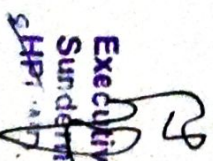


STRETCH WISE CALCULATION SHEET OF C/O SLAPPER TO TATAPANI ROAD KM 8/500/ TO 61/600							
BREAK UP OF LAND/WIDTH OF ALREADY APPROVED DIVERSION AND VIOLATION							
SR.NO	KM		LENGTH IN KM	WIDTH	AREA IN HECTARE	APPROVAL LETTER NO.	REMARKS
	FROM	TO					
1	8/500	13/300	4.800	6.00	-	-	HPPWD LAND(4 MTR. ADDITIONAL LAND PROPOSED WHERE REQUIRED)
2	13/300	17/300	4.000	6.00	3.204	9-HPB361/2010-CHA/9834	APPROVED(ADDITIONAL 4 MTR PROPOSED)
3	17/300	25/490	8.190	6.00	4.868	9-HPB732/2012-CHA	APPROVED(ADDITIONAL 4 MTR PROPOSED)
4	25/490	30/690	5.200	6.00	2.717	9-HPB.298/2013-CHA/94	APPROVED(ADDITIONAL 4 MTR PROPOSED)
5	30/690	60/640	29.950	-	-	-	VIOLATION OF 12.9265 HECT. IN SUKET DIVISION & 0.2310 HECT IN KARSOG DIVISION
6	60/640	61/600	0.960	10	-	-	PWD LAND

  
 Executive Engineer,  
 Sundernagar Division  
 HPWD, Sundernagar



**NATIONAL ENGINEERING SERVICES CONSULTANCY**  
**VILL. & P O. LAKHANPUR TEHSIL SADAR DISTT. BILASPUR HP.**  
 No. NESAC-976 Dated: 22/09/2022

**Suggestive Over lay design on the existing pavement**  
**As per CSA Method Consideration IRC-81-1997**

**1. INTRODUCTION:**

Assistant Engineer Slappar Sub Division HP:PWD at Kangu vide his letter No PW-KSD-Lab.Test/Slappar Tattapani road /2021-22-150-52 Dt 06/07/2022, requested to carry out Benkelman Beam deflection test for the Improvement and Widening of Slappar Tattapani road KM 0/000 to 68/000. (Sub Head: ROFD, Metalling and Tarring, R/walls, Breast Wall, Cross Drainage works, W-Metal beam Crash barrier, dumping site etc for double lane portion KM 56/600 to 61/600 under CRF- HP-2017-18-143.

The field test values observed in the field will be utilized for working out additional overlays required for strengthening the existing pavement in the aforesaid reach of the road with request to suggest the over lay design.

**2. REACH INVESTIGATED:** - The investigated reach of the road starts at KM 58/700 and ends at Km. 61/600 only. Annual rainfall as inquired from the field staff is greater than 1300 mm had been reported in the vicinity of the road by the field authorities. The sub soil water poses no problem in this section of the road. However, surface water oozing out from adjacent hill side slopes due to rainfall resulting particularly in shady portions of the road reaches will have definite impact on the sub grade soil.

**3. IDENTIFICATION AND CLASSIFICATION:** -

The identification & classification of soil had been done by visual observation. The soil -strata in the soil section of the reach had been found generally Gravely-sandy-Silty/clay and high rainfall areas >1300mm and M.C on the time of testing is found 4.50%.

**4. FACTOR FOR TEMP. & SEASONAL VARIATION:**

Since the reach investigated experiences a temperature more than 20 °C for more than 8/9 months in a year. The Temp. Correction factor has been applied as positive 0.01 per av. °C. The seasonal correction factor has also been applied and taken as 1.33.

**5. BENKELMAN BEAM DEFLECTION MEASUREMENTS:**

Necessary deflection measurements were recorded at representative points in the section of the road with Benkelman Beam as per test procedure mentioned at clauses 4.2 and 4.3 in IRC: 81-1997.

**6. TRAFFIC INTENSITY FOR DESIGN:**

9. TRAFFIC INTENSITY FOR DESIGN:

S. No	Car/Jeep/	Motorised Two wheelers	Light commercial vehicles	Truck/		Buses		Agriculture		Non-Motorised Vehicles			Total
	Vans/Three wheelers		Pick up Vans	Tankers				Tractors		Cycle /Rickshaw	Animal drawn		
				L	UL	L	UL	L	UL		Pneumatic tyres	Non- Tyred	AADT
(Av.DT)	4250	3380	778	185	42	35	10	353	115	40	0	0	9188
			778	185	42	35	10	353	115	40		CVD	1518





**NESAC NATIONAL ENGINEERING SERVICES AND CONSULTANCY**

**MATERIAL TESTING LABORATORY FOR CIVIL WORKS**

REGD: DIC BILASPUR VIDE LETTER NO 02/08/21/00153 DATED 24-7-2013

GOVT OF INDIA MSMEUDHYOG AADHAAR NO UAN HPO1E0000141

**GSTIN: 02AFLPS4734B1ZP**

**PROP: ER.N.R.SHARMA (RETD. XEN HP: PWD), CHARTERED ENGINEER.**

**No. NESAC-975**

**Dated: 22/09/2022**

To

The Assistant Engineer,  
PIU Sub-Division Slappar,  
HP: PWD at Kangu Distt. Mandi HP.

Subject: - Improvement and Widening of Slappar Tattapani road KM 0/000 to 68/000. (Sub Head: ROFD, Metalling and Tarring, R/walls, Breast Wall, Cross Drainage works, W-Metal beam Crash barrier, dumping site etc for double lane portion KM 56/600 to 61/600 under CRF- HP- 2017-18-143. Report of BBD Test for estimation of overlays for providing the overlay of flexible Pavement of in KM 58/700 to 61/600 thereof.

Reference. Your office letter No PW-KSD-Lab.Test/Slappar Tattapani road /2021-22-150-52 Dt 06/07/2022.

Dear Sir,

Kindly ref. to your office letter no. ref to above, the Benkelman Beam Deflection Test as requested is conducted at site and the Characteristic's, deflection is worked out as per field observations and a suggestive overlay pavement design for provision of overlay over the existing pavement as requested is sent here with for favour of kind information and n/a please. The bill of its charges will be sent separately.

This is for favour your kind information and necessary action at your end please.

Ends: Test report Page 1-5

National Engineering Services & Consultancy  
Bilaspur (HP)

With Regards  
Auth. Signatory

Copy to Executive Engineer Sunder Nagar Division HP; PWD Sunder Nagar Distt. Mandi HP a/w the report estimated suggestive pavement design for over lay is sent herewith for information and n/a at your end please.

Encs: Test report Page 1-5

With Regards

National Engineering Services & Consultancy  
Bilaspur (HP)

Auth. Signatory