

Preparation of DGPS map of Shongtong - Karcham Hydro- Electric Project for the MoEF, Govt for Forest Clearance under Forest FCA.



By
 Divisional Forest Officer,
 Kullu District Division
 at Zaskong Jhu (H.P.)

Dr. [Signature]
 Sr. [Signature]
 District Engineer (H.P.),
 Dist. Engineer (H.P.),
 Dist. Engineer (H.P.), 170000

Coordinate Table

S. No.	Station	Northing	Easting	Longitude
1	237861.119	5881256.767	31° 21' 54.227" N	76° 24' 23.887" E
2	237872.947	5881256.767	31° 21' 54.227" N	76° 24' 23.887" E
3	237861.119	5881256.767	31° 21' 54.227" N	76° 24' 23.887" E
4	237861.119	5881256.767	31° 21' 54.227" N	76° 24' 23.887" E

Area Details of Fenced CA Land			
S. No.	Area	Station No.	Area (Hect.)
1	RADOLA		1.176
	Total		1.176

INDEX

Proposed CA Land	
Forest Land	
Forest Boundary	



- NOTE
1. Boundary lines depicted in the map is as shown by the field staff.
 2. All dimensions are in meters unless otherwise specified.

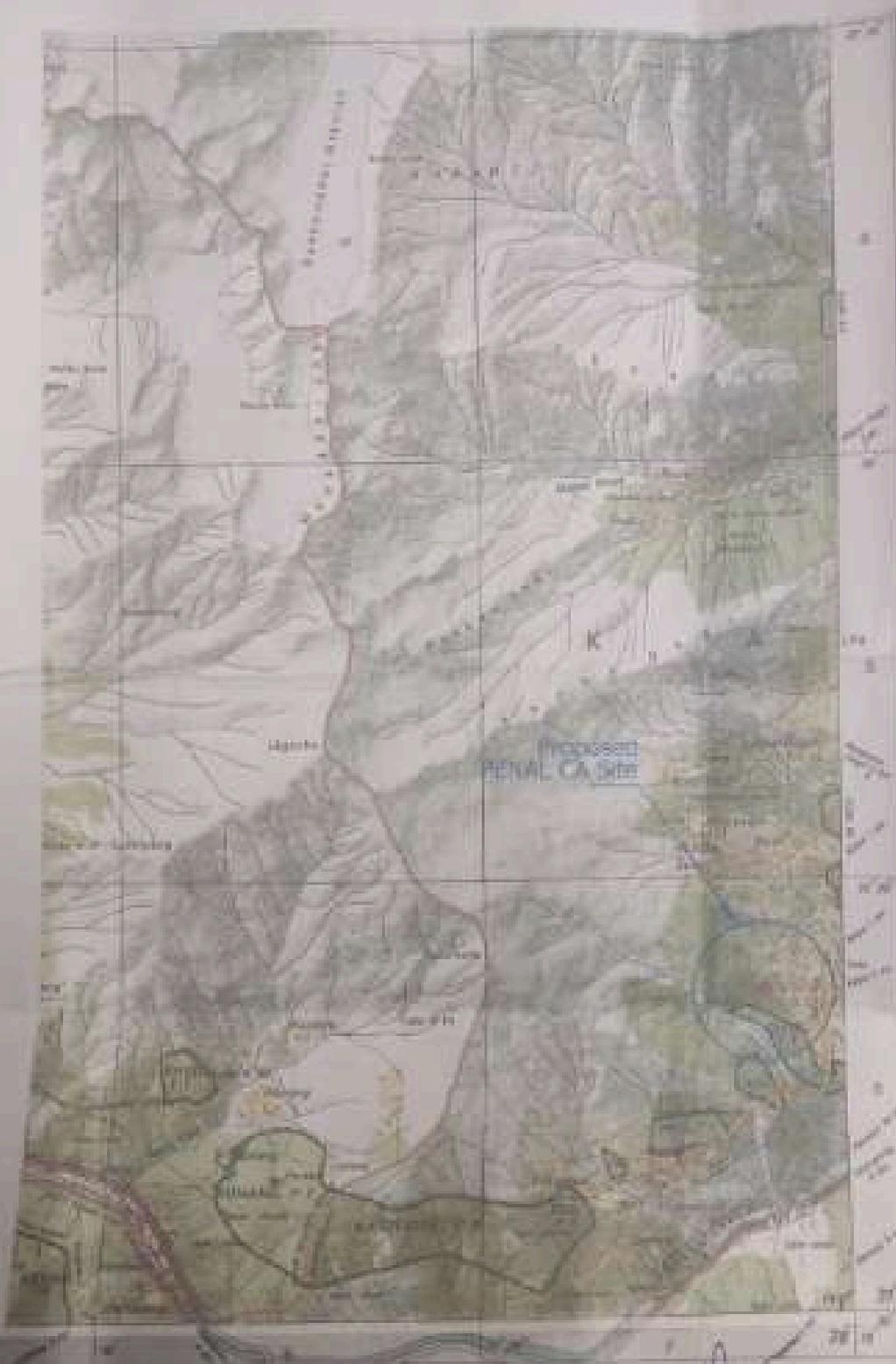
PROJECT

Preparation of DGPS map of Shongtong - Karcham Hydro Electric Project for the MoEF, Govt for Forest Clearance under Forest FCA.

Project Proposer

SHREC,
 14802, Sadiq,
 14802, Sadiq, etc.

Survey Sheet of Shongtong - Kanchham Hydro-Electric project for the MoEF, GoI
for Forest Clearance under Forest PCA. (1,1762 Hect.)



PROJECT:
Shongtong - Kanchham Hydro-Electric project for the MoEF, GoI for Forest Clearance under Forest PCA.

Project Proponent:
MPC, Shongtong, MPC, Kanchham.

NAME OF FOREST RANGE:
KALPA RANGE

NAME OF FOREST DIVISION:
BENGAJAL, at Bongaing-Pao

AREA OF PROPOSED FOREST PCA SITE

Area Details of Forest PCA, Land	
Name	Area (Hect)
Forest	1,1762
Total	1,1762

MAP SHEET No. OF S.O.I.
144A2



INDEX
PROPOSED FOREST PCA SITE

[Signature]
Divisional Forest Officer,
Bongaing Forest Division,
at Bongaing-Pao (H.P.)

[Signature]
Sr. Manager (S.R.)
Shongtong - Kanchham HEP,
MPC, Bongaing-Pao,
Dist. - Bongaing H.P., 731103

Digital Landuse Map of Dumping Site Area Below Road D/S of Adit - 1 to Ropeway (2-38-13 Hect)
 (In Respect of Shongtong -Karcham HEP, HPPCL Reckong Peo, Distt. Kinnaur, Himachal Pradesh)



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Legend

- Dumping Site
- Road

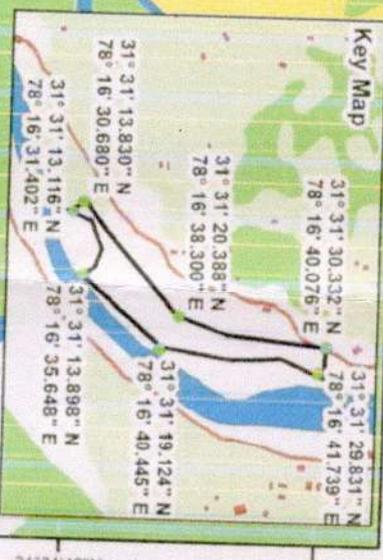
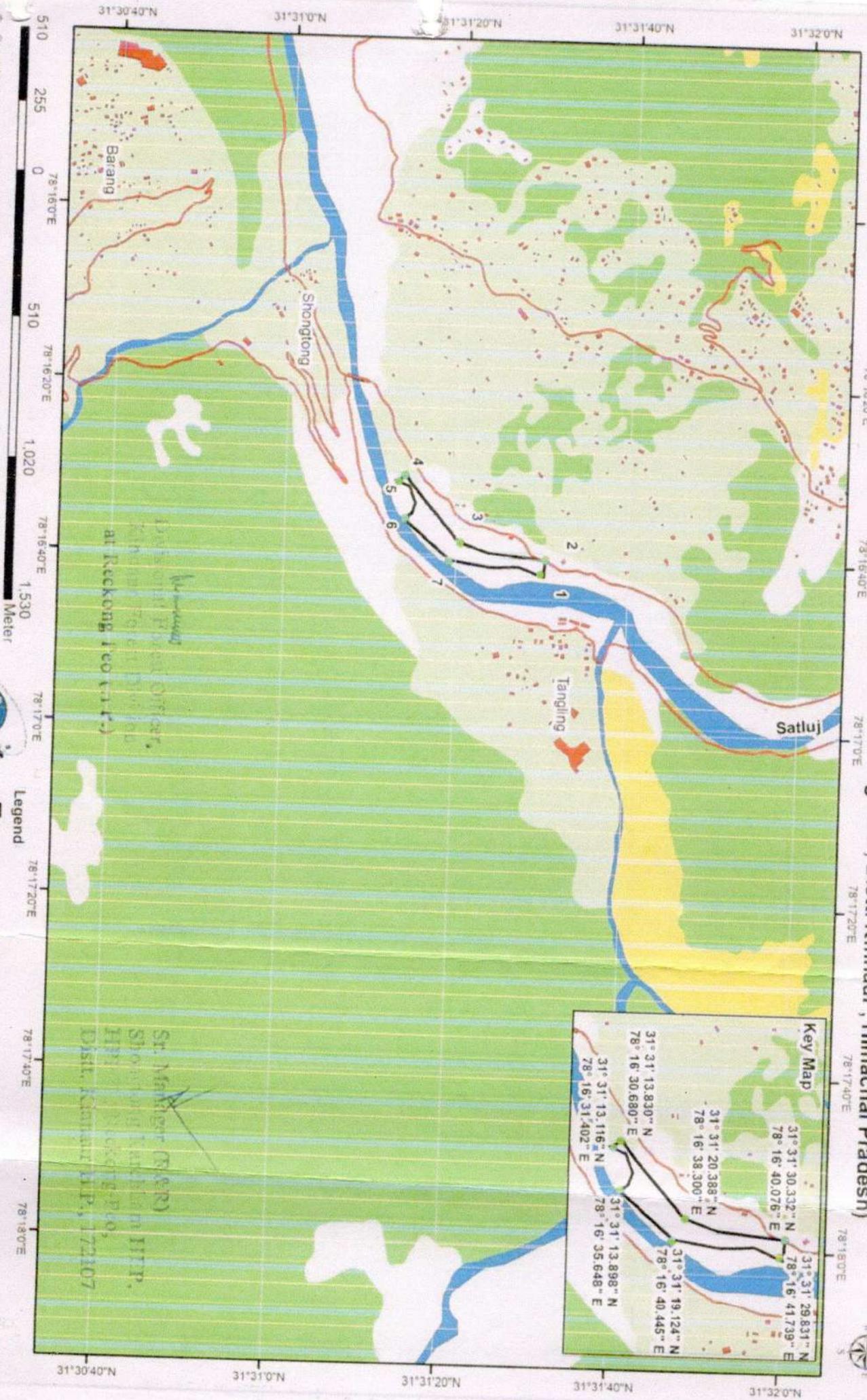
- Agriculture
- Bridge
- Builtup
- Forest Land

- Open Land
- Pantation
- River/Nallah

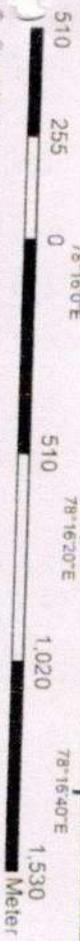
Divisional Forest Officer,
 Kinnaur Forest Division
 at Reckong Peo (I.C.)

St. Matthew (P.O.)
 Shongtong - Karcham
 HPPCL Reckong Peo
 Distt. Kinnaur, Himachal Pradesh

Digital Landuse Map of Land Area Dumping Site Near U/S of Dumping 03 (1-44-70 Hect)
(In Respect of Shongtong -Karcham HEP, HPPCL Reckong Peo , Distt. Kinnaur , Himachal Pradesh)



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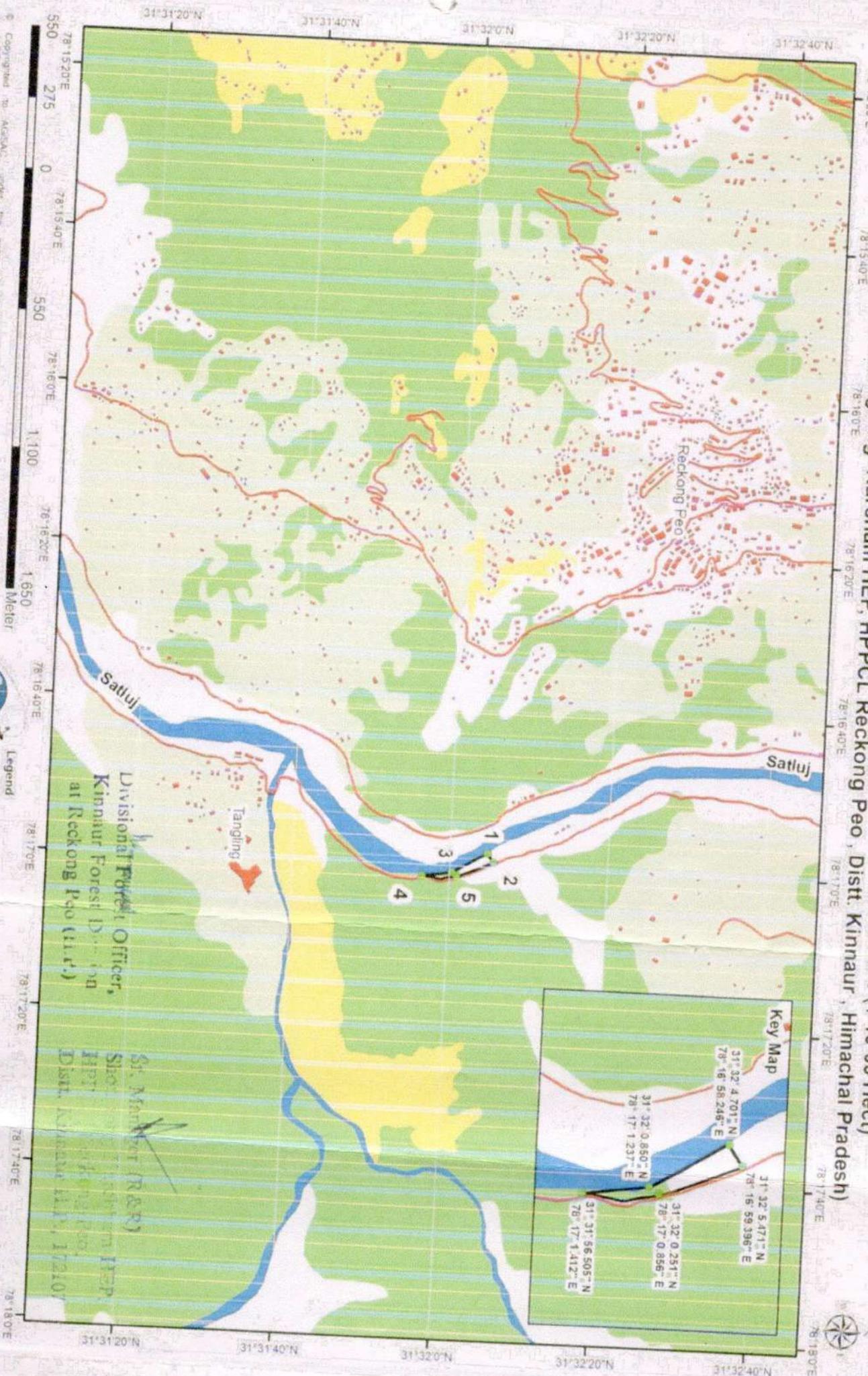
- Legend**
- Dumping Site
 - Road
 - Agriculture
 - Bridge
 - Builtup
 - Forest Land
 - Open Land
 - River/Nallah
 - Plantation

Himachal Pradesh
 DISTRICT KINNAUR
 RECKONG PEO (T.C.)
 AT RECKONG PEO (T.C.)

ST. MARGARET (TOWER)
 SHONGTONG (TOWN)
 HPPCL RECKONG PEO,
 DIST. KINNAUR (H.P.), 172107



Digital Landuse Map of Proposed Dumping Site Area Below Near Adit-1 (1-10-05 Hect)
(In Respect of Shongtong -Karcham HEP, HPPCL Reckong Peo, Distt. Kinnaur, Himachal Pradesh)



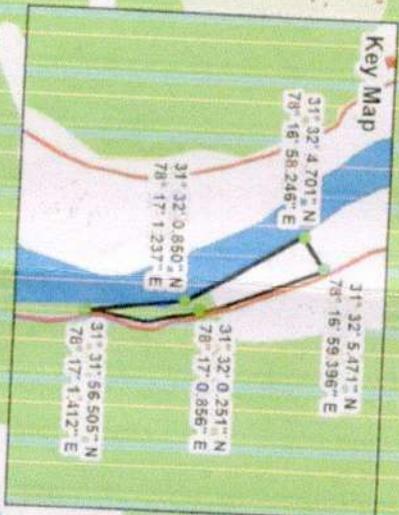
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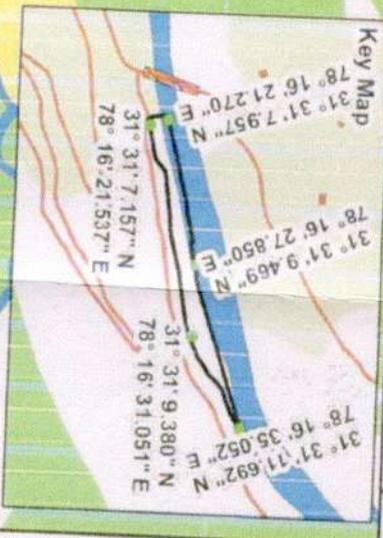
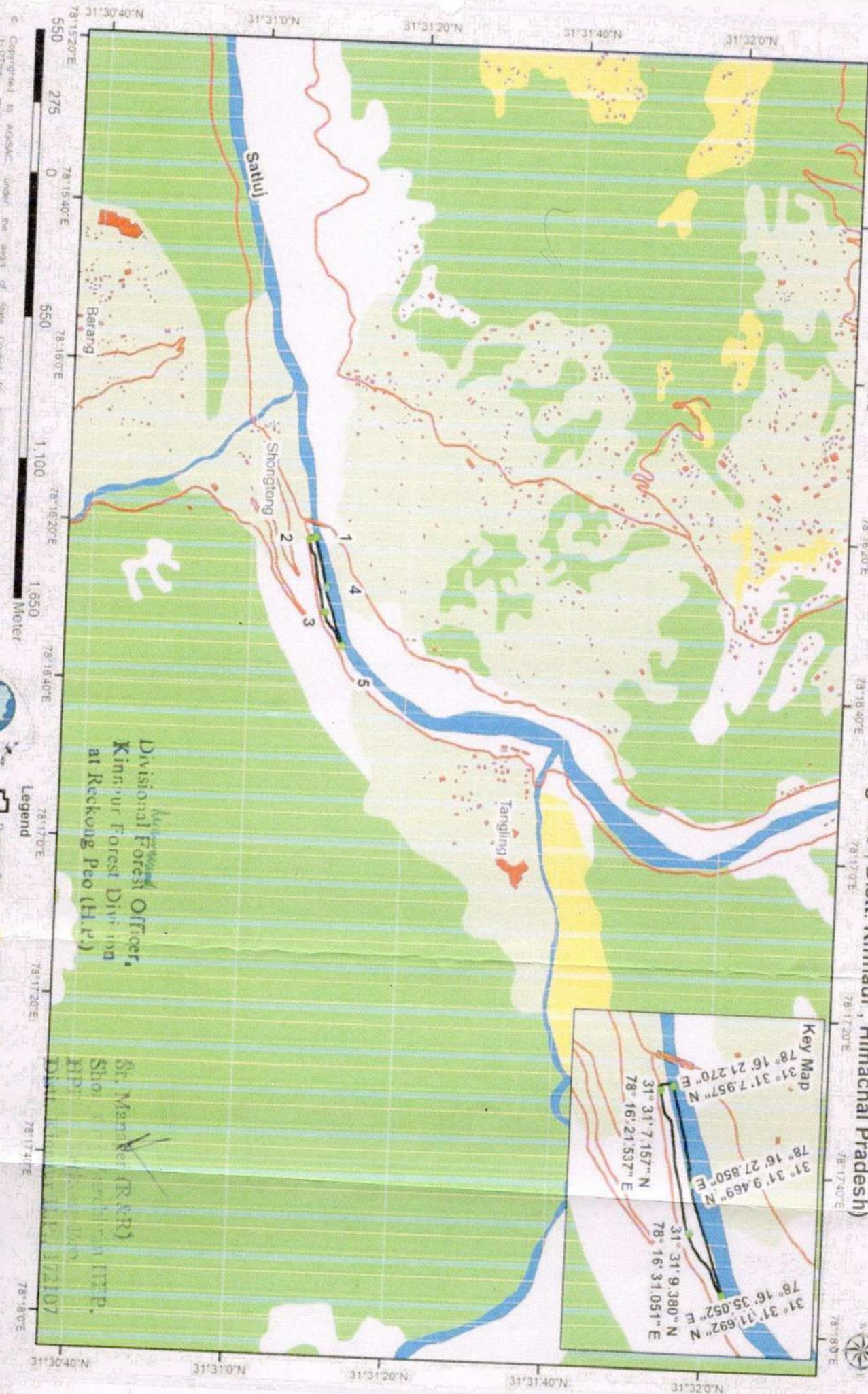
Divisional Forest Officer,
 Kinnaur Forest Division
 at Reckong Peo (I.I.R.)

Sd/- Mr. R.R.P.
 Sd/- Mr. H.P.P.
 Sd/- Mr. H.P.P.
 Distt. Kinnaur, Himachal Pradesh

- Legend**
- Dumping Site
 - Agriculture
 - Builtup
 - Forest Land
 - Road
 - Bridge
 - Open Land
 - River/Nallah
 - Plantation



Digital Landuse Map of Land Area Near Shongtong -Bridge for SFT Out Let (0-85-95 Hect)
 (In Respect of Shongtong -Karcham HEP, HPPCL Reckong Peo, Distt. Kinnaur, Himachal Pradesh)



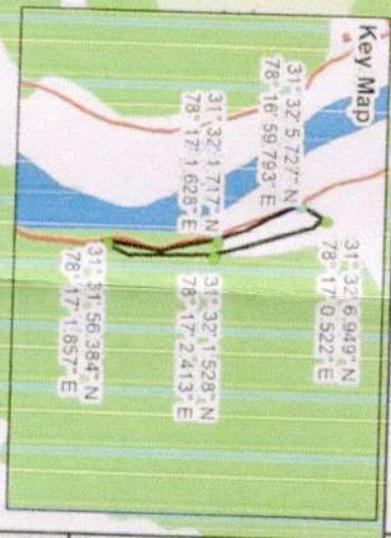
Divisional Forest Officer,
 Kinnaur Forest Division
 at Reckong Peo (H.P.)

Legend

- Dumping Site
- Agriculture
- Forest Land
- Builtup
- Open Land
- River/Stream
- Road
- Bridge
- Forest Land
- Plantation

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Digital Landuse Map of Land Area Near U/s of Adit-1(0-58-83 Hect)
(In Respect of Shongtong -Karcham HEP, HPPCL Reckong Peo, Distt. Kinnaur, Himachal Pradesh)



DIVISIONAL OFFICE,
 KINNAUR FOREST DEPT,
 BI Reckong Peo (H.P.)
 St. Mary's (R&R)
 SHONGTONG-KARCHAM HEP,
 HPPCL Reckong Peo,
 Distt. Kinnaur H.P., 172107

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- Legend**
- Dumping Site
 - Agriculture
 - Forest Land
 - Builtup
 - Open Land
 - River/Naah
 - Road
 - Bridge
 - Plantation

Digital Landuse Map of Intake Tunnel and Diversion Tunnel Near Powari Intake No -4 (0-56-36 Hect)
(In Respect of Shongtong -Karcham HEP, HPPCL Reckong Peo, Distt. Kinnaur, Himachal Pradesh)



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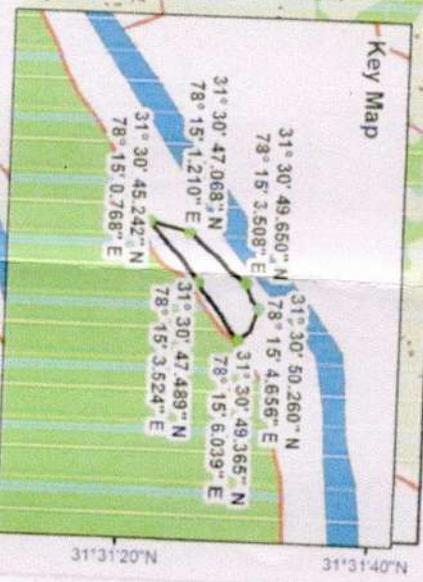


- Legend**
- Dumping Site
 - Agriculture
 - Bridge
 - Builtup
 - Forestland
 - Open Land
 - River/Naah
 - Plantation

Divisional Forest Officer,
 Kinnaur Forest Division
 at Reckong Peo (I.C.P.)

ST. MANKU (R.A.P.)
 SHANGTONG (R.A.P.) H.T.P.,
 HPPCL RECKONG PEO,
 DISTT. KINNAUR H.P., 172107

Digital Landuse Map of Land Area Dumping Site Near D/S of Adit-II (0-29-60 Hect)
(In Respect of Shongtong -Karcham HEP, HPPCL Reckong Peo, Dist. Kinnaur, Himachal Pradesh)



510 255 0 510 1020 1530
 78°14'20"E 78°14'40"E 78°15'0"E 78°15'20"E 78°15'40"E 78°16'0"E
 31°30'20"N 31°30'40"N 31°31'0"N 31°31'20"N 31°31'40"N

Divisional Forest Officer,
Kinnaur Forest Division,
at Reckong Peo (H.P.)

St. Mary's (G.P.)
Shanglung (G.P.)
KIT, Kinnaur Forest Division
Distt. Kinnaur H.P., 172410

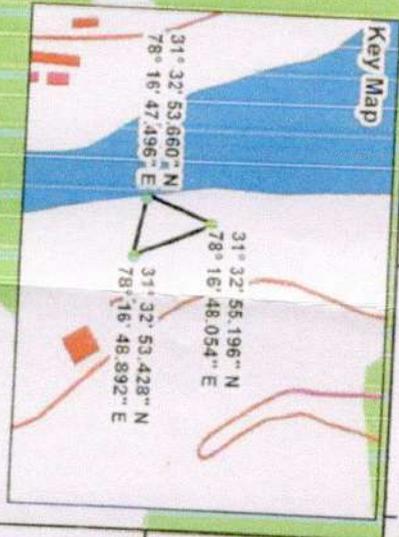
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- Legend**
- Dumping Site
 - Road
 - Agriculture
 - Bridge
 - Forest Land
 - Bullup
 - Open Land
 - River/Nallah
 - Dry Drainage

Digital Landuse Map of Approach Road to RBM Site at Powari on Left Bank of River Satluj (0-13-60 Hect)

(In Respect of Shongtong -Karcham HEP, HPPCL Reckong Peo, Distt. Kinnaur, Himachal Pradesh)



Divisional Forest Officer,
Kinnaur Forest Division
at Reckong Peo (H.P.)

St. Mary's (D.P.R.)
Shongtong - Karcham HEP,
HPPCL Reckong Peo,
Distt. Kinnaur, Himachal Pradesh

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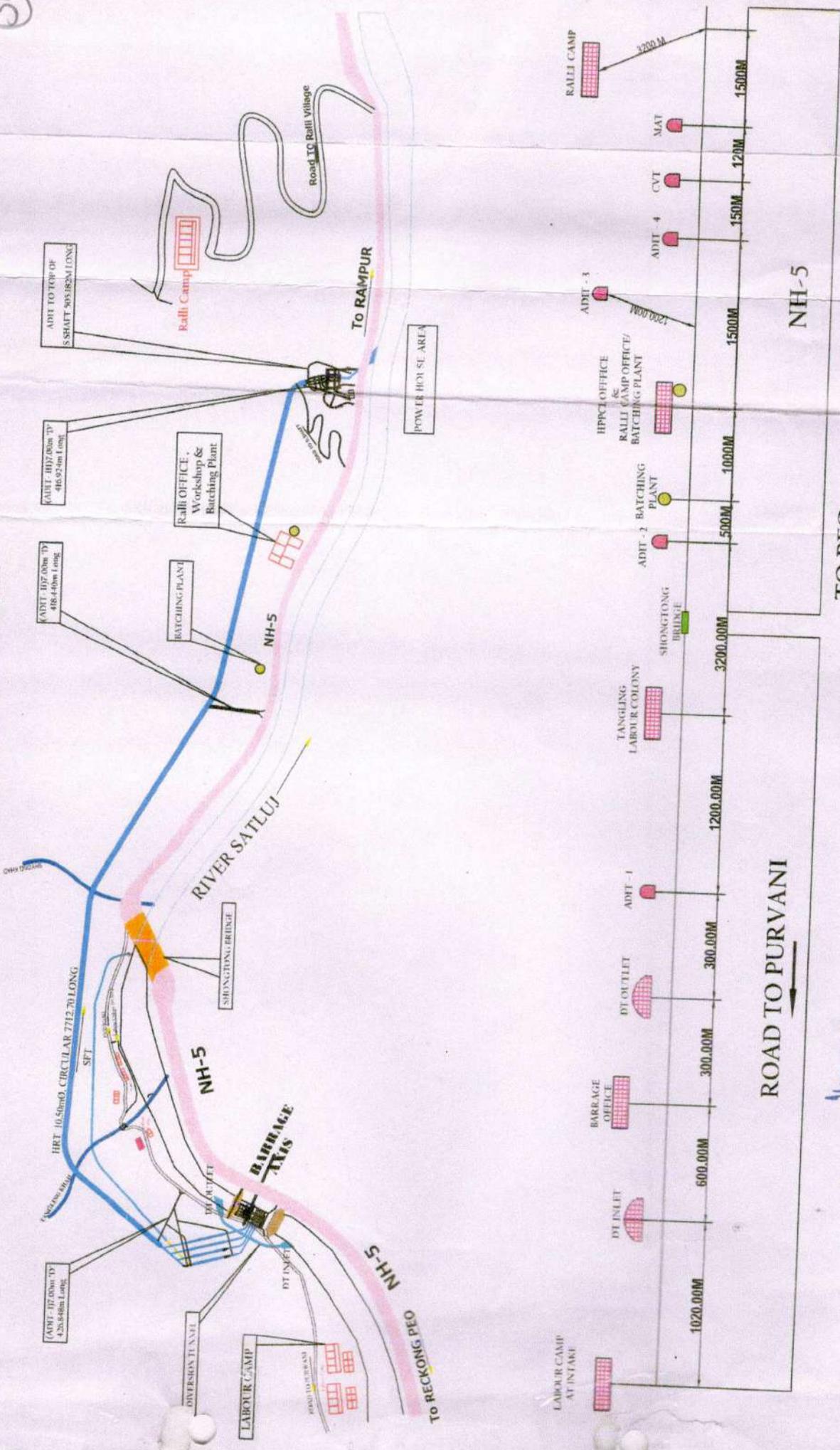


- Legend**
- Dam/Durgam Site
 - Road
 - Agriculture
 - Bridge
 - Bulcup
 - Forest Land
 - Open Land
 - Pertation
 - River/Naikh

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SHONGTONG-KARCHHAM HYDRO ELECTRIC PROJECT (450 MW)
LAYOUT PLAN OF PROJECT



Divisional Forest Officer,
 Kinnaur Forest Division
 at Reckong Pao (H.P.)

LOCATION OF PROJECT WITH DISTANCE

Shongtong-Karchham HEP,
 HPP, Reckong-Pao,

CHECK LIST SERIAL NUMBER-07

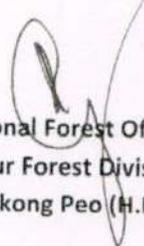
STATEMENT SHOWING DETAILS OF FOREST AREA PROPOSED FOR DIVERSION

Sr.No	District	Division	Range/Tehsil/ Village	Khasra/ Survey or Component Number or Km. stone	Forest area proposed for diversion (ha.)	Legal status of area	Remark
1.	Kinnaur	Kalpa	Kalpa (Shudarang)	56/1	0-21-91	Charagah Darkhtan	Dumping area adjoining to the existing dumping area No. 3 on right bank of river Satluj near Shongtong bridge
				568	084-09	Charagah Darkhtan	
			Up Mohal Range	569	0-38-70	Charagah Darkhtan	
				Sub Total	03 Kita	1-44-70	
			Kalpa (Barang)	3/2	0-29-60	Charagah Darkhtan	Dumping area near Adit-I on left bank of river Satluj
				Sub Total	1 Kita	0-29-60	
			Kalpa (Tangling)	2/1	0-58-83	Charagah Darkhtan	Adit-I portal on left bank of satluj river including its working areas
				2/1	1-10-05	Charagah Darkhtan	Dumping area on left bank of river satluj near Adit-I below existing HPPWD road Shongtong to Purbani
				2/2	2-38-13	Charagah Darkhtan	Dumping area on left bank of river satluj near Adit-I below existing HPPWD road Shongtong to Purbani. D/S of proposed Adit-I
				1/1	0-15-73	Gair Mumkin dariya	Silt Flushing Tunnel's outlet portal and approach road to portal & its working area.
				838/1	0-35-86	Charagah Darakhtan	
				840/1	0-34-36	Charagah Darakhtan	
				Sub Total	06 Kita	04-92-96	

			Kalpa (Powari)	854/823/1	0-56-36	Charagah Darkhtan	Intake Tunnel & Diversion Tunnel outlet & its working area in between existing HPPWD road and vertical cliff
				810/2	0-13-60	Charagah Darakhtan	Approach road to RBM site at Powari on left bank of river satluj.
				Sub Total	2 Kita	0-69-96	
				G.Total	12 Kita	7-37-22	

Date: 16-Nov-2021

Place: R/Peo


Divisional Forest Officer
Kinnaur Forest Division
At Reckong Peo (H.P.)

(Srinoid Rayston A) IPS
Dy. Conservator of Forest

CHECK LIST:-08

STATEMENT SHOWING DETAILS OF NON FOREST AREA PROPOSED FOR DIVERSION						
Sr.No	District	Division	Range/ Village/ Mohal	Khasra No./Survey of Compartment No. or K.M. Stone	Non Forest area proposed for diversion (Hectare)	Present land Use
1	Kinnaur	Kalpa	Nil	Nil	Nil	Nil

Date
Place

Sr. Manager (R&R)
Shongtung-Karcham HEP TTP,
HPPCL/Recorg Pco
Distt. Kinnaur H.P. I.A.D., 172107

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OFFICE OF THE COLLECTOR, KINNAUR DISTRICT AT
RECKONG PEO, H.P.

No. KNR-(DRA)/- 1070896

Dated 27/09/19

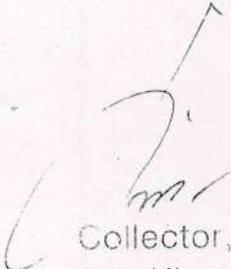
NON-AVAILABILITY OF NON FOREST LAND CERTIFICATE

On the basis of report vide letter No. SDK-07-II (OK)/2374 dated 24-09-2019 of SDO (C), Kalpa at Reckong Peo & Basis of Joint inspection report it is certified that the land area measuring 7-37-22 Hect. in up mohal Raang, Usaring, Tangling & Powari Tehsil Kalpa, District Kinnaur, H.P. is a forest land. It is further certified that no non forest land is readily available for construction of Shongtong Karchham Hydro Electric Project (450 MW) District Kinnaur, H.P.

It is also certified that the diversion of this forest land area measuring 7-37-22 Hect. in up mohal Raang, Usaring, Tangling & Powari Tehsil Kalpa, District Kinnaur, H.P. for construction of the Shongtong Karchham Hydro Electric Project (450 MW) is inescapable. The non availability of non forest land certificate is issued accordingly.

Place- Reckong Peo.
Dated :




Collector,
District Kinnaur
at Reckong Peo.
COLLECTOR
KINNAUR DISTRICT
AT RECKONG PEO

**JUSTIFICATION FOR LOCATING THE PROJECT IN
THE FOREST AREA**

The area of Satluj river on both banks was surveyed with technical detail while conducting investigations. Thereafter various alternatives were analyzed, scrutinized as per required technical requirements. Incidentally, both the banks of Satluj river are terraced with the forestland. However left bank was found more suitable as the components of the project intercept less forest land and provide favorable geological conditions required for different components of the project as compared to the right bank. No other suitable area was available wherein use of forest land could be avoided/ minimized. In the present proposal, vegetation on the required area proposed for diversion is very low being mostly rocky/ barren. Since there is minimal destruction of green vegetation, therefore this location is suitable for construction of this Project. The forest area to be diverted is 0.7-37-22 Ha and complete detail of the same are attached in Checklist Sr. No 7 . Number of trees involved in the proposed land are 112 including saplings. For the construction of Shongtong Karchham HEP, MoEFCC has already accorded approval for diversion of 63-50-15 Ha of land vide MoEF&CC FNo. 8-78/2010-FC dated 14.11.2012 ,copy of which is attached in the proposal folder.

(Signature of User Agency)

Office Seal

Shongtong Karchham HEP,
HPPCL, Reckong-Poo,
Dist. Kinnaur H.P., 172107

Countersigned By:-

Divisional Forest Officer,
Kinnaur Forest Division,
at Reckong-Poo

JUSTIFICATION FOR LOCATING THE PROJECT IN THE FOREST AREA

The area proposed for diversion for Shongtong Karchham HEP 450 MW, as additional land measuring 7.3722 ha are located in various Up Mohal of Kalpa Tehsil of Kinnaur District complete details of the area proposed for diversion is detailed below:

S.No.	District	Division	Range/Tehsil/ Village	Khasra/ Survey or Compartment Number of Km. Stone	Forest Area proposed for Diversion (Ha.)	Legal status of Forest Area	Remarks
1	Kinnaur	Kalpa	Kalpa (Shudharang)	561/1	0-21-91	Charagah Drakhtaan	Dumping area adjoining to the existing Dumping area No. 3 on right bank of river Sutluj near Shongtong bridge.
				568	0-84-09	Charagah Drakhtaan	
				569	0-38-70	Charagah Drakhtaan	
				Sub Total	03 kita	1-44-70	
			Kalpa (Barang)	3/2	0-29-60	Charagah Drakhtaan	Dumping Area near Adit-II on left bank of Sutluj River.
				Sub Total	1 kita	0-29-60	
			Kalpa (Tangling)	21/1	0-58-83	Charagah Drakhtaan	Adit-I portal on left bank of river Sutluj including its working areas.
				2/1	1-10-05	Charagah Drakhtaan	Dumping Area on left bank of river Sutluj near Adit-I below existing HPPWD road Shongtongto Purbani.
				2/2	2-38-13	Charagah Drakhtaan	Dumping Area on left bank of river Sutluj near Adit-I below existing HPPWD road Shongtongto Purbani. D/s of proposed Adit-I
				1/1	0-15-73	Gairmum kindariya	Silt Flushing Tunnel 's outlet portal and approach road to portal & its working area.
				838/1	0-35-86	Charagah Drakhtaan	
				840/1	0-34-36	Charagah	

				Sub Total	06 kita	04-92-96	Drakhtaan	
			Kalpa (Powari)	854/823/1		0-56-36	Charagah Drakhtaan	Intake tunnels & Diversion tunnel outlet & its working areas in between existing HPPWD road and vertical cliff.
				810/2		0-13-60	Charagah Drakhtaan	Approach road to RBM site at Powari on left bank of river Sutluj.
				Sub Total	2 kita	0-69-96		
				G.Total	12 Kita	7-37-22		

The details of trees standing in the Proposed diversion along with Khara no s are given in the Enumeration list attached with the proposal. Although as per the requirement/compliance sougthed by the CF is as under:

SN	Kh. No	Area(Ha)	No of trees standing	Remarks
1	1/1	0-15-73	5	4 No. Neoza & 1 No. Thum
2	21/1	0-58-83	16	18 No. Neoza, 3 Thum & 4 Neoza sapling and 1 Thum sapling
3	854/823/1	0-56-36	17	14 No. Neoza, 3 No. Thum & sapling of Neoza 8 No. Mohru 10 No.
4	561/1 & 568	0-21-91 & 0-84-09	15	4 No. Neoza, Khidk 1 No. Kunishk, 10 & Sapling of Ash 9 no. Neoza 2 No. Kunishk, 20 No. Alanthus No.
		Total	53	

Reason for finalizing the Proposed Forest land are as per the Revised final drawing of 450 MW which cannot be changed because of the alignment already finalized/Fixed after various studies conducted through various technical experts moreover both banks of Satluj river has been studied and surveyed in detail while conducting the investigations to accord various technical details and then the various alternatives have been concluded analyzed and scrutinized, incidentally both the banks of Satluj river have been terraced with the forestland. However left bank was found more suitable as the components of the project intercept less forest land and it also provide good

scheme from the view of deriving benefits by feeding power to the Northern grid.

Govt. of Himachal Pradesh has allotted Shongtong Karchham HEP(402 MW) HEP, to Himachal Pradesh Power Corporation, vide letter No. MPP-F(2)-5/2005-II, Govt. of HP, Deptt of MPP& Power dated 6th January 2007.after obtaining all the statutory clearances,Project proponent had started the construction activities .MOEFCC has already accorded the Forest Clearance for 63-50-15 ha (Copy attached as **Annexure-I**) for the construction of Shongtong Karchham HEP(402 MW) Details for Land diverted is attached as (**Annexure—II**) by implementation of this project, 6 numbers of Panchayats being declared as Project affected Panchayats of STKHEP will be benefitted under various R&R schemes are as under :

SN	Name of Gram Panchayat	No. of Beneficiaries	Remarks
1	Khawangi,	180	
2	Shudharang,.	158	
3	Kalpa	465	
4	Powar	224	
5	Barang	328	
6	Mebar.	71	
	Total	1426	

Approximately 3000 skilled, semi skilled and unskilled persons during construction phase would be employed for a period of 66 months (including infrastructure development) beside about 25 directly employed regular staff in the operation phase . In addition to it the project would generate indirect employment in both construction and operation phases like, Hiring of vehicle, hiring of Buildings, petty contracts, fisheries, retail business & tourism etc.

G. V. V. V.
Divisional Forest Officer,
Kinnaur Forest Division
at Reckong Peo (H.P.)

[Signature]
Sr. Manager (R&R)
Shongtong Karchham HEP,
HPP, Reckong Peo,
Distt. Kinnaur H.P., 172107

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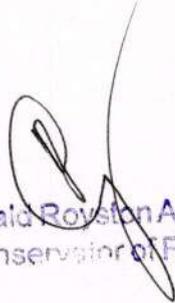
CHECKLIST SERIAL NO-11
CERTIFICATE FOR MINIMUM USE OF FOREST LAND

This is to certify that forest land involved in the proposal for diversion of **07-37-22 Hect.** for Proposed C/O Shongtong-Karchham HEP, 450 MW in Distt. Kinnaur is unavoidable and barest minimum.

Date:- 16-Nov-2021

Place:- R/Peo


Sr. Manager (R&R)
Shongtong-Karchham HEP,
H.P., Teekong-Peo,
Distt. Kinnaur H.P., 172107


(Reginald Royston A) IFS
Dy. Conservator of Forests

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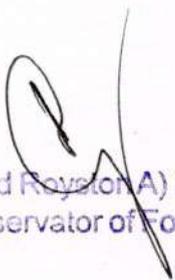
CHECKLIST SERIAL NO-12
UNDERTAKING FOR PAYMENT OF COST OF COMPENSATORY
AFFORESTATION

I Deputy General Manager (R&R), Shongtong-Karchham HEP, 450 MW do hereby undertake to pay the entire amount of compensatory afforestation in leu of the forest area **07-37-22 hectares** of forest land diverted for proposed C/O Shongtong-Karchham HEP, 450 MW in Distt. Kinnaur as per prevailing wage rates at the time of plantation as and when demanded by forest department.

Date:- 16-Nov-2021

Place:- R/Seco


Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL, Reckong-Pee,
Distt. Kinnaur H.P., 172107


(Reginald Royston A) IFS
Dy. Conservator of Forest

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CHECKLIST SERIAL NO-13
UNDERTAKING FOR PAYMENT OF NET PRESENT VALUE OF
FOREST AREA

I Deputy General Manager (R&R), Shongtong-Karchham HEP, 450 MW has applied for the diversion of **07-37-22 hectares** of forest land for proposed C/O Shongtong-Karchham HEP, 450 MW in Distt. Kinnaur.

I/We hereby undertake to pay the Net Present Value (NPV) of the forest land.

Date:- 16-11-2021

Place:- Reckong-Peo


(Reginald Royston A) IFS
Dy. Conservator of Forests


Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL, Reckong-Peo,
Distt. Kinnaur H.P., 172107

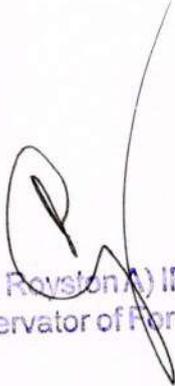
43

CHECKLIST SERIAL NO-13-A
UNDERTAKING FOR PAYMENT OF ADDITIONAL NPV OF
FOREST AREA

I Deputy General Manager (R&R), Shongtong-Karchham HEP, 450 MW do hereby undertake to pay the additional amount for NPV in lieu of the forest area **07-37-22 hectares** of forest land diverted for proposed C/O Shongtong-Karchham HEP, 450 MW in Distt. Kinnaur as per prevailing wage rates at the time of plantation as and when demanded by forest department.

Date:- 16-11-2021

Place:- R/roo


(Reginald Revston) IFS
Dy. Conservator of Forest


Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL., Reckong-Peo,
Distt. Kinnaur H.P., 172107

44

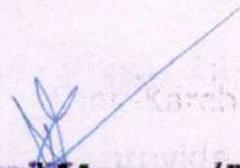
UNDERTAKING TO PROVIDE FOREST RIGHT ACT.(FRA) CERTIFICATE

I Dy. General Manager (E&RR), Shongtong-Karchham HEP (450MW), Distt. Kinnaur hereby undertake to provide the **FRA Certificate** after getting Stage-I approval as the process of obtaining FRA certificate is under process.

Date:- 4/1/22

Place:- R. Peo

I Dy. General Manager (E&RR), Shongtong-Karchham HEP (450MW), Distt. Kinnaur hereby undertake to provide the FRA Certificate after getting Stage-I approval as the process of obtaining FRA certificate is under process.
Conservator at Forest
Kinnaur Forest Division
R. Peo


Dy General Manager(E&RR)
Shongtong-Karchham HEP
HPPCL Reckong Peo.
Distt. Kinnaur (H. P.) 172107
Distt. Kinnaur H.P.

Enumeration list of tree, which are standing on the Diversion of additional Forest Land for construction of Shongthong-Karchham HEP, 450 MW Falling in Sub Mohal Tangling in khasra No. 1/1, area 0-15-73 hect. and Khasra No. 21/1 area 0.58.83 hect. in Tangling Beat, Shongthong forest Block, Kalpa Forest Rang, Kinnaur Forest Diversion during 10/019 as under:-

I – For Silt Flushing Tunnel:- Khasra No. 1/1 area 0.15.73 Hect.

Enumeration No.	Species	Dia	Class	Remark's
1/019	Neoza	39-39	III	Green Standing on bank of River Satluj.
2/019	Thum	25-42	III	Green Standing Fit.
3/019	-do-	47-48	II A	-do-
4/019	Neoza	48-49	II A	-do-
5/019	Thum	42-48	II A	-do-
Sappling : Neoza 4 Nos, Thum 1 No.				

II – For Adit-1 Portal on left bank of River Satluj

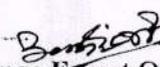
Including its working areas khasara No. 21/1 area 0-58-83 hect.

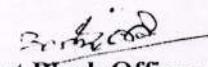
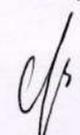
1/019	Neoza	39-40	III	Green standing fit.
2/019	-do-	39-40	III	Dry standing on Rock/danger zone can't cut/convert.
3/019	-do-	65-68	I A	-do-
4/019	-do-	30-31	III	-do-
5/019	-do-	30-31	III	-do-
6/019	-do-	20-21	IV	-do-
7/019	-do-	21-22	IV	-do-
8/019	-do-	37-38	III	-do-
9/019	-do-	32-33	III	-do-
10/019	-do-	38-39	III	Green Standing fit.
11/019	-do-	26-27	IV	-do-
12/019	-do-	20-21	IV	-do-
13/019	-do-	64-65	I A	-do-
14/019	-do-	28-29	IV	-do-
15/019	-do-	12-13	V	-do-
16/019	-do-	28-29	IV	-do-

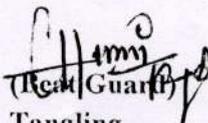
Classification

Species	V	IV	III	II A	II B	I A	I B	I C	I D	Total	Remarks
Neoza	1	6	8	1	-	2	-	-	-	18 Nos.	sappling Neoza= 4 Nos. Thum=1 Nos.
Volume	0.01 8	0.90	3.36	0.87	-	2.50	-	-	-	7.648 m ³	
Thum	-	-	1	2	-	-	-	-	-	3 Nos.	
Volume	-	-	0.708	2.672	-	-	-	-	-	3.38 m ³	


 Representative
 of user agency.
 Shongthong Karchham HEP 450mw
 HPPCL KARCHHAM HEP,
 Distt- Kinnaur (H.P.) 172107


 Range Forest Officer
 Kalpa Forest Range
 Kalpa Range (H.P)
 Distt Kinnaur (H.P)


 Forest Block Officer
 Shongthong
 Shongthong Knt.




 (Range Guard)
 Tangling

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Sub Mohal Powari khasra No. 854/823/1 area 0-56-36 Hect.

II -- For Intake tunnel-Diversion tunnel out let and its working area in between existing HPPWD Road and vertical cliff.

Enumeration No.	Species	Dia	Class	Remark's
1/019	Neoza	85-86	I C	Green Standing fit.
2/019	-do-	19-20	V	Green Standing half broken fit.
3/019	-do-	19-20	V	Green Standing fit.
4/019	-do-	22-23	IV	-do-
5/019	-do-	22-23	IV	-do-
6/019	-do-	29-30	IV	-do-
7/019	-do-	25-26	IV	-do-
8/019	-do-	23-24	IV	Dry Standing top broken fit.
9/019	Mohru	35-36	III	Green Standing fit.
10/019	-do-	24-25	IV	-do-
11/019	Neoza	35-36	III	-do-
12/019	-do-	37-38	III	-do- on rock fit.
13/019	-do-	27-28	IV	Green Standing fit.
14/019	-do-	27-28	IV	-do-
15/019	-do-	27-28	IV	-do-
16/019	-do-	26-27	IV	-do-
17/019	Mohru	38-39	III	Green Standing half broken unfit.

Classification.

Species	V	IV	III	II A	II B	I A	I B	I C	I D	Total	Remarks
Neoza	2	9	2	-	-	-	-	1	-	14 Nos.	sappling Neoza= 8 Nos. Mohru=10 Nos.
Volume	0.036	1.35	0.84	-	-	-	-	1.25	-	3.476 m ³	
Mohru	-	1	2	-	-	-	-	-	-	3 Nos.	
Volume	-	0.313	1.314	-	-	-	-	-	-	1.627 m ³	

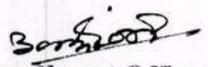
Signature of user (R.P.) Junior Officer (R&R) agency, Shongthong, Kanchiam HEP 41, HPPCL REGULATORY PBO, Distt. Kamnab (H. P.) 172107
 Range Forest Officer Kalpa Forest Range Kalpa Kiffinan (H.P) Distt. Kamnab
 Forest Block Officer Shongthong Block Forest Officer Shongthong Kanchiam
 Beat Guard Tangling

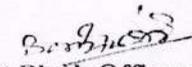
16/11/2021
R/PCO

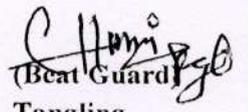
(Reginald Royston A) IFS
Dy. Conservator of Forest

GENERAL ABSTRACT.

Name of Forest	Species.	V	IV	III	II A	II B	I A	I B	I C	ID	Total	Remarks.
UF.Tangling	Neoza	1	6	8	1	-	2	-	-	-	18 Nos.	Sappling:-
	Volume	0.018	0.90	3.36	0.87	-	2.50	-	-	-	7.648 m ³	Neoza=4 Nos.
	Thum	-	-	1	2	-	-	-	-	-	3 Nos.	Them=1 No.
	Volume	-	-	0.708	2.672	-	-	-	-	-	3.38 m ³	
UF Powari	Neoza	2	9	2	-	-	-	-	1	-	14 Nos.	Sappling:-
	Volume	0.036	1.35	0.84	-	-	-	-	1.25	-	3.476 m ³	Mohru=10 Nos.
	Mohru	-	1	2	-	-	-	-	-	-	3 Nos.	Neoza= 8 Nos.
	Volume	-	0.313	1.314	-	-	-	-	-	-	1.627 m ³	
G.Total										38 Nos.	16.131 m ³	Sapplings 23 Nos.


 Range Forest Officer
 Kalpa Forest Range
 Kalpa Kinnaur (H.P.)
 Distt Kinnaur (H.P.) 172107


 Block Forest Officer
 Shongthong Kinnaur


 (Beat Guard)
 Tangling

16-11-2021
R/90


 (Reginald Royston A) IFS
 Dy. Conservator of Forests

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Enumeration list of tree with are coming in proposal muck Dumping site location at up Mohal Rang (Powari) land in Khasra No. 568 & 561 in Reckong Peo beat Kalpa Forest Block, Range Kinnaur Forest Division. The detail of trees with need to be felt is as under Vid D.F.O. Endst. No. Dated.

S. No.	Enurmatation No.	Species	Dia	Class	Remarks
1.	1/19	Neoza	100 over	over	Green standing fit.
2.	2/19	-do-	100 over	over	-do-
3.	3/19	-do-	92-93	I D	-do-
4.	4/19	-do-	20-22	IV	-do-
5.	5/19	Khidok	12-13	V	-do-
6.	6/19	Kunish	15-16	V	-do-
7.	7/19	-do-	22-23	IV	-do-
8.	8/19	-do-	18-19	V	-do-
9.	9/19	-do-	15-16	V	-do-
10.	10/19	-do-	14-15	V	-do-
11.	11/19	-do-	31-32	III	-do-
12.	12/19	-do-	32-34	III	-do-
13.	13/19	-do-	51-52	II B	-do-
14.	14/19	-do-	17-18	V	-do-
15.	15/19	-do-	33-34	III	-do-

ABSTRACT

S. No.	Spp	V	IV	III	II A	II B	IA	IB	IC	ID	OVER	G.Tota	Note
1	Neoza	-	1	-	-	-	-	-	-	1	2	4	splings
	Volume	-	0.15	-	-	-	-	-	-	1.25	2.50	3.90	Ash - 9 No.
2	Khidk	1-	-	-	-	-	-	-	-	-	-	1	Nwoza - 2 No.
	Volume	0.094	-	-	-	-	-	-	-	-	-	0.094	Kunish - 20 No.
3.	Kunish	5	1	3	-	1	-	-	-	-	-	10	Alunthus - 5 No.
	Volume	0.47	0.294	2.124	-	2.177	-	-	-	-	-	5.065	

[Signature]
 (Reginald Roy) IFS
 Dy. Conservator of Forests

[Signature]
 Representative
 Junior Officer (R&R)
 of user agency
 HPPCL RECKONG PEO,
 Distt. Kinnaur (H. P.) 172107

[Signature]
 Range Forest Officer
 Kalpa Forest Range
 Kalpa Kinnaur (H.P.)
 Distt. Kinnaur (H.P.)

[Signature]
 Forest Block Officer
 Forest Block Officer
 Kalpa

Sr. No.	Name of Forest compartment	Species names (Local)	Botanical Name	Girth in C.M. (सेन्टीमीटर)										Total
				0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	More than 90	
1	UF Powari	Neoza	Pinus Geradiana	8	2	9	2	-	-	-	-	1	-	22
		MOHRU	Quercus sp.	10	-	1	2	-	-	-	-	-	-	13
2	UF Tangling	Neoza	Pinus Geradiana	4	1	6	9	1	-	2	-	-	-	23
		Thum	Fraxinus sp.	1	-	-	1	2	-	-	-	-	-	4
3	Up Mohal Rang	Neoza	Pinus Geradiana	2	-	-	-	-	-	-	-	-	3	5
		Khidok	Celtis Aultralis	-	1	-	-	-	-	-	-	-	-	1
		Kunish	Alnus Nitida	20	5	1	3	-	1	-	-	-	-	30
		Thum	Fraxinus sp. Pinus Geradiana	9	-	-	-	-	-	-	-	-	9	
		Alunthus	Alunthus Excelse	5	-	-	-	-	-	-	-	-	5	
	Total													112

Girth in C.M. (सेन्टीमीटर)

Divisional Forest Officer
Shimla Forest Divisional

(Rajul Roychowdhary A)

Sr. Manager (R&R)

Shongtang-Karcham H.P.P.

Distt. Minamur H.P., 172107

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146-39
6

Full Title of the Project: Shongtong-Karchham HEP(450MW), HPPCL

File No. : _____

Date of Proposal: _____

CHECK LIST SERIAL NUMBER: 16

SITE INSPECTION REPORT NOT BELOW THE RANK OF DCF

(For the Forest land to be diverted under FCA)

A proposal has been received by this office from **Shongtong-Karchham HEP, HPPCL** for diversion (under FCA-1980) of **7-37-22 ha.** of forest land for non forestry purpose. The subject envisages the use of forest land for *Construction of Adit-1 portal, silt flushing Tunnel (SFT)outlet portal and approach road to portal and its working area, intake tunnels and diversion tunnel outlet and its working area, approach road to RBM site and dumping area of the Components of Hydroelectric Project.* The site inspection of the land involved in the proposal has been done by me on dated **11.02.20**. On inspection of the site, it is found that the land required by the user agency is a forest measuring **7-37-22 ha.** The requirement of forest land as proposed by the user agency in Col. 2 of part-I is unavoidable and is barest minimum required for the project. And there were No any rare/ endangered/ unique species of flora and fauna found in the area. Nor any protected archaeological/ heritage site/ or any other important monument is located in the area. If so, the details thereof with NOC from competent authority, if required.

- (a) The user agency has not violated the provisions of Forest (Conservation) Act, 1980 and no work has been started without proper sanction.
- (b) It has been found that the user agency has violated the Forest (Conservation) Act, 1980 provisions. A detailed report as per para 1.9 of Chapter 1, Part C of Handbook of Forest (Conservation) Act, 1980 is attached).**

(Note: Whichever of the above is applicable should be shown in bold letters.)

Specific recommendation for acceptance or otherwise of the proposal.

The Proposal is recommended for approval for the Forest Land with an area of 7-37-22 Ha .Out of which 0-58-83 Ha is already used in construction of Adit tunnel in UP Mohal Tangling at Khasara no. 21/1.

Place : Dehra Dun
Date : 11.02.2020

(Signature) [Signature]
Name Dr. Chandra Lal
Designation Divisional Forest Officer
Office Seal Kinnaur Forest Divisional
R/P-0

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Full Title of the Project: Shongtong-Karchham HEP(450MW), HPPCL

Detailed Report on Violation of FCA Provision 1980

The Shonthong Karchham Hydro Electric Project(450 MW) ,HPPCL intends to develop the the Project on River Satluj in UP Mohal Shudarang , Barang, Tangling, Powari of Kalpa in Kalpa Tehsil of District Kinnaur of Himachal Pradesh.. The HPPCL has submitted a proposal for the diversion of the 7-37-22 ha of additional forest land with this office for construction of Adit -I portal , Silt Flushing Tunnel outlet and its working area and approach road to portal and its working area, intake tunnels and diversion tunnel outlet and its working area , approach road to RBM site and dumping area of the Components of Hydroelectric Project in Kalpa Forest Range of Kinnaur Forest Division , Distt. Kinnaur ,H.P.

During the site inspection ,it was found that the user agency is already using approximately 0-58-83 ha of Forest Land for the construction of the Adit -I tunnel which is a violation of the FCA, 1980. However it is a case of encroachment. Since the construction of the this Adit -I tunnel is necessary for the construction of Head Race Tunnel and the other components of the Project. Under these circumstances the user agency has made a proposal for the additional forest land with bare minimum forest land.

According to violation of FCA, 1980 a penal CA scheme is also prepared in lieu of the diversion of 0-58-83 ha of forest land . Hence the proposal is recommended for approval under Section 2 of the FCA, 1980.

Place : Reckong
Date: 9.11.20

9.11.20
(Signature)
Divisional Forest Officer
Kinnaur Forest Division
At Reckong Peo

52 63

Site inspection Report in respect of observation no. xvi vide letter no. 2840 dated 31-08-2020

In compliance to your office letter No FCA-I Kinnaur-2840 dated 31.08.2020 Para IV, Site inspection was carried out on dated 9.11.2020. It was observed that Shongtong Karchham HEP is in construction Stage, there are 6 designated dumping sites for dumping of the muck coming out of the excavation during construction of the project. These dumping sites were checked during the inspection and found that: - In Dumping site No1 situated at Mohal Khawangi, Khasara No 470, area measuring 1-13-83, which was already diverted in favor of Shongtong Karchham HEP , as per the record available with this office. It was observed that, dumping area is already filled, but it seems that Project proponent had not dumped the muck whereas this area has been filled with the muck due to land slide which was unavoidable and unpredictable incidences from the uphill side of Khawangi and User Agency had not taken appropriate action and not informed the Forest Department about the incidence and thereafter the Project Proponent has taken the protection measures to avoid the spilling and same fact has already been enquired by ACF Kinnaur in his inquiry report conducted in CWP 1616/2020. Undersigned directed the project proponent not to use this area for further dumping purpose which is already filled and no capacity is left out for further dumping and also directed to strengthen the protection measures already made is not sufficient .

9.11.20
Divisional Forest Officer,
Kinnaur Forest Division at
Reckong Peo

Full title of the project: Additional forest land in favour of HPPCL for Shongtong-Karchham HEP.

File No.:

Date of proposal:

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CHECK LIST SERIAL NUMBER-17

LOCATION MAP.

Location Map of Non-Forest/Degraded Forest Area identified for Compensatory Afforestation in lieu of proposal for diversion of 7.37.22 hac. of forest land for Shongtong-Karchham HEP, Tehsil Kalpa, Distt. Kinnaur H.P.

Forest Division:- Kinnaur.

Forest Range:- Kalpa.

Block No./Compartment No.

/Survey No. 53 I/2

53 I/2

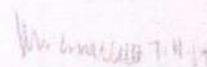
UF-33 =10 ha., (Kalpa Range)

UF-33 =5 ha. (Kaipa Range)

Area:- 15.00 ha.

Map attached of the area to be taken for Compensatory Afforestation.


Dy. General Manager
Shongtong-Karchham HEP,
HPPCL, Reckong Peo,
Distt. Kinnaur (H. P.) 172107


(Dr. Chaman Lal Rao), HPFS
Divisional Forest Officer,
Kinnaur Forest Division
Distt. Kinnaur, Peo (H.P.)
Office Seal _____

Digital Landuse Map for Proposed C A Site C/O Shongton-Karchham Hydro-Electric Project

78.229663

78.233290

78.236917

78.240544

78.244171

31.539720

31.537088

31.534456

31.531824

31.529192

78.229663

78.233290

78.236917

78.240544

78.244171

Radula

CA Site
10 Hect.

31°32'5.74"N
78°14'2.31"E

31°32'5.26"N
78°14'7.79"E

31°32'5.59"N
78°14'12.80"E

31°32'2.20"N
78°14'15.64"E

31°31'54.87"N
78°14'15.11"E

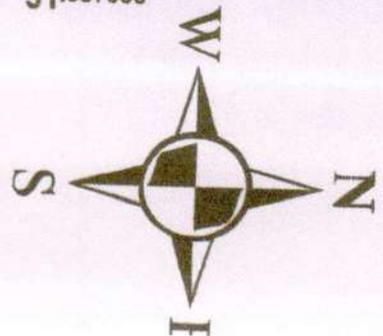
31°31'52.20"N
78°14'12.22"E

31°31'57.16"N
78°14'9.38"E

31°31'57.26"N
78°14'6.33"E

31°31'56.90"N
78°14'2.02"E

31°32'1.08"N
78°14'2.44"E

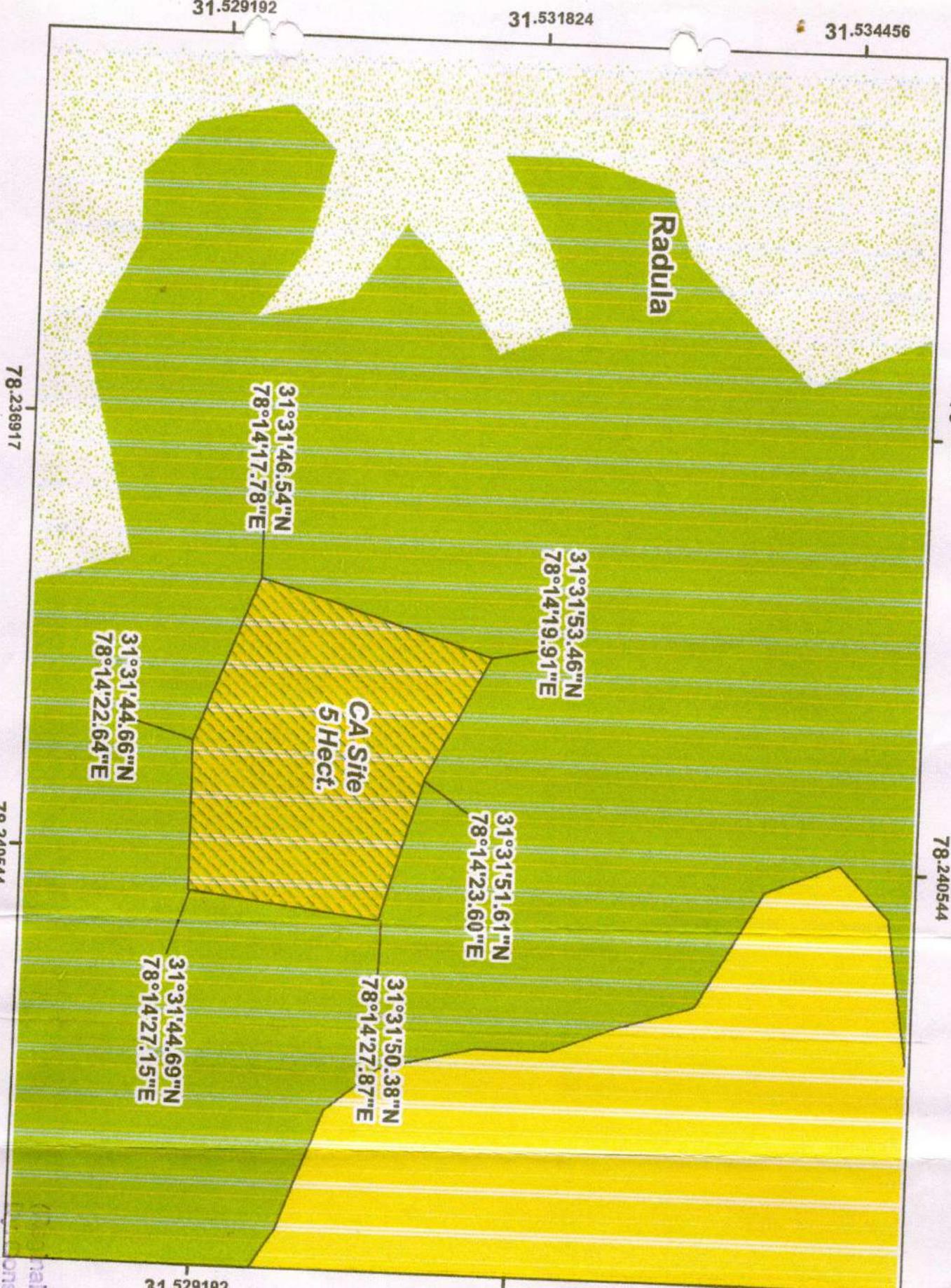


Legend

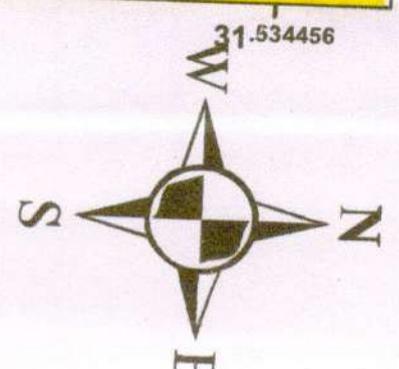
-  Proposed CA Site
-  Forest Land
-  Open Land
-  Private Land


 Sr. Surveyor (R.E.R.)
 Shongton-Karchham
 Hydro-Pec
 Dist. H.P.

 J. J. ...
 Director of Forest



57
00



Legend

-  Proposed CA Site
-  Forest Land
-  Open Land
-  Private Land

Dr. M... (CRER)
Sho...
HP...
Dist... N.P., 17.

[Handwritten signature]
naik Roy...
nservator of...

Topo Sheet :- Proposed C A Site C/o Shongton-Karchham Hydro Electric Project (5.Hact.)

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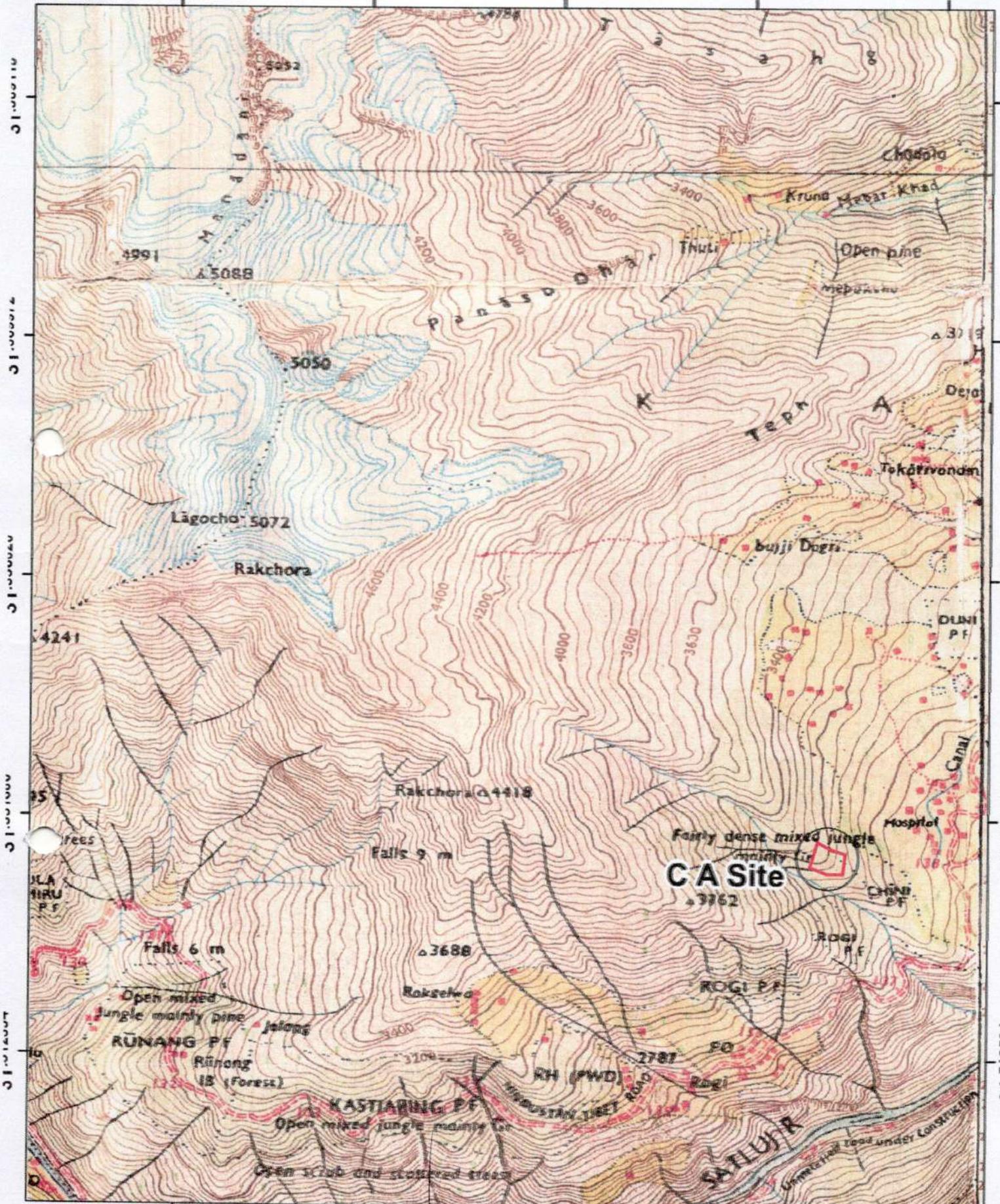
78-186208

78-201424

78-216640

78-231856

78-247072



Index

78-186208

78-201424

78-216640

78-231856

78-247072

C A Site



Deputy Conservator of Forest
 Kinnaur Forest Division
 at Reckong Peo, H.P.

Scale 1:50000

Topo Sheet:- 53I/2

Full Title of the Project: Additional Forest land in favour of HPPCL for Shongtong-Karchham HEP.

File No.:

Date of Proposal:

CHECK LIST SERIAL NUMBER-18
SCHEME FOR COMPENSATORY AFFORESTATION

Detail scheme for compensatory afforestation to be carried out in lieu of 07-37-22 Hac. Of forest area to be diverted for **additional forest land in favour of HPPCL for Shongtong-Karchham HEP.** Tehsil Kalpa in Kinnaur District.

1. Details of degraded forest land/non forest land:-

District: Kinnaur Village: Kalpa

Tehsil: Kalpa

Name of Forest Division: Kinnaur Range: Kalpa

Block No./Compartment No.

Survey No. 531/2 UF-33 =10ha. (Kalpa Range)

531/2 UF-33 =5ha. (Kalpa Range)

Area to be afforested 15.00 ha.

2. Description of Area:-

- i. Whether the site selected for compensatory afforestation is a land bank or not:- Yes
- ii. If the CA site is other than the land bank, reasons be given:- Not Applicable
- iii. In case of non-forest area identified form A, then what is the distance of CA site from the adjoining forest boundary :- Not Applicable
- iv. Soil Type:- Loan moderately deep
- v. Topography:- a. Hilly
b. Slope: Steep
- vi. Whether the area is bearing any root stock of vegetation:- Yes

3. Plantation Model:-

Copy of the approval compensatory afforestation scheme/model showing component wise physical and financial break up is enclosed.

4. Schedule of plantation programme:-

Detail of year wise break up of requirement of funds is enclosed.

5. Technical Details:-

Technical details of compensatory afforestation scheme are as follows:-

- a) **General Details:-** An area of 15.00 ha. will be taken up for planting under compensatory afforestation scheme in UF-33 =10 ha. (Kalpa Range) & UF-33 = 5 ha.(Kalpa Range) in two compact patch. The area will be protected by Barbed wire fencing and a mixture of conifer and broad leaved species will be planted. 1500 plants will be planted per hectare.
- b) **Spacement:-** 3.0 mtrs x 3.0 mts
- c) **Species:-** Conifer & other broad leaf species.

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- d) **Plantation Method:-** Nursery grown one year old plant (in polythene bags) will be planted in 30x30x30 cm pits in the selected area. Bush cutting will be done in the infested area. The plantation will be maintained for subsequent 10 years in which beating up of failures will be done. The plantation will be rainfed.
- e) **Soil Moisture Conservation Work:-** Contour trenching will be done over the entire area to conserve the available moisture during rainy season so that moisture regime in the area is improved. Minor soil conservation works like plugging, check walls be done where ever required.
- f) **Protection (fencing, watchman, people's participation etc.):-** Area will be protected from grazing by erecting barbed wire fencing at all vulnerable places around the plantation. Further watch and ward as also fire protection will be ensured through regular departmental staff.
- g) **Proposed Monitoring Mechanism :-** The plantation will be monitored as per existing monitoring mechanism in the forest department. The plantation will also be monitored by GOI representatives as per instructions. The plantation sites will be approachable from Kalpa.
- h) Any other information:- Nil

Divisional Forest Officer
Kinnaur Forest Division
At Reckong Peo (H.P.)

(Regiment Royston A) IFS
Dy. Conservator of Forests

16/11/2021
R/Seco

Cost for Compensatory Afforestation (CA) Scheme over 15.00 ha. forest Land of lieu of diversion of 07-37-22 ha. of forest land proposed to be diverted for construction of Shongtong-Karchham 450 MW within the jurisdiction of Kinnaur Forest Division

Area proposed to be diverted : 15.00 Ha.
Total number of plants to be planted : 1100 Nos. per ha.
Area proposed for plantation : UF- 33 =10Ha. Kalpa Range & UF-33 =5 Ha. Kalpa range

Species to be Planted	Coniferous and other broad live species				
Particulars of works	Unit cost at wage Structure for 2021-22 on wards	Year of execution of works	Cost escalation	Unit Cost after applying cost escalation	Total Amount
Initial cost for raising compensatory afforestation over an area of 15.00 ha.	134644	2022-23	10%	148108.4	2221626
1st year maintenance	11380	2022-24	20%	13656	204840
2nd year maintenance	7675	2022-25	30%	9978	149663
3rd year maintenance	3975	2022-26	40%	5565	83475
4th year maintenance	3975	2022-27	50%	5963	89438
5th year maintenance	3975	2022-28	60%	6360	95400
6th year maintenance	3975	2022-29	70%	6758	101363
7th year maintenance	3975	2022-30	80%	7155	107325
8th year maintenance	3975	2022-31	90%	7553	113288
9th year maintenance	3975	2022-32	100%	7950	119250
10th year maintenance	3975	2022-33	110%	8348	125213
Total Rs.					3410879
Contingency Charges 5%					170544
Total Rs.					3581422
Departmental Charges 17.5%					626749
Grand Total Rs.					4208171

(Reginald Royston A) IFS
Dy. Conservator of Forest

(Reginald Royston A) IFS
Dy. Conservator of Forest

(63) (74)

Cost for Penal Compensatory Afforestation (CA) Scheme which violation found over 0.5883 ha. of additional forest under FCA, 1980 in favour of Shongtong-Karchham HEP Distt. Kinnaur HP within the jurisdiction of Kinnaur Forest Division

Area proposed to be diverted : 1.1766 Ha.
 Total number of plants to be planted : 1100 Nos. per ha.
 Area proposed for plantation : UF- Rodulc

Species to be Planted	Coniferous and other broad live species				
Particulars of works	Unit cost at wage Structure for 2021-22 on wards	Year of execution of works	Cost escalation	Unit Cost after applying cost escalation	Total Amount
Initial cost for raising compensatory afforestation over an area of 1.1766 ha.	117111	2022-23	10%	128822.1	151572
1st year maintenance	11380	2022-24	20%	13656	16068
2nd year maintenance	7675	2022-25	30%	9978	11740
3rd year maintenance	3975	2022-26	40%	5565	6548
4th year maintenance	3975	2022-27	50%	5963	7015
5th year maintenance	3975	2022-28	60%	6360	7483
6th year maintenance	3975	2022-29	70%	6758	7951
7th year maintenance	3975	2022-30	80%	7155	8419
8th year maintenance	3975	2022-31	90%	7553	8886
9th year maintenance	3975	2022-32	100%	7950	9354
10th year maintenance	3975	2022-33	110%	8348	125213
Total Rs.					360248
Contingency Charges 5%					18012
Total Rs.					378260
Departmental Charges 17.5%					66196
Grand Total Rs.					444456


 (Reginald Royston A) IFS
 Dy. Conservator of Forests

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Per hectare cost norm for planting with RCC Fencing under Compensatory Afforestation Scheme (1100) Plants per hectare.(As per Norm of 2021-22).

S.No.	Particulars of works	Unit	Qty.	Rate per unit at wage rate Rs.375/-	Amount at the wage rate Rs. 375/-
A	Survey, Demarcation & Fencing				
1	Survey/demarcation of plantation area i/c marking of sections	hac	1	252.50	252.50
2	Cost of RCC Poles and painting	No.	50	358.00	17900.00
3	Cost of carriage of RCC Poles upto 2 kms uphill/downhill	Km/No.	50	83.75	8375.00
4	Preparation/digging of holes of 20x30x50 cm size for fixing of fence	No.	50	22.65	1133.00
5	Fixing of RCC fence posts in concrete i/c strutting	No.	50	17.90	895.00
6	Carriage of B/wire manually over a distance of 2 kms uphill/downhill from road side to plantation site	Per Km per Qntl	0.75	184.13	276.20
7	Stretching and fixing of B/wire in four stands	Rmt	600	12.00	7200.00
8	Interlacing of thorny bushes along the fence	Rmt	150	10.22	1534.00
9	Cost of procurement of B/wire	Qntl	0.75	6510.00	4882.00
Total-A Survey, Demarcation & Fencing =					42447.70
Or Say =					42448
B	Planting				
1	Clearing the site of weeds/Bush cutting in strips 3mtrx3mtr	Ha.	1	2980.00	2980.00
2	Digging of pits 45x45x45cm size	No.	1100	23.85	26235.00
3	Filling of pits 45x45x45 cm size	No.	1100	6.80	7480.00
4	Carriage of plants in poly bags from Nry to work site r distance of 2 kms uphill/downhill	No.	1100	4.75	10450.00
5	Panting of plants raised in P/bags	No	1100	5.45	5995.00
6	Construction of Inspection Path	Rmt.	100	27.50	2750.00
7	Cost of Sign board, carriage and fixing	No	1	LS	5000.00
Total-B Planting =					60890.00
Or Say =					60890
Total Fencing and Planting (A+B)					103338.00
C	Cost of Plants				
	Cost of P/bags Plants	Nos	1100	28.46	31306
Total C Nursery Cost					
Grand Total (A+B+C):-					134644.00
D	Ist Year Maintenance (30% Beating up)				
1	Re-digging of pits45x450x45 cm	No.	330	1193.22	3938.00
2	Filling of pits45x45x450 cm	No.	330	6.80	2244.00
3	Panting of plants raised in P/bags	No.	330	5.45	1799.00

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Full Title of the Project: Additional Forest land in favour of HPPCL for Shongtong-Karchham HEP.

File No.:

Date of Proposal:

CHECK LIST SERIAL NUMBER-18

LAND SUITABILITY CERTIFICATE BY DFO CONCERNED

This is to certify that 15.00 ha. land bearing survey sheet No. 53 ½ near village Kalpa in Tehsil Kalpa District Kinnaur H.P. identified for Compensatory Afforestation is suitable for undertaking plantation from the management point of view and free all sort of encumbrances and encroachments.

Date: 16-11-2024

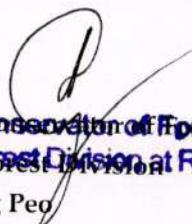
Place: Reckong Poo

Divisional Forest Officer
Kinnaur Forest Division
At Reckong Poo H.P.

(Regional Commission A) IFS
Dy. Conservator of Forests

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	Carriage of plants in poly bags from Nry to work site r distance of 2 kms				
4	uphill/ downhill	No.	330	4.75	1568.00
5	Repair of fencing	Rmt	60	3.90	234.00
6	Cost of plants	No.	330	28.46	9392.00
Total 1st year maintenance					19175.00
Or Say =					19175
	2nd year Maintenance (20 % beating up)				
1	Re-digging of pits45x450x45 cm	No.	220	1193.22	2625.00
2	Filling of pits45x45x450 cm	No.	220	6.80	1496.00
3	Panting of plants raised in P/bags	No.	220	5.45	1199.00
4	Carriage of plants in poly bags from Nry to work site distance of 2 kms uphill/ downhill	No.	220	4.75	1045.00
5	Repair of fencing	Rmt	60	3.90	234.00
6	Cost of plants	No.	220	28.46	6261.20
Total 2nd year maintenance					12860.20
Or Say =					12860
	3rd year to 10th year maintenance (10% beating up)				
1	Re-digging of pits45x450x45 cm	No.	110	1193.22	1313.00
2	Filling of pits45x45x450 cm	No.	110	6.80	748.00
3	Panting of plants raised in P/bags	No.	110	5.45	599.50
4	Carriage of plants in poly bags from Nry to work site distance of 2 kms uphill/ downhill	No.	110	4.75	522.50
5	Repair of fencing	Rmt	60	3.90	234.00
6	Cost of plants	No.	110	28.46	3130.60
Total 3rd year10th year maintenance					6547.60
Or Say =					6548


Deputy Conservator of Forests,
Kinnaur Forest Division at R/Peo HP,
 at Reckong Peo

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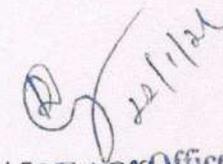
CHECK LIST SERIAL NUMBER

LAND SUITABILITY CERTIFICATE BY DFO CONCERNED

This is to certify that 1.1766 hac.land bearing Survey Sheet No. H44A2n near village Kalpa in Tehsil Kalpa Distt. Kinnaur H.P. identified for Penal Compensatory a forestation is suitable for undertaking plantation from the management point of view and is free from all sort of encumbrance and encroachments.

Dated 22.01.2021

Place: Reckong Peo.


Divisional Forest Officer,
Kinnaur Forest Division at R/Peo.
at Reckong Peo (H.P.)

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BILL OF NPV

Calculation of Net Present Value (NPV) of Forest land proposed to be diverted under FCA, 1980 for the diversition of 7.3722 hac. in favour of HPPCL for the Construction of Shongthong Karchamm, HEP,402MW.Kalpa Range, within in the jurisdiction of Kinnaur Forest Division. (H.P.)

1	Area being diverted.	7.3722	Hectare
2	Total trees in the forest land to be diverted.	53 Trees +59 Saplings	112 Nos
3	Trees below III class.	36	Nos.
4	Trees III class and above.	0	Nos.
5	Conversion of below III class trees into III class and above	36 76	trees below IIIrd class=36 trees IIIrd class and above.=76
6.	Therefore total trees upto III class and above.	76	Nos.
7.	In 73722 Sqm. land number of trees.	76	Nos.
8.	Number of trees per hac.	10	trees.
9.	If 400 trees III class and above	100%	
10.	If 10 trees III class and above per hac. then density	2.58	%
11.	Rates applicable for Open Forest	1069470	
12.	For one hectare land NPV chargeable as per Order dated 28-	1069470	per hac.
13.	For 7.3722 hectare forest land NPV chargeable.	7.3722	X 1069470
	NPV amount in Rupees=		7884347/-

Date:- 01.04.22

Place:- Kinnaur

Deputy Conservator of Forest
Deputy Conservator of Forests,
Kinnaur Forest Division,
Distt. Kinnaur, H.P.



भारत सरकार
पर्यावरण एवं वन मंत्रालय
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS

BY SPEED POST

E-mail: sanchita@nic.in
sansom_2859@yahoo.co.in

Telefax: 011-24360488

F. No. J-12011/58/2007-IA-1

Date: 19th May 2011

To

The Deputy General Manager
Shongtong-Karcham Hydro-Electric Project
Himachal Pradesh Power Corporation Ltd
Kinfed Building, Reckong Peo - 172 107
District Kinnaur
Himachal Pradesh

Subject: Shongtong-Karcham 402 MW Hydroelectric Power Project in
District Kinnaur of Himachal Pradesh by M/s Himachal Pradesh
Power Corporation Ltd. - Environmental Clearance regarding.

Sir,

This has reference to your letter No. /HPPCL/DGM/SKHEP/DB-10/09-1775-79, dated 22.8.2009 and subsequent letters dated 3.10.2009, 30.11.2009, 9.2.2010, 10.3.2011 and 19.3.2011 on the above mentioned subject.

2. It is noted that the project envisages construction of 22m high diversion barrage across river Satluj near village Powarl for generation of 402 MW hydropower. This is run-of-the-river scheme. The catchment area at barrage site is 47,968 sq. km. The total land requirement for the project is about 77,3326 ha out of which 63,5015 ha is forest land & 13,8311 ha is private land. Stage-I Forest Clearance has been accorded for diversion of 63,501 ha of forest land. An underground powerhouse is proposed on the left bank of the river near village Ralli with 3 units of 134 MW each. A total of 158 families are likely to be affected due to this project. The total cost of the project is Rs. 1507.30 Crores.

3. The above proposal was considered by the Expert Appraisal Committee for River Valley & Hydroelectric Power Projects in its meetings held on 14.9.2009, 15.12.2009 and 19.2.2010. The Public Hearing for the Project was conducted on 28th-29th July, 2009.

Dy. General Manager
Shongtong-Karcham HEP,
Kinfed Building, Reckong Peo,
District Kinnaur (H.P.) 172107

जहाँ है हृदयाली।
वहाँ है खुशहाली।।

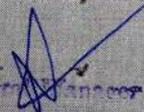
पर्यावरण भवन, सी.जी.ओ. कॉम्प्लेक्स, लोदी रोड, नई दिल्ली - 110 003
PARIVARAN BHAWAN, C.G.O. COMPLEX, LODHI ROAD, NEW DELHI - 110 003

Website: envfor.nic.in

- (v) The equipment likely to generate high noise levels during the construction period or otherwise shall meet the ambient noise standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under Environment Protection Act (EPA), 1986.
- (vi) Consolidation and compillation of the muck shall be carried-out only in the designated muck dumping sites, approved by the State Pollution Control Board. As per the proposed muck disposal plan given in your EIA/BMP, about 3.57 Mm³ will be generated out of which 0.47 Mm³ will be reutilized for back filling and 1.05 Mm³ as construction material/protection works and remaining 2.04 Mm³ shall be disposed off at 8 designated disposal areas. This shall be strictly implemented. The dumping sites shall be at least 30 m horizontally away from the high flood level of the river.
- (vii) The proposed Compensatory Afforestation Programme on 128 ha of land with identified plant species @1500 plants per hectare shall be taken-up immediately. The allocated funds for this purpose shall not be diverted to any other purpose.
- (viii) Greenbelt development in 40 ha of land along the approach roads, residential areas, office complex, barrage site and other working areas with various native plant species shall be undertaken immediately. The allocated budget of Rs. 40 lakhs for this purpose shall not be diverted to any other purpose.
- (ix) The revised Fisheries Management Plan submitted vide letter no. HPPCL/ESMU-2/Shongtong/09-1658-61 dated 9th February, 2010 shall be undertaken in consultation with the Fisheries Department, Government of Himachal Pradesh. Breeding and hatching of indigenous fish i.e. Snow Trout will be carried out separately. The same shall also be followed in the proposed hatchery at Sangla with separate bays.
- (x) The proposed Wildlife Management & Development and Conservation of Biodiversity Plans at a cost of Rs. 764.50 lakhs shall be taken-up strictly as outlined in the EIA/EMP Report and implemented in consultation with the State Forest Department without any diversion of funds. A report of implementation shall be included in the sixth monthly compliance report to be submitted to the Ministry.
- (xi) About 15% of the total project cost shall be spent for the Local Area Development.
- (xii) Any other clearance from any other organization/department, if required, shall be obtained.

Dy. General Manager
Shree Ganga Sagar Dam HPP
HPP, Sangla, Kangra Dist.
Dist. Kinnaur (H. P.) 172107

- 6. Besides the above stated conditions, the Project, Proponent and Government of Himachal Pradesh shall also implement all other environmental safeguards, as proposed in the EIA/EMP report and other reports from time to time.
- 7. The environmental management plan shall be strictly adhered to and a sum of Rs. 84.891 Crores, the budgetary provisions for implementation of EMP shall not to be diverted for any other purpose.
- 8. Any change in the scope of the project shall be intimated to the Ministry and fresh approval if required, shall be taken from the Ministry.
- 9. The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary and to take action including revoking of the clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner.
- 10. This clearance letter is valid for a period of 10 years from the date of issue of this letter for commencement of construction work.
- 11. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/ Municipal Corporation, Urban local body and the local NGO, if any, from whom any suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- 12. The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at [http:// www.envfor.nic.in](http://www.envfor.nic.in).
- 13. After 5 years of the commissioning of the Project, a study shall be undertaken regarding impact of the project on the environment and downstream ecology. The study shall be undertaken by an Independent agency, decided in consultation with the Ministry.


 Director General
 Ministry of Environment and Forests
 New Delhi
 17/107

4. After appraising the Project Proposal from environmental angle, the Ministry of Environment and Forests hereby accords environmental clearance as per the provisions of Environmental Impact Assessment Notification, 2006 and its subsequent amendment in 2009, subject to the following conditions:

Part A: Specific Conditions

(i) The following Catchment Area Treatment Plan, as proposed in the EIA/EMP Report shall be completed in 5 years-

Treatment Measures	I Year	II Year	III Year	IV Year	V Year	Total
A) Biological Measures						
Afforestation/ Gap Plantation (ha.)	81	80	80	80	80	401
Pasture Development (ha.)	476	475	470	470	470	2361
Nursery Development (nos.)	5	5	-	-	-	10
B) Engineering Measures						
Step Drain (Rmt)	57	57	57	57	57	285
Check Dams (nos.)	5	5	5	5	5	25

(ii) The details of the land holding of project affected persons whose land is being acquired shall be submitted to this Ministry. The benefits for the land losing households will be as per the National Rehabilitation and Resettlement Policy, 2007 (NRRP, 2007) or as per the State Rehabilitation and Resettlement Policy, whichever is higher. Adequate publicity for the compensation package shall be given in the affected villages. All R&R issues shall be completed before commissioning of the Project.

(iii) All commitments made during the public hearing shall be fulfilled completely.

(iv) A scientific study from a reputed institute for deciding the minimum environmental flow to be released during the lean season should be undertaken. Till the study is completed, 20 % of the average flow of four consecutive leanest months of 90% dependable year shall be maintained as environmental flow. After the study is completed, whichever is higher figure shall be adopted.

Part-B: General Conditions

- (i) Adequate arrangement for providing free fuel like kerosene/wood/LPG shall be made for the labour engaged in the construction work so that indiscriminate felling of trees is prevented.
 - (ii) Medical facilities as well as recreational facilities shall also be provided to the labours.
 - (iii) Labours to be engaged for construction work shall be thoroughly examined by health personnel and adequately treated before issuing them work permit.
 - (iv) No fugitive dust emissions should be observed at the construction sites. Water sprinkling arrangements shall be made to suppress the fugitive emissions.
 - (v) Potable drinking water and proper sanitary facilities shall be provided for the labour force and the local area people.
 - (vi) Restoration of construction area including dumping sites shall be ensured by leveling, filling up of burrow pits, landscaping etc. The area shall be properly treated with suitable plantation.
 - (vii) Separate financial provision shall be made in the total budget of the project for implementation of the above suggested safeguard measures. The same shall be informed to the Ministry.
 - (viii) Environmental parameters shall be monitored and six monthly monitoring reports shall be submitted to the Regional Office of the Ministry and State Pollution Control Board for their review.
 - (ix) A Multi-Disciplinary Committee (MDC) to monitor environmental safeguards during the construction shall be constituted by the Ministry on the suggestions of the Proponent. Six monthly monitoring report of this Committee shall be displayed on the web-site of the Proponent.
 - (x) Videography of the project area shall be carried out to ascertain that no damage occurs to the houses of the villagers/local people and in case any damage occurs, the PP shall pay compensation for the damages.
5. The Project Proponent shall provide full cooperation and all required documents / data to the Officials of relevant Regional Office of MOEF who would be monitoring the implementation of environmental safeguards.

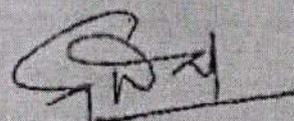
14. The Project Proponent shall submit six monthly compliance reports of the stipulated EC conditions and the monitoring data (both in hard copies as well by e-mail) to the respective Regional office of MoEF and the State Pollution Control Board. Both monitoring and compliance reports shall be up-loaded on the Web-site of the Proponent.

Yours faithfully,


(Sanchita Jindal)
Director

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti, Bhawan, Rafi Marg, New Delhi-1.
2. The Adviser (Power), Planning Commission, Yojna Bhawan, New Delhi-1.
3. Principal Secretary (Power), Government of Himachal Pradesh, Shimla.
4. The Secretary, Department of Environment, Government of Himachal Pradesh, Shimla.
5. The Secretary, Ministry of Water Resources, Shram Shakti Bhawan, Rafi Marg, New Delhi-1.
6. The Chief Engineer, Project Appraisal Directorate, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110 066.
7. The Northern Regional Office, Ministry of Environment & Forests, Bays No. 24-25, Sector-31 A, Dakshin Marg, Chandigarh-160 022.
8. Member Secretary, Himachal Pradesh State Pollution Control Board, Him Parivesh, Phase-III, New Shimla-171 009, Himachal Pradesh.
9. E1- Division, Ministry of Environment & Forests, New Delhi-110 003.
10. Guard file.


(Sanchita Jindal)
Director



Himachal Pradesh State Pollution Control Board

'Him Parivesh', Phase -III, New Shimla-171009, HP.

Form-XIII
(See Rule 22)

Application for Consent to Industry /Operate/Renewal the industrial plant/plants under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 .

Application for Consent to Establish or take any step to establish any Industry , operation processes or any treatment and disposal system for discharge,under Section-25 or continuation or discharge under Section -26 of the Water (Prevention and Control of Pollution) Act, 1974.

RCTE for the period(01/04/2019-31/03/2020)

From

Shongtong Karchham HEP, M/s Shongtong Karchham HEP HPPCL-
Reckong Peo, Distt. Kinnaur HPPCL Corporate Office, Tutikandi,
Shimla R-Peo
City: Reckong Peo
Block: Kalpa
District: Kinnaur

Date: 15/11/2019

Industry ID: 13343

Application No.: 1352272

To

The Member Secretary,
Himachal Pradesh Pollution Control Board,
Him Parivesh, Phase-III, New Shimla,
Shimla- 171009, HP.

Sir,

I / we hereby apply for Consent/ Renewal of Consent under Section-25 of Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) to establish or take any step to establish any Health Care Facility/CBWTF/Research Lab or operation or process or a treatment and disposal system or any extension or addition to bring into use any new altered outlet for discharge of sewage / trade effluent* to continue to discharge sewage /trade effluent * from land/ premises owned by Shongtong Karchham HEP

The other relevant details are below:

Dy. General Manager
Shongtong Karchham HEP,
HPPCL, Reckong Peo,
Distt. Kinnaur

Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL, Reckong-Peo,
Distt. Kinnaur H.P., 172107

This is computer generated document from OCMMIS by HPSPCB

1.	Full name of the Industry	Shongtong Karchham HEP		
2.	Nationality of the applicant	Indian		
3.	Type of Industry	State Government		
4.	Full Address of the Industry with PIN Code:	Name of applicant: Sharma Address: New HPPCL Building District: Kinnaur Block: Kalpa		
5.	Details of Establishment etc.:			
	(a) Approximate date of proposed Establishment. :	Month : January Year : 2013		
	(b) Expected date of commencement of date of Operation :	Month : January Year : January		
6.	Total number of employee expected to be Employed	: 80		
7.	Details of license/registrations, if any obtained under the provisions of Industrial Development Regulation Act, 1951.	Registration No. : U40101HP2006SGC030591 Registration Add. : U40101HP2006SGC030591 Registration Date : 2013		
8.	Name of the person authorised to sign this form (the original authorization except in the case of individual proprietor concern is to be enclosed)	Er. T N Negi		
9.	List of raw materials with monthly consumption rate (MT/month)			
	Raw Materials	Quantity	Unit	
	387.39 Cumecs of De-silted water is drawn from river satluj for generation of 450 MW of Electricity	1004114880	K.L./Month	
10.	List of products with monthly production rate (MT/month)			
	Name of Products	Quantity	Unit	Intermediate Product
	Electricity generated	1735	Millions/Year	1735 Million Unit of electricity
				To strengthening the Northern grid
11.	List of By Product Details			
	Name of By Products	Unit	Installed Capacity	Average Production
	Di-silted water From TRT is to be feed to the main River	K.L./Year		
	(c) License/Registration of Annual Capacity of the Industry, Operation or process etc. :	46429.0		
	Expansion Cost			
12.	Source of Water and Consumption Detail :			
	Usage			

Dy. General Manager
Shongtong Karchham HEP,
HPPCL, Pookong-Deo,
Distt. Kinnaur (H.P.) 172107

"This is computer generated document from OCMMS by HPSPCB"

St. Manager (R&R)
Shongtong Karchham HEP,
HPPCL, Pookong-Deo,
Distt. Kinnaur H.P., 172107

13.	Whether permission for water abstraction has been taken from the Competent Authority (enclose copy).	Yes
14.	(a) Effluent Currently Discharged or Expected	
	Type of Effluent	Capacity(KLD)
	Quantity(KLD)	
	(c) What monitoring arrangement is currently existing or proposed to be created?	
15.	Process of treatment (if industry has any treatment plant for industrial, domestic or combined effluent).	
	Description	Quantity(in KLD)
	Method of Treatment	Method of Disposal
16.	Water Emission Discharge	
	Installed	Capacity
	Method of Disposal	Unit
17.	Please indicate whether storm water drains are kept separate from industrial/domestic effluent drains.	
18.	Please indicate expected composition of the effluent. In case of operational Industry actual composition of the effluent is to be indicated and latest analysis report to be attached.	
19.	(a) Are facilities available with the applicant for carrying out the test of waste water	
	Test of Waste Water	Existing
		Proposed
20.	I/we further declare that the information furnished above is correct to the best of my/ our knowledge.	
	I/we hereby submit that in case of change either of the point of discharge or the quantity of discharge or its quantity, a fresh application for CONSENT shall be made and until such CONSENT is granted no change shall be brought into use.	
	I/we hereby agree to submit to the Himachal Pradesh State Pollution Control Board an application for Renewal of Consent one month in advance of the date of expiry of the consented period for outlet/ discharge if, to be continued thereafter.	
	I / we undertake to furnish any other information within one month of its being called for by the Himachal Pradesh State Pollution Control Board.	
	I/we, enclose herewith Bank Draft No. 000213 Date 13/03/2019 for Rs 280000.0 (Rupees) in favour of the Environmental Engineer/ Assistant Environmental Engineer / Regional Officer , Himachal Pradesh State Pollution Control Board,..... payable at under section-25 of the Act as per the Fee Schedule attached.	

[Signature]
 Dy. General Manager
 Shri. ... HEP,
 HPPC, ...
 Distt. ... (H. P.) 172107

[Signature]
 Sr. Manager (R&R)
 Shri. ... HEP,
 HPPC, ...
 Distt. ... 172107

[Signature]
 Yours faithfully,
 Signature :
 Name of the application :
 Designation :
 Address :

PUC

Recd. Post

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No. FFE-B-F-(2)-10/2012
Government of Himachal Pradesh
Department of Forest.

From

The Principal Secretary (Forest) to the
Government of Himachal Pradesh.

To

The Assistant Inspector General of Forests,
Government of India, Ministry of Environment and Forests,
F.C. Division
Paryakaran Bhawan, CGO Complex,
Lodhi Road, New Delhi-110003.

Dated, Shimla-2 the

6-3-2014.

Subject:

Revised CAT Plan of Shongtong Karchham HEP (402MW)
under Kinnaur Forest Division Rampur Forest Circle.

Sir,

I am directed to refer to this department letter of even no. dated 23-08-2012 on the subject cited above and to enclose a copy (in original) of revised CAT Plan, Loan Rs. 544.00 Lakh to Rs. 6040.00 Lakh, of 402 MW Saumptan Ka Chaur Hydro Electric Project, Lakh within the jurisdiction of Kinnaur Forest Division of Rampur Forest Circle duly approved by the State Government for further necessary action at your end please.

Yours faithfully,

(Prakash Nandi)
Under Secretary (Forests) to the
Government of Himachal Pradesh
0177-2380818, 04184-55573

Dated Shimla-2, the

6-3-2014

(Prakash Nandi)
Under Secretary (Forests) to the
Government of Himachal Pradesh
(177-2380818, 04184-55573)

Sr. Manager (R&R)
Shongtong-Karchham HEP
HPPCL, Reckong-Po, Distt. Kinnaur H.P., 172

~~S. CAT~~
A.P.C.F. (C.A.P.)

5208
2/8/14

7/13
7/3

11/3/14

In Ist. No. As above
Copy is forwarded to
H. Ch. of Conservator of Forest (H.P.) H.P., with this letter No. 11
CA/MP/65/2010 Shongtong Karchham HEP ep. Dated 20.07.14 for info.

Dy. General Manager
Shongtong-Karchham HEP,
HPPCL, Reckong-Po,
Distt. Kinnaur (H. P.) 172107

P-33

RESTORATION AND LANDSCAPING OF CONSTRUCTION SITES

7.1 INTRODUCTION

The landscape and restoration plan targets towards overall improvement in the condition of the area. The landscape plan provides benefits to improve beautification and its utility. All the activities are aimed at restoring the areas where scars would be formed. The restoration would prevent soil erosion enhance forest cover and stabilize degraded areas.

7.2 RESTORATION PLAN FOR QUARRY SITE AND BORROW AREA

A project of this magnitude would require significant amount of construction material. The details are given in Table-7.1.

TABLE-7.1 Detail of Construction Material Required

S. No.	Material	Unit	Quantity
1.	Coarse aggregate	lac m ³	2.97
2.	Fine aggregate	lac m ³	1.50
3.	Cement	MT	14,000
4.	Structural steel	MT	6,200
5.	Reinforcement steel	MT	20,323
6.	High Tensile steel	MT	12,824

The sand required for the project is proposed to be taken from Satluj river bank. An aggregate manufacturing equipment sand processing plant will be located at quarry site near village Powari, the site is away from habitation. The impervious material required for cofferdam will be met locally. The material for riprap is available on the river banks at site.

The cement will be transported from ACC Barmana and Ambuja cement factories. The steel transported from Jalandhar by road. The quarrying operations are semi-mechanized in nature. Normally, in a hilly terrain like Himachal Pradesh, quarrying is normally done by cutting a face of the hill. A permanent scar is likely to be left, once quarrying activities are over. With the passage of time, the rock from the exposed face of the quarry under the action of wind and other erosion forces, get slowly weathered and after some time, they become a potential source of landslide. Thus it is necessary to implement appropriate slope stabilization measures to prevent the possibility of soil erosion and landslides in the quarry sites.

Similarly, the proposed project would require significant amount of fine material, which can be met either by crushing the aggregates or by excavation from borrow areas. In the proposed project, large quantity of fines shall be required, which would entail excavation from borrow pits. Normally, such sites are left untreated after excavation of the construction material. The pit so created impedes the natural drainage, increases the potential for soil erosion and stores rain water and runoff. These pools of water can serve as habitats for proliferation of mosquitoes, which can lead to increased incidence of vector-borne diseases.

7.3 RESTORATION PLAN FOR QUARRY SITE AND BORROW AREA

The following biological and engineering measures are suggested for the restoration of quarry site:

- Garland drains around quarry site to capture the runoff and divert the same to the nearest natural drain.
- Construction of concrete guards check the soil erosion of the area.
- The pit formed after excavation be filled with small rocks, sand and farmyard manure.
- Grass slabs will be placed to stabilize and to check the surface runoff of water and loose soil.

Since the quarry site is in the submergence area thus, the River Bed Mining (RBM) material will replenish itself annually in monsoon season. Since no gangue or mine spoil will be generated (RBM has 100% utilization rate) therefore there is no need for disposal. The quarried material will be stacked at leveled dumping site. As per Muck Management Plan, excess capacity for dumping is available. Figure 1.1, gives the pectoral view of submergence area and Table 1.1, in Chapter 1, gives detail of trees required to be cut in submergence area, Table 7.2 gives details of availability of raw material for construction.

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H. P. C. L. Reckong Poo,
Dist. Kinnaur H.P., 172107

TABLE 7.2: Detail of availability of adequate quantities of raw material (Coarse/Fine aggregate) per year construction of SKHEP

Site No.	Name of Quarry Site	Quantity (cubic meters)
1.	25 m D/S of Drift to Desanding chamber	24,241.00
2.	25 m U/S of Drift to Desanding chamber	17,622.75
3.	At Barrage	8,891.25
4.	At Barrage	39,337.50
5.	Near Stone Crusher at Powari	30,137.25
6.	U/S of Discharge site	9,975.00
7.	U/S of Discharge site	17,672.00
8.	Near Tangling Jhula	9,265.00
	TOTAL	157,141.75 say (157,142.00)

Since all the sites are in river bed thus they will replenish themselves every year. So for the 5½ years of construction phase it will come out to be = $157,142 \times 5 \frac{1}{2}$

= 864279.625 cubic meters

= 8.6 lakh cubic meters

In case the required material fell short of demand then HPPCL will use its already existing quarry of Kashang Project at Jangi.

The necessary NOCs/approval from the mining department and other approvals for use of quarry sites will be taken after acquisition of land.

At the present level of investigations a tentative provision of Rs.105 lakh can be earmarked for quarry and borrow slope stabilization. The details are given in Table-7.3.

TABLE-7.3: Cost estimate for restoration of borrow area

S. No.	Activities/purpose	Cost (Rs. lakh)
1.	Filling up the land with soil	10.0
2.	Cost of green manure	4.0
3.	Cost of sapling (10,000 saplings/ ha) @ Rs.5.00 per sapling	0.5
4.	Cost of fertilizers and pesticides	4.0
5.	Fencing with RCC pillars and barbed wire	3.0
6.	Maintenance activities including cleaning of weeds @ Rs.50,000 for 5 years	2.5
7.	Digging of pits	1.0
8.	Construction of garland drain	20.0
9.	Bench terracing	50.0
	Total	105.0

7.4 LANDSCAPING AND RESTORATION PLAN

Area for landscaping: The working areas of barrage site, power house complex colony area have been selected for beautification of the project area after construction is over.

The reservoir created due to the construction of barrage may be a local point of tourist attraction. This could be used for sport fishing, so there is a need to construction of benches for sitting, development of resting sheds and footpath. The beautification would be carried out by developing flowering beds for plantation ornamental plant and flower garden.

There would be sufficient open space in power house complex and colony area. Forested area in the power house complex would provide aesthetic view and add to natural seismic beauty. The beautification in the colony area would be carried out by development of flowering beds for plantation of ornamental plant, creepers, flower garden and a small park, construction of benches for sitting, resting sheds, walk way and fountain. A provision of Rs.50 lakh has been earmarked for landscaping and beautification of the area.

7.5 BUDGET

A total provision of (105.0 + 50.0) Rs. 155.0 lakh, (has been earmarked) for restoration of quarry and borrow area, reclamation of construction sites, landscaping and beautification.

Dy. General Manager
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Sr. Manager (R&R)
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RESTORATION AND LANDSCAPING OF CONSTRUCTION SITES

7.1 INTRODUCTION

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- The pit formed after excavation be filled with small rocks, sand and farmyard manure.
- Grass slabs will be placed to stabilize and to check the surface runoff of water and loose soil.

Since the quarry site is in the submergence area thus, the River Bed Mining (RBM) material will replenish itself annually in monsoon season. Since no gangue or mine spoil will be generated

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HPPCL, Rong Peo,
Distt. Kinnaur (H. P.)

(RBM has 100% utilization rate) therefore there is no need for disposal. The quarried material will be stacked at leveled dumping site. As per Muck Management Plan, excess capacity for dumping is available. Figure 1.1, gives the pectoral view of submergence area and Table 1.1, in Chapter 1, gives detail of trees required to be cut in submergence area, Table 7.2 gives details of availability of raw material for construction.

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S. No.	Activities/purpose	Cost (Rs. lakh)
1.	Filling up the land with soil	10.0
2.	Cost of green manure	4.0
3.	Cost of sapling (10,000 saplings/ ha) @ Rs.5.00 per sapling	0.5
4.	Cost of fertilizers and pesticides	4.0
5.	Fencing with RCC pillars and barbed wire	3.0
6.	Maintenance activities including cleaning of weeds @ Rs.50,000 for 5 years	2.5
7.	Digging of pits	1.0
8.	Construction of garland drain	20.0

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HPPCL, Reckong Pco,
Distt. Kinnaur (H. P.) 172107

S. No.	Activities/purpose	Cost (Rs. lakh)
9.	Bench terracing	50.0
	Total	105.0

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7.4 LANDSCAPING AND RESTORATION PLAN

Area for landscaping: The working areas of barrage site, power house complex colony area have been selected for beautification of the project area after construction is over.

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7.5 BUDGET

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(Signature)
Dy. General Manager
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HPCL, P. O. No. 10,
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Shongtong Karcham HEP, 450 MW



Muck Management Plan for Additional Land Measuring 7.3722h Ha.

Prepared By:- E&RR Cell of STKHEP, HPPCL,

STKHEP, HPPCL

Divisional Forest Office
 Kinnaur Forest Divisional
 D.F.O.

Sr. Manager (R&R)
 Shongtong Karcham HEP
 HPPCL, Ruckong-Poo,
 Distt. Kinnaur H.P., 172101

Component-wise Details Planning for Muck Disposal

No.	Location	Area (ha)	Capacity (Cum)	Distance			Qty. of muck debris to be dumped from	Actual capacity (Cum)	Addl. Capacity
				From Barrage &	From Adit II	From Adit-III			
1	Sudarang Near Shongtong Bridge	1-44-70	83423.12	2 km	5.00 km	9.00 km	chambers & flushing conduits	50,053.8	33369.3
2	Kalpa Usaring Near Adit II	0-29-60	45271.25	0.50 km	1.50 km	5.50 km	River diversion works, Barrage intake, sedimentation	32,595.3	12675.9
3	Tangling Near PWD road to Shongtong on	1-10-05	18500	1.50 km	1.00 km	5.00 km	Upper half of HRT & Diversion barrage	13320	5180
4	Tangling Near PWD road to Shongtong on Left bank of River	2-38-13		5.00 km	2.00 km	3.00 km	Lower half of HRT & Diversion barrage		
	Total	5-22-25	1,47,194.3					95,965.1	51,225.2

STKHEP, HPPCL

As per

Divisional Forest Officer
Kinnaur Forest Division
R/Per

[Signature]

Sr. Manager (R&R)
Shongtong-Karcham HEP,
HPPCL, Rockong-Peo,
Distt. Kinnaur H.P., 172107

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Normally, muck is disposed in low-lying areas or depressions. Trees, if any, are cut before muck disposal, however, shrubs, grass or other types of undergrowth in the muck disposal at sites perish. The total area earmarked for muck disposal in Additional land is 5.2225 ha.

Muck generated from excavation of any project component is required to be disposed in a planned manner so that it takes a least possible space and is not hazardous to the environment. In the hilly area, dumping is done after creating terraces thus usable terraces are developed. The overall idea is to enhance/maintain aesthetic view in the surrounding area of the project in post-construction period and avoid contamination of any land or water resource due to muck disposal.

Suitable retaining walls shall be constructed to develop terraces so as to support the muck on vertical slope and for optimum space utilization. Loose muck would be compacted layer wise. The muck disposal area will be developed in a series of terraces of boulder crate wall and masonry wall to protect the area/muck from flood water during monsoons. In-between the terraces, catch water drain will be provided.

The terraces of the muck disposal area will be ultimately covered with fertile soil and suitable plants will be planted adopting suitable bio-technological measures. The basic aim and objectives of the muck management plan are to:

- Protect these areas from soil erosion
- Develop these areas by afforestation
- Utilize the maximum quantity of muck for development of infrastructure of the project
- Develop these areas in harmony with the landscape of the project area.

Various activities proposed as a part of the management plan are given as below:

- Land acquisition for muck dumping sites
- Civil works (construction of retaining walls, boulder crate walls etc.)
- Dumping of muck
- Levelling of the area, terracing and implementation of various engineering control measures e.g., boulder, crate wall, masonry wall, catch water drain.

- Spreading of soil
- Application of fertilizers to facilitate vegetation growth over disposal sites.

For stabilization of muck dumping areas following measures of engineering and biological measures have been proposed

Engineering Measures

- Wire crate wall
- ii) Boulder crate wall
- iii) R.C.C
- iv) Catch water Drain

Biological Measures

- Plantation of suitable tree species and soil binding species
- Plantation of ornamental plants
- Barbed wire fencing

Muck generally lacks nutrients and therefore, are difficult to re-vegetate. However, if no attempts to vegetate the slopes are made, the muck could slide lower down during rain and may eventually wash off the check dams also. Since, top soils are not available in large quantities in Himalayas; it may not be possible to apply a thin layer of soil over the muck. Bio-fertiliser technique developed by National Environmental Engineering Research Institute (NEERI) can be adopted in the proposed project. NHPC has successfully used this technique in Uri hydroelectric project. Similar approach can be utilized in the proposed project as well. In this process, the unused excavated material is piled and stacked with proper slopes at the designated muck disposal sites. The slopes are broken up by creating benches across them. This is done to provide stability to the slopes and also to provide ample space for planting of trees that would further help in holding and consolidating biotechnological approach. The traditional methods of afforestation of these areas would be supplemented with the use of fungus, i.e. Vesicular Arbuscular Mycorrhizae (VAM) and nitrogen fixing bacteria that form partnership with plant roots. These grow on plant roots and

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provide water and nutrition especially phosphorus to plants at faster rate. The seeding of plants would be inoculated with VAM and nitrogen fixing bacteria before planting. It has been found that plants inoculated with bio-fertilizers grow at faster rate especially in the medium where the soil/rock is devoid of nutrients.

The afforestation with suitable plant species shall be done. About 1000-1200 trees/ha shall be planted. Major species recommended for plantation are listed in Table-1

TABLE-1

Species recommended for plantation over muck disposal site

Botanical Name	Local Name
Trees	
<i>Populus ciliate</i>	Popular
<i>Pinus roxburghii</i>	Chir
<i>Cedrus deodara</i>	Deodar
<i>Salix acutifolia</i>	Bhains
Shrubs	
<i>Artemisia nilgarica</i>	Kunja
<i>Berberis aristata</i>	Kingor
<i>Berberis lyceum</i>	Kingor
<i>Rosa Moschata</i>	

STKHEP, HPPCL

6-5 Divisional Forest Officer
Khanaur Forest Divisional
R/Peo

Sr. Manager (R&R)
Shongtong-Karchham HE
HPCL, Dorkong-Peo,
Distt. Itanagar H.P., 1721

6.3 BUDGET

The total expenditure required for stabilization of muck disposal sites has been estimated to be of the order of Rs. 274.72 Lacks. The details are given in Table-1.0.

TABLE-1.0
Break-up of cost for stabilization of muck disposal sites

S. No.	Items	Cost (Rs. Lacks)
1.	Environmental Protections Construction of retaining structure (check dams / wire create) along river banks @ Rs. 5667.06/crate & 2744) Numbers of crates	155.50
2.	PCC cladding @ Rs. 4076.80/m ³ for 1291.3 m ³	52.64
3.	Preparation of muck disposal site@ Rs. 5.00 Lakh/ha for 5.225 ha	26.11
4.	Provision of 15 cm soil layer over an area 5.2225 ha @ Rs. 4.0 Lakhs /ha	20.89
5.	19.58	33.45
	Total	274.72

TABLE-1.1
Cost of Afforestation over muck disposal sites

S. No.	Particular	Area (ha)	Unit Rate (Rs/ha)	Amount (Rs.)
1.	Cost of afforestation including Cost of material	5.2225	39000	24,67,800.14
2.	2 nd year Maintenance (Refer Table-1.3)	5.2225	5490	92,148.75
3.	3 rd year Maintenance (Refer Table-1.4)	5.2225	4370	34,047.00
5.	4 th to 7 th year Maintenance (Refer Table-1.4)	5.2225		1,36,188.00
			Total	27,30,183.89
6.0	Contingencies (5% of Total Cost)			1,36,509.19
	Total			28,66,693.09
7.0	Departmental Charges @ 17.5%			4,77,782.18
	Grand Total			33,44,475.07

STKHEP, HPPCL

6-6 Divisional Forest Officer
Kinnaur Forest Divisional
R/Pcc

Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL, Reckong-Do,
Dist. Kinnaur H.P., 172107

TABLE-1.2
Plantation

S.No.	Activity	No.	Unit Rate (Rs.)	Total Cost (Rs.)
A	Planting			
1.	Digging of pits 45x45x45 cms	3000 Nos.	20	60,000.00
2.	Filling of pits 45x45x45 cms	3000 Nos.	5.66	16,980.00
3.	Planting of polythene bags plants	3000	4.55	13,650.00
4.	Construction of Inspection Path	600/mt	22.91/Rmt	13,746.00
5.	Cost of Sign Board carriage and Fixing	4 No.	4000/board	16,000.0
6.	Carriage of polythene bags over a distance of 500 m Up hill	3000	1per plants / km	3000.00
7.	Cost of P bag Plants	3000 No,s	27.5per plant	82,500.0
	Total cost of Plantation			2,05,876.00
B	Survey and demarcation & Fencing			
1	Purchase of RCC/wooden fence post	500 Nos.	447.5 per post	2,23,750.00
2	Carriage of post fence over a distance of 2Km	500.	69.78	34,890.00
3	Preparation of Digging holes 20x30x50	3000	18.77	56,310.00
4	Cost of barbed wire	3.75qtl	7750.2 p/Qtl	29,063.25
5	Fixing of RCC Pole including shuttring	500	1491.70	74,58,50.0
6	Carriage of barbed wire over a distance of 2 Km	3.75Qtl	154.02	577.57
7	Stretching and fixing of barbed wire in 4 stards	6000	10 Rmt	60,000.0
	Survey, demarcation & Fencing			11,50,440.57
			Total:-	13,56,316.82
	Rate as per HP Forest CA rate (1100 plants / Pec.)at the wage rate of Rs312/- in HP			
	Add Tribal increase		25%	3,39079.21
			Grand Total:-	16,95,396.03

Divisional Forest Office
Khanaur Forest Divisional
R/Pcc

Sr. Manager (R&R)
Shongtong-Karohham HEP,
HPMC, Reckong-Do,
Dist. Kinnaur H.P., 172107

89 100

TABLE-1.3
Maintenance cost for 2nd year 25% mortality)

S.No.	Activity	No.	Unit Rate (Rs.)	Total Cost (Rs.)
1	Digging of pits 45x45x45 cms	750 Nos.	20	15000.00
2	Filling of pits 45x45x45 cms	750 Nos.	5.66	4,245.00
3	Planting of polythene bags plants	750	4.55	3,412.50
4	Construction of Inspection Path	150/mt	22.91/Rmt	3436.50
5	Carriage of polythene bags over a distance of 500 m Up hill plants over a distance of 2 km up	750	1per plants / km	750.00
6	Cost of P bag Plants	750 No,s	27.5per plant	20,625.00
7	Nursery cost of plants	750Nos.	20 per plants	20,625.00
8	Repair of fence	1500RMT.	3.75 per Rmt	5,625.00
Total cost of Plantation				73,719.00
Add Tribal increase 25%				18,429.75
Total				92,148.75

C/S
Divisional Forest Officer
Kannur Forest Divisional

6-8

[Signature]
Sr. Manager (R&R)
Shongtong-Karchham HEP,
HPPCL, Reckong-Poo,
Distt. Khamti H.P., 172111

90 101

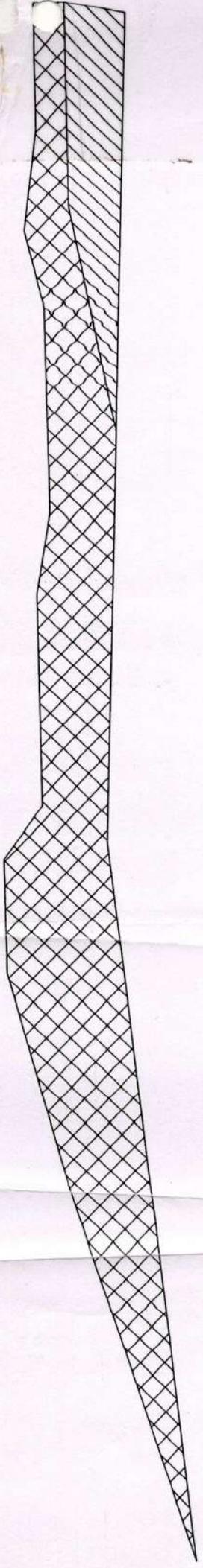
TABLE-1.4
Maintenance cost for 3rd, 4th to 7th year 10% mortality)

S.No.	Activity	No.	Unit Rate (Rs.)	Total Cost (Rs.)
1	Digging of pits 45x45x45 cms	300 Nos.	20	6000.00
2	Filling of pits 45x45x45 cms	300 Nos.	5.66	1698.00
3	Planting of polythene bags plants	300	4.55	1365.00
4	Construction of Inspection Path	60/mt	22.91/Rmt	1374.6
5	Carriage of polythene bags over a distance of 500 m Up hill plants over a distance of 2 km up	300	1per plants / km	300.00
6	Cost of P bag Plants	300 No.s	27.5per plant	8,250.00
7	Nursery cost of plants	300Nos.	20 per plants	18,987.60
8	Repair of fence	600RMT.	3.75 per Rmt	2,250.0
	Total			27,237.6
	Add Tribal increase 25%			6809.40
	Total			34,047.00
	For further 4 years (i.e. 4th to 7th Year) of maintenance@ 10% mortality (34047x4)			1,36,188.00

(1) Kumar
Divisional Forest Officer
Kannaur Forest Divisional
6-9

(Signature)
Sr. Manager (R&R)
Shongtong-Marchham HEP,
HPPCL, Reekong-Poo,
Distt. Kibnaur H.P., 172107

PROPOSED AREA FOR SILT FLUSHING TUNNEL, PORTAL, WORKING AREA AND APPROACH ROAD (KHASRA NO. $\frac{1}{1}$ 838 & $\frac{1}{1}$ 840) MEASURING 0-85-95 HECTARE



BIFURCATION OF AREA	
SR. NO.	DETAIL OF AREA
1	SILT FLUSHING OUTLET
2	APPROACH ROAD TO PORTAL AND WORKING AREA
TOTAL	
	AREA IN Ha.
	00-15-73
	00-70-22
	00-85-95

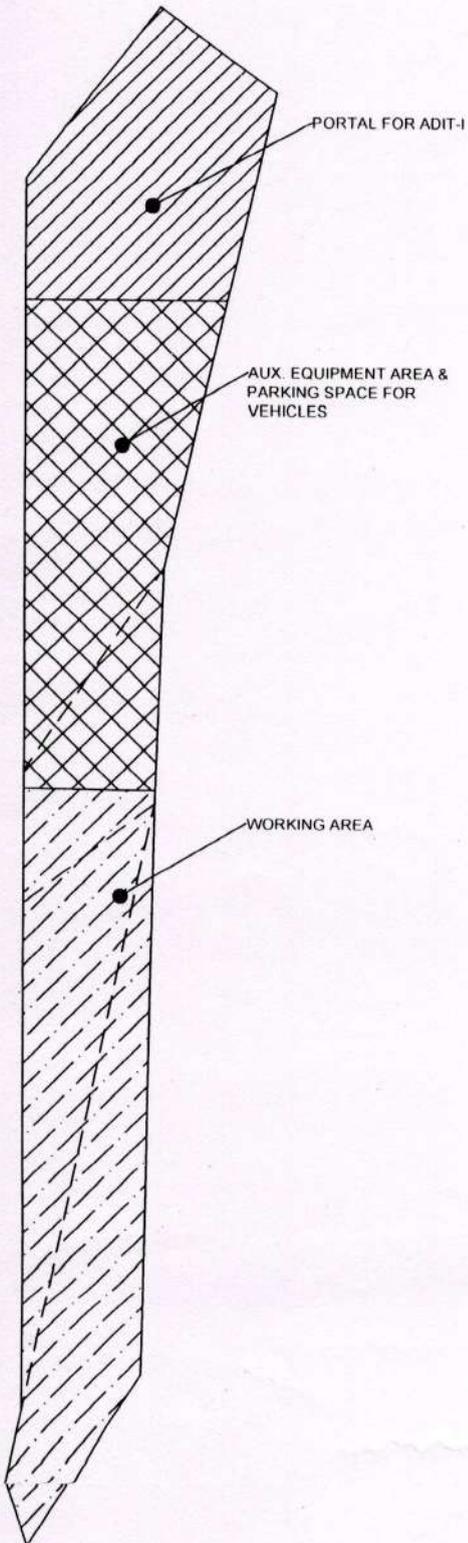
C/S
Regional Forest Officer
Kinnair Forest Division
R/Peo

St. Manager (R&R)
Shangtung-Karcham HEP,
HP, Lockeng-Deo,
Dist. Kinnair H.P., 172107

(91)

92

PROPOSED AREA FOR ADIT-I (KHASRA NO. 21/1) MEASURING 0-58-83 HECTARE



BIFURCATION OF AREA		
SR. NO.	DETAIL OF AREA	AREA IN Ha.
1	PORTAL FOR ADIT-I	00-14-31
2	AUX. EQUIPMENT AREA & PARKING SPACE FOR VEHICLES	00-20-91
3	WORKING AREA	00-23-61
	TOTAL	00-58-83

C/S
Divisional Forest Officer
Khanaur Forest Division
1984

[Signature]
Sr. Manager (R&P)
Shorlung Karchham HEP,
HEP, Deokong-Poo,
Distt. Khanaur H.P., 172107

1123/Muck Dumping/37/QM

20 Jan 2020

Himachal Pradesh
Power Corporation Ltd
Dist- Kinnaur (Reckong Peo)**DUMPING OF EXCAVATION MUCK AT DESIGNATED
DUMPING SITE NO 03**

1. Refer to HPPCL, Shimla letter No SWD-(A)4-5/2017-Loose-I dated 17 Sep 2019.
2. It is intimated that permission for dumping excavated earth at site No 3 has been accorded. The dumping will be carried out under supervision and restrictions as mandated as per provision of WoDA-1903. Following aspects have to be strictly adhered to:-
 - (a) Safety and Security of Ammunition point, persons & stores.
 - (b) No dumping will be allowed to take place above the ground level in the immediate vicinity/perimeter of Ammunition Point.
 - (c) No crowding/ unauthorised movement of vehs in the restricted zone.
 - (d) No construction/ obstruction of any kind (Temporary / Permanent) will be allowed.
 - (e) No blasting / hazardous activity in notified area in vicinity of Ammunition Point.
 - (f) Dumping will be carried out in a phased manner so as to prevent crowding of vehicles in the vicinity of Ammunition Point.
 - (g) The activity if found unsuitable would be stopped forthwith on requisition of Military authorities and subsequast attention is drawn to WoDA 1903.
3. In view of the above, you are requested to forward tentative plan covering dumping schedule prior to commencement of dumping.

Mani Singh
(Mani Singh)
Lt Col
Officer Commanding

Copy toHQ 136 (I) Inf Bde Gp (Q) -
PIN-908636
c/o-56 APO

For info pl.

Mani Singh
Divisional Forest Officer,
Kinnaur Forest Division
at Reckong Peo (H.P.)

Sr. Manager (R&P)
Shongtang-Parcham NEP,
HF Reckong-Peo,
Dist. Kinnaur H.P., 172107

ABSTRACT OF COST
Name of work:- Estimate for protection works of additional dumping site near Adit-2.

Sr. No.	Item code No.	Description of items	Qty.	Rate	Unit	Amount	Remarks
1	1131020000	wire crate of G.I wire filled with boulders with square cut faces against the wire. (wire crates to be measured and paid for separately)	2683.59	2080.00	M ³	5581873.44	Rates are as per BOQ rates of M/s PEL
2	09120200	Providing & laying cement concrete work 1:2:4 (1 cement : 2 Sand: 4 graded stone aggregate 20 mm nominal size) and curing complete (Cladding works)	280.80	4076.80	M ³	1144765.44	
Total =						6726638.88	

Sy. Manoj
Divisional Forest Officer
Kinnaur Forest Division
R/Pao

St. Manoj (D.F.O.)
 Shergo, S. Parikhim H.P.,
 H.P., Kinnaur Dist.,
 Dist. Kinnaur H.P., 172107



(95)

DETAIL OF QUANTITY

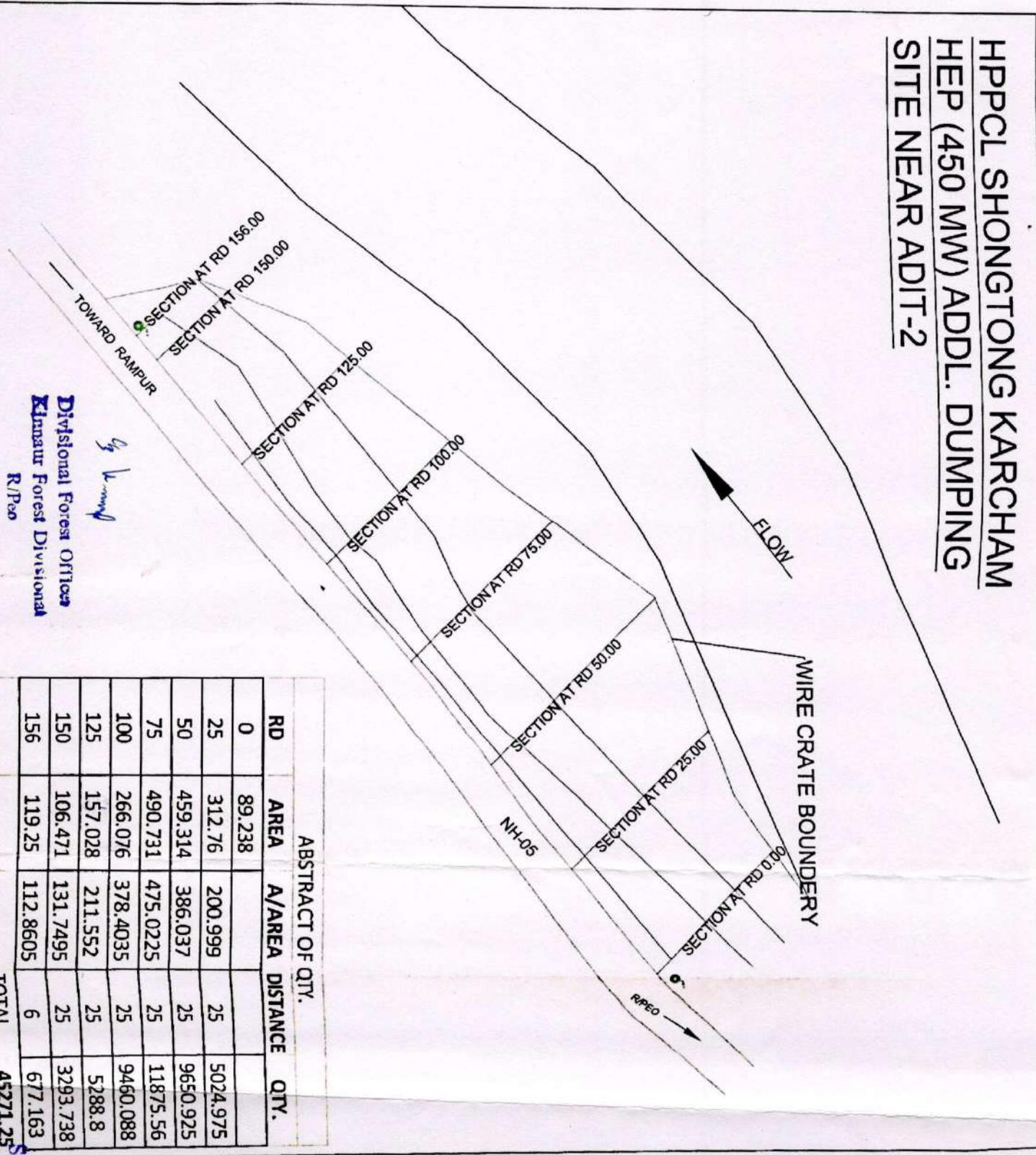
Name of work:-Estimate for protection works of additional dumping site near Adit-2.

Sr. No.	Description of items	N0.	L(m)	B(m)	H(m)	Qty (cum)
1	Wire crate of G.I wire filled with bouldars with square cut faces against the wire.(wire crates to be measured and paid for separately)					
	R.D 0.00 to 156.00mtr					
	5 Rows (156/1.25 = 125x5= 625)	625.00	2.50	1.25	1.25	2441.41
	1 Rows (156/2.5 = 62)	62.00	2.50	1.25	1.25	242.19
					Total	2683.59
2	Providing & laying cement concrete work 1:2:4 (1 cement : 2 Sand: 4 graded stone aggregate 20 mm nominal size) and curing complete : -					
	(R.D 0.00 to 156.00mtr)					
	Bottom	1.00	156.00	2.50	0.30	117.00
	Front	3.00	156.00	1.25	0.20	117.00
	Top	3.00	156.00	0.50	0.20	46.80
					Total	280.80

S/S
Divisional Forest Officer
Kinnaur Forest Divisional
R/Peo

[Signature]
Sr. Manager (R&R)
Shongtong-Karchham HEP,
HP
Distt. Kinnaur H.P., 172107

**HPPCL SHONGTONG KARCHAM
HEP (450 MW) ADDL. DUMPING
SITE NEAR ADIT-2**



ABSTRACT OF QTY.

RD	AREA	A/AREA	DISTANCE	QTY.
0	89.238			
25	312.76	200.999	25	5024.975
50	459.314	386.037	25	9650.925
75	490.731	475.0225	25	11875.56
100	266.076	378.4035	25	9460.088
125	157.028	211.552	25	5288.8
150	106.471	131.7495	25	3293.738
156	119.25	112.8605	6	677.163
TOTAL				45271.25

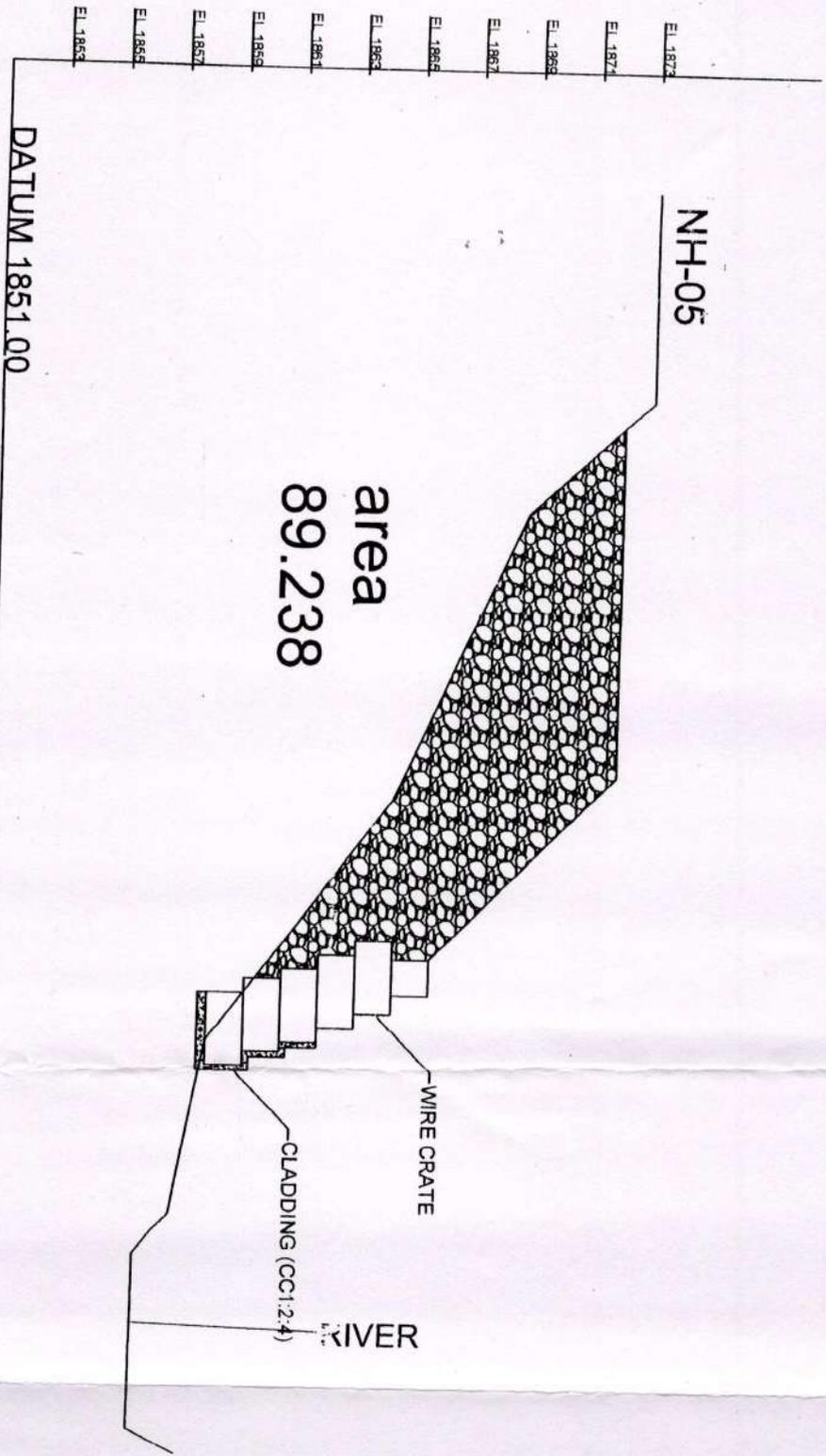
CONSIDERING SWELL FACTOR @ 72 = 32595.3

**Divisional Forest Officer
Kinnaur Forest Divisional
R/Peo**

By R. Manoj

St. Manager (R/Peo)
Shongtong Karcham TTP,
Distt. Nainital, 172403

HPPCL SHONG TONG KARCHAM HEP (450MW) ADDL.
DUMPING SITE NEAR ADIT-2



X-SECTION AT RD 0.00

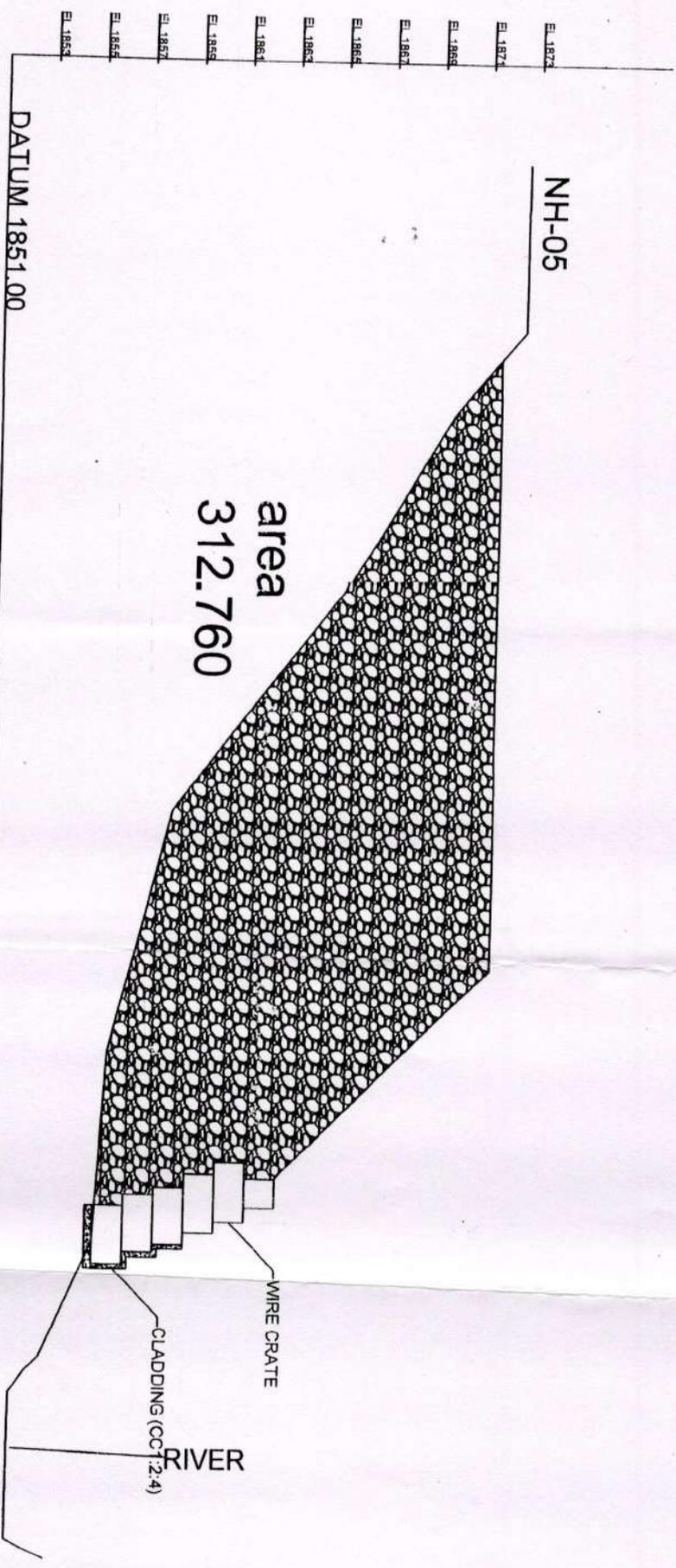
By [Signature]

Divisional Forest Officer
Kinnaur Forest Division
R/Pao

Sr. Manager (R.P.O.)
Short [Signature]
Distt. Kinnaur H.P., 172107

(97)

HPPCL SHONG TONG KARCHAM HEP (450MW) ADDL.
DUMPING SITE NEAR AJIT. 2



X-SECTION AT RD 25.00

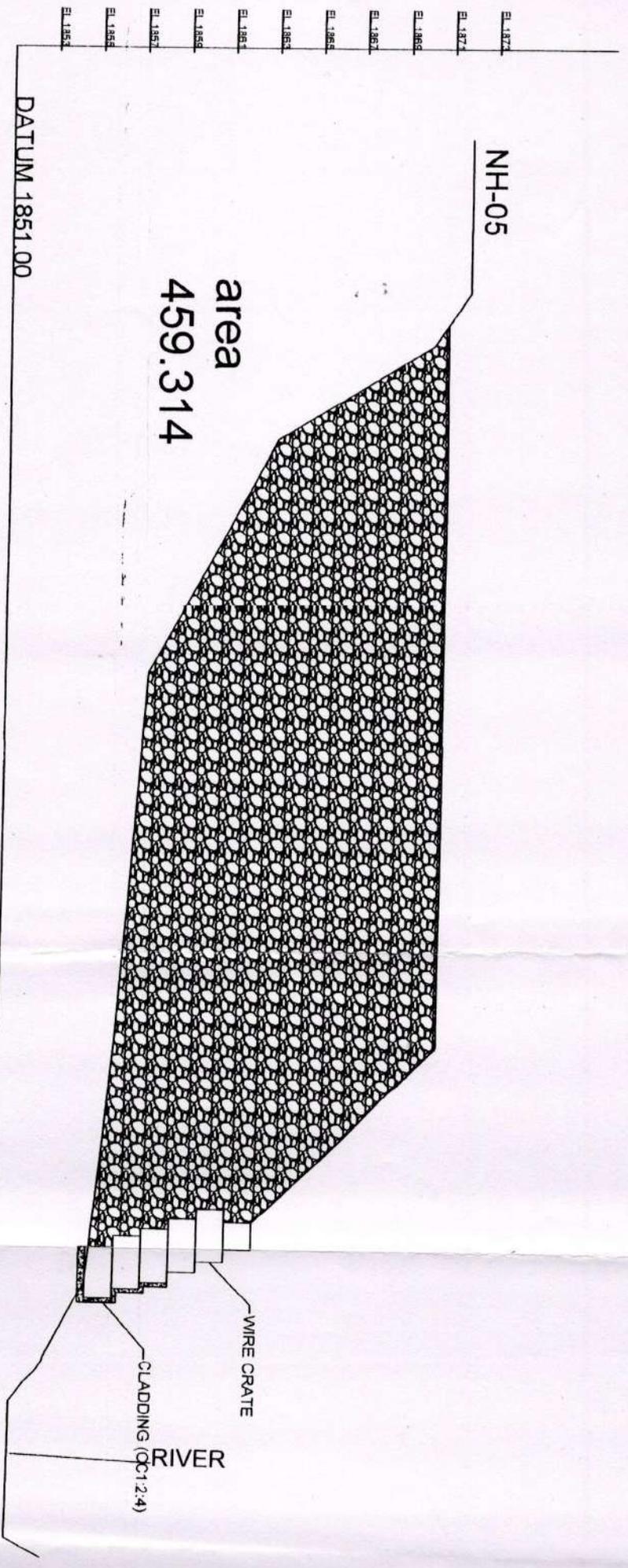
Sy. Kinnar

Divisional Forest Officer
 Kinnar Forest Divisional
 K/Deo

Shongtong-Karcham TTP,
 HPP, Karcham
 Distt. Kinnar H.P., 172107

98

HPPCL SHONG TONG KARCHAM HEP (450MW) ADDL.
DUMPING SITE NEAR ADIT-2



X-SECTION AT RD 50.00

By hand

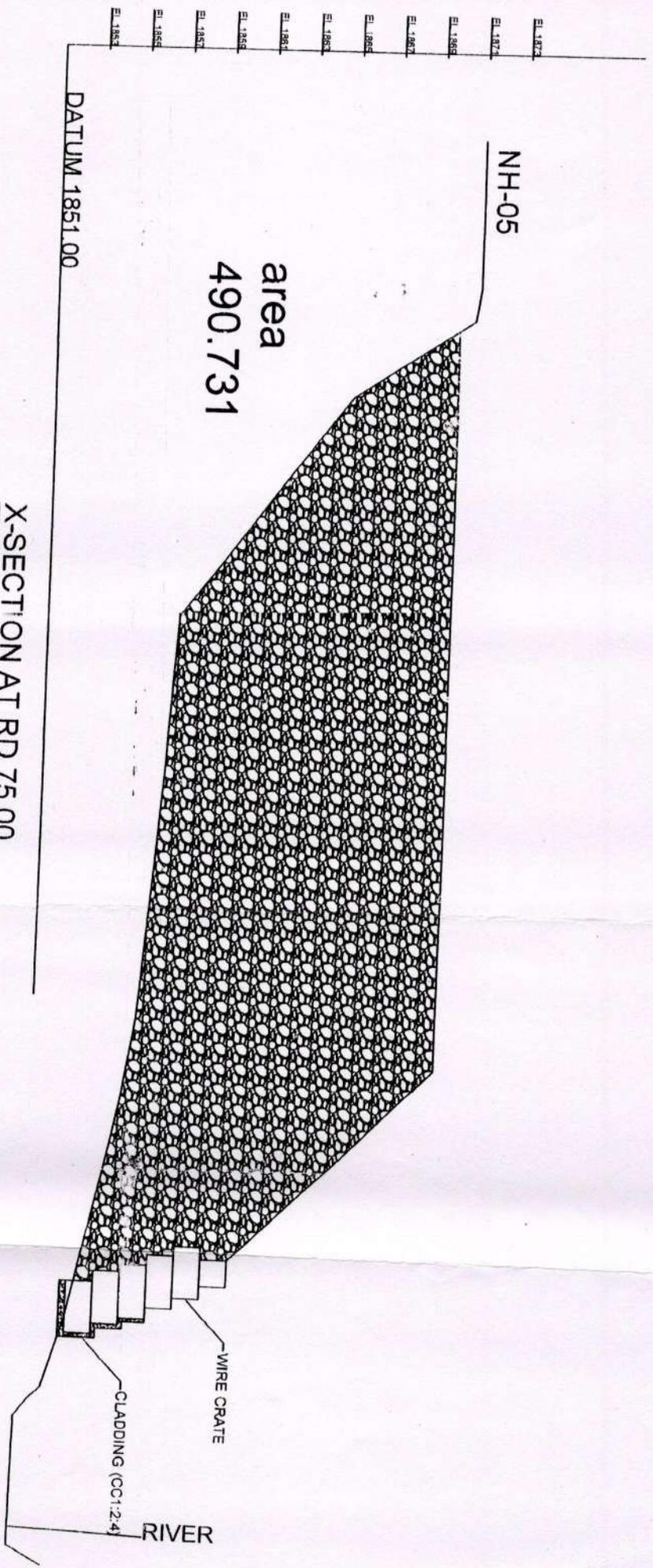
Divisional Forest Officer
Klanaur Forest Divisional
R/Pass

Sf. J. Verma
Shore of ang. Tardil. TTP,
HP
Dist. 172107

99



HPPCL SHONG TONG KARCHAM HEP (450MW) ADDL.
DUMPING SITE NEAR ATIT-2



X-SECTION AT RD 75.00

by hand

Divisional Forest Officer
Karamur Forest Division
R/Geo

Sr. Manager (D.P.P.)
Shengdong Karcham HEP,
Karamur Forest Division,
Dist. Jhansi M.P., 17107

100

HPPCL SHONG TONG KARCHAM HEP (450MW) ADDL.
DUMPING SITE NEAR ADIT-2

101
112
113

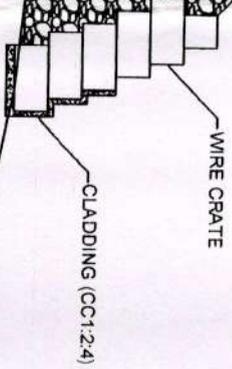
EL.1873
EL.1871
EL.1868
EL.1865
EL.1863
EL.1862
EL.1861
EL.1858
EL.1855
EL.1853
EL.1851

NH-05

area
266.076

DATUM 1851.00

X-SECTION AT RD 100.00

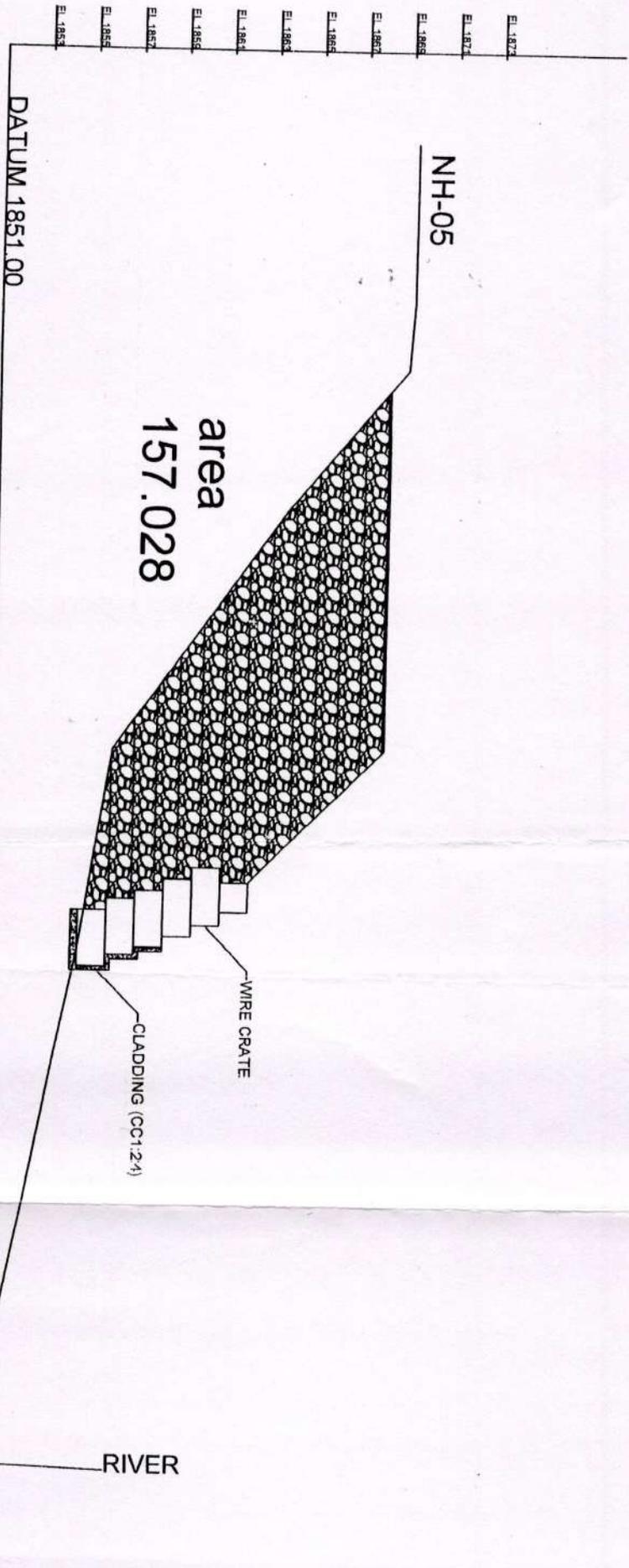


Sy. [Signature]

Divisional Forest Officer
Kjinaur Forest Divisional
R/Peo

Sr. Manager (R & P)
Shongtong-Karcham HEP,
HPP, [unclear]
Dist. Kinnaur H.P., 172107

HPPCL SHONG TONG KARCHAM HEP (450MW) ADDL
DUMPING SITE NEAR ADIT-2

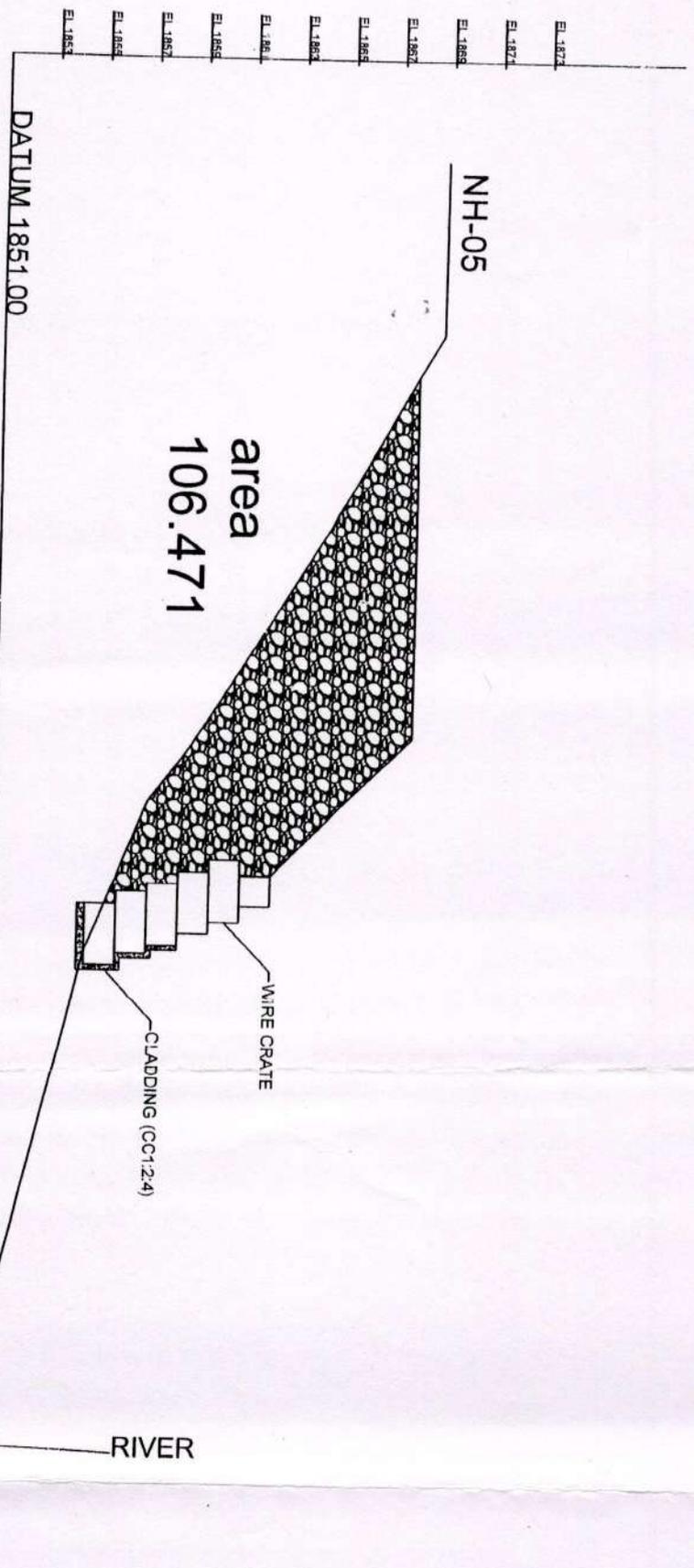


S. S. Sanyal
Regional Project Officer
Karnam Forest Division
R.D. No. 1

Sr. Manager (P & T)
Shongtong-Karcham
HEP
Dist. ...

(12)
128 (119)
(115)

HPPCL SHONG TONG KARCHAM HEP (450MW) ADDL.
DUMPING SITE NEAR ADIT-2



By hand

Divisional Forest Officer
Kinnaur Forest Division
R/Pao

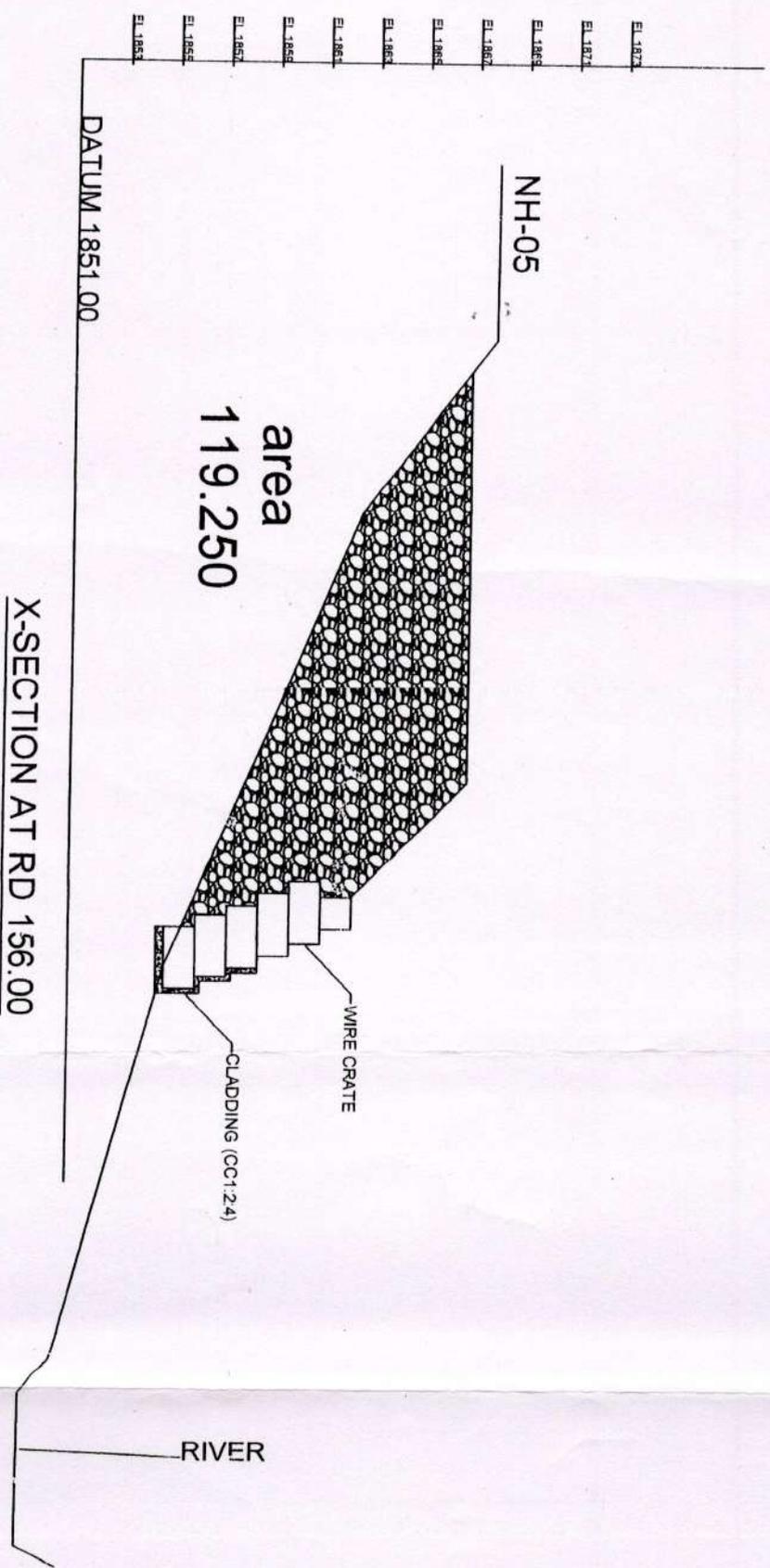
Sr. Manager (R.P.O.)

Shongtong Karcham HEP,
Kinnaur Forest Division,
Distt. Kinnaur H.P., 172107

163

114

HPPCL SHONG TONG KARCHAM HEP (450MW) ADDL.
DUMPING SITE NEAR ADIT-2



area
119.250

NH-05

DATUM 1851.00

X-SECTION AT RD 156.00

WIRE CRATE

CLADDING (CC1:2:4)

RIVER

g. kumar
 Divisional Forest Officer
 Kinnair Forest Division
 R/Peo

Sr. Manager (C.P.P.)
 Shri. T. S. Srinivasan IEP,
 H.P. Engineering,
 Dist. Office, 172107

107
 108
 109

ABSTRACT OF COST

Name of work:- Estimate for protection works of additional dumping site at Tangling near Adit-1 (L/bank of River Satluj)

Sr. No.	Item code No.	Description of items	qty.	Rate	Unit	Amount	Remarks
1	1131020000	wire crate of G.I wire filled with bouldars with square cut faces against the wire (wire crates to be measured and paid for separately)	2343.75	2080.00	M ³	4875000.00	Rates are as per BOQ rates of M/s PEL
2	09120200	Providing & laying cement concrete work 1:2:4 (1 cement: 2 Sand: 4 graded stone aggregate 20 mm nominal size) and curing complete (Cladding works)	288.00	4076.80	M ³	1174118.40	
					Total=	6049118.40	
					Say	6049118.00	

g/l
 Divisional Forest Officer
 Kinnaur Forest Divisional
 R/Peo

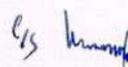
Sr. Manager (R&R)
 Shorotong-Karchham HEP,
 HP
 Kang-Peo,
 Dist. Kinnaur H.P., 172107

105

DETAIL OF QUANTITY

Name of work:- Estimate for protection works of additional dumping site at Tangling near Adit-1 (L/bank of River Satluj)

Sr. No.	Description of items	N0.	L (m)	B (m)	H (m)	Qty. (Cum)
1	Wire crate of G.I wire filled with bouldars with square cut faces against the wire. (wire crates to be measured and paid for separately)					
	R.D 0.00 to 60.00mtr					
	1 Row (60/1.25 = 48x1= 48)	48.00	2.50	1.25	1.25	187.50
	3 Rows (60/2.5 = 24x3 =72)	72.00	2.50	1.25	1.25	281.25
	R.D 90.00 to 170.00mtr					
	1 Row (80/1.25 = 64x1= 64)	64.00	2.50	1.25	1.25	250.00
	3 Rows (80/2.5 = 32x3 =96)	96.00	2.50	1.25	1.25	375.00
	R.D 220.00 to 380.00mtr					
	1 Row (160/1.25 = 128x1= 128)	128.00	2.50	1.25	1.25	500.00
	3 Rows (160/2.5 = 64x3 =192)	192.00	2.50	1.25	1.25	750.00
					Total	2343.75
2	Providing & laying cement concrete work 1:2:4 (1 cement : 2 Sand: 4 graded stone aggregate 20 mm nominal size) and curing complete					
	Bottom (R.D 220.00 to 380.00mtr)	1.00	160.00	2.50	0.30	120.00
	Front (R.D 220.00 to 380.00mtr)	3.00	160.00	1.25	0.20	120.00
	Top (R.D 220.00 to 380.00mtr)	3.00	160.00	0.50	0.20	48.00
					Total	288.00

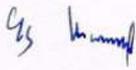

 Divisional Forest Officer
 Kinnaur Forest Division
 R/Peo

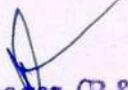

 Sr. Manager (R&R)
 Shongtong-Karchham HEP,
 HF Karg-Deo,
 Distt. Kinnaur H.P., 172107

107

Name of work:- Estimate for protection works of additional dumping site at Tangling near Adit-1 (L/bank of River Satluj)

Sr. No.	Description of items	RD (M)	Area (M ²)	Mean area (M ²)	Length (M)	Qty (M ³)	
1	Filling of muck in additional dumping site at Tangling near Adit-1 (L/bank of River Satluj)	0.00	90.032	0.00	0.00	0.00	
		40.00	62.707	76.37	40.00	3054.78	
		60.00	53.160	57.93	20.00	1158.67	
		90.00	33.970	0.00	0.00	0.00	
		130.00	23.042	28.51	40.00	1140.24	
		170.00	9.050	16.05	40.00	641.84	
		220.00	16.050	0.00	0.00	0.00	
		260.00	98.420	57.24	40.00	2289.40	
		300.00	100.279	99.35	40.00	3973.98	
		340.00	70.260	85.27	40.00	3410.78	
		380.00	71.260	70.76	40.00	2830.40	
						Total	18500.09
						Swell factor @ .72 = 18500.09 x .72	
					Say	13320.00	


Divisional Forest Officer
Kinnaur Forest Divisional
R/Peo


Sr. Manager (R&R)
Shongtong-Karchham HEP,
HF Keng-Peo,
Distt. Kinnaur H.P., 172107

10300 m

10000 m

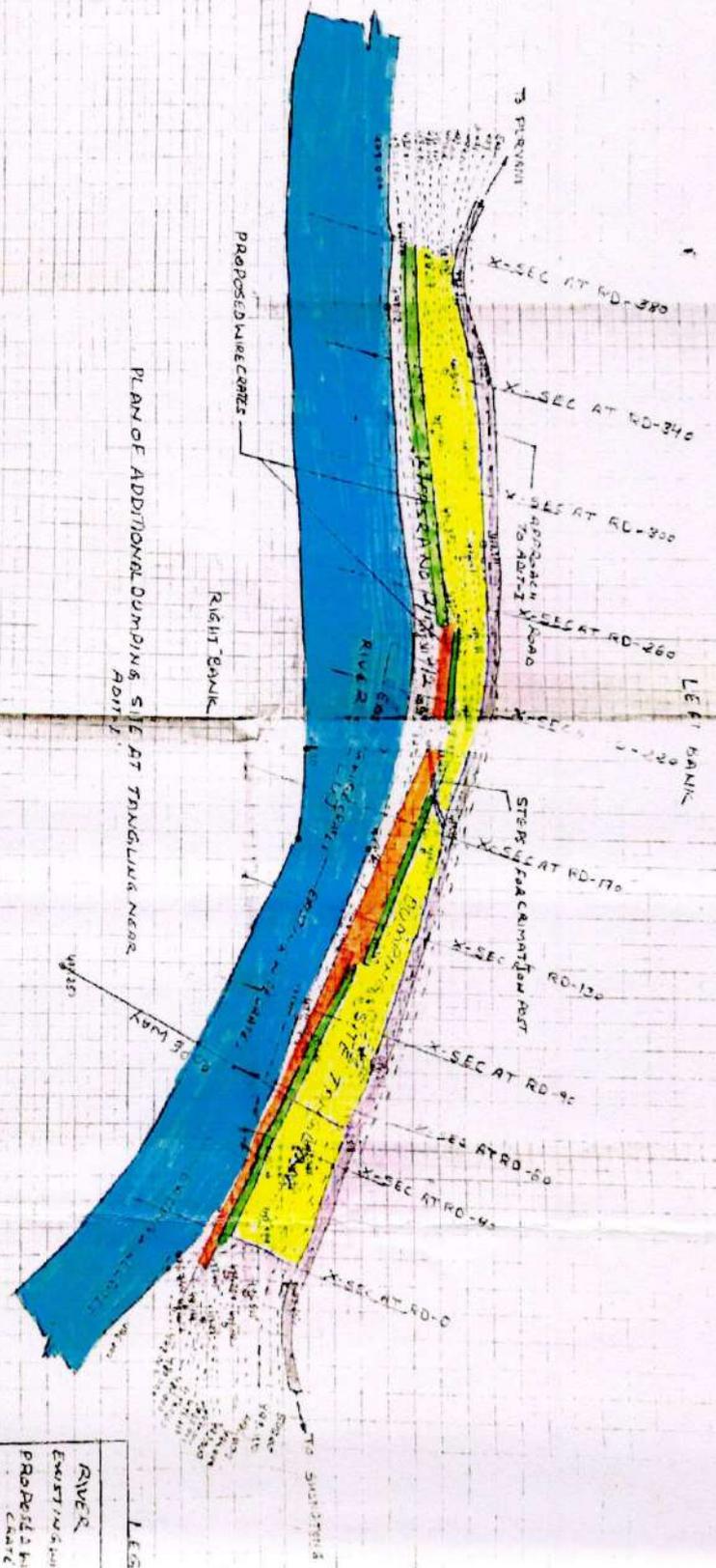
9600 m

9200 m

Regional Forest Office
Kinnaur Forest Division
R.P.O.

U. Lal

PLAN OF ADDITIONAL DUMPING SITE AT TRINGLUNG NEAR
ADRIJ



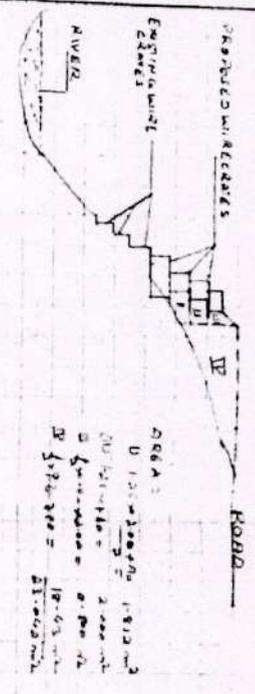
LEGEND

RIVER	
EXISTING WIRECAGES	
PROPOSED WIRECAGES	
DUMPING SITE	
ROAD	

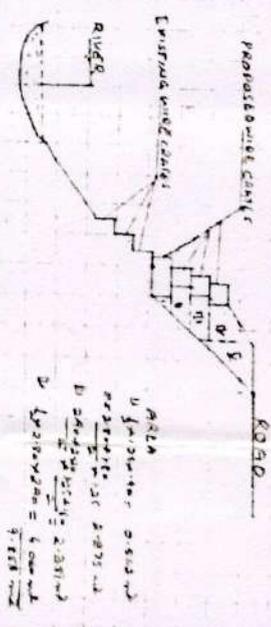
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Sr. Manager (R & R)
Shongtong-Karchinam HEP,
H.P., Tockong/Peo,
Distt. Kinnaur H.P., 172107

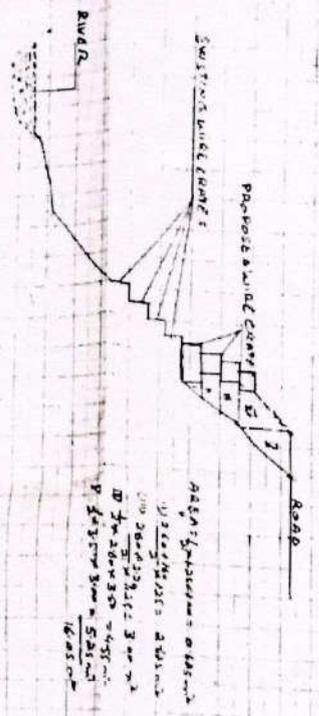
X-SECTION AT 150.00



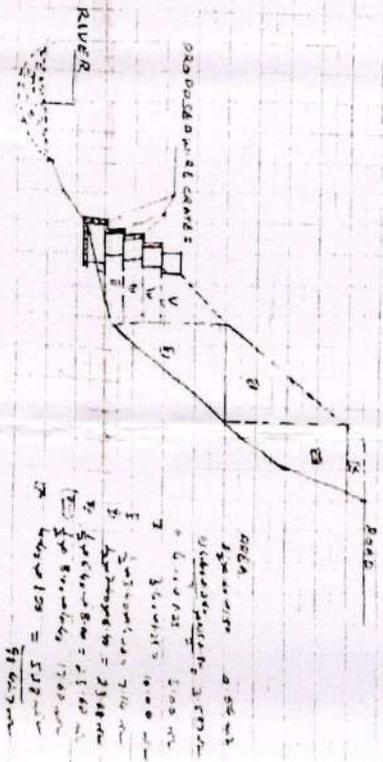
X-SECTION AT 200.00



X-SECTION AT 220.00



X-SECTION AT 260.00



Divisional Forest Offices
Kinnaird Forest Division

R/1750

St. Manoj (R&R)
Shri. Manoj K. Maram H.P.,
Kannur H.P., 172107

110



ABSTRACT OF COST

(10)

Name of work:- Estimate for protection works of additional dumping site adjoining to dumping site 3 upstream of Shongtong bridge right bank.

Sr. No.	Item code No.	Description of items	qty.	Rate	Unit	Amount	Remarks
1	1131020000	wire crate of G.I wire filled with bouldars with square cut faces against the wire. (wire crates to be measured and paid for separately)	5664.06	2080.00	M ³	11781250.00	Rates are as per BOQ rates of M/s PEL
2	09120200	Providing & laying cement concrete work 1:2:4 (1 cement : 2 Sand: 4 graded stone aggregate 20 mm nominal size) and curing complete (Cladding works)	722.50	4076.80	M ³	2945488.00	
Total=						14726738.00	

S. K. D.

**Divisional Forest Officer
Kansur Forest Divisional
R/Peo**

Sr. Manager (R&R)
Shri. S. K. D. Chelam HEP,
H. P. S. Kansur,
Dist. Khamrui A.P., 172107