

GOVERNMENT OF RAJASTHAN
PUBLIC WORKS DEPARTMENT

ESTIMATE

For

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A
(KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00

PACKAGE NO. : RJ-16-10-SRF (SH)-2018-19

JOB NO. : 47/5054/SRF/MDR/GEN/2018-19 Rs. = 295.71 Lacs

47/5054/SRF/MDR/SC/2018-19 Rs. = 76.76 Lacs

47/5054/SRF/MDR/ST/2018-19 Rs. = 58.03 Lacs

TOTAL = 430.50 Lacs

Sanctioned Length : Rs. 13.00 Km ✓

ESTIMATED COST : Rs. 430.50 Lacs ✓

NAME OF CIRCLE : P.W.D. Rural Circle, Jaipur

NAME OF DIVISION : P.W.D. Dn Kotputli

NAME OF SUB. DN. : P.W.D. Sub Dn Viratnagar-II

TECHNICAL REPORT

Name of Road : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00

PACKAGE NO. : RJ-16-10-SRF (SH)-2018-19

JOB NO. : 47/5054/SRF/MDR/GEN/2018-19 Rs. = 295.71 Lacs
: 47/5054/SRF/MDR/SC/2018-19 Rs. = 76.76 Lacs
: 47/5054/SRF/MDR/ST/2018-19 Rs. = 58.03 Lacs
TOTAL = 430.50 Lacs

Name of Circle : P.W.D. Rural Circle, Jaipur

Name of Division : P.W.D. Dn Kotputli

Name of Sub Division : P.W.D. Sub Dn Viratnagar-II

A.F. Sanction : F (35) A&F/SRF/Sec.-II/2018-19 D-446 Dated 11-09-2018 Amount (Rs. 430.50 Lacs)

Necessity : This Road is SH-83 which Started From NH-8 Km 181 to end point is on Sikar Distt. Border. Total Length road is 13.00 Km presently this road having 0/00 to 4/600 Km Fully damaged road which is below the Ground Level at some places so raising is required and Km 11/500 to 13/00 is old PMGSY Road. Km 4/600 to 11/500 is Kutcha Portion. The Rehabilitation of this 6.100 km road is essential balance length be Constructed in Kutcha Portion.

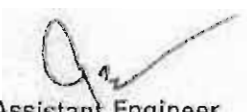
Specification : The following specification has been adopted for this work :
A. Road Work
1 GSB on Berms 150mm thick and 1.00 mtr. width on either side.
2 (as per I) for Strengthening and for raising 150mm thick
3 WMM. for Strengthening and for raising 250mm thick
4 20mm PMC with seal coat type B Bitumen (VG-30)
5 Cement concrete M-30 grade, 200 mm thick is taken, as shown in scope of work.
B. Road Furniture taken in estimate as per requirement

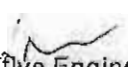
Labour : The skilled and unskilled labour is locally available.

B.S.R. : Rates are based on P.W.D. Rural Circle, Jaipur Road BSR effective from March, 2018 with all subsequent Corrigendum

Estimated Cost : Rs. 430.50 Lacs

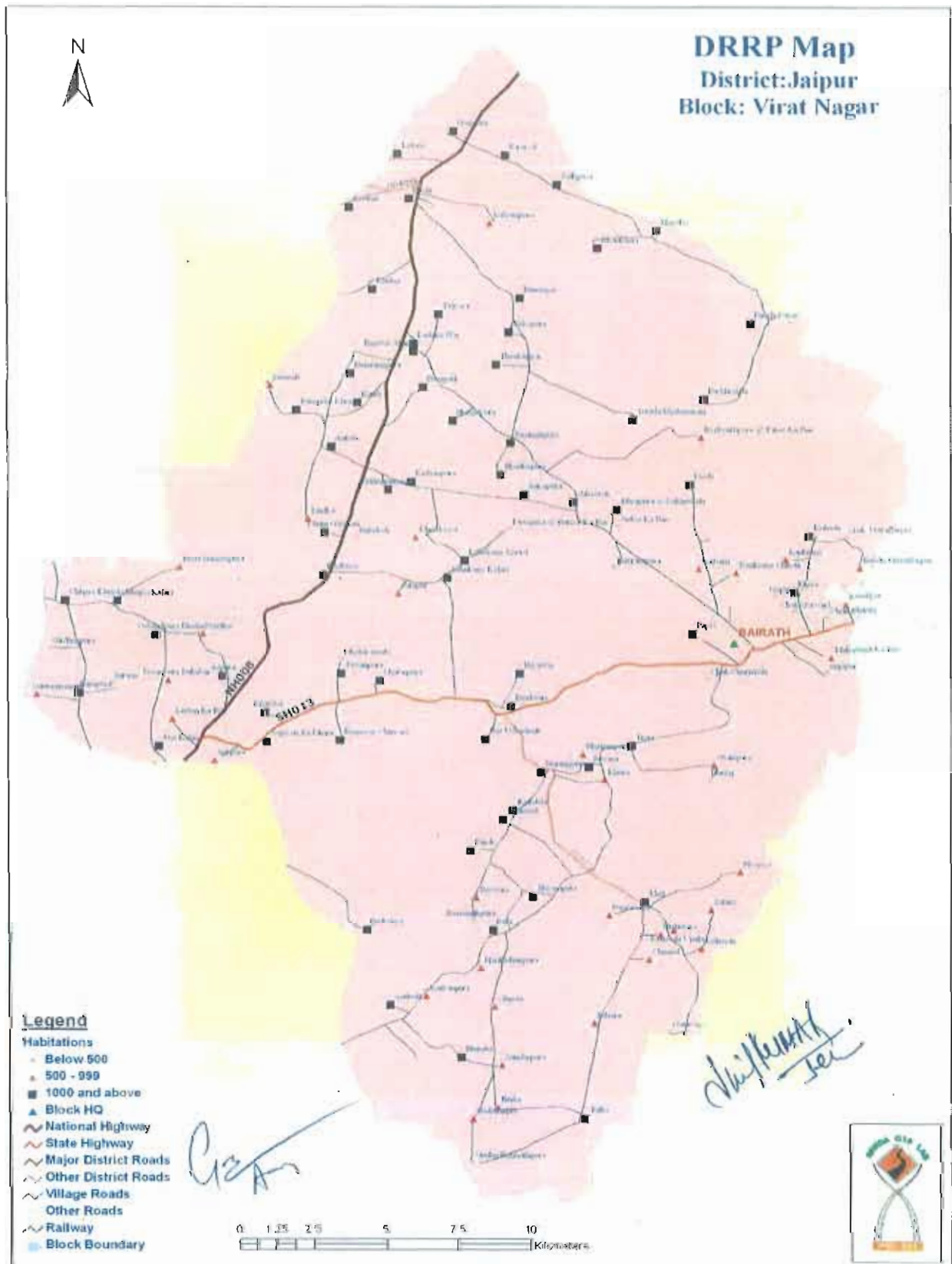
Agency : This work will be executed by the P.W.D after calling competitive tenders from registered contractors.


Assistant Engineer
P.W.D. Sub Dn Viratnagar-II


Executive Engineer
P.W.D. Dn Kotputli

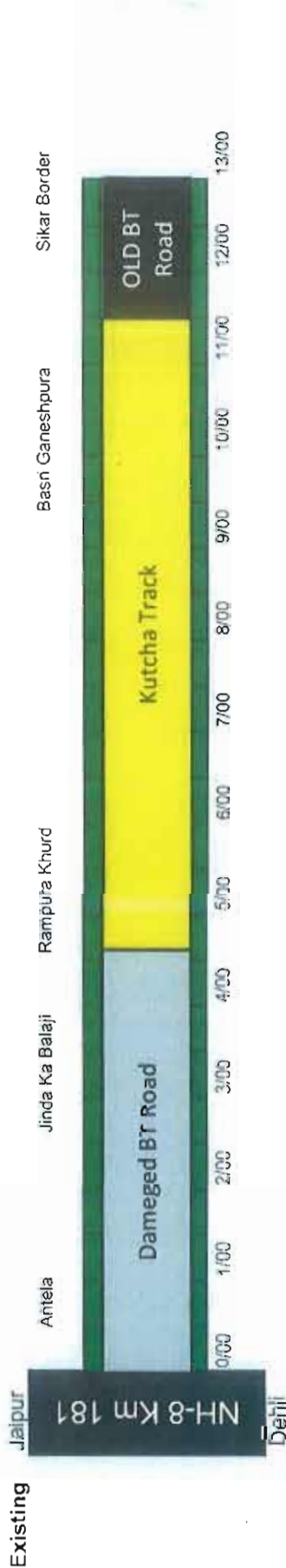
NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00

BLOCK MAP

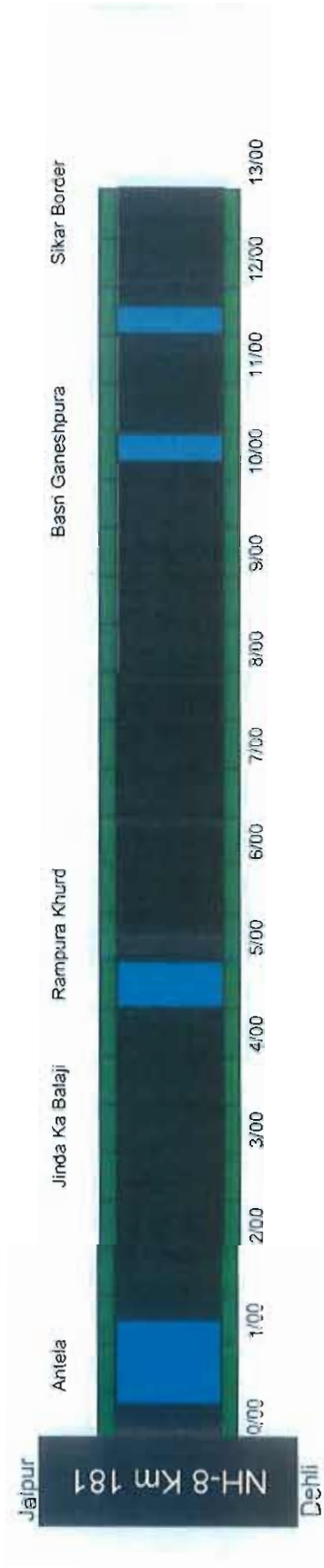


NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00

LINEAR CHART



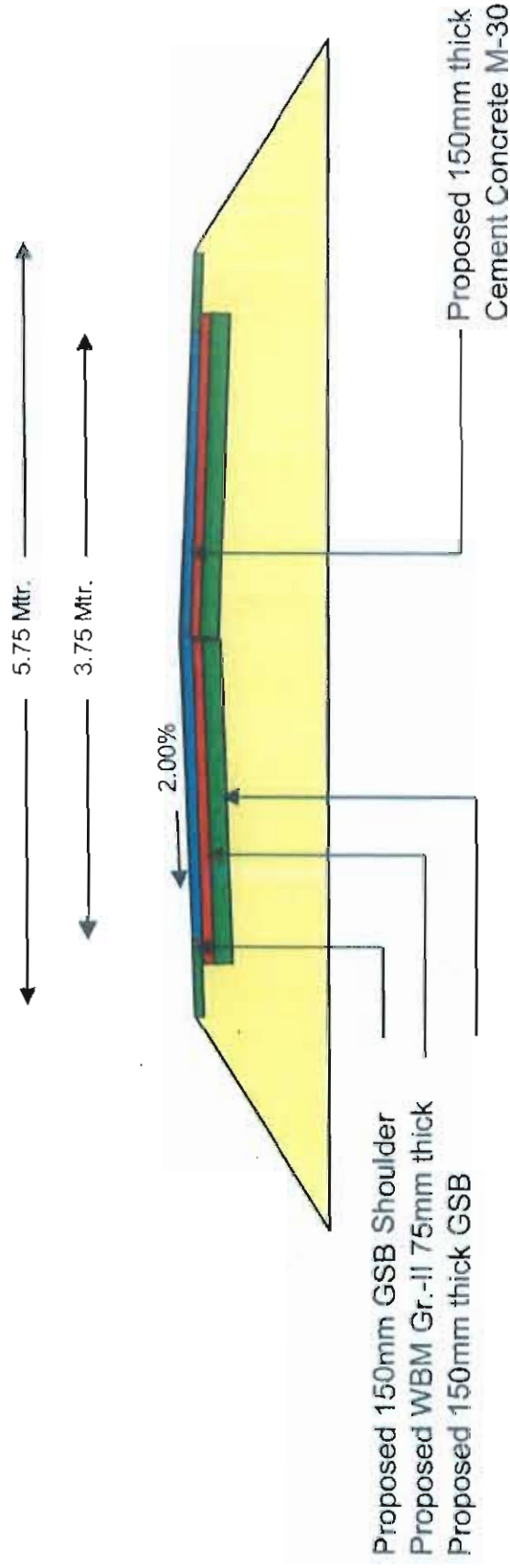
Proposed



[Signature]
Junior Engineer
P.W.D. Sub Dn Viratnagar-II

[Signature]
Assistant Engineer
P.W.D. Sub Dn Viratnagar-II

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-
KALYANPURA RENWAL) KM 0/00 TO 13/00**



TYPICAL X-SECTION OF C.C. PAVEMENT

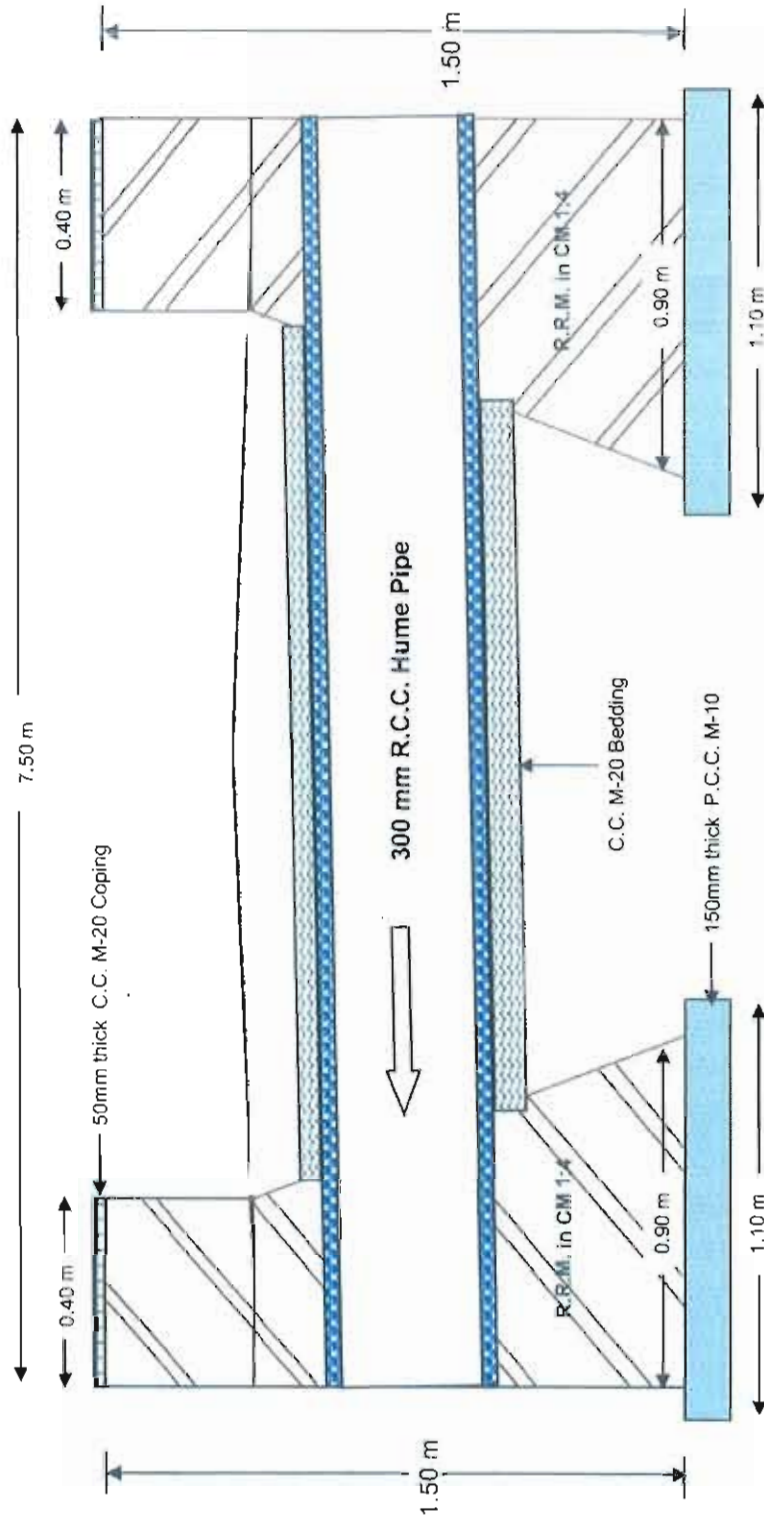
Signature

**Junior Engineer
P.W.D. Sub Dn Viratnagar-II**

Signature

**Assistant Engineer
P.W.D. Sub Dn Viratnagar-II**

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM
0/00 TO 13/00

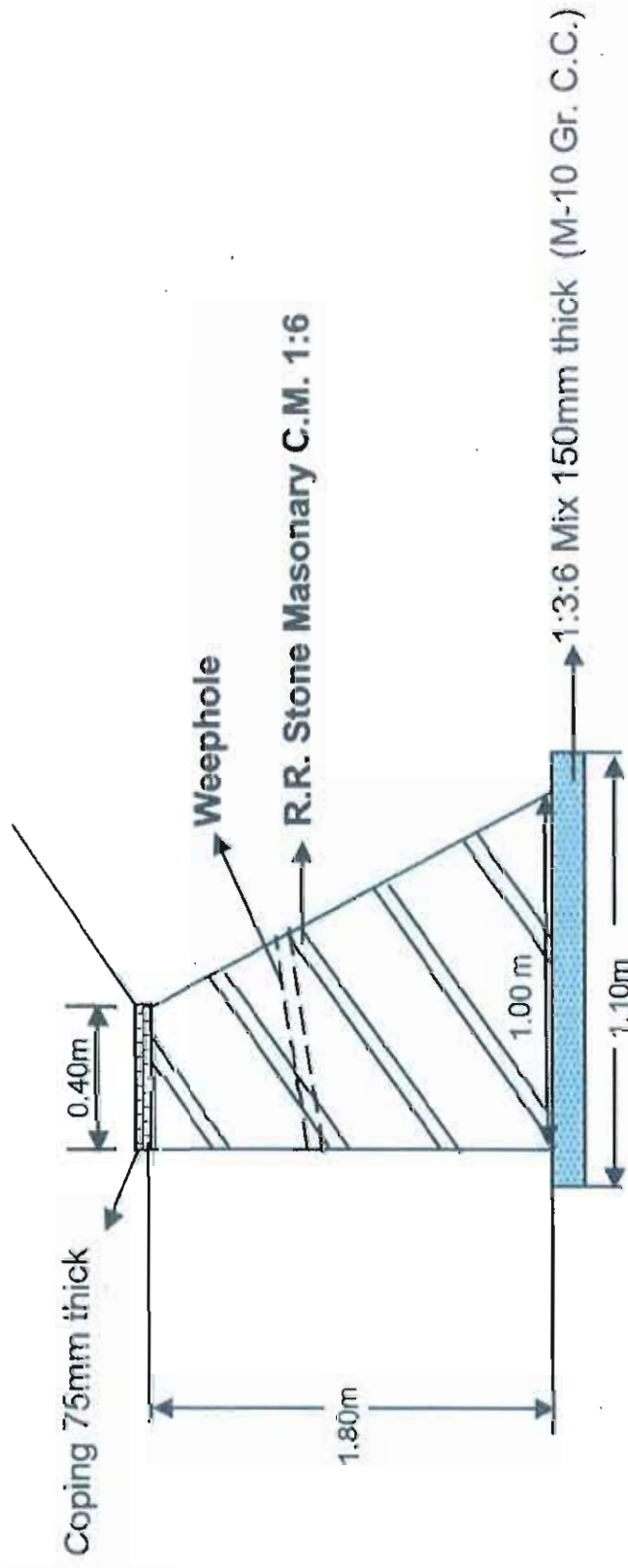


TYPICAL X - SECTION OF SYPHON

Junior Engineer
P.W.D. Sub Dn Viratnagar-II

Gar
Assistant Engineer
P.W.D. Sub Dn Viratnagar-II

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00



CROSS SECTION OF PROPOSED PROTECTION WALL

Chandrasekhar

Junior Engineer

P.W.D. Sub Dn Viratnagar-II

G. N.

Assistant Engineer

P.W.D. Sub Dn Viratnagar-II

Name of Road : NH-8 KM 181 (ANTELA) TO SH-8A
(KHACHARIYAWAS-KALYANPURA RENWAL)
KM 0/00 TO 13/00

CERTIFICATE FOR CORRECTNESS OF ESTIMATE

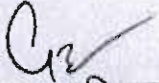
Certified that I/We have checked estimate of above work as per BSR PWD Rural Circle, Jaipur effective from March, 2018 with all subsequent corrigendum for road works and Building BSR 2017. The rates, nomenclature & calculations checked by me and found correct


Executive Engineer
P.W.D. Dn Kotputli

प्रमाण-पत्र

सन्दर्भ :- अतिरिक्त मुख्य अभियन्ता सा.नि.वि. सम्भाग द्वितीय, जयपुर के पत्रांक 2722
दिनांक 12.09.2018 के क्रम में।

“प्रमाणित तकमीने में जो प्रावधान लिये गये हैं वह सड़क की वर्तमान स्थिति के अनुसार
आवश्यक है, एवं सड़क का निरीक्षण किया हुआ है।”


सहायक अभियन्ता
सा.नि.वि. उपखण्ड. पिराटनगर


अधिशायी अभियन्ता
सा.नि.वि. खण्ड...पिराटनगर

अतिरिक्त सचिव, सार्वजनिक निर्माण विभाग, राजस्थान जयपुर की ओर से मुख्य अभियन्ता (पथ) सार्वजनिक निर्माण विभाग, राजस्थान जयपुर को लिखे पत्र क्रमांक एफ 7(35) A&F/एसआरएफ /अनु-11/ 2018-19/डी- दिनांक की प्रतिलिपि
विषय:- वित्तीय वर्ष 2018-19 में एसआरएफ मद में प्रशासनिक एवं वित्तीय स्वीकृति बाबत।

महोदय,

निर्देशानुसार राजस्थान के राज्यपाल महोदय की ओर से विभिन्न जिलों में वित्तीय वर्ष 2018-19 में एसआरएफ मद के तहत के 214 कार्यों हेतु राशि रु0 692.97 करोड की प्रशासनिक एवं वित्तीय स्वीकृति संलग्न सूची के अनुसार निम्नानुसार प्रदत्त की जाती है:-

क्र.सं.	विवरण	कार्यों की संख्या	स्वीकृत लम्बाई (किमी.)	स्वीकृत लागत (करोड में)
1.	मुख्य जिला सड़कें	89	834.00	216.14
2.	राज्य राजमार्ग	125	1316.12	476.83
	योग	214	2150.12	692.97

उक्त व्यय निम्न बजट मदों में भारित किया जाएगा-

SRF-SHW works		
Gen	SC	ST
5054-सड़कों एवं सेतुओं पर पुर्जोगत परिचय 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 पुर्जोगत परिचय 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 पुर्जोगत परिचय 03-राज्य राजमार्ग 796- जनजातिय क्षेत्र उपयोगना (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 पुर्जोगत परिचय 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 पुर्जोगत परिचय 04-जिला एवं अन्य सड़कें 789- अनुसूचित जातियों के लिए विशिष्ट संघटक योजना (06)-राज्य सड़क विकास निधि से पोषित सड़कें(एमडीआर) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय (आयोजना)	5054-सड़कों एवं सेतुओं पर पुर्जोगत परिचय 04-जिला एवं अन्य सड़कें 796- जनजातिय क्षेत्र उपयोगना (06)-राज्य सड़क विकास निधि से पोषित सड़कें(एमडीआर) [90]-निर्माण कार्य 74-सड़कों एवं पुलों का निर्माण व्यय (आयोजना)

उक्त स्वीकृति वित्त विभाग की आईडी क्रमांक 101805210 दिनांक 11.09.2018 एवं प्रशासनिक विभाग की आईडी संख्या 8254/एम/पीडब्ल्यूडी/2018 दिनांक 06.09.2018 के अनुसरण से निम्न शर्तों के अध्याधीन जारी की जा रही है:-

- (1) राशि का व्यय बजट प्रावधान की सीमा में करना सुनिश्चित किया जाएगा।
- (2) निविदा आमंत्रण से पूर्व प्रस्तावित कार्य की ड्राईंग एवं डिजाइन अनुमोदित करा ली हैं, तथा भूमि अधिग्रहण की आवश्यकता होने पर भूमि अधिग्रहित कर ली गई हैं।
- (3) निविदा आमंत्रण से पूर्व यह सुनिश्चित किया जाएगा कि प्रस्तावित कार्य पूर्व में किसी अन्य योजना में स्वीकृत नहीं है।

- (4) प्रस्तावित कार्य PWF&AR, RTPP Act/Rules, विभागीय नियमों/ योजना के दिशा-निर्देशों तथा निर्धारित मापदण्डों के अनुसार कराया जाना सुनिश्चित किया जावेगा।
- (5) प्रस्तावित कार्यों के निष्पादन में समय-समय पर राज्य सरकार द्वारा जारी पत्रों में वर्णित दिशा-निर्देशों/शर्तों की पूर्ण पालना सुनिश्चित की जायेगी।

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

क्रमांक एफ 7(35) A&F/एसआरएफ /अनु-II/ 2018-19/डी-446 दिनांक 11.09.2018
प्रतिलिपि निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है :-

- 1 अति. मुख्य अभियन्ता सा.नि.वि. संभाग.....(समस्त)
- 2 अधीक्षण अभियन्ता सा0नि0वि0 वृत्त.....(समस्त)
- 3 अधिशासी अभियन्ता खण्ड(समस्त)
- 4 मु0 अभि0 (पथ)/अधीक्षण अभियन्ता (पथ)/अधिशासी अभियन्ता (पी एण्ड एम-II/उपनिदेशक, सांख्यिकी/बजट लिपिक (पथ)/कम्पाईलेशन लिपिक, मुख्य अभियन्ता कार्यालय, सा0नि0वि0, राजस्थान, जयपुर।

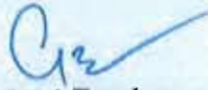
(एम0जी0महेश्वरी)
मुख्य अभियन्ता (पथ),
सा.नि.वि. राज. जयपुर।

S.No.	District	Name of Road	Non Patchable length with Chainage		Sanction Amount (in Lacs)	Bifurcation			Job. No.
			Length	Chainage		Gn.	S.C.	S.T.	
43	2 Hanumangarh	3 Sadulsahar- Chaiyan via Sangaria Tibbi Road (SHW-76) Km 10/0-94/100	4 29.00	5 16/0 to 25/0, 30/0 to 32/0, 53/0 to 57/0, 65/700 to 68/950, 69/850 to 72/200, 85/700 to 93/400	6 870.00	7	8	9	10 46 /5054/SRF/SH/2018-19
44	Jaipur	N.H.-8 Km. 181(Antela) to SH-8A(Khachariyawas-Kalyanpura Renwal) Km 0/00 to 13/00	13.00	0/00 to 4/500 & 4/500 to 11/500 & 11/500 to 13/00	430.50	295.71	76.76	58.03	47 /5054/SRF/SH/2018-19
45	Jaipur	Dausa to Kuchaman via Lavan Tunga Phagi Dudu Sambhar Km 156/00 to 170/00 (SH-2)	11.00	159/00 to 170/00	450.00	309.11	80.24	60.66	48 /5054/SRF/SH/2018-19
46	Jaipur	Dausa to Kuchaman via Lawan Tunga Phagi Dudu Sambhar km 108/0 to 156/0	6.00	133/500 to 134/500 145/0 to 146/0 152/0 to 156/0	266.00	182.72	47.43	35.86	49 /5054/SRF/SH/2018-19
47	Jaipur	Dausa to Kuchaman via Lavan Tunga Phagi Dudu Sambhar Km 16/0 to 29/0	13.00	16/0 to 29/0	227.50	156.27	40.56	30.67	50 /5054/SRF/SH/2018-19
48	Jaipur	Jaipur to Nawan via Jobner Pachkodla 37/200 to 50/00	1.10	37450 to 38450	150.00	103.04	26.75	20.22	51 /5054/SRF/SH/2018-19
49	Jaipur	Sikar to Pachkodla via Data Ramgarh Road Km 68/00 to 87/00 (SH-8A)	8.00	70/00 to 78/00	535.00	367.49	95.59	72.12	52 /5054/SRF/SH/2018-19
50	Jaipur	Phalodi (NH-15) to Needer via Ahu Pachudi Nagaur Taranu Toshina Kuchaman, Renwal Kaladera km 327/00 to 347/00 (SH-19)	6.50	327/00 to 331/800 & 332/300 to 334/00	210.00	144.25	37.44	28.31	53 /5054/SRF/SH/2018-19
51	Jaipur	Phalodi (NH-15) to Needer via Ahu Pachudi Nagaur Taranu Toshina Kuchaman, Renwal Kaladera km 359/00 to 384/00	7.00	359/0 to 366/0	212.50	145.97	37.89	28.65	54 /5054/SRF/SH/2018-19
52	Jaipur	Gudha to Jaipur via Andhi, Jamwarangarh Km 47/0 to 73/0	8.00	57/0 to 58/0, 59/0 to 64/00, 71/0 to 73/0	210.00	144.25	37.44	28.31	55 /5054/SRF/SH/2018-19
53	Jaipur	Mokhampura (NH-8) Phulera Sambhar Road Km 16/0 to 26/0 (SH-57)	4.00	20/800 to 24/800	140.00	96.17	24.96	18.87	56 /5054/SRF/SH/2018-19
54	Jaipur	Mokhampura Phulera Sambar Road km 0/0 to 16/0	6.40	3/600 to 6/0 8/0 to 12/0	224.00	153.87	39.94	30.20	57 /5054/SRF/SH/2018-19
55	Jaipur	Sawarda (NH-8) to Ajmer via Naraina, Marwah, Roopangarh, Salemad Road 0/0 to 41/0	0.60	1/800 to 2/500	50.00	34.35	8.92	6.74	58 /5054/SRF/SH/2018-19

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A
(KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00**

GENERAL ABSTRACT

S. No.	Item	Amount
1	2	3
1	PART - A : ROAD WORK	34077717.00
2	PART - B : PROTECTION WORK	625473.00
3	PART - C : ROAD FURNISHING	64488.00
4	PART - D : FLUSH CAUSEWAY	1872198.00
5	PART - E : HUME PIPE CULVERT 1000MM DIA TWO ROW	528781.00
Total		37168657.00
	Add. : 1% for Quality Control	371686.00
	Add. : 1.5% for Contingency	557530.00
Total		38097873.00
	Add. : 13% for Prorata Charges	4952723.00
Total		43050596.00
Say		Rs. 430.50 Lacs


Assistant Engineer
P.W.D. Sub Dn Viratnagar-II


Executive Engineer
P.W.D. Dn Kotputli

No. 239 Date 12/09/2018

Estimate Technically Sanctioned
for Rs. 430.50 lacs only

(Four Hundred Thirty Point Fifty Lacs only).


Superintendent Engineer
PWD Rural Circle
JAIPUR 2M

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-
KALYANPURA RENWAL) KM 0/00 TO 13/00**

ABSTRACT

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
1	2.1	Clearing grass and removal of rubbish up to a distance of 30 m outside the periphery of the area as per MoRTH Specification Clause 201.By Manual Means.	5.89	P.Hect.	7930.00	46708.00
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.	4268.70	P.Cum	23.00	98180.00
3	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	12342.50	P.Cum	50.00	617125.00
4	3.4 (i)	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 1000 m as per MoRTH Specification Clause 305.3	4200.00	P.Cum	110.00	462000.00
5	3.2	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	825.00	P.Sqm	7.00	5775.00

PART - A : ROAD WORK

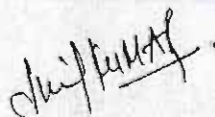
S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
6	4.2 (i)	Providing laying spreading and compacting specified graded sand, gravel (crushed stone) as per Table 400-1,400-2 or any other course material as per design mix, as per CBR in sub base course including premixing the material at OMC in wet 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	6412.73	P.Cum	750.00	4809544.00
7	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	4548.00	P.Cum	400.00	1819200.00
8	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	9894.38	P.Cum	1125.00	11131172.00
9	5.1 (i)	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	36262.50	P.Sqm	22.00	797775.00
10	5.2 (i)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.20 to 0.30 kg per sqm on the prepared bituminous surface cleaned with Hydraulic broom as per MoRTH Specification Clause 503.	4125.00	P.Sqm	7.00	28875.00

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
11	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.	36262.50	P.Sqm	8.00	290100.00
12	5.7 Case II (ii)	Providing, laying and rolling of open-graded premix carpet of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using Viscosity grade bitumen or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a three wheel 80-100 kN static roller capacity, finished to required level and grades to be followed by seal coat of either Type A or Type B or Type C as per MoRTH Specification Clause 510. Case - II By Mechanical Means Bitumen Bitumen (VG-30)	40387.50	P.Sqm	94.00	3796425.00
13	5.9(B) Case II Type B (ii)	Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A, Type B and Type C as per MoRTH Specification Clause 511 By Mechanical Means Case - II : Type B Bitumen (VG-30)	40387.50	P.Sqm	31.00	1252013.00

PART - A : ROAD WORK

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	6	5	7
14	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,	1702.50	P.Cum	5200.00	8853000.00
		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				
15	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.	105.00	P.Rmt.	665.00	69825.00
		TOTAL OF PART - A				34077717.00



Junior Engineer
P.W.D. Sub Dn Viratnagar-II



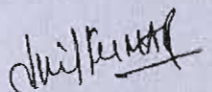
Assistant Engineer
P.W.D. Sub Dn Viratnagar-II

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-
KALYANPURA RENWAL) KM 0/00 TO 13/00**

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)	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	119.00	P.Cum	155.00	18445.00
2	11.4 1 (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	17.85	P.Cum	2550.00	45518.00
3	11.6 III(iii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:6 cement mortar	265.20	P.Cum	2050.00	543660.00
4	12.2	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRTH specification Clauses 1406 and 2200	102.00	P.Sqm	73.00	7446.00
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	34.00	P.Sqm	306.00	10404.00
		TOTAL OF PART - B				625473.00



Junior Engineer
P.W.D. Sub Dn Viratnagar-II



Assistant Engineer
P.W.D. Sub Dn Viratnagar-II

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-
KALYANPURA RENWAL) KM-0/00 TO 13/00**

ABSTRACT

PART - C : ROAD FURNISHING

S. No.	BSR Ref.	Item	Qty	Unit	Rate	Amount
1	2	3	4	5	6	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				
(b)	10.10.2	Ordinary Kilometer Stone (Precast)	14	Each	1439.00	20146.00
(c)	10.10.3	200 m stone (precast)	52	Each	339.00	17628.00
2	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.	1	Each	7774.00	7774.00
3	16.76	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	Nos.	9470	18940.00
		TOTAL OF PART - B				64488.00

(Signature)
Junior Engineer

P.W.D. Sub Dn Viratnagar-II

(Signature)
Assistant Engineer

P.W.D. Sub Dn Viratnagar-II

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00**

ABSTRACT OF COST

PART- D : FLUSH CAUSEWAY

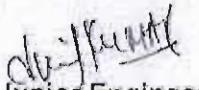
S. NO.	BSR Ref.	ITEM	QTY.	UNIT	RATE	AMOUNT
1	2	3	4	5	6	7
1	R-11.1 (i)	Earthwork in excavation for structures as per drawing and MoRTH specifications Clause 304.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material. Ordinary soil Upto 3 m depth	481.20	P.Cum	155.00	74586.00
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	45.00	P.Cum	2550.00	114750.00
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	268.20	P.Cum	2470.00	662454.00
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	118.80	P.Cum	750.00	89100.00

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00

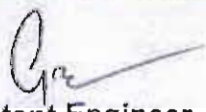
ABSTRACT OF COST

PART- D : FLUSH CAUSEWAY

S. NO.	BSR Ref.	ITEM	QTY.	UNIT	RATE	AMOUNT
1	2	3	4	5	6	7
5	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,	167.25	P.Cum	5200.00	869700.00
		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				
6	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on Stone work.	108.00	P.Sqm	126.00	13608.00
7	R-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	80	P.Nos.	600	48000.00
		TOTAL OF PART - E				1872198.00


Junior Engineer

P.W.D. Sub Dn Viratnagar-II

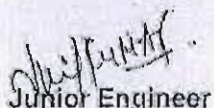

Assistant Engineer
P.W.D. Sub Dn Viratnagar-II

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00**

ABSTRACT

PART - E : HUME PIPE CULVERT 1000MM DIA TWO ROW

S. NO.	BSR Ref.	ITEM	QTY.	UNIT	RATE	AMOUNT
1	2	3	4	5	6	7
1	R-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	196.08	P.Cum	155.00	30392.00
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	8.02	P.Cum	2550.00	20451.00
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	79.44	P.Cum	2470.00	196217.00
4	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)	29.08	P.Cum	2900.00	84332.00
5	R-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	32.60	P.Cum	695.00	22657.00
6	R-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	20.00	P.Rmt	8439.00	168780.00
7	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on Stone work.	47.24	P.Sqm	126.00	5952.00
		TOTAL OF PART - F				528781.00


Junior Engineer

P.W.D. Sub Dn Viratnagar-II


Assistant Engineer

P.W.D. Sub Dn Viratnagar-II

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-
KALYANPURA RENWAL) KM 0/00 TO 13/00**

DETAIL

PART - A : ROAD WORK

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
1	2.1	Clearing grass and removal of rubbish up to a distance of 30 m outside the periphery of the area as per MoRTH Specification Clause 201. By Manual Means.		
			2 x 6100.00 x 2.00 / 10000	= 2.44 Hect.
			2 x 6900.00 x 2.50 / 10000	= 3.45 Hect.
				= 5.89 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.		
		CC Pavement	1 x 2270.00 x 4.05 x 0.20	= 1838.70 Cum
		Extra for Dola Cutting	2 x 1800.00 x 0.90 x 0.75	= 2430.00 Cum
				= 4268.70 Cum
3	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		
		Embankment widening	2 x 3000.00 x 2.00 x 0.35	= 4200.00 Cum
		3800 to 4300	2 x 500.00 x 2.00 x 0.35	= 700.00 Cum
		4700 to 11500	1 x 2500.00 x 7.50 x 0.35	= 6562.50 Cum
		11500 to 12800	2 x 1100.00 x 2.00 x 0.20	= 880.00 Cum
				= 12342.50 Cum
4	3.4 (i)	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 1000 m as per MoRTH Specification Clause 305.3		
		3000 to 3800	1 x 800.00 x 7.50 x 0.70	= 4200.00 Cum
				= 4200.00 Cum

PART - A : ROAD WORK

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
5	3.2	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		
			1 x 500.00 x 3.00 x 55%	= 825.00 Sqm = 825.00 Sqm
6	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 Raising	1 x 9130.00 x 4.05 x 0.15	= 5546.48 Cum
		Under CC	1 x 2270.00 x 3.75 x 0.10	= 851.25 Cum
		Ramps	2 x 25.00 x 3.00 x 0.10	= 15.00 Cum
				= 6412.73 Cum
7	4.1 (A)	Construction of granular sub-base (iii) 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		
		Remetlling,raising	2 x 9630.00 x 1.20 x 0.15	= 3466.80 Cum
		Along Renewal	2 x 1100.00 x 1.20 x 0.100	= 264.00 Cum
		For CC Pavement Shoulders	2 x 2270.00 x 1.20 x 0.15	= 817.20 Cum
				= 4548.00 Cum

PART - A : ROAD WORK

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
8	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		
		Remetalling & Raising	1 x 9630.00 x 3.75 x 0.250	= 9028.13 Cum
		Under CC	1 x 2270.00 x 3.75 x 0.100	= 851.25 Cum
		Ramps	2 x 25.00 x 3.00 x 0.100	= 15.00 Cum
				= 9894.38 Cum
9	5.1 (i)	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		
		On Remetalling portion	1 x 9630.00 x 3.75	= 36112.50 Sqm
		Ramps	2 x 25.00 x 3.00	= 150.00 Cum
				= 36262.50 Sqm
10	5.2 (i)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.20 to 0.30 kg per sqm on the prepared bituminous surface cleaned with Hydraulic broom as per MoRTH Specification Clause 503.		
			1 x 1100.00 x 3.75	= 4125.00 Sqm
				= 4125.00 Sqm

PART - A : ROAD WORK

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
11	5.2	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.		
		On Remetalling portion	1 x 9630.00 x 3.75	= 36112.50 Sqm
		Ramps	2 x 25.00 x 3.00	= 150.00 Sqm
				= 36262.50 Sqm
12	5.7	Providing, laying and rolling of open-graded premix carpet of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using Viscosity grade bitumen or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a three wheel 80-100 kN static roller capacity, finished to required level and grades to be followed by seal coat of either Type A or Type B or Type C as per MoRTH Specification Clause 510. Case - II By Mechanical Means Bitumen Bitumen (VG-30)		
		Ramps	1 x 10730.00 x 3.75	= 40237.50 Sqm
			2 x 25.00 x 3.00	= 150.00 Sqm
				= 40387.50 Sqm
13	5.9(B)	Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A, Type B and Type C as per MoRTH Specification Clause 511 By Mechanical Means Case - II : Type B Bitumen (VG-30)		
		Qty Same as PMC		= 40387.50 Sqm

PART - A : ROAD WORK

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
14	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, using curing compound and water finishing to lines and grade as per drawing and MoRTH Specification Clause 602 including vacuum dewatering process with all required equipments		
			1 x 2270.00 x 3.75 x 0.20	= 1702.50 Cum = 1702.50 Cum
15	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.		
			14 x 7.50	= 105.00 Rmt.

Shif Bhatt

Junior Engineer
P.W.D. Sub Dn Viratnagar-II

Ar

Assistant Engineer
P.W.D. Sub Dn Viratnagar-II

**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00**

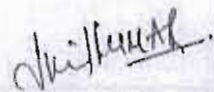
DETAILS

PART - B : PROTECTION WORK

Sl. No.	BSR Ref.	Description of Item	Measurement	Quantity
1	2	3	4	5
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. Ordinary soil Upto 3 m depth	$1 \times 85.00 \times 1.40 \times 1.00$	$= 119.00 \text{ Cum}$
2	11.4	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	$1 \times 85.00 \times 1.40 \times 0.15$	$= 17.85$ $= 17.85 \text{ Cum}$
3	11.6 III(iii)	Stone masonry work in cement mortar in foundation complete as per drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:6 cement mortar	$1 \times 85.00 \times \frac{1.20 + 1.40}{2} \times 2.40$	$= 265.20 \text{ Cum}$
4	12.2	Pointing with cement mortar (1:3) on Stone work as per drawing and MoRTH specification Clauses 1406 and 2200	$1 \times 85.00 \times 1.20$	$= 102.00 \text{ Sqm}$

PART - B : PROTECTION WORK

Sl. No.	BSR Ref.	Description of Item	Measurement	Quantity
1	2	3	4	5
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 85.00 x 0.40	= 34.00 Sqm



Junior Engineer
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Assistant Engineer
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**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00**

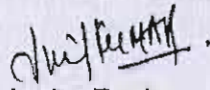
DETAIL

PART - C : ROAD FURNISHING

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		
(b)	10.10.2	Ordinary Kilometer Stone (Precast)	=	14 No.
(c)	10.10.3	200 m stone (precast)	=	52 No.
2	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.		
			=	1 Nos.

PART - C : ROAD FURNISHING

S. No.	BSR Ref.	Particulars	Measurement	Qty
1	2	3	4	5
3	16.76	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 Nos.


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**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-
KALYANPURA RENWAL) KM 0/00 TO 13/00**

DETAIL & ABSTRACT

PART- D : FLUSH CAUSEWAY

30.00 Mtr. (4 No.)

S. No.	BSR Ref.	Description of Item	Measurement	Qty.
1	2	3	4	5
1	R- 11.1	Earthwork in excavation for structures as per drawing and (i) 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		
		Foundation of U/S wall	4 x 1 x 30.00 x 1.20 x 1.50	= 216.00 Cum
		Foundation of D/S Wall	4 x 1 x 30.00 x 1.30 x 1.70	= 265.20 Cum
				= 481.20 Cum
2	11.4	Providing concrete for (i) 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		
		Foundation of U/S wall	4 x 1 x 30.00 x 1.20 x 0.15	= 21.60 Cum
		Foundation of D/S Wall	4 x 1 x 30.00 x 1.30 x 0.15	= 23.40 Cum
				= 45.00 Cum
3	11.6	Stone masonry work in cement (III) mortar in foundation complete as per (II) drawing and MoRTH specifications Clauses 1402, 1405, 2102 & 2104. Random Rubble Masonry In 1:4 cement mortar		
		Foundation of U/S wall	4 x 1 x 30.00 x $\frac{(0.90 + 0.40)}{2}$ x 1.50	= 117.00 Cum
		Foundation of D/S Wall	4 x 1 x 30.00 x $\frac{(1.00 + 0.40)}{2}$ x 1.80	= 151.20 Cum
				268.20 Cum

PART- D : FLUSH CAUSEWAY

30.00 Mtr.

(4 No.)

S. No.	BSR Ref.	Description of Item	Measurement	Qty.
1	2	3	4	5

- 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

Under CC

$$4 \times 1 \times 30.00 \times \frac{(6.65 + 6.55)}{2} \times 0.150 = 118.80 \text{ Cum}$$

PART- D : FLUSH CAUSEWAY

30.00 Mtr.

(4 No.)

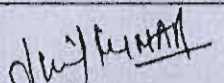
S. No.	BSR Ref.	Description of Item	Measurement	Qty.
1	2	3	4	5
5	6.1	Construction of un-reinforced, dowel jointed at expansion and construction joint only, plain cement concrete pavement, thickness as per design, over a prepared sub base, with 43 grade cement or any other type as per Clause 602.2.2 M30 (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 using curing compound and water finishing to lines and grade as per drawing and MoRTH Specification Clause 602 including vacuum dewatering process with all required equipments		
		Causeway Flooring	$4 \times 1 \times 30.00 \times \frac{(6.60 + 6.70)}{2} \times 0.125 = 99.75 \text{ Cum}$ $4 \times 1 \times 30.00 \times 7.50 \times 0.075 = 67.50 \text{ Cum}$ $= 167.25 \text{ Cum}$	
6	12.2 A	Plastering with cement mortar (1:4), 20 mm thick on Stone work.	$4 \times 2 \times 30.00 \times 0.45$	108.00 = 108.00 Sqm

PART-D : FLUSH CAUSEWAY

30.00 Mtr.

(4 No.)

S. No.	BSR Ref.	Description of Item	Measurement	Qty.
1	2	3	4	5
7	R-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		
			4 x 2 x 10.00	= 80 Nos.


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Assistant Engineer
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**NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA
RENWAL) KM 0/00 TO 13/00**

DETAIL & ABSTRACT

PART - E : HUME PIPE CULVERT 1000MM DIA TWO ROW

2 Nos.

Sl. No.	BSR Ref.	Description of Item	Measurement	Qty.
1		3	4	5
1	R- 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	As per IRC:SP:20-2002 Plate No. 7.01 =	196.08 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	As per IRC:SP:20-2002 Plate No. 7.01 =	8.02 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	As per IRC:SP:20-2002 Plate No. 7.01 =	79.44 Cum
4	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)	As per IRC:SP:20-2002 Plate No. 7.01 =	29.08 Cum

PART - E : HUME PIPE CULVERT 1000MM DIA TWO ROW**2 Nos.**

Sl. No.	BSR Ref.	Description of Item	Measurement	Qty.
1		3	4	5

- 5 R- 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

As per IRC:SP:20-2002 Plate No. 7.01 = **32.60 Cum**

- 6 R- 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

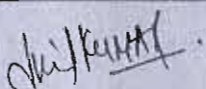
As per IRC:SP:20-2002 Plate No. 7.01 = **20.00 Rmt**

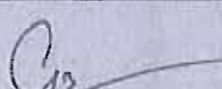
- 7 12.2 A Plastering with cement mortar (1:4), 20 mm thick on Stone work.

$$4 \times 7.88 \times 1.80 = 56.74 \text{ Sqm}$$

Deduction for Pipes $2 \times 4 \times \frac{3.14}{4} \times 1.23 \times 1.23 = -9.50 \text{ Sqm}$

$$\text{Net Qty.} = \mathbf{47.24 \text{ Sqm}}$$


Junior Engineer
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Assistant Engineer
P.W.D. Sub Dn Viratnagar-II

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00

SCOPE OF WORK

S.No.	Chainage		Length	Good Condition	Existing					Proposed					Protecti on work		Remark
	From	To			BT 3.00	BT 3.75	C.C. Pavement/C.C. Block 3.75 Mtr.	FCW	HPC	Only GR	PMC 3.75m with WBM Patch	Raising 3.75m	Remetall ing 3.75m	New Constructio n 3.75 m Width CC M-30	Strengthen ing 3.75 m Width CC M-30	FCW	
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2	0	200	200									200					18
3	200	270	70											70			
4	270	1500	1230									1230					
5	1500	2500	1000											1000			
6	2500	3000	500									500					
7	3000	3800	800									800					
8	3800	4300	500										500				
9	4300	5100	800											800			
10	5100	9000	3900									3900					
11	9000	11500	2500									2500					
12	11500	12600	1100								1100						
13	12600	13000	400											400			
	TOTAL		13000	0	0	0	0	0	0	0	1100	9130	500	2270	0	0	0

dwij kumar

Junior Engineer
P.W.D. Sub Dn Viratnagar-II

Gp

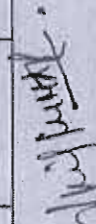
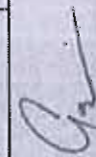
Assistant Engineer
P.W.D. Sub Dn Viratnagar-II

FIELD DATA SHEET FOR TRAFFIC CENSUS

NAME OF WORK NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00

DISTRICT STATE Jaipur Rajasthan Cencess point New

Date	Motorised Traffic						Non Motorised Traffic				Total
	Cars, Jeeps, Vans, Three-Wheelers	Motorised Two-wheelers	Light Commercial Vehicles	Trucks	Agricultural Tractors / Tractor Trailer	Buses	Multi-Axied Vehicles & Trailer	Cycles	Cycle Rickshaws	Animal Drawn Vehicles SWC Num Tyred	
16.06.2018	44	105	115	64	44	29	35	88	0	0 1	525
17.06.2018	77	124	112	58	64	25	44	115	0	0 1	620
18.06.2018	31	105	97	77	31	22	47	77	0	0 1	488
Total for three day	152	334	324	199	139	76	126	280	0	0 3	1633
Average Daily Traffic	51	111	108	66	46	25	42	93	0	0 1	543
PCU Factor	1.00	0.50	1.50	3.00	3.00	3.00	3.00	0.50	2.00	8.00 8.00	
Average Daily Traffic PCU	51	56	162	198	138	75	126	47	0	0 6	859
Total CVPD			108	66		25	42				241



 JUNIOR ENGINEER
 P.W.D. SUB. DN. VIRATNAGAR
 ASSISTANT ENGINEER
 P.W.D. SUB. DN. VIRATNAGAR

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00

Design of Flexible Pavement

(As per IRC:37-2001)

1 Design Datas :-

(i) P	=	Number of commercial vehicles per day at last count in Apr. 2007	
(a)		Light Commercial Vehicles	= 108
(b)		Bus	= 25
(c)		Trucks	= 66
(d)		Multi-Axied Vehicles & Trailor	= 42
Total Commercial Vehicles Per Day			= 241 CVPD
(ii) r	=	Annual growth rate of Commercial traffic (as per IRC:37-2001 para 3.3.2.2)	= 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:37-2001 para 3.3.3.2 for Other catory of road 10 to 15 year	= 15 Years
(v) F	=	Vehicle Damage Factor (as per IRC:37-2001 para 3.3.4.4 for traffic volume 0-150)	= 3.50
(vi) D	=	Lane Distribution Factor (as per IRC:37-2001 para 3.3.5.1 for Single lane carriageway)	= 1.00
(vii) A	=	Initial traffic in the year of completion of construction in terms of CVPD	
$A = P (1 + r)^x = 241 (1 + 0.075)^1$			= 255 CVPD
(viii) CBR Value of the Sub Grade			= 8.00 %

2 Design traffic (N) :-

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

$$N = \frac{365 \times [(1+0.075)^{10} - 1]}{0.075} \times 255 \times 1.00 \times 3.50 = 4.61 \text{ msa}$$

Say = 5.00 msa

3 Crust thickness of existing road :-

(i) GSB	=	150 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	=	20
Total Existing Crust	=	320 mm

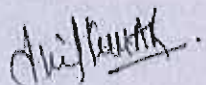
4 Design of Flexible Pavement :-

(In the light of IRC:37-2012, Pavement Design Catalogue for CBR 9.50% & Traffic 2 msa)

(i) Granular Sub Base	=	150 mm
(ii) WMM	=	250 mm
(iii) DBM	=	50 mm
(iv) BC	=	25 mm
(i) Total Pavement Thickness	=	475 mm

5 Crust thickness Adopted equal to existing crust.

(i) Granular Sub Base (Existing)	=	150 mm
(ii) WMM	=	250 mm
(iii) DBM	=	0 mm
(iv) BC	=	0 mm
(v) 20 mm PMC with Seal Coat	=	20 mm
	=	420 mm



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ASSISTANT ENGINEER
P.W.D. SUB. DN. VIRATNAGAR

CONCRETE PAVEMENT DESIGN (As per IRC : 58-2002)

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00

Step -1 Design Parameters:

(a) Location of Pavement	:	Rajasthan
Class of Road	:	Village Road
Concrete Grade (f_{ck}) =	:	M-30
Characteristic strength of Concrete Grade (f_{ck}) =	:	35.00 N/mm ²
(b) Flexural Strength of Concrete (f_{cr}) =	:	41.00 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 (μ)	:	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	:	241 CVPD
Design Life	:	20 Years
Traffic Growth rate (r) =	:	0.075
(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
19-21	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 =

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

$$C = [365 \times 241 \times \{(1 + 0.075)^{20} - 1\}] / 0.075$$

3809296 Commercial vehicles

Design Traffic = 25% of total repetition of commercial vehicles

= 25% of 3809296

952324

Total repetitions of single axle & tandem 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	47616	20	47616
10	133325	16	19046
Less than 10	95232	Less than 16	123802

Step -4 Load stress for edge region :

Step -3 Select tentative design thickness of pavement slab

h

20 Cm

Road Classification

Village Road

Load Safety factor (LSF) =

1.10

Modulus of Rupture =

41.00 kg/cm²

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

81.53 cms.

$$b = (1.80 a^2 + h^2)^{1/2} - 0.675h$$

14.39 cms.

$$sl_0 = 0.529 P/h^2 (1 + 0.54m) [4 \log_{10} l/b - \log_{10} b - 0.4048]$$

Axle load (AL) tonnes	Design load (AL x LSF)	Stress from Chart (kg/cm ²)	Stress Ratio (SR)	Expected repetition (n)	Fatigue life (N)	Fatigue life Consumed = (5) / (6)
1	2	3	4	5	6	7
Single axle						
20.00	22.00	33.75	0.820	0	68	0.0000
18.00	19.80	30.38	0.740	0	630	0.0000
16.00	17.60	27.00	0.660	0	5830	0.0000
14.00	15.40	23.63	0.580	0	53937	0.0000
12.00	13.20	20.25	0.490	47616	1286914	0.0370
10.00	11.00	16.88	0.410	133325	Unlimited	0.0000
Tandem axle						
36.00	39.60	26.80	0.650	0	7700	0.0000
32.00	35.20	23.82	0.580	0	53937	0.0000
28.00	30.80	20.84	0.510	0	485184	0.0000
24.00	26.40	17.86	0.440	0	Unlimited	0.0000
20.00	22.00	14.89	0.360	47616	Unlimited	0.0000
16.00	17.60	11.91	0.290	19046	Unlimited	0.0000
Cummulative fatigue life consumed =						0.037

The Design is safe from fatigue considerations

Step -4 Temperature stress for edge region :

(a) for Rajasthan Region $\Delta t =$	14.06 °C
(b) $i = [Eh^3 / \{12(1-m^2)K\}]^{1/4} =$	81.53 cms.
for $L/i =$	4.290
$C_L =$	0.636
for $W/i =$	4.290
$C_W =$	0.636
$C_{max} =$	0.636
$st_e = (E\Delta t / 2) \cdot C =$	13.41 kg/cm ²

Step -5 Residual Concrete Strength for Supporting Traffic Loads

$$f_L = f_R - st_e \quad 27.690 \text{ kg/cm}^2$$

Total of temperature warping stress and the highest axle load stress = 27.69 + 13.41 = 41

Which is less than 41 kg/cm² the maximum load stress at highest axle load

Hence o.k.

Step -6 Corner Load stress

Radius of relative stiffness (l)

$$l = [Eh^3 / \{12(1-m^2)K\}]^{1/4} = \quad 81.53 \text{ cms.}$$

$$98\text{th Percentile load} = \quad 12 \text{ tonnes}$$

$$\text{Wheel load (P)} = \quad 6 \text{ tonnes}$$

Radius of area of contact of wheel (a) =

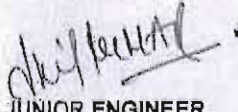
$$C/C \text{ distance between two tyres} = \quad 31 \text{ cms}$$

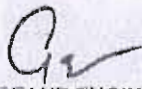
$$a = [0.8521 \times (P/(q \times 3.14)) + (S/3.14) \times (P/(0.5227 \times q))^{1/2}] \quad 24.03 \text{ cms}$$

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

$$st_c = \quad 20.32 \text{ kg/cm}^2$$

< f_R O.K.


JUNIOR ENGINEER
P.W.D. SUB. DN. VIRATNAGAR


ASSISTANT ENGINEER
P.W.D. SUB. DN. VIRATNAGAR

NAME OF ROAD : NH-8 KM 181 (ANTELA) TO SH-8A (KHACHARIYAWAS-KALYANPURA RENWAL) KM 0/00 TO 13/00

IRC:37-2012

