCT	GF-40%	11.627827	6.5	15	240	3×0.45×0.30	98487	100%	NFP
1503	LT/84 A	CST & CCT	GF-40%	6.700595	6.5	15	240	3×0.45×0.30	56742	100%	NFP
1504	LT/84 B	CCT	SGP	10.549114	6.5	15	240	3×0.45×0.30	89347	100%	NFP
1505	LT/85	CCT	SGP	1.406727	6.5	15	240	3×0.45×0.30	11927	100%	NFP
1506	LT/86	CST & CCT	SGP	1.352631	6.5	15	240	3×0.45×0.30	11468	100%	NFP
1507	LT/86	CST & CCT	SGP	1.852084	6.5	15	240	3×0.45×0.30	15703	100%	NFP
1508	LT/87	CST & CCT	SGP	10.273523	6.5	15	240	3×0.45×0.30	87018	100%	NFP
1509	LT/87	CST & CCT	SGP	1.099082	6.5	15	240	3×0.45×0.30	9316	100%	NFP
1510	LT/88	CST & CCT	SGP	1.396783	6.5	15	240	3×0.45×0.30	11821	100%	NFP
1511	LT/88	CST & CCT	SGP	2.985512	6.5	15	240	3×0.45×0.30	25301	100%	NFP
1512	LT/89	CCT	No Plantation Required	22.348163	6.5	15	240	3×0.45×0.30	189281	100%	NFP

1513	LT/90	CCT	No Plantation Required	10.143319	6.5	15	240	3×0.45×0.30	85889	100%	NFP
1514	LT/91	CST & CCT	SGP	1.303177	6.5	15	240	3×0.45×0.30	11045	100%	NFP
1515	LT/91	CST & CCT	SGP	1.728172	6.5	15	240	3×0.45×0.30	14644	100%	NFP
1516	LT/92	CST & CCT	SGP	18.662752	6.5	15	240	3×0.45×0.30	158052	100%	NFP
1517	LT/97	CCT	SGP	2.03261	6.5	15	240	3×0.45×0.30	17220	100%	NFP
1518	LT/99	CCT	SGP	3.347851	6.5	15	240	3×0.45×0.30	28336	100%	NFP
1519	LT/100	CCT	No Plantation Required	9.848483	6.5	15	240	3×0.45×0.30	83419	100%	NFP
1520	LT/101	CCT	No Plantation Required	11.126098	6.5	15	240	3×0.45×0.30	94217	100%	NFP
1521	LT/101	CCT	No Plantation Required	4.667635	6.5	15	240	3×0.45×0.30	39522	100%	NFP
1522	LT/102	CST & CCT	SGP	17.226246	6.5	15	240	3×0.45×0.30	145877	100%	NFP
1523	LT/103	CST & CCT	SGP	5.564385	6.5	15	240	3×0.45×0.30	47108	100%	NFP
1524	LT/104	CCT	No Plantation Required	14.922239	6.5	15	240	3×0.45×0.30	126364	100%	NFP
1584	LT/76	CST & CCT	SGP	1.29921	5.8	17	272	3×0.45×0.30	12456	80%	GF
1589	LT/76	CST & CCT	SGP	13.393585	6.5	15	240	3×0.45×0.30	113413	80%	GF
1689	LT/85	CCT	SGP	0.627128	6.5	15	240	3×0.45×0.45	7993	50%	GF
1690	LT/85	CCT	SGP	0.874096	6.5	15	240	3×0.45×0.45	11115	50%	GF
1872	LT/25	CCT	No Plantation Required	2.522575	5.8	17	272	3×0.45×0.30	24207	50%	GF
1874	LT/27	CCT	No Plantation Required	1.144393	5.8	17	272	3×0.45×0.30	10974	50%	GF
1875	LT/27	CCT	No Plantation Required	1.882076	5.8	17	272	3×0.45×0.30	18067	50%	GF
1881	2/LT		SGP	1.641499	5.8	17	272	3×0.45×0.30	15738	50%	GF
1882	3/LT	CCT	SGP	1.380671	5.8	17	272	3×0.45×0.30	13268	50%	GF
1883	3/LT	CCT	SGP	1.64747	5.8	17	272	3×0.45×0.30	15809	50%	GF
1886	9/LT	CCT	SGP	3.877816	5.8	17	272	3×0.45×0.30	37228	50%	GF
1887	LT/33	CCT	NFP	1.141693	5.8	17	272	3×0.45×0.30	10974	50%	GF
1888	LT/101	CCT	No Plantation Required	2.332504	5.8	17	272	3×0.45×0.30	22372	50%	GF
1891	LT/30	CCT	No Plantation Required	1.211143	5.8	17	272	3×0.45×0.30	11610	50%	GF
1894	LT/82 A	CST & CCT	NFP	1.275547	5.8	17	272	3×0.45×0.30	12245	50%	GF

1895	LT/82 A	CST & CCT	NFP	1.294393	5.8	17	272	3×0.45×0.30	12421	50%	GF
1898	LT/82	CST & CCT	NFP	2.487997	5.8	17	272	3×0.45×0.30	23889	50%	GF
1899	LT/82	CST & CCT	NFP	2.307088	5.8	17	272	3×0.45×0.30	22160	50%	GF
1900	LT/79	CCT	No Plantation Required	1.581886	5.8	17	272	3×0.45×0.30	15174	50%	GF
1901	LT/77	CCT	No Plantation Required	2.229157	5.8	17	272	3×0.45×0.30	21384	50%	GF
1902	LT/84 A	CST & CCT	GF-40%	1.073384	5.8	17	272	3×0.45×0.30	10304	50%	GF
1903	LT/85	CCT	SGP	3.710684	5.8	17	272	3×0.45×0.30	35605	50%	GF
1913	2/LT		SGP	8.577518	6.5	15	240	3×0.45×0.30	72656	50%	GF
1914	3/LT	CCT	SGP	3.55946	6.5	15	240	3×0.45×0.30	30135	50%	GF
1915	3/LT	CCT	SGP	1.174824	6.5	15	240	3×0.45×0.30	9951	50%	GF
1916	4/LT	CCT	No Plantation Required	2.081746	6.5	15	240	3×0.45×0.30	17644	50%	GF
1917	4/LT	CCT	No Plantation Required	3.94915	6.5	15	240	3×0.45×0.30	33452	50%	GF
1918	5/LT	CCT	SGP	2.141114	6.5	15	240	3×0.45×0.30	18138	50%	GF
1919	8/LT	CST & CCT	NFP	1.194773	6.5	15	240	3×0.45×0.30	10127	50%	GF
1920	11/LT (A)	CST & CCT	GF-30%	4.636884	6.5	15	240	3×0.45×0.30	39275	50%	GF
1921	LT/18	CCT	No Plantation Required	2.137972	6.5	15	240	3×0.45×0.30	18102	50%	GF
1922	LT/21	CCT	No Plantation Required	11.841551	6.5	15	240	3×0.45×0.30	100286	50%	GF
1923	LT/25	CCT	No Plantation Required	16.262372	6.5	15	240	3×0.45×0.30	137726	50%	GF
1924	LT/25	CCT	No Plantation Required	5.516339	6.5	15	240	3×0.45×0.30	46720	50%	GF
1925	LT/26	CCT	No Plantation Required	3.392228	6.5	15	240	3×0.45×0.30	28724	50%	GF
1926	LT/26	CCT	No Plantation Required	6.054014	6.5	15	240	3×0.45×0.30	51272	50%	GF
1927	LT/27	CCT	No Plantation Required	6.530439	6.5	15	240	3×0.45×0.30	55295	50%	GF
1928	LT/27	CCT	No Plantation Required	1.852775	6.5	15	240	3×0.45×0.30	15703	50%	GF
1929	LT/27	CCT	No Plantation	3.447207	6.5	15	240	3×0.45×0.30	29183	50%	GF

			Required								
1930	LT/70	CCT	No Plantation Required	2.503715	6.5	15	240	3×0.45×0.30	21208	50%	GF
1931	LT/71	CCT	No Plantation Required	5.089513	6.5	15	240	3×0.45×0.30	43086	50%	GF
1932	LT/72	CST & CCT	SGP	2.307014	6.5	15	240	3×0.45×0.30	19549	50%	GF
1933	LT/72	CST & CCT	SGP	1.096108	6.5	15	240	3×0.45×0.30	9281	50%	GF
1934	LT/72	CST & CCT	SGP	1.454901	6.5	15	240	3×0.45×0.30	12315	50%	GF
1935	LT/74	CCT	Encroachment	1.026133	6.5	15	240	3×0.45×0.30	8681	50%	GF
2082	LT/29 B	CCT	No Plantation Required	5.530308	6.5	15	240	3×0.45×0.30	46826	50%	GF
2083	LT/30	CCT	No Plantation Required	1.372977	6.5	15	240	3×0.45×0.30	11645	50%	GF
2084	LT/35	CCT	No Plantation Required	10.760864	6.5	15	240	3×0.45×0.30	91147	50%	GF
2085	LT/58	CCT	No Plantation Required	6.963928	6.5	15	240	3×0.45×0.30	58965	50%	GF
2086	LT/76	CST & CCT	SGP	1.173655	6.5	15	240	3×0.45×0.30	9951	50%	GF
2087	LT/76	CST & CCT	SGP	2.038181	6.5	15	240	3×0.45×0.30	17255	50%	GF
2088	LT/82	CST & CCT	NFP	1.092979	6.5	15	240	3×0.45×0.30	9245	50%	GF
2089	LT/82 A	CST & CCT	NFP	1.748186	6.5	15	240	3×0.45×0.30	14821	50%	GF
2090	LT/84 A	CST & CCT	GF-40%	10.739594	6.5	15	240	3×0.45×0.30	90971	50%	GF
2091	LT/84 A	CST & CCT	GF-40%	6.576724	6.5	15	240	3×0.45×0.30	55683	50%	GF
2092	LT/85	CCT	SGP	2.453467	6.5	15	240	3×0.45×0.30	20784	50%	GF
2093	LT/86	CST & CCT	SGP	1.139815	6.5	15	240	3×0.45×0.30	9669	50%	GF
2094	LT/86	CST & CCT	SGP	5.227108	6.5	15	240	3×0.45×0.30	44285	50%	GF
2095	LT/92	CST & CCT	SGP	8.244899	6.5	15	240	3×0.45×0.30	69833	50%	GF
2096	LT/101	CCT	No Plantation Required	1.482304	6.5	15	240	3×0.45×0.30	12562	50%	GF
2131	13/LT	CST & CCT	NFP	11.124958	6.5	15	240	3×0.45×0.30	94217	100%	NFP
2132	13/LT	CST & CCT	NFP	6.506687	6.5	15	240	3×0.45×0.30	55119	100%	NFP
2133	13/LT	CST & CCT	NFP	6.918729	6.5	15	240	3×0.45×0.30	58577	100%	NFP
2134	LT/15	CST & CCT	NFP	5.911575	6.5	15	240	3×0.45×0.30	50073	100%	NFP

(10) Panipathar Beat (Puncha range)

Drainage Line Treatment Measures Open Map

10.1.1 Loose Boulder Check Dam- Panipathar Beat (Puncha range) Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
190	21 B	2A2B4h5	1	23.2332	86.4998	8.0	1.00	0.5	2.00	0.30	43783.30
191	26 A	2A2B4h5	1	23.2414	86.5033	8.0	0.75	0.4	1.50	0.20	23949.71
192	26 B	2A2B4h5	1	23.2413	86.5036	7.0	0.75	0.4	1.50	0.20	20956.54
193	26 C	2A2B4h5	1	23.2412	86.5036	7.0	0.75	0.4	1.50	0.20	20957.08
194	26 D	2A2B4h5	1	23.2411	86.5037	4.0	0.75	0.4	1.50	0.20	11975.78
195	26 E	2A2B4h5	1	23.241	86.5038	6.0	0.75	0.4	1.50	0.20	17964.14
196	26 F.	2A2B4h5	1	23.2417	86.5031	5.0	0.75	0.4	1.50	0.20	14970.50
197	26 G	2A2B4h5	1	23.2417	86.503	5.0	1.00	0.5	2.00	0.30	27369.97
198	27 A	2A2B4h5	1	23.2421	86.5026	5.0	0.50	0.4	1.20	0.20	9478.69
199	77 C	2A2B4h4	1	23.2099	86.5356	5.0	0.75	0.4	1.50	0.20	14971.66
200	77 D	2A2B4h4	1	23.2099	86.5356	4.0	0.75	0.4	1.50	0.20	11977.64
201	77 E	2A2B4h4	1	23.2099	86.5356	6.0	0.75	0.4	1.50	0.20	17966.92
203	83 C	2A2B4h2	1	23.2285	86.546	5.0	0.60	0.4	1.30	0.20	11396.95
205	85 B	2A2B4h2	1	23.2367	86.5497	5.0	0.60	0.4	1.30	0.20	11397.62
206	87 B	2A2B4h2	1	23.2386	86.5455	5.0	0.60	0.4	1.30	0.20	11397.96
207	87 C	2A2B4h2	1	23.2386	86.5456	5.0	0.75	0.4	1.50	0.20	14974.75
208	87 E	2A2B4h2	1	23.2386	86.5457	9.0	0.60	0.4	1.30	0.20	20517.53
209	90 A	2A2B2g7	1	23.2189	86.4664	6.0	0.90	0.5	1.90	0.30	29316.54
210	90 B	2A2B2g7	1	23.2186	86.4667	4.0	0.50	0.4	1.20	0.20	7585.92
211	90 C	2A2B2g7	1	23.2196	86.4674	4.0	0.50	0.4	1.20	0.20	7586.17
212	90 D	2A2B2g7	1	23.2194	86.4672	3.0	0.50	0.4	1.20	0.20	5689.81
213	90 E	2A2B2g7	1	23.2194	86.4675	3.0	0.50	0.4	1.20	0.20	5690.00
214	90 F	2A2B2g7	1	23.2196	86.4677	7.0	0.50	0.4	1.20	0.20	13277.09

215	90 G	2A2B2g7	1	23.2204	86.4679	4.0	0.50	0.4	1.20	0.20	7587.16
216	90 H	2A2B2g7	1	23.2203	86.4681	4.0	0.50	0.4	1.20	0.20	7587.40
217	90 I	2A2B2g7	1	23.2207	86.4671	9.0	0.75	0.4	1.50	0.20	26961.50
219	111 F	2A2B2g2	1	23.1581	86.4908	9.0	1.00	0.5	2.00	0.30	49296.53
220	111 G	2A2B2g2	1	23.1553	86.4906	9.0	0.75	0.4	1.50	0.20	26963.59
221	111 H	2A2B2g2	1	23.1581	86.4905	9.0	0.75	0.4	1.50	0.20	26964.28
222	111 I	2A2B2g2	1	23.1581	86.4903	7.0	0.60	0.4	1.30	0.20	15964.64
204	83 B	2A2B4h2	1	23.2286	86.5461	2.5	0.60	0.4	1.30	0.20	5686.43

10.1.2 Gabion Check Dam Panipathar Beat (Puncha range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
189	21 A	2A2B4h5	1	23.23333	86.49961	10.5	2.1	1.0	0.70	5	3.10	1.0	0.70	370301.82
218	111 E	2A2B2g2	1	23.15561	86.49044	10.5	1.8	1.0	0.60	5	2.80	1.0	0.60	368773.30

Water Harvesting Structure Measures - Panipathar Beat (Puncha range)

Open Map

10.2.1 Pond Renovation- Panipathar Beat (Puncha range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
84	33/WR (D)	2 A 2 B 4 h 5	1	23.240011	86.506397	594417.45
85	40/WR (A)	2 A 2 B 4 h 3	1	23.249722	86.524167	163505.13
86	65/WR (D)	2 A 2 B 4 h 1	1	23.190556	86.528611	305450.86
87	65/WR (F)	2 A 2 B 4 h 1	1	23.190278	86.528333	93106.06

88	65/WR (C)	2 A 2 B 2 g 1	1	23.184167	86.531944	332356.02
89	70/WR (C)	2 A 2 B 4 h 1	1	23.196111	86.527222	623103.47
91	77/WR (A)	2 A 2 B 4 h 2	1	23.215556	86.526111	117579.18
92	107/WR (A)	2 A 2 B 2 g 8	1	23.178361	86.446917	55144.79

10.3.1 Land Treatment and Forest Plantation measures- Panipathar Beat (Puncha range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
43	LT/116	CST & CCT	NFP	2.553555	5.8	17	272	3×0.45×0.45	36787	100%	NFP
45	LT/105B	CST & CCT	NFP	1.24094	6.5	15	240	3×0.45×0.45	15773	100%	NFP
46	LT/63A	CST		1.468813	5.8	17	272	3×0.45×0.45	21172	100%	NFP
47	LT/63A	CST		4.421867	5.8	17	272	3×0.45×0.45	63676	100%	NFP
63	LT/63	CST & CCT	NFP	2.454096	6.5	15	240	3×0.45×0.45	31176	100%	NFP
64	LT/103	CST & CCT	NFP	9.39658	6.5	15	240	3×0.45×0.45	119359	100%	NFP
228	LT/29	CST	GF-60%	2.684972	6.5	15	240	3×0.45×0.30	22725	100%	NFP
233	LT/26	CST & CCT	NFP	1.319395	5.8	17	272	3×0.45×0.30	12668	100%	NFP
235	LT/87F	CST & CCT	NFP	2.219815	5.8	17	272	3×0.45×0.30	21313	100%	NFP
238	LT/87F	CST & CCT	NFP	4.825165	6.5	15	240	3×0.45×0.30	40863	100%	NFP
242	LT/87F	CST & CCT	NFP	1.713184	5.8	17	272	3×0.45×0.30	16444	100%	NFP
246	LT/31	CST	GF-50%	2.681884	5.8	17	272	3×0.45×0.30	25724	100%	NFP
248	LT/87F	CST & CCT	NFP	2.69176	5.8	17	272	3×0.45×0.30	25830	100%	NFP
254	LT/24	CST & CCT	NFP	3.378688	5.8	17	272	3×0.45×0.30	32429	100%	NFP
255	LT/85A	CST & CCT	NFP	2.580002	6.5	15	240	3×0.45×0.30	21843	100%	NFP
256	LT/31	CST	GF-50%	1.338486	5.8	17	272	3×0.45×0.30	12845	100%	NFP
257	LT/86	CST & CCT	NFP	1.127495	5.8	17	272	3×0.45×0.30	10833	100%	NFP
258	LT/87A	CST & CCT	NFP	4.894811	5.8	17	272	3×0.45×0.30	46967	100%	NFP
264	LT/86	CST & CCT	NFP	1.142123	5.8	17	272	3×0.45×0.30	10974	100%	NFP

266	LT/87A	CST & CCT	NFP	1.05243	5.8	17	272	3×0.45×0.30	10092	100%	NFP
268	LT/38	CST & CCT	NFP	1.37662	5.8	17	272	3×0.45×0.30	13197	100%	NFP
271	LT/83		GF-80%	1.360749	5.8	17	272	3×0.45×0.30	13056	100%	NFP
272	LT/85A	CST & CCT	NFP	1.312604	5.8	17	272	3×0.45×0.30	12598	100%	NFP
280	LT/09	CST & CCT	NFP	6.43798	5.8	17	272	3×0.45×0.30	61788	100%	NFP
291	LT/80F	CST & CCT	NFP	2.940683	5.8	17	272	3×0.45×0.30	28230	100%	NFP
306	LT/72A	CST & CCT	GF-40%	2.044864	5.8	17	272	3×0.45×0.30	19620	100%	NFP
307	LT/01	CST		2.784189	6.5	15	240	3×0.45×0.30	23572	100%	NFP
313	LT/02	CST & CCT	NFP	1.990045	5.8	17	272	3×0.45×0.30	19090	100%	NFP
318	LT/04	CST		1.793466	5.8	17	272	3×0.45×0.30	17220	100%	NFP
330	LT/66B	CST & CCT	NFP	2.338164	5.8	17	272	3×0.45×0.30	22443	100%	NFP
397	LT/17	CST & CCT	NFP	2.313519	6.5	15	240	3×0.45×0.30	19584	100%	NFP
398	LT/64A	CST & CCT	NFP	3.236057	6.5	15	240	3×0.45×0.30	27418	100%	NFP
399	LT/80D	CST & CCT	NFP	5.040709	6.5	15	240	3×0.45×0.30	42698	100%	NFP
400	LT/80H	CST & CCT	NFP	1.343262	6.5	15	240	3×0.45×0.30	11362	100%	NFP
401	LT/82B	CST & CCT	NFP	2.830693	6.5	15	240	3×0.45×0.30	23960	100%	NFP
446	LT/54	CST	NFP	1.172567	6.5	15	240	3×0.45×0.30	9916	100%	NFP
490	LT/72A	CST & CCT	GF-40%	1.769452	5.8	17	272	3×0.45×0.45	25460	50%	GF
491	LT/72A	CST & CCT	GF-40%	1.643334	5.8	17	272	3×0.45×0.45	23660	50%	GF
504	LT/102A	CST & CCT	NFP	7.452925	6.5	15	240	3×0.45×0.45	94693	50%	GF
505	LT/105A	CST & CCT	NFP	1.298795	6.5	15	240	3×0.45×0.45	16514	50%	GF
506	LT/105B	CST & CCT	NFP	1.089837	6.5	15	240	3×0.45×0.45	13868	50%	GF
593	LT/29	CST	GF-60%	5.156592	6.5	15	240	3×0.45×0.30	43686	50%	GF
595	LT/29	CST	GF-60%	1.071336	6.5	15	240	3×0.45×0.30	9069	50%	GF
596	LT/87F	CST & CCT	NFP	1.065299	5.5	18	288	3×0.45×0.30	10833	50%	GF
601	LT/25	CST & CCT	NFP	1.324777	6.5	15	240	3×0.45×0.30	11221	50%	GF
612	LT/83		GF-80%	1.062901	6.5	15	240	3×0.45×0.30	8998	50%	GF
621	LT/82A	CST & CCT	NFP	1.382866	5.8	17	272	3×0.45×0.30	13268	50%	GF
631	LT/50	CCT		1.551052	6.5	15	240	3×0.45×0.30	13127	50%	GF
634	LT/111D	CST	GF-50%	1.036093	5.8	17	272	3×0.45×0.30	9951	50%	GF
635	LT/111D	CST	GF-50%	2.164161	5.8	17	272	3×0.45×0.30	20784	50%	GF
637	LT/111C	CST & CCT	NFP	1.189866	5.8	17	272	3×0.45×0.30	11433	50%	GF
658	LT/18	CST & CCT	NFP	1.828771	6.5	15	240	3×0.45×0.30	15491	50%	GF
659	LT/26	CST & CCT	NFP	3.461641	6.5	15	240	3×0.45×0.30	29324	50%	GF
660	LT/67	CST & CCT	GF-90%	1.6753	6.5	15	240	3×0.45×0.30	14185	50%	GF
661	LT/71	CST & CCT	NFP	3.055468	6.5	15	240	3×0.45×0.30	25866	50%	GF
662	LT/78	CST & CCT	GF-90%	2.151469	6.5	15	240	3×0.45×0.30	18208	50%	GF

738	LT/92	CST & CCT	NFP	6.634263	5.8	17	272	3×0.45×0.45	95540	100%	NFP
741	LT/90	CST & CCT	NFP	5.768913	5.8	17	272	3×0.45×0.45	83049	100%	NFP
742	LT/90	CST & CCT	NFP	1.204348	5.8	17	272	3×0.45×0.45	17361	100%	NFP
746	LT/72A	CST & CCT	GF-40%	1.661687	5.8	17	272	3×0.45×0.45	23925	100%	NFP
749	LT/102A	CST & CCT	NFP	1.465108	5.8	17	272	3×0.45×0.45	21119	100%	NFP
750	LT/105A	CST & CCT	NFP	2.2405	5.8	17	272	3×0.45×0.45	32235	100%	NFP
751	LT/105B	CST & CCT	NFP	2.453211	5.8	17	272	3×0.45×0.45	35305	100%	NFP
756	LT/111D	CST	GF-50%	2.117951	5.8	17	272	3×0.45×0.45	30488	100%	NFP
757	LT/111D	CST	GF-50%	1.25214	5.8	17	272	3×0.45×0.45	18049	100%	NFP
783	LT/63A	CST		5.233613	6.5	15	240	3×0.45×0.45	66481	100%	NFP
784	LT/63B	CST		7.103816	6.5	15	240	3×0.45×0.45	90247	100%	NFP
785	LT/63B	CST		0.724624	6.5	15	240	3×0.45×0.45	9210	100%	NFP
786	LT/63B	CST		2.702516	6.5	15	240	3×0.45×0.45	34352	100%	NFP
787	LT/102A	CST & CCT	NFP	2.830331	6.5	15	240	3×0.45×0.45	35940	100%	NFP
788	LT/102A	CST & CCT	NFP	2.197767	6.5	15	240	3×0.45×0.45	27895	100%	NFP
789	LT/105A	CST & CCT	NFP	2.169876	6.5	15	240	3×0.45×0.45	27577	100%	NFP
790	LT/105A	CST & CCT	NFP	1.829427	6.5	15	240	3×0.45×0.45	23237	100%	NFP
791	LT/105B	CST & CCT	NFP	1.006195	6.5	15	240	3×0.45×0.45	12756	100%	NFP
792	LT/105B	CST & CCT	NFP	1.007053	6.5	15	240	3×0.45×0.45	12809	100%	NFP
793	LT/115	CST & CCT	NFP	18.34554	6.5	15	240	3×0.45×0.45	233055	100%	NFP
794	LT/116	CST & CCT	NFP	7.435162	6.5	15	240	3×0.45×0.45	94429	100%	NFP
795	LT/116	CST & CCT	NFP	1.892845	6.5	15	240	3×0.45×0.45	24031	100%	NFP
886	LT/90	CST & CCT	NFP	9.836576	6.5	15	240	3×0.45×0.45	124970	100%	NFP
887	LT/90	CST & CCT	NFP	6.199857	6.5	15	240	3×0.45×0.45	78761	100%	NFP
888	LT/92	CST & CCT	NFP	8.89921	6.5	15	240	3×0.45×0.45	113060	100%	NFP
889	LT/92	CST & CCT	NFP	2.526945	6.5	15	240	3×0.45×0.45	32076	100%	NFP
890	LT/111D	CST	GF-50%	1.147871	6.5	15	240	3×0.45×0.45	14556	100%	NFP
1059	LT/29	CST	GF-60%	1.22349	5.8	17	272	3×0.45×0.30	11751	100%	NFP
1062	LT/87F	CST & CCT	NFP	1.925808	5.8	17	272	3×0.45×0.30	18491	100%	NFP
1064	LT/52	CST & CCT	NFP	1.375885	5.8	17	272	3×0.45×0.30	13197	100%	NFP
1068	LT/25	CST & CCT	NFP	1.320306	6.5	15	240	3×0.45×0.30	11186	100%	NFP
1071	LT/86	CST & CCT	NFP	1.632975	5.8	17	272	3×0.45×0.30	15668	100%	NFP
1080	LT/33	CST & CCT	NFP	3.201434	5.8	17	272	3×0.45×0.30	30735	100%	NFP
1081	LT/86	CST & CCT	NFP	9.032193	5.8	17	272	3×0.45×0.30	86701	100%	NFP
1082	LT/87A	CST & CCT	NFP	1.775061	5.8	17	272	3×0.45×0.30	17044	100%	NFP
1086	LT/85A	CST & CCT	NFP	1.882574	5.8	17	272	3×0.45×0.30	18067	100%	NFP
1087	LT/85A	CST & CCT	NFP	8.370696	5.8	17	272	3×0.45×0.30	80349	100%	NFP

1090	LT/87A	CST & CCT	NFP	7.233358	5.8	17	272	3×0.45×0.30	69410	100%	NFP
1091	LT/87A	CST & CCT	NFP	1.137104	5.8	17	272	3×0.45×0.30	10904	100%	NFP
1098	LT/83		GF-80%	3.488465	5.8	17	272	3×0.45×0.30	33488	100%	NFP
1115	LT/03	CST		1.426575	5.8	17	272	3×0.45×0.30	13691	100%	NFP
1116	LT/03	CST		2.386092	5.8	17	272	3×0.45×0.30	22901	100%	NFP
1117	LT/55	CST & CCT	NFP	1.159138	5.8	17	272	3×0.45×0.30	11115	100%	NFP
1118	LT/01	CST		3.011281	5.8	17	272	3×0.45×0.30	28900	100%	NFP
1119	LT/78	CST & CCT	GF-90%	2.25105	5.8	17	272	3×0.45×0.30	21596	100%	NFP
1128	LT/63B	CST		1.505148	5.8	17	272	3×0.45×0.30	14432	100%	NFP
1129	LT/63B	CST		2.598707	5.8	17	272	3×0.45×0.30	24948	100%	NFP
1133	LT/50	CCT		10.35542	5.8	17	272	3×0.45×0.30	99404	100%	NFP
1149	LT/112	CST	GF-20%	1.744426	5.8	17	272	3×0.45×0.30	16726	100%	NFP
1150	LT/112	CST	GF-20%	10.827419	5.8	17	272	3×0.45×0.30	103921	100%	NFP
1245	LT/26	CST & CCT	NFP	2.452446	6.5	15	240	3×0.45×0.30	20784	100%	NFP
1246	LT/31	CST	GF-50%	12.285161	6.5	15	240	3×0.45×0.30	104027	100%	NFP
1247	LT/33	CST & CCT	NFP	3.353742	6.5	15	240	3×0.45×0.30	28406	100%	NFP
1248	LT/33	CST & CCT	NFP	4.336615	6.5	15	240	3×0.45×0.30	36734	100%	NFP
1249	LT/50	CCT		1.414433	6.5	15	240	3×0.45×0.30	11962	100%	NFP
1250	LT/50	CCT		8.338733	6.5	15	240	3×0.45×0.30	70610	100%	NFP
1251	LT/50	CCT		3.112359	6.5	15	240	3×0.45×0.30	26360	100%	NFP
1252	LT/50	CCT		5.812175	6.5	15	240	3×0.45×0.30	49226	100%	NFP
1253	LT/51	CST & CCT	NFP	1.09238	6.5	15	240	3×0.45×0.30	9245	100%	NFP
1254	LT/52	CST & CCT	NFP	14.006382	6.5	15	240	3×0.45×0.30	118636	100%	NFP
1255	LT/63	CST & CCT	NFP	5.468477	6.5	15	240	3×0.45×0.30	46297	100%	NFP
1256	LT/63B	CST		1.180364	6.5	15	240	3×0.45×0.30	9986	100%	NFP
1257	LT/63B	CST		33.568265	6.5	15	240	3×0.45×0.30	284274	100%	NFP
1258	LT/64	CST & CCT	NFP	2.317203	6.5	15	240	3×0.45×0.30	19620	100%	NFP
1259	LT/67	CST & CCT	GF-90%	7.211946	6.5	15	240	3×0.45×0.30	61082	100%	NFP
1260	LT/72A	CST & CCT	GF-40%	3.610719	6.5	15	240	3×0.45×0.30	30594	100%	NFP
1261	LT/72A	CST & CCT	GF-40%	2.731707	6.5	15	240	3×0.45×0.30	23148	100%	NFP
1262	LT/76	CST & CCT	GF-70 %	8.777488	6.5	15	240	3×0.45×0.30	74350	100%	NFP
1263	LT/78	CST & CCT	GF-90%	1.500751	6.5	15	240	3×0.45×0.30	12703	100%	NFP
1264	LT/78	CST & CCT	GF-90%	1.126706	6.5	15	240	3×0.45×0.30	9528	100%	NFP
1265	LT/82A	CST & CCT	NFP	7.357168	6.5	15	240	3×0.45×0.30	62317	100%	NFP
1266	LT/83		GF-80%	2.026497	6.5	15	240	3×0.45×0.30	17150	100%	NFP
1267	LT/83		GF-80%	4.277101	6.5	15	240	3×0.45×0.30	36240	100%	NFP
1268	LT/85A	CST & CCT	NFP	2.041959	6.5	15	240	3×0.45×0.30	17291	100%	NFP

1269	LT/85A	CST & CCT	NFP	8.548457	6.5	15	240	3×0.45×0.30	72409	100%	NFP
1270	LT/86	CST & CCT	NFP	3.084087	6.5	15	240	3×0.45×0.30	26113	100%	NFP
1271	LT/86	CST & CCT	NFP	1.90448	6.5	15	240	3×0.45×0.30	16126	100%	NFP
1272	LT/86	CST & CCT	NFP	12.204021	6.5	15	240	3×0.45×0.30	103356	100%	NFP
1273	LT/87A	CST & CCT	NFP	37.663265	6.5	15	240	3×0.45×0.30	318961	100%	NFP
1274	LT/87A	CST & CCT	NFP	1.572901	6.5	15	240	3×0.45×0.30	13303	100%	NFP
1275	LT/87F	CST & CCT	NFP	14.104238	6.5	15	240	3×0.45×0.30	119447	100%	NFP
1525	LT/01	CST		0.795719	6.5	15	240	3×0.45×0.30	6740	100%	NFP
1526	LT/02	CST & CCT	NFP	1.733088	6.5	15	240	3×0.45×0.30	14679	100%	NFP
1527	LT/03	CST		1.736319	6.5	15	240	3×0.45×0.30	14715	100%	NFP
1528	LT/03	CST		1.473207	6.5	15	240	3×0.45×0.30	12492	100%	NFP
1529	LT/04	CST		5.725972	6.5	15	240	3×0.45×0.30	48485	100%	NFP
1530	LT/06	CST	GF-80%	5.838607	6.5	15	240	3×0.45×0.30	49437	100%	NFP
1531	LT/09	CST & CCT	NFP	2.954243	6.5	15	240	3×0.45×0.30	25019	100%	NFP
1532	LT/09	CST & CCT	NFP	1.517521	6.5	15	240	3×0.45×0.30	12845	100%	NFP
1533	LT/38	CST & CCT	NFP	2.230501	6.5	15	240	3×0.45×0.30	18879	100%	NFP
1534	LT/55	CST & CCT	NFP	1.692346	6.5	15	240	3×0.45×0.30	14327	100%	NFP
1535	LT/55	CST & CCT	NFP	4.845744	6.5	15	240	3×0.45×0.30	41039	100%	NFP
1536	LT/55	CST & CCT	NFP	1.410539	6.5	15	240	3×0.45×0.30	11962	100%	NFP
1537	LT/55	CST & CCT	NFP	1.336843	6.5	15	240	3×0.45×0.30	11327	100%	NFP
1538	LT/57	CST	GF-60%	1.144636	6.5	15	240	3×0.45×0.30	9704	100%	NFP
1539	LT/57	CST	GF-60%	4.110577	6.5	15	240	3×0.45×0.30	34829	100%	NFP
1540	LT/111C	CST & CCT	NFP	12.631949	6.5	15	240	3×0.45×0.30	106991	100%	NFP
1541	LT/111C	CST & CCT	NFP	1.313284	6.5	15	240	3×0.45×0.30	11115	100%	NFP
1542	LT/111C	CST & CCT	NFP	1.617006	6.5	15	240	3×0.45×0.30	13691	100%	NFP
1543	LT/111D	CST	GF-50%	4.423915	6.5	15	240	3×0.45×0.30	37475	100%	NFP
1544	LT/111D	CST	GF-50%	9.943329	6.5	15	240	3×0.45×0.30	84195	100%	NFP
1545	LT/112	CST	GF-20%	8.985264	6.5	15	240	3×0.45×0.30	76079	100%	NFP
1546	LT/112	CST	GF-20%	1.089154	6.5	15	240	3×0.45×0.30	9210	100%	NFP
1641	LT/55	CST & CCT	NFP	1.500909	5.8	17	272	3×0.45×0.45	21596	50%	GF
1643	LT/105B	CST & CCT	NFP	2.647187	5.8	17	272	3×0.45×0.45	38110	50%	GF
1644	LT/111D	CST	GF-50%	1.926072	5.8	17	272	3×0.45×0.45	27736	50%	GF
1652	LT/63B	CST		1.834279	6.5	15	240	3×0.45×0.45	23290	50%	GF
1653	LT/72A	CST & CCT	GF-40%	4.419637	6.5	15	240	3×0.45×0.45	56160	50%	GF
1691	LT/55	CST & CCT	NFP	4.303536	6.5	15	240	3×0.45×0.45	54678	50%	GF
1692	LT/111D	CST	GF-50%	2.360745	6.5	15	240	3×0.45×0.45	30012	50%	GF
1693	LT/111D	CST	GF-50%	1.720171	6.5	15	240	3×0.45×0.45	21860	50%	GF

1846	LT/29	CST	GF-60%	5.544662	5.8	17	272	3×0.45×0.30	53213	50%	GF
1849	LT/25	CST & CCT	NFP	1.487846	6.5	15	240	3×0.45×0.30	12598	50%	GF
1853	LT/25	CST & CCT	NFP	3.119721	5.8	17	272	3×0.45×0.30	29959	50%	GF
1866	LT/85A	CST & CCT	NFP	2.235895	5.8	17	272	3×0.45×0.30	21455	50%	GF
1877	LT/83		GF-80%	2.486305	5.8	17	272	3×0.45×0.30	23854	50%	GF
1889	LT/70B	CST & CCT	NFP	2.587517	5.8	17	272	3×0.45×0.30	24842	50%	GF
1890	LT/70B	CST & CCT	NFP	1.595792	5.8	17	272	3×0.45×0.30	15315	50%	GF
1892	LT/63B	CST		1.404237	5.8	17	272	3×0.45×0.30	13480	50%	GF
1893	LT/50	CCT		1.302301	5.8	17	272	3×0.45×0.30	12492	50%	GF
1896	LT/111D	CST	GF-50%	1.242597	5.5	18	288	3×0.45×0.30	12633	50%	GF
1897	LT/111D	CST	GF-50%	1.753144	5.5	18	288	3×0.45×0.30	17820	50%	GF
1936	LT/50	CCT		3.757639	6.5	15	240	3×0.45×0.30	31829	50%	GF
1937	LT/51	CST & CCT	NFP	18.77357	6.5	15	240	3×0.45×0.30	159004	50%	GF
1938	LT/63B	CST		6.334472	6.5	15	240	3×0.45×0.30	53637	50%	GF
1939	LT/63B	CST		1.028461	6.5	15	240	3×0.45×0.30	8716	50%	GF
1940	LT/63B	CST		3.321454	6.5	15	240	3×0.45×0.30	28124	50%	GF
1941	LT/63B	CST		2.545377	6.5	15	240	3×0.45×0.30	21561	50%	GF
1942	LT/63B	CST		5.766935	6.5	15	240	3×0.45×0.30	48838	50%	GF
1943	LT/83		GF-80%	2.154247	6.5	15	240	3×0.45×0.30	18244	50%	GF
1944	LT/85A	CST & CCT	NFP	1.893226	6.5	15	240	3×0.45×0.30	16020	50%	GF
1945	LT/87A	CST & CCT	NFP	1.756766	6.5	15	240	3×0.45×0.30	14891	50%	GF
1946	LT/87F	CST & CCT	NFP	1.614081	6.5	15	240	3×0.45×0.30	13656	50%	GF
2097	LT/03	CST		5.281371	6.5	15	240	3×0.45×0.30	44744	50%	GF
2098	LT/03	CST		2.006617	6.5	15	240	3×0.45×0.30	17008	50%	GF
2099	LT/55	CST & CCT	NFP	17.849927	6.5	15	240	3×0.45×0.30	151171	50%	GF
2100	LT/111C	CST & CCT	NFP	9.539017	6.5	15	240	3×0.45×0.30	80772	50%	GF
2101	LT/111C	CST & CCT	NFP	1.146323	6.5	15	240	3×0.45×0.30	9704	50%	GF
2102	LT/111D	CST	GF-50%	1.251864	6.5	15	240	3×0.45×0.30	10586	50%	GF
2103	LT/111D	CST	GF-50%	2.434458	6.5	15	240	3×0.45×0.30	20608	50%	GF
2104	LT/111D	CST	GF-50%	10.646484	6.5	15	240	3×0.45×0.30	90159	50%	GF
2105	LT/112	CST	GF-20%	1.422572	6.5	15	240	3×0.45×0.30	12033	50%	GF
2106	LT/112	CST	GF-20%	1.339019	6.5	15	240	3×0.45×0.30	11327	50%	GF

(11) Puncha Beat (Puncha range)

Drainage Line Treatment Measures Open Map

11.1.1 Brushwood Check Dam- Puncha Beat (Puncha range)

Open Design Detailed Excel File

Survey No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design Width (m)	Design Height (m)	Depth of driving Vertical Poles inside the earth(m)	Breath (m) Spacing between two rows	Cost (₹)
227	DLT 5	2A2B4f7	1	23.22611	86.6	3.0	0.6	0.4	0.75	2556.83
228	DLT 6	2A2B4f7	1	23.22581	86.60124	4.0	1.0	0.6	0.75	4467.25
274	DLT 52	2A2D5c2	1	23.22917	86.69222	4.5	1.5	0.9	0.75	6703.62

11.1.2 Loose Boulder Check Dam- Puncha Beat (Puncha range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
223	DLT 1	2A2B4f7	4	23.2261	86.5989	5.0	0.90	0.5	1.90	0.30	24440.73
224	DLT 2	2A2B4f7	1	23.2258	86.5989	4.0	0.90	0.5	1.90	0.30	19553.17
229	DLT 7	2A2B4f7	1	23.2256	86.6011	4.0	0.75	0.4	1.50	0.20	11985.36
231	DLT 9	2A2B4f7	1	23.2256	86.6013	5.0	1.50	0.6	2.90	0.50	60381.05
234	DLT 12	2A2B4f7	4	23.2247	86.6042	6.0	1.00	0.5	2.00	0.30	32872.70
235	DLT 13	2A2B4f7	4	23.2247	86.6042	4.0	1.00	0.5	2.00	0.30	21915.75
236	DLT 14	2A2B4f1	1	23.1969	86.6453	7.0	1.00	0.5	2.00	0.30	38353.65
237	DLT 15	2A2B4f1	1	23.1967	86.6453	8.0	1.00	0.5	2.00	0.30	43833.97
238	DLT 16	2A2B4f1	1	23.1969	86.6456	7.0	1.00	0.5	2.00	0.30	38355.81
242	DLT 20	2A2D5c2	1	23.2314	86.69	9.0	0.75	0.4	1.50	0.20	26972.63
245	DLT 23	2A2D5c2	1	23.2306	86.6906	9.0	1.00	0.5	2.00	0.30	49320.17
246	DLT 24	2A2D5c2	1	23.23	86.6908	9.0	0.75	0.4	1.50	0.20	26975.41

247	DLT 25	2A2D5c2	1	23.2294	86.6906	8.0	1.00	0.5	2.00	0.30	43842.63
248	DLT 26	2A2D5c2	1	23.2294	86.6914	7.0	1.00	0.5	2.00	0.30	38363.38
252	DLT 30	2A2D5c2	1	23.2153	86.6975	7.0	1.00	0.5	2.00	0.30	38364.46
253	DLT 31	2A2D5c2	1	23.2153	86.6978	6.0	0.60	0.4	1.30	0.20	13691.61
254	DLT 32	2A2D5c2	1	23.2156	86.6981	5.0	0.60	0.4	1.30	0.20	11410.01
255	DLT 33	2A2D5c2	1	23.2153	86.6972	6.0	0.75	0.4	1.50	0.20	17986.39
258	DLT 36	2A2D5c2	1	23.2156	86.695	6.0	0.75	0.4	1.50	0.20	17986.85
259	DLT 37	2A2D5c2	2	23.2158	86.6939	6.0	0.50	0.4	1.20	0.20	11391.86
272	DLT 50	2A2D5c2	1	23.2286	86.6928	4.0	0.75	0.4	1.50	0.20	11992.16
273	DLT 51	2A2D5c2	1	23.2289	86.6925	7.0	0.75	0.4	1.50	0.20	20986.82
278	DLT 57	2A2D5c1	1	23.2292	86.7186	7.0	0.75	0.4	1.50	0.20	20987.36
279	DLT 58	2A2D5c1	1	23.2294	86.7189	9.0	1.00	0.5	2.00	0.30	49339.64
281	DLT 60	2A2D5c1	2	23.2294	86.7183	7.0	0.60	0.4	1.30	0.20	15978.70
283	DLT 62	2A2B4f7	1	23.2375	86.6458	6.0	0.60	0.4	1.30	0.20	13696.83
284	DLT 63	2A2B4f7	1	23.2375	86.6461	6.0	0.75	0.4	1.50	0.20	17991.95
286	DLT 65	2A2B4f7	1	23.2375	86.6456	8.0	0.75	0.4	1.50	0.20	23990.50
287	DLT 66	2A2B4f7	2	23.2372	86.6472	7.0	0.75	0.4	1.50	0.20	20992.23
288	DLT 67	2A2B4f7	1	23.2369	86.6472	8.0	1.00	0.5	2.00	0.30	43868.58
289	DLT 68	2A2B4f7	1	23.2367	86.6475	5.0	0.75	0.4	1.50	0.20	14995.22
290	DLT 69	2A2B4f7	1	23.2364	86.6475	5.0	0.60	0.4	1.30	0.20	11416.37
291	DLT 70	2A2B4f7	1	23.2364	86.6481	8.0	1.05	0.6	2.20	0.30	50493.32
292	DLT 71	2A2B4f7	1	23.2361	86.6483	8.0	0.90	0.5	1.90	0.30	39152.13
294	DLT 73	2A2B4f7	1	23.2361	86.6492	7.0	0.75	0.4	1.50	0.20	20996.01
295	DLT 74	2A2B4f7	1	23.2361	86.6469	8.0	0.75	0.4	1.50	0.20	23996.06
296	DLT 75	2A2B4f7	1	23.2372	86.6464	7.0	0.75	0.4	1.50	0.20	20997.10
311	DLT 91	2A2D5c2	1	23.2425	86.7031	5.0	0.75	0.4	1.50	0.20	14998.31
312	DLT 92	2A2D5c2	4	23.2427	86.7035	5.0	0.90	0.5	1.90	0.30	24474.48
313	DLT 93	2A2D5c3	1	23.2475	86.6669	7.0	1.05	0.6	2.20	0.30	44191.17
320	DLT 100	2A2D5c3	1	23.2531	86.6742	6.0	0.60	0.4	1.30	0.20	13703.66
321	DLT 101	2A2D5c3	1	23.2533	86.6742	5.0	0.75	0.4	1.50	0.20	14999.86
322	DLT 102	2A2D5c3	1	23.2528	86.6739	9.0	0.75	0.4	1.50	0.20	27000.44
323	DLT 103	2A2D5c3	1	23.2556	86.6775	5.0	0.60	0.4	1.30	0.20	11420.72

334	DLT 114	2A2D5c3	1	23.2481	86.6697	9.0	0.75	0.4	1.50	0.20	27001.83
338	DLT 118	2A2D5c3	1	23.2472	86.6667	9.0	0.90	0.5	1.90	0.30	44063.32
339	DLT 119	2A2D5c3	1	23.2472	86.6669	6.0	0.75	0.4	1.50	0.20	18002.15
342	DLT 122	2A2D5c2	1	23.2389	86.7067	5.0	0.75	0.4	1.50	0.20	15002.17
345	DLT 125	2A2D5c2	1	23.2389	86.7067	5.0	0.75	0.4	1.50	0.20	15002.95
275	DLT 53	2A2D5c2	1	23.2303	86.6925	8.0	1.00	0.5	2.00	0.30	43610.26
233	DLT 11	2A2B4f7	1	23.225	86.6042	5.0	0.75	0.4	1.50	0.20	14915.65
344	DLT 124	2A2D5c2	1	23.2392	86.7067	2.0	0.75	0.4	1.50	0.20	5969.97
261	DLT 39	2A2D5c2	2	23.2167	86.6936	2.0	0.75	0.4	1.50	0.20	5980.94
257	DLT 35	2A2D5c2	1	23.2133	86.6975	8.0	1.00	0.5	2.00	0.30	43810.49
256	DLT 34	2A2D5c2	1	23.39833	86.69694	7.0	1.20	0.6	2.40	0.40	57224.99
265	DLT 43	2A2D5c2	1	23.2158	86.6956	5.0	0.50	0.4	1.20	0.20	9490.49

11.1.3 Gabion Check Puncha Beat (Puncha range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
230	DLT 8	2A2B4f7	1	23.22561	86.60115	7	1	0.40	42884.40
232	DLT 10	2A2B4f7	1	23.22587	86.60078	5	1.8	0.60	47863.44
251	DLT 29	2A2D5c2	1	23.21417	86.69944	7	1	0.40	42884.40
260	DLT 38	2A2D5c2	2	23.21583	86.69361	8	1	0.40	49010.75
262	DLT 40	2A2D5c2	1	23.21778	86.69333	8	1	0.40	49010.75
264	DLT 42	2A2D5c2	2	23.21667	86.69333	6	0.6	0.30	25421.85
266	DLT 44	2A2D5c2	1	23.2175	86.69528	6	0.6	0.30	25421.85
268	DLT 46	2A2D5c2	1	23.21778	86.69472	8	1	0.40	49010.75
271	DLT 49	2A2D5c2	1	23.22833	86.69278	6	0.6	0.30	25421.85
276	DLT 54	2A2D5c2	1	23.23	86.6925	7	0.6	0.30	29658.82

298	DLT 77	2A2C8j8	1	23.23028	86.6625	5	1	0.40	30631.72
299	DLT 78	2A2C8j8	1	23.23056	86.66194	6	1	0.40	36758.06
301	DLT 80	2A2C8j8	1	23.23111	86.66139	5	1.2	0.40	34401.91
302	DLT 81	2A2C8j8	1	23.23028	86.66139	6	1.2	0.40	41282.29
303	DLT 82	2A2C8j8	1	23.23056	86.66139	6	0.6	0.30	25421.85
307	DLT 86	2A2C8j8	1	23.23333	86.66278	5	1	0.40	30631.72
308	DLT 88	2A2D5c2	1	23.23139	86.70278	7	1	0.40	42884.40
309	DLT 89	2A2D5c2	1	23.23167	86.7025	4	1	0.40	24505.37
314	DLT 94	2A2D5c3	1	23.24778	86.66694	6	1.5	0.50	50356.39
316	DLT 96	2A2D5c3	1	23.24694	86.66778	5	1	0.40	30631.72
317	DLT 97	2A2D5c3	1	23.23194	86.69278	4	0.6	0.30	16947.90
319	DLT 99	2A2D5c3	1	23.23222	86.6925	6	0.6	0.30	25421.85
324	DLT 104	2A2D5c3	1	23.25278	86.67417	8	1	0.40	49010.75
326	DLT 106	2A2D5c3	1	23.2525	86.67417	6	1.2	0.40	41282.29
327	DLT 107	2A2D5c3	1	23.25262	86.67424	5	1	0.40	30631.72
328	DLT 108	2A2D5c3	1	23.25	86.67639	6	1	0.40	36758.06
329	DLT 109	2A2D5c3	1	23.25028	86.67667	5	0.6	0.30	21184.87
330	DLT 110	2A2D5c3	1	23.24639	86.66722	6	1	0.40	36758.06
332	DLT 112	2A2D5c3	1	23.25972	86.66111	6	1.2	0.40	41282.29
333	DLT 113	2A2D5c3	1	23.24694	86.66917	8	1	0.40	49010.75
335	DLT 115	2A2D5c3	1	23.24806	86.66972	4	0.6	0.30	16947.90
336	DLT 116	2A2D5c3	1	23.24806	86.67028	6	0.6	0.30	25421.85
337	DLT 117	2A2D5c3	1	23.24694	86.66667	6	1	0.40	36758.06
340	DLT 120	2A2D5c2	1	23.24028	86.69917	4	1	0.40	24505.37
341	DLT 121	2A2D5c2	1	23.24028	86.69917	5	1	0.40	30631.72

346	DLT 126	2A2D5c2	1	23.23917	86.70639	5	0.6	0.30	21184.87
347	DLT 127	2A2D5c3	1	23.25361	86.67222	6	0.6	0.30	25421.85
348	DLT 128	2A2D5c3	1	23.25381	86.67248	6	0.6	0.30	25421.85
349	DLT 129	2A2D5c3	1	23.25383	86.67242	5	0.6	0.30	21184.87
225	DLT 3	2A2B4f7	4	23.22583	86.59944	3	1	0.40	18353.39
249	DLT 27	2A2D5c2	1	23.21389	86.69861	7	1	0.40	42824.57
269	DLT 47	2A2D5c2	1	23.22778	86.69278	6	1	0.40	36706.78
270	DLT 48	2A2D5c2	1	23.22806	86.69278	7	1	0.40	42824.57
277	DLT 55	2A2D5c2	1	23.22944	86.69278	6	1	0.40	36706.78
297	DLT 76	2A2C8j8	1	23.23056	86.6625	7	1	0.40	42824.57
300	DLT 79	2A2C8j8	1	23.23028	86.66194	7	1	0.40	42824.57
304	DLT 83	2A2C8j8	1	23.23306	86.66333	8	1.2	0.40	54974.68
305	DLT 84	2A2C8j8	1	23.23333	86.66361	5	1	0.40	30588.98
306	DLT 85	2A2C8j8	1	23.23361	86.66333	5	0.6	0.30	21152.82
310	DLT 90	2A2D5c2	1	23.23171	86.70268	3	0.6	0.30	12691.69
315	DLT 95	2A2D5c3	1	23.24778	86.66667	5	1	0.40	30588.98
318	DLT 98	2A2D5c3	1	23.23194	86.6925	6	1	0.40	36706.78
325	DLT 105	2A2D5c3	1	23.25306	86.67389	5	1	0.40	30588.98
331	DLT 111	2A2D5c3	1	23.24611	86.66722	7	1.5	0.50	58674.33
239	DLT 17	2A2C8j7	1	23.22917	86.68944	6	1	0.40	36758.06
240	DLT 18	2A2C8j7	1	23.22944	86.68917	3	1	0.40	18379.03

11.1.4 Gabion Check Dam Puncha Beat (Puncha range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
241	DLT 19	2A2C8j7	1	23.23	86.68889	9.5	1.2	1.0	0.40	5	2.20	1.0	0.40	341205.38
250	DLT 28	2A2D5c2	1	23.21389	86.69917	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
263	DLT 41	2A2D5c2	2	23.21694	86.69278	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
267	DLT 45	2A2D5c2	1	23.2175	86.695	11.5	1.5	1.0	0.50	6	2.50	1.0	0.50	395795.47
343	DLT 123	2A2D5c2	1	23.23917	86.70667	10.5	1.5	1.0	0.50	5	2.50	1.0	0.50	367244.78
243	DLT 21	2A2D5c2	1	23.23083	86.69111	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
244	DLT 22	2A2D5c2	1	23.23083	86.69083	12.5	1.0	1.0	0.40	6	2.00	1.0	0.40	399991.54
280	DLT 59	2A2D5c1	2	23.22944	86.71861	10.5	1.0	1.0	0.40	5	2.00	1.0	0.40	355370.53
282	DLT 61	2A2D5c1	1	23.22889	86.7175	12.5	1.5	1.0	0.50	6	2.50	1.0	0.50	414210.87
285	DLT 64	2A2B4f7	1	23.23778	86.64639	9.5	1.0	1.0	0.40	5	2.00	1.0	0.40	337923.00
293	DLT 72	2A2B4f7	1	23.23611	86.64861	9.5	1.2	1.0	0.40	5	2.20	1.0	0.40	341205.38

11.2.1 Land Treatment and Forest Plantation measures- Puncha Beat (Puncha range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
27	LT 143	CPT / Boundary Trench	No Plantation Required	3.128292	5.8	17	272	3×0.45×0.45	45044	100%	NFP
28	LT 145		Encroachment	4.508927	5.8	17	272	3×0.45×0.45	64893	100%	NFP
29	LT 51	CPT / Boundary Trench	No Plantation Required	3.589834	5.8	17	272	3×0.45×0.45	51661	100%	NFP

31	LT 118	Encroachment		4.116445	5.8	17	272	3×0.45×0.45	59283	100%	NFP
32	LT 86	Encroachment		1.896079	5.8	17	272	3×0.45×0.45	27312	100%	NFP
33	LT 49	CPT / Boundary Trench		2.067708	5.8	17	272	3×0.45×0.45	29747	100%	NFP
34	LT 122	Encroachment	Encroachment	1.693078	5.8	17	272	3×0.45×0.45	24401	100%	NFP
35	LT24	CPT / Boundary Trench	No Plantation Required	4.263597	5.8	17	272	3×0.45×0.45	61400	100%	NFP
36	LT 37	CPT / Boundary Trench	No Plantation Required	2.832252	5.5	18	288	3×0.45×0.45	43192	100%	NFP
39	LT2a		No Plantation Required	1.473238	5.8	17	272	3×0.45×0.45	21225	100%	NFP
40	LT26	CPT / Boundary Trench	Encroachment	1.924759	5.8	17	272	3×0.45×0.45	27736	100%	NFP
42	LT17		NFP	3.440575	5.8	17	272	3×0.45×0.45	49543	100%	NFP
49	LT15	CPT / Boundary Trench	NFP	1.497981	5.5	18	288	3×0.45×0.45	22813	100%	NFP
65	LT 47A	CPT / Boundary Trench	NFP	1.348343	6.5	15	240	3×0.45×0.45	17150	100%	NFP
66	LT 48A	CPT / Boundary Trench		6.796684	6.5	15	240	3×0.45×0.45	86330	100%	NFP
67	LT 50	CPT / Boundary Trench	NFP	7.933626	6.5	15	240	3×0.45×0.45	100780	100%	NFP
68	LT 86	Encroachment		4.256224	6.5	15	240	3×0.45×0.45	54042	100%	NFP
69	LT 87	Encroachment		1.28597	6.5	15	240	3×0.45×0.45	16356	100%	NFP
70	LT 88	Encroachment		1.197039	6.5	15	240	3×0.45×0.45	15191	100%	NFP
71	LT 108	Encroachment	Encroachment	1.324281	6.5	15	240	3×0.45×0.45	16832	100%	NFP
72	LT 109	Encroachment	Encroachment	6.775603	6.5	15	240	3×0.45×0.45	86066	100%	NFP
73	LT 120		Encroachment	2.289857	6.5	15	240	3×0.45×0.45	29112	100%	NFP
74	LT 133 A	CPT / Boundary Trench	Encroachment	3.092038	6.5	15	240	3×0.45×0.45	39275	100%	NFP
75	LT 134	CPT / Boundary Trench	NFP	1.644907	6.5	15	240	3×0.45×0.45	20908	100%	NFP
76	LT 136	CPT / Boundary Trench	Encroachment	1.737499	6.5	15	240	3×0.45×0.45	22072	100%	NFP
77	LT 145		Encroachment	1.380963	6.5	15	240	3×0.45×0.45	17520	100%	NFP
78	LT 149		Encroachment	3.286905	6.5	15	240	3×0.45×0.45	41762	100%	NFP
79	LT 150		Encroachment	1.990571	6.5	15	240	3×0.45×0.45	25301	100%	NFP

80	LT 154		No Plantation Required	1.236059	6.5	15	240	3×0.45×0.45	15720	100%	NFP
113	LT6	CCT	NFP	5.577227	6.5	15	240	3×0.45×0.45	70874	100%	NFP
114	LT12		No Plantation Required	1.33399	6.5	15	240	3×0.45×0.45	16938	100%	NFP
115	LT17a	CPT / Boundary Trench		4.303415	6.5	15	240	3×0.45×0.45	54678	100%	NFP
116	LT22		Encroachment	2.182824	6.5	15	240	3×0.45×0.45	27736	100%	NFP
117	LT25	CPT / Boundary Trench	No Plantation Required	3.541505	6.5	15	240	3×0.45×0.45	44991	100%	NFP
118	LT 55	CPT / Boundary Trench	NFP	2.536883	6.5	15	240	3×0.45×0.45	32235	100%	NFP
119	LT 68 B	CPT / Boundary Trench	No Plantation Required	5.599231	6.5	15	240	3×0.45×0.45	71139	100%	NFP
120	LT 69	CPT / Boundary Trench	NFP	2.764909	6.5	15	240	3×0.45×0.45	35146	100%	NFP
121	LT 70		Encroachment	4.831922	6.5	15	240	3×0.45×0.45	61400	100%	NFP
122	LT 95	CPT / Boundary Trench	NFP	1.490794	6.5	15	240	3×0.45×0.45	18949	100%	NFP
123	LT 97	Encroachment	Encroachment	2.63497	6.5	15	240	3×0.45×0.45	33452	100%	NFP
124	LT 155		No Plantation Required	1.924055	6.5	15	240	3×0.45×0.45	24454	100%	NFP
218	LT 110	NIL	Encroachment	2.318298	5.8	17	272	3×0.45×0.30	22266	100%	NFP
222	LT 109	Encroachment	Encroachment	1.009712	5.8	17	272	3×0.45×0.30	9704	100%	NFP
226	LT 107 A	Encroachment	Encroachment	1.151071	5.8	17	272	3×0.45×0.30	11045	100%	NFP
232	LT 57	Encroachment	Encroachment	1.295668	5.8	17	272	3×0.45×0.30	12421	100%	NFP
234	LT 74 F	CPT / Boundary Trench	NFP	2.349418	5.8	17	272	3×0.45×0.30	22549	100%	NFP
236	LT 94	CPT / Boundary Trench	No Plantation Required	0.879579	5.8	17	272	3×0.45×0.30	8434	100%	NFP
240	LT 74 D	CPT / Boundary Trench	No Plantation Required	1.890065	5.8	17	272	3×0.45×0.30	18138	100%	NFP
241	LT 83	Encroachment	Encroachment	1.253002	5.8	17	272	3×0.45×0.30	12033	100%	NFP
245	LT 107	CPT / Boundary Trench	NFP	1.579671	5.8	17	272	3×0.45×0.30	15174	100%	NFP
249	LT 94	CPT / Boundary Trench	No Plantation Required	1.341853	5.8	17	272	3×0.45×0.30	12880	100%	NFP

250	LT 94	CPT / Boundary Trench	No Plantation Required	1.179861	5.5	18	288	3×0.45×0.30	11998	100%	NFP
251	LT 74 A	CPT / Boundary Trench	No Plantation Required	2.445189	5.8	17	272	3×0.45×0.30	23466	100%	NFP
252	LT 41	CPT / Boundary Trench		2.626385	5.8	17	272	3×0.45×0.30	25195	100%	NFP
253	LT 140	CPT / Boundary Trench	NFP	2.581748	5.8	17	272	3×0.45×0.30	24772	100%	NFP
259	LT 74	CPT / Boundary Trench	No Plantation Required	1.320809	5.8	17	272	3×0.45×0.30	12668	100%	NFP
260	LT 91	CPT / Boundary Trench	No Plantation Required	1.781516	5.8	17	272	3×0.45×0.30	17114	100%	NFP
262	LT 59	CPT / Boundary Trench		1.190743	5.8	17	272	3×0.45×0.30	11433	100%	NFP
263	LT 105	CPT / Boundary Trench	No Plantation Required	1.134749	5.8	17	272	3×0.45×0.30	10904	100%	NFP
267	LT 89	CPT / Boundary Trench	No Plantation Required	1.765633	5.8	17	272	3×0.45×0.30	16938	100%	NFP
273	LT 90 A	Encroachment	No Plantation Required	1.558123	5.8	17	272	3×0.45×0.30	14962	100%	NFP
274	LT 89	CPT / Boundary Trench	No Plantation Required	1.060543	5.8	17	272	3×0.45×0.30	10163	100%	NFP
277	LT 47	CPT / Boundary Trench	NFP	1.270044	5.8	17	272	3×0.45×0.30	12174	100%	NFP
284	LT 63	CPT / Boundary Trench	Encroachment	1.516498	5.8	17	272	3×0.45×0.30	14538	100%	NFP
288	LT19	CPT / Boundary Trench	GF-40%	1.075209	5.8	17	272	3×0.45×0.30	10304	100%	NFP
296	LT31	CST & CCT	NFP	2.588662	5.8	17	272	3×0.45×0.30	24842	100%	NFP
297	LT 32 A	CPT / Boundary Trench		1.354553	5.8	17	272	3×0.45×0.30	12986	100%	NFP
298	LT31	CST & CCT	NFP	1.227994	6.5	15	240	3×0.45×0.30	10410	100%	NFP
300	LT24	CPT / Boundary Trench	No Plantation Required	1.693043	5.8	17	272	3×0.45×0.30	16267	100%	NFP
302	LT 33	CPT / Boundary Trench	GF-40%	1.115591	5.5	18	288	3×0.45×0.30	11327	100%	NFP
303	LT 97	Encroachment	Encroachment	1.584258	5.8	17	272	3×0.45×0.30	15209	100%	NFP

305	LT26	CPT / Boundary Trench	Encroachment	1.142123	5.8	17	272	3×0.45×0.30	10974	100%	NFP
308	LT 33	CPT / Boundary Trench	GF-40%	1.597136	5.8	17	272	3×0.45×0.30	15315	100%	NFP
309	LT 159		No Plantation Required	0.999707	5.8	17	272	3×0.45×0.30	9598	100%	NFP
310	LT 68	CPT / Boundary Trench	No Plantation Required	1.176364	5.8	17	272	3×0.45×0.30	11292	100%	NFP
316	LT 35	CPT / Boundary Trench	NFP	1.166382	5.8	17	272	3×0.45×0.30	11186	100%	NFP
325	LT16	CPT / Boundary Trench	NFP	2.901372	5.8	17	272	3×0.45×0.30	27842	100%	NFP
327	LT 34	CPT / Boundary Trench	NFP	3.88895	5.8	17	272	3×0.45×0.30	37334	100%	NFP
328	LT 157		No Plantation Required	1.765818	5.8	17	272	3×0.45×0.30	16938	100%	NFP
371	LT 160		Encroachment	1.248561	5.8	17	272	3×0.45×0.30	11998	100%	NFP
402	LT 36A	CPT / Boundary Trench	GF-50%	2.22863	6.5	15	240	3×0.45×0.30	18879	100%	NFP
403	LT 42	Pond	NFP	1.541872	6.5	15	240	3×0.45×0.30	13056	100%	NFP
404	LT 50	CPT / Boundary Trench	NFP	1.052361	6.5	15	240	3×0.45×0.30	8928	100%	NFP
405	LT 58A	CPT / Boundary Trench		2.367814	6.5	15	240	3×0.45×0.30	20043	100%	NFP
406	LT 74 B	CPT / Boundary Trench	NFP	5.659639	6.5	15	240	3×0.45×0.30	47920	100%	NFP
407	LT 74 G	Encroachment	Encroachment	2.013566	6.5	15	240	3×0.45×0.30	17044	100%	NFP
408	LT 75 B	CPT / Boundary Trench	No Plantation Required	2.684709	6.5	15	240	3×0.45×0.30	22725	100%	NFP
409	LT 77	Encroachment	Encroachment	4.880915	6.5	15	240	3×0.45×0.30	41321	100%	NFP
410	LT 84	Encroachment	Encroachment	1.304517	6.5	15	240	3×0.45×0.30	11045	100%	NFP
411	LT 106	CPT / Boundary Trench	No Plantation Required	5.724419	6.5	15	240	3×0.45×0.30	48485	100%	NFP
412	LT 127	CPT / Boundary Trench	No Plantation Required	4.597755	6.5	15	240	3×0.45×0.30	38922	100%	NFP
413	LT 138	CPT / Boundary Trench	Encroachment	4.125906	6.5	15	240	3×0.45×0.30	34934	100%	NFP

414	LT 141		Encroachment	5.014709	6.5	15	240	3×0.45×0.30	42486	100%	NFP
415	LT 142		Encroachment	1.569191	6.5	15	240	3×0.45×0.30	13303	100%	NFP
447	LT3	CCT	No Plantation Required	1.725825	6.5	15	240	3×0.45×0.30	14609	100%	NFP
448	LT14a		No Plantation Required	7.930006	6.5	15	240	3×0.45×0.30	67152	100%	NFP
449	LT18	CPT / Boundary Trench	Encroachment	7.403919	6.5	15	240	3×0.45×0.30	62705	100%	NFP
450	LT23	CPT / Boundary Trench	No Plantation Required	2.872247	6.5	15	240	3×0.45×0.30	24313	100%	NFP
451	LT25	CPT / Boundary Trench	No Plantation Required	3.893538	6.5	15	240	3×0.45×0.30	32958	100%	NFP
452	LT26	CPT / Boundary Trench	Encroachment	6.769206	6.5	15	240	3×0.45×0.30	57342	100%	NFP
453	LT 34	CPT / Boundary Trench	NFP	11.053811	6.5	15	240	3×0.45×0.30	93617	100%	NFP
454	LT 54	CPT / Boundary Trench	NFP	1.513537	6.5	15	240	3×0.45×0.30	12809	100%	NFP
455	LT 66		Encroachment	3.004633	6.5	15	240	3×0.45×0.30	25442	100%	NFP
456	LT 68 B	CPT / Boundary Trench	No Plantation Required	1.706666	6.5	15	240	3×0.45×0.30	14468	100%	NFP
457	LT 68 C	CPT / Boundary Trench	No Plantation Required	4.07352	6.5	15	240	3×0.45×0.30	34511	100%	NFP
458	LT 68 D	CPT / Boundary Trench	NFP	6.434894	6.5	15	240	3×0.45×0.30	54484	100%	NFP
459	LT 96	Encroachment	Encroachment	1.286862	6.5	15	240	3×0.45×0.30	10904	100%	NFP
460	LT 98	Encroachment	Encroachment	1.598685	6.5	15	240	3×0.45×0.30	13550	100%	NFP
461	LT 102	Encroachment	Encroachment	1.441711	6.5	15	240	3×0.45×0.30	12209	100%	NFP
462	LT 125	CPT / Boundary Trench	Encroachment	1.994922	6.5	15	240	3×0.45×0.30	16903	100%	NFP
463	LT 156		No Plantation Required	1.047164	6.5	15	240	3×0.45×0.30	8857	100%	NFP
485	LT 51	CPT / Boundary Trench	No Plantation Required	1.104658	6.5	15	240	3×0.45×0.45	14027	50%	GF
486	LT 103	NIL		4.19862	6.5	15	240	3×0.45×0.45	53354	50%	GF
487	LT 104 A	NIL		2.032619	5.5	18	288	3×0.45×0.45	30965	50%	GF
488	LT 104 A	NIL		4.175774	6.5	15	240	3×0.45×0.45	53037	50%	GF

489	LT 36	CPT / Boundary Trench	No Plantation Required	1.63612	6.5	15	240	3×0.45×0.45	20802	50%	GF
492	LT1	CST & CCT	GF-40%	1.272854	5.8	17	272	3×0.45×0.45	18314	50%	GF
507	LT20	CPT / Boundary Trench	GF-40%	3.470077	6.5	15	240	3×0.45×0.45	44091	50%	GF
508	LT 115	CPT / Boundary Trench	No Plantation Required	1.030439	6.5	15	240	3×0.45×0.45	13074	50%	GF
509	LT 117	CPT / Boundary Trench	No Plantation Required	1.392407	6.5	15	240	3×0.45×0.45	17679	50%	GF
529	LT2	CST & CCT	GF-30%	7.957101	6.5	15	240	3×0.45×0.45	101098	50%	GF
592	LT 107 B	Encroachment	Encroachment	1.468888	5.8	17	272	3×0.45×0.30	14115	50%	GF
594	LT 56	CPT / Boundary Trench	No Plantation Required	3.243083	5.8	17	272	3×0.45×0.30	31123	50%	GF
597	LT 60	CPT / Boundary Trench	No Plantation Required	2.643175	5.8	17	272	3×0.45×0.30	25372	50%	GF
602	LT 51	CPT / Boundary Trench	No Plantation Required	2.249878	5.8	17	272	3×0.45×0.30	21596	50%	GF
604	LT 132 A	CPT / Boundary Trench	No Plantation Required	2.324841	5.8	17	272	3×0.45×0.30	22302	50%	GF
605	LT 58	CPT / Boundary Trench	No Plantation Required	1.166221	5.8	17	272	3×0.45×0.30	11186	50%	GF
606	LT 131 A	CPT / Boundary Trench	NFP	1.673437	5.8	17	272	3×0.45×0.30	16056	50%	GF
607	LT 39	CPT / Boundary Trench	GF-60%	1.208227	5.8	17	272	3×0.45×0.30	11610	50%	GF
608	LT 132	CPT / Boundary Trench	No Plantation Required	1.320917	5.8	17	272	3×0.45×0.30	12668	50%	GF
610	LT 89 B		No Plantation Required	1.010286	5.8	17	272	3×0.45×0.30	9704	50%	GF
611	LT 89 A	CPT / Boundary Trench	No Plantation Required	3.316735	5.8	17	272	3×0.45×0.30	31829	50%	GF
617	LT 90		No Plantation Required	2.354949	5.8	17	272	3×0.45×0.30	22619	50%	GF
618	LT 103	NIL		6.452225	6.5	15	240	3×0.45×0.30	54660	50%	GF
624	LT31	CST & CCT	NFP	1.033686	5.8	17	272	3×0.45×0.30	9916	50%	GF
625	LT 33	CPT / Boundary Trench	GF-40%	1.177426	5.8	17	272	3×0.45×0.30	11292	50%	GF

627	LT10	CCT		1.319421	5.8	17	272	3×0.45×0.30	12668	50%	GF
663	LT 40	CPT / Boundary Trench		2.510345	6.5	15	240	3×0.45×0.30	21243	50%	GF
664	LT 43	CCT	No Plantation Required	2.287187	6.5	15	240	3×0.45×0.30	19373	50%	GF
665	LT 51	CPT / Boundary Trench	No Plantation Required	1.002203	6.5	15	240	3×0.45×0.30	8504	50%	GF
666	LT 74 C	CPT / Boundary Trench	No Plantation Required	2.626656	6.5	15	240	3×0.45×0.30	22231	50%	GF
667	LT 84 A	CPT / Boundary Trench	No Plantation Required	4.17282	6.5	15	240	3×0.45×0.30	35323	50%	GF
668	LT 92	CPT / Boundary Trench	No Plantation Required	2.642438	6.5	15	240	3×0.45×0.30	22372	50%	GF
669	LT 115	CPT / Boundary Trench	No Plantation Required	9.157997	6.5	15	240	3×0.45×0.30	77561	50%	GF
670	LT 115 A	CPT / Boundary Trench	No Plantation Required	4.614024	6.5	15	240	3×0.45×0.30	39063	50%	GF
671	LT 128 C	CPT / Boundary Trench	No Plantation Required	1.614753	6.5	15	240	3×0.45×0.30	13691	50%	GF
672	LT 131	CPT / Boundary Trench	No Plantation Required	3.161268	6.5	15	240	3×0.45×0.30	26783	50%	GF
689	LT2	CST & CCT	GF-30%	11.132506	6.5	15	240	3×0.45×0.30	94288	50%	GF
690	LT 63	CPT / Boundary Trench	Encroachment	1.143853	6.5	15	240	3×0.45×0.30	9704	50%	GF
691	LT 67		Encroachment	4.324135	6.5	15	240	3×0.45×0.30	36628	50%	GF
695	LT 43	CCT	No Plantation Required	1.398822	6.5	15	240	3×0.45×0.45	17785	100%	NFP
696	LT 43	CCT	No Plantation Required	1.030718	6.5	15	240	3×0.45×0.45	13074	100%	NFP
706	LT 43	CCT	No Plantation Required	3.492447	6.5	15	240	3×0.45×0.30	29571	50%	GF
707	LT 43	CCT	No Plantation Required	1.574057	6.5	15	240	3×0.45×0.30	13339	50%	GF
729	LT 132 B	CPT / Boundary Trench	NFP	1.009315	6.5	15	240	3×0.45×0.45	12809	100%	NFP
730	LT 152		No Plantation Required	3.416833	5.8	17	272	3×0.45×0.45	49173	100%	NFP

731	LT 152		No Plantation Required	1.491443	5.8	17	272	3×0.45×0.45	21490	100%	NFP
732	LT 53	CPT / Boundary Trench	No Plantation Required	4.030093	5.8	17	272	3×0.45×0.45	58012	100%	NFP
733	LT 132 B	CPT / Boundary Trench	NFP	3.01756	5.8	17	272	3×0.45×0.45	43456	100%	NFP
737	LT 103	NIL		0.726894	5.8	17	272	3×0.45×0.45	10480	100%	NFP
739	LT 115	CPT / Boundary Trench	No Plantation Required	5.795356	5.8	17	272	3×0.45×0.45	83419	100%	NFP
740	LT 115 A	CPT / Boundary Trench	No Plantation Required	1.384323	5.8	17	272	3×0.45×0.45	19955	100%	NFP
744	LT 36	CPT / Boundary Trench	No Plantation Required	3.380661	5.5	18	288	3×0.45×0.45	51555	100%	NFP
747	LT 68	CPT / Boundary Trench	No Plantation Required	1.351106	5.8	17	272	3×0.45×0.45	19479	100%	NFP
748	LT27	CPT / Boundary Trench	No Plantation Required	2.056521	5.8	17	272	3×0.45×0.45	29588	100%	NFP
752	LT12		No Plantation Required	3.619073	5.8	17	272	3×0.45×0.45	52084	100%	NFP
796	LT 32 A	CPT / Boundary Trench		4.084262	6.5	15	240	3×0.45×0.45	51872	100%	NFP
797	LT 36	CPT / Boundary Trench	No Plantation Required	0.844084	6.5	15	240	3×0.45×0.45	10745	100%	NFP
798	LT 36B	CPT / Boundary Trench	NFP	2.779481	6.5	15	240	3×0.45×0.45	35305	100%	NFP
799	LT 47	CPT / Boundary Trench	NFP	2.491117	6.5	15	240	3×0.45×0.45	31653	100%	NFP
800	LT 49	CPT / Boundary Trench		2.050713	6.5	15	240	3×0.45×0.45	26042	100%	NFP
801	LT 49	CPT / Boundary Trench		4.684312	6.5	15	240	3×0.45×0.45	59494	100%	NFP
802	LT 53	CPT / Boundary Trench	No Plantation Required	2.758555	6.5	15	240	3×0.45×0.45	35040	100%	NFP
803	LT 74	CPT / Boundary Trench	No Plantation Required	3.298822	6.5	15	240	3×0.45×0.45	41921	100%	NFP
804	LT 103	NIL		19.212942	6.5	15	240	3×0.45×0.45	244064	100%	NFP
805	LT 104	CPT / Boundary Trench	GF-30%	1.929625	6.5	15	240	3×0.45×0.45	24507	100%	NFP

806	LT 107 A	Encroachment	Encroachment	12.522687	6.5	15	240	3×0.45×0.45	159057	100%	NFP
807	LT 115 A	CPT / Boundary Trench	No Plantation Required	5.78611	6.5	15	240	3×0.45×0.45	73521	100%	NFP
808	LT 117	CPT / Boundary Trench	No Plantation Required	1.065637	6.5	15	240	3×0.45×0.45	13550	100%	NFP
809	LT 117	CPT / Boundary Trench	No Plantation Required	1.25533	6.5	15	240	3×0.45×0.45	15932	100%	NFP
810	LT 118	Encroachment		3.040847	6.5	15	240	3×0.45×0.45	38640	100%	NFP
811	LT 119	Encroachment		15.083515	6.5	15	240	3×0.45×0.45	191610	100%	NFP
812	LT 121	Encroachment	Encroachment	3.373265	6.5	15	240	3×0.45×0.45	42874	100%	NFP
813	LT 133 B	CPT / Boundary Trench	Encroachment	1.278261	6.5	15	240	3×0.45×0.45	16250	100%	NFP
814	LT 143	CPT / Boundary Trench	No Plantation Required	5.706144	6.5	15	240	3×0.45×0.45	72462	100%	NFP
815	LT 144	CPT / Boundary Trench	NFP	5.279424	6.5	15	240	3×0.45×0.45	67063	100%	NFP
816	LT 148		Encroachment	1.926125	6.5	15	240	3×0.45×0.45	24454	100%	NFP
817	LT 152		No Plantation Required	1.272186	6.5	15	240	3×0.45×0.45	16144	100%	NFP
818	LT 153		No Plantation Required	2.358991	6.5	15	240	3×0.45×0.45	29959	100%	NFP
891	LT2	CST & CCT	GF-30%	1.218157	6.5	15	240	3×0.45×0.45	15456	100%	NFP
892	LT2	CST & CCT	GF-30%	1.26909	6.5	15	240	3×0.45×0.45	16144	100%	NFP
893	LT4	CPT / Boundary Trench	GF-40%	11.911368	6.5	15	240	3×0.45×0.45	151329	100%	NFP
894	LT11		No Plantation Required	1.020575	6.5	15	240	3×0.45×0.45	12968	100%	NFP
895	LT15	CPT / Boundary Trench	NFP	8.169446	6.5	15	240	3×0.45×0.45	103797	100%	NFP
896	LT15	CPT / Boundary Trench	NFP	5.258413	6.5	15	240	3×0.45×0.45	66799	100%	NFP
897	LT19	CPT / Boundary Trench	GF-40%	1.800278	6.5	15	240	3×0.45×0.45	22866	100%	NFP
898	LT21	CPT / Boundary Trench	GF-40%	1.911512	6.5	15	240	3×0.45×0.45	24295	100%	NFP
899	LT23	CPT / Boundary Trench	No Plantation Required	5.197062	6.5	15	240	3×0.45×0.45	66005	100%	NFP

900	LT24	CPT / Boundary Trench	No Plantation Required	1.122888	6.5	15	240	3×0.45×0.45	14238	100%	NFP
901	LT24	CPT / Boundary Trench	No Plantation Required	1.065773	6.5	15	240	3×0.45×0.45	13550	100%	NFP
902	LT24	CPT / Boundary Trench	No Plantation Required	3.496885	6.5	15	240	3×0.45×0.45	44409	100%	NFP
903	LT26	CPT / Boundary Trench	Encroachment	2.587098	6.5	15	240	3×0.45×0.45	32870	100%	NFP
904	LT26	CPT / Boundary Trench	Encroachment	3.521017	6.5	15	240	3×0.45×0.45	44727	100%	NFP
905	LT27	CPT / Boundary Trench	No Plantation Required	2.470554	6.5	15	240	3×0.45×0.45	31388	100%	NFP
906	LT27	CPT / Boundary Trench	No Plantation Required	1.396201	6.5	15	240	3×0.45×0.45	17732	100%	NFP
907	LT 34	CPT / Boundary Trench	NFP	2.504666	6.5	15	240	3×0.45×0.45	31811	100%	NFP
908	LT 60A	CPT / Boundary Trench	NFP	4.63935	6.5	15	240	3×0.45×0.45	58912	100%	NFP
909	LT 60B	CPT / Boundary Trench	NFP	1.296792	6.5	15	240	3×0.45×0.45	16462	100%	NFP
910	LT 61		Encroachment	3.582018	6.5	15	240	3×0.45×0.45	45521	100%	NFP
911	LT 68	CPT / Boundary Trench	No Plantation Required	1.976513	6.5	15	240	3×0.45×0.45	25089	100%	NFP
912	LT 68 A	CPT / Boundary Trench	NFP	3.93198	6.5	15	240	3×0.45×0.45	49967	100%	NFP
913	LT 71	CPT / Boundary Trench	NFP	3.642194	6.5	15	240	3×0.45×0.45	46262	100%	NFP
914	LT 160		Encroachment	1.656199	6.5	15	240	3×0.45×0.45	21014	100%	NFP
1043	LT 143	CPT / Boundary Trench	No Plantation Required	1.259059	5.8	17	272	3×0.45×0.30	12068	100%	NFP
1051	LT 143	CPT / Boundary Trench	No Plantation Required	1.305148	5.8	17	272	3×0.45×0.30	12527	100%	NFP
1052	LT 143	CPT / Boundary Trench	No Plantation Required	1.705235	5.8	17	272	3×0.45×0.30	16373	100%	NFP
1060	LT 60	CPT / Boundary Trench	No Plantation Required	1.289111	6.5	15	240	3×0.45×0.30	10904	100%	NFP
1061	LT 60	CPT / Boundary Trench	No Plantation Required	1.55543	5.8	17	272	3×0.45×0.30	14927	100%	NFP

1063	LT 143	CPT / Boundary Trench	No Plantation Required	1.710184	5.8	17	272	3×0.45×0.30	16409	100%	NFP
1065	LT 60	CPT / Boundary Trench	No Plantation Required	3.902989	5.8	17	272	3×0.45×0.30	37475	100%	NFP
1069	LT 94	CPT / Boundary Trench	No Plantation Required	3.856878	5.8	17	272	3×0.45×0.30	37016	100%	NFP
1070	LT 94	CPT / Boundary Trench	No Plantation Required	2.084233	5.8	17	272	3×0.45×0.30	20008	100%	NFP
1072	LT 94	CPT / Boundary Trench	No Plantation Required	3.115076	5.8	17	272	3×0.45×0.30	29888	100%	NFP
1073	LT 94	CPT / Boundary Trench	No Plantation Required	2.447297	5.8	17	272	3×0.45×0.30	23501	100%	NFP
1074	LT 94	CPT / Boundary Trench	No Plantation Required	2.808861	5.8	17	272	3×0.45×0.30	26959	100%	NFP
1075	LT 80	Encroachment	Encroachment	2.632303	5.8	17	272	3×0.45×0.30	25266	100%	NFP
1077	LT 101	Encroachment	Encroachment	3.813782	5.8	17	272	3×0.45×0.30	36593	100%	NFP
1078	LT 40 A	CPT / Boundary Trench	GF-40%	5.391173	5.8	17	272	3×0.45×0.30	51731	100%	NFP
1079	LT 51	CPT / Boundary Trench	No Plantation Required	1.987867	5.8	17	272	3×0.45×0.30	19090	100%	NFP
1083	LT 75 A	CPT / Boundary Trench	NFP	2.890805	5.8	17	272	3×0.45×0.30	27736	100%	NFP
1084	LT 130	CPT / Boundary Trench	No Plantation Required	3.119141	5.8	17	272	3×0.45×0.30	29924	100%	NFP
1085	LT 130	CPT / Boundary Trench	No Plantation Required	1.465682	5.8	17	272	3×0.45×0.30	14080	100%	NFP
1092	LT 128 B	CPT / Boundary Trench	No Plantation Required	1.605908	5.8	17	272	3×0.45×0.30	15421	100%	NFP
1095	LT 48	CPT / Boundary Trench	NFP	1.088231	5.8	17	272	3×0.45×0.30	10445	100%	NFP
1099	LT 72	CPT / Boundary Trench	No Plantation Required	2.235024	5.8	17	272	3×0.45×0.30	21455	100%	NFP
1100	LT 103	NIL		4.091754	5.8	17	272	3×0.45×0.30	39275	100%	NFP
1102	LT 104	CPT / Boundary Trench	GF-30%	4.275686	5.8	17	272	3×0.45×0.30	41039	100%	NFP
1104	LT 62		Encroachment	1.122877	5.8	17	272	3×0.45×0.30	10763	100%	NFP
1105	LT 65		Encroachment	1.030131	5.8	17	272	3×0.45×0.30	9880	100%	NFP

1106	LT 115	CPT / Boundary Trench	No Plantation Required	1.798683	5.8	17	272	3×0.45×0.30	17255	100%	NFP
1107	LT 115	CPT / Boundary Trench	No Plantation Required	0.793912	5.8	17	272	3×0.45×0.30	7622	100%	NFP
1108	LT 115	CPT / Boundary Trench	No Plantation Required	1.435818	5.8	17	272	3×0.45×0.30	13797	100%	NFP
1109	LT 115	CPT / Boundary Trench	No Plantation Required	1.297731	5.8	17	272	3×0.45×0.30	12456	100%	NFP
1114	LT 32 A	CPT / Boundary Trench		1.488982	5.8	17	272	3×0.45×0.30	14291	100%	NFP
1120	LT9		Encroachment	1.48098	5.8	17	272	3×0.45×0.30	14221	100%	NFP
1138	LT 158		No Plantation Required	2.07887	5.8	17	272	3×0.45×0.30	19937	100%	NFP
1276	LT32	CST & CCT	GF-40%	1.561397	6.5	15	240	3×0.45×0.30	13233	100%	NFP
1277	LT 32 A	CPT / Boundary Trench		5.943611	6.5	15	240	3×0.45×0.30	50320	100%	NFP
1278	LT 38	CPT / Boundary Trench	NFP	2.487436	6.5	15	240	3×0.45×0.30	21066	100%	NFP
1279	LT 39 A	CPT / Boundary Trench	GF-40%	1.191182	6.5	15	240	3×0.45×0.30	10092	100%	NFP
1280	LT 40 A	CPT / Boundary Trench	GF-40%	1.836917	6.5	15	240	3×0.45×0.30	15562	100%	NFP
1281	LT 42	Pond	NFP	9.597981	6.5	15	240	3×0.45×0.30	81302	100%	NFP
1282	LT 47	CPT / Boundary Trench	NFP	1.904677	6.5	15	240	3×0.45×0.30	16126	100%	NFP
1283	LT 47A	CPT / Boundary Trench	NFP	5.55063	6.5	15	240	3×0.45×0.30	47003	100%	NFP
1284	LT 48	CPT / Boundary Trench	NFP	3.57108	6.5	15	240	3×0.45×0.30	30241	100%	NFP
1285	LT 48	CPT / Boundary Trench	NFP	2.891175	6.5	15	240	3×0.45×0.30	24489	100%	NFP
1286	LT 51	CPT / Boundary Trench	No Plantation Required	3.712699	6.5	15	240	3×0.45×0.30	31441	100%	NFP
1287	LT 53	CPT / Boundary Trench	No Plantation Required	1.108175	6.5	15	240	3×0.45×0.30	9386	100%	NFP
1288	LT 72	CPT / Boundary Trench	No Plantation Required	5.879863	6.5	15	240	3×0.45×0.30	49790	100%	NFP

1289	LT 73	CPT / Boundary Trench	No Plantation Required	1.872927	6.5	15	240	3×0.45×0.30	15879	100%	NFP
1290	LT 73	CPT / Boundary Trench	No Plantation Required	0.759063	6.5	15	240	3×0.45×0.30	6422	100%	NFP
1291	LT 74	CPT / Boundary Trench	No Plantation Required	9.342128	6.5	15	240	3×0.45×0.30	79114	100%	NFP
1292	LT 74 A	CPT / Boundary Trench	No Plantation Required	3.384061	6.5	15	240	3×0.45×0.30	28653	100%	NFP
1293	LT 74 A	CPT / Boundary Trench	No Plantation Required	1.758328	6.5	15	240	3×0.45×0.30	14891	100%	NFP
1294	LT 74 D	CPT / Boundary Trench	No Plantation Required	4.019039	6.5	15	240	3×0.45×0.30	34052	100%	NFP
1295	LT 74 D	CPT / Boundary Trench	No Plantation Required	5.806091	6.5	15	240	3×0.45×0.30	49155	100%	NFP
1296	LT 74 E	CPT / Boundary Trench	No Plantation Required	11.406343	6.5	15	240	3×0.45×0.30	96616	100%	NFP
1297	LT 74 F	CPT / Boundary Trench	NFP	1.730221	6.5	15	240	3×0.45×0.30	14644	100%	NFP
1298	LT 75 A	CPT / Boundary Trench	NFP	8.982418	6.5	15	240	3×0.45×0.30	76079	100%	NFP
1299	LT 76	Encroachment	Encroachment	1.110904	6.5	15	240	3×0.45×0.30	9422	100%	NFP
1300	LT 80	Encroachment	Encroachment	3.411974	6.5	15	240	3×0.45×0.30	28900	100%	NFP
1301	LT 80	Encroachment	Encroachment	3.154889	6.5	15	240	3×0.45×0.30	26712	100%	NFP
1302	LT 81	Encroachment	Encroachment	2.789123	6.5	15	240	3×0.45×0.30	23607	100%	NFP
1303	LT 82	Encroachment	Encroachment	0.653973	6.5	15	240	3×0.45×0.30	5540	100%	NFP
1304	LT 83	Encroachment	Encroachment	4.120246	6.5	15	240	3×0.45×0.30	34899	100%	NFP
1305	LT 83	Encroachment	Encroachment	3.011206	6.5	15	240	3×0.45×0.30	25513	100%	NFP
1306	LT 84 A	CPT / Boundary Trench	No Plantation Required	4.111393	6.5	15	240	3×0.45×0.30	34829	100%	NFP
1307	LT 85 A	CPT / Boundary Trench	No Plantation Required	1.184953	6.5	15	240	3×0.45×0.30	10022	100%	NFP
1308	LT 85 A	CPT / Boundary Trench	No Plantation Required	3.025933	6.5	15	240	3×0.45×0.30	25619	100%	NFP
1309	LT 89 A	CPT / Boundary Trench	No Plantation Required	1.823039	6.5	15	240	3×0.45×0.30	15456	100%	NFP
1310	LT 93	CPT / Boundary Trench	NFP	4.219862	6.5	15	240	3×0.45×0.30	35746	100%	NFP

1311	LT 94	CPT / Boundary Trench	No Plantation Required	1.670977	6.5	15	240	3×0.45×0.30	14150	100%	NFP
1312	LT 94	CPT / Boundary Trench	No Plantation Required	5.433163	6.5	15	240	3×0.45×0.30	46015	100%	NFP
1313	LT 94	CPT / Boundary Trench	No Plantation Required	1.985781	6.5	15	240	3×0.45×0.30	16832	100%	NFP
1314	LT 103	NIL		1.665694	6.5	15	240	3×0.45×0.30	14115	100%	NFP
1315	LT 104	CPT / Boundary Trench	GF-30%	8.537678	6.5	15	240	3×0.45×0.30	72304	100%	NFP
1316	LT 104	CPT / Boundary Trench	GF-30%	1.253471	6.5	15	240	3×0.45×0.30	10621	100%	NFP
1317	LT 105	CPT / Boundary Trench	No Plantation Required	6.743443	6.5	15	240	3×0.45×0.30	57095	100%	NFP
1318	LT 105 A	NIL	GF-50%	1.411223	6.5	15	240	3×0.45×0.30	11962	100%	NFP
1319	LT 106 A	CPT / Boundary Trench	NFP	6.419517	6.5	15	240	3×0.45×0.30	54378	100%	NFP
1320	LT 107	CPT / Boundary Trench	NFP	6.331566	6.5	15	240	3×0.45×0.30	53637	100%	NFP
1321	LT 107 A	Encroachment	Encroachment	8.946655	6.5	15	240	3×0.45×0.30	75762	100%	NFP
1322	LT 107 A	Encroachment	Encroachment	3.544422	6.5	15	240	3×0.45×0.30	30029	100%	NFP
1323	LT 107 B	Encroachment	Encroachment	3.358775	6.5	15	240	3×0.45×0.30	28442	100%	NFP
1324	LT 108	Encroachment	Encroachment	1.281803	6.5	15	240	3×0.45×0.30	10868	100%	NFP
1325	LT 109	Encroachment	Encroachment	4.534037	6.5	15	240	3×0.45×0.30	38393	100%	NFP
1326	LT 110	NIL	Encroachment	1.541865	6.5	15	240	3×0.45×0.30	13056	100%	NFP
1327	LT 115	CPT / Boundary Trench	No Plantation Required	3.082009	6.5	15	240	3×0.45×0.30	26113	100%	NFP
1328	LT 116		Encroachment	1.181461	6.5	15	240	3×0.45×0.30	10022	100%	NFP
1329	LT 116 A		Encroachment	1.548567	6.5	15	240	3×0.45×0.30	13127	100%	NFP
1330	LT 117	CPT / Boundary Trench	No Plantation Required	4.809134	6.5	15	240	3×0.45×0.30	40721	100%	NFP
1331	LT 121	Encroachment	Encroachment	22.072662	6.5	15	240	3×0.45×0.30	186917	100%	NFP
1332	LT 128 A	CPT / Boundary Trench	No Plantation Required	1.419218	6.5	15	240	3×0.45×0.30	12033	100%	NFP
1333	LT 128 B	CPT / Boundary Trench	No Plantation Required	2.397394	6.5	15	240	3×0.45×0.30	20290	100%	NFP
1334	LT 128 B	CPT / Boundary Trench	No Plantation Required	8.075387	6.5	15	240	3×0.45×0.30	68387	100%	NFP

1335	LT 129	CPT / Boundary Trench	No Plantation Required	2.311952	6.5	15	240	3×0.45×0.30	19584	100%	NFP
1336	LT 130	CPT / Boundary Trench	No Plantation Required	1.012786	6.5	15	240	3×0.45×0.30	8575	100%	NFP
1337	LT 131 A	CPT / Boundary Trench	NFP	1.911673	6.5	15	240	3×0.45×0.30	16197	100%	NFP
1338	LT 132 B	CPT / Boundary Trench	NFP	1.925971	6.5	15	240	3×0.45×0.30	16303	100%	NFP
1339	LT 139	CPT / Boundary Trench	Encroachment	7.330236	6.5	15	240	3×0.45×0.30	62070	100%	NFP
1340	LT 140	CPT / Boundary Trench	NFP	1.806676	6.5	15	240	3×0.45×0.30	15315	100%	NFP
1341	LT 143	CPT / Boundary Trench	No Plantation Required	1.5033	6.5	15	240	3×0.45×0.30	12739	100%	NFP
1342	LT 143	CPT / Boundary Trench	No Plantation Required	2.673353	6.5	15	240	3×0.45×0.30	22654	100%	NFP
1547	LT4	CPT / Boundary Trench	GF-40%	4.160794	6.5	15	240	3×0.45×0.30	35252	100%	NFP
1548	LT7	CCT	NFP	1.814667	6.5	15	240	3×0.45×0.30	15385	100%	NFP
1549	LT9		Encroachment	26.683313	6.5	15	240	3×0.45×0.30	225980	100%	NFP
1550	LT10	CCT		1.648306	6.5	15	240	3×0.45×0.30	13974	100%	NFP
1551	LT10	CCT		1.184692	6.5	15	240	3×0.45×0.30	10022	100%	NFP
1552	LT17b	CPT / Boundary Trench	GF-40%	4.086474	6.5	15	240	3×0.45×0.30	34617	100%	NFP
1553	LT17c		Encroachment	2.052398	6.5	15	240	3×0.45×0.30	17397	100%	NFP
1554	LT18a	CPT / Boundary Trench	Encroachment	4.559682	6.5	15	240	3×0.45×0.30	38604	100%	NFP
1555	LT19	CPT / Boundary Trench	GF-40%	1.175253	6.5	15	240	3×0.45×0.30	9951	100%	NFP
1556	LT24	CPT / Boundary Trench	No Plantation Required	2.817391	6.5	15	240	3×0.45×0.30	23854	100%	NFP
1557	LT 33	CPT / Boundary Trench	GF-40%	6.802486	6.5	15	240	3×0.45×0.30	57624	100%	NFP
1558	LT 57	Encroachment	Encroachment	1.052911	6.5	15	240	3×0.45×0.30	8928	100%	NFP
1559	LT 63	CPT / Boundary Trench	Encroachment	3.704526	6.5	15	240	3×0.45×0.30	31370	100%	NFP
1560	LT 68	CPT / Boundary	No Plantation	1.11979	6.5	15	240	3×0.45×0.30	9492	100%	NFP

		Trench	Required								
1561	LT 69	CPT / Boundary Trench	NFP	1.216506	6.5	15	240	3×0.45×0.30	10304	100%	NFP
1562	LT 89	CPT / Boundary Trench	No Plantation Required	7.131711	6.5	15	240	3×0.45×0.30	60412	100%	NFP
1563	LT 90 A	Encroachment	No Plantation Required	2.843669	6.5	15	240	3×0.45×0.30	24066	100%	NFP
1564	LT 99	Encroachment	Encroachment	2.282195	6.5	15	240	3×0.45×0.30	19337	100%	NFP
1565	LT 100	CPT / Boundary Trench	NFP	1.926403	6.5	15	240	3×0.45×0.30	16303	100%	NFP
1566	LT 101	Encroachment	Encroachment	1.467989	6.5	15	240	3×0.45×0.30	12421	100%	NFP
1567	LT 123	CPT / Boundary Trench	Encroachment	1.808199	6.5	15	240	3×0.45×0.30	15315	100%	NFP
1568	LT 124	CPT / Boundary Trench	Encroachment	1.722851	6.5	15	240	3×0.45×0.30	14574	100%	NFP
1569	LT 158		No Plantation Required	1.551577	6.5	15	240	3×0.45×0.30	13127	100%	NFP
1570	LT 159		No Plantation Required	1.571116	6.5	15	240	3×0.45×0.30	13303	100%	NFP
1571	LT 160		Encroachment	1.829958	6.5	15	240	3×0.45×0.30	15491	100%	NFP
1572	LT 160		Encroachment	16.57513	6.5	15	240	3×0.45×0.30	140373	100%	NFP
1633	LT 132 B	CPT / Boundary Trench	NFP	1.590233	6.5	15	240	3×0.45×0.45	20220	50%	GF
1634	LT 132 B	CPT / Boundary Trench	NFP	3.760587	5.8	17	272	3×0.45×0.45	54148	50%	GF
1635	LT 39	CPT / Boundary Trench	GF-60%	1.082019	5.8	17	272	3×0.45×0.45	15562	50%	GF
1637	LT 104 A	NIL		2.664313	5.8	17	272	3×0.45×0.45	38375	50%	GF
1638	LT23	CPT / Boundary Trench	No Plantation Required	1.693871	5.8	17	272	3×0.45×0.45	24401	50%	GF
1640	LT30	CPT / Boundary Trench	Encroachment	1.997604	5.8	17	272	3×0.45×0.45	28741	50%	GF
1654	LT30	CPT / Boundary Trench	Encroachment	1.45833	6.5	15	240	3×0.45×0.45	18526	50%	GF
1655	LT 32 A	CPT / Boundary Trench		1.306489	6.5	15	240	3×0.45×0.45	16620	50%	GF
1656	LT 39	CPT / Boundary	GF-60%	1.054804	6.5	15	240	3×0.45×0.45	13392	50%	GF

		Trench									
1657	LT 39	CPT / Boundary Trench	GF-60%	5.068977	6.5	15	240	3×0.45×0.45	64417	50%	GF
1658	LT 53	CPT / Boundary Trench	No Plantation Required	1.24716	6.5	15	240	3×0.45×0.45	15826	50%	GF
1694	LT1	CST & CCT	GF-40%	1.455449	6.5	15	240	3×0.45×0.45	18473	50%	GF
1695	LT1	CST & CCT	GF-40%	4.993607	6.5	15	240	3×0.45×0.45	63411	50%	GF
1696	LT23	CPT / Boundary Trench	No Plantation Required	1.479523	6.5	15	240	3×0.45×0.45	18790	50%	GF
1697	LT23	CPT / Boundary Trench	No Plantation Required	1.152718	6.5	15	240	3×0.45×0.45	14662	50%	GF
1698	LT24	CPT / Boundary Trench	No Plantation Required	2.837615	6.5	15	240	3×0.45×0.45	36046	50%	GF
1699	LT24	CPT / Boundary Trench	No Plantation Required	1.032909	6.5	15	240	3×0.45×0.45	13127	50%	GF
1700	LT 160		Encroachment	1.147905	6.5	15	240	3×0.45×0.45	14556	50%	GF
1839	LT 143	CPT / Boundary Trench	No Plantation Required	2.485893	5.8	17	272	3×0.45×0.30	23854	50%	GF
1850	LT 94	CPT / Boundary Trench	No Plantation Required	1.384235	5.8	17	272	3×0.45×0.30	13303	50%	GF
1851	LT 132 B	CPT / Boundary Trench	NFP	4.20528	5.8	17	272	3×0.45×0.30	40369	50%	GF
1852	LT 132 B	CPT / Boundary Trench	NFP	0.652976	5.8	17	272	3×0.45×0.30	6281	50%	GF
1855	LT 94	CPT / Boundary Trench	No Plantation Required	7.899448	6.5	15	240	3×0.45×0.30	66905	50%	GF
1856	LT 74 C	CPT / Boundary Trench	No Plantation Required	1.077806	5.8	17	272	3×0.45×0.30	10339	50%	GF
1857	LT 80	Encroachment	Encroachment	1.583673	5.8	17	272	3×0.45×0.30	15209	50%	GF
1861	LT 40 A	CPT / Boundary Trench	GF-40%	1.362578	5.8	17	272	3×0.45×0.30	13092	50%	GF
1862	LT 91	CPT / Boundary Trench	No Plantation Required	1.03909	5.8	17	272	3×0.45×0.30	9986	50%	GF
1863	LT 132 A	CPT / Boundary Trench	No Plantation Required	4.257761	5.8	17	272	3×0.45×0.30	40863	50%	GF
1864	LT 132 A	CPT / Boundary Trench	No Plantation Required	3.074349	5.8	17	272	3×0.45×0.30	29500	50%	GF

1865	LT 132	CPT / Boundary Trench	No Plantation Required	5.111662	5.8	17	272	3×0.45×0.30	49049	50%	GF
1867	LT 105	CPT / Boundary Trench	No Plantation Required	2.42029	5.8	17	272	3×0.45×0.30	23219	50%	GF
1868	LT 84 B	CPT / Boundary Trench	No Plantation Required	2.025617	5.8	17	272	3×0.45×0.30	19443	50%	GF
1869	LT 85	CPT / Boundary Trench	No Plantation Required	1.978562	5.8	17	272	3×0.45×0.30	18985	50%	GF
1870	LT 85	CPT / Boundary Trench	No Plantation Required	1.180284	5.8	17	272	3×0.45×0.30	11327	50%	GF
1871	LT 85	CPT / Boundary Trench	No Plantation Required	1.491367	5.8	17	272	3×0.45×0.30	14327	50%	GF
1873	LT 48	CPT / Boundary Trench	NFP	1.193471	5.8	17	272	3×0.45×0.30	11468	50%	GF
1876	LT 90 A	Encroachment	No Plantation Required	1.691217	5.8	17	272	3×0.45×0.30	16232	50%	GF
1878	LT 103	NIL		1.050428	5.8	17	272	3×0.45×0.30	10092	50%	GF
1879	LT19	CPT / Boundary Trench	GF-40%	3.238017	5.8	17	272	3×0.45×0.30	31088	50%	GF
1880	LT 115	CPT / Boundary Trench	No Plantation Required	2.137254	5.8	17	272	3×0.45×0.30	20502	50%	GF
1884	LT9		Encroachment	4.307962	5.8	17	272	3×0.45×0.30	41357	50%	GF
1947	LT20	CPT / Boundary Trench	GF-40%	1.13673	6.5	15	240	3×0.45×0.30	9633	50%	GF
1948	LT32	CST & CCT	GF-40%	5.274393	6.5	15	240	3×0.45×0.30	44674	50%	GF
1949	LT 39	CPT / Boundary Trench	GF-60%	6.905188	6.5	15	240	3×0.45×0.30	58471	50%	GF
1950	LT 39 A	CPT / Boundary Trench	GF-40%	10.789627	6.5	15	240	3×0.45×0.30	91394	50%	GF
1951	LT 40 A	CPT / Boundary Trench	GF-40%	1.35504	6.5	15	240	3×0.45×0.30	11468	50%	GF
1952	LT 47	CPT / Boundary Trench	NFP	2.183445	6.5	15	240	3×0.45×0.30	18491	50%	GF
1953	LT 48	CPT / Boundary Trench	NFP	1.913717	6.5	15	240	3×0.45×0.30	16197	50%	GF
1954	LT 48	CPT / Boundary Trench	NFP	3.779818	6.5	15	240	3×0.45×0.30	32006	50%	GF

1955	LT 52	CPT / Boundary Trench	No Plantation Required	2.299064	6.5	15	240	3×0.45×0.30	19479	50%	GF
1956	LT 53	CPT / Boundary Trench	No Plantation Required	7.091463	6.5	15	240	3×0.45×0.30	60059	50%	GF
1957	LT 58	CPT / Boundary Trench	No Plantation Required	1.014459	6.5	15	240	3×0.45×0.30	8575	50%	GF
1958	LT 58	CPT / Boundary Trench	No Plantation Required	1.076188	6.5	15	240	3×0.45×0.30	9104	50%	GF
1959	LT 75 A	CPT / Boundary Trench	NFP	2.974276	6.5	15	240	3×0.45×0.30	25195	50%	GF
1960	LT 80	Encroachment	Encroachment	1.062368	6.5	15	240	3×0.45×0.30	8998	50%	GF
1961	LT 84 B	CPT / Boundary Trench	No Plantation Required	7.556967	6.5	15	240	3×0.45×0.30	64011	50%	GF
1962	LT 85	CPT / Boundary Trench	No Plantation Required	1.515017	6.5	15	240	3×0.45×0.30	12845	50%	GF
1963	LT 85	CPT / Boundary Trench	No Plantation Required	7.162784	6.5	15	240	3×0.45×0.30	60659	50%	GF
1964	LT 85 A	CPT / Boundary Trench	No Plantation Required	7.419785	6.5	15	240	3×0.45×0.30	62847	50%	GF
1965	LT 89 A	CPT / Boundary Trench	No Plantation Required	14.537217	6.5	15	240	3×0.45×0.30	123117	50%	GF
1966	LT 94	CPT / Boundary Trench	No Plantation Required	1.432065	6.5	15	240	3×0.45×0.30	12139	50%	GF
1967	LT 105 A	NIL	GF-50%	5.987147	6.5	15	240	3×0.45×0.30	50708	50%	GF
1968	LT 107 B	Encroachment	Encroachment	1.045328	6.5	15	240	3×0.45×0.30	8857	50%	GF
1969	LT 117	CPT / Boundary Trench	No Plantation Required	3.530361	6.5	15	240	3×0.45×0.30	29888	50%	GF
1970	LT 128	CPT / Boundary Trench	No Plantation Required	4.493408	6.5	15	240	3×0.45×0.30	38040	50%	GF
1971	LT 128 B	CPT / Boundary Trench	No Plantation Required	1.436623	6.5	15	240	3×0.45×0.30	12174	50%	GF
1972	LT 131 A	CPT / Boundary Trench	NFP	14.574523	6.5	15	240	3×0.45×0.30	123435	50%	GF
1973	LT 132	CPT / Boundary Trench	No Plantation Required	4.2271	6.5	15	240	3×0.45×0.30	35817	50%	GF
1974	LT 132	CPT / Boundary Trench	No Plantation Required	4.646472	6.5	15	240	3×0.45×0.30	39345	50%	GF

1975	LT 132	CPT / Boundary Trench	No Plantation Required	2.335809	6.5	15	240	3×0.45×0.30	19796	50%	GF
1976	LT 132 A	CPT / Boundary Trench	No Plantation Required	4.460531	6.5	15	240	3×0.45×0.30	37793	50%	GF
1977	LT 132 A	CPT / Boundary Trench	No Plantation Required	1.575877	6.5	15	240	3×0.45×0.30	13339	50%	GF
1978	LT 132 A	CPT / Boundary Trench	No Plantation Required	2.304925	6.5	15	240	3×0.45×0.30	19514	50%	GF
1979	LT 143	CPT / Boundary Trench	No Plantation Required	3.074615	6.5	15	240	3×0.45×0.30	26042	50%	GF
1980	LT 143	CPT / Boundary Trench	No Plantation Required	4.218181	6.5	15	240	3×0.45×0.30	35711	50%	GF
1981	LT 143	CPT / Boundary Trench	No Plantation Required	1.388952	6.5	15	240	3×0.45×0.30	11751	50%	GF
1982	LT 143	CPT / Boundary Trench	No Plantation Required	11.667075	6.5	15	240	3×0.45×0.30	98804	50%	GF
2107	LT9		Encroachment	2.178132	6.5	15	240	3×0.45×0.30	18455	50%	GF
2108	LT9		Encroachment	1.920652	6.5	15	240	3×0.45×0.30	16267	50%	GF
2109	LT10	CCT		9.707669	6.5	15	240	3×0.45×0.30	82219	50%	GF
2110	LT10	CCT		6.301105	6.5	15	240	3×0.45×0.30	53354	50%	GF
2111	LT10	CCT		1.709106	6.5	15	240	3×0.45×0.30	14468	50%	GF
2112	LT19	CPT / Boundary Trench	GF-40%	1.473664	6.5	15	240	3×0.45×0.30	12492	50%	GF
2113	LT 33	CPT / Boundary Trench	GF-40%	1.965038	6.5	15	240	3×0.45×0.30	16656	50%	GF
2114	LT 35	CPT / Boundary Trench	NFP	3.340392	6.5	15	240	3×0.45×0.30	28300	50%	GF
2115	LT 60	CPT / Boundary Trench	No Plantation Required	1.18012	6.5	15	240	3×0.45×0.30	9986	50%	GF
2116	LT 90		No Plantation Required	3.366168	6.5	15	240	3×0.45×0.30	28512	50%	GF
2117	LT 160		Encroachment	5.15918	6.5	15	240	3×0.45×0.30	43686	50%	GF
2135	LT 42	Pond	NFP	1.149632	6.5	15	240	3×0.45×0.30	9739	100%	NFP

(12) Para Beat (Purulia Para range)

Drainage Line Treatment Measures Open Map

12.1.1 Loose Boulder Check Dam- Para Beat (Purulia Para range) Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
13	DLT-1	2A2F3h2	1	23.54317	86.38373	9.0	1.20	0.6	2.40	0.40	73210.11
14	DLT-2	2A2F3h2	1	23.54319	86.38295	8.0	1.20	0.6	2.40	0.40	65077.63
15	DLT-3	2A2F3h2	1	23.54304	86.38288	7.0	1.20	0.6	2.40	0.40	56944.66
7	DLT-2	2A2F3g5	1	23.44232	86.55586	9.0	1.50	0.6	2.90	0.50	108084.38
11	DLT-5	2A2D5r9*	1	23.44339	86.53759	9.0	1.50	0.6	2.90	0.50	108087.74
12	DLT-6	2A2D5r9*	1	23.44333	86.53909	9.0	1.20	0.6	2.40	0.40	73205.66
8	DLT-1	2A2F3g5	1	23.43871	86.53931	5.0	1.35	0.6	2.60	0.40	47301.80
9	DLT-2	2A2F3g5	1	23.43834	86.53858	7.0	1.50	0.6	2.90	0.50	84381.88
10	DLT-3	2A2F3g5	1	23.43796	86.5376	9.0	1.50	0.6	2.90	0.50	108497.70

*Outside shapefile boundary of the Beat. Shapefile Boundary or proposed DLT Lat-Long. need to verify.

Water Harvesting Structure Measures - Para Beat (Purulia Para range) Open Map

12.2.1 Embankment Pond- Para Beat (Purulia Para range) Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
9	WRD-1	2 A 2 D 5 r 9	1	23.44526	86.55512	25494.56
11	WRD-3C	2 A 2 F 3 g 5	1	23.4397	86.5307	14948.91

12.2.2 Dugout Pond- Para Beat (Purulia Para range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
12	WRD-4	2 A 2 D 5 r 7	1	23.443117	86.573756	475584.16

12.2.3 Pond Renovation- Para Beat (Purulia Para range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
10	WRD-1	2 A 2 D 5 r 9	1	23.438981	86.538097	614621.61
13	WRD-1	2 A 2 F 1 h 6	1	23.559775	86.531478	117579.18
14	WRD-2	2 A 2 F 1 h 6	1	23.563389	86.532756	210867.49

12.3.1 Land Treatment and Forest Plantation measures- Para Beat (Purulia Para range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
58	TFP-2	CST	NFP	5.003259	6.5	15	240	3×0.45×0.45	63570	100%	NFP
385	TFP-3B	CCT	NFP	5.182933	6.5	15	240	3×0.45×0.30	43897	100%	NFP
386	TFP-1	CCT	NFP	4.520001	6.5	15	240	3×0.45×0.30	38287	100%	NFP
474	TFP-1	CCT	NFP	1.596579	5.8	17	272	3×0.45×0.45	22972	50%	GF
475	TFP-3	CST	NFP	1.011354	5.8	17	272	3×0.45×0.45	14556	50%	GF
476	TFP-3A	CCT	GF-50%	4.307135	6.5	15	240	3×0.45×0.45	54731	50%	GF
499	TFP-3	CST	NFP	2.497961	6.5	15	240	3×0.45×0.45	31759	50%	GF
649	TFP-1	CCT	NFP	11.819704	6.5	15	240	3×0.45×0.30	100110	50%	GF

650	TFP-1	CCT	NFP	1.288225	6.5	15	240	3×0.45×0.30	10904	50%	GF
714	TFP-1	CCT	NFP	1.324729	5.8	17	272	3×0.45×0.45	19055	100%	NFP
715	TFP-1	CCT	NFP	4.010721	5.8	17	272	3×0.45×0.45	57748	100%	NFP
765	TFP-1	CCT	NFP	1.91455	6.5	15	240	3×0.45×0.45	24295	100%	NFP
766	TFP-1	CCT	NFP	7.612114	6.5	15	240	3×0.45×0.45	96705	100%	NFP
767	TFP-1	CST	NFP	1.774374	6.5	15	240	3×0.45×0.45	22549	100%	NFP
768	TFP-1	CCT	NFP	3.191921	6.5	15	240	3×0.45×0.45	40545	100%	NFP
769	TFP-1	CCT	NFP	2.415638	6.5	15	240	3×0.45×0.45	30700	100%	NFP
770	TFP-1	CCT	NFP	2.230786	6.5	15	240	3×0.45×0.45	28318	100%	NFP
926	TFP-1	CCT	NFP	1.097456	5.8	17	272	3×0.45×0.30	10551	100%	NFP
1175	TFP-1	CCT	NFP	1.35503	6.5	15	240	3×0.45×0.30	11468	100%	NFP
1176	TFP-1	CCT	NFP	1.209781	6.5	15	240	3×0.45×0.30	10233	100%	NFP
1177	TFP-1	CCT	NFP	16.094091	6.5	15	240	3×0.45×0.30	136315	100%	NFP
1178	TFP-1	CCT	NFP	26.798218	6.5	15	240	3×0.45×0.30	226968	100%	NFP
1585	TFP-1	CCT	NFP	6.357753	6.5	15	240	3×0.45×0.30	53848	80%	GF
1611	TFP-3A	CCT	GF-50%	3.048074	5.8	17	272	3×0.45×0.45	43880	50%	GF
1645	TFP-3A	CCT	GF-50%	1.474109	6.5	15	240	3×0.45×0.45	18738	50%	GF
1646	TFP-1	CST	NFP	4.050868	6.5	15	240	3×0.45×0.45	51449	50%	GF
1647	TFP-1	CCT	NFP	14.178707	6.5	15	240	3×0.45×0.45	180124	50%	GF

(13) Purulia-I Beat (Purulia Para range)

Drainage Line Treatment Measures Open Map

13.1.1 Brushwood Check Dam- Purulia-I Beat (Purulia Para range) Open Design Detailed Excel File

Survey No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design Width (m)	Design Height (m)	Depth of driving Vertical Poles inside the earth(m)	Breath (m) Spacing between two rows	Cost (₹)
1	DLT-1	2A2B4p6	4	23.27567	86.42291	6.0	1.3	0.8	1.00	9209.40

13.1.2 Gabion Check Dam Purulia-I Beat (Purulia Para range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
2	DLT-12	2A2B5a1	1	23.3218	86.21389	10.5	1.8	1.0	0.60	5	2.80	1.0	0.60	368773.30
3	DLT-21	2A2B5c1	4	23.37029	86.22226	10.5	1.8	1.0	0.60	5	2.80	1.0	0.60	368773.30

Water Harvesting Structure Measures - - Purulia-I Beat ((Purulia Para range)

Open Map

13.2.1 Embankment Pond- Purulia-I Beat (Purulia Para range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
1	WRD-5	2 A 2 B 4 p 5	1	23.2357	86.43444	952500.20
2	WRD-10	2 A 2 B 5 a 1	1	23.32337	86.31355	126957.56
3	WRD-13	2 A 2 B 5 a 4	1	23.34372	86.27499	33838.59
4	WRD-16	2 A 2 B 4 p 4	1	23.26509	86.46181	424191.41
5	WRD-18	2 A 2 B 2 h 8	1	23.1776	86.33833	954117.40
6	WRD-20	2 A 2 B 3 f 7	1	23.04314	86.21728	346907.60

13.3.1 Land Treatment and Forest Plantation measures- Purulia-I Beat (Purulia Para range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
26	TFP-8	CCT	NFP	1.377974	5.8	17	272	3×0.45×0.45	19849	100%	NFP
56	TFP-8	CCT	NFP	7.719194	6.5	15	240	3×0.45×0.45	98081	100%	NFP
98	TFP-4	CCT	NFP	5.59939	6.5	15	240	3×0.45×0.45	71139	100%	NFP
174	TFP-1	CCT	GF-50%	1.278409	5.8	17	272	3×0.45×0.30	12280	100%	NFP
215	TFP-3	CCT	NFP	1.028743	5.8	17	272	3×0.45×0.30	9880	100%	NFP
283	TFP-7	CST	NFP	2.472297	5.8	17	272	3×0.45×0.30	23713	100%	NFP
379	TFP-3	CCT	NFP	1.750837	6.5	15	240	3×0.45×0.30	14821	100%	NFP
380	TFP-17	CCT	NFP	1.858834	6.5	15	240	3×0.45×0.30	15738	100%	NFP
381	TFP-19	CST	NFP	13.4905	6.5	15	240	3×0.45×0.30	114260	100%	NFP
498	TFP-5	CST	NFP	1.288182	6.5	15	240	3×0.45×0.45	16356	50%	GF
735	TFP-6	CST	NFP	3.466119	5.8	17	272	3×0.45×0.45	49914	100%	NFP
736	TFP-5	CST	NFP	7.224159	5.8	17	272	3×0.45×0.45	104009	100%	NFP
758	TFP-5	CST	NFP	1.823061	6.5	15	240	3×0.45×0.45	23184	100%	NFP
759	TFP-7	CST	NFP	10.954114	6.5	15	240	3×0.45×0.45	139155	100%	NFP
760	TFP-9	CST	GF-30%	3.089473	6.5	15	240	3×0.45×0.45	39222	100%	NFP
761	TFP-11	CST	NFP	10.16161	6.5	15	240	3×0.45×0.45	129098	100%	NFP
762	TFP-11	CST	NFP	11.456125	6.5	15	240	3×0.45×0.45	145507	100%	NFP
763	TFP-15	CST	NFP	2.152523	6.5	15	240	3×0.45×0.45	27365	100%	NFP
764	TFP-17	CCT	NFP	6.017297	6.5	15	240	3×0.45×0.45	76432	100%	NFP
1093	TFP-5	CST	NFP	3.005173	5.8	17	272	3×0.45×0.30	28830	100%	NFP
1169	TFP-5	CST	NFP	3.883933	6.5	15	240	3×0.45×0.30	32888	100%	NFP
1170	TFP-7	CST	NFP	8.329445	6.5	15	240	3×0.45×0.30	70539	100%	NFP
1171	TFP-15	CST	NFP	4.61443	6.5	15	240	3×0.45×0.30	39063	100%	NFP
1909	TFP-2	CST	NFP	1.079267	6.5	15	240	3×0.45×0.30	9139	50%	GF
1910	TFP-2	CST	NFP	2.299161	6.5	15	240	3×0.45×0.30	19479	50%	GF

(14) Purulia-II Beat (Purulia Para range)

Drainage Line Treatment Measures

Open Map

14.1.1 Brushwood Check Dam- - Purulia -II Beat (Purulia Para range)

Open Design Detailed Excel File

Survey No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design Width (m)	Design Height (m)	Depth of driving Vertical Poles inside the earth(m)	Breath (m) Spacing between two rows	Cost (₹)
5	DL-10	2A2B4q1	1	23.27341	86.46779	3.0	0.8	0.5	0.75	3041.33
6	DL-21	2A2B4q1*	2	23.27901	86.46696	6.0	0.8	0.5	1.00	6459.21

* Outside shapefile boundary of the Beat. Shapefile Boundary or proposed DLT Lat-Long. need to verify.

14.1.2 Loose Boulder Check Dam- Purulia-II Beat (Purulia Para range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
4	DL-9	2A2B4q1	3	23.27224	86.46729	9.0	0.75	0.4	1.50	0.20	26842.62

Water Harvesting Structure Measures - Purulia-II Beat (Purulia Para range)

Open Map

14.2.1 Embankment Pond- Purulia-II Beat (Purulia Para range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
7	WRD-1	2 A 2 B 4 n 6	1	23.27726	86.47084	33838.59
8	WRD-1	2 A 2 B 4 n 6	1	23.2853	86.47501	88306.02

14.3.1 Land Treatment and Forest Plantation measures- Purulia-II Beat (Purulia Para range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
57	TFP-1	Encroachment	NFP	5.287126	6.5	15	240	3×0.45×0.45	67169	100%	NFP
175	TFP-5	CST	GF-40%	1.022095	5.8	17	272	3×0.45×0.30	9810	100%	NFP
178	TFP-5	CST	GF-40%	2.568574	6.5	15	240	3×0.45×0.30	21737	100%	NFP
184	TFP-9	CST	GF-50%	1.068464	6.5	15	240	3×0.45×0.30	9034	100%	NFP
187	TFP-5	CST	GF-40%	1.853689	5.8	17	272	3×0.45×0.30	17785	100%	NFP
188	TFP-10	CCT	NFP	1.363906	5.8	17	272	3×0.45×0.30	13092	100%	NFP
189	TFP-10	NIL	NFP	2.690042	6.5	15	240	3×0.45×0.30	22796	100%	NFP
382	TFP-4	CST	NFP	3.618378	6.5	15	240	3×0.45×0.30	30629	100%	NFP
383	TFP-2A	CCT	NFP	7.72311	6.5	15	240	3×0.45×0.30	65423	100%	NFP
384	TFP-17	Encroachment	No Plantation Required	2.29645	6.5	15	240	3×0.45×0.30	19443	100%	NFP
648	TFP-5	CST	GF-40%	0.897889	6.5	15	240	3×0.45×0.30	7587	50%	GF
701	TFP-2A	CCT	NFP	5.158213	6.5	15	240	3×0.45×0.30	43686	100%	NFP
702	TFP-2A	CCT	NFP	5.139584	6.5	15	240	3×0.45×0.30	43544	100%	NFP
997	TFP-9	CST	GF-50%	4.144081	5.8	17	272	3×0.45×0.30	39769	100%	NFP
1172	TFP-8	CST	NFP	1.896451	6.5	15	240	3×0.45×0.30	16056	100%	NFP
1173	TFP-5	CST	GF-40%	1.8637	6.5	15	240	3×0.45×0.30	15773	100%	NFP
1174	TFP-10	CCT	NFP	1.045619	6.5	15	240	3×0.45×0.30	8857	100%	NFP

(15) Neturia Beat (Raghunathpur range)

Drainage Line Treatment Measures Open Map

15.1.1 Brushwood Check Dam- Neturia Beat (Raghunathpur range) Open Design Detailed Excel File

Survey No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design Width (m)	Design Height (m)	Depth of driving Vertical Poles inside the earth(m)	Breath (m) Spacing between two rows	Cost (₹)
22	DLT-2	2A2F1a5	1	23.63748	86.75249	2.0	0.5	0.3	0.50	1442.30
28	DLT-8	2A2F1a3	1	23.63	86.78243	2.0	1.3	0.8	0.50	2489.51
30	DLT-10	2A2F1a3	1	23.63649	86.77434	2.0	0.8	0.5	0.50	1826.41
34	DLT-14	2A2F1a3	1	23.63544	86.77501	3.0	1.5	0.9	0.75	4784.76
38	DLT-18	2A2F1a3	1	23.6352	86.77652	2.0	0.8	0.5	0.50	1826.41
39	DLT-19	2A2F1a3	1	23.63504	86.77669	4.0	0.8	0.5	0.75	3807.81

15.1.2 Loose Boulder Check Dam- Neturia Beat (Raghunathpur range) Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
29	DLT-9	2A2F1a3	1	23.63272	86.77996	3.0	0.60	0.4	1.30	0.20	6809.25
31	DLT-11	2A2F1a3	1	23.63615	86.77417	4.0	1.00	0.5	2.00	0.30	21811.31
32	DLT-12	2A2F1a3	1	23.63588	86.77354	4.0	1.00	0.5	2.00	0.30	21811.93
33	DLT-13	2A2F1a3	1	23.63586	86.77331	5.0	1.20	0.6	2.40	0.40	40685.88
35	DLT-15	2A2F1a3	1	23.6348	86.77533	4.0	1.20	0.6	2.40	0.40	32549.69
41	DLT-21	2A2F1a3	1	23.63518	86.77729	6.0	1.20	0.6	2.40	0.40	48830.47
23	DLT-3	2A2F1a3	1	23.63184	86.77918	9.0	1.00	0.5	2.00	0.30	49293.29
24	DLT-4	2A2F1a3	1	23.63173	86.77896	8.0	1.00	0.5	2.00	0.30	43818.11
25	DLT-5	2A2F1a3*	1	23.63025	86.78234	9.0	1.00	0.5	2.00	0.30	49297.46
26	DLT-6	2A2F1a3*	1	23.63034	86.78244	7.0	0.75	0.4	1.50	0.20	20972.31

*Outside shapefile boundary of the Beat. Shapefile Boundary or proposed DLT Lat-Long. need to verify.

15.1.3 Gabion Check Neturia Beat (Raghunathpur range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
27	DLT-7	2A2F1a3	1	23.63017	86.78228	4	1	0.40	24471.19

15.1.4 Gabion Check Dam Neturia Beat (Raghunathpur range)

Open Design Detailed Excel File

Sr. No.	Map ID	Watershed	Order of Gully	Latitude	Longitude	Head wall Design width (m)	Head wall Design Height (m)	Head wall Design breath (m)	Head wall FD(m)	Side wall Design Length (m)	Side wall Height (m)	Side wall Design breath (m)	Side wall FD(m)	Total Estimated Cost (₹)
36	DLT-16	2A2F1a3	1	23.63515	86.77554	9.5	1.8	1.0	0.60	5	2.80	1.0	0.60	350493.56
37	DLT-17	2A2F1a3	1	23.63524	86.77591	9.5	1.5	1.0	0.50	5	2.50	1.0	0.50	349131.85
40	DLT-20	2A2F1a3	1	23.63494	86.77706	9.5	1.5	1.0	0.50	5	2.50	1.0	0.50	349131.85

15.1.5 Random Rubble Masonry Check Dam- Neturia Beat (Raghunathpur range)

Open Design Detailed Excel File

Catchment ID	Survey Sr_No	Beat	Map Id	Watershed Code	Gully Order	Latitude	Longitude	Catchment Area (ha)	Length of weir, L (m)	Height of dam, F	Depth of flow (including freeboard), h	Total Estimated Cost (in lakh ₹)
1	21	Neturia	DLT-1	2A2F1a5	2	23.642581	86.751469	167	7.0	1.5	2.01	3.71

Water Harvesting Structure Measures - Neturia Beat (Raghunathpur range)

Open Map

15.2.1 Embankment Pond- Neturia Beat (Raghunathpur range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
31	EWHS-6	2 A 2 F 1 a 3	1	23.63639	86.77395	25494.56

15.2.3 Percolation Pond – Neturia Beat (Raghunathpur range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
26	EWHS-1	2 A 2 F 1 a 5	1	23.63971	86.75363	276906.18
27	EWHS-2	2 A 2 F 1 a 5	1	23.6391	86.75315	228610.96
28	EWHS-3	2 A 2 F 1 a 3	1	23.63209	86.77997	268881.19
29	EWHS-4	2 A 2 F 1 a 3	1	23.63153	86.78029	148070.50
30	EWHS-5	2 A 2 F 1 a 3	1	23.63874	86.77832	59359.75

15.3.1 Land Treatment and Forest Plantation measures- Neturia Beat (Raghunathpur range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
1	L1	CPT / Boundary Trench	GF-20%	1.651733	5.5	18	288	3×0.45×0.45	25195	100%	NFP
2	L1	CPT / Boundary Trench	GF-20%	1.179131	5.8	17	272	3×0.45×0.45	16991	100%	NFP

60	L3	CPT / Boundary Trench	GF-30%	2.810054	6.5	15	240	3×0.45×0.45	35675	100%	NFP
61	L6	CPT / Boundary Trench	GF-20%	1.03953	6.5	15	240	3×0.45×0.45	13180	100%	NFP
501	L5	CPT / Boundary Trench	GF-20%	2.871064	6.5	15	240	3×0.45×0.45	36469	50%	GF
502	L6	CPT / Boundary Trench	GF-20%	1.080715	6.5	15	240	3×0.45×0.45	13709	50%	GF
709	L1	CPT / Boundary Trench	GF-20%	3.970518	5.8	17	272	3×0.45×0.45	57165	100%	NFP
775	L1	CPT / Boundary Trench	GF-20%	6.241505	6.5	15	240	3×0.45×0.45	79290	100%	NFP
1590	L7	CPT / Boundary Trench	GF-20%	0.773109	5.5	18	288	3×0.45×0.45	11804	50%	GF
1591	L1	CPT / Boundary Trench	GF-20%	2.187116	5.8	17	272	3×0.45×0.45	31494	50%	GF
1592	L7	CPT / Boundary Trench	GF-20%	1.983382	5.8	17	272	3×0.45×0.45	28530	50%	GF
1593	L1	CPT / Boundary Trench	GF-20%	3.45781	5.5	18	288	3×0.45×0.45	52719	50%	GF
1651	L7	CPT / Boundary Trench	GF-20%	5.855446	6.5	15	240	3×0.45×0.45	74368	50%	GF
1911	L4	CPT / Boundary Trench	GF-20%	2.855513	6.5	15	240	3×0.45×0.30	24172	50%	GF
1912	L4	CPT / Boundary Trench	GF-20%	1.194602	6.5	15	240	3×0.45×0.30	10127	50%	GF

(16) Raghunathpur-I Beat (Raghunathpur range)

Drainage Line Treatment Measures Open Map

16.1.1 Loose Boulder Check Dam- Raghunathpur-I Beat (Raghunathpur range) Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
16	DLT-1	2A2F1b8	1	23.57096	86.74641	6.0	0.75	0.4	1.50	0.20	17898.78
17	DLT-2	2A2F1b8	1	23.56593	86.75109	7.0	0.75	0.4	1.50	0.20	20882.46

Water Harvesting Structure Measures - Raghunathpur-I Beat (Raghunathpur range) Open Map

16.2.1 Pond Renovation- Raghunathpur-I Beat (Raghunathpur range) Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
15	EWHS-1	2 A 2 D 5 s 9	3	23.478497	86.604436	329350.07
16	EWHS-2	2 A 2 F 1 c 5	1	23.593297	86.692289	248246.92
17	EWHS-3	2 A 2 F 1 b 3	1	23.571522	86.704856	159217.77
18	EWHS-4	2 A 2 F 1 b 3	1	23.572514	86.716739	82456.56
19	EWHS-5	2 A 2 F 1 b 7	2	23.561917	86.758936	308438.41
20	EWHS-6	2 A 2 F 1 g 4	1	23.541572	86.599086	281656.10

16.3.1 Land Treatment and Forest Plantation measures- Raghunathpur-I Beat (Raghunathpur range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
126	L4	CPT / Boundary Trench	GF-30%	1.93001	5.5	18	288	3×0.45×0.30	19620	100%	NFP
128	L3	CPT / Boundary Trench	GF-30%	3.326071	5.5	18	288	3×0.45×0.30	33805	100%	NFP
130	L4	CPT / Boundary Trench	GF-30%	0.598661	5	20	320	3×0.45×0.30	6775	100%	NFP
131	L4	CPT / Boundary Trench	GF-30%	6.618462	5.5	18	288	3×0.45×0.30	67257	100%	NFP
466	L1	CPT / Boundary Trench	GF-40%	1.516826	5.8	17	272	3×0.45×0.45	21860	80%	GF
470	L1	CPT / Boundary Trench	GF-40%	1.408383	6.5	15	240	3×0.45×0.45	17891	50%	GF
471	L1	CPT / Boundary Trench	GF-40%	1.354398	5.5	18	288	3×0.45×0.45	20643	50%	GF
472	L1	CPT / Boundary Trench	GF-40%	2.818865	5.8	17	272	3×0.45×0.45	40598	50%	GF
473	L1	CPT / Boundary Trench	GF-40%	7.892225	5.5	18	288	3×0.45×0.45	120312	50%	GF
500	L3	CPT / Boundary Trench	GF-30%	1.725587	6.5	15	240	3×0.45×0.45	21913	50%	GF
534	L4	CPT / Boundary Trench	GF-30%	1.139525	5.2	19	304	3×0.45×0.30	12209	50%	GF
535	L4	CPT / Boundary Trench	GF-30%	1.826171	5.5	18	288	3×0.45×0.30	18561	50%	GF
536	L4	CPT / Boundary Trench	GF-30%	1.143116	5	20	320	3×0.45×0.30	12915	50%	GF
537	L1	CPT / Boundary Trench	GF-40%	1.047892	5.5	18	288	3×0.45×0.30	10657	50%	GF

538	L1	CPT / Boundary Trench	GF-40%	1.697307	5.5	18	288	3×0.45×0.30	17255	50%	GF
651	L2	CPT / Boundary Trench	GF-30%	1.159041	6.5	15	240	3×0.45×0.30	9810	50%	GF
710	L2	CPT / Boundary Trench	GF-30%	2.772427	5.5	18	288	3×0.45×0.45	42239	100%	NFP
771	L1	CPT / Boundary Trench	GF-40%	6.028456	6.5	15	240	3×0.45×0.45	76591	100%	NFP
772	L1	CPT / Boundary Trench	GF-40%	3.172108	6.5	15	240	3×0.45×0.45	40280	100%	NFP
773	L3	CPT / Boundary Trench	GF-30%	2.024121	6.5	15	240	3×0.45×0.45	25724	100%	NFP
774	L3	CPT / Boundary Trench	GF-30%	0.573697	6.5	15	240	3×0.45×0.45	7304	100%	NFP
920	L4	CPT / Boundary Trench	GF-30%	3.354671	5.5	18	288	3×0.45×0.30	34087	100%	NFP
921	L4	CPT / Boundary Trench	GF-30%	2.416191	5.8	17	272	3×0.45×0.30	23184	100%	NFP
922	L4	CPT / Boundary Trench	GF-30%	3.798272	5.8	17	272	3×0.45×0.30	36452	100%	NFP
1582	L1	CPT / Boundary Trench	GF-40%	1.348334	5.5	18	288	3×0.45×0.45	20537	80%	GF
1583	L1	CPT / Boundary Trench	GF-40%	5.154965	5.8	17	272	3×0.45×0.45	74209	80%	GF
1596	L2	CPT / Boundary Trench	GF-30%	1.638665	5.5	18	288	3×0.45×0.45	24983	50%	GF
1597	L2	CPT / Boundary Trench	GF-30%	3.767109	5.8	17	272	3×0.45×0.45	54254	50%	GF
1599	L2	CPT / Boundary Trench	GF-30%	1.071664	5.5	18	288	3×0.45×0.45	16356	50%	GF
1600	L2	CPT / Boundary Trench	GF-30%	1.75564	5.8	17	272	3×0.45×0.45	25301	50%	GF
1602	L1	CPT / Boundary Trench	GF-40%	1.83421	5.8	17	272	3×0.45×0.45	26412	50%	GF
1603	L1	CPT / Boundary Trench	GF-40%	7.77176	6.5	15	240	3×0.45×0.45	98716	50%	GF
1604	L1	CPT / Boundary Trench	GF-40%	6.813269	5.8	17	272	3×0.45×0.45	98081	50%	GF

1605	L1	CPT / Boundary Trench	GF-40%	1.977726	5.8	17	272	3×0.45×0.45	28477	50%	GF
1606	L1	CPT / Boundary Trench	GF-40%	1.52475	5.8	17	272	3×0.45×0.45	21966	50%	GF
1607	L3	CPT / Boundary Trench	GF-30%	2.10941	5.8	17	272	3×0.45×0.45	30382	50%	GF
1608	L1	CPT / Boundary Trench	GF-40%	6.486272	5.5	18	288	3×0.45×0.45	98875	50%	GF
1609	L1	CPT / Boundary Trench	GF-40%	6.609721	5.8	17	272	3×0.45×0.45	95170	50%	GF
1648	L1	CPT / Boundary Trench	GF-40%	2.716316	6.5	15	240	3×0.45×0.45	34511	50%	GF
1649	L2	CPT / Boundary Trench	GF-30%	2.035835	6.5	15	240	3×0.45×0.45	25883	50%	GF
1650	L2	CPT / Boundary Trench	GF-30%	14.683947	6.5	15	240	3×0.45×0.45	186528	50%	GF
1705	L3	CPT / Boundary Trench	GF-30%	1.190319	5.5	18	288	3×0.45×0.30	12104	50%	GF
1706	L4	CPT / Boundary Trench	GF-30%	3.018887	5.5	18	288	3×0.45×0.30	30665	50%	GF
1707	L4	CPT / Boundary Trench	GF-30%	0.952436	5.5	18	288	3×0.45×0.30	9669	50%	GF
1708	L4	CPT / Boundary Trench	GF-30%	3.277629	5.5	18	288	3×0.45×0.30	33311	50%	GF
1709	L4	CPT / Boundary Trench	GF-30%	3.125267	5.5	18	288	3×0.45×0.30	31759	50%	GF
1710	L4	CPT / Boundary Trench	GF-30%	1.944061	5.5	18	288	3×0.45×0.30	19761	50%	GF
1711	L4	CPT / Boundary Trench	GF-30%	8.755916	5.5	18	288	3×0.45×0.30	88994	50%	GF
1712	L4	CPT / Boundary Trench	GF-30%	4.477227	5.8	17	272	3×0.45×0.30	42980	50%	GF
1713	L4	CPT / Boundary Trench	GF-30%	1.362846	5.8	17	272	3×0.45×0.30	13092	50%	GF
1714	L4	CPT / Boundary Trench	GF-30%	1.358442	5.8	17	272	3×0.45×0.30	13021	50%	GF
1715	L1	CPT / Boundary Trench	GF-40%	1.397864	5.8	17	272	3×0.45×0.30	13409	50%	GF

1716	L3	CPT / Boundary Trench	GF-30%	1.441354	5.8	17	272	3×0.45×0.30	13833	50%	GF
1717	L3	CPT / Boundary Trench	GF-30%	2.08337	5.8	17	272	3×0.45×0.30	20008	50%	GF

(17) Raghunathpur-II Beat (Raghunathpur range)

Drainage Line Treatment Measures Open Map

17.1.1 Loose Boulder Check Dam- Raghunathpur-II Beat (Raghunathpur range) Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
18	DLT-1	2A2F1g8	1	23.57718	86.55506	8.0	1.00	0.5	2.00	0.30	43617.67
19	DLT-2	2A2F1g7	1	23.57857	86.55643	6.0	0.75	0.4	1.50	0.20	17900.18
20	DLT-3	2A2F1g1	1	23.61926	86.58078	6.0	0.75	0.4	1.50	0.20	17900.64

Water Harvesting Structure Measures - Raghunathpur-II Beat (Raghunathpur range) Open Map

17.2.2 Percolation Pond – Raghunathpur-II Beat (Raghunathpur range) Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
21	EWHS-1	2 A 2 F 1 g 7	1	23.5792	86.55783	373496.61
22	EWHS-2	2 A 2 F 1 g 7	1	23.58274	86.55607	228610.96
23	EWHS-3	2 A 2 F 1 g 7	1	23.57732	86.55524	268881.19
24	EWHS-4	2 A 2 F 1 g 8	1	23.56825	86.57347	83580.01
25	EWHS-5	2 A 2 F 1 g 4	1	23.55544	86.5895	268881.19

17.3.1 Land Treatment and Forest Plantation measures- Raghunathpur-II Beat (Raghunathpur range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
59	L2	CCT	GF-20%	2.705274	6.5	15	240	3×0.45×0.45	34352	100%	NFP
129	L2	CCT	GF-20%	1.433049	5.8	17	272	3×0.45×0.30	13762	100%	NFP
918	L2	CCT	GF-20%	2.472525	5.8	17	272	3×0.45×0.30	23748	100%	NFP
1179	L1	CCT	NFP	0.801081	6.5	15	240	3×0.45×0.30	6775	100%	NFP
1180	L1	CCT	NFP	0.77496	6.5	15	240	3×0.45×0.30	6563	100%	NFP
1181	L2	CCT	GF-20%	19.407886	6.5	15	240	3×0.45×0.30	164368	100%	NFP

(18) Santuri Beat (Raghunathpur range)

Drainage Line Treatment Measures

Open Map

18.1.1 Loose Boulder Check Dam- Santuri Beat (Raghunathpur range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design Height (m)	Top Width (m)	Bottom Width (m)	FD (m)	Cost (₹)
45	DLT-4	2A2E6n2*	1	23.5717	86.85193	4.0	0.75	0.4	1.50	0.20	11936.85
46	DLT-5	2A2E6n2*	1	23.5718	86.85195	5.0	0.75	0.4	1.50	0.20	14921.45

*Outside shapefile boundary of the Beat. Shapefile Boundary or proposed DLT Lat-Long. need to verify.

18.1.2 Gabion Check Santuri Beat (Raghunathpur range)

Open Design Detailed Excel File

Sr. No.	Map Id	Watershed	Order of Gully	Latitude	Longitude	Design width (m)	Design height (m)	FD (m)	Cost (₹)
42	DLT-1	2A2E6n2	1	23.57187	86.93143	4	1	0.40	24505.37
43	DLT-2	2A2E6n8	2	23.57176	86.83481	5	1	0.40	30631.72
44	DLT-3	2A2E6n4	1	23.57154	86.84822	9	1.2	0.40	61923.43

Water Harvesting Structure Measures - Santuri Beat (Raghunathpur range)

Open Map

18.2.1 Embankment Pond- Santuri Beat (Raghunathpur range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
32	EWHS-1	2 A 2 E 6 n 2	1	23.5709	86.84678	25494.56
33	EWHS-2	2 A 2 E 6 n 2	1	23.57198	86.85207	407420.83

18.2.2 Pond Renovation- Santuri Beat (Raghunathpur range)

Open Design Detailed Excel File

Survey No.	Map ID	Watershed Code	Gully Order	LATITUDE	LONGITUDE	Estimated Cost (in ₹)
34	EWHS-3	2 A 2 E 6 m 3	1	23.577778	86.876667	206051.37
35	EWHS-4	2 A 2 E 6 n 2	1	23.574167	86.862222	215535.81
36	EWHS-5	2 A 2 E 6 n 2	1	23.574167	86.861111	607830.67
37	EWHS-6	2 A 2 E 6 n 8	2	23.531111	86.878889	565383.43
38	EWHS-7	2 A 2 E 6 n 2	1	23.580556	86.844722	259370.31
39	EWHS-8	2 A 2 E 6 q 6	1	23.577111	86.795500	127163.99
40	EWHS-9	2 A 2 E 6 n 6	2	23.538361	86.839694	328842.28

41	EWHS-10	2 A 2 E 6 n 6	1	23.545556	86.842500	282761.73
42	EWHS-11	2 A 2 D 5 k 8	1	23.498611	86.825583	217009.99
43	EWHS-12	2 A 2 D 5 k 8	1	23.498889	86.829889	226985.83
44	EWHS-13	2 A 2 D 5 k 7	2	23.480556	86.830278	248246.92

18.3.1 Land Treatment and Forest Plantation measures- Santuri Beat (Raghunathpur range)

Open Map

Open Design Detailed Excel File

OBJECT ID	Map ID	Proposed Land Treatment Type	Proposed Forest Plantation Type	Area (ha)	Horizontal Interval (m)	No. of Lines of 100 m Length/ha	No. of Trenches/ha	Trench Dimensions (m)	Total Estimated Cost (₹)	Recommended Plantation (%)	Recommended Plantation Type
3	L1	CST	GF-40%	1.002723	5.5	18	288	3×0.45×0.45	15297	100%	NFP
4	L1	CST	GF-40%	1.49219	5.8	17	272	3×0.45×0.45	21490	100%	NFP
127	L1	CST	GF-40%	2.262851	5.8	17	272	3×0.45×0.30	21702	100%	NFP
132	L2	CST	NFP	1.560826	6.5	15	240	3×0.45×0.30	13233	100%	NFP
133	L2	CST	NFP	1.025873	5.8	17	272	3×0.45×0.30	9845	100%	NFP
134	L2	CST	NFP	1.26886	5.2	19	304	3×0.45×0.30	13621	100%	NFP
468	L3	CST	GF-80%	1.097057	5	20	320	3×0.45×0.45	18579	50%	GF
469	L1	CST	GF-40%	2.48925	6.5	15	240	3×0.45×0.45	31600	50%	GF
532	L1	CST	GF-40%	0.602358	5.2	19	304	3×0.45×0.30	6458	50%	GF
533	L1	CST	GF-40%	1.924977	5.8	17	272	3×0.45×0.30	18491	50%	GF
539	L2	CST	NFP	2.90876	6.5	15	240	3×0.45×0.30	24631	50%	GF
540	L2	CST	NFP	4.772058	5.5	18	288	3×0.45×0.30	48485	50%	GF
652	L1	CST	GF-40%	4.628375	6.5	15	240	3×0.45×0.30	39204	50%	GF
711	L1	CST	GF-40%	2.786961	5.5	18	288	3×0.45×0.45	42503	100%	NFP
712	L3	CST	GF-80%	0.772071	5.5	18	288	3×0.45×0.45	11751	100%	NFP
713	L1	CST	GF-40%	1.489575	6.5	15	240	3×0.45×0.45	18896	100%	NFP
776	L1	CST	GF-40%	3.531202	6.5	15	240	3×0.45×0.45	44832	100%	NFP
777	L1	CST	GF-40%	1.393845	6.5	15	240	3×0.45×0.45	17732	100%	NFP
919	L1	CST	GF-40%	6.523668	5.5	18	288	3×0.45×0.30	66305	100%	NFP
923	L2	CST	NFP	1.212766	5.8	17	272	3×0.45×0.30	11645	100%	NFP

924	L2	CST	NFP	3.460287	5.5	18	288	3×0.45×0.30	35181	100%	NFP
925	L2	CST	NFP	2.343622	5.5	18	288	3×0.45×0.30	23819	100%	NFP
1594	L3	CST	GF-80%	2.435345	5.8	17	272	3×0.45×0.45	35040	50%	GF
1595	L3	CST	GF-80%	5.441721	5.8	17	272	3×0.45×0.45	78338	50%	GF
1598	L3	CST	GF-80%	14.127422	5.5	18	288	3×0.45×0.45	215376	50%	GF
1601	L1	CST	GF-40%	2.0261	5.5	18	288	3×0.45×0.45	30912	50%	GF
1703	L1	CST	GF-40%	2.652778	5.5	18	288	3×0.45×0.30	26959	50%	GF
1704	L1	CST	GF-40%	1.403199	5.5	18	288	3×0.45×0.30	14256	50%	GF

Consultancy Project on

Preparation of Catchment Area Treatment Plan CAT Plans) for 13 Forest Divisions in West Bengal under JICA Funded WB-FBCCCR

Consultant: **ICAR-Indian Institute of Soil and Water Conservation (ICAR-IISWC)**
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