DIVERSION OF 1.0188 HA.OF FORESTLAND FOR CONSTRUCTION OF BANUALA BAROOND-I SMALL HYDRO PROJECT 2.00 MW IN TEHSIL CHURAH DISTRICT CHAMBA (H.P)
FILE NO .. : **FP/HP/HYD/148103/2021**
DATE OF PROOSAL :

ALTERNATE SITES CONSIDERED TO MINIMISE THE USE OF FOREST LAND FOR CONSTRUCTION OF BANUALA BAROOND-I-I– II (2MW) SMALL HYDRO ELECTRIC PROJECT

ALTERNATIVE-I

The proposed project is situated on the right bank of the Churkhu stream. The alternative involves construction of diversion structure at EL ± 1990 m on Churkhu Nala. The water conductor shall consist of surface Desilting tank and water Conductor System on the right bank of Churkhu Nala comprising of 37 m length. Penstock alignment runs through rocky slope. The gross head available for power generation shall be around 223 m. Surface powerhouse shall be located on the right bank of the Churkhu Nala. There are small bends in Penstock alignment . No part of the Channel or other components lies in inhabitant area thus it will not have any other adverse environmental impact and large cutting of trees.

Feature considered:

- Alignment of the proposed project falls on right bank and along the stream. This has been deliberately designed for the reduction of land to be used, fewer amounts of trees to be cut and also based on the suitable strata for Channel . The proposal involves cutting of 28 trees in the all components alignment which are not to be cut.
- Forest land involved to the tune of 1.0188 Hectares.
- No disturbance to the stable slope & green cover.
- Limited number to trees to be cut off for execution of components of project.
- No Cultivated land and habitants.

ALTERNATIVE- II

This alternative involves construction of diversion structure on left Churkhu Nala at EL ± 1990 m and the water conductor system involving Open Channel of about 50 m length passing through a loose rock on the right bank of the Nala. Geologically this alternative is not appropriate for the safety of the Project components.

Feature Considered:

- Forest land involved to the tune of 1.0588 hectares and 57 trees are involved in this process.
- It is difficult for construction of open channel on the right side as the slope is very steep which may trigger landslide during and after construction and it also increases the number of trees to be cut.
- Gross head available also decreases, resulting in less power generation.
- A lot of trees to be cut resulting into decreasing forest cover in this area.
- Some of the alignment of Project components coming in cultivated land and habitant area.

ALTERNATIVE- III

This is mainly left bank alternative involves construction of diversion structure at EL ± 1990 m on the Churkhu Nala. Water of Churkhu Nala shall be diverted through a 55 m long Water Conductor System to the Forebay. There is open space available for location of Forebay. The penstock shall be over ground along with surface powerhouse on the left bank of the Churkhu Nala. The gross head shall be about 200 m. The length of the transmission line increases and the length of the road upto Power house shall

with surface powerhouse on the left bank of the Churkhu Nala. The gross head shall be about 200 m. The length of the transmission line increases by 100 meters and the length of the road upto Power House shall increase by 460 m which increases the involvement of more forest land. In this alternative the Water Conductor System would cross the agriculture land resulting in erosion of agricultural land.

Features Considered:

- Entire alignment falls on left bank of Churkhu Nala.
- Forest land involved to the tune of 1.0988 hectares and 62 trees are involved in this proposal.
- Length of water conductor system involved is more which increases the construction time.
- Total area involved is more which leads to cutting of more trees, Diversion of more forest land.
- Left bank of Churkhu Nala covering proposed Powerhouse and Penstock consist of loose strata which is vulnerable to landslides.
- Most of the alignment of Project components coming in cultivated land and habitant area.

Keeping in view all the above three alternative, the **alternative- I**, which is more suitable and environmental friendly, has been finally adopted.

For Gyatri Hydel Project P.ltd.

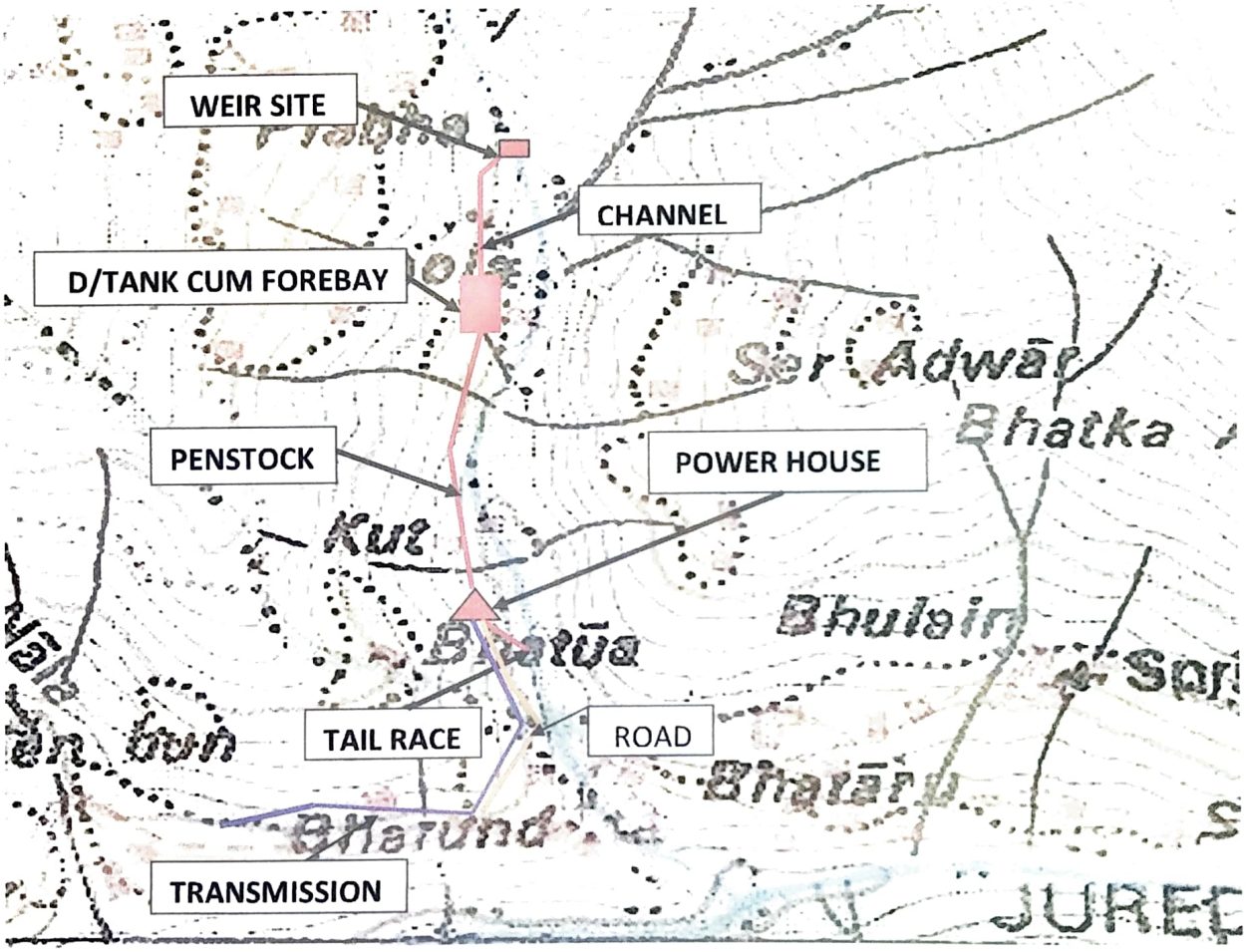
Gyatri Hydel Projects P. Ltd.

Authorised Signatory

BANUALA BAROOND –I SMALL HYDRO PROJECT (2.00 MW)
TEHSIL CHURAH DISTRICT CHAMBA (H.P.)

ALTERNATIVE –I

SOI TOPO SHEET : 52D/5



FEATURES CONSIDERED	
AREA INVOLVED	1.0188 HA.
TREES INVOLVED	28 NO.

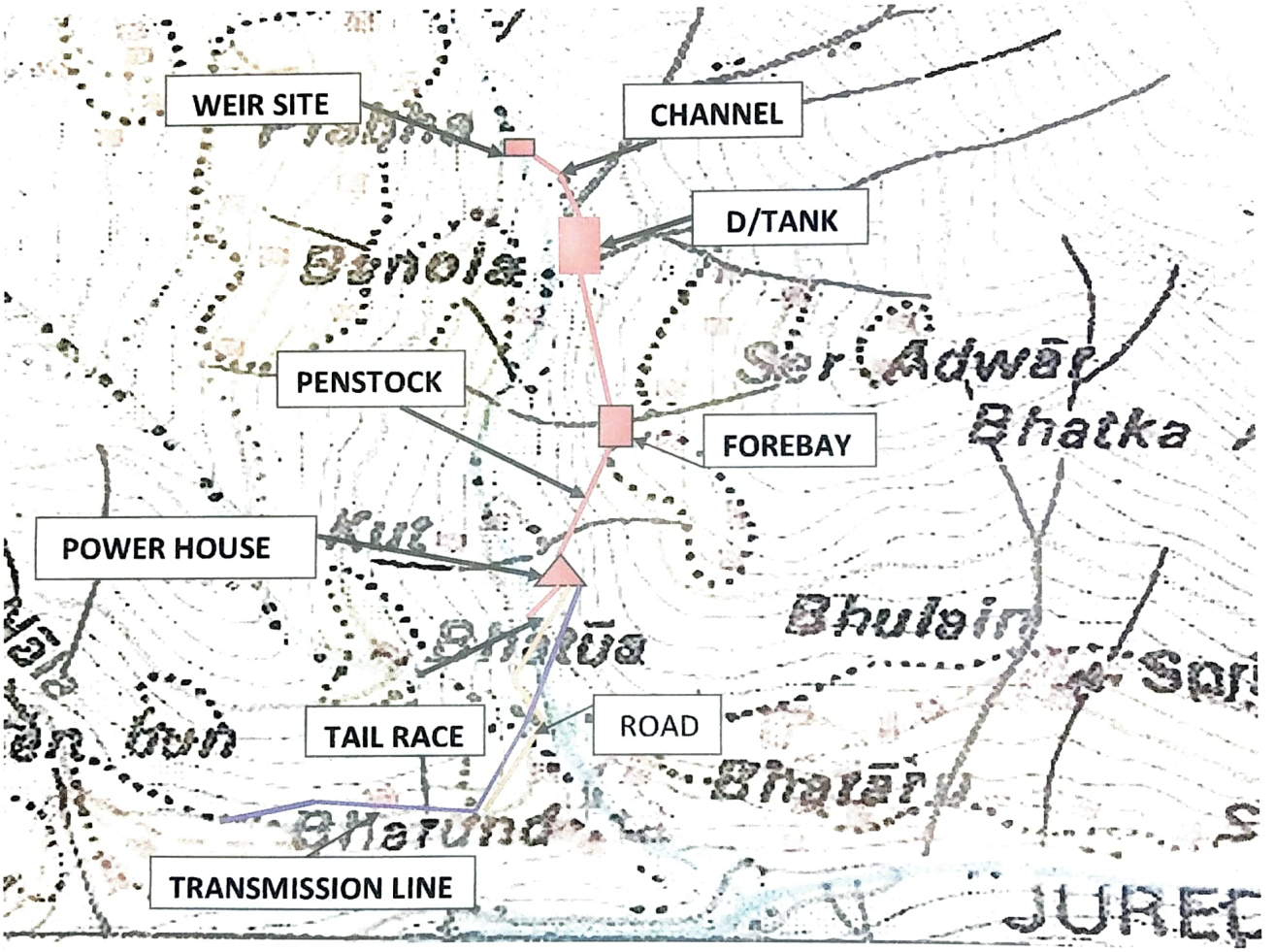
Gyatri Hydel Project (P) Ltd
Authorised Signatory

Divisional Forest Officer
Chamba Forest Division
CHAMBA

BANUALA BAROOND –I SMALL HYDRO PROJECT (2.00 MW)
TEHSIL CHURAH DISTRICT CHAMBA (H.P.)

ALTERNATIVE –II

SOI TOPO SHEET : 52D/5



FEATURES CONSIDERED	
AREA INVOLVED	1.0588 HA.
TREES INVOLVED	57 NO.

Gyatri Hydel Project (P) Ltd
Authorised Signatory

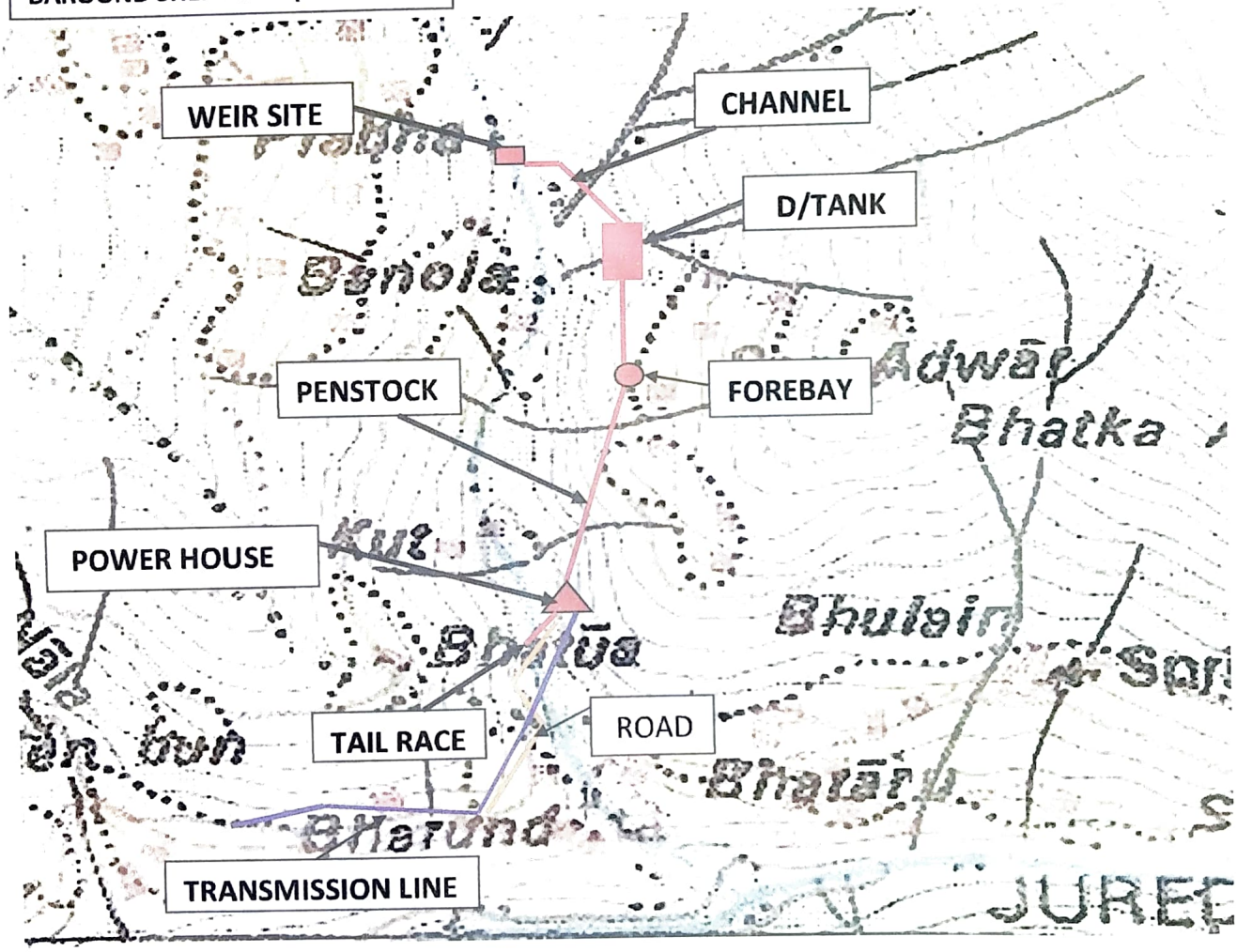
Divisional Forest Officer
Chamba Forest Division
CHAMBA

BANUALA BAROOND –I SMALL HYDRO PROJECT (2.00 MW)
TEHSIL CHURAH DISTRICT CHAMBA (H.P.)

ALTERNATIVE –III

ALTERNATIVE-III FOR BANUALA BAROOND SHEP 2MW (REJECTED)

SOI TOPO SHEET : 52D/5



FEATURES CONSIDERED	
AREA INVOLVED	1.0988 HA.
TREES INVOLVED	62 NO.

Uyaan Hydel Project (P) Ltd
Authorised Signatory

C/S

Divisional Forest Officer
Chamba Forest Division
CHAMBA