Government of Rajasthan

PUBLIC WORKS DEPARTMENT

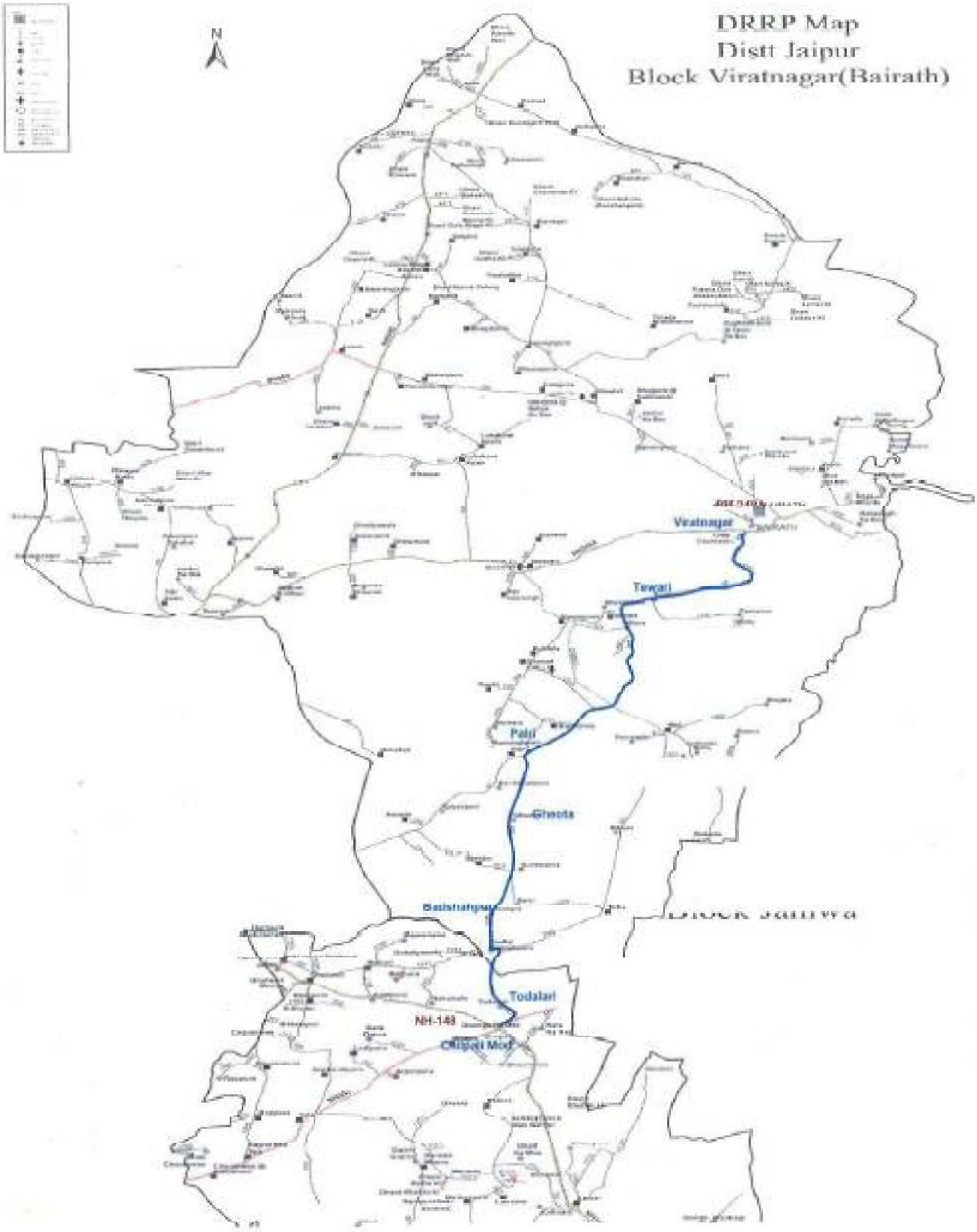
ESTIMATE

YEAR 2020-21

FOR

NAME OF WORK	:	RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)
ESTIMATED COST	:	Rs. 3000.00 Lacs
LENGTH	:	28.400 Km
NAME OF ZONE	:	PWD ZONE - II, JAIPUR
NAME OF CIRCLE	:	PWD RURAL CIRCLE, JAIPUR
NAME OF DIVISION	:	PWD DN. KOTPUTLI
NAME OF SUB DN.	:	PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)



TECHNICAL REPORT

1 Name of Work	:	**RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)**
2 District	:	Jaipur
3 Location		Starting Point Viratnagar and End Point Chilpali Mod
4 Important towns /villages covered	:	

Name of Town / Village		**Population**
1	Viratnagar	17237
2	Teori	3702
3	Sewara	1367
4	Palri	1902
5	Gheota	811
6	Badshahpur	354
7	Gudha Baijnathpura	385
	Total	**25758**

5 Proposed Length of road	:	**28.40 Km.**
6 A & F Sanction	:	**CE & AS Letter No. FF-7(65)A&F/SEC-II/2020-21 D-51 Dated 08.10.2020 Rs. 30.00 Cr.**
7 Job No.	:	**6/5054/SRF-MDR/GN./2020-21** **6/5054/SRF-MDR/SC/2020-21** **6/5054/SRF-MDR/ST/2020-21**
8 Assembly Constituencies	:	Viratnagar, Jamwa Ramgarh
8 Existing width (Mtr.)	:	3.00mtr., 3.75mtr. & 5.50mtr.

9 Traffic Details :

PCU (as per Traffic Census in Oct., 2019)	7214
CVPD (as per Traffic Census in Oct., 2019)	308
Growth Rate	5.00%

10 Necessity of work : The offtake point of this road is NH-248A (Viratnagar). This is a important road which connect the 7 Nos. of village which are directly served and 10 Nos. of other link routes are also connected with this route. The Chainage 11/800 & 15/400 to 29/900 is laying in mining zone area due to which the heavy overload traffic over plying on this road, due to which the road widening and Strengthing required. Hence, it is necessary to rebuilt upto two lane with hard shoulder as required on the basis of the present traffic data.

11 Proposals : Two lane with hard shoulders

16 Specification :

(A) For Road Work

(i) Sub base : GSB 150mm
(ii) Base WMM 250mm
(iii) Surface DBM Grading-II 60mm & BC 30mm

(B) C.C. Pavement

(i) Sub Base GSB 150mm
(ii) DLC 100mm
(iii) Surface CC M-30 250mm

(C) For Road Furnishing

(i) Retro-Reflectorised cautionary, mandatory and informatory sign as per IRC:67

(ii) Erecting typical Citizen's information Board as per approved drawing & specification

(iii) Marking Centre Line and stop lines etc. on road as per IRC pattern with thermoplastic paint

(D) For Protection Work

(i) 150mm P.C.C grade M 10 Nominal mix 1:3:6

(ii) Random Rubble Masonry In cement mortar 1:4

(iii) PCC M-20 architectural coping

(iv) Pointing on wall taken

17 **BSR** : **Rates are based on PWD Rural Circle Jaipur effective from June, 2019 Road BSR and NH BSR effective from April, 2019 with all subsequent corrigendum.**

21 Estimated Cost : **Rs. 3000.00 Lacs**

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

Executive Engineer
Pwd Dn. Kotputli

अधीक्षण अभियन्ता
सा० नि० वि०, वृत्त-ग्रामीण,
जयपुर

अतिरिक्त सचिव, सार्वजनिक निर्माण विभाग राजस्थान जयपुर की ओर से मुख्य अभियन्ता (एन) सार्वजनिक निर्माण विभाग, राजस्थान जयपुर को लिखे पत्र क्रमांक एफ एफएफ- 7 (66) / A&F/Sec-II/2020-21- डी-53 दिनांक 8/10/20 की प्रतिलिपि

विषयः– माननीय मुख्यमंत्री महोदय द्वारा की गई बजट घोषणा वर्ष 2020–21 की अनुपालना में प्रशासनिक एवं वित्तीय स्वीकृति जारी करने बाबत्।

महोदय,

निर्देशानुसार राजस्थान के राज्यपाल महोदय की ओर से माननीय मुख्यमंत्री महोदय द्वारा की घोषणा के अनुसरण में निम्न कार्य हेतु वित्तीय वर्ष 2020–21 में 3 कार्यों हेतु राशि रू0 89.00 करोड़ की प्रशासनिक एवं वित्तीय स्वीकृति निम्नानुसार प्रदत्त की जाती है:–

क्र. स.	जिला	कार्य का नाम	सड़क की श्रेणी	लम्बाई (कि.मी.)	लागत (करोड़ में)	जॉब नं0
1	अलवर	महुवा मन्डावर गढ़ी सवाईराम लक्ष्मणगढ़ गोविन्दगढ़ सड़क एस.एच.-35 कि.मी. 29/0 से 47/0 एवं 50/0 से 60/0 का पुनर्निमाण कार्य	SH-35	28.00	35.00	13/5054//SRF-SH/2020-21
2	बीकानेर	नौडू–बज्जू–कोलायत से झझु एसएच–87ए	SH-87A	28.00	20.00	14/5054//SRF-SH/2020-21
3	नागौर	परबतसर हरसौर डोडीयाना एनएच–89 कि.मी. 0/0 से 61/0 का सुदृढ़ीकरण एवं चौड़ाईकरण का कार्य।	SH-21A	61.00	34.00	11/5054//SRF-SH/2020-21
		योग		117.00	89.00	

उक्त व्यय निम्न बजट मद में भारित किया जायेगा

SRF-SHW work		
Gen	SC	ST
5054–सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 03–राज्य राजमार्ग 337–सड़क निर्माण कार्य (07)–राज्य सड़क विकास निधि से पोषित सड़कें [90]–निर्माण कार्य 74–सड़कों एवं पुलों का निर्माण व्यय	5054–सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 03–राज्य राजमार्ग 789– अनुसूचित जातियों के लिए विशिष्ट संघटक योजना (04)–राज्य सड़क विकास निधि से पोषित सड़कें(एस एच) [90]–निर्माण कार्य 74–सड़कों एवं पुलों का निर्माण व्यय	5054–सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 03–राज्य राजमार्ग 796– जनजातीय क्षेत्र उपयोजना (04)–राज्य सड़क विकास निधि से पोषित सड़कें(एस एच) [90]–निर्माण कार्य 74–सड़कों एवं पुलों का निर्माण व्यय

उक्त स्वीकृति वित्त विभाग की आईडी संख्या 102002442 दिनांक 14.9.2020 एवं प्रशासनिक विभाग की आईडी संख्या 1731 /सा. मुख्यमंत्री /सानिवि/2019 दिनांक 19.5.2020 के अनुसरण में निम्न शर्तों के साथ जारी की जा रही है।

(1) राशि का व्यय बजट प्रावधान की सीमा में करना सुनिश्चित किया जावेगा।

(2) निविदा आमंत्रण से पूर्व यह सुनिश्चित किया जायेगा कि प्रस्तावित कार्य पूर्व में किसी अन्य योजना में स्वीकृत नहीं है।

(3) प्रस्तावित कार्य PWF&AR, RTPP Act/Rules, विभागीय नियमों / योजना के दिशा–निर्देशों तथा निर्धारित मापदण्डों के अनुसार कराया जाना सुनिश्चित किया जावेगा।

(4) प्रस्तावित कार्यों के निष्पादन में समय–समय पर राज्य सरकार द्वारा जारी पत्रों में वर्णित दिशा निर्देशों / शर्तों की पूर्ण पालना सुनिश्चित की जायेगी।

(5) यह सुनिश्चित किया जावे कि निविदा आमन्त्रण से पूर्व प्रस्तावित कार्य की ड्राइंग एवं डिजाइन अनुमोदित करा ली गई तथा अतिरिक्त भूमि की आवश्यकता होने पर भूमि अधिग्रहित कर ली गई है।

(6) निविदा आमंत्रण से पूर्व चुनाव आदर्श आचार संहिता लागू नहीं है, यह सुनिश्चित कर लिया जावे।

कार्यालय मुख्य अभियन्ता, सार्वजनिक निर्माण विभाग, राजस्थान, जयपुर।

एफ– 7 (66)/A&F/Sec-II/2020–21 डी –54 दिनांक 8/10/20

प्रतिलिपि निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :–

1. अति. मुख्य अभियन्ता सा.नि.वि. संभाग
2. अधीक्षण अभियन्ता सा.नि.वि. वृत
3. अधिशासी अभियन्ता खण्ड
4. मु0 अभि0 (पथ) अधीक्षण अभियन्ता (पथ)/उपनिदेशक, सांख्यिकी/बजट लिपिक (पथ)/कम्पाईलेशन लिपिक, मुख्य अभियन्ता कार्यालय, सा.नि.वि. राजस्थान, जयपुर

तकनीकी में कार्य के विरुद्ध व्यय करने में माहवार लेखों में शामिल करते समय भविष्य में स्वीकृति से संबंधित सभी संदर्भों में कार्य का जॉब नम्बर जैसा कार्य को आवंटित किया गया है व कार्य के विवरण के समक्ष अंकित किया गया है वैसा ही बिना बदलाव के लिखा जावे। उक्त कार्यों की राशि पर प्रारेटा (प्रतिभार) सहित है। व्यय आवंटित बजट सीमा तक ही किया जावे।

8/10/2020
(सजीव माथुर)
मुख्य अभियन्ता एवं अतिरिक्त सचिव,
सा.नि.वि. राज. जयपुर

अतिरिक्त सचिव सार्वजनिक निर्माण विभाग, राजस्थान जयपुर की ओर से मुख्य अभियन्ता (पथ) सार्वजनिक निर्माण विभाग, राजस्थान जयपुर को लिखे पत्र क्रमांक एफ एफएफ– 7 (65)/A&F/Sec-II/2020-21– डी-57 दिनांक 8/10/20 की प्रतिलिपि

विषय:– माननीय मुख्यमंत्री महोदय की घोषणा की अनुपालना में प्रशासनिक एवं वित्तीय स्वीकृति जारी करने बाबत्।

महोदय,

निर्देशानुसार राजस्थान के राज्यपाल महोदय की ओर से माननीय मुख्यमंत्री महोदय द्वारा की घोषणा के अनुसरण में निम्न कार्य हेतु वित्तीय वर्ष 2020–21 में 10 कार्यों हेतु राशि रू0 142.21 लाख की प्रशासनिक एवं वित्तीय स्वीकृति निम्नानुसार प्रदत्त की जाती है:–

क्र.सं.	जिला	कार्य का नाम	सड़क की श्रेणी	लम्बाई (किमी.)	लागत (करोड़ में)	जोब न0
1	बारां	मांगरोल से अन्ता वाया पचेल कला सड़क किमी. 2/0 से 31/0 का चौड़ाईकरण एवं सुदृढ़ीकरण का कार्य	MDR-127	29.00	49.94	2/5054//SRF-MDR/2020-21
2.	जोधपुर	डांगियावास–गुड़ा–कांकाणी–लूणी–पुनायता– समदड़ी सड़क के किमी 25/500 से 66/0 का चौड़ाईकरण एवं सुदृढ़ीकरण कार्य	SH-68	34.50	27.00	3/5054//SRF-SH/2020-21
3.	जोधपुर	डंडोरा–भगेरिया सड़क किमी. 2/600 से 5/0 का निर्माण कार्य	VR	2.50	0.60	1/5054//SRF-RR/2020-21
4.	जोधपुर	माणकपुरा से बासनी हरिसिंह किमी. 0/0 से 6/0 का चौड़ाईकरण एवं सुदृढ़ीकरण का कार्य	VR	6.00	4.20	2/5054//SRF-RR/2020-21
5.	जोधपुर	फलौदी रणसता -आउगला सड़क किमी. 1/0 से कबीर आश्रम–लवारी सड़क का निर्माण कार्य	VR	7.00	2.01	3/5054//SRF-RR/2020-21
6.	जोधपुर	सुरपुरा–हिंगोली–लवारी सड़क का निर्माण कार्य	VR	6.50	1.96	4/5054//SRF-RR/2020-21
7.	चूरू	चूरू–तारानगर सड़क के किमी. 0/0 से 25/0 का चौड़ाईकरण एवं सुदृढ़ीकरण कार्य	SH-36	22.00	16.00	6/5054//SRF-SH/2020-21
8.	प्रतापगढ़	धरियावद प्रतापगढ़ मन्दसौर सड़क (SH-81) किमी 58/0 से 73/0 का सुदृढ़ीकरण कार्य	SH	15.00	7.50	8/5054//SRF-SH/2020-21

क्र.स.	जिला	कार्य का नाम	सड़क की श्रेणी	लम्बाई (कि.मी.)	लागत (करोड़ में)	जॉब नं.
9.	बाड़मेर	आलोदा हरसानी सड़क कि.मी. 22/0 से 37/0 एवं 42/0 से 61/0 का पुनर्निर्माण कार्य	ODR-35	19.00	3.00	8/5054//SRF-RR/2020-21
10.	जयपुर	विराटनगर (एन एच 248ए) से पिलवाली मोड़(एन एच 148) वाया सेवड़ी, सेवड़ा, पाल्डी, पालडी तिराहा, धेवता, स्वामी की ढाणी, माधवराजपुरा, गुढा, बैजनाथपुरा, टोडाळी का पुनर्निर्माण कार्य	MDR-231	29.10	30.00	6/5054//SRF-MDR/2020-21
		योग		170.6	142.21	

उक्त व्यय निम्न बजट मद में भारित किया जावेगा-

SRF-SHW works

Gen	SC	ST
5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 03-राज्य राजमार्ग 337-सड़क निर्माण कार्य (07)-राज्य सड़क विकास निधि से पोषित सड़कें [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय	5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 03-राज्य राजमार्ग 789-अनुसूचित जातियों के लिए विशिष्ट संघटक योजना (04)-राज्य सड़क विकास निधि से पोषित सड़कें(एस एच) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय	5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 03-राज्य राजमार्ग 796-जनजातीय क्षेत्र उपयोजना (04)-राज्य सड़क विकास निधि से पोषित सड़कें(एस एच) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय

SRF-MDR works

Gen	SC	ST
5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 04-जिला एवं अन्य सड़कें 800-अन्य सड़कें (14)-राज्य सड़क विकास निधि से पोषित सड़कें(एमडीआर) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय (आयोजना)	5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 04-जिला एवं अन्य सड़कें 789-अनुसूचित जातियों के लिए विशिष्ट संघटक योजना (08)-राज्य सड़क विकास निधि से पोषित सड़कें(एमडीआर) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय (आयोजना)	5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 04-जिला एवं अन्य सड़कें 796-जनजातीय क्षेत्र उपयोजना (08)-राज्य सड़क विकास निधि से पोषित सड़कें(एमडीआर) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय (आयोजना)

SRF-RR works

Gen	SC	ST
5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 04-ग्रामीण सड़कें 800-अन्य सड़कें (23)-राज्य सड़क विकास निधि से पोषित सड़कें(आरआर) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय (आयोजना)	5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 04-ग्रामीण सड़कें 789-अनुसूचित जातियों के लिए विशिष्ट संघटक योजना (18)-राज्य सड़क विकास निधि से पोषित सड़कें(आरआर) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय (आयोजना)	5054-सड़कों एवं सेतुओं पर पूंजीगत परिव्यय 04-ग्रामीण सड़कें 796-जनजातीय क्षेत्र उपयोजना (13)-राज्य सड़क विकास निधि से पोषित सड़कें(आरआर) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय (आयोजना)

Urban Road Budget Head

5054-सड़कों तथा सेतुओं पूंजीगत परिव्यय 04-जिला एवं अन्य सड़कें 800-अन्य व्यय (04) शहरी सड़कें 74-सड़कों तथा पुलों का निर्माण कार्य	5054-सड़कों तथा सेतुओं पूंजीगत परिव्यय 04-जिला एवं अन्य सड़कें 789-अनुसूचित जातियों के लिए विशिष्ट संघटक योजना (03)- शहरी सड़कें 74-सड़कों तथा पुलों का निर्माण कार्य	5054-सड़कों तथा सेतुओं पूंजीगत परिव्यय 04-जिला एवं अन्य सड़कें 796-जनजातीय क्षेत्र उपयोजना (03)- शहरी सड़कें 74-सड़कों तथा पुलों का निर्माण कार्य

वित्त विभाग की आईडी संख्या 1020002440 दिनांक 14.9.2020 एवं प्रशासनिक विभाग की आईडी संख्या /उप मुख्यमंत्री /सार्तोवि/2019 दिनांक 19.5.2020 के अनुत्तरण में निम्न शर्तों के साथ जारी की जा रही है

(1) राशि का व्यय बजट प्रावधान की सीमा में करना सुनिश्चित किया जावेगा।
(2) निविदा आमन्त्रण से पूर्व यह सुनिश्चित किया जावेगा कि प्रस्तावित कार्य पूर्व में किसी अन्य योजना में स्वीकृत नहीं है।
(3) प्रस्तावित कार्य PWF&AR, RTPP Act/Rules, वित्तीय नियमों/ योजना के दिशा-निर्देशों तथा निर्धारित गाइडलाईन के अनुसार कराया जाना सुनिश्चित किया जावेगा।
(4) प्रस्तावित कार्यों के निष्पादन में समय-समय पर राज्य सरकार द्वारा जारी पत्रों में वर्णित दिशा-निर्देशों/शर्तों की पूर्ण पालना सुनिश्चित की जावेगी।
(5) यह सुनिश्चित किया जावे की निविदा आमन्त्रण से पूर्व प्रस्तावित कार्यों की ड्राइंग एवं डिजाइन अनुमोदित करा ली है, तथा अधिग्रहण की आवश्यकता होने पर भूमि अधिग्रहित कर ली गई है।
(6) निविदा आमन्त्रण से पूर्व चुनाव आदर्श आचार संहिता लागु नही है, यह सुनिश्चित कर लिया जावें।

कार्यालय मुख्य अभियन्ता, सार्वजनिक निर्माण विभाग, राजस्थान, जयपुर।

एफ- 1 (85)/A&F/Sec-II/2020-21- डी -52 दिनांक 9/10/20

प्रतिलिपि निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

1. अति. मुख्य अभियंता सा.नि.वि. संभाग -
2. अधीक्षण अभियन्ता सा.नि.वि. वृत्त
3. अधिशासी अभियन्ता खण्ड
4. मु. अभि0 (प्रा.) अधीक्षण अभियन्ता (प्रशा)/उपनिदेशक, सांख्यिकी/बजट लिपिक (पश्च)/कम्पाईलेशन लिपिक, मुख्य अभियन्ता कार्यालय, सा.नि.वि. राजस्थान, जयपुर

तकमीने में कार्य के विरुद्ध व्यय करने में माहवार खेलों में शामिल करते समय भविष्य में स्वीकृति से संबंधित सभी संदर्भों में कार्य का शीर्ष नम्बर जैसा कार्य को आवंटित किया गया है व कार्य के विवरण के समक्ष अंकित किया गया है वैसा ही बिना बदलाव के लिखा जावे। उक्त कार्यों की राशि पर प्रारेटा (प्रतिभार) सहित है। व्यय आवंटित बजट सीमा तक ही किया जावे।

9/10/2020
(संजीव माथुर)
मुख्य अभियंता एवं अतिरिक्त सचिव,
सा.नि.वि. राज. जयपुर

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

CERTIFICATE FOR CORRECTNESS OF ESTIMATE

It is certifed that I/We have checked Estimate of above work as per Road BSR PWD Rural Circle, Jaipur effective from June, 2019 and NH BSR effective from April, 2019 with all subsequent corrigendum for road works. The rates, nomenclature & calculation checked by me and found correct.

ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

EXECUTIVE ENGINEER
PWD DN. KOTPUTLI

NAME OF WORK :

RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

CERTIFICATE

1 **"Certified that no land acquition is required and land needed for the project is available free of all incumberences."**

2 "Certified that **No shifting of utilities** is involved in the proposed work."

3 "Certified that **no requirement of cutting of trees** is required for the proposed work."

4 "Certified that no part of road work already sanctioned / proposed in other schemes".

5 "Certified that **rates, nomenclature and all calculations** have been cheked and found correct".

6 "Certified that all **items of Road Safety and Development works** have been included in the estimate at black spots".

7 In this reach widening is proposed from 3.0/3.75/5.50 mtr. To 7.00 mtr. Width as well as 60mm DBM and 30mm BC is taken for strengthening and make the uniformity of road the surface because of importance of the roads.

8 Certifed that the road passes through forest area in 4.00 Km Length between Viratnagar and Teori in which Principal approval will be taken from the forest department.

9 Certifed that this project Km. 7/200 to 7/600, 11/700 to 15/300 and 21/500 to 23/100 is under DLP. On these chainages work will be done after expunging the DLP period of contractor.

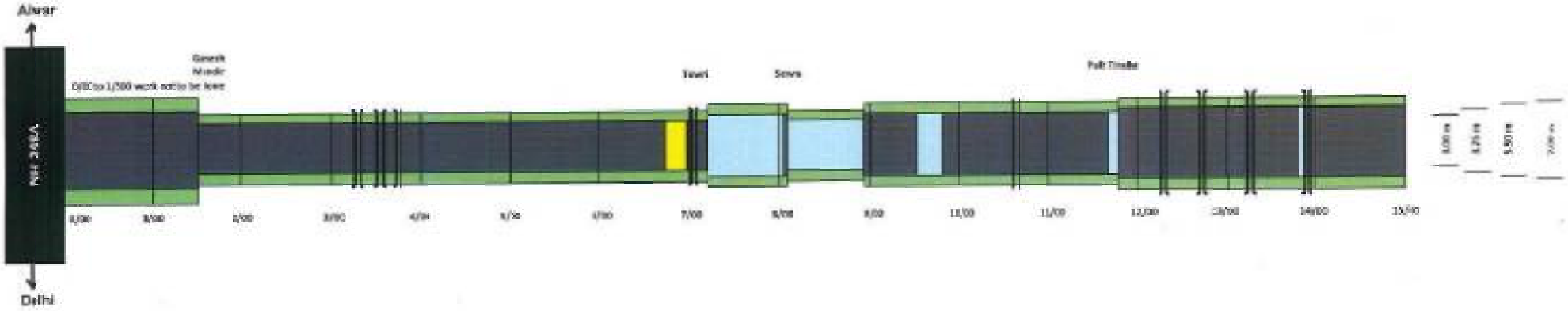
ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

EXECUTIVE ENGINEER
PWD DN. KOTPUTLI

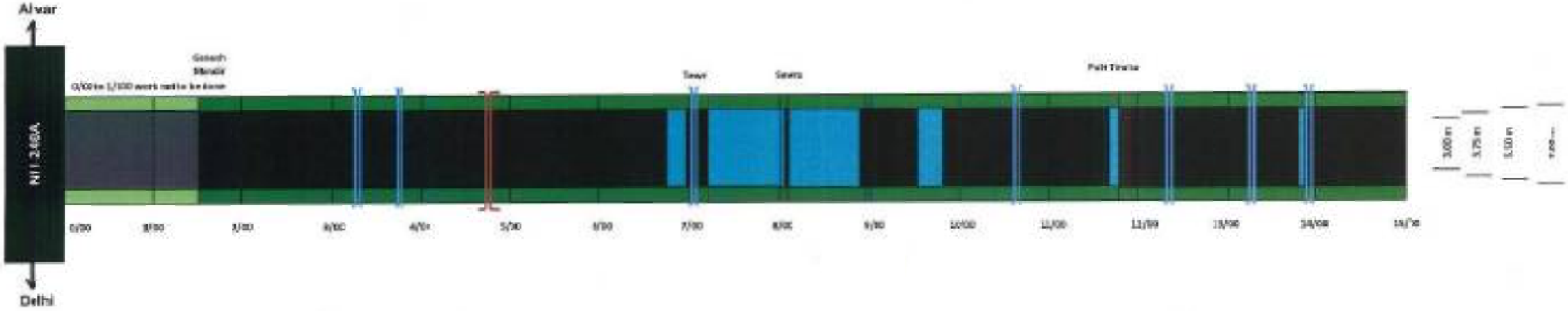
"Linear Chart"

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

Existing



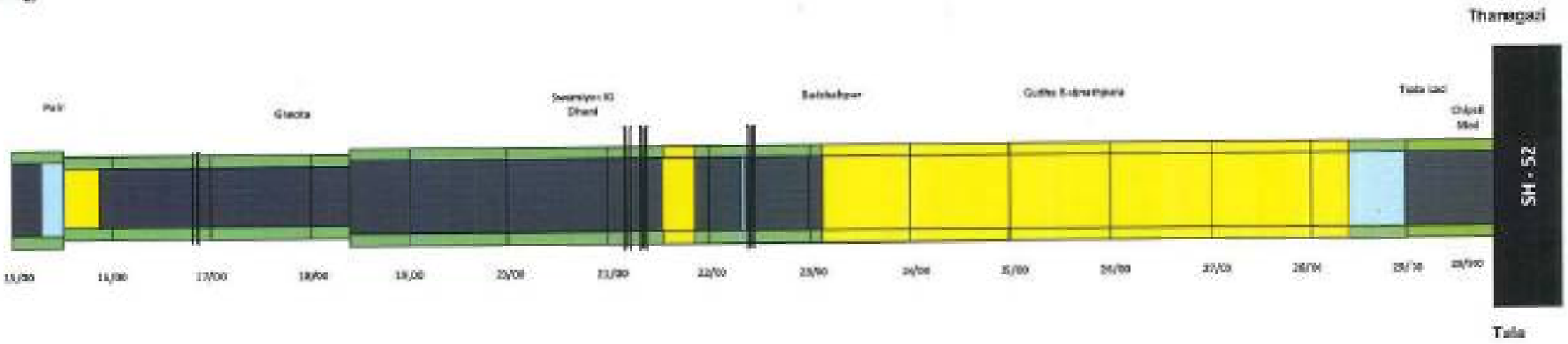
Proposed



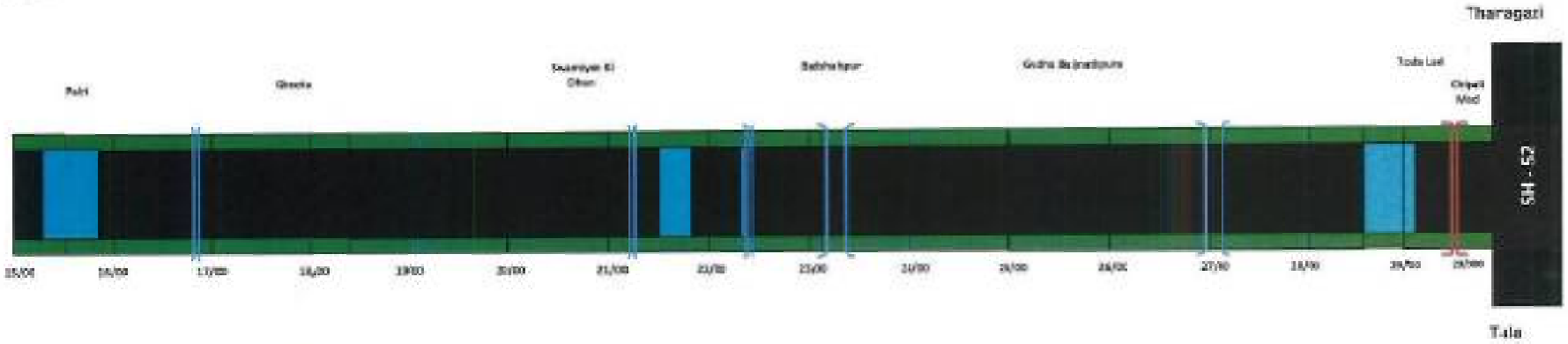
"Linear Chart"

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

Existing



Proposed



Existing Kaccha		8	Proposed BT		
Existing BT Road Pelri		9	Proposed GSB Berms		
Existing CC Pavement		10	Proposed C.C.		
Existing GSB Berms		11	Proposed FCW	][	
Existing FCW	][	12	Proposed Slab Culvert	]C[	
Existing HPC	)C(	13	Proposed Pipe Culvert		

Assistant Engineer

PWD S JB DN. VRATNAGAR-I

GENERAL ABSTRACT

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

S.No.	Particular	Amount (Rs.)
1	PART - A : ROAD WORK	208165805=00 ~~208647744.00~~
2	PART - B : PROTECTION WORK	12544005=00 ~~42084280.00~~
3	PART - C : HPC 1000 MM DIA 2 ROW	3239451.00
4	PART - D : SYPHON	556704.00
5	PART - E : FLUSH CAUSEWAY	22660779.00
6	PART - F : SLAB CULVERT 1 SPAN X 6 MTR.	2684062.00
7	PART - G : SLAB CULVERT 2 SPAN X 6 MTR.	3678373.00
8	PART - H : ROAD FURNITURE	5478382.00
	Total	25900756/-00 ~~**260000755.00**~~
	Add. : 2.5% for Contingency & Quality Control	6475189=00 ~~6475244.00~~
	Total	265482730=00 ~~**265484999.00**~~
	Add. : 13% for Prorata Charges	34512758=00 ~~34513050.00~~
	Total	299995508=00 ~~**299998049.00**~~
	Say	**Rs. 3000.00 LACS**

ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

EXECUTIVE ENGINEER
PWD DN. KOTPUTLI

SUPERINTENDING ENGINEER
PWD RURAL CIRCLE, JAIPUR

No. 251 Dated 28/10/2024
Technically Sanctioned for Rs. 3000.00 Lac
In words Three thousand lacs
only

Addl. Chief Engineer
PWD Zone II Jaipur

GENERAL ABSTRACT

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

S.No.	Particular	Amount (Rs.)
1	PART - A : ROAD WORK	208165805.00
2	PART - B : PROTECTION WORK	12544005.00
3	PART - C : HPC 1000 MM DIA 2 ROW	3239451.00
4	PART - D : SYPHON	556704.00
5	PART - E : FLUSH CAUSEWAY	22660779.00
6	PART - F : SLAB CULVERT 1 SPAN X 6 MTR.	2684062.00
7	PART - G : SLAB CULVERT 2 SPAN X 6 MTR.	3678373.00
8	PART - H : ROAD FURNITURE	5478362.00
	Total	**259007561.00**
	Add. : 2.5% for Contingency & Quality Control	6475189.00
	Total	**265482750.00**
	Add. : 13% for Prorata Charges	34512758.00
	Total	**299995508.00**
	Say	**Rs. 3000.00 LACS**

ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

EXECUTIVE ENGINEER
PWD DN. KOTPUTLI

SUPERINTENDING ENGINEER
PWD RURAL CIRCLE, JAIPUR

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

ABSTRACT

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	2.2 (II) (A)	Clearing and grubbing road land including uprooting wild vegetation, grass, bushes, shrubs, saplings and trees of girth upto 300 mm, removal of stumps of such trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, upto a lead of 1000 m including removal and disposal of top organic soil not exceeding 150 mm in thickness as per MoRTH Specification Clause 201.By Mechanical Means In area of non-thorny jungle	17.04	P.Hect	12402.00	211330.00
2	3.5 (ii)	Excavation for roadway in soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 m, including trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections.	34042.74	P.Cum	24.00	817026.00
3	3.8 (ii)	Excavation for roadway in ordinary rock by deploying a dozer D-50 including cutting and pushing the cut earth to site of embankment upto a distance of 100 m (average lead 50 m), trimming bottom and side slopes in accordance with the requirements of lines, grades and cross-sections with lift upto 1.5 m.	16358.39	P.Cum	30.00	490752.00
4	3.4 (ii)	Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300-1 and 300-2 with a lead upto 50 m as per MoRTH Specification Clause 305.3	107187.35	P.Cum	54.00	5788117.00

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
5	3.3	Construction of embankment with approved materials deposited at site obtained from roadway cutting and excavation from drain and foundation or other structures graded and compacted to meet requirement of Tables 300-1 and 300-2 as per MoRTH Specification Clause 305.3 Deduct if excavated earth as per item No. 3.5 (ii) is used and pushed for filling in embankment.	34042.74	P.Cum	35.00	1191496.00
6	3.15 (i)	Loosening, Levelling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Tables 300-1 and 300-2 for embankment construction as per MoRTH Specification Clause 305.3.4	16188.75	P.Cum	12.50	202359.00
7	3.2	Scarifying Existing Bituminous Surface to a Depth of 150 mm by Mechanical Means Scarifying the existing bituminous road surface to a depth of 150 mm and disposal of scarified material with a lift upto 3 m and lead upto 1000 m as per MoRTH Specification Clause 305.4.3	49273.53	P.Sqm	7.00	344915.00
8	4.2 (i)	Providing laying spreading and compacting specified graded sand, gravel (crushed stone) as per Table 400-1,400-2 or any other course material as per design mix, as per CBR in sub base course including premixing the material at OMC in wet mix plant, carriage of mixed material spreading in uniform layers with motor grader F.E loader on a prepared base and compacting with vibratory roller to achieve desired density (as per I.S.2720) including all material, labor, machinery, lighting guarding, barricading and maintenance of diversion complete.[MoRTH specification : Clause 401]. By mechanical means. For Grading-I Material.	18503.64	P.Cum	802.00	14839919.00

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
9	4.1 A (iii)	Construction of granular sub-base by providing well graded material, spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per MoRTH Specification Clause 401. For Grading III Material	12496.50	P.Cum	415.00	5186048.00
10	4.6	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400-12 & 400-13 and MoRTH Specification Clause 406. By Mechanical Means with 1 km lead.	34882.93	P.Cum	1147.00	40010721.00
11	4.6 A (i)	Extra rate for carriage of mixed material additional lead from in item 4.6 2nd Km. to 10th Km	34882.93	P.Cum	4.80	167438.00
12	4.6 A (ii)	Extra rate for carriage of mixed material additional lead from in item 4.6 11th Km. to 20th Km	34882.93	P.Cum	2.25	78487.00
13	5.1	Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base(WBM/WMM) including cleaning of road surface and spraying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per MoRTH Specification Clause 502.	168138.00	P.Sqm	23.00	3867174.00
14	5.2 (ii)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer & cleaned with Hydraulic broom as per MoRTH Specification Clause 503.	168138.00	P.Sqm	8.00	1345104.00

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
15	16.16.2	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tones per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH Specifications Clause 505 complete in all respects. Grading - II (19 mm (Nominal Size))	10088.28	P.Cum	5663.00	57129930.00
16	16.17.5	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH Specifications Clause 507 complete in all respects. for Grading-II(13 mm nominal size) Bitumen (VG-30)	5044.14	P.Cum	6551.00	33044161.00
17	16.17-A	Add extra for adding Shreaded Plastic Waste as per Guidelines envisaged in IRC:SP:98:2013 over Item of (Bitumen Concrete) @8% of the Quantity of Bitumen by weight including mixing of aggregate and plastic waste in Hot Mix Plant (the Bitumen content will be as per respective Clause of Morth Specification).	5044.14	P.Cum	288.00	1452712.00

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
18	6.4	Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing.	1672.15	P.Cum	2768.00	4628511.00
19	6.1	Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 602.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design. laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including provision of contraction and expansion, construction joints, applying debonding strips, primer, sealant, dowel bars, near approaches to bridge/culvert and construction joints, admixtures as approved, curing of concrete slabs for 14-days,	6844.25	P.Cum	5460.00	37369605.00

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
		using curing compound and water finishing to lines and grade as per drawing and MoRTH Specification Clause 602 including vaccum dewatering process with all required equipments.				
		TOTAL OF PART - A				208165805.00

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

ABSTRACT

PART - B : PROTECTION WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	11.1 I (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m. dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil. Upto 3 m depth.	3418.80	P.Cum	155.00	529914.00
2	11.4 I (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 10. Nominal mix 1:3:6.	427.35	P.Cum	2677.00	1144016.00
3	11.6 III (ii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:4 cement mortar.	3907.20	P.Cum	2593.00	10131370.00
4	12.2	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRTH specification Clauses 1406 and 2200	2747.25	P.Sqm	76.00	208791.00
5	12.13 (B)	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6. 75 mm thick.	814.00	P.Sqm	321.00	261294.00
6	12.9	Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia AC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and MoRTH specification Clauses 1409, 2204.4, 2206.4 & 2706	4070.00	Each.	66.00	268620.00
		TOTAL OF PART - B				12544005.00

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

ABSTRACT

PART - C : HPC 1000 MM DIA 2 ROW

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	11.1 I (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil. Upto 3 m depth.	525.48	P.Cum	155.00	81449.00
2	11.4 I (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 10. Nominal mix 1:3:6.	76.57	P.Cum	2677.00	204978.00
3	11.4 III (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104. P.C.C. grade M 20. Nominal mix (1:2:4).	292.13	P.Cum	3045.00	889536.00
4	11.6 III (ii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry in 1:4 cement mortar .	419.39	P.Cum	2593.00	1087478.00
5	14.1	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Clause 5.3.7.2 of IRC:89, no fragment weighing less than 25 kg laid dry complete as per drawing and MoRTH specifications Clause 2503.2.	85.11	P.Cum	695.00	59151.00
6	9.5 (B)	Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets as per Clause 2905. 1000 mm dia.	100.00	P.Rmt.	8439.00	843900.00

PART - C : HPC 1000 MM DIA 2 ROW

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
7	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on Stone work.	396.24	P.Sqm	132.00	52304.00
8	12.13 (B)	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6. 75 mm thick.	50.43	P.Sqm	321.00	16188.00
9	15.13	White washing two coats on parapet walls and tree trunks including preparation of surface by cleaning scraping etc. as per MoRTH specifications Clause 800	446.67	P.Sqm	10.00	4467.00
		TOTAL OF PART - C				**3239451.00**

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

ABSTRACT

PART - D : SYPHON

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	11.1 I (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil. Upto 3 m depth.	236.25	P.Cum	155.00	36619.00
2	11.4 I (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 10. Nominal mix 1:3:6.	46.21	P.Cum	2677.00	123704.00
3	9.3 (E)	Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets Clause 2905. 300 mm dia.	375.00	P.Rmt	665.00	249375.00
4	11.6 III (ii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:4 cement mortar.	50.09	P.Cum	2593.00	129883.00
5	12.13 (B)	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6. 75 mm thick.	22.50	P.Sqm	321.00	7223.00

PART - D : SYPHON

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
6	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on Stone work.	75.00	P.Sqm	132.00	9900.00
		TOTAL OF PART - D				556704.00

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

ABSTRACT

PART - E : FLUSH CAUSEWAY **630.00 Mtr.** **12.00 No's**

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	11.1 (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil Upto 3 m depth	2504.25	P.Cum	155.00	388159.00
2	11.4 (I) (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 10 Nominal mix 1:3:6	212.63	P.Cum	2677.00	569211.00
3	11.6 (III) (ii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:4 cement mortar	1426.91	P.Cum	2593.00	3699978.00
4	4.2 (i)	Providing laying spreading and compacting specified graded sand, gravel (crushed stone) as per Table 400-1,400-2 or any other course material as per design mix, as per CBR in sub base course including premixing the material at OMC in wet mix plant, carriage of mixed material spreading in uniform layers with motor grader F.E loader on a prepared base and compacting with vibratory roller to achieve desired density (as per I.S.2720) including all material, labor, machinery, lighting guarding, barricading and maintenance of diversion complete [MoRTH specification : Clause 401]. By mechanical means. For Grading-I Material	1811.48	P.Cum	802.00	1452807.00
5	6.4	Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing.	1098.56	P.Cum	2768.00	3040814.00

PART - E : FLUSH CAUSEWAY

630.00 Mtr. 12.00 No's

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
6	6.1	Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 602.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including provision of contraction and expansion, construction joints, applying debonding strips, primer, sealant, dowel bars, near approaches to bridge/culvert and construction joints, admixtures as approved, curing of concrete slabs for 14-days,	2362.50	P.Cum	5460.00	12899250.00
		using curing compound and water finishing to lines and grade as per drawing and MoRTH Specification Clause 602 including vaccum dewatering process with all required equipments.				
7	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on Stone work.	750.00	P.Sqm	132.00	99000.00
8	7.7	Construction of RCC guide posts of 250 mm dia M25 grade cast-in-situ with 20 mm nominal size aggregate, true to line and grade, tolerance of vertical RCC posts not to exceed 1 in 500 as per drawing and MoRTH Specification Clause 1700 & 1600	840.00	Each	609.00	511560.00
		TOTAL OF PART - E				**22660779.00**

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

ABSTRACT

PART - F : SLAB CULVERT 1 SPAN X 6 MTR. **CHAINAGE 4/800**

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	11.1	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m. dressing of sides and bottom and backfilling in trenches with excavated suitable material.				
a)	I (i)	Ordinary Soil, Upto 3 Mtr Depth	225.97	P.Cum	155.00	35025.00
b)	II	Ordinary rock (Not Requiring blasting) Upto 3 m depth.	225.97	P.Cum	195.00	44064.00
2	11.4 (II) (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 15 Nominal mix (1:2.5:5)	100.09	P.Cum	2887.00	288960.00
3	11.6 III (i)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:3 cement mortar	100.68	P.Cum	2961.00	298113.00
4	12.4 II (i)	Stone masonry in cement mortar for substructure complete as per drawing & MoRTH specification Clauses 1402, 1405 & 2200 Coursed Rubble masonry (2nd sort) In 1:3 cement mortar	356.12	P.Cum	3270.00	1164512.00
5	13.1 (III)	Providing and laying reinforced cement concrete in superstructure as per drawing and MoRTH specifications Clauses 1700, 2302 and 2304 R.C.C. Grade M 30	73.11	P.Cum	4494.00	328556.00
6	13.5	Providing and laying cement concrete wearing course M 30 grade including reinforcement complete as per drawing and MoRTH specifications Clauses 1700 and 2702.2	7.96	P.Cum	8619.00	68564.00
7	13.2	Supplying, fitting, and placing HYSD bar reinforcement in superstructure complete as per drawing and MoRTH specifications Clauses 1009,1600 and 2302	6.77	P.Tonn e	51363.00	347723.00

PART - F : SLAB CULVERT 1 SPAN X 6 MTR. CHAINAGE 4/800

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
8	12.2	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRTH specification Clauses 1406 and 2200	221.60	P.Sqm	76.00	16842.00
9	13.16 (iii)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans, covered with sealant complete as per drawing and MoRTH specifications Clause 2604	1200.00	P.Rmt Per Cm Depth	11.50	13800.00
10	12.9	Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia AC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and MoRTH specification Clauses 1409, 2204.4, 2206.4 & 2706	88.00	Each	66.00	5808.00
11	12.11	Providing and laying filter media with granular crushed aggregates as per specification to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and providing over the entire surface behind abutment, wing wall, return wall to the full height, compacted to firm condition complete as per drawing and MoRTH specification Clause 2204.6 & 2504.2.2	59.40	P.Cum	655.00	38907.00
12	14.1	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Clause 5.3.7.2 of IRC:89, no fragment weighing less than 25 kg laid dry complete as per drawing and MoRTH specifications Clause 2503.2	39.90	P.Cum	695.00	27731.00
13	12.13 B	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6 75 mm thick	17.00	P.Sqm	321.00	5457.00
		TOTAL OF PART - F				**2684062.00**

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

ABSTRACT

PART - G : SLAB CULVERT 2 SPAN X 6 MTR. **CHAINAGE 29/400**

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	11.1	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material.				
a)	I (i)	Ordinary Soil. Upto 3 Mtr Depth	285.17	P.Cum	155.00	44201.00
b)	II	Ordinary rock (Not Requiring blasting) Upto 3 m depth.	285.17	P.Cum	195.00	55608.00
2	11.4 (II) (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 15 Nominal mix (1:2.5:5)	119.03	P.Cum	2887.00	343640.00
3	11.6 III (i)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:3 cement mortar	148.73	P.Cum	2961.00	440390.00
4	12.4 II (i)	Stone masonry in cement mortar for substructure complete as per drawing & MoRTH specification Clauses 1402, 1405 & 2200 Coursed Rubble masonry (2nd sort) In 1:3 cement mortar	436.49	P.Cum	3270.00	1427322.00
5	13.1 (iii)	Providing and laying reinforced cement concrete in superstructure as per drawing and MoRTH specifications Clauses 1700, 2302 and 2304 R.C.C. Grade M 30	123.51	P.Cum	4494.00	555054.00
6	13.5	Providing and laying cement concrete wearing course M 30 grade including reinforcement complete as per drawing and MoRTH specifications Clauses 1700 and 2702.2	14.62	P.Cum	8619.00	125967.00
7	13.2	Supplying, fitting, and placing HYSD bar reinforcement in superstructure complete as per drawing and MoRTH specifications Clauses 1009,1600 and 2302	10.72	P.Tonne	51383.00	550963.00

PART - G : SLAB CULVERT 2 SPAN X 6 MTR. **CHAINAGE 29/400**

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
8	12.2	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRTH specification Clauses 1406 and 2200	301.40	P.Sqm	76.00	22906.00
9	13.16 (iii)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans, covered with sealant complete as per drawing and MoRTH specifications Clause 2604	1800.00	P.Rmt Per Cm Depth	11.50	20700.00
10	12.9	Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia AC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and MoRTH specification Clauses 1409, 2204.4, 2206.4 & 2706	88.00	Each	66.00	5808.00
11	12.11	Providing and laying filter media with granular crushed aggregates as per specification to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and providing over the entire surface behind abutment, wing wall, return wall to the full height, compacted to firm condition complete as per drawing and MoRTH specification Clause 2204.6 & 2504.2.2	59.40	P.Cum	655.00	38907.00
12	14.1	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Clause 5.3.7.2 of IRC:89, no fragment weighing less than 25 kg laid dry complete as per drawing and MoRTH specifications Clause 2503.2	59.64	P.Cum	695.00	41450.00
13	12.13 D	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6 75 mm thick	17.00	P.Sqm	321.00	5457.00
		TOTAL OF PART - G				**3678373.00**

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

ABSTRACT

PART - H : ROAD FURNITURE

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	R-10.10	Reinforced cement concrete M15 grade kilometre stone/local stone of standard design as per IRC:8 fixing in position including painting and printing, etc as per drawing and MoRTH Specification Clause 801				
(a)	10.10.1	5th Kilometre Stone (precast)	6.00	Each	2427.00	14562.00
(b)	10.10.2	Ordinary Kilometer Stone (Precast)	25.00	Each	1439.00	35975.00
(c)	10.10.3	200 m stone (precast)	116.00	Each	339.00	39324.00
2	10.2 A (I) (i)	Providing and fixing of retro-reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 801.3.1 fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per drawings and MoRTH Specification Clause 801 900 mm equilateral triangle.	50.00	Each	4772.00	238600.00

PART - H : ROAD FURNITURE

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
3	10.25	Providing and Erecting typical Citizen's information Board as per approved drawing & specification made of two MS sheet of 1.6 mm thick each of size 900mm x 750mm stiffend by angle iron 25mmx25mm x 3mm all around the plate & plates fixed on frame of 75mm dia pipe of 12 SWG sheet (vertical post 3050 mm with angle holdfasts and horizontal member 900mm) to be joined by embedded in cement concrete M-15 grade of block of 600mmx 600mm x 750 mm size below ground level as per enclosed drawings & as directed by Engineering incharge. All MS will be stove anmeled on both side lettering. Figuring and border will be with ready mixed synthethic enamel paint of superior quality in required shade and colour etc complete in all respect. All sections of framed post and steel tube will be painted with primer and two coat of epoxy paint as per drawing and as per Specification.	6.00	Each	8451.00	50706.00
4	10.3 A (i)	Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 801.3.1. fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 x 450 x 600 mm, 600 mm below ground level as per approved drawing and MoRTH Specification Clause 801. Direction and Place Identification signs upto 0.9 sqm size board	12.96	P.Sqm	10968.00	142145.00

PART - H : ROAD FURNITURE

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
5	10.22	Providing and fixing Mukhya Mantri Sadak Yojana/ Mahatma Gandhi Rajya Sadak Yojana informatory sign board with logo for roads funded by State road fund having M.S. Definition plate of 1.60 mm thickness frame to steel hollow dsection of 75mm x 75mm, 2.5m long stove enamelled paint with hold fast including paint logo as per approved design and colours. The logo shall be made out of 1.6mm thick circular plate duly framed with MS angle 25x25x5 mm on back and fix on 1200mm x 150mm rectangular steel base plate 1.6mm thick, the base of circular shall be plain at the junction of base plate. The size of definition plate shall be 1500x600mm and embedding the posts by M-15 cement concrete block 45 cm x 45 cm x 60 cm, 60 cm below ground level including lettering / writing and painting etc. complete in all respect.as per MoRTH Specification Clause 801.	4.00	Each	7774.00	31096.00
6	10.21	Marking Centre Line and stop lines etc. on road as per IRC pattern with thermoplastic paint of approved quality and make without glass beads laid on the road surface at temperature 160" C with a special applicator machine complete with a special applicator machine complete with labour material and traffic diversion arrangements.	8559.20	P.Sqm	485.00	4151212.00
7	16.63	Supplying of Cat's Eye made of aluminium alloy size 75x100x22 mm having 21 biconvex lenses embedded in circular disk of ABS plastic on each side.	1326.00	Each	220.00	291720.00
8	16.79	Labour charges for fixing of Cat's Eye as per MoRTH specification excluding cost of Cat's Eye	1326.00	Each	7.00	9282.00
9	NH 8.37	Supply of Chevron sign of size 75x60 cm made out of aluminum sheet 2 mm thick with fixing provision on M.S. angle iron post 50x50x6 mm 3 M long screwed with stainless steel nut bolts of 8 M dia, plate is covered by high intensity grade yellow retro-reflective sheeting and black screen printed arrow on Retro Reflective Sheet, complete in all respect. Comp. in all ,espect duly post painted in alternate band of Black/White synthetic enamel paint & hold fast at bottom	40.00	Each	5865.00	234600.00

PART - H : ROAD FURNITURE

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
10	NH 8.14	Installation of sign board having the post like mandatory cautionary & informatory board includes excavation, cement concrete 1:5:10 (30X30X60) cm and transportation complete.	40.00	Each	357.00	14280.00
11	16.71	Construction of Foundation / Inaugration Pedastal in 23 cm thick Brick masonry in CM 1:4 of size 1.20m x 1.80m above ground level with adequate foundation including providing and fixing of Granite stone of size 0.75m x0.60m with engraving letters and figures,cement plaster,white washing etc. complete as per direction of Engineer in charge.	2.00	Each	9470.00	18940.00
12	10.24 (ii)	Providing and laying rounded hump type speed breakers for crossing speed 25 km/h as per IRC design including providing and applying bitumen emulsion tack coat, making speed breaker in designed profile with bituminous macadam, providing seal coat type B for sealing the voids and marking chequered pattern with thermoplastic paint complete as per IRC : 99-1988 5.0 meter wide and 10 cm high for heavy truck and bus traffic	70.00	P.Rmt	2942.00	205940.00
		TOTAL OF PART - H				**5478382.00**

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAIL & ABSTRACT

PART - A : ROAD WORK

S. No.	BSR Ref.	ITEM	Measurement	QTY.	UNIT
1	2	3	4	5	6
1	2.2 (II) (A)	Clearing and grubbing road land including uprooting wild vegetation, grass, bushes, shrubs, saplings and trees of girth upto 300 mm, removal of stumps of such trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, upto a lead of 1000 m including removal and disposal of top organic soil not exceeding 150 mm in thickness as per MoRTH Specification Clause 201.By Mechanical Means In area of non-thorny jungle			
			2 x 28400.00 x 3.00 / 10000.0 =	17.04	
				17.04	Hect
2	3.5 (ii)	Excavation for roadway in soil by mechanical means including cutting and pushing the earth to site of embankment upto a distance of 100 m, including trimming bottom and side slopes in accordance with requirements of lines, grades and cross-sections.			
		For BT			
		Widening 3.00 to 7.00 mtr.	1 x 2.00 x 7635.00 x 2.50 x 0.25 =	9543.75	
		Widening 3.75 to 7.00 mtr.	1 x 2.00 x 7795.00 x 2.50 x 0.25 =	9743.75	
		Widening 5.50 to 7.00 mtr.	1 x 2.00 x 3319.00 x 2.50 x 0.25 =	4148.75	
		For CC			
		Widening 3.00 to 7.00 mtr.	1 x 2.00 x 885.00 x 2.50 x 0.25 =	1106.25	
		Widening 3.75 to 7.00 mtr.	1 x 2.00 x 1560.00 x 2.50 x 0.25 =	1950.00	
		Widening 5.50 to 7.00 mtr.	1 x 2.00 x 391.00 x 2.50 x 0.25 =	488.75	
		As per level sheet	=	7061.49	
			=	**34042.74**	Cum
3	3.8 (ii)	Excavation for roadway in ordinary rock by deploying a dozer D-50 including cutting and pushing the cut earth to site of embankment upto a distance of 100 m (average lead 50 m), trimming bottom and side slopes in accordance with the requirements of lines, grades and cross-sections with lift upto 1.5 m.			
		As per level sheet Km. 2/00 to 7/00	=	16358.386	
			=	**16358.386**	Cum
4	3.4 (ii)	Construction of embankment with approved material obtained from borrow pits with a lift upto 1.5 m, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300-1 and 300-2 with a lead upto 50 m as per MoRTH Specification Clauce 305.3			
		As per level sheet	=	157588.472	
		Less Qty. as per Item No. 2	=	-50401.126	
			=	**107187.346**	Cum

PART - A : ROAD WORK

S. No.	BSR Ref.	ITEM	Measurement		QTY.	UNIT
1	2	3	4		5	6
5	3.3	Construction of embankment with approved materials deposited at site obtained from roadway cutting and excavation from drain and foundation or other structures graded and compacted to meet requirement of Tables 300-1 and 300-2 as per MoRTH Specification Clause 305.3 Deduct if excavated earth as per item No. 3.5 (ii) is used and pushed for filling in embankment.				
		Qty. as per Item No. 2		=	34042.74	
				=	**34042.74**	Cum
6	3.15 (i)	Loosening, Levelling and Compacting original ground supporting embankment to facilitate placement of first layer of embankment, scarified to a depth of 150 mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Tables 300-1 and 300-2 for embankment construction as per MoRTH Specification Clause 305.3.4				
		For BT				
		Widening 3.00 to 7.00 mtr.	1 x 2.00 x 7635.00 x 2.50 x 0.15	=	5726.25	
		Widening 3.75 to 7.00 mtr.	1 x 2.00 x 7795.00 x 2.50 x 0.15	=	5846.25	
		Widening 5.50 to 7.00 mtr.	1 x 2.00 x 3319.00 x 2.50 x 0.15	=	2489.25	
		For CC				
		Widening 3.00 to 7.00 mtr.	1 x 2.00 x 885.00 x 2.50 x 0.15	=	663.75	
		Widening 3.75 to 7.00 mtr.	1 x 2.00 x 1560.00 x 2.50 x 0.15	=	1170.00	
		Widening 5.50 to 7.00 mtr.	1 x 2.00 x 391.00 x 2.50 x 0.15	=	293.25	
				=	**16188.75**	Cum
7	3.2	Scarifying Existing Bituminous Surface to a Depth of 150 mm by Mechanical Means Scarifying the existing bituminous road surface to a depth of 150 mm and disposal of scarified material with a lift upto 3 m and lead upto 1000 m as per MoRTH Specification Clause 305.4.3				
		Widening 3.00 to 7.00 mtr.	1 x 7635.00 x 3.00	=	22905.00	
		Widening 3.75 to 7.00 mtr.	1 x 7795.00 x 3.75	=	29231.25	
		Widening 5.50 to 7.00 mtr.	1 x 3319.00 x 5.50	=	18254.50	
				=	70390.75	
			70390.75 x 70%	=	**49273.53**	Sqm
8	4.2 (i)	Providing laying spreading and compacting specified graded sand, gravel (crushed stone) as per Table 400-1,400-2 or any other course material as per design mix, as per CBR in sub base course including premixing the material at OMC in wet mix plant, carriage of mixed material spreading in uniform layers with motor grader F.E loader on a prepared base and compacting with vibratory roller to achieve desired density (as per I.S.2720) including all material, labor, machinery, lighting guarding, barricading and maintenance of diversion complete.[MoRTH specification : Clause 401]. By mechanical means. For Grading-I Material.				
		For BT				
		Widening 3.00 to 7.00 mtr.	2 x 7635.00 x 2.15 x 0.15	=	4924.58	
		Widening 3.75 to 7.00 mtr.	2 x 7795.00 x 1.80 x 0.15	=	4209.30	
		Widening 5.50 to 7.00 mtr.	2 x 3319.00 x 0.90 x 0.15	=	896.13	
		Kutcha Track to 7.00 Mtr.	1 x 5110.00 x 7.30 x 0.15	=	5595.45	
		For Ramp	20 x 15.00 x 4.05 x 0.15	=	182.25	
		For CC				
		Widening 3.00 to 7.00 mtr.	2 x 885.00 x 2.15 x 0.15	=	570.83	
		Widening 3.75 to 7.00 mtr.	2 x 1560.00 x 1.80 x 0.15	=	842.40	
		Widening 5.50 to 7.00 mtr.	2 x 391.00 x 0.90 x 0.15	=	105.57	

PART - A : ROAD WORK

S. No.	BSR Ref.	ITEM	Measurement		QTY.	UNIT
1	2	3	4		5	6
		Katcha Track to 7.00 mtr.	1 x 1075.00 x 7.30 x 0.15	=	1177.13	
				=	**18503.64**	Cum
9	4.1 A (iii)	Construction of granular sub-base by providing well graded material, spreading in uniform layers with Tractor Mount Grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with smooth wheel roller to achieve the desired density, complete as per MoRTH Specification Clause 401. For Grading III Material				
			2 x 27770.00 x 1.50 x 0.15	=	12496.50	
				=	**12496.50**	Cum
10	4.6	Providing, laying, spreading and compacting graded stone aggregate to **wet mix macadam** specification including premixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400-12 & 400-13 and MoRTH Specification Clause 406. By Mechanical Means with 1 km lead.				
		For BT Work				
		Widening 3.00 to 7.00 mtr.	2 x 7635.00 x 2.000 x 0.10	=	3054.00	
			1 x 7635.00 x 7.000 x 0.15	=	8016.75	
		Widening 3.75 to 7.00 mtr.	2 x 7795.00 x 1.625 x 0.10	=	2533.38	
			1 x 7795.00 x 7.000 x 0.15	=	8184.75	
		Widening 5.50 to 7.00 mtr.	2 x 3319.00 x 0.750 x 0.10	=	497.85	
			1 x 3319.00 x 7.000 x 0.15	=	3484.95	
		Kutcha Track to 7.00 Mtr.	1 x 6110.00 x 7.000 x 0.25	=	8942.50	
		For Ramp	20 x 15.00 x 3.750 x 0.15	=	168.75	
				=	**34882.93**	Cum
11	4.6 A (i)	Extra rate for carriage of mixed material additional lead from in item 4.6 2nd Km. to 10th Km				
		Qty. as per Item No. 10		=	34882.93	
				=	**34882.93**	Cum
12	4.6 A (ii)	Extra rate for carriage of mixed material additional lead from in item 4.6 11th Km. to 20th Km				
		Qty. as per Item No. 10		=	34882.93	
		Lead 15 Km.		=	**34882.93**	Cum
13	5.1	Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base(WBM/WMM) including cleaning of road surface and spraying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per MoRTH Specification Clause 502.				
			1 x 23859.00 x 7.00	=	167013.00	
		For Ramp	20 x 15.00 x 3.75	=	1125.00	
				=	**168138.00**	Sqm

PART - A : ROAD WORK

S. No.	BSR Ref.	ITEM	Measurement		QTY.	UNIT
1	2	3	4		5	6
14	5.2 (ii)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer & cleaned with Hydraulic broom as per MoRTH Specification Clause 503.	1 x 23859.00 x 7.00	=	167013.00	
		For Ramp	20 x 15.00 x 3.75	=	1125.00	
					168138.00	Sqm
15	16.16.2	Providing and laying dense graded bituminous macadam with 100 120 TPH batch type HMP producing an average output of 75 tones per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH Specifications Clause 505 complete in all respects. Grading - II (19 mm (Nominal Size))	1 x 23859.00 X 7.00 x 0.060	=	10020.78	
		For Ramp	20 x 15.00 x 3.75 x 0.060	=	67.50	
					10088.28	Cum
16	16.17.5	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH Specifications Clause 507 complete in all respects. for Grading-II(13 mm nominal size) Bitumen (VG 30)	1 x 23859.00 x 7.000 x 0.03	=	5010.39	
		For Ramp	20 x 15.00 x 3.75 x 0.03	=	33.75	
					5044.14	Cum
17	16.17-A	Add extra for adding Shreaded Plastic Waste as per Guidelines envisaged in IRC:SP:98:2013 over item of (Bitumen Concrete) @8% of the Quantity of Bitumen by weight including mixing of aggregate and plastic waste in Hot Mix Plant (the Bitumen content will be as per respective Clause of Morth Specification).				
		Qty. as per Item No. 16		=	5044.14	
				=	5044.14	Cum

S. No.	BSR Ref.	ITEM	Measurement								QTY.	UNIT
1	2	3	4								5	6
18	6.4	Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing.										
		For CC Work										
		Widening 3.00 to 7.00 mtr.	2	x	885.00	x	2.00	x	0.100	=	354.00	
		Widening 3.75 to 7.00 mtr.	2	x	1560.00	x	1.625	x	0.100	=	507.00	
		Widening 5.50 to 7.00 mtr.	2	x	391.00	x	0.75	x	0.100	=	58.65	
		Katcha Track to 7.00 mtr.	1	x	1075.00	x	7.00	x	0.100	=	752.50	
										=	**1672.15**	Cum
19	6.1	Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 602.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including provision of contraction and expansion, construction joints, applying debonding strips, primer, sealant, dowel bars, near approaches to bridge/culvert and construction joints, admixtures as approved, curing of concrete slabs for 14-days, using curing compound and water finishing to lines and grade as per drawing and MoRTH Specification Clause 602 including vaccum dewatering process with all required equipments.										
		Widening 3.00 to 7.00 mtr.	1	x	885.00	x	7.00	x	0.250	=	1548.75	
		Widening 3.75 to 7.00 mtr.	1	x	1560.00	x	7.00	x	0.250	=	2730.00	
		Widening 5.50 to 7.00 mtr.	1	x	391.00	x	7.00	x	0.250	=	684.25	
		Katcha Track to 7.00 mtr.	1	x	1075.00	x	7.00	x	0.250	=	1881.25	
										=	**6844.25**	Cum

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAIL & ABSTRACT

PART - B : PROTECTION WORK

S. NO.	BSR Ref.	ITEM	Measurement		Qty	Unit
1	2	3	4		5	6
1	11.1 I (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil. Upto 3 m depth.				
			1 x 2035.00 x 1.40 x 1.20	=	3418.80	Cum
				=	3418.80	Cum
2	11.4 I (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 10. Nominal mix 1:3:6.				
			1 x 2035.00 x 1.40 x 0.15	=	427.35	Cum
				=	427.35	Cum
3	11.6 III (ii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:4 cement mortar.				
			$1 \times 2035.00 \times \frac{1.20 + 0.40}{2} \times 2.40$	=	3907.20	Cum
				=	3907.20	Cum
4	12.2	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRTH specification Clauses 1406 and 2200				
			1 x 2035.00 x 1.35	=	2747.25	Sqm
				=	2747.25	Sqm

PART - B : PROTECTION WORK

S. NO.	BSR Ref.	ITEM	Measurement		Qty	Unit
1	2	3	4		5	6
5	12.13 (B)	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6. 75 mm thick.				
			1 x 2035.00 x 0.40	=	814.00	Sqm
				=	814.00	Sqm
6	12.9	Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia AC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and MoRTH specification Clauses 1409, 2204.4, 2206.4 & 2706				
			2 x 2035.00	=	4070.00	Each.
				=	4070.00	Each.

ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAIL & ABSTRACT

PART - C : HPC 1000 MM DIA 2 ROW **8 Nos.**

S. No.	BSR Item	Item	Measurement	Unit	Qty.
1	2	3	4	5	6
1	11.1 I (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil. Upto 3 m depth.			
		Face Wall	8 x 1 x 1 x 7.88 x 1.80 x 1.80	204.25	
			8 x 1 x 1 x 7.88 x 1.90 x 2.10	251.53	
		For Pipe	8 x 1 x 1 x 8.80 x 3.30 x 0.30	69.70	
				525.48	Cum
2	11.4 I (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 10. Nominal mix 1:3:6.			
		Face Wall	8 x 1 x 1 x 7.88 x 1.80 x 0.15	17.02	
			8 x 1 x 1 x 7.88 x 1.90 x 0.15	17.97	
		Pipe Bedding	8 x 1 x 1 x 10.50 x 3.30 x 0.15	41.58	
				76.57	Cum
3	11.4 III (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104. P.C.C. grade M 20. Nominal mix (1:2:4).			
		Haunching	$8 \times 1 \times 3.50 \times \frac{11.30 + 10.25}{2} \times 0.80$	241.36	
		Deduction for Pipe	$8 \times 2 \times \frac{3.14}{8} \times 1.23 \times 1.23 \times \frac{11.30 + 10.25}{2}$	-102.37	
				292.13	Cum
4	11.6 III (ii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:4 cement mortar.			
			$8 \times 1 \times 7.88 \times \frac{1.50 + 0.40}{2} \times 3.30$	197.63	
			$8 \times 1 \times 7.88 \times \frac{1.60 + 0.40}{2} \times 3.60$	226.94	
		Parapet	8 x 2 x 7.88 x 0.40 x 0.50	25.22	
		Deduction for Pipe	$8 \times 4 \times \frac{3.14}{4} \times 1.23 \times 1.23 \times \frac{1.00 + 0.60}{2}$	-30.40	
				419.39	Cum

PART - C : HPC 1000 MM DIA 2 ROW — 8 Nos.

S. No.	BSR Item	Item	Measurement	Unit	Qty.
1	2	3	4	5	6
5	14.1	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Clause 5.3.7.2 of IRC:89, no fragment weighing less than 25 kg laid dry complete as per drawing and MoRTH specifications Clause 2503.2.			
		U/S	8 x 1 x 7.88 x 1.50 x 0.30	28.37	
		D/S	8 x 1 x 7.88 x 3.00 x 0.30	56.74	
				85.11	**Cum**
6	9.5 (B)	Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets as per Clause 2905. 1000 mm dia.	8 x 1 x 12.50	**100.00**	**Rmt.**
7	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on Stone work.			
		Head Wall	8 x 2 x 7.88 x 2.00	252.16	
		Parapet	8 x 4 x 7.88 x 0.50	126.08	
			8 x 4 x 0.40 x 0.50	6.40	
			$8 \times 2 \times 2 \times \frac{1.15 + 0.40}{2} \times 2.00$	49.60	
		Deduction for Pipe	$8 \times 4 \times \frac{3.14}{4} \times 1.23 \times 1.23$	-38.00	
				396.24	**Sqm**
8	12.13 (B)	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6. 75 mm thick.	8 x 2 x 7.88 x 0.40	50.43	
				50.43	**Sqm**
9	15.13	White washing two coats on parapet walls and tree trunks including preparation of surface by cleaning scraping etc. as per MoRTH specifications Clause 800	Qty Same as Item No.7+8	446.67	
				446.67	**Sqm**

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA. TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAIL & ABSTRACT

PART - D : SYPHON

Sl. No.	BSR Ref.	Items	Measurement	Qty.	Unit
1	2	3	4	5	6
1	11.1 I (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil. Upto 3 m depth.			
		Face walls	30 x 2 x 1.25 x 0.85 x 0.60 =	38.25	
		Syphon Pipe	30 x 1 x 10.00 x 0.60 x 1.10 =	198.00	
			Total : =	**236.25**	Cum
2	11.4 I (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 10. Nominal mix 1:3:6.			
		Face walls	30 x 2 x 1.25 x 0.85 x 0.15 =	9.56	
		Syphon Pipe Bedding	30 x 1 x 9.20 x 0.60 x 0.15 =	24.84	
		Syphon Pipe Haunches	30 x 1 x 9.30 x 0.60 x 0.20 =	33.48	
			=	67.88	
		Deduction for Pipe	$30 \times 1/2 \times \frac{3.14}{4} \times 0.40 \times 0.40 \times 11.50$ =	-21.67	
			Total : =	**46.21**	Cum
3	9.3 (E)	Providing and laying reinforced cement concrete pipe NP3 for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets Clause 2906. 300 mm dia.			
			30 x 1 x 12.50 =	375.00	Rmt
4	11.6 III (ii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry in 1:4 cement mortar.			
			$30 \times 2 \times 1.25 \times \frac{0.30 + 0.65}{2} \times 1.50$ =	53.44	
		Deduction for Pipe	$30 \times 2 \times \frac{3.14}{4} \times 0.40 \times 0.40 \times \frac{0.48 + 0.41}{2}$ =	-3.35	
				50.09	Cum
5	12.13 (B)	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6. 75 mm thick.			
			30 x 2 x 1.25 x 0.30 =	22.50	Sqm

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAIL & ABSTRACT

PART - D : SYPHON

Sl. No.	BSR Ref.	Items	Measurement	Qty.	Unit
1	2	3	4	5	6
6	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on Stone work.	30 x 2 x 1.25 x 1.00	75.00	Sqm

ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAILED ESTIMATE

PART - E : FLUSH CAUSEWAY

630.00 12 No's

Sl. No.	BSR Item	Description of Item	Measurement	Qty.	Unit
1	2	3	4	5	6
1	11.1 (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil Upto 3 m depth			
		U/s	1 x 1.00 x 630.00 x 1.05 x 1.50	= 992.25	
		D/s	1 x 1.00 x 630.00 x 1.20 x 2.00	= 1512.00	
				= 2504.25	Cum
2	11.4 (I) (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 10 Nominal mix 1:3:6			
		U/s	1 x 1.00 x 630.00 x 1.05 x 0.15	= 99.23	
		D/s	1 x 1.00 x 630.00 x 1.20 x 0.15	= 113.40	
				= 212.63	Cum
3	11.6 (III) (ii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry in 1:4 cement mortar			
		U/s	1 x 1.00 x 630.00 x $\frac{0.85 + 0.40}{2}$ x 1.35	= 531.56	
		D/s	1 x 1.00 x 630.00 x $\frac{1.00 + 0.40}{2}$ x 1.35	= 819.00	
		U/s	12 1 x 2.00 x 10.00 x $\frac{0.85 + 0.40}{2}$ x $\frac{0.00 + 0.50}{2}$	= 37.50	
		D/s	12 1 x 2.00 x 10.00 x $\frac{1.00 + 0.40}{2}$ x $\frac{0.00 + 0.50}{2}$	= 42.00	
			Total	1426.91	Cum
4	4.2 (i)	Providing laying spreading and compacting specified graded sand, gravel (crushed stone) as per Table 400-1,400-2 or any other course material as per design mix, as per CBR in sub base course including premixing the material at OMC in wet mix plant, carriage of mixed material spreading in uniform layers with motor grader F.E loader on a prepared base and compacting with vibratory roller to achieve desired density (as per I.S.2720) including all material, labor, machinery, lighting guarding, barricading and maintenance of diversion complete.[MoRTH specification Clause 401]. By mechanical means. For Grading-I Material.			
		Service Road	12 1 x 1.00 x 100.00 x 4.00 x 0.15	= 720.00	
			1 x 1.00 x 630.00 x $\frac{11.50 + 11.00}{2}$ x 0.15	= 1091.48	
			Total	= 1811.48	Cum

PART - E : FLUSH CAUSEWAY

630.00 12 No's

Sl. No.	BSR Item	Description of Item	Measurement	Qty.	Unit
1	2	3	4	5	6
5	6.4	Construction of **dry lean cement concrete** Sub-base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 13:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing.	1 x 1.00 x 630.00 x $\frac{11.60 + 11.65}{2}$ x 0.15 = 1098.56 Total = 1098.56 Cum		
6	6.1	Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 602.2.2 M30 (Grade), coarse and fine aggregates conforming to IS:383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a concrete mixer of not less than 0.2 cum capacity and appropriate weigh batcher using approved mix design, laid in approved fixed side formwork (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the formwork as per drawing), spreading the concrete with shovels, rakes, compacted using needle, screed and plate vibrators and finished in continuous operation including provision of contraction and expansion, construction joints, applying debonding strips, primer, sealant, dowel bars, near approaches to bridge/culvert and construction joints, admixtures as approved, curing of concrete slabs for 14-days, using curing compound and water finishing to lines and grade as per drawing and MoRTH Specification Clause 602 including vaccum dewatering process with all required equipments.	1 x 1.00 x 630.00 x $\frac{12.50 + 12.50}{2}$ x 0.30 = 2362.50 Total = 2362.50 Cum		
7	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on stone work.	1 x 2.00 x 630.00 x 0.50 = 630.00 12 1 x 4.00 x 10.00 x $\frac{0.50 + 0.00}{2}$ = 120.00 = 750.00 Sqm		
8	7.7	Construction of RCC guide posts of 250 mm dia M25 grade cast-in-situ with 20 mm nominal size aggregate, true to line and grade, tolerance of vertical RCC posts not to exceed 1 in 500 as per drawing and MoRTH Specification Clause 1700 & 1600	1 x 2.00 x 420.00	840.00	Each
		TOTAL			

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAILED ESTIMATE

PART - F : SLAB CULVERT 1 SPAN X 6 MTR. **CHAINAGE 4/800**

Sl. No.	BSR Ref.	Description of Item	Measurement	Qty.	Unit
1	2	3	4	5.00	4.00
1	11.1	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material.			
		Abutment	2 x 14.40 x 5.30 x 2.00 =	305.28	
		Wing wall	4 x 6.00 x 2.88 x 2.00 =	138.24	
		For Bed	2 x 5.20 x 0.90 x 0.90 =	8.42	
			=	451.94	
a)	I (i)	Ordinary Soil, Upto 3 Mtr Depth	**451.94 x 50%** =	225.97	Cum
b)	II	Ordinary rock (Not Requiring blasting) Upto 3 m depth.	**451.94 50%** =	225.97	Cum
2	11.4 (II) (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 15 Nominal mix (1:2.5:5)			
		Abutment	2 x 14.40 x 5.30 x 0.40 =	61.06	
		Wing wall	4 x 6.00 x 2.88 x 0.40 =	27.65	
		For Bed	2 x 5.20 x 0.90 x 0.15 =	1.40	
			1 x 12.80 x 5.20 x 0.15 =	9.98	
			=	100.09	Cum
3	11.6 III (i)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:3 cement mortar			
			2 x 14.00 x 4.50 x 0.40 =	50.40	
		Abutment	2 x (14.00 + 13.20)/2 x (4.50 + 4.10)/2 x 0.40 =	46.78	
		Wing wall	4 x 6.40 x 2.48 x 0.40 =	25.40	
			4 x 6.40 x (2.48 + 2.08)/2 x 0.40 =	23.35	
		For Bed	2 x 5.20 x (0.70 + 0.40)/2 x 0.90 =	5.15	
			=	100.68	Cum

PART - F : SLAB CULVERT 1 SPAN X 6 MTR. CHAINAGE 4/800

Sl. No.	BSR Ref.	Description of Item	Measurement	Qty.	Unit
1	2	3	4	5.00	4.00
4	12.4 II (i)	Stone masonry in cement mortar for substructure complete as per drawing & MoRTH specification Clauses 1402, 1405 & 2200 Coursed Rubble masonry (2nd sort) in 1:3 cement mortar			
		Abutment	2 x (12.80 + 12.00)/2 x (3.10 + 1.30)/2 x 3.50 =	190.96	
		Wing wall	4 x (6.90 + 8.30)/2 x (2.08 + 0.50)/2 x 4.00 =	156.86	
		For Parapet	4 x 8.30 x 0.50 x 0.50 =	8.30	
			=	356.12	Cum
5	13.1 (iii)	Providing and laying reinforced cement concrete in superstructure as per drawing and MoRTH specifications Clauses 1700, 2302 and 2304 R.C.C. Grade M 30			
	A	Abut Bed Plate	2 x 12.00 x 1.30 x 0.50 =	15.60	
		Dirt Wall	2 x 12.00 x 0.30 x 0.50 =	3.60	
		Crush Barrier	2 x 8.60 x (0.175 + 0.450)/2 x 1.10 =	5.91	
			Part A =	**25.11**	
	B	Slab	1 x 12.00 x 8.00 x 0.500 =	48.00	
			Part B =	**48.00**	
			=	**73.11**	Cum
6	13.5	Providing and laying cement concrete wearing course M 30 grade including reinforcement complete as per drawing and MoRTH specifications Clauses 1700 and 2702.2	1 x 11.10 x 8.60 x (0.05 + 0.15 + 0.05)/3 =	7.96	Cum
			=	7.96	Cum
7	13.2	Supplying, fitting, and placing HYSD bar reinforcement in superstructure complete as per drawing and MoRTH specifications Clauses 1009,1600 and 2302			
		Qty. As per Itme No. 5 A	25.11 x 7850.00 x 2% =	3942.27	
		As per Enclosed IRC SP:13 2004 Plate-9	=	2825.00	
			=	6767.27	
			6767.27 / 1000 =	6.77	Tonne
8	12.2	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRTH specification Clauses 1406 and 2200			
		Abutment	2 x 1 x (12.00 + 12.80)/2 x 3.00 =	74.40	
		Wing wall	4 x 1 x (6.90 + 8.30)/2 x 3.75 =	114.00	

PART - F : SLAB CULVERT 1 SPAN X 6 MTR. CHAINAGE 4/800

Sl. No.	BSR Ref.	Description of Item	Measurement					Qty.	Unit
1	2	3	4					5.00	4.00
		Parapet	4 x 2.00 x 8.30 x 0.50					= 33.20	
								= 221.60	Sqm
9	13.16 (III)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans, covered with sealant complete as per drawing and MoRTH specifications Clause 2604							
			2 x 12.00 x 50.00					= 1200.00	
								= 1200.00	Rmt Per Cm Depth
10	12.9	Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia AC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and MoRTH specification Clauses 1409, 2204.4, 2206.4 & 2706							
		Abutment	2 x 2 x 10.00					= 40.00	Nos
		Wing Wall	4 x 2 x 6.00					= 48.00	Nos
								88.00	**Each**
11	12.11	Providing and laying filter media with granular crushed aggregates as per specification to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and providing over the entire surface behind abutment, wing wall, return wall to the full height, compacted to firm condition complete as per drawing and MoRTH specification Clause 2204.6 & 2504.2.2							
			2 x 11.00 x 3.00 x 0.90					= 59.40	Cum
								59.40	**Cum**
12	14.1	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Clause 5.3.7.2 of IRC:89, no fragment weighing less than 25 kg laid dry complete as per drawing and MoRTH specifications Clause 2503.2							
			1 x 12.00 x 5.20 x 0.250					= 15.60	Cum
			1 x 13.50 x 6.00 x 0.300					= 24.30	
								39.90	**Cum**

PART - F : SLAB CULVERT 1 SPAN X 6 MTR. CHAINAGE 4/800

Sl. No.	BSR Ref.	Description of Item	Measurement					Qty.	Unit
1	2	3	4					5.00	4.00
13	12.13 B	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2200.6 75 mm thick	4	x 8.50	x 0.50		=	17.00	Sqm
								17.00	Sqm
		TOTAL							

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAILED ESTIMATE

PART - G : SLAB CULVERT 2 SPAN X 6 MTR. **CHAINAGE 29/400**

Sl. No.	BSR Ref.	Description of Item	Measurement	Qty.	Unit
1	2	3	4	5.00	4.00
1	11.1	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material.			
		Abutment	2 x 14.40 x 5.30 x 2.00 =	305.28	
		Pier	1 x 14.80 x 3.20 x 2.50 =	118.40	
		Wing wall	4 x 6.00 x 2.88 x 2.00 =	138.24	
		For Bed	2 x 5.20 x 0.90 x 0.90 =	8.42	
			=	570.34	
a)	I (i)	Ordinary Soil, Upto 3 Mtr Depth	**570.34** x **50%** =	285.17	Cum
b)	II	Ordinary rock (Not Requiring blasting) Upto 3 m depth.	**570.34** **50%** =	285.17	Cum
2	11.4 (II) (i)	Providing concrete for plain/reinforced concrete in open foundations complete as per drawings and MoRTH specifications Clause 1702, 1703, 2102 & 2104 P.C.C grade M 15 Nominal mix (1:2.5:5)			
		Abutment	2 x 14.40 x 5.30 x 0.40 =	61.06	
		Pier	1 x 14.80 x 3.20 x 0.40 =	18.94	
		Wing wall	4 x 6.00 x 2.88 x 0.40 =	27.65	
		For Bed	2 x 5.20 x 0.90 x 0.15 =	1.40	
			1 x 12.60 x 5.20 x 0.15 =	9.08	
			=	119.03	Cum
3	11.6 III (i)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:3 cement mortar			
			2 x 14.00 x 4.50 x 0.40 =	50.40	
		Abutment	2 x (14.00 + 13.20)/2 x (4.50 + 4.10)/2 x 0.40 =	46.78	
		Pier	1 x 14.40 x 2.80 x 0.65 =	26.21	
			1 x 14.00 x 2.40 x 0.65 =	21.84	
		Wing wall	4 x 6.40 x 2.48 x 0.40 =	25.40	
			4 x 6.40 x (2.48 + 2.08)/2 x 0.40 =	23.35	
		For Bed	2 x 5.20 x (0.70 + 0.40)/2 x 0.90 =	5.15	
			=	140.73	Cum

PART - G : SLAB CULVERT 2 SPAN X 6 MTR. CHAINAGE 29/400

Sl. No.	BSR Ref.	Description of Item	Measurement	Qty.	Unit
1	2	3	4	5.00	4.00
4	12.4 II (i)	Stone masonry in cement mortar for substructure complete as per drawing & MoRTH specification Clauses 1402, 1405 & 2200 Coursed Rubble masonry (2nd sort) in 1:3 cement mortar			
		Abutment	2 x (12.80 + 12.00)/2 x (3.10 + 1.30)/2 x 3.50 =	190.96	
		Pier	1 x (13.70 + 12.90)/2 x (2.00 + 1.20)/2 x 3.50 =	74.48	
			1 x 0.79 x 2.13 x 3.50 =	5.89	
		Wing wall	4 x (6.90 + 8.30)/2 x (2.08 + 0.50)/2 x 4.00 =	156.86	
		For Parapet	4 x 0.30 x 0.60 x 0.60 =	8.30	
			=	436.49	Cum
5	13.1 (iii)	Providing and laying reinforced cement concrete in superstructure as per drawing and MoRTH specifications Clauses 1700, 2302 and 2304 R.C.C. Grade M 30			
	A	Abut Bed Plate	2 x 12.00 x 1.30 x 0.50 =	15.60	
		Dirt Wall	2 x 12.00 x 0.30 x 0.50 =	3.60	
			1 x 12.00 x 1.20 x 0.50 =	7.20	
		Crush Barrier	2 x 8.60 x (0.175 + 0.450)/2 x 1.10 =	5.91	
			Part A =	**32.31**	
	B	Slab	2 x 12.00 x 7.60 x 0.500 =	91.20	
			Part B =	**91.20**	
			=	**123.51**	Cum
6	13.5	Providing and laying cement concrete wearing course M 30 grade including reinforcement complete as per drawing and MoRTH specifications Clauses 1700 and 2702.2	1 x 11.10 x 15.80 x (0.05 + 0.15 + 0.05)/3 =	14.62	Cum
			=	14.62	Cum
7	13.2	Supplying, fitting, and placing HYSD bar reinforcement in superstructure complete as per drawing and MoRTH specifications Clauses 1009,1600 and 2302			
		Qty. As per Itme No. 5 A	32.31 x 7850.00 x 2% =	5072.67	
		As per Enclosed IRC SP:13 2004 Plate-9	2.00 x 2825.00 =	5650.00	
			=	10722.67	
			10722.67 / 1000 =	10.72	Tonne

PART - G : SLAB CULVERT 2 SPAN X 6 MTR. CHAINAGE 29/400

Sl. No.	BSR Ref.	Description of Item	Measurement												Qty.	Unit
1	2	3	4												5.00	4.00
8	12.2	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRTH specification Clauses 1406 and 2200														
		Abutment	2	x	1	x	12.00	+	12.80 / 2	x	3.00			=	74.40	
		Pier	1	x	2	x	12.90	+	13.70 / 2	x	3.00			=	79.80	
		Wing wall	4	x	1	x	6.90	+	8.30 / 2	x	3.75			=	114.00	
		Parapet	4	x	2.00	x	8.30	x	0.50					=	33.20	
														=	301.40	Sqm
9	13.16 (iii)	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans, covered with sealant complete as per drawing and MoRTH specifications Clause 2604														
			3	x	12.00	x	50.00							=	1800.00	
														=	1800.00	Rmt Per Cm Depth
10	12.9	Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia AC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and MoRTH specification Clauses 1409, 2204.4, 2206.4 & 2706														
		Abutment	2	x	2	x	10.00							=	40.00	Nos
		Wing Wall	4	x	2	x	6.00							=	48.00	Nos
														=	**88.00**	**Each**
11	12.11	Providing and laying filter media with granular crushed aggregates as per specification to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and providing over the entire surface behind abutment, wing wall, return wall to the full height, compacted to firm condition complete as per drawing and MoRTH specification Clause 2204.6 & 2504.2.2														
			2	x	11.00	x	3.00	x	0.90					=	59.40	Cum
														=	**59.40**	**Cum**

PART - G : SLAB CULVERT 2 SPAN X 6 MTR. CHAINAGE 29/400

Sl. No.	BSR Ref.	Description of Item	Measurement										Qty.	Unit
1	2	3	4										5.00	4.00
12	14.1	Providing and laying boulder apron for bed protection with stone boulders of minimum size and weight as per Clause 5.3.7.2 of IRC:89, no fragment weighing less than 25 kg laid dry complete as per drawing and MoRTH specifications Clause 2503.2												
			2	x	12.00	x	5.20	x	0.250			=	31.20	Cum
			1	x	15.80	x	6.00	x	0.300			=	28.44	
												=	**59.64**	**Cum**
13	12.13 B	Providing PCC M-20 architectural coping on the top of wing wall, return wall etc. complete as per drawing and MoRTH specification Clauses 1313, 1411 and 2206.6 75 mm thick												
			4	x	8.50	x	0.50					=	17.00	Sqm
												=	**17.00**	**Sqm**
		TOTAL												

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

DETAIL

PART - H : ROAD FURNITURE

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
1	R-10.10	Reinforced cement concrete M15 grade kilometre stone/local stone of standard design as per IRC:8 fixing in position including painting and printing, etc as per drawing and MoRTH Specification Clause 801		
(a)	10.10.1	5th Kilometre Stone (precast)	=	6 Each
(b)	10.10.2	Ordinary Kilometer Stone (Precast)	=	25 Each
(c)	10.10.3	200 m stone (precast)	=	116 Each
2	10.2 A (I) (i)	Providing and fixing of retro-reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 801.3.1 fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per drawings and MoRTH Specification Clause 801 900 mm equilateral triangle.	=	50 Each
3	10.25	Providing and Erecting typical Citizen's information Board as per approved drawing & specification made of two MS sheet of 1.6 mm thick each of size 900mm x 750mm stiffend by angle iron 25mmx25mm x 3mm all around the plate & plates fixed on frame of 75mm dia pipe of 12 SWG sheet (vertical post 3050 mm with angle holdfasts and horizontal member 900mm) to be joined by embedded in cement concrete M-15 grade of block of 600mmx 600mm x 750 mm size below ground level as per enclosed drawings & as directed by Engineering incharge. All MS will be stove anmeled on both side lettering. Figuring and border will	=	6 Each

PART - H : ROAD FURNITURE

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
4	10.3 A (i)	Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of encapsulated lens type reflective sheeting vide Clause 801.3.1. fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M-15 grade cement concrete 450 x 450 x 600 mm, 600 mm below ground level as per approved drawing and MoRTH Specification Clause 801. Direction and Place identification signs upto 0.9 sqm size board		
			12 x 1.20 x 0.90	= 12.96 Sqm
5	10.22	Providing and fixing Mukhya Mantri Sadak Yojana/ Mahatma Gandhi Rajya Sadak Yojana informatory sign board with logo for roads funded by State road fund having M.S. Definition plate of 1.60 mm thickness frame to steel hollow dsection of 75mm x 75mm, 2.5m long stove enamelled paint with hold fast including paint logo as per approved design and colours. The logo shall be made out of 1.6mm thick circular plate duly framed with MS angle 25x25x5 mm on back and fix on 1200mm x 150mm rectangular steel base plate 1.6mm thick, the base of circular shall be plain at the junction of base plate. The size of definition plate shall be 1500x600mm and embedding the posts by M-15 cement concrete block 45 cm x 45 cm x 60 cm, 60 cm below ground level including lettering / writing and painting etc. complete in all respect.as per MoRTH Specification Clause 801.		
				= 4 Each
6	10.21	Marking Centre Line and stop lines etc. on road as per IRC pattern with thermoplastic paint of approved quality and make without glass beads laid on the road surface at temperature 160" C with a special applicator machine complete with a special applicator machine complete with labour material and traffic diversion arrangements.		
		Center Line	23859 x 3/9 x 0.10	= 795.30 Sqm
			2 x 23859.00 x 0.15	= 7157.70 Sqm
		Edge Line	2 x 30.00 x 7.00	= 420.00 Sqm
		Stop Line	14 x 7.00 x 3.80 x0.5	= 186.20 Sqm
				= 8559.20 Sqm

PART - H : ROAD FURNITURE

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
7	16.63	Supplying of Cat's Eye made of aluminium alloy size 75x100x22 mm having 21 biconvex lenses embedded in circular disk of ABS plastic on each side.	23859.00 / 18.00	= 1326.00
				= 1326.00 Each
8	16.79	Labour charges for fixing of Cat's Eye as per MoRTH specification excluding cost of Cat's Eye. Qty. as per Item No. 7		= 1326.00 Each
9	NH 8.37	Supply of Chevron sign of size 75x60 cm made out of aluminum sheet 2 mm thick with fixing provision on M.S. angle iron post 50x50x6 mm 3 M long screwed with stainless steel nut bolts of 8 M dia, plate is covered by high intensity grade yellow retro-reflective sheeting and black screen printed arrow on Retro Reflective Sheet, complete in all respect. Comp. in all respect duly post painted in alternate band of Black/White synthetic enamel paint & hold foot at bottom		= 40.00 = 40.00 Each
10	NH 8.14	Installation of sign board having the post like mandatory cautionary & informatory board includes excavation, cement concrete 1:5:10 (30X30X60) cm and transportation complete. Qty. as per Item No. 9		= 40.00 = 40.00 Each
11	16.71	Construction of Foundation / Inaugration Pedastal in 23 cm thick Brick masonry in CM 1:4 of size 1.20m x 1.80m above ground level with adequate foundation including providing and fixing of Granite stone of size 0.75m x0.60m with engraving letters and figures,cement plaster,white washing etc. complete as per direction of Engineer in charge.		= 2.00 = 2.00 Each

PART - H : ROAD FURNITURE

S. No.	BSR Ref.	Particulars	Measurement				Qty	
1	2	3	4				5	
12	10.24 (ii)	Providing and laying rounded hump type speed breakers for crossing speed 25 km/h as per IRC design including providing and applying bitumen emulsion tack coat, making speed breaker in designed profile with bituminous macadam, providing seal coat type B for sealing the voids and marking chequered pattern with thermoplastic paint complete as per IRC : 99-1988 5.0 meter wide and 10 cm high for heavy truck and bus traffic	10	x	7.00	=	70.00	
						=	**70.00**	**Rmt**

Assistant Engineer
PWD SUB DN. VIRATNAGAR-I

Name of Work : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 5/5054/SRF-MDR/2020-21)

SCOPE OF WORK

S No.	Chainage			Existing												Work not to be done	Proposed															
	From	To	Total	Kutcha	BT 3.00	BT 3.75	BT 5.50	BT7.00	CC 3.00	CC 3.75	CC 5.50	FCW 7.00	Slab Culvert	HPC	FW		BT 5.50	BT Kutcha to 7.00	BT 3.00 to 7.00	BT 3.75 to 7.00	BT 5.50 to 7.00	CC3.00 To 3.0	CC 3.75 To 7.0	CC 5.50 To 7.0	Kutcha to CC 7.5	FCW 12.50	Slab Culvert	HPC	BT Ramps	CC Ramps	Protec tion Work	Drain	Raising
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
*	0	1500	1500													1500																	
2	1500	2800	1300		1300														1300														
3	1800	2850	50											50				50									1						
4	1850	9250	350		350														350							20						
5	9200	9230	30									30																					
6	9230	3500	270		270													54	270								1						
7	3500	3550	50									50																					
8	3550	3700	150		150														150							30						
9	3700	3730	30									30																					
10	3730	4850	1120		1120														1120								1						
11	4850	5800	950		950														950														
12	5800	5850	50									50						50										1					
13	5850	6625	775		775														775														
14	6625	6950	325	325																					325								
15	6950	7000	50		50														50							50							
16	7000	7030	30									30							31														
17	7030	7100	70		70														100														
18	7100	7200	100		100																		125										
19	7200	8025	825							825										50													
20	8025	8075	50			50																385											
21	8075	8960	885						885											691													
22	8960	9841	881			881																	364										
23	9841	9805	284							284										780													
24	9805	10591	786			786																											
25	10591	10621	30									30								1064						30							
26	10621	11685	1064			1064																		100									
27	11685	11789	103								103										579												
28	11789	12367	578				579																			40							
29	12367	12407	40									40									359												
30	12407	12766	359				359											40									1						
31	12766	12805	40									40									569												
32	12805	13375	569				569																			30							
33	13375	13395	20									20									413												
34	13395	13808	413				413																	60									
35	13808	13871	63								63															30							
36	13871	13901	30									30									1305												
37	13901	15300	1399				1399																	225									
38	15300	15625	325								225														350								
39	15625	15975	350	350																													

Name of Work : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5064/SRF-MDR/2020-21)

SCOPE OF WORK

S. No.	Chainage			Existing														Proposed																	
	From	To	Total	Kutcha	BT 3.00	BT 3.75	BT 5.50	BT 7.00	CC 3.00	CC 3.75	CC 5.50	FCW 7.50	Slab Culvert	HPC	RW	Work not to be done	BT 5.50	BT Kutcha to 7.10	BT 3.00 to 7.00	BT 3.75 to 7.00	BT 5.50 to 7.00	CC 1.00 To 7.0	CC 3.75 To 7.0	CC 5.50 To 7.0	Kutcha to CC 7.0	FCW 3.50	Slab Culvert	HPC	BT Ramps	CC Ramps	Protection Work	Drain	Raising
40	14875	15850	975		975														975														
41	14850	14875	25									25						25										1					
42	14875	16400	1525		1525														1525														
43	18420	21186	2766			2766														2766													
44	21186	21236	50									50														50							
45	21236	21434	198			198														198													
46	21434	21464	30									30						30										1					
47	21464	21600	136			136														136													
48	21600	21900	300	300																					300								
49	21900	22388	488			488														488													
50	22388	22429	41							41													41										
51	22429	22464	35									35														35							
52	22464	23100	636			636														636													
53	23100	23250	150	150																						150							
54	23250	26950	3700	3700														3700															
55	26950	27100	150	150																						150							
56	27100	28265	1165	1165														1165															
57	28265	28365	100	100																					100								
58	28365	28795	430							430													430										
59	28795	29171	376			376														376													
60	29171	29206	35									35														35							
61	29206	29800	594			594														594							1						
	TOTAL		29900	6240	7836	7798	3319	0	888	1583	391	525	0	50	0	1990	0	5140	7636	7798	3319	885	1560	391	1976	630	2	8	20	0	2035	0	0
	TOTAL			29400													23859					3911				630							
	TOTAL			29900													29600																

4541

ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

EXECUTIVE ENGINEER
PWD DN. KOTPUTLI

TRAFIC CENSUS DATA

1 **Name of State** : Rajasthan

2 a. **SHW/MDR No.** : MDR 231

b. **SHW/MDR Name** : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

3 **Count Station Particulars** :-

a. **Name of Count Station** : Palri

b. **Count Station No.** : One

c. **Pin Code of Count Station** :

d. **Kilometerage of C.S.** : Km 15

e. **Kilometerage 0.00 at Place** : Jaipur-

f. **State where Kilometerage 0.00 is stuated** : Rajasthan

g. **Name of nearest town** : Viratnagar

h. **Distance of nearest town from C.S.** :

i. **Nature of area (Please ✓ one in each row)** :

(i) [×] Services (e.g. Office Areas) — [×] Industrial — [✓] Agricultural

(ii) [×] Urban — [×] Semi Urban — [✓] Rural

J. **Terrain (Please √) (Depends on cross- slopes of country around.**

(i) [✓] Plain (0% ≤ S ≤ 60%) — [×] Rolling (10% ≤ S ≤ 25%)

(ii) [×] Mountainous (25% ≤ S ≤ 60%) — [×] Steep (S ≤ 60%)

4 **Carriageway Width at Count Station** : 3.75 Mtr.

5 **Time of Census** : Month October Year 2019

6 **Duration of Census** : 07 Day

7 **Average daily traffic (in number of vehicles)** : 07 Day

A. Fast/Power Driven Vehicles :

a. Car/Jeep/Taxies/Van/Three/Wheeler (auto rickshaw)	1086
b. Tow Wheeler (Motor cycle/scooter)	1961
c. CLV (Lihgt commercial vehicles e.g. Minitruck)	21
d. Bus	23
e. Two Axle Truck/Tanker	213
f. Multi Axle Truck/Truck Trailer	51
g. Agricultral Tractor/with Trailer	1387

B Slow Vhicles :

a. Cycle/Cycle rickshaw Other Human Powered vehicles	21
b. Bullock Cart/Horse Driven cart/other Animal	2

C	**Other Vehicles (if any) (Please Specify)**	: 1

8 **Highest Peak hour traffic for the week (in number of vehicles)** :-

A.	**Highest Peak Hour**	: **6.00 AM** to **7.00 AM**
	Day of Highest Peak Hour	: **13.10.19 to 14.10.19**
B.	**Fast/Power Driven Vehicles**	:
a.	Car/Jeep/Taxies/Van/Three/Wheeler (auto rickshaw)	1205
b.	Tow Wheeler (Motor cycle/scooter)	1944
c.	CLV (Lihgt commercial vehicles e.g. Minitruck)	22
d.	Bus	21
e.	Two Axle Truck/Tanker	270
f.	Multi Axle Truck/Truck Trailer	51
g.	Agricultral Tractor/with Trailer	1370
B	**Slow Vhicles**	:
a.	Cycle/Cycle rickshaw Other Human Powered vehicles	21
b.	Bullock Cart/Horse Driven cart/other Animal	0
C	**Other Vehicles (if any) (Please Specify)**	:

9 a. **Any factor which may have caused sudden change I traffic from last count (Please ✓ one or more as applicable).** :-

- ☐ Construction of alternate route
- ☐ Closure of alternate road
- ☐ New railway/inland waterway/coastal waterway being
- ☐ Railway/inland water way/constal water way being closed.
- ☐ Construction of new facility on road
- ☐ Deterioration of level of service on road
- ☐ Any other (Please specify)

b. **Date (data last reported)** : Month **April** Year **2019**

10 a. **Reporting Organisation** :- **PWD Rajasthan**

b. **Reporting Officer's designation** :- **ASSISTANT ENGINEER**

c. **Reporting Officer's Address** :- **PWD SUB DN. VIRATNAGAR-I**

District : **Jaipur** Pin Code : 303108
Phone No. (with STD Code) : 014121-248103
Fax No. (if any)
Email No.(if any eektppwd@gmail.com

11 **Signature of Reporting Officer** :-

TRAFFIC CENSUS
WEEKLY TRAFFIC SUMMARY

Name of Road : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

Date :	10.10.19 to 17.10.19 Day : 7 Day's	SHW/MDR No. :	MDR
From (Place) :	Viratnagar to Place) Chilpali Mod	Count station No. :	One
	Chilpali Mod to Place) Viratnagar	Km. of count station :	Km 15
Pin Code of Count Station No. :	Link No.	Place of count station :	Palri
	Up+Down Side	District :	JAIPUR

Day				VEHICLE CLASS										
From		To		FAST/POWER DRIVERN VEHICLES							SLOW VEHICLES			
Date	Hours	Date	Hours	Car, Jeep, Vans, Three Wheelers	Two Wheelers (Motor Cycle/ Scooter)	LCV (Light Coomercial Vehicles)	Buses	Two Axle, Truck, Tanker	Multi Axled Vehicles/ Trailor	Agriculture Tractor with Trailer	Cycle / Cycle Rickshaw	Bullock Cart/ Other Animal Drawn Vehicles	Other Vehicles Specify (If any)	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
10.10.19	6.00 AM	11.10.19	6.00 AM	1080	1583	19	30	175	44	1163	23	3	3	4143
11.10.19	6.00 AM	12.10.19	6.00 AM	1015	1366	20	24	204	46	1242	24	1	1	3943
12.10.19	6.00 AM	13.10.19	6.00 AM	1066	2227	21	26	239	48	1251	29	4	0	4941
13.10.19	6.00 AM	14.10.19	6.00 AM	1205	1944	22	21	270	51	1370	21	0	3	4907
14.10.19	6.00 AM	15.10.19	6.00 AM	936	2181	21	6	203	54	1506	5	3	1	4916
15.10.19	6.00 AM	16.10.19	6.00 AM	1142	2312	20	20	208	57	1503	21	0	1	5284
16.10.19	6.00 AM	17.10.19	6.00 AM	1126	2113	21	32	195	54	1657	21	0	0	5219
Total for the Week				**7600**	**13726**	144	159	1494	354	9712	**144**	**11**	**9**	**33353**
Averee Daily Traffc for the Week				**1086**	**1961**	21	23	213	51	**1387**	**21**	**2**	**1**	**4765**
PCU Factor				1.00	0.50	1	3	3	4.5	3.00	0.50	8.00	0.00	
Average Daily Traffic PCU				1086	981	21	69	639	230	4161	11	16	0	**7214**
Total CVPD						**21**	**23**	**213**	**51**					**308**

Name of Work : **RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)**

Design of Flexible Pavement

(As per IRC : 37 - 2018)

1 Design Datas :-

(i) **P** = Number of commercial vehicles per day at last count in October, 2019

(a) Light Commercial Vehicles	=	21	
(b) Bus	=	23	
(c) Trucks	=	213	
(d) Commercial Tractor Trailor unit	=	0	
(e) Multiaxled Vehicles, Truck Trailors Combination etc.	=	51	
Total Commercial Vehicles Per Day	=	**308 CVPD**	

(ii) **r** = Annual growth rate of Commercial traffic (as per IRC:37-2018 para 4.2.2) = **5.00 %**

(iii) **x** = Number of years between the last count of traffic and the year of completion of construction = **1 Year**

(iv) **n** = Design life in Years (as per IRC:37-2018 para 4.3.1 for MDR) = **15 Years**

(v) **F** = Vehicle Damage Factor (as per IRC:37-2018 para 4.4.6 for traffic volume > 150-1500) = **3.90**

(vi) **D** = Lane Distribution Factor (as per IRC:37-2018 para 4.5.1.3 for Two lane carriageway) = **0.50**

(vii) **A** = Initial traffic in the year of completion of construction in terms of CVPD

$A = P(1+r)^x$ = 308 $(1 + 0.05)^1$ = **323.4 CVPD**

(viii) CBR Value of the Sub Grade = **6.00 %**

2 Design traffic (N) :-

$$N = \frac{365 \times [(1+r)^n - 1]}{r} \times A \times D \times F$$

$$N = \frac{365 \times [(1+0.05)^{15} - 1]}{0.050} \times 323 \times 0.50 \times 3.90 = 4.97 \text{ msa}$$

Adopt 5 msa

3 Crust thickness of existing road :-

3 (A) 3.00/3.75 Mtr. to 7.00 Mtr. Widening

(i) GSB	=	100 mm
(ii) One Layers of Gr - II	=	75 mm
(iii) One Layers of Gr - III	=	75 mm
(iv) BM	=	0 mm
(v) 20 mm PMC with Seal Coat (Two times as per renual cycle)	=	0 mm
Total Existing Crust	=	**250 mm**

3 (B) 5.50 Mtr. to 7.00 Mtr. Widening

(i) GSB	=	100 mm
(ii) One Layers of Gr - II	=	75 mm
(iii) One Layers of Gr - III	=	75 mm
(iv) BM	=	0 mm
(v) 20 mm PMC with Seal Coat (Two times as per renual cycle)	=	0 mm
Total Existing Crust	=	**250 mm**

3 (C) Kutcha to 7.00 Mtr.

(i) GSB	=	0 mm
(ii) One Layers of Gr - II	=	0 mm
(iii) One Layers of Gr - III	=	0 mm
(iv) BM	=	0 mm
(v) 20 mm PMC with Seal Coat (Two times as per renual cycle)	=	0 mm
Total Existing Crust	=	**0 mm**

4 Design of Flexible Pavement :-

(In the light of IRC:37-2018, Pavement Design Catalogue for Plate No. 2, CBR 8.00 % and Traffic 20.00 msa)

(i) Total Pavement Thickness	=	**490 mm**
(ii) Granular Sub Base	=	**150 mm**
(iii) WMM	=	**250 mm**
(iv) DBM	=	**60 mm**
(v) BC	=	**30 mm**

5 Proposed Crust :-

(i) Granular Sub Base (Existing)	=	150 mm
(ii) WMM	=	250 mm
(iii) DBM	=	60 mm
(iv) BC	=	30 mm
Total Crust Thickness proposed	=	**490 mm**

ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

EXECUTIVE ENGINEER
PWD DN. KOTPUTLI

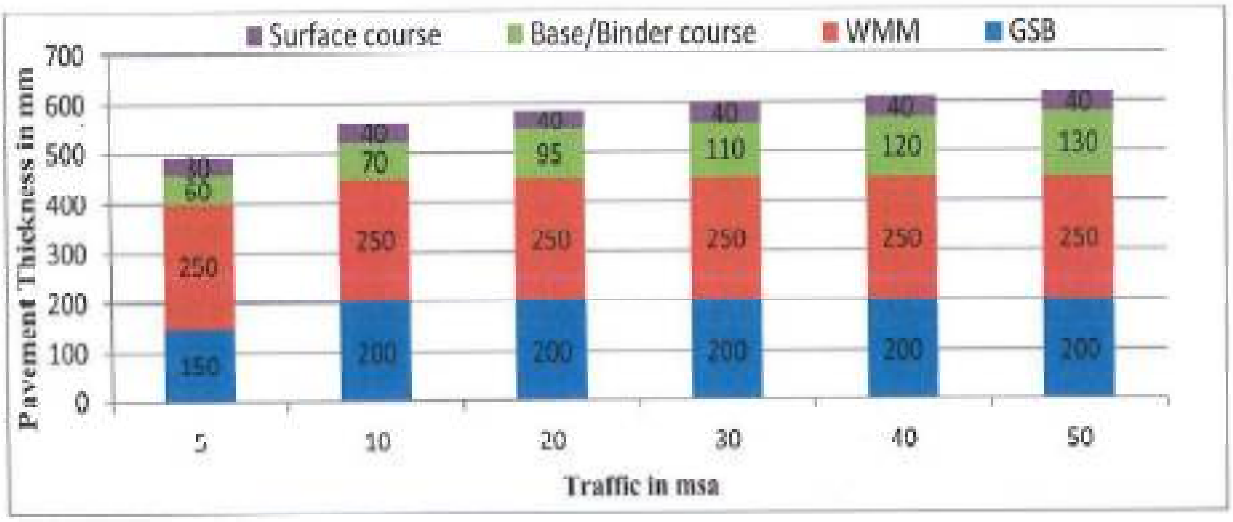


Figure 12.2 Catalogue for pavement with bituminous surface course with granular base and sub-base - Effective CBR 6% (Plate-2)

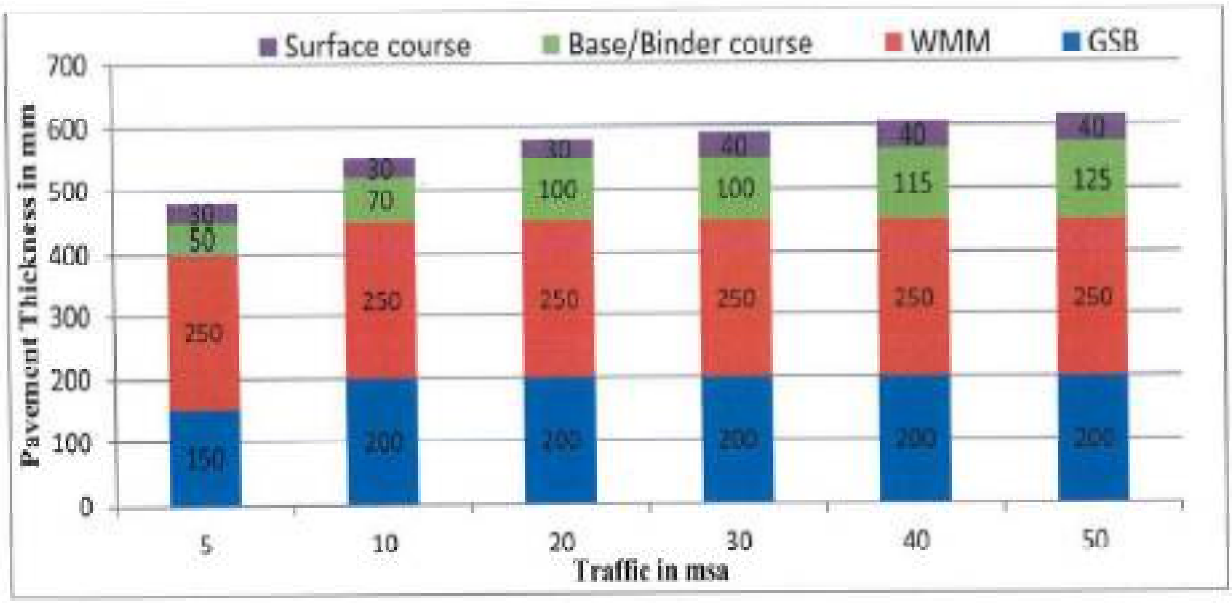


Figure 12.3 Catalogue for pavement with bituminous surface course with granular base and sub-base - Effective CBR 7% (Plate-3)

CONCRETE PAVEMENT DESIGN
(As per IRC : 58-2015)

NAME OF ROAD :RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NO. 6/5054/SRF-MDR/2020-21)

Step -1 Design Parameters:

(a) Location of Pavement : Rajasthan

Class of Road MDR-231

Concrete Grade (f_{ck}) = M-30

Charateristic strength of Concrete Grade (f_{ck}) = 30.00 N/mm2

(b) Flexural Strength of Concrete(f_{cf}) = : 38.00 kg/cm^2

(c)Effective Modulus of Subgrade reaction of the DLC sub base (K) : 8.00 kg/cm^3

(d) Modulus of elasticity of Concrete (E) 300000 kg/cm^2

(e) Poisson's Ratio of Concrete (m) : 0.15

(f) Coefficient of thermal expansion of concrete (α) : 0.00001 /°C

(g) Design Tyre Pressure : 8 kg/cm^2

(h) Contraction joint spacing (L) : 3.50 metres

(i) Lane Width (W) : 3.50 metres

(a) Present Traffic Intensity : 308 CVPD

Design Life : 30 Years

Traffic Growth rate (r) = 0.05

(j) Axle load spectrum as per axle load survey

Single axle loads		Tandem axle loads	
Axle load class (t)	% of axle loads	Axle load class (t)	% of axle loads
18-21	0.000	34-38	0.000
17-19	0.000	30-34	0.000
15-17	0.000	26-30	0.000
13-15	0.000	22-26	0.000
11-13	50.000	18-22	5.000
9-11	20.000	14-18	2.000
Less than 9	10.000	Less than 14	13.000
Total =	**80.000**	**Total =**	**20.000**

DESIGN

Cummulative repetitions in design life =

$C = [365 \times A \times \{(1+r)^n - 1\}] / r$

$C = [\,365 \times 308 \times \{(1 + 0.05)^{30} - 1\}] / 0.05$ 7469055 Commercial vehicles

Design Traffic = 25% of total repitition of commercial vehicles

= 25% of 7469055 1867264

Total repititions of sinle axle & tandom axle loads are as follows :

Single axle loads		Tandem axle loads	
Axle load class (t)	% of axle loads	Axle load class (t)	% of axle loads
20	0	36	0
18	0	32	0
16	0	28	0
14	0	24	0
12	93363	20	93363
10	261417	16	37345
Less than 10	186726	Less than 16	242744

Step -4 Load stress for edge region :

Step -3 Select tentative design thickness of pavement slab

h : **25.00 cms.**

Road Classification MDR-231

Load Safety factor (LSF) = 1.10

Modulus of Rupture = 38.00 kg/cm2

$l = [\,Eh^3 / \{12(1-m^2)K\}]^{1/4}$ = 84.07 cms.

$b = (1.60\,a^2 + h^2)^{1/2} - 0.675h$ 14.51 cms.

$sl_e = 0.529\,P/h^2\,(1 + 0.54m)\,[\,4\log_{10} l/b - \log_{10} b - 0.4048]$

Axle load (AL) tonnes	Design load (AL x LSF)	Stress from Chart (kg/cm2)	Stress Ratio (SR)	Expected ripitition (n)	Fatigue life (N)	Fatigue life Consumed = (5) / (6)
1	2	3	4	5	6	7
Single axle						
20.00	22.00	31.89	0.840	0	39	0.0000
18.00	19.80	28.70	0.780	0	361	0.0000
16.00	17.60	25.51	0.670	0	4415	0.0000
14.00	15.40	22.32	0.590	0	40842	0.0000
12.00	13.20	19.13	0.500	93363	762043	0.1230
10.00	11.00	15.94	0.420	261417	Unlimited	0.0000
Tandem axle						
36.00	39.60	25.30	0.670	0	4416	0.0000
32.00	35.20	22.49	0.590	0	40842	0.0000
28.00	30.80	19.67	0.520	0	326334	0.0000
24.00	26.40	16.86	0.440	0	Unlimited	0.0000
20.00	22.00	14.05	0.370	93363	Unlimited	0.0000
16.00	17.60	11.24	0.300	37345	Unlimited	0.0000
Cummulative fatigue life consumed =						**0.123**

The Design is safe from fatugue considerations

Step -4 Temperature stress for edge region :

(a) for Rajasthan Region Dt = 14.3 °C

(b) $l = [Eh^3/\{12(1-m^2)K\}]^{1/4}$ = 84.07 cms.

for Ll = 4.160

C_L = 0.548

for Wl = 4.160

C_W = 0.548

C_{max} 0.549

$st_e = (EaDt./2) . C$ = 11.76 kg/cm^2

Step -5 Residual Cocrete Strength for Supporting Traffic Loads

$f_r = f_a - st_e$ 26.240 kg/cm^2

Total of temperature warping stress and the highest axle load stress = 26.24 + 11.76 = 38

Which is less than 38 kg/cm2 the maximum load stress at highest axle load

Hence O.K.

Step -6 Corner Load stress

Radius of relative stiffness (l)

$l = [Eh^3/\{12(1-m^2)K\}]^{1/4}$ = 84.07 cms.

98th Percentile load = 12 tonnes

Wheel load (P) = 6 tonnes

Radius of area of contact of wheel (a) =

C/C distance between two tyres = 31 cms

$a = [0.8521 \times (P/(q \times 3.14) + (S/3.14)x(P/(0.5227xq)^{0.5}$ 24.03 cms

$st_c = 3P/h^2[1-\{a(2)^{1/2}\}^{1.2}/l]$

st_c = 19.09 kg/cm^2

< f_a O.K.

ASSISTANT ENGINEER
PWD SUB DN. VIRATNAGAR-I

EXECUTIVE ENGINEER
PWD DN. KOTPUTLI

OBSERVATION SHEET FOR CBR TEST (As per IS : 2720 Part 16)

Name of Division : Executive Engineer ,PWD Div- Kotputli.

Name of Sub Dn. : Assistant Engineer ,Sub Div-Virat Nagar I

Name of Road/Work : **Widening & Strengthening of MDR-231 from Viratnagar (NH-248A) to Chilpali Mod (NH-148) via Teori,Sewra Palri,Palri Tiraha Sawami ki Dhani,Baijanathpura ,Todalari.**

Particular of sample : Location KM 27/100

Wt. of Surcharge weight : 5 Kg.

MDD/FDD :

% Existing Moisture

Water added :

Particular of Wet Sample: 2250xMoulding Density (IW+M) / 100

Date of Casting : Date of Testing

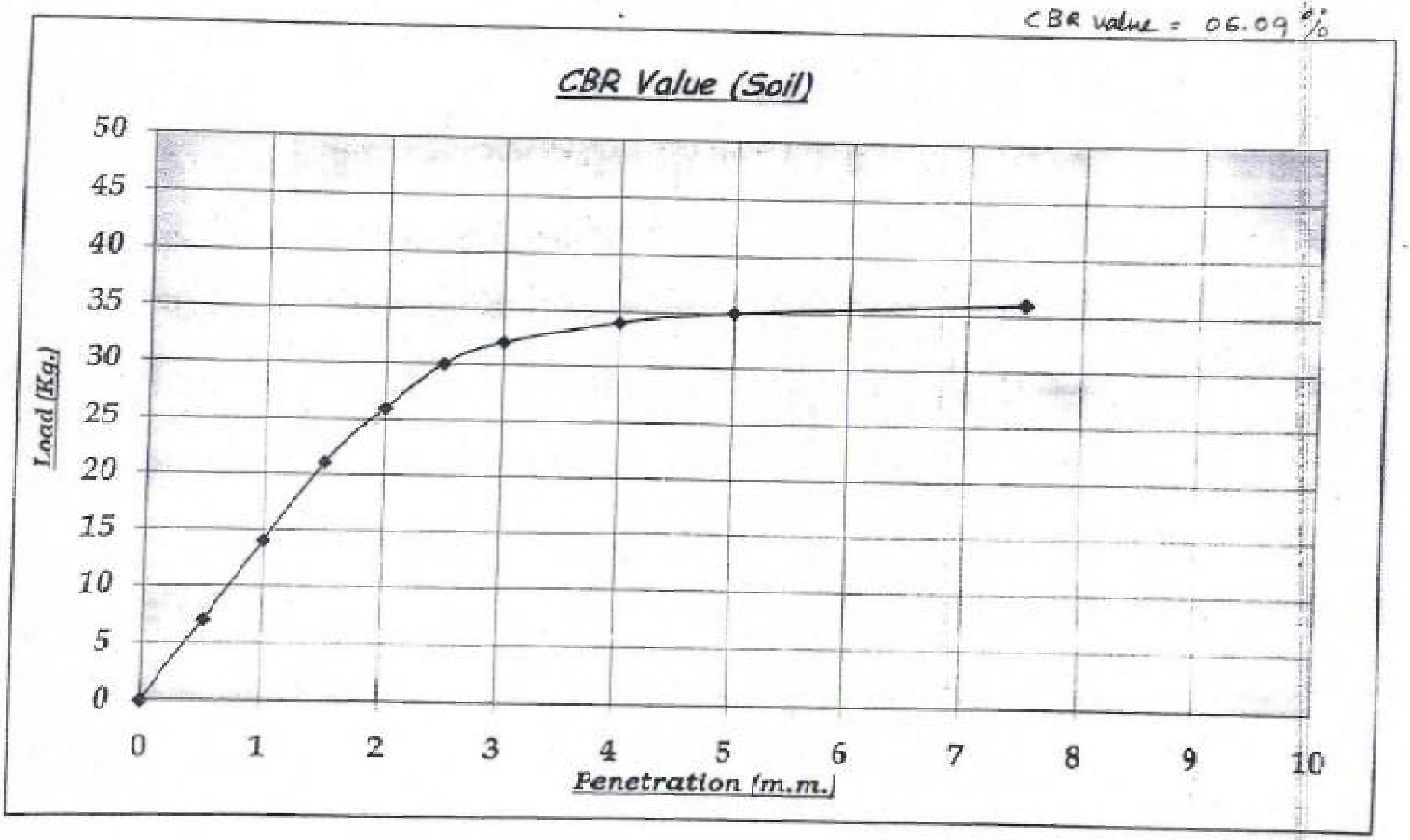
Penetration (mm)	Div. Of Dial gauge	Load in Kg	Div. Of Dial gauge	Load in Kg	Div. Of Dial gauge	Load in Kg
0	0	0				
0.5	7	19.46				
1	14	38.92				
1.5	21	58.38				
2	26	72.28				
2.5	30	83.4				
3	32	88.96				
4	34	94.52				
5	35	97.3				
7.5	36	100.08				

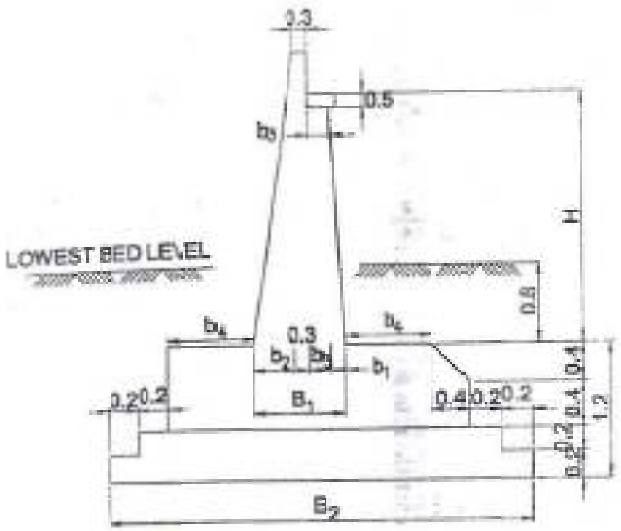
Mould No.	Load Kg	CBR at 2.5 mm Penetration (%)		Load Kg	CBR at 5.0mm Penetration (%)
	83.4	6.09		97.3	4.73

Test Conducted by

Test Checked by

CBR value = 06.09 %





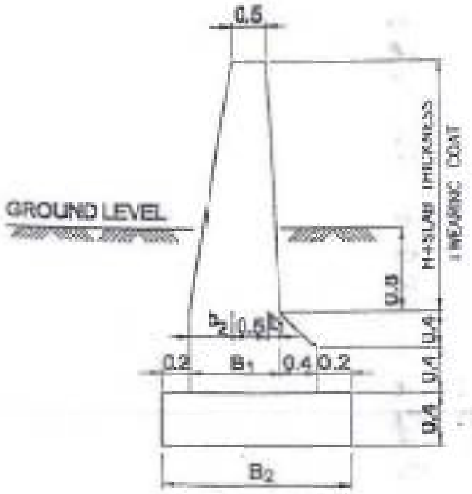
SECTION OF ABUTMENT

TABLE OF DIMENSIONS FOR ABUTMENT

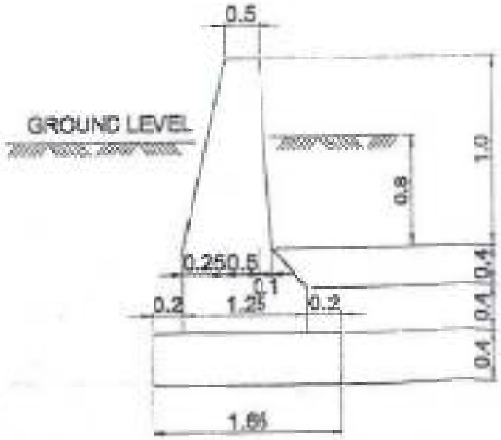
Effective Span	8m and 6m					3m, 2m, 1.5m and 1m						5.5m and 4m					
H	2.0m	2.5m	3.0m	3.5m	4.0m	1.5m	2.0m	2.5m	3.0m	3.5m	4.0m	1.5m	2.0m	2.5m	3.0m	3.5m	4.0m
b_1	0.2	0.25	0.3	0.35	0.4	0.15	0.2	0.25	0.3	0.35	0.4	0.15	0.2	0.25	0.3	0.35	0.4
b_2	0.6	0.85	1.0	1.2	1.4	0.5	0.7	0.95	1.1	1.25	1.4	0.5	0.7	0.95	1.1	1.25	1.4
b_3	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
b_4	–	0.1	0.2	0.4	0.6	–	–	0.1	0.2	0.3	0.5	–	–	0.1	0.2	0.3	0.5
B_1	2.1	2.4	2.6	2.85	3.1	1.45	1.7	2.0	2.25	2.4	2.6	1.95	2.2	2.5	2.7	2.9	3.1
B_2	3.3	3.8	4.2	4.65	5.1	2.65	2.9	3.4	3.8	4.2	4.8	3.15	3.4	3.9	4.3	4.7	5.2

TABLE OF DIMENSIONS FOR WING WALL (HIGH END)

SPAN	UPTO 2 METRES						3 METRES						4 METRES						5 METRES						6 METRES					
H	1.50	2.00	2.50	3.00	3.50	4.00	1.50	2.00	2.50	3.00	3.50	4.00	1.50	2.00	2.50	3.00	3.50	4.00	2.00	2.50	3.00	3.50	4.00	3.00	2.50	3.00	3.50	4.00	3.00	3.50
b_1	0.15	0.20	0.25	0.30	0.35	0.40	0.15	0.20	0.25	0.30	0.35	0.40	0.15	0.20	0.25	0.30	0.35	0.40	0.20	0.25	0.30	0.35	0.40	0.25	0.30	0.35	0.40	0.45	0.25	0.30
b_2	0.45	0.50	0.70	0.80	0.95	1.00	0.45	0.50	0.70	0.80	0.95	1.00	0.45	0.50	0.70	0.80	0.95	1.00	0.50	0.70	0.80	0.95	1.00	0.70	0.80	0.95	1.00	1.15	0.80	0.95
B_1	1.15	1.30	1.40	1.65	1.85	2.00	1.15	1.35	1.50	1.65	1.85	2.00	1.17	1.34	1.52	1.69	1.87	2.04	1.37	1.55	1.72	1.90	2.08	1.36	1.54	1.72	1.90	2.08	1.55	1.72
B_2	1.90	2.10	2.30	2.45	2.65	2.80	1.90	2.15	2.30	2.45	2.65	2.80	1.97	2.14	2.32	2.49	2.67	2.84	2.17	2.35	2.52	2.70	2.88	2.18	2.35	2.53	2.70	2.88	2.35	2.53



WING WALL SECTION AT HIGH END

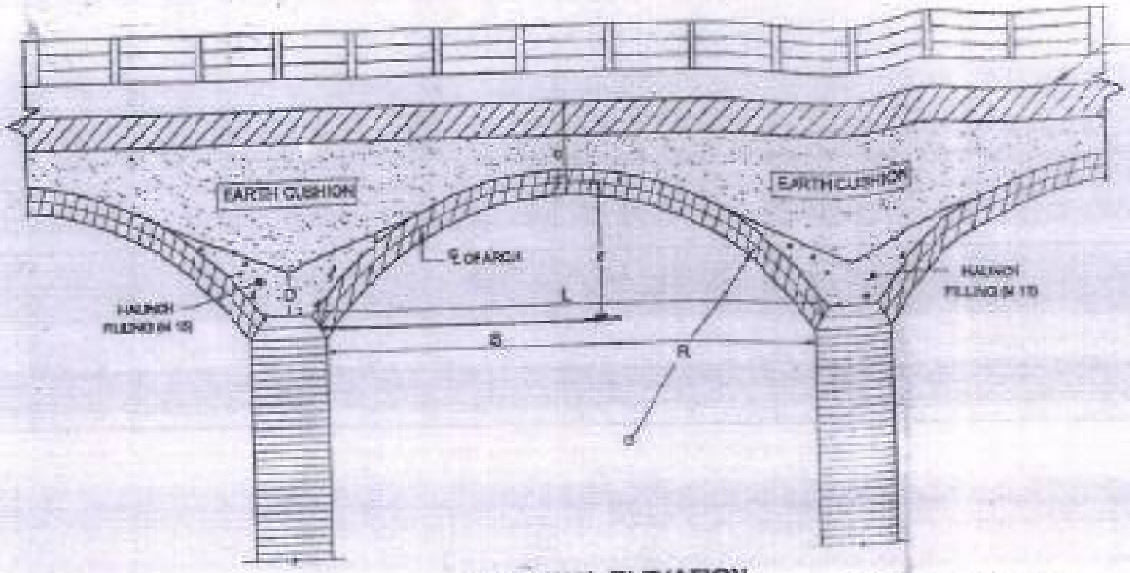


WING WALL SECTION AT LOW END (FOR ALL SPANS)

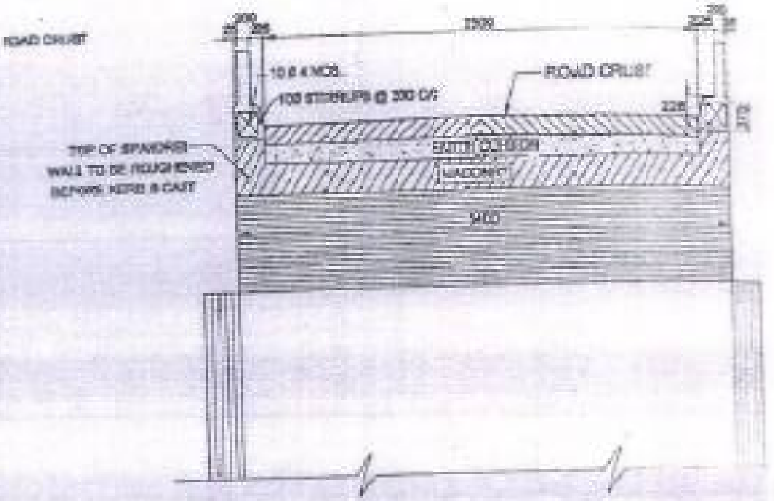
NOTES :-

1. ABUTMENT AND WING WALL SECTIONS ARE APPLICABLE FOR A MINIMUM BEARING CAPACITY OF THE SOIL OF 16.5 t/m^2. FOR SOIL HAVING LOWER BEARING CAPACITY THE SECTIONS SHOULD BE INCREASED SUITABLY.
2. ABUTMENT AND WING WALL SECTION FOR INTERMEDIATE HEIGHTS TO BE ADOPTED SUITABLY.
3. THE VARIOUS DIMENSIONS TO BE SUITABLY ADJUSTED TO SUIT THE SIZE OF BRICKS WHERE NECESSARY.
4. THESE SECTIONS ARE APPLICABLE FOR CULVERTS DESIGNED FOR IRC CLASS 70R OR 2 LANES OF CLASS A LOADING, WHICHEVER IS MORE SEVERE, WITHOUT PROVISION OF APPROACH SLABS.
5. THESE SECTIONS ARE NOT APPLICABLE TO SEISMIC ZONE IV AND V.
6. THE SECTIONS SHALL BE IN CEMENT CONCRETE M 15, BRICK MASONRY IN CEMENT MORTAR 1:3 OR COURSED RUBBLE MASONRY (1nc SORT) IN CEMENT MORTAR 1:3. THE FOUNDATION CONCRETE SHALL BE IN CEMENT CONCRETE M 15.

ABUTMENT AND WING WALL SECTIONS FOR CULVERTS



SECTIONAL ELEVATION



CROSS SECTION AT THE CROWN OF ARC

TABLE

EFFECTIVE SPAN (L) METRES	6	9
CLEAR SPAN (S) METRES	5.572	8.512
RISE (r) MILLIMETRES	1500	2250
RADIUS OF CENTRE LINE(R) (MILLIMETRES)	3750	5625
CUSHION ABOVE CROWN (C) (MILLIMETRES)	610	760
ARCH THICKNESS (T) (MILLIMETRES) (UNIFORM SECTION FROM SPRINGING TO CROWN)	535	810
DEPTH OF HAUNCH FILLING AT PIER & ABUTMENT $D=\frac{R+T}{2}$ (MILLIMETRES)	1018	1430

GENERAL NOTES :-

1. SPECIFICATIONS :- R.C. STANDARD SPECIFICATIONS AND CODE OF PRACTICE FOR ROAD BRIDGES SECTION I, II AND IV.
2. DESIGN LIVE LOAD :- I.R.C. CLASS A LOADING TWO LANES OR CLASS '70-R' LOADING ONE LANE.
3. MATERIAL :- THE MASONRY OF THE ARCH RING MAY CONSIST OF EITHER CONCRETE BLOCKS (M 15) OR DRESSED STONES OR BRICKS IN (1:3) CEMENT MORTAR. THE CRUSHING STRENGTH OF STONE OR BRICK UNITS SHALL NOT BE LESS THAN 10.5 MPa. WHERE STONE MASONRY IS ADOPTED FOR THE ARCH RING, IT SHALL BE EITHER COURSED RUBBLE MASONRY OR ASHLAR MASONRY.
4. DESIGN STRESSES :- PERMISSIBLE TENSILE STRESS (MASONRY OF ARCH RING) PERMISSIBLE COMPRESSIVE STRESS — AS SPECIFIED IN I.R.C. BRIDGE CODE SECTION IV (2002).
5. RAILINGS :- AS PER DETAILS APPROVED.

NOTES:

1. THIS DRAWING IS NOT APPLICABLE TO BRIDGES LOCATED IN SEISMIC ZONES IV AND V.
2. THE RATIO OF RISE TO SPAN OF THE CENTRAL LINE OF ARCH RING SHALL BE 1/4.
3. SPECIFICATION FOR ROAD CRUST OVER THE ARCH BRIDGES MAY BE SAME AS THAT ADOPTED FOR THE ADJACENT STRETCHES OF ROAD.
4. THE DIMENSIONS AND THE DIAMETRES OF REINFORCEMENT BARS ARE INDICATED IN MILLIMETRES EXCEPT WHERE SHOWN OTHERWISE.
5. FIGURED DIMENSIONS SHALL BE TAKEN INSTEAD OF SCALED DIMENSIONS.

DETAILS OF SEGMENTAL MASONRY ARCH BRIDGES WITHOUT FOOTPATHS EFFECTIVE SPAN 6m & 9m

(A) GENERAL

1. These notes are applicable for the Standard Drawings of R.C.C. solid slab superstructure with and without footpaths.

2. These drawings are applicable only for skew bridges with overall right width of 12 m.

3. No raised footpaths shall be provided on the bridges having length less than 30 m measured along skew direction unless the same are otherwise existing on the approaches.

4. All dimensions are in millimetres, unless otherwise mentioned. Only written dimensions are to be followed. No drawing shall be scaled.

5. Design criteria

   I. The design is according to the following codes:
      (a) IRC:5-1985
      (b) IRC:6-1966 (1985 reprint)
      (c) IRC:21-1987.

   II. The following loads have been considered in the design:
      (i) One-lane of IRC class 70R or two lanes of IRC class A on carriageway, whichever governs.
      (ii) Footpath live load 5 kN/sq.m for superstructure having footpaths.
      (iii) Wearing coat load of 2 kN/sq.m.

   III. The designs are applicable for 'MODERATE AND SEVERE' conditions of exposure.

6. Public utility services (except water supply and sewerage), if required, shall be carried over the bridge through 150 mm diameter ducts provided in the footpaths. Total load of such services shall not be more than 1.0 kN per metre on each footpath. Water/sewerage pipe line shall not be carried over any part of the superstructure. Inspection chambers in footpaths may be provided as shown in the drawing. The location and spacing of chambers along the footpath will be decided by the Engineer-in-charge in consultation with the users.

7. Wearing coat shall consist of the following:

   I. (a) A coat of mastic asphalt 6 mm thick with a prime coat over the top of the deck before the wearing coat is laid. The prime coat of mastic asphalt shall be 30 per cent straight run 30-40 penetration grade bitumen and 50 per cent light solvent (Benzol) to be laid over the deck slab. The insulating layer of 6 mm thick mastic asphalt with 75 per cent lime stone dust filler and 25 per cent of 30-40 penetration grade bitumen shall be laid at 175°C with broken stone [illegible]

   (b) 50 mm thick Bituminous Concrete wearing coat in two layers of 25 mm each as per Clause 500 of MoRT&H's Specifications for Road and Bridge Works (Fourth Revision 2001).

   II. In case of isolated bridge construction or bridges located in remote areas where provision of mastic and asphaltic concrete wearing coat is not practicable, the Engineer-in-charge may permit provision of 75 mm thick reinforced cement concrete wearing coat in M30 grade concrete with maximum water cement ratio as 0.40. The reinforcement shall consist of 8 mm High Yield Strength Deformed bars @200 mm centres. However, in the 300 mm width adjacent to expansion joint the reinforcement shall consist of 8 mm dia HYSD bars spaced at 100 mm centre-to-centre in both directions.

8. Wearing coat shall be discontinued at expansion joint location. Joint filler shall extend upto the top of wearing coat.

9. Width of expansion joint has been kept 20 mm only which does not cater for any allowance for possible tilting of abutment.

10. Support for the deck slab shall provide a bearing width of 400 mm measured in a direction perpendicular to support.

11. In urban areas, chequered tiles may be provided in the footpath portion by suitably adjusting the thickness of the footpath slab.

12. Type/position of return walls, railings, guard posts, ramp etc. in approach portion shall be decided by the Engineer-in-charge.

(B) MATERIALS SPECIFICATIONS

Concrete

1. Concrete shall be design mix shall have minimum 28 days characteristic strength of 30 MPa on 150 mm cubes for all elements of superstructure for both 'SEVERE' and 'MODERATE' conditions of exposure.

2. Ordinary portland cement conforming to IS:269 or high strength ordinary portland cement conforming to IS:8112 capable of achieving the required design concrete strength shall only be used.

3. The minimum cement content and maximum water cement ratio in the concrete design mix shall be 310 kg/cu.m and 0.45 respectively for 'MODERATE' conditions of exposure. The minimum cement content and maximum water cement ratio in the concrete design mix shall be 400 kg/cu.m and 0.40 respectively for 'SEVERE' conditions of exposure.

Reinforcement

All reinforcement bars shall be High Yield Strength Deformed bars (Grade designation S 415) conforming to IS:1786.

Water

Water to be used in concreting and curing shall conform to Clause 302.4 of IRC:21-1987.

(C) WORKMANSHIP/DETAILING

1. Minimum clear cover to any reinforcement including stirrups shall be 30 mm unless shown otherwise in the drawings.

2. For ensuring proper cover of concrete to reinforcement bars specially made polymer cover blocks shall only be used.

3. Construction joints:

   I. The location and provision of construction joints shall be approved by the Engineer-in-charge. The concreting operation shall be carried out continuously upto the construction joint.

   II. The concrete surface at the joint shall be brushed with a stiff brush after casting while the concrete is still fresh and it has only slightly hardened.

   III. Before new concrete is poured the surface of old concrete shall be prepared as under:

      a) For hardened concrete, the surface shall be thoroughly cleaned to remove debris/laitance and made rough so that 1/4 of the size of the aggregate is exposed but without dislodging the aggregate or structurally damaging the concrete.

      b) For partially hardened concrete, the surface shall be treated by wire brush followed by an air jet.

      c) The old surface shall be soaked with water without leaving puddles immediately before starting concreting to prevent the absorption of water from new concrete.

   IV. New concrete shall be thoroughly compacted in the region of the joint.

4. Welding of reinforcement bars shall not be permitted.

5. Laps in reinforcement:

   I. Minimum lap length of reinforcement shall be kept as 53 d where 'd' is the diameter of bar.

   II. Not more than 50 per cent of reinforcement shall be lapped at any one location.

   III. For closely spaced bars lapping may be avoided by providing suitable type of mechanical splices.

6. Bending of reinforcement bars shall be as per IS:2502.

7. Supporting chairs of 12 mm diameter shall be provided at suitable intervals as per IS:2502.

8. Concrete shall be produced in a mechanical mixer of capacity not less than 200 litres having integral weigh batching facility and automatic water measuring and dispensing device.

9. Proper compaction of concrete shall be ensured by use of full width screed vibrators for concrete in deck slab.

10. Properly braced steel plates shall be used as shuttering.

11. Sharp edges of concrete shall be chamfered.

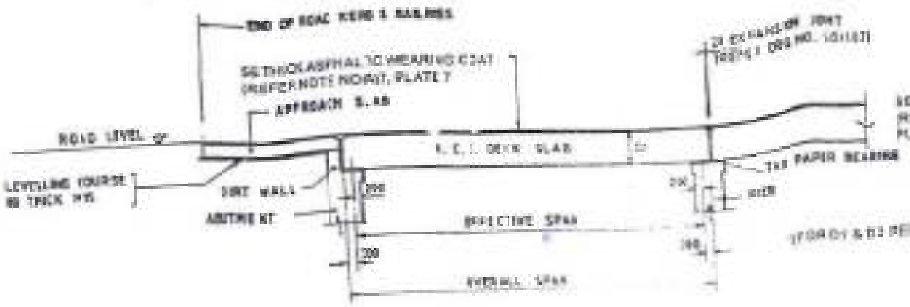
(D) GENERAL SPECIFICATIONS

The work shall be executed in accordance with MoRT&H's Specifications for Road and Bridge Works (Fourth Revision, 2001) except wherever otherwise mentioned.

(E) For details refer MoRT&H's Standard Drawings as listed below:

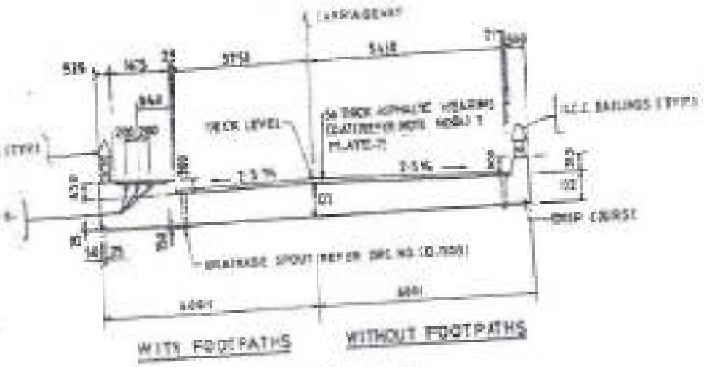
Drawing No.	Title
SD/152, SD/153 SD/154, SD/155*	General Arrangement for various skew angles (* Extracts are also reproduced at Plate-12 for reference only)
SD/156, SD/157 & SD/158	Miscellaneous details
SD/159	Details of R.C.C. Railings (without footpaths)
SD/160	Details of R.C.C. Railings (with foot-paths)
SD/161-SD/164 SD/169-SD/172 SD/177-SD/180 SD/185-SD/188	R.C.C. solid slab Superstructure (without footpaths) for various skew angles
SD/165-SD/168 SD/173-SD/176 SD/181-SD/184 SD/189-SD/192	R.C.C. solid slab superstructure (with footpaths) for various skew angles

R.C.C. SOLID SLAB
SUPERSTRUCTURE (SKEW)
RIGHT EFFECTIVE SPAN
4.0 m TO 10.0 m
(WITH AND WITHOUT FOOTPATHS)
GENERAL NOTES

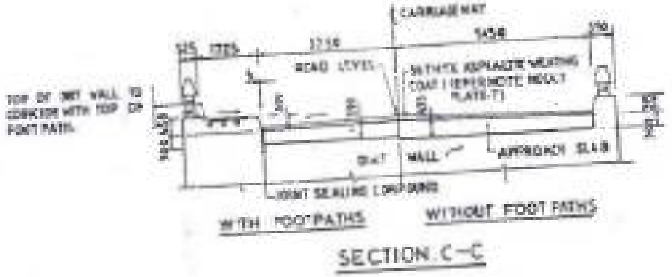


SECTION A-A

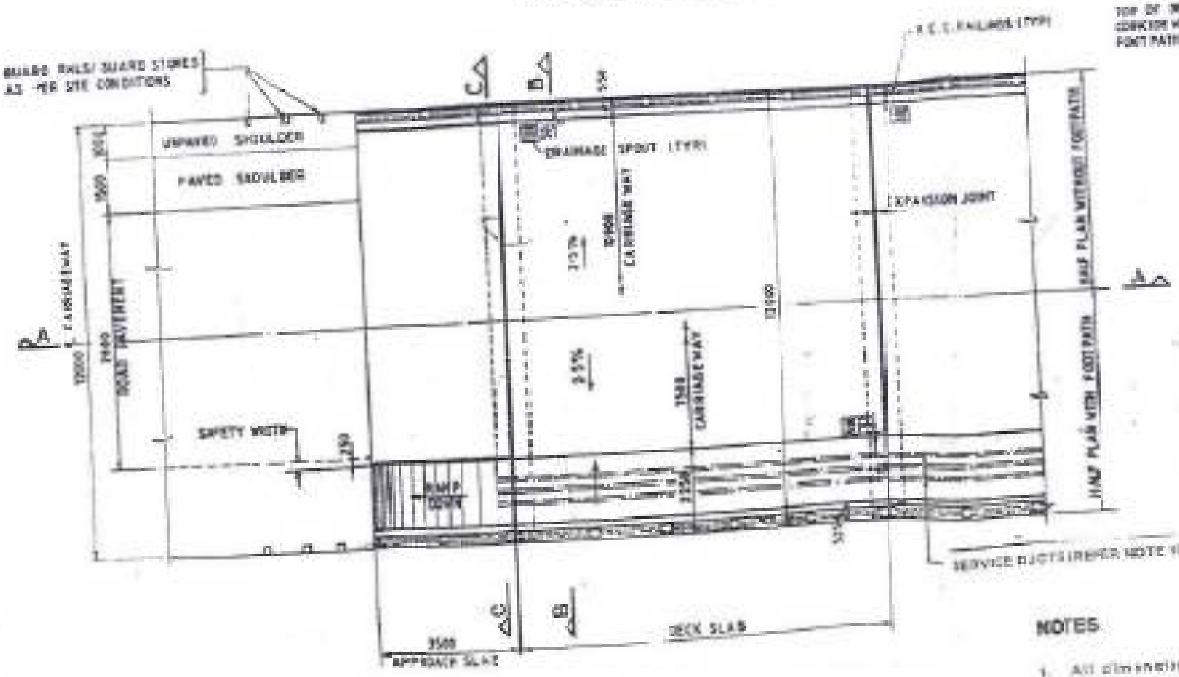
ROAD KERB & RAILINGS NOT SHOWN



SECTION B-B



SECTION C-C



PLAN

NOTES

1. All dimensions are in millimetres unless otherwise mentioned. Only written dimensions are to be followed.
2. Typical arrangement of drainage spouts has been shown in plan. Suitable modifications may be made by the Engineer-in-charge as per site condition and intensity of rainfall.

- R.C.C. SOLID SLAB SUPERSTRUCTURE (RIGHT)
EFFECTIVE SPAN
3.0m to 10.0 m
(WITH AND WITHOUT FOOTPATHS)
GENERAL ARRANGEMENT

Type	Effective Span (m)	Depth of Slab D1 (mm)	D2 (mm)	Concrete (m^3)	Steel (kg)	Asphaltic wearing coat (m^2)	Type	Effective Span (m)	Depth of Slab D1 (mm)	D2 (mm)	Concrete (m^3)	Steel (kg)	Asphaltic wearing coat (m^2)
↑	3.0	450	300	16.65	895	37.06	↑	30	450	300	2934	907	35.50
	4.0	500	350	23.84	1296	47.36		40	500	350	3939	391	13.00
	5.0	550	400	32.5*	2061	58.8a		50	550	400	3835	2170	43.50
Without	6.0	600	450	42.45	2825	69.76	With	60	600	450	5000	2955	48.00
Foot	7.0	650	500	53.51	3857	80.66	Foot	70	650	500	6225	3794	55.50
Paths	8.0	750	600	70.81	4727	91.56	Paths	80	750	600	8074	4823	63.00
	9.0	820	670	87.14	6016	102.46		90	820	670	9836	1166	70.50
↓	10.0	900	750	106.40	7047	113.36	↓	10.0	900	750	11870	7124	78.00

Note:

1. Quantity of steel includes 5 per cent extra for laps and wastage
2. Quantities pertaining to approach slab and railings not included

R.C.C. Solid Slab Superstructure (Right)

Effective Span 3.0 m to 10.0 m
(With and Without Footpaths)
Depth of Slab and Quantities
Per Span

(A) GENERAL

1. These notes are applicable for the Standard Drawings for R.C.C. solid slab superstructure with and without footpaths.

2. These drawings are applicable only for right bridges with overall width of 12 m.

3. No raised footpaths shall be provided on the bridges having length less than 30 m unless the same are also provided on the approaches.

4. All dimensions are in millimetres unless otherwise mentioned. Only written dimensions are to be followed. No drawing shall be scaled.

5. Design criteria

I. The design is according to the following codes

(a) IRC 5-1985

(b) IRC 6-1966 (1985 reprint)

(c) IRC 21-1987

II. The following loads have been considered in the design:

(a) One lane of IRC class 70R or two lanes of IRC class A on carriageway, whichever governs.

(b) Footpath load of 5 kN/sq.m for superstructure having footpaths

(c) Wearing coat load of 2 kN/sq.m.

III. The designs are applicable for 'MODERATE AND SEVERE' conditions of exposure.

6. Public utility services (except water supply and sewerage), if required, shall be carried over the bridge through 150 mm diameter ducts provided in the footpaths. Total load of such services shall not be more than 1.0 kN per metre on each footpath. Water/ sewerage pipeline shall not be carried over any part of the superstructure. Inspection chambers in footpaths may be provided as shown in the drawing. The location and spacing of chambers along the footpath will be decided by the Engineer-in-charge in consultation with the users.

7. Wearing coat shall consist of the following:

I. (a) A coat of mastic asphalt 6 mm thick with a prime coat over the top of the deck before the wearing coat is laid. The prime coat of mastic asphalt shall be 30 per cent straight run 30/40 penetration grade bitumen and 70 per cent light solvent (kerosene) to be laid over the deck slab. The moulding layer of 6 mm thick mastic asphalt with 7 kg per cum lime stone dust filler and 25 per cent of 30-40 penetration grade bitumen shall be laid at 275°F with broom over prime coat.

(b) 50 mm thick asphaltic concrete wearing coat in two layers of 25 mm each as per Clause 512 of MoRT&H's Specifications for Road and Bridge Works (Second Revision, 1988).

II. In case of isolated bridge construction in hilly/remote areas where provision of mastic and asphaltic concrete wearing coat is not practicable, the Engineer-in-charge may permit provision of 75 mm thick cement concrete wearing coat in M 30 grade concrete with maximum water cement ratio as 0.40. The reinforcement shall consist of 8 mm HYSD bars @ 200 mm centres reducing to 100 centres in both the directions over a strip of 3400 mm near the expansion joint. Reinforcement shall be placed at the centre of the wearing coat. Wearing coat shall be discontinued at expansion joint locations. Joint fillers shall extend upto the top of wearing coat.

8. 20 cm expansion joint does not take care for any allowance for possible silting of abutment.

9. Support for the deck slab shall provide a bearing width of 400 mm.

10. In urban areas, chequered tiles may be provided in the footpath portion by suitably adjusting the thickness of the footpath slab.

11. Type/position of return walls, railings, guard pots, ramp etc. in approach portion shall be decided by the Engineer-in-charge.

(B) MATERIALS SPECIFICATIONS

Concrete

1. Concrete shall be of design mix and shall have minimum 28 days characteristic strength on 150 mm cubes for all elements of superstructure as indicated below:

Conditions of Exposure	Concrete grade	Characteristic Strength
[illegible]	[illegible]	[illegible]
'MODERATE'	M 30	30 MPa (for 10 m span)
'SEVERE'	M 30	30 MPa (for 3 m to 10 m span)

2. High strength ordinary portland cement conforming to IS:8112 or ordinary portland cement conforming to IS:269 capable of achieving the required design concrete strength shall only be used.

3. The minimum cement content and maximum water cement ratio in the concrete design mix shall be 310 kg/cu.m and 0.45 respectively for 'MODERATE' conditions of exposure [illegible] for 'SEVERE' conditions of exposure.

Reinforcement

All reinforcing bars shall be High Yield Strength Deformed bars (Grade designation S 411) conforming to IS:1786.

Water

Water to be used in concreting and curing shall conform to Clause 302.4 of IRC:21-1987.

(C) WORKMANSHIP/DETAILING

1. Minimum clear cover to any reinforcement including stirrups shall be 50 mm unless shown otherwise in the drawings.

2. For ensuring proper cover of concrete to reinforcement bars specially made polymer cover blocks shall only be used.

3. Construction Joints

I. The location and provision of construction joints shall be approved by Engineer-in-charge. The concreting operation shall be carried out continuously upto the construction joint.

II. The concrete surface at the joint shall be brushed with a stiff brush after casting while the concrete is still fresh and it has only slightly hardened.

III. Before new concrete is poured the surface of old concrete shall be prepared as under:

(a) For hardened concrete, the surface shall be thoroughly cleaned to remove debris/laitance and made rough so that 1/4 of the size of the aggregate or structurally damaging the concrete.

(b) For partially hardened concrete, the surface shall be treated by wire brush followed by an air jet.

(c) The old surface shall be soaked with water without leaving puddles immediately before starting concreting to prevent the absorption of water from new concrete.

IV. New concrete shall be thoroughly compacted in the region of the joint.

4. Welding of reinforcement bars shall not be permitted.

5. Laps in reinforcement

I. Minimum lap length of reinforcement shall be kept as 32 d where 'd' is the diameter of bar.

II. Not more than 50 per cent of reinforcement shall be lapped at any one location.

6. Bending of reinforcement bars shall be as per IS:2502.

7. Supporting chairs of 12 mm diameter shall be provided at suitable intervals as per IS:2502.

8. Concrete shall be produced in a mechanical mixer of capacity not less than 250 litres having integral weigh-batching facility and automatic water measuring and dispensing device.

9. Proper compaction of concrete shall be ensured by use of hot with screed vibrators for concrete in deck slab.

10. Properly waxed steel plates shall be used as shuttering.

11. Sharp edges of concrete shall be chamfered.

(D) GENERAL SPECIFICATIONS

The work shall be executed in accordance with MoRT&H's Specification for Road and Bridge Works (Fourth Revision, 2001) except wherever otherwise mentioned.

(E) For details refer MORT&H's Standard Drawings as listed below:

Drawing No.	Title
SD/100*	General Arrangement (*Details are also reproduced at Plate-8 for reference only)
SD/103 & SD/104	Miscellaneous Details
SD/105	Details of R.C.C. Railings (without footpaths)
SD/106	Details of R.C.C. Railings (with foot-paths)
SD/107 through SD/114	R.C.C. solid slab superstructure (right) Spans 3 m to 10 m (without footpaths)
SD/115 through SD/122	R.C.C. Solid slab superstructure (right) Spans 3 m to 10 m (with footpaths)

R.C.C. SOLID SLAB SUPERSTRUCTURE (RIGHT) EFFECTIVE SPAN 3.0 m TO 10.0 m (WITH AND WITHOUT FOOTPATHS)

GENERAL NOTES

U

OFFICE OF THE CHIEF ENGINEER,PWD,RAJASTHAN, JAIPUR.

No. CE(SE(R)/ BSR/2019/D-1097 Dated: 7/2/20

Superintending Engineer,
PWD, Circle----------(ALL)

Sub:- Addendum in Basic Schedule of Rates in Road BSR 2019.

As per recommendation of the SE Rural Circle Jaipur the addendum for use of plastic waste in road construction in Road BSR of Jaipur Rural Circle was approved vide this letter No. 1063 Dated 22.01.2020. as below: -

Chapter No.	Item	Unit	Rate (Rs.)
5.7-A	Add extra for adding Shreaded Plastic Waste as per Guidelines envisaged in IRC:SP:98-2013 over Item of Open Graded Premix Carpet @ 8% of the quantity of Bitumen by weight including mixing of aggregate and plastic waste in Hot Mix Plant (The Bitumen content will be as per respective Clause of Morth Specifications).	sqm	3.50
16.17-A	Add extra for adding Shreaded Plastic Waste as per Guidelines envisaged in IRC:SP:98-2013 over Item of (Bitumen Concrete) @8% of the quantity of Bitumen by weight including mixing of aggregate and plastic waste in Hot Mix Plant (the Bitumen content will be as per respective Clause of Morth Specifications).	cum Tonne	288.00 122.00

As this item is required in all Circles with Common analysis of rate. Therefor it is directed to incorporate above addendum in BSR of your circle accordingly.

Encl:- Rate Analysis

6/2/2020
(SUNIL KUMAR GUPTA)
CHIEF ENGINEER &ADDL. SECY
PWD, RAJASTHAN

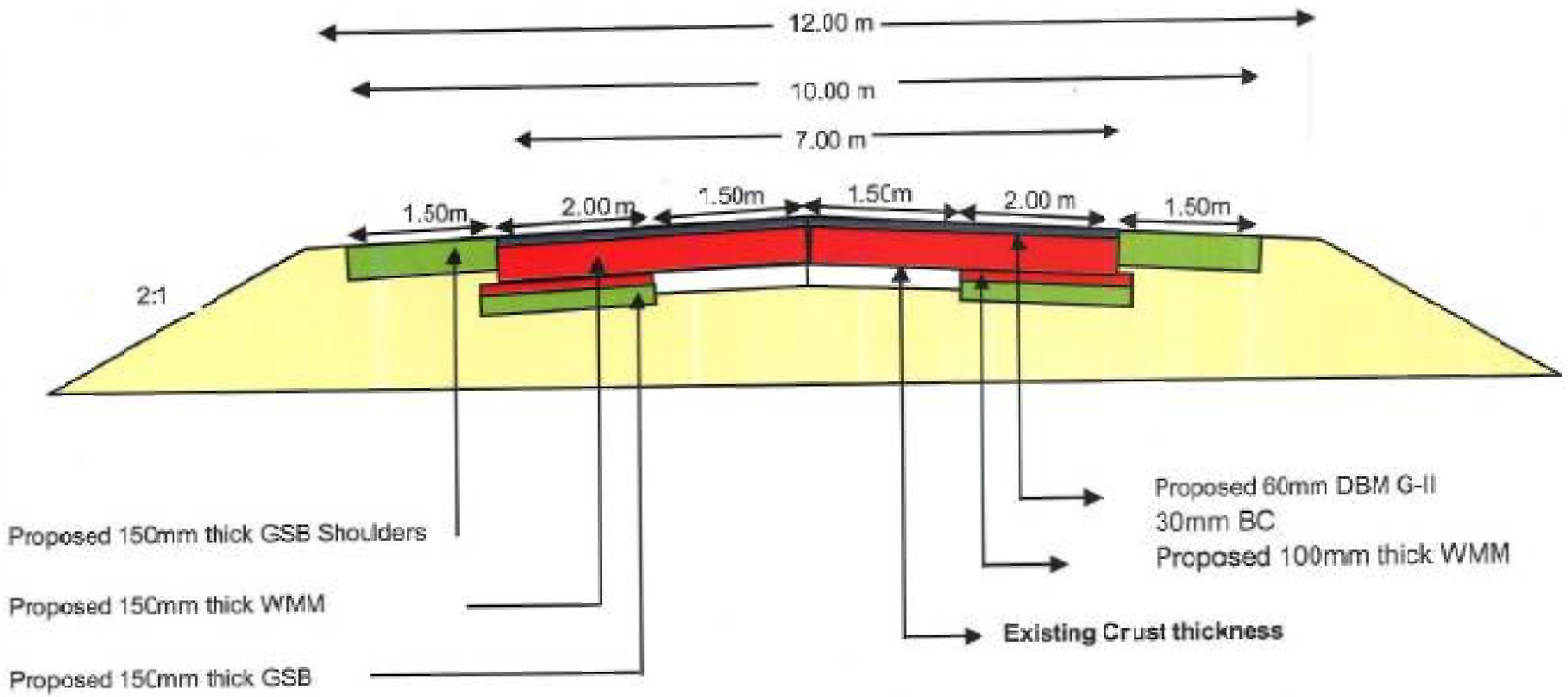
Dated:

No.CE/SE(R)/BSR/2019/D-

1- P.S. to Addl. Chief Secretary to Govt., PWD, Rajasthan, Jaipur.
2- P.S. to Secretary to Govt., PWD, Rajasthan, Jaipur
3- P.S. to Chief Engineer cum Addl. Secretary to Govt., PWD, Rajasthan, Jaipur.
4- PS to Chief Engineer NH/Building/QC/PMGSY/Electric. PWD, Rajasthan, Jaipur.
5- The Managing Director RSRDCC, Setu Bhawan Rajasthan, Jaipur.
6- P.A. to F.A. PWD, Rajasthan, Jaipur.
7- Addl. Chief Engineer PWD, (ALL)

6/2/2020
(MANWAR ALI)
SUPDTG. ENGINEER (ROAD)

NAME OF WORK : RECONSTRUCTION WORK OF VIRATNAGAR (NH-248A) TO CHILPALI MOD (NH-148) VIA TEORI, SEWRA PALRI, PALRI TIRAHA, GHEOTA, SAWAMI KI DHANI, BADSHAHPUR, GUDHA BAIJANATHPURA, TODALARI (JOB NC. 6/5054/SRF-MDR/2020-21)



TYPICAL CROSS SECTION FOR WIDENING OF 3.00 TO 7.00 MTR. ROAD