



HIMACHAL PRADESH POWER TRANSMISSION CORPORATION LIMITED

(A State Govt. undertaking)

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No. HPPTCL/PIU-Kala-Amb/FCA-AKTL/2022-23 1224

Dated: - 14/02/2023


Certificate Regarding Muck Management Plan

The towers are located in Hilly Terrain. The tower foundation and its related revetment works are planned based on the topographical and techno-economical requirements so that minimum cutting/excavation & revetment works are required and cutting/excavated quantity of earth are fully utilized within the tower bench.

In the case of "Construction of 132 kV MCT line on 220 kV towers from 220/132/33 kV Substation Andheri to tower no. 20/21 of existing 132 kV Jamta-Kalaamb transmission line", the quantity of the cutting/excavated & filling is worked out as per the design drawings and site-specific requirements wherein total 176.35 cum (or 4.3 cum per Tower) (which is only 0.75 % of the total excavated quantity) becomes surplus after filling. (Details enclosed at **Annex-'A'**)

It is further mentioned that the geological strata of the site are generally comprises of soil and boulders of different sizes. Generally excavated material contains 20-40% of usable boulders/stones which are used for revetment work. After excavation, the boulder extracted from the site are stacked and used for the construction of revetments works. So in the instant case, 7064 cum (or 30%) excavated earth shall be in the shape of usable stone which would be used for revetment work. As such the estimated surplus earth shall be fully consumed within the tower site.

However, even if any minor earth material becomes surplus same is used and spread on the overall tower bench as a levelling course with proper compaction.


Senior Manager (Projects)
PIU Kala-Amb, HPPTCL,
Distt. Sirmaur (HP)

Name of Work		Construction of 132 kV MCT line from 220/132/33 kV HPPTCL Sub-station Andheri at Kala Amb to T-20-21 of existing 132 kV Jamta - Kalaamb TL in Distt. Sirmaur (HP)		
Tower wise detail of Earth Cutting and Filling				
Sr. No	Tower Detail	Description	Cutting (Cum)	Filling (Cum)
1	T-1	Bench cutting/ filling + Breast wall cutting	270.82	37.8
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		181.94
		Filling of tower pits after concreting.		396
		Sub total-1	745.03	615.735
2	T-2	Bench cutting/ filling + Breast wall cutting	16.56	53.38
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		134.91
		Filling of tower pits after concreting.		396
		Sub total-2	490.77	584.29
3	T-3	Bench cutting/ filling + Breast wall cutting	52.47	44.84
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		160.59
		Filling of tower pits after concreting.		396
		Sub total-3	526.68	601.43
4	T-4	Bench cutting/ filling + Breast wall cutting	54.135	30.24
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		182.18
		Filling of tower pits after concreting.		396
		Sub total-4	528.345	608.418
5	T-5	Bench cutting/ filling + Breast wall cutting	32.472	20.16
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		266.13
		Filling of tower pits after concreting.		396
		Sub total-5	506.682	682.288
6	T-6	Bench cutting/ filling + Breast wall cutting	53.838	11.79
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		37.75
		Filling of tower pits after concreting.		396
		Sub total-6	528.048	445.54
7	T-7	Bench cutting/ filling + Breast wall cutting	4.68	29.826
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		74.95
		Filling of tower pits after concreting.		396
		Sub total-7	478.89	500.776
8	T-8	Bench cutting/ filling + Breast wall cutting		47.53
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		65.52
		Filling of tower pits after concreting.		396
		Sub total-8	474.21	509.045
9	T-9	Bench cutting/ filling + Breast wall cutting	139.455	5.85
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		242.58
		Filling of tower pits after concreting.		396
		Sub total-9	613.67	644.43
10	T-10	Bench cutting/ filling + Breast wall cutting	120.068	
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		136.48
		Filling of tower pits after concreting.		396
		Sub total-10	594.28	532.48
11	T-11	Bench cutting/ filling + Breast wall cutting	21.708	21.096
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		75.50
		Filling of tower pits after concreting.		396
		Sub total-11	495.92	492.596

12	T-12	Bench cutting/ filling + Breast wall cutting		84.978
		Excavation of tower foundation	474.21	195.32
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.	474.21	676.298
		Sub total-12		11.7
13	T-13	Bench cutting/ filling + Breast wall cutting	174.662	
		Excavation of tower foundation	474.21	150.96
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		558.66
		Sub total-13	648.87	48.951
14	T-14	Bench cutting/ filling + Breast wall cutting	32.652	
		Excavation of tower foundation	474.21	140.22
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		585.171
		Sub total-14	506.86	2.79
15	T-15	Bench cutting/ filling + Breast wall cutting	227.42	
		Excavation of tower foundation	474.21	144.30
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		543.09
		Sub total-15	701.63	16.83
16	T-16	Bench cutting/ filling + Breast wall cutting	278.77	
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		226.38
		Filling of tower pits after concreting.		396
		Sub total-16	752.98	639.205
17	T-17	Bench cutting/ filling + Breast wall cutting	190.18	68.76
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		214.40
		Filling of tower pits after concreting.		396
		Sub total-17	664.39	679.16
18	T-18	Bench cutting/ filling + Breast wall cutting	304	
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		123.60
		Filling of tower pits after concreting.		396
		Sub total-18	778.21	519.6
19	T-19	Bench cutting/ filling + Breast wall cutting	0.68	23.967
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		91.75
		Filling of tower pits after concreting.		396.00
		Sub total-19	474.89	511.717
20	T-20	Bench cutting/ filling + Breast wall cutting	29.502	8.73
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		100.00
		Filling of tower pits after concreting.		396
		Sub total-20	503.71	504.73
21	T-21	Bench cutting/ filling + Breast wall cutting	206.54	33.047
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		257.43
		Filling of tower pits after concreting.		396
		Sub total-21	680.75	686.472
22	T-22	Bench cutting/ filling + Breast wall cutting	10.728	40.188
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		112.74
		Filling of tower pits after concreting.		396
		Sub total-22	484.94	548.928
23	T-23	Bench cutting/ filling + Breast wall cutting	21.118	35.64
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		62.04
		Filling of tower pits after concreting.		396
		Sub total-23	495.33	493.68
24	T-24	Bench cutting/ filling + Breast wall cutting	8.765	112.47
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		165.87
		Filling of tower pits after concreting.		396
		Sub total-24	482.98	674.34

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25	T-25	Bench cutting/ filling + Breast wall cutting	471.203	22.653
		Excavation of tower foundation	474.21	136.62
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		555.273
		Sub total-25	945.41	59.616
26	T-26	Bench cutting/ filling + Breast wall cutting	385.388	
		Excavation of tower foundation	474.21	217.35
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		672.966
		Sub total-26	859.60	23.605
27	T-27	Bench cutting/ filling + Breast wall cutting	81.442	
		Excavation of tower foundation	474.21	117.50
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		537.105
		Sub total-27	555.65	88.252
28	T-28	Bench cutting/ filling + Breast wall cutting	263.786	
		Excavation of tower foundation	474.21	290.08
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		774.332
		Sub total-28	738.00	47.952
29	T-29	Bench cutting/ filling + Breast wall cutting	408.261	
		Excavation of tower foundation	474.21	279.92
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		723.872
		Sub total-29	882.47	8.244
30	T-30	Bench cutting/ filling + Breast wall cutting	10.95	
		Excavation of tower foundation	474.21	168.75
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		572.994
		Sub total-30	485.16	31.5
31	T-31	Bench cutting/ filling + Breast wall cutting	4.407	
		Excavation of tower foundation	474.21	146.96
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		574.46
		Sub total-31	478.62	46.044
32	T-32	Bench cutting/ filling + Breast wall cutting	6.201	
		Excavation of tower foundation	474.21	172.14
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		614.184
		Sub total-32	480.41	35.784
33	T-33	Bench cutting/ filling + Breast wall cutting	18.72	
		Excavation of tower foundation	474.21	128.25
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		560.034
		Sub total-33	492.93	35.226
34	T-34	Bench cutting/ filling + Breast wall cutting	2.16	
		Excavation of tower foundation	474.21	207.00
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		638.226
		Sub total-34	476.37	12.051
35	T-35	Bench cutting/ filling + Breast wall cutting	0.054	
		Excavation of tower foundation	474.21	207.00
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		615.051
		Sub total-35	474.26	1.58
36	T-36	Bench cutting/ filling + Breast wall cutting	23.143	
		Excavation of tower foundation	474.21	22.50
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		420.08
		Sub total-36	497.35	4.055
37	T-37	Bench cutting/ filling + Breast wall cutting	25.184	
		Excavation of tower foundation	474.21	0.00
		Backfilling behind retaining walls		396
		Filling of tower pits after concreting.		400.055
		Sub total-37	499.39	

38	T-38	Bench cutting/ filling + Breast wall cutting	8.887	69.615
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		82.37
		Filling of tower pits after concreting.		396
		Sub total-38	483.10	547.983
39	T-39	Bench cutting/ filling + Breast wall cutting	32.717	1.836
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		0.00
		Filling of tower pits after concreting.		396
		Sub total-39	506.93	397.836
40	T-40	Bench cutting/ filling + Breast wall cutting	86.13	33.52
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		72.64
		Filling of tower pits after concreting.		396
		Sub total-40	560.34	502.16
41	T-41	Bench cutting/ filling + Breast wall cutting	27.018	32.436
		Excavation of tower foundation	474.21	
		Backfilling behind retaining walls		0.00
		Filling of tower pits after concreting.		396
		Sub total-41	501.23	428.436
Grand Total (1 to 41)		23549.48	23373.13	
Net Surplus Earth to be Disposed off			176.35	

NOTES:-

1) NET SURPLUS EARTH TO BE DISPOSED OFF = 176.35 cum approx. i.e., 4.3 cum/ per. tower.

2) At most of tower locations, out of total earth filling as computed above, 20 to 40 % of stone/ boulders other than soil likely to be found during excavation which will be used in revetment work and as a filter media behind the revetment wall.

3) Since earth filling is a combination of soil and stone/ boulders , but practically earth/ soil is required to be borrowed from other locations for maintaining the tower benches with earth filling.

4) In exceptional cass, if stone/ boulders not found during cutting and excavation then plinth/ height of retaining walls to be increased for consuming surplus earth

Hence, there will be no surplus earth/ Soil for disposing off at each tower location.

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