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**JONHA MINI HYDRO POWER PROJECT  
SALIENT FEATURES**

**Location**

State	Jharkhand
District	Ranchi
River/Tributary	Subarnarekha/Ganga nallah
Diversion Weir	23 <sup>0</sup> 20' 41.19" N , 85 <sup>0</sup> 36' 20.84" E
Power House Site	23 <sup>0</sup> 20' 28.87" N , 85 <sup>0</sup> 36' 27.10" E

**Hydrology**

Catchment Area At Intake Site	99.41 km <sup>2</sup>
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Design Flood	455 m <sup>3</sup> /s
Diversion Flood	10.15 m <sup>3</sup> /s

**Diversion Structure**

Type	Trench weir
Length of Weir	32 m

Top elevation of weir	EL. 398.0 m
Average River Bed Level	EL. 398.0 m
FRL	EL. 397.5 m

**Intake Structure**

Invert Level	EL. 395.3 m
Width	4 m
Height	2.7 m
Design discharge	3.24 cumecs

**De-silting Basin**

Type	Hopper type surface desilting basin
Size of Basins	36 m (L) X 4 m (W) X 3.5 m (H)
Minimum size of particles to be	0.2 mm

removed

Settling velocity 0.025 m/s

### **Power Channel**

Type Rectangular

Size 207m (L) X 2.7m (W) X 1.57m (H)

Invert Level 395.60

Top Level 397.50

### **Forebay**

Type Square tank

Size 3 m (L) X 3 m (W) X 4.85 m (H)

Invert Level EL. 393.15 m

Top Level EL. 398.0 m

### **Main Penstock**

Type Steel lined circular-Surface

Size 1.0 m diameter

Length 76 m

### **Branch penstocks**

No. and size 3 no.

Branch 1 0.7 m dia. and 10 m long

Branch 2 0.7 m dia. and 10 m long

Branch 3 0.32 m dia. and 5 m long

### **Power House**

Location

Type Surface

Total Installed Capacity 1 MW

No. of Units 3

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Capacity of Units	2 X 450 KW and 1 X 100 KW
Size Of power house	24 m (L) X 8 m (W)
Type Of Turbine	Horizontal Francis
Speed Of Turbine	600 rpm
Gross Head	50 m
Net Operating Head Design Discharge	48 m

#### **Tail Race Channel**

Max. Tail Water Level	EL. 349.0 m
Min. Tail Water Level	EL 348.0 m

Shape of channel	Rectangular
Size	1.8 m (W) X 1.2 m (H)
Length	9 m

#### **Power Generation**

Installed Capacity	1 MW
75% Dependable Energy	3.07 GWh
Plant Load factor	34 %
Levellised Tariff at bus bar	Rs.4.06 /kWh

#### **COST ESTIMATE**

#### **INR (Crores)**

Civil & HM Works	4.64
Electro Mechanical Works	1.51
TOTAL COST WITHOUT TRANSMISSION	6.15
Cost of Transmission Works	1.35
TOTAL COST WITH TRANSMISSION	7.50