GOVT. OF JAMMU AND KASHMIR

Public Works Department (Roads and Buildings)

Jammu

APPLICATION FOR ADMINISTRATIVE APPROVAL

Name of Project : **Construction of road from Bani to Billawar via Dhaggar, Dhaman and Deri Galla under CRF Phase-1st.**

ESTIMATED COST: RS.2000.00 LACS.

LENGTH : **5.00 KMS.**

BLOCK : **DUGGAN**

DISTRICT : **KATHUA**

O/C

108 BANI

OFFICE OF THE EXECUTIVE ENGINEER PWD (R&B) DIVISION BASOHLI

No. 3710-17

The Superintending Engineer,
PWD (R&B) Jammu-Kathua Circle,
JAMMU.

Dated 8-12-2016

Subject:- **Application for Administrative Approval for:**

1. Construction of road from Kohag to Tilla Billawar via Lower Lahri under C.R.F. Length = 11.00 Kms. = **Rs.1368.44 Lacs.**
2. Up-gradation of Billawar to Sukralla road (Double Lane Specifications) under CRF Phase-1st (Length-4.00 Kms.) = **Rs.1800.00 Lacs.**
3. Construction of road from Bani to Billawar via Dhaggar, Dhaman and Deri Galla under C.R.F. Phase-1st (Length=5.00 Kms.).= **Rs.2000.00 Lacs.**

Sir,

Kindly find enclosed herewith the Applications for Administrative Approval for construction of above noted 03 Nos. roads, amounting as mentioned above along-with Technical Report and Drawings for favour of further necessary action. All other salient features and financial aspects have fully been explained in the Technical Report. The AAA/DPR for the construction of balance work of 220 mtr. span (Actual 200 Mtr.) motorable bridge over nallah Ujh near Guddu Flail stands submitted to General Manager JKPCC Limited Jammu vide Deputy General Manager JKPCC Ltd. Unit-5 Kathua's No.JKPCC-5/56 dated 27.04.2016 under CRF for Rs.1477.24 lacs please.

The Applications for Administrative Approval have been processed as desired by the Chief Engineer PW(R&B) Deptt. Jammu's No.CEJ/DB/S/14714 dated 02.12.2016 and your endorsement No.7617-23 dated 03.12.2016. Copy thereof is enclosed for ready reference.

As such it is requested that the Applications for Administrative Approval may kindly be got accorded from concerned quarter, so as to enable this office for taking further course of action.

Yours Faithfully,

(Er.Suman Bhaskar)
Executive Engineer
PWD (R&B) Division
Basohli

Encl.....Sets

Copy to the:-

1- PRO to Dy. Chief Minister J&K State for favour of information please.
2- Hon'ble MLA Bani Constituency for favour of information please.
3- Chief Engineer PW (R&B) Department Jammu for favour of information please.
4-5- Assistant Executive Engineer PWD (R&B) Sub-Division Billawar/Bani for information.
6-7- Head Draftsman-Head Clerk for information.

o/c

108 BANI

Member
J&K Legislative Assembly

Jewan Lal

D. O. No.

Dated : 27-3-15

Respect Sir,

I Request your goodself to kindly issue direction to your deptt. officer to conduct a survey and prepare a D.P.R. for submission of Road Project from Bani - Dhaggar - Billawar with a tunnel at Dharmman under C.R.F from centre as this road will cover 35000 population of Bani, Lohai Malhar and Baggan block population

Regards.
Moh'd Altaf Bukhari
Minister Public Work.

Your Sincerely
M.L.A.
Bani

(9)

OFFICE OF THE SUPERINTENDING ENGINEER PWD(R&B)JAMMU KATHUA CIRCLE JAMMU

No:- SEJ/ 505-06

The Executive Engineer,
PWD(R&B) Division,
Basohli.

Dated:- 16-04-2015

Subject:- **Inclusion of roads under CRF.**

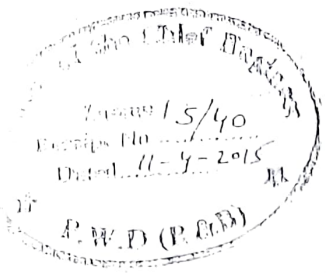
Find herewith a copy of letter No. PS/HM/(R&B)/PW/F/335/2015 dated 08-04-2015 alongwith its enclosure received through Chief Engineer PW(R&B)Department, Jammu's endstt. No. CEJ/G/342-344 dated 11-04-2015 on the subject cited above for submission of the DPR under laid down norms at the earliest possible.

(Er. S P. Manhas)
Superintending Engineer,
PWD(R&B)Jammu Kathua Circle,
Jammu.

Copy to the:-
1. Chief Engineer PW(R&B)Department, Jammu for information.

Executive Engineer
PWD (R&B) Division
Basohli

Corr. Division Basohli



Personal Section of Hon'ble Minister for
Public Works (R&B), Floriculture and Gardens & Parks, J&K

NO:-PS/HM/(R&B)/PW/F/335/2015
Dated. 08-04-2015

The Chief Engineer,
PW (R&B),
Jammu

Subject: - *Inclusion of roads under CRF*

-.-

Sir,

Shri Jewan Lal, Hon'ble MLA, Bani has made a request to the Hon'ble Minister Public Works and Floriculture through his D.O letter dated 27-03-2015 for conducting of survey and preparation of DPR of road project viz; "Bani-Dhaggar-Billawar with a tunnel at Dhamman" for its inclusion under CRF.

In this connection, I am desired to request you kindly to have the survey of the said road conducted and DPR prepared for its inclusion in the list of CRF projects for the current financial year after seeking approval of the Hon'ble Minister.

Yours faithfully,

OSD to
Minister for PW(R&B),
Floriculture and Gardens & Parks

CHECK LIST OF C.R.F SCHEMES OF R&B DEPARTMENT

	Project formulation:-	Construction of road from Bani to Billawar via Dhaggar, Dhaman and Deri Galla under CRF Phase-1st.
1	District	Kathua
2	State road Map with indicating district Boundaries,National Highways,State Highways. Of roads in different colours. in addition to the Roads already approved under the scheme and On going works under this schemes.	Enclosed
3	Index Map Showing the area and proposed road Bridges.	Enclosed
4	Category of the road proposed to be improved whether State highway or Major district road or otherwise.	ODR
5	Scope of the work incl. the specifications to be adopted in brief.	Yes
6	Length	5.00 Kms.
7	Estimates cost of the project based on the actual Requirement and realistic cost estimate alongwith An abstract of cost estimate.	Rs.2000.00 Lacs.
8	Justification of the work for inclusion in the schemes.	As per Technical Report
9	Details of last improvement work done on this road and the calendar year in which it was carried out. For Last three years	No Original Works
10	Probable starting date	As per scheme approved
11	Target date of completion	As per scheme approved
12	A certificate regarding availability of the entire Unencumbered land needed for the project.	Enclosed

Sd/-
Asstt:Executive Engineer
PWD (R&B) Sub-Division
Bani

Executive Engineer
PWD (R&B) Division
Basohli

Technical Report

Name of Project: Construction of road from Bani to Billawar via Dhaggar Dhaman and Deri Galla under CRF Phase 1st

Total length: 10.0 KM (Phase 1st =5.00)

Authority: As desired by the Hon'ble MLA Bani constituency vide his D.O.letter No.Nil dated 27-03-2015 & Hon'ble Minister for Public Works (R&B), Floriculture and Gardens & Parks, J&K vide his No.PS/HM/(R&B) /F/335/2015 dated 08-04-2015.

Project Profile: The State of Jammu and Kashmir is divided into three regions, Jammu, Kashmir and Ladakh. The Jammu region consisting of ten Districts, Doda, Kishatwar, Ramban, Jammu, Samba, Kathua, Poonch, Rajouri, Udhampur and Reasi. In Kathua District, Dhaman to Deri Galla is a picturesque place situated about 41 km West of Bani at an altitude of 1710 Mtrs from the actual mean sea level. The area has immense tourist potential with the dense forests of evergreen conifer trees all round. If all necessary facilities and infrastructures are provided, it can be developed as an ideal tourist spot. At present the villages namely Dhaggar, Dhaman, Bhullari, Dullangal, Bhakoga, Having population of more than 15000 souls are still without any road network despite of the fact that

The entire area is almost backward and large number of families living in adjoining area falls below the poverty line. The people of the area are mostly Agriculturists, depending upon the Agriculture produce. In absence of better communication system they have to face a lot of hardships in bringing their products to the Marketing Centers. The road when constructed shall open a new era for overall development of this area and shall provide better road system for the inhabitants of the area.

The socio-economic standard of the people could be improved by constructing road and providing them easy access to townships and markets to sell their produce. The Agricultural return could be multiplied by using fertilizers and modern techniques of farming and crop

rotation. Needless to mention here that Health and education standard get a spire due to accessibility.
The construction of all weather road will play a pivotal role in overall development of the area. Besides this sick and school going children will also be benefitted by construction of this road.
The construction of road upto B.T.specifications will also provide direct employment to skilled and unskilled labour.

This area has shortest possible connectivity from tehsil Billawar as a road is already under construction from Billawer to Majnu and this new proposed connectivity from Majnu to Deri Galla road will provide direct connectivity from Billawar (tehsil headquarter) to Bani by constructing approximate 10.0km length of road from Majnu to Deri Galla as from Bani to Deri Galla Via Dhaggar is already with PWD/PMGSY Department. Keeping in view funds concentrates only 5.00km out of 10.0km length is proposed in Phase 1st. With this new proposed construction approximate 150000 souls will directly/ indirectly be benefitted.

Keeping in view of above facts, it is felt imperative to construct the road and complete it in the shortest possible time for getting maximum benefits to the local population of the area.

Proposals & Specifications:-

It has been proposed to construct the road as per village road specifications. The formation width of the road is 6.00 mtr at straight reaches and 8.00 mtr at curves. The carriage way of the road shall be 3.00 mtr upto B.T standard. Suitable number of passing zones shall be constructed. The work shall be got executed with following specification.

Brief Specification:

a) Earth work in cutting shall be done in the entire length of 6.00 Km. with formation width of 6.00 mtr. and carriageway 3.00 mtr.

b) WBM Grade-II (15cm thick)

c) WBM Grade-III (10cm thick)

d) 50mm thick Bitumen Macadam

d) 25 mm thick semi dense premix carpet shall be laid as per IRC & MORT&H specifications.

e) 12 Nos 1.0mtr span RCC Culvert,03 nos 3.0mtr span RCC Culvert,, 1195mtr Pacca drain be constructed to drain off water from from minor Nallah.

f) Retaining Wall of an aggregate length of 900mtr and Breast Wall for an aggregate length 900mtr be provided for protection of Road

Time & Cost :-

The scheme is estimated to cost **Rs.2000.00 Lacs** and shall be completed within three years subject to the availability of funds and key construction material well in time.

Asstt. Executive Engineer
PWD(R&B) Sub-Division
Bani

Executive Engineer
PWD(R&B) Division
Basohli

OFFICE OF THE CHIEF ENGINEER PW (R&B) DEPARTMENT, JAMMU

No. : CEJ/DB/S/19719
Dated: 02 -12-2016

The Superintending Engineer
PWD (R&B) Jammu - Kathua Circle
Jammu .

Subject:- Detailed Project Reports proposed under CRF for the year 2016-17

Please find enclosed a list of 17 no. projects at a estimated cost of Rs.27856.44 lacs proposed for funding under CRF during the financial year 2016-17.

You are advised to furnish the Detail Project reports as per Annexure "A" to this office within three days positively. The Detailed Project Reports should have cost of Abstract indicating specifically the Details for Major components of the works. You are also advised to record the certificate to the effect that :-

1. Land is available free from all encumbrances.
2. Rates have been properly checked / scrutinized as per the latest SOR.
3. No work has been done on the said road during the past three years.
4. The Project has not been funded under any other scheme.
5. Roads safety measures are in place as per Norms.

Er. ALOK MENGI
CHIEF ENGINEER
PW (R&B) DEPARTMENT
JAMMU

Office of the SE PWD (R&B) Jammu - Kathua Circle Jammu

No. 1617-23 Dt. 03-12-2016

Copy forwarded to the Executive Engineer, PWD (R&B) [illegible] for immediate [illegible] PWD (R&B) Div Samba / Kathua / Basohli [illegible] Division with the detailed project reports under CRF [illegible] three days positively [illegible] be also taken [illegible] by the above [illegible]

[illegible]

Superintending Engineer
PWD (R&B) Jammu Kathua Circle
JAMMU.

LIST OF ROADS / BRIDGES PROPOSED UNDER CRF FOR THE YEAR 2016-17 (ANNEXURE "A")

S NO	Name of Scheme	District	Cost	
JAMMU	KATHUA CIRCLE JAMMU			
1	Construction of four lane Chatha Miran Sahib road from Karan bagh Chowk to Miran Sahib Chowk and Chatha Mill Chowk to Rani Bagh (Phase - I)	Jammu	2000.00	I
2	Construction of road from Bamyal to Deva Mai Temple via Holy Mandir including 45.00 m span bridge over Holy Nallah	Jammu	1500.00	I
3	Improvement / Up-Gradation of road from Kothi Morh to Jarola Chak to Seohra via Shirdee College, Bishnah	Jammu	1400.00	I
4	Construction of Uriani to Pali Bridge	Jammu	800.00	
5	Widening / Upgradation of RS pura Suchetgarh road upto four laning Km 1 to km 7 RD 800	Jammu	1500.00	I
6	Construction of 7x50 mtr span double lane pre-stressed bridge over Nallah Aik Jora Nikowal	Jammu	2000.00	I
7	Kathua to Magloor via Mouri	Kathua	2000.00	
8	Kobak to Tilla Billawar via Lower Lahri	Kathua	1368.44	
9	Construction of balance work of 220 Mtr span motorable bridge over Nallah Ujh near Guddu	Kathua	1000.00	
10	Up-gradation of Sukrala road (double lane specifications)	Kathua	1800.00	
11	Rani to Billawar via Dagger	Kathua	2000.00	
12	Improvement / Widening of Old samba - Kathua road	Kathua	1500.00	
13	Construction of bridge at Utterbani over river Devak at village Utterbeni in samba Constituency	Samba	1200.00	
14	Improvement / Up-Gradation / Strengthening of Samba Sumb road.	Samba	2000.00	
15	Widening /Improvement of Utterbehani Purmandal road via Mandal (Double Lane)	Samba	1800.00	
16	Approach road and Underpass for AIIMS at Vijaypur	samba	1988.00	
17	Widening of existing Raya Morh, Raya Suchani Mandal link road (Central University road double lane)	Samba	2000.00	
			27856.44	

CERTIFICATE

Name of work:- **Construction of road from Bani to Billawar via Dhaggar, Dhaman and Deri Galla under CRF Phase-1st.**

The land is free from all encumbrances and is available with PWD / J&K Government.

Specification:- **O.D.R.**

Sd/-
Asstt: Executive Engineer
PWD(R&B)Sub-Division
Billawar

Executive Engineer
PWD(R&B) Division
Basohli

CERTIFICATE

of work:- Construction of road from Bani to Billawar via Dhaggar, Dhanan & Deri Galla.

The Land I free from all encumbrances and is available with PWD/J&K Government and that land acquisition may be required for this project.

Rates have been properly checked / scrutinized as per the latest SOR.

No work has been done on the said road during the past three years.

The project has not been funded under any other scheme.

Roads safety measures are in place as per Norms.

:Executive Engineer
(R&B)Sub-Division
Bani

Technical officer
PWD(R&B)Division
Basohli

Executive Engineer
PWD(R&B) Division
Basohli

GENERAL ABSTRACT OF COST

Name of work: Construction of road from Bani to Billawar via Dhaggar Dhaman and Deri Galla under C.R.F. Phase-1st.

S.No	Description	Amount (in Lacs.)
1	Construction of road (Details as per Annexure A attached).	1885.67
2	P/F of sign Boards and Road Markings (Details as per Annexure B Attached)	10.06
	Total	1895.73
	Add 1% for devising and operation of quality assurance system and monitoring of the works:	18.95
	Total:	1914.68
	Add 3% for contingencies	57.44
	Total:	1972.12
	Add 1% for quality control and monitoring of the works / training	19.72
	Total:	1991.84
	Add 1/2% for establishment	9.95
	G.Total	**2001.79**

Say Rs.2000.00 Lacs

Sd/-
Assistant Executive Engineer
Pwd (R&B) Sub Division
Bani

Executive Engineer
PWD (R&B) Division
Basohli

ANNEXTURE A

Name of Work:- Construction of road from Bani to Billawar via Dhaggar Dhaman and Deri Galla under CRF Phase 1st

NO	Description	Qty	Unit	Rate	Amount Rs(Lacs)
	Excavation for roadway in soil by mechanical means including cutting and pushing the earth to site of embankment up to a distance of 100 metres (average lead 50 metres), including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.(40%) Qty as per E/Work Chart	79093.50	Cum	167.00	132.08
	Excavation for roadway in ordinary rock by mechanical means including cutting and pushing the earth to site of embankment up to a distance of 100 metres (average lead 50 metres), including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.(30%) Qty as per E/Work Chart	59320.00	Cum	283.00	167.87
3	Excavation for roadway in hard rock by mechanical means including cutting and pushing the earth to site of embankment up to a distance of 100 metres (average lead 50 metres), including trimmingbottom and side slopes in accordance with requirements of lines, grades and cross sections.(30%) Qty as per E/work chart	59320.00	Cum	896.00	531.50
4	Earth work in excavation by manual means in trenches for foundations, drains, pipes ,cables etc. (Not exceeding 1.5 mts in width) & for shafts, wells,cesspits & the like not exceeding 10 sqm on plan, depth upto 1.5 mts including disposal of excavated earth upto 50 mts from cutting edge, disposed earth is to be leveled & neatly dressed in all kinds of soil	10213.65	Cum	405.00	41.36

	Providing and laying in position cement conc. of specified grade excl. the cost of centering and shuttering – All work upto plinth level 1 : 4 : 8 (1 cement : 4 coarse sand : 8 graded stone agg.40mm nominal size) Crushed.	1845.46	Cum	7051.00	130.12
6	Providing and laying in position cement conc. of specified grade excl. the cost of centering and shuttering – All work upto plinth level 1:3:6(1 c8ement :3 coarse sand :6 graded stone agg. 20mm nominal size) Crushed	7052.62	cum	7955.00	561.03
7	Providing and laying DPC (coping) 50 mm thick with cement Conc. 1:2:4 (1 cement : 2 C.stone:4 graded stone Agg. 20 mm Nominal size) (Crushed)	275.17	Cum	4346.0	11.95
8	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering , shuttering, finishing and reinforcement all work upto plinth level 1:1.5:3 (1 cement :1.5 coarse sand : 3 graded stone agg. 20 mm nominal size)	125.46	Cum	9343.0	11.72
9	Reinforcement for RCC Work incl. straightening, cutting,bending and placing in position all Comp. cold twisted Bar	20778.36	Kg	97.00	20.15
10	Providing and Laying WBM Grade-II with specified stone agg. stone screening and binding material incl. screening , sorting, spreading to template and consolidation with Power Road Roller of 8 to 10 tonne capacity etc. complete (Payment for stone agg., screenings, kankar, moorum and red bajri etc. to be made separately). Base course with 63mm to 45mm size including stone screening 13.2mm size	2475.00	Cum	3371.00	83.43
11	Providing and Laying WBM Grade-III with specified stone agg. stone screening and binding material incl. screening sorting, spreading to template and consolidation with Power Road Roller of	1650.00	Cum	3497.00	57.70

	8 to 10 tonne capacity etc. complete (Payment for stone agg.screenings, kankar, moorum and red bajri etc. to be made separately). Base course with 53mm to 22.4 mm size includingstone screening 11.2mm size			)	
2	Providing and laying 50 mm thick (compacted) premix bituminous macadam base course with stone aggregate of quality size and grading as specified in latest MORT & H specifications and straight run bitumen of VG-30 @4% by weight total mix including hot mixing of stone aggregateS and bitumen in hot mix plant, transporting mixed material to the site and laying with paver finisher as per required profile, including cost of priming / tack coat and filling patches / pot holes with BUSG / WBM in required level and grade, rolling with roller of 8-10 Tonne capacity to achieve the required compaction and density. All complete including cost of Bituminous and all sort of taxes.	825.00	Cum	10233.00	84.42
13	Providing and laying 25 mm thick semi dense premix carpet surfacing including cost of bitumen with Hot mix Plant and paver Finisher.	412.50	cum	12690	52.34
				Total amount=	1885.67

Sd/-
Asstt. Executive Engineer
PWD(R&B) Sub-Division
Bani

Executive Engineer
PWD(R&B) Division
Basohli

ANNEXTURE B

Name of work:- Detail for providing and fixing of Overhead information Board, Sign Board and road marking with Hot applied thermo-plastic compound for Construction of road from Bani to Billawar via Dhaggar Dhaman and Deri Galla under CRF Phase-1st.

S.NO	Description	Quantity	Unit	Rate	Amount(lacs)
1	Providing and fixing, Sign Board fully Retro Reflective High Intensity Micro prismatic Grade facility @11 No per km 1x5x11=	55.00	No	18300	10.06
				Total amount=	10.06

Asstt. Executive Engineer
PWD(R&B) Sub-Division
Bani

T.O. to Executive Engineer
PWD(R&B) Division
Basohli

Executive Engineer
PWD(R&B) Division
Basohli

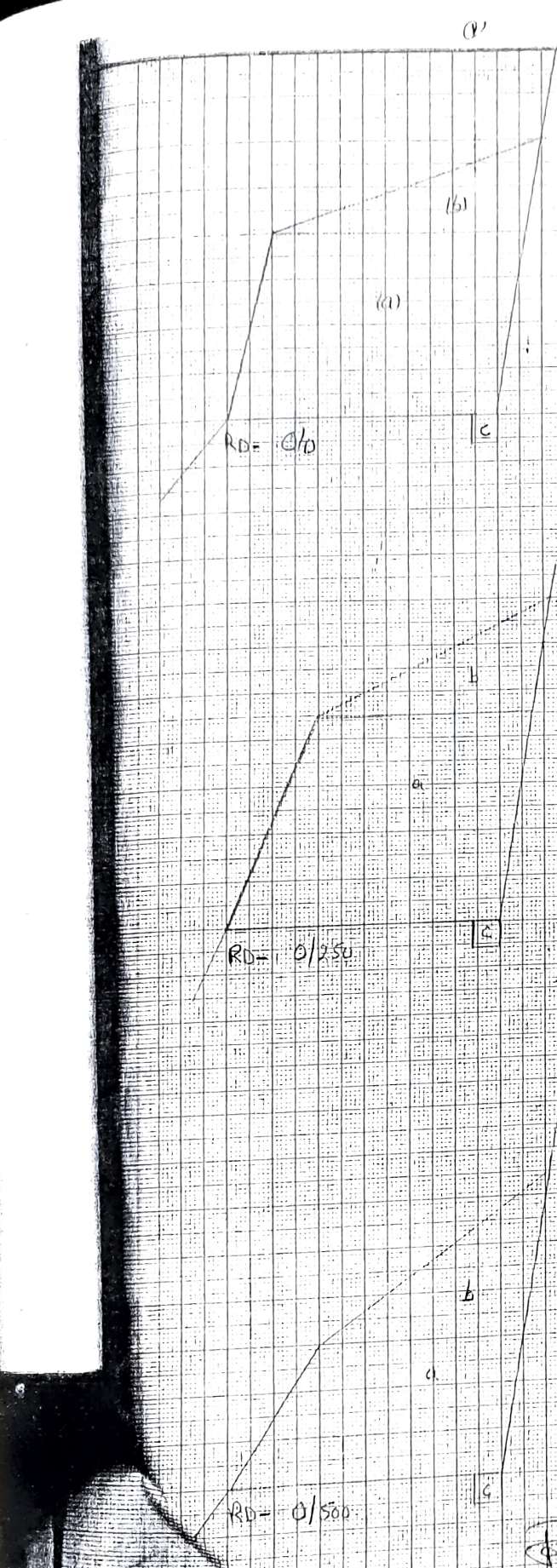
Earthwork chart for construction of Bani to Billawar via Dhaggar Dhaman and Deri Galla under CRF

RD	Sectional area	Total area	Mean area	Length	Quantity
0/0	29.16	-	-	-	-
0/250	30.08	59.96	29.98	250.00	7495.00
0/500	23.98	54.78	27.39	250.00	6847.50
0/750	34.76	58.74	29.37	250.00	7342.50
1/0	22.86	57.62	28.81	250.00	7202.50
1/250	35.36	58.22	29.11	250.00	7277.50
1/500	39.61	74.97	37.49	250.00	9371.25
1/750	42.11	81.72	40.86	250.00	10215.00
2/0	37.93	80.04	40.02	250.00	10005.00
2/250	37.76	75.69	37.85	250.00	9461.25
2/500	33.8	71.56	35.78	250.00	8945.00
2/750	38.36	72.16	36.08	250.00	9020.00
3/0	56.96	95.32	47.66	250.00	11915.00
3/250	51.96	108.92	54.46	250.00	13615.00
3/500	49.98	101.94	50.97	250.00	12742.50
3/750	45.16	95.14	47.57	250.00	11892.50
4/0	44.48	89.64	44.82	250.00	11205.00
4/250	33.96	78.44	39.22	250.00	9805.00
4/500	45.96	79.92	39.96	250.00	9990.00
4/750	48.26	94.22	47.11	250.00	11777.50
5/0	44.61	92.87	46.44	250.00	11608.75
Total Quantity=					197733.75

Sd
Asstt. Executive Engineer
PWD(R&B) Sub-Division
Bani

T.O. to Executive Engineer
PWD(R&B) Division
Basohli

Executive Engineer
PWD(R&B) Division
Basohli



Cross sectional Area at RD 0/0

a = $\frac{5.6+6.0}{2} \times 4.0 = 23.2\ m^2$

b = $\frac{1}{2} \times 5.6 \times 2.0 = 5.6\ m^2$

c = $0.6 \times 0.6 = 0.36\ m^2$

Total Area = 29.16 m^2

Cross-sectional Area at RD 0/250

a = $\frac{5.7+6.0}{2} \times 4.5 = 26.32\ m^2$

b = $\frac{5.7}{2} \times 2.5 = 7.12\ m^2$

c = $0.6 \times 0.6 = 0.36\ m^2$

Total = 33.80 m^2

Cross-sectional Area at RD 0/500

a = $\frac{4.5+6.0}{2} \times 3.0 = 15.75\ m^2$

b = $\frac{1}{2} \times 4.5 \times 3.5 = 7.87\ m^2$

c = $0.6 \times 0.6 = 0.36\ m^2$

Total = 23.98 m^2

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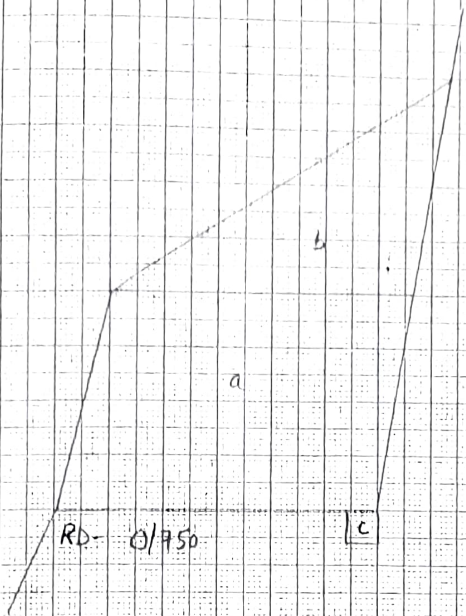
Earthwork Fe



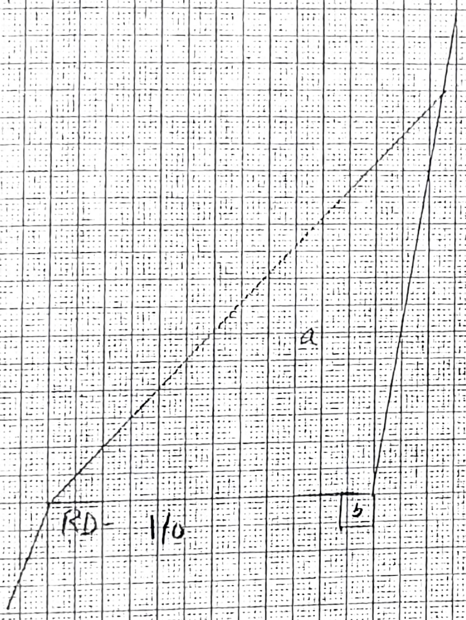
Cross-Sectional Area at RD 0/750

$a = \frac{5.6 + 6.0}{2} \times 4.0 = 23.2\ m^2$

$b = \frac{5.6}{2} \times 4.0 = 11.2\ m^2$

$c = 0.6 \times 0.6 = 0.36\ m^2$

Total $34.76\ m^2$

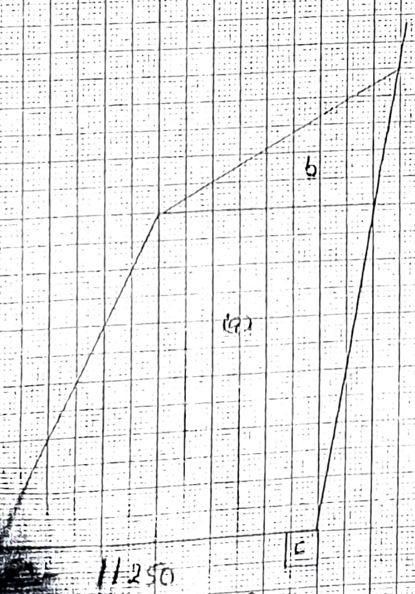


Cross-Sectional Area at RD 1/0

$a = \frac{1}{2} \times 6.0 \times 7.5 = 22.5\ m^2$

$b = 0.6 \times 0.6 = 0.36\ m^2$

Total $= 22.86\ m^2$



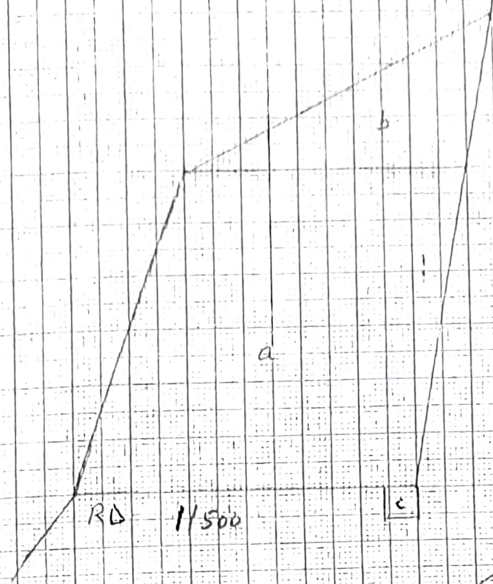
Cross-Sectional Area at RD 1/250

$a = \frac{4.0 + 6.0}{2} \times 6.0 = 30.0\ m^2$

$b = \frac{1}{2} \times 4.0 \times 2.5 = 5.0\ m^2$

$c = 0.6 \times 0.6 = 0.36\ m^2$

Total $= 35.36$



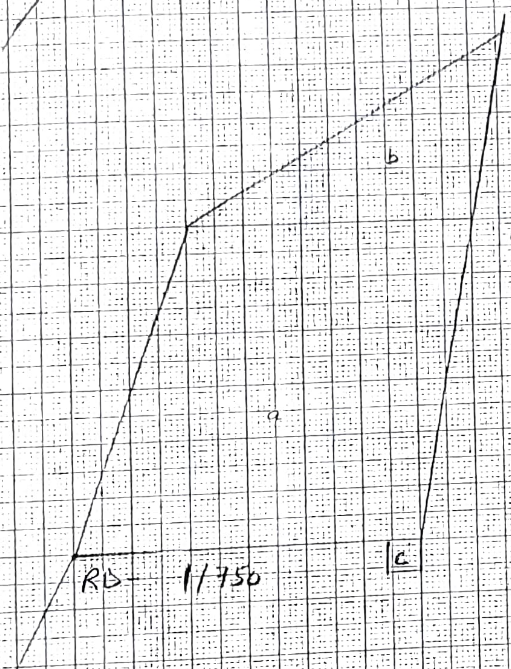
Cross Sectional Area of RD 1/500

$a = \frac{5.0 + 6.0}{2} \times 6.0 = 33 m^2$

$b = \frac{1}{2} \times 5.0 \times 3.0 = 6.25 m^2$

$c = 0.6 \times 0.6 = 0.36 m^2$

Total = 39.61 m^2



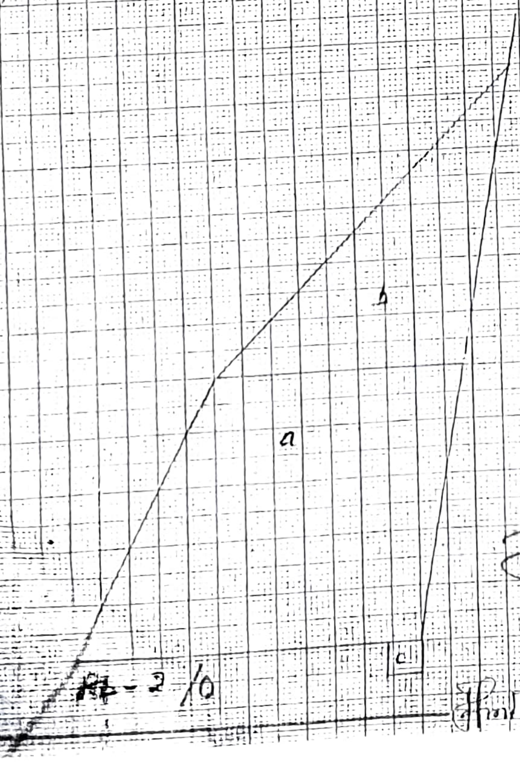
Cross-sectional Area of RD 1/750

$a = \frac{5.0 + 6.0}{2} \times 6.0 = 33.0 m^2$

$b = \frac{1}{2} \times 5.0 \times 3.5 = 8.75 m^2$

$c = 0.6 \times 0.6 = 0.36 m^2$

Total = 42.1 m^2



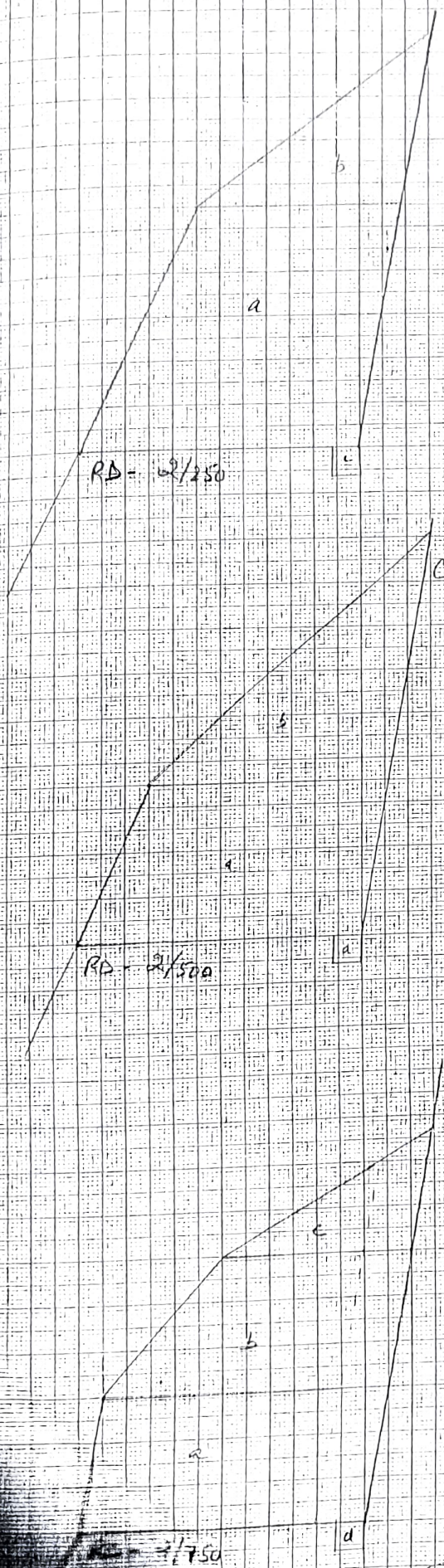
Cross-Sectional Area at RD 2/0

$a = \frac{4.3 + 6.0}{2} \times 5.0 = 25.75 m^2$

$b = \frac{1}{2} \times 4.3 \times 5.5 = 11.82 m^2$

$c = 0.6 \times 0.6 = 0.36 m^2$

Total = 37.93 m^2



Cross-sectional Area at RD - 2/250

$a = \frac{4.4 + 6.0}{2} \times 5.5 = 28.6\ m^2$

$b = \frac{1}{2} \times 4.4 \times 4.0 = 8.8\ m^2$

$c = 0.6 \times 0.6 = 0.36\ m^2$

Total = 37.76 m^2

Cross-sectional Area at RD 2/500

$a = \frac{6.1 + 6.0}{2} \times 3.5 = 19.42\ m^2$

$b = \frac{1}{2} \times 5.1 \times 5.5 = 14.02\ m^2$

$c = 0.6 \times 0.6 = 0.36\ m^2$

Total = 33.80 m^2

Cross-sectional Area at RD 2/750

$a = \frac{6.0 + 6.0}{2} \times 3.0 = 18.0\ m^2$

$b = \frac{4.0 + 6.0}{2} \times 3.0 = 15.0\ m^2$

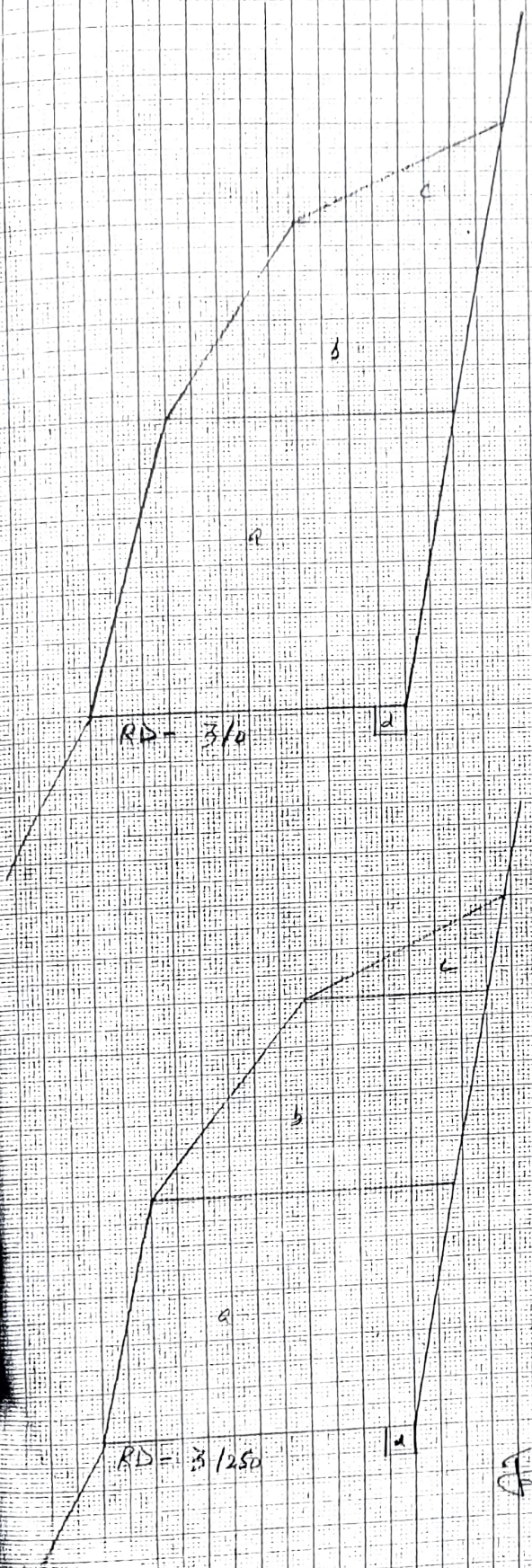
$c = \frac{1}{2} \times 4.0 \times 2.5 = 5.0\ m^2$

$d = 0.6 \times 0.6 = 0.36\ m^2$

Total = 38.36 m^2

Hamilton

21



Cross-sectional Area at RD 3/0

a = $\frac{5.5+6.0}{2} \times 6.0 = 34.5\,m^2$

b = $\frac{3.7+5.5}{2} \times 1.0 = 18.4\,m^2$

c = $\frac{1}{2} \times 3.7 \times 2.0 = 3.7\,m^2$

d = $0.6 \times 0.6 = 0.36\,m^2$

Total = 56.96 m²

Cross-sectional Area at RD 3/250

a = $\frac{5.8+6.0}{2} \times 5.0 = 29.5\,m^2$

b = $\frac{3.5+5.8}{2} \times 4.0 = 18.6\,m^2$

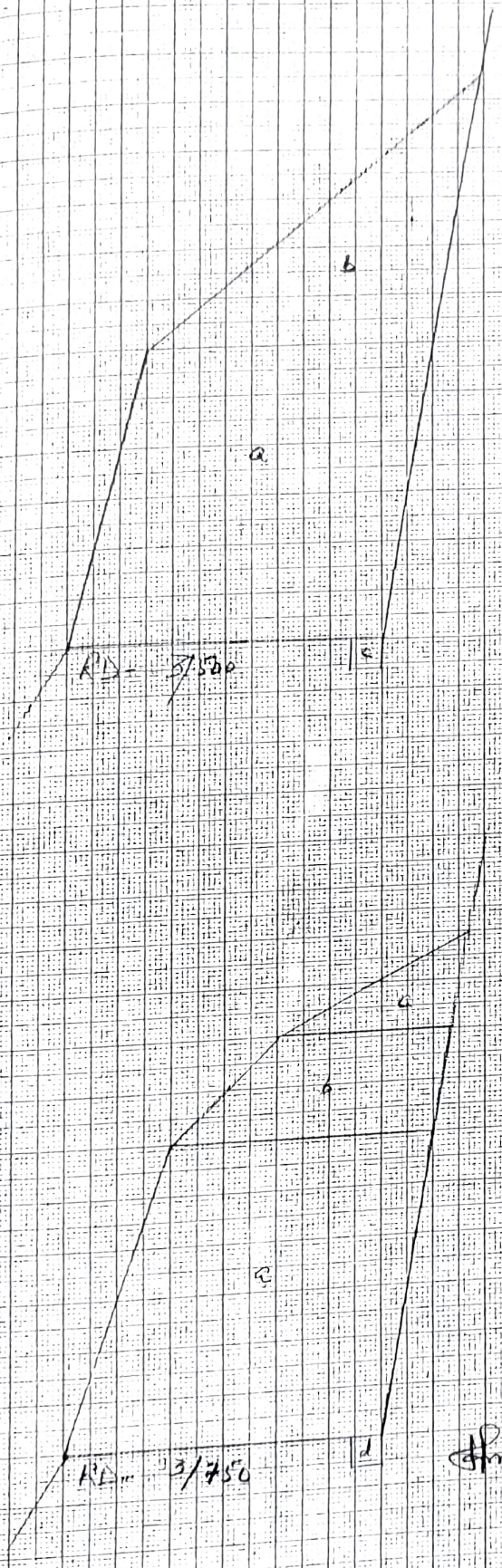
c = $\frac{1}{2} \times 3.5 \times 2.0 = 3.5\,m^2$

d = $0.6 \times 0.6 = 0.36\,m^2$

Total = 51.96 m²

Hmillan

Hmillan



Cross-Sectional Area at RL 3/500

a = $\frac{5.5 + 16.0}{2} \times 6.0$ = 34.5 m²

b = $\frac{1}{2} \times 5.5 \times 5.5$ = 15.13 m²

c = 0.6 × 0.6 = 0.36 m²

Total = (49.99) m²

Cross-Sectional Area at RL 3/750

a = $\frac{5.0 + 6.0}{2} \times 6.0$ = 33 m²

b = $\frac{3.4 + 5.0}{2} \times 2.0$ = 8.4 m²

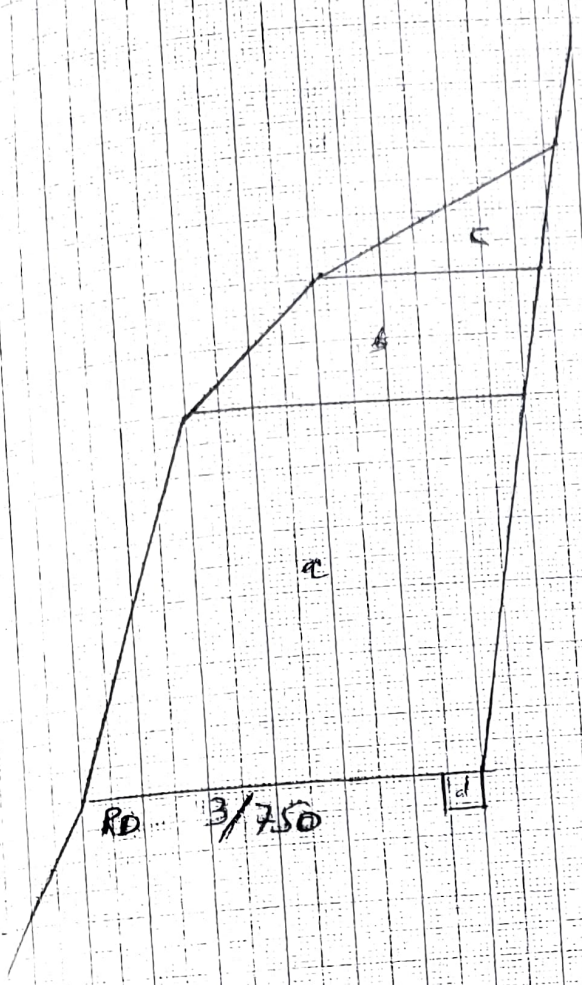
c = $\frac{1}{2} \times 3.4 \times 2.0$ = 3.4 m²

d = 0.6 × 0.6 = 0.36 m²

Total = (45.16) m²

Similar

Similar



Cross-Sectional Area at RD 3/750

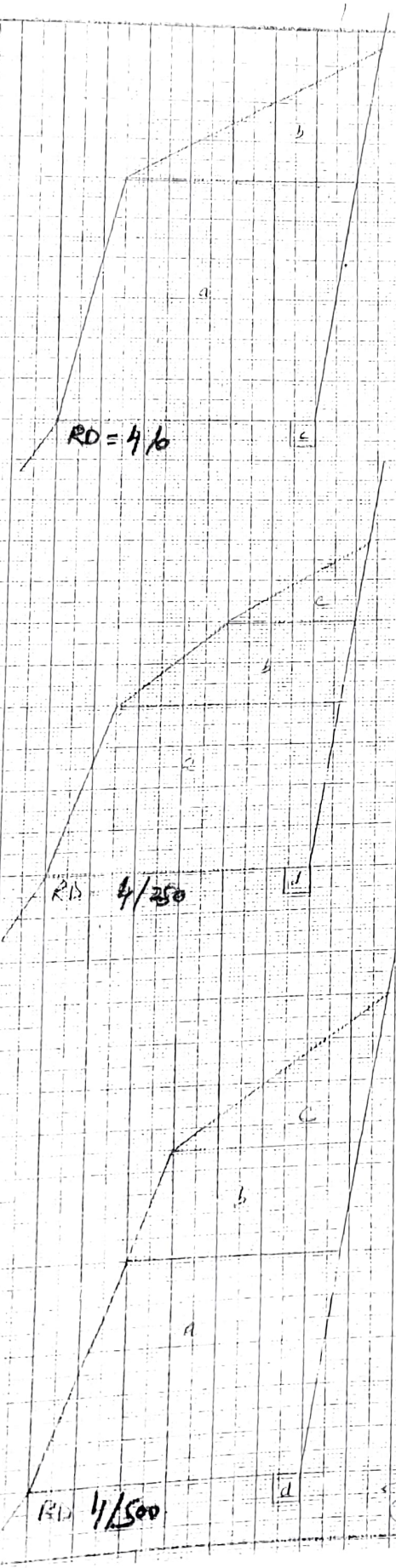
$a = \frac{5.0 + 6.0}{2} \times 6.0 = 33.0\ m^2$

$b = \frac{3.4 + 5.0}{2} \times 2.0 = 8.4\ m^2$

$c = \frac{1}{2} \times 3.4 \times 2.0 = 3.4\ m^2$

$d = 0.6 \times 0.6 = 0.36\ m^2$

Total = $45.16\ m^2$



Cross-Sectional Area at RD 4/0

a = $\frac{6.5+6.0}{2} \times 6.0 = 34.5\ m^2$

b = $\frac{1}{2} \times 5.5 \times 3.5 = 9.62\ m^2$

c = $0.6 \times 0.6 = 0.36\ m^2$

Total = (44.48) m^2

Cross-Sectional Area at RD 4/250

a = $\frac{5.2+6.0}{2} \times 4.0 = 22.4\ m^2$

b = $\frac{3.0+5.2}{2} \times 2.0 = 8.2\ m^2$

c = $\frac{1}{2} \times 3.0 \times 2.0 = 3\ m^2$

d = $0.6 \times 0.6 = 0.36\ m^2$

Total = (33.96) m^2

Cross-Sectional Area at RD 4/500

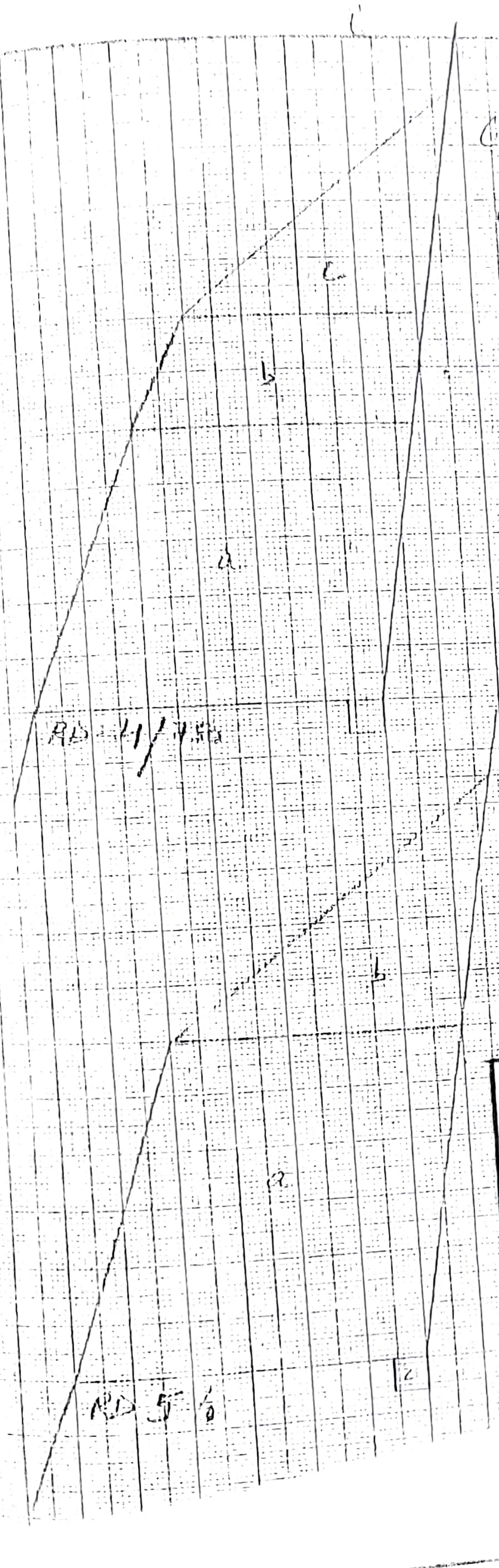
a = $\frac{4.8+6.0}{2} \times 5.0 = 27\ m^2$

b = $\frac{4.2+4.0}{2} \times 2.5 = 11.25\ m^2$

c = $\frac{1}{2} \times 4.2 \times 3.5 = 7.35\ m^2$

d = $0.6 \times 0.6 = 0.36\ m^2$

Total = (45.96) m^2



Cross Sectional Area at RD 4/450

a = 5.8+10.2 / 2 x 5.0 = 29.5 m²

b = 4.2+5.8 / 2 x 2.0 = 10 m²

c = ½ x 4.2 x 4.0 = 8.4 m²

d = 0.6 x 0.6 = 0.36 m²

Total = (48.26) m²

Cross-Sectional Area at RD 5/0

a = 5.0+6.0 / 2 x 6.0 = 33 m²

b = ½ x 5.0 x 4.5 = 11.25 m²

c = 0.6 x 0.6 = 0.36 m²

Total = (44.61) m²

CONST. OF ROAD FROM BANI TO BILLAWAR VIA DHAGGAR, DHAMAN AND DERI GALLI UNDER CRF PHASE-IV LENGTH: 5Km.

Executive Engineer
PWD (R&B) Division
Basohli

Detail of Quantity for Construction of road from Bani to Billawar via Dhaggar Dhaman and Deri Galla under CRF Phase 1st

S.NO	Particular	Quantity
1	Excavation for roadway in soil by mechanical means including cutting and pushing the earth to site of embankment up to a distance of 100 metres (average lead 50 metres), including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.(40%) Qty as per E/Work Chart	79093.05cum
2	Excavation for roadway in ordinary rock by mechanical means including cutting and pushing the earth to site of embankment up to a distance of 100 metres (average lead 50 metres), including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections.(30%) Qty as per E/Work Chart	59320.00cum
3	Excavation for roadway in hard rock by mechanical means including cutting and pushing the earth to site of embankment up to a distance of 100 metres (average lead 50 metres), including trimmingbottom and side slopes in accordance with requirements of lines, grades and cross sections.(30%) Qty as per E/work chart	59320.00cum
4	Earth work in excavation by manual means in trenches for foundations, drains, pipes ,cables etc. (Not exceeding 1.5 mts in width) & for shafts, wells,cesspits & the like not exceeding 10 sqm on plan, depth upto 1.5 mts including disposal of excavated earth upto 50 mts from cutting edge, disposed earth is to be leveled & neatly dressed in all kinds of soil D-crossings :- 1.00 mtr span RCC Culvert = 65.52 x 12 = 786.24 cum 3.00 mtr span RCC Culvert = 177.44 x 3 = 532.320 cum Breast Wall :- 900 x 1.95 = 1755.00 cum R-wall:- 900 x 1.80 = 1620.00 cum Pucca Drain :- 1195x 4.62 = 5520.09 cum Total quantity=	10213.65cum
5	Providing and laying in position cement conc. of specified grade excl. the cost of centering and shuttering – All work upto plinth level 1 : 4 : 8 (1 cement : 4 coarse sand : 8 graded stone agg.40mm nominal size) Crushed. D-crossings :- 1.00 mtr span RCC Culvert = 11.13 x 12 = 133.56 cum 3.00 mtr span RCC Culvert = 22.166 x 3 = 66.45 cum = 261.00 cum Breast Wall :- 900 x 0.29 = 297.00 cum R-wall:- 900 x 0.33 = 1087.45 cum Pucca Drain :- 1195 x 0.91 Total quantity=	1846.45cum

6	Providing and laying in position cement conc. of specified grade excl. the cost of centering and shuttering – All work upto plinth level 1:3:6(1 cement :3 coarse sand :6 graded stone agg. 20mm nominal size) Crushed D-crossings :- 1.00 mtr span RCC Culvert = 69.28 x 12 = 831.36 cum 3.0 mtr span RCC culvert = 109.756 x3 = 329.26 cum Breast Wall :- 900 x 1.46 = 1314.00 cum R-wall:- 900 x 2.85 = 2565.00 cum Pucca Drain :- 1195 x 1.685 = 2013.57 cum Total quantity=	7052.62cum
7	Providing and laying DPC (coping) 50 mm thick with cement Conc. 1:2:4 (1 cement : 2 C.stone:4 graded stone Agg. 20 mm Nominal size) (Crushed) 1.00 mtr span RCC Culvert = 6 x 0.05 x 12 x 1 = 3.60 cum 3.0 mtr span RCC culvert = 6.00 x 0.05 x 3 x 3 = 2.7 cum Pucca Drain = 1195 x 0.225 = 268.87 cum Total quantity=	275.17cum
8	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering , shuttering, finishing and reinforcement all work upto plinth level 1:1.5:3 (1 cement :1.5 coarse sand : 3 graded stone agg. 20 mm nominal size) D-crossings :- 1.0 mtr span RCC culvert = 7.41 x 12 = 88.92 cum 3.0 mtr span RCC culvert = 12.18 x 3 = 36.54 cum Total Quantity=	125.46cum
9	Reinforcement for RCC Work incl. straightening, cutting,bending and placing in position all Comp. cold twisted Bar 1.0 mtr span RCC culvert = 927 x 12 = 11124.00 Kg 3.0 mtr span RCC culvert = 3218.12 x 3 = 9654.36 kg Total Quantity=	20778.36kg
10	Providing and Laying WBM Grade-II with specified stone agg. stone screening and binding material incl. screening , sorting, spreading to template and consolidation with Power Road Roller of 8 to 10 tonne capacity etc. complete (Payment for stone agg., screenings, kankar, moorum and red bajri etc. to be made separately). Base course with 63mm to 45mm size including stone screening 13.2mm size = 1x 5000 x3.00 = 15000.00 Sqm Add 10% for curves =1500 Sqm Total Quantity = 16500 x 0.15	2475.00cum

11	Providing and Laying WBM Grade-III with specified stone agg. stone screening and binding material incl. screening sorting, spreading to template and consolidation with Power Road Roller of 8 to 10 tonne capacity etc. complete (Payment for stone agg.screenings, kankar, moorum and red bajri etc. to be made separately). Base course with 53mm to 22.4 mm size includingstone screening 11.2mm size = 1x 5000 x3.00 = 15000.00 Sqm Add 10% for curves =1500.00 Sqm Total Quantity = 16500 x 0.10	1650.00cum
12	Providing and laying 50 mm thick (compacted) premix bituminous macadam base course with stone aggregate of quality size and grading as specified in latest MORT & H specifications and straight run bitumen of VG-30 @4% by weight total mix including hot mixing of stone aggregateS and bitumen in hot mix plant, transporting mixed material to the site and laying with paver finisher as per required profile, including cost of priming / tack coat and filling patches / pot holes with BUSG / WBM in required level and grade, rolling with roller of 8-10 Tonne capacity to achieve the required compaction and density. All complete including cost of Bituminous and all sort of taxes. = 1x 5000 x3.00 = 15000.00 Sqm Add 10% for curves = 1500 Sqm Total Quantity =**16500 x 0.05**	825.00cum
13	Providing and laying 25 mm thick semi dense premix carpet surfacing including cost of bitumen with Hot mix Plant and paver Finisher. = 1x 5000 x3.00 = 15000.00 Sqm Add 10% for curves = 1500 Sqm Total Quantity =**16500 x 0.025**	412.05cum

Asstt. Executive Engineer
PWD(R&B) Sub-Division
Bani

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PWD(R&B) Division
Basohli

ANALYSIS OF RATES

Excavation for roadway in soil by mechanical means including cutting and pushingthe earth to site of embankment upto a distance of 100 metres (average lead 50 metres), including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections

Total Qty = 180.00 cum Unit =cum

Reference to MoRT&H Specifications

S. No.	Description	Unit	Qty.	Rate	Amount (in Rs.)
a)	**LABOUR**				
i)	Mate	Day	0.08	450.00	36.00
ii)	Mazdoor	Day	2.00	400.00	800.00
c)	**MACHINERY**				
(i)	Dozer 80 HP @ 30 cum per hour	Hr	6.00	4000.00	24000.00
				Total	**24836.00**
	Add 10% overhead charges				2483.60
				Total	**27319.60**
	Add 10% contractor's profit				2731.96
				Total	**30051.56**

Rate/Cum = 166.95 /cum

Say Rs.167 /cum

Sd/-
Assistant Executive Engineer
PWD (R&B) Sub-Division
Bani

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PWD (R&B) Division
Basohli

ANALYSIS OF RATES

cavation for roadway in ordinary rock by deploying a dozer, 80 HP including cutting and pushing the rth to site of embankment upto a distance of 100 metres (average lead 50 metres), including trimming ttom and side slopes in accordance with requirements of lines, grades and cross sections

tal Qty = 108.00 cum

Unit =cum

ference to MoRT&H Specifications

S. No.	Description	Unit	Qty.	Rate	Amount (in Rs.)
a)	**LABOUR**				
i)	Mate	Day	0.12	450.00	54.00
ii)	Mazdoor	Day	3.00	400.00	1200.00
c)	**MACHINERY**				0.00
	Dozer. 80 HP @ 30 cum per hour	Hr.	6.00	4000.00	24000.00
				Total	**25254.00**
	Add 10% overhead charges				2525.40
				Total	**27779.40**
	Add 10% contractor's profit				2777.94
				Total	**30557.34**

Rate/Cum = 282.93/cum

Say Rs.283.00 /cum

Assistant Executive Engineer
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Bani

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Basohli

ANALYSIS OF RATES

ation for roadway hard rock (requiring blasting) by drilling, blasting and breading, trimming and side slopes in accordance with requirement of lines grades and cross sections, loading sposal of cut road within all lifts and leads upto 1000 mtrs

Unit =cum

Qty = 180.00 cum

ence to MoRT&H Specifications

No.	Description	Unit	Qty.	Rate	Amount (in Rs.)
	LABOUR				
	Mate	Day	0.22	450.00	99.00
	Mazdoor	Day	3.00	400.00	1200.00
	Driller	Day	2.00	700.00	1400.00
	Blaster	Day	0.25	700.00	175.00
	MACHINERY				
	Dozer 80 HP @ 30 cum per hour	Hr	6.00	4000.00	24000.00
	Air Compressor, 250 CFM with 2 Jack hammer	Hr.	6.00	2000.00	12000.00
	Front end loader 1 cum bucket capacity	Hr.	6.00	3000.00	18000.00
	Tipper 10 tonne capacity	Hr.	11.25	700.00	7875.00
	Material				
	Gelatin 80 per cent	Kg.	63.00	100.00	6300.00
	Electric Detonators @ 1 detonator for 2 gelatuin sticks of 125 grms each	each	252.00	140.00	35280.00
	Credit for excavated rock found suitable for use @ 50 percent quantity blaseted	cum	90.00	300.00	27000.00
				Total	**133329.00**
	Add 10% overhead charges				13332.90
				Total	**146661.90**
	Add 10% contractor's profit				14666.19
				Total	**161328.09**

Rate/Cum = 896.26/cum

Say Rs.896.00 /cum

Sd/-
Assistant Executive Engineer
PWD (R&B) Sub-Division
Bani

Executive Engineer
PWD (R&B) Division
Basohli

ANALYSIS OF RATES

Earth work excavation of foundation of structures as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, backfilling the excavation earth to the extent required and utilizing the remaining earth locally for road work

Unit = Cum

Ordinary Soil

Taking Qty = 10 Cum

Ref to MORT & H Specification

Depth upto = 3 m

Pages - 60

S.No	Description	Unit	Qty.	Rate	Amount In Rs.
	Earth work excavation of foundation of structures as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, backfilling the excavation earth to the extent required and utilizing the remaining earth locally for road work				
1	LABOUR				
	Male	Day	0.32	450	144.00
	Mazdoor	Day	8	400	3200.00
			Total		3344.00
	Add Overhead charges @ 10%				334.4
			Total		3678.40
	Add Contractors profit @ 10%				367.84
			Total		4046.24
Cost of 10 Cum = Rs.4046.24					
Cost of 1 Cum = Rs. 404.62					

Say Rs.405.00/Cum

Assistant Executive Engineer
PWD (R&B) Sub-Division
Bani

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ANALYSIS OF RATES

Plain cement concrete1 4:8 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days

Total Qty = 15 cum

Unit =cum

S. No	Description	Unit	Qty.	Rate	Amount (in Rs.)
	Plain cement concrete1:4:8 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation & compacted by vibration including curing for 14 days.				
A.	**LABOUR**				
(i)	Mate	Day	0.64	450.00	288.00
(ii)	Mason	Day	1	700.00	700.00
(iii)	Mazdoor	Day	15	400.00	6000.00
B.	**MATERIAL**				
(i)	Stone aggregate crusher **40** mm	Cum	8.91	1800.00	16038.00
(ii)	Stone aggregate **20** mm	Cum	4.59	2000.00	9180.00
(iii)	Sand	Cum	6.75	2000.00	13500.00
(iv)	Cement	MT	2.55	10000.00	25500.00
(v)	Water	KL	18	300.00	5400.00
C.	**MACHINERY**				
(i)	Concrete mixer = **0.4/0.28**	Hr.	6.00	800.00	4800.00
(ii)	**33** KVA Generator set	Hr.	6.00	800.00	4800.00
(iii)	Water tank **6 kl** capacity	Hr.	2.00	600.00	1200.00
	Total				**87406.00**
	Add overhead charges @ 10%				8740.60
	Total				**96146.60**
	Add 10% Contractors Profit				9614.66
	Total				**105761.26**

Rate/Cum = 7050.75

Say Rs.7051.00/cum

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Basohli

ANALYSIS OF RATES

Plain cement concrete1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days

Analysis based on standard Date Book MORT & H

Page No. 331 Ref to Section 2100 — Taking Output 15 Cum

S. No.No	Description	Unit	Qty.	Rate	Amount in Rs.
	Plain cement concrete1:3:6 nominal mix in foundation with crushed stone aggregate 40 mm nominal size mechanically mixed, placed in foundation and compacted by vibration including curing for 14 days				
a)	LABOUR				
i)	Mate	Day	0.64	450.00	288.00
ii)	Mason	Day	1	700.00	700.00
iii)	Mazdoor	Day	15	400.00	6000.00
b)	MACHINERY				
i)	Concrete Mixer (0.40/0.28)	Hr.	6	800.00	4800.00
ii)	Generator 33 KVA	Hr.	6	800.00	4800.00
iii)	6 KL Capacity Water Tanker	Hr.	2	600.00	1200.00
c)	MATERIAL				
i)	40 mm stone aggregate	Cum	13.8	1800.00	24840.00
ii)	Course sand	Cum	6.9	2000.00	13800.00
iii)	Cement	MT	3.3	10000.00	33000.00
iv)	Water	KL	18	300.00	5400.00
				Total	**94828.00**
	Add Form work @ 4%				3793.12
				Total	98621.12
	Add Overhead @ 10%				9862.11
				Total	108483.23
	Add 10% Contractor's Profit				10848.32
				Total	**119331.56**

Rate/Cum = 7955.43

Say Rs. 7955.00/cum

Sd/-
Assistant Executive Engineer
PWD (R&B) Sub-Division
Bani

Executive Engineer
PWD (R&B) Division
Basohli

ANALYSIS OF RATES

Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical

Specifications. PCC Grade M- 20Grade

Analysis based on standard Date Book MORT & H

Page No. 336 Taking Output 15 Cum

Unit = Cum

S. No.	Description	Unit	Qty.	Rate	Amount in Rs.
	Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications. PCC M- 20Grade				
a)	LABOUR				
i)	Mate	Day	0.86	450.00	387.00
ii)	Mason	Day	1.50	700.00	1050.00
iii)	Mazdoor	Day	20.00	400.00	8000.00
b)	MACHINERY				0.00
i)	Concrete Mixer (0.40/0.28 Cum)	Hr.	6.00	800.00	4800.00
ii)	Generator 33 KVA	Hr.	6.00	800.00	4800.00
c)	MATERIAL				0.00
i)	20 mm stone aggregate	Cum	8.10	1800.00	14580.00
iii)	10 mm stone aggregate	Cum	5.40	2000.00	10800.00
iv)	Course sand	Cum	6.75	2200.00	14850.00
v)	Cement	MT	5.21	10000.00	52100.00
				Total	**111367.00**
	Add Form work @ 4%				4454.68
				Total	115821.68
	Add Overhead @ 10%				11582.17
				Total	127403.85
	Add 10% Contractor's Profit				12740.38
				Total	140144.23

Rate/Cum =Rs. 9342.95

Say Rs. 9343.00 /cum

Sd/-
Assistant Executive Engineer
PWD (R&B) Sub-Division
Bani

Executive Engineer
PWD (R&B) Division
Basohli

ANALYSIS OF RATES

Supplying, fitting and Placing HYSD bars reinforcement in superstructure complete as per drawing and Technical Specification

Ref to MORT & H Specification

Analysis based on standard Date Book MORT & H Unit = MT

Pages 489 (14.2) & Ref Section =1600 Taking Qty. = 1.00 MT

S. No	Description	Unit	Qty.	Rate	Amount in Rs.
	Supplying, fitting and Placing HYSD bars reinforcement in superstructure complete as per drawing and Technical Specification				
1	LABOUR				
	Mate	Day	0.44	450	198.00
	Mazdoor	Day	8	400	3200.00
	Black Smith	Day	3	800	2400.00
2	Material				0.00
	HYSD bars including 5% for	MT	1.05	70000	73500.00
	Binding Wire	Kg	8	100	800.00
				Total	80098.00
	Add Overhead @ 10%				8009.80
				Total	88107.80
	Add 10% Contractor s Profit				8810.78
				Total	96918.58

Cost of 1 MT= Rs 96918.58
Cost of one Kg steel =Rs 96.91

Say Rs 97.00 /Kg

Assistant Executive Engineer
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Bani

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PWD (R&B) Division
Basohli

ANALYSIS OF RATES

...viding and Laying, spreading and compacting stone aggregates of specific sizes to water bound macadam ...ecification including spreading in uniform thickness, hand packing, rolling with 3-wheeled steel/vibratory roller 8- ...onnes in stages to proper grade and camber, applying and brooming requisite type of screening/binding ...erials to fill- up the intersectices of coarse aggregate, watering and compacting to the required density

...ade-II 63 mm to 45 mm

...er to MORT & H Specification : 404

Unit = Cum

...ges 104-106

Qty = 360 Cum

S. No.	Description	Unit	Qty.	Rate	Amount in Rs.
	Providing and Laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with3-wheeled steel/vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/binding materials to fill- up the intersectices of coarse aggregate, watering and compacting to the required density Grade-II 63 mm to 45 mm/ Grading III 53 mm to 22 4 mm @ 0 91 cum per 10 Sqm for compacted thickness of 75 mm				
...)	LABOUR				
	Mate	Day	10.08	450.00	4536.00
...)	Mazdoor skilled	Day	2.00	450.00	900.00
...)	Mazdoor	Day	250.00	400.00	100000.00
...	MACHINERY				0.00
i)	Vibrator Roller 8-10 tonne@ 60 cum /hr.	Hr.	6.00	1200.00	7200.00
...	MATERIAL				0.00
...)	Grade-II 63 mm to 45 mm	Cum	435.6	1700.00	740520.00
...)	Stone screening 13.20 mm for Grade-II @ 0 12 cum/10sqm	Cum	57.6	1300.00	74880.00
...)	Binding material @ 0.06 Cum/10 Sqm for Grade-II	Cum	28.8	1100.00	31680.00
iv)	Cost of water	KL	144	300.00	43200.00
				Total	**1002916.00**
	Add Overhead @ 10%				100291.60
				Total	1103207.60
	Add 10% Contractor's Profit				110320.76
				Total	1213528.36

Cost for 360 Cum = Rs.1213528.36

Cost for 1.00 Cum = Rs 3370.91

Say Rs.3371.00 /cum

Sd/-

Assistant Executive Engineer
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ANALYSIS OF RATES

g and Laying, spreading and compacting stone aggregates of specific sizes to water bound macadam ation including spreading in uniform thickness, hand packing, rolling with3-wheeled steel/vibratory roller 8- es in stages to proper grade and camber, applying and brooming requisite type of screening/binding s to fill- up the intersectices of coarse aggregate, watering and compacting to the required density

ll 53 mm to 22 4 mm

ORT & H Specification 404

Unit = Cum

Qty. = 360 Cum

104-106

Description	Unit	Qty.	Rate	Amount in Rs.
Providing and Laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with3-wheeled steel/vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/binding materials to fill- up the intersectices of coarse aggregate, watering and compacting to the required density. Grade-III 53 mm to 22.4 mm @ 0.91 cum per 10 sqm for compacted thickness of 75 mm				
LABOUR				
Mate	Day	10.08	450.00	4536.00
Mazdoor skilled	Day	2.00	450.00	900.00
Mazdoor	Day	250.00	400.00	100000.00
MACHINERY				0.00
Vibrator Roller 8-10 tonne@ 60 cum /hr.	Hr.	6.00	1200.00	7200.00
MATERIAL				0.00
Grade-III 53 mm to 22 4 mm	Cum	435.60	1700.00	740520.00
Stone screening 11.2 mm for Grade-III @ 0.18 cum/10Sqm	Cum	86.40	1300.00	112320.00
Binding material @ 0.08 Cum/ 10 Sqm for Grade-III	Cum	28.80	1100.00	31680.00
Cost of water	KL	144.00	300.00	43200.00
			Total	**1040356.00**
Add Overhead @ 10%				104035.60
			Total	1144391.60
Add 10% Contractor's Profit				114439.16
			Total	1258830.76

Cost for 360 Cum = Rs.1258830.76

Cost for 1.00 Cum = Rs.3496.00

Say Rs.3497.00 /cum

Sd/-

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ANALYSIS OF RATES

ing and laying bituminous macadam with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using
d aggregates of specified grading premixed with bituminous binder transported to site, laid over a previously prepared surface
ver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired
hout.

Ref. to MORT& H Spec.	Description	Unit	Quantity	Rate	Cost Rs.	Remarks/Input Ref
504	**Bituminous Macadam** Providing and laying bituminous macadam with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading premixed with bituminous binder transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction					
	Unit = Cum					
	Taking output = 205 cum (450 tonnes)					
	i) Labour	Day	0.84	450.00	378.00	
	Mate	Day.	16.00	400.00	6400.00	
	Mazdoor working with HMP mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction					
	Skilled Mazdoor for checking line & levels	Day	5.00	450.00	2250.00	
	j) Machinery					
	Batch mix HMP 100-120TPH @ 75 tonne per hour actual output	Hour	6.00	22334.00	134004.00	
	Mechanical Broom Hydraulic @ 1250 sqms per hour	Hour	2.20	460.00	1012.00	
	Air Compressor 250 cfm	Hour	2.20	412.00	906.40	
	Paver finisher hydrostatic with sensor control @ 75 cum per hour	Hour	6.00	3450.00	20700.00	
	Generator 250KVA	Hour	6.00	3500.00	21000.00	
	Front end loader 1 cum bucket capacity	Hour	6.00	1040.00	6240.00	
	Tipper 10 tonne capacity	Tonne Km	9000.00	4.20	37800.00	
	Add 10% of cost of carriage to cover cost of loading and unloading				0.00	
	Smooth Wheeled roller 8-10 tonne for initial break down rolling	Hour	6.00 x 0.65	594.00	2316.00	
	Vibratory roller 8 tonnes for intermediate rolling	Hour	6.00 x 0.65	1846.00	7199.00	
	Finish rolling with 6-8tonnes smooth wheeled tandem roller	Hour	6.00 x 0.65	594.00	2316.00	
	k) Material	Tonne	14.85	65000.00	965250.00	
	i) Bitumen@ 3.3 percent of mix					
	Weight of Mix = 205 x 2.2					
	= 450 tonne					
	ii) Aggregate					
	Total Weight of mix = 450 tonnes					
	Weight of Bitumen = 14.85 tonnes					
	Weight of aggregate = 450-14.85					
	= 435.15 tonnes					
	Taking density of aggregate = 1.52 ton/cum					
	Volume of aggregate = 290.10 cum					
	'Grading I (40 mm nominal size)	Cum	43.51	1200.00	52212.00	
	37.5-25 mm 15 percent	Cum	130.55	1200.00	156660.00	
	25-10 mm 45 percent	Cum	72.53	1200.00	87036.00	
	10-5 mm 25 per cent	Cum	43.51	1200.00	52212.00	
	5 mm and below 15 percent					

For grading I (40 mm nominal size)			Total	1555891.40	
l) Over head charges @ 10%				155589.14	
			Total	1711480.54	
m) Contractor s profit @ 10%				171148.05	
Cost for 205 cum = (a+b+c+d+e)				1882628.59	
Rate per cum				9183.55	

Therefore rate for 1 cum of BM = Rs 9183.55

Priming coat/Tack Coat for 1 cum BM 50 mm

Area of 1 cum BM = 1.00/0.050 = 20.00 sqm @ 0.75kg/ Sqm =15.00 @ 70.00/sqm = 1050.00

Hence rate for 1cum of BM including Priming coat and tack coat=9183.55+1050.00 = Rs 10233.55 /Cum

Say Rs.10233.00/cum

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Basohli

ANALYSIS OF RATES

...ding and laying semi dense bituminous conc with 100-120 TPH batch type HMP producing an average output of 75 tonnes ...r hour using crushed aggregates of specified grading, premixed with bituminous binder@ 4.5 to 5 percent of mix and filler, ...nsporting 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 MORT&H specification clause No. 508 complete in all respects

Sr. No.	Ref. to MORT&H Spec.	Description	Unit	Quantity	Rate	Cost Rs.	Remarks/Input Ref.
	508	**Semi Dense Bituminous Concrete**					
		Providing and laying semi dense bituminous conc. with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder@ 4.5 to 5 percent 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 MORT&H specification clause No. 508 complete in all respects.					
		Unit = Cum					
		Taking output = 195 cum (450 tonnes)					
		a) Labour					
		Mate	Day	0.84	450.00	378.00	L-12
		Mazdoor working with HMP mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction.	Day	16.00	400.00	6400.00	L-13
		Skilled Mazdoor for checking line & levels	Day	5.00	450.00	2250.00	L-15
		b) Machinery				0.00	
		Batch mix HMP @ 75 tonne per hour	Hour	6.00	22334.00	134004.00	P&M-022
		Paver finisher hydrostatic with sensor control @ 75 cum per hour	Hour	6.00	3450.00	20700.00	P&M-034
		Generator 250KVA	Hour	6.00	3500.00	21000.00	P&M-081
		Front end loader 1 cum bucket capacity	Hour	6.00	1040.00	6240.00	P&M-017
		Tipper 10 tonne capacity	Tonne Km	9000.00	4.20	37800.00	Lead = 20 km & P&M - 058
		Add 10% of cost of carriage to cover cost of loading and unloading				0.00	
		Smooth Wheeled roller 8-10 tonnes for initial break down rolling	Hour	6.00 x 0.65	594.00	2316.60	P&M-044
		Vibratory roller 8 tonnes for intermediate rolling	Hour	6.00 x 0.65	1846.00	7199.40	P&M-059
		Finish rolling with 6-8tonnes smooth wheeled tandem roller	Hour	6.00 x 0.65	594.00	2316.00	P&M-045
		c) Material					
		***Grading I: 13mm(Nominal Size)**	Tonne	20.25	65000.00	1316250.00	M-074
		i) Bitumen @4.5 percent of weight of mix					
		ii) Aggregate					
		Total Weight of mix = 450 tonnes					
		Weight of Bitumen = 20.25 tonnes					
		Weight of aggregate = 450-20.25					
		= 429.75 tonnes					
		Taking density of aggregate = 1.5 ton/cum					
		Volume of aggregate = 286.50 cum					

	13.2-10 mm 20 percent	Cum	57.30	1200.00	68760.00	M-011
	10-5 mm 38 percent	Cum	108.87	1200.00	130644.00	M-040
	5 mm and below 15 percent	Cum	114.60	1200.00	137520.00	M-030
	Filler@2percent of weight of aggregates.	tonne	8.62	1200.00	10344.00	M-188
				Total	1904122.00	
	d) Over head charges @ 10%				190412.20	
				Total	2094534.20	
	e) Contractor's profit @ 10%				209453.42	
	Cost for 195 cum = (a+b+c+d+e)				2303987.62	
	Rate per cum =(a+b+c+d+e)/195(for grading I)				11815.32	

Therefore rate for 1 cum of SDBC = Rs 11815.32
Priming coat/Tack Coat for 1 cum SDBC 25 mm
Area of 1 cum SDBC = 1.00/0.040= 25.00 sqm. @ 0.5 KG/Sqm=12.50 kg@ Rs 70/kg =875.00
Hence rate for 1cum of SDBC including Priming coat and tack coat= 11815.32+875 = Rs.12690.32 /Cum.

Say= Rs 12690.00/ Cum

Sd/-
Assistant Executive Engineer
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Bani

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PWD (R&B) Division
Basohli

Detailed estimate for providing and fixing of Sign Boards fully Retro Reflective High Micro prismatic grade facility.

S. No.	Particulars	Qty.
1.	Excavation of road work in soil hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in Tippers, Trimming bottom and side slopes in accordance with requirement of lines, grade and X-ing and transporting to the embankment location lead upto 1000 m 1x 0.75m x 0.75m x 0.70 m = 0.40 m^3 @ Rs. 356.5/m^3	Rs. 143.00
2.	Plain cement concrete 1:3:6 mix with crushed stone aggregate 40 mm nominal size-mechanically mixed in foundation and compacted with vibrator including cutting for 14 days(As per 408 MOST specifications). 1 x 0.75 m x 0.75 m x 0.60 m x 0.60 m = 0.06 m^3 @ Rs. 7696.00/m^3	Rs. 462.00
3.	Cement Concrete in open foundation for RCC Grade-15 using concrete mixture (As per 1500/1700 and 2100 specifications). 1x 0.60 m x 0.60 m x0.6 m = 0.22 m^3 @ Rs. 7960.00/m^3	Rs. 1751.00
4.	Steel work welded in built up section/framed work including, hoisting, fixing, in position using structural steel etc. as required: complete Job Angle Iron (65 x 65 x 6 mm) Vertical Post = 1 x 2 x 3.00 m = 6.00 m Board = 2 x 2 x 0.835 m = 3.34 m = 1 x 2 x 0.47 m = 1.88 m Hold Fast = 1 x 0.30 m = 0.60 m T = 11.82 m @ 5.80 kg/m = 68.56 kg Rs.115/ Kg	Rs. 7884.00
5.	Painting with ready mix synthetic enamel paint of approved brand and manufacture in all shades to give an even shade on New Steel work (two or more coats). Vertical Post = 1 x 4 x 0.065m x 3.00 m = 0.78 m^2 Board = 2 x 4 x 0.065m x 0.835m = 0.48 m^2 = 2 x 4 x 0.065m x 0.47m = 0.24 m^2 T = 1.45 m^2 @Rs.100/m^2	Rs. 145.00
6.	Providing and fitting 2 mm thick aluminum sheet double colour (green & white) on both faces including computerized cutting all complete job. Designing, processing, placing and finishing of Retro reflective sheet on computer plotter. 2 x 0.9 m x 0.60 m = 1.08 m^2 Aluminum sheet=1.08 m^2 @ 2800/m^2 Double layer in high intensity mirror prismatic glow =1.08 m^2 @ 4000/ m^2	Rs. 3024.00 Rs.4320.00
7	Carriage of steel frame from manufacturing unit to site of work. Lump Sum	Rs. 600.00
	Grand Total	Rs.18329.00

Say Rs. 18300.00

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...TIMATE FOR THE CONSTRUCTION OF 1.00 MTR SPAN RCC CULVERT

Particulars of items | Qty.

...work in excavation by manual means in trenches for foundation, drains, pipes, cables etc. (Not exceeding 1.5mts ...) for shafts, wells, cesspits & the like not exceeding ... plan, depth upto 1.5mts including disposal of ... earth upto 50mts from cutting edge, disposed earth is ... neatly dressed in all kinds of soil

... 1x10.00x1.90x(1.50+1.10)/2 = 50.7 cum
... 1x1.50x1.90x(1.50+1.10)/2 = 14.82cum
= 65.52 cum

...and laying in position cement conc. of specified grade ... of centering and shuttering – All work upto plinth ... (1 cement : 4 fine sand :8 graded stone agg. 40mm nominal size) Crushed

...ment	1x10.0x 3.90 x 0.20	= 7.8 cum	
...Wall	1x 1.50x1.90x0.20	= 2.28 cum	=11.13 cum
...Back	1x10.0 x 0.70 x 0.15	= 0.78 cum	

...ding and laying cement conc. in retaining walls, return walls, ... (any thickness) including attached pilasters, columns, piers, ... pillars, posts, struts, butteresses, string or laces, courses, ... coping, bed blocks, anchor blocks, plain window sills, fillets ... upto floor five level, excluding the cost of centering shuttering ... finishing 1:3:6 (1 cement :3 coarse sand :6 graded stone agg. ... nominal size) Crushed

...ments:				
...step	2x10.0x1.60x0.50	=	16.00 cum	
...step	2x10.0 x 1.30x0.50	=	13.0 cum	
...p	2x10.0x(0.75+1.00)/2x1.35	=	23.625 cum	
...ing Wall :				
...p	4x1.50x1.60x0.50	=	4.80 cum	= 69.285 cum
...step	4x1.50x1.30x0.50	=	3.90 cum	
...step	4x1.50x(0.45+1.00)/2x1.70	=	7.39 cum	
...Wall/C-Wall:-				
...step	2x0.40x0.80x0.50	=	0.32 cum	
...d step	2x0.70x0.60x0.30	=	0.25 cum	

...ding and laying in position specified grade of reinforced cement ... excluding the cost of centering, shuttering, finishing and reinforcement all work upto plinth level 1:1.5:3 (1 cement :1.5 coarse sand :3 graded stone agg. 20 mm nominal size)

...Slab	2x10.0 x (0.60+0.75)/2 x 0.15	= 2.025 cum	
...	1x10.0x ... 70x0.20	= 1.4 cum	= 7.415 cum
...	...20 x (0.30+0.45)/2 x 0.60	= 0.09 cum	

Qty.

Particulars of items

... laying DPC ... mm thick with cement ... coarse sand ... graded stone ... (stone crushed) = 10.00 sqm

... Work incl. straightening, cutting, ... in position and binding all complete = 927 kg

... 115cum @ 125 kg/cum

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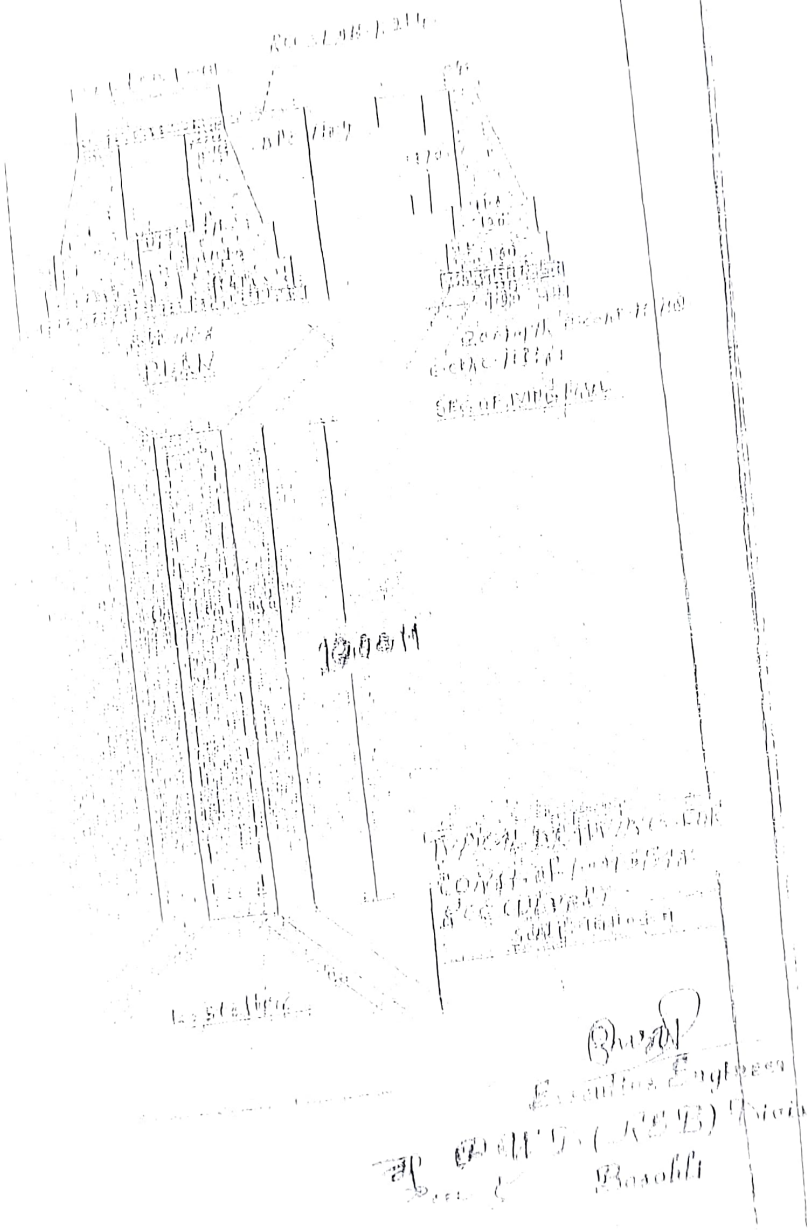
Basohli

...tive Engineer
... Division
BANI



Typical Estimate for construction of 3.00m span RCC culvert

Particular of Items. Qty

Earth work in excavation by manual means in trenches for foundations, drains, pipes ,cables etc. (Not exceeding 1.5mts in width) & for shafts, wells, cesspits & the like not exceeding 10 sqm on plan, depth upto 1.5mts including disposal of excavated earth upto 50mts from cutting edge,disposed earth is to be levelled & neaty dressed in all kinds of soil.

Abutments 1 x 11.20 x 7.70 x 1.70 = 133.28 cum
Wing walls: 4 x 2.40 x 2.00 x 1.40 = 26.88 cum
Crates :- 2 x 6.0 x 1.20 x 1.20 = 17.28 cum

= 177.44 cum

Providing and laying in position cement conc. of specified grade excl. the cost of centring and shuttering – All work upto plinth level 1:4:8 (1 cement : 4 fine sand :8 graded stone agg. 40mm nominal size) Crushed

Abutment:- 1 x 11.20 x 7.70 x 0.20 = 15.68 cum
Wing Walls:- 4 x 2.40 x 2.00 x 0.20 = 3.84 cum
Under floors 1 x 9.8 x 1.80 x 0.15 = 2.646 cum

= 22.166 cum

Providing and laying cement conc. in retaining walls, return walls, walls, (any thickness) including attached pilasters, columns,piers, abutments, pillars, posts, struts, butteresses, string or laces, courses, parapets, coping,bed blocks,anchor blocks,plain window sills,fillets etc.upto floor five level, excluding the cost of centering shuttering and finishing. 1:3:6 (1 cement :3 coarse sand :6 graded stone agg. 20 mm nominal size) Crushed .

Abutments :-
1st Step :- 2 x 1.90 x 10.80 x 0.40 = 16.416 cum
2nd Step :- 2 x 1.50 x10.40 x 0.40 = 12.48 cum
3rd step :- 2 x 1.30 x 10.0 x 0.40 = 10.40 cum
4th step :- $2 \times \frac{1.20 + 0.80}{2} \times 10.00 \times 1.50$ = 30.00 cum

Wings :-
1st step :- 4 x 2.00 x 2.20 x 0.40 = 7.04 cum
2nd step :- 4 x 1.60 x 2.40 x 0.40 = 6.14 cum
3rd step :- $4 \times 2.60 \times \frac{1.60 + 1.20}{2} \times 0.40$ = 5.82 cum
4th step :- $4 \times 2.80 \times \frac{1.20 + 0.50}{2} \times 1.95$ = 18.56 cum
Parapets :- $2 \times 4.60 \times \frac{0.60 + 0.45}{2} \times 0.60$ = 2.90 cum

= 109.756 cum

S.No.	Particular of Items.	Qty
4.	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering , shuttering, finishing and reinforcement all work upto plinth level 1:2 :4 (1 cement :2 coarse sand :4 graded stone agg. 20 mm nominal size) Raft :- 1 x 10.80 x 6.6 x 0.40 = 28.52 cum Bed plate :- 2 x 10.0 x 0.80 x 0.15 = 2.44 cum 2 x 0.50 x 10.00 x 0.30 = 3.00 cum	= 33.912 cum
5	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering , shuttering, finishing and reinforcement all work upto plinth level 1:1.5:3 (1 cement :1.5 coarse sand :3 graded stone agg. 20 mm nominal size) Slab :- 1 x 3.60 x 10.00 x 0.30 = 10.8 cum Wheel Guard :- 2 x 4.60 x 0.25 x 0.60 = 1.38 cum	=12.18 cum
6.	Reinforcement for RCC Work incl. straightening, cutting, bending, placing in position and binding all complete Cold twisted bars.. Qty. vide item no. 4 = 33.192 cum @ Rs.50 kg/cum = 1695.00 kg Qty. vide item no. 5 = 12.18 cum @ Rs. 125/cum = 1522.5 kg	= 3218.10 kg

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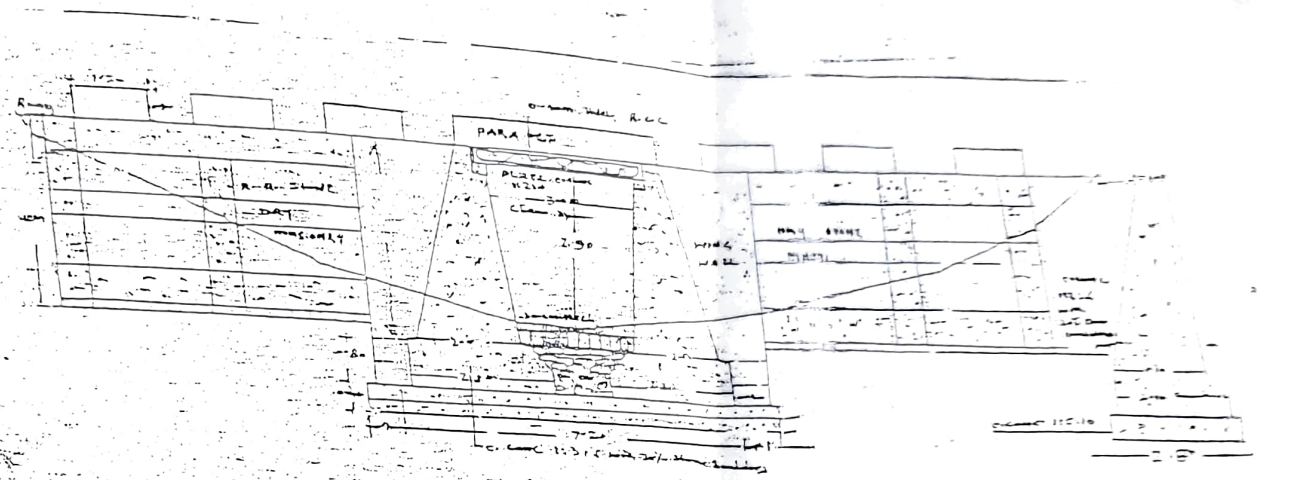

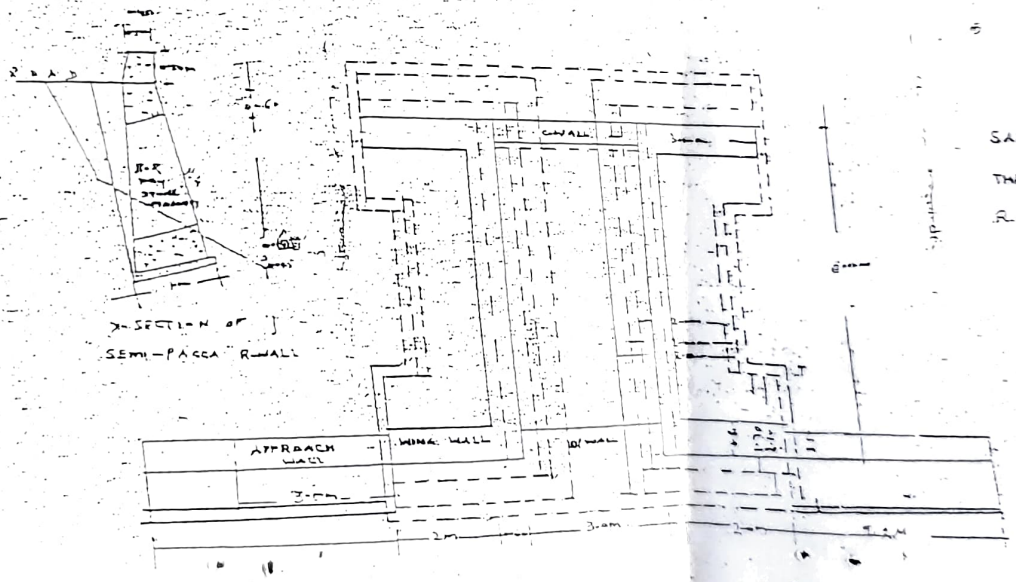

SAMPLE DRAWING FOR
THE CONST. OF 3·0M SPAN
R.C.C. CULVERT

SCALE 1CM = 50CM

Typical Estimate for Construction of B-wall and Drain on various roads of (R&B) Division Basohli

S.No.	Particulars	Qty.
1	Earthwork in excavation by manual means in foundation trenches or drains (not exceeding 1.5m in width as well as 10sqm on Plan) including dressing of sides and ramming of bottoms, lift upto 1.5m including getting out the excavated soil and disposal of surplus excavated soil as directed 25.00m from cutting edge. $1 \times 1.10 \times \frac{(1.00 + 2.55)}{2}$	1.952 cum
2	Providing and laying in position cement concrete (1 : 4 : 8) stone aggregate 40mm nominal size with nallah stone aggregate. 1 x 1.90 x 0.15	0.285 cum
3	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering –All work upto plinth level. 1 : 3 : 6 (1 cement : 3 coarse sand : 6 graded nallah stone aggregate 20mm nominal size) $= 1 \times \frac{0.80 + 0.45}{2} \times 1.95$ $+ 1 \times \frac{0.30 + 0.50}{2} \times 0.60$	1.458 cum

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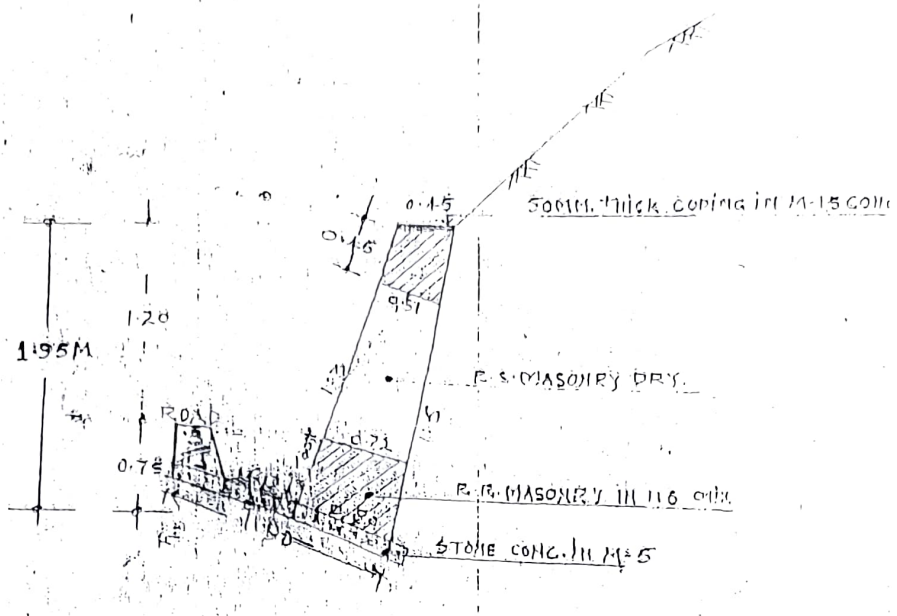
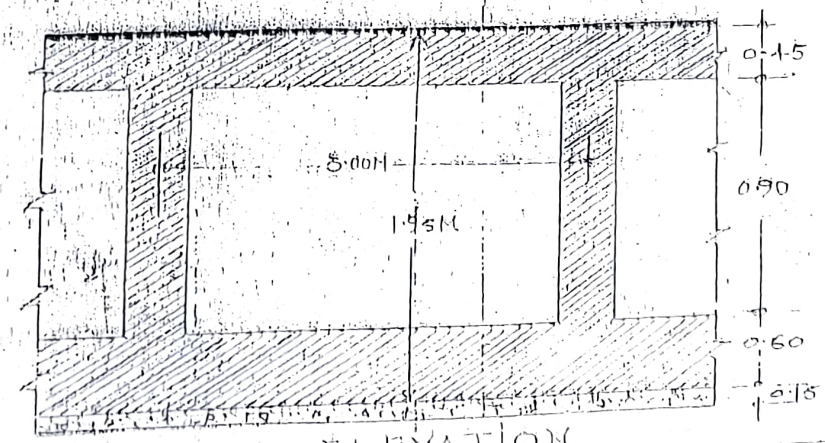


CROSS SECTION



ELEVATION

PLE DRAWING FOR
ST. OF BREAST WALL

Executive Engineer
PWD (R&B) Division

Typical Estimate for Construction of R-wall on various roads of (R&B) Division Basohli

Particulars	Qty.
Earthwork in excavation by manual means in foundation trenches or drains (not exceeding 1.5m in width as well as 10sqm on Plan) including dressing of sides and ramming of bottoms, lift upto 1.5m including getting out the excavated soil and disposal of surplus excavated soil as directed 25.00m from cutting edge. $1 \times 1.65 \times \frac{(0.6 + 1.6)}{2}$	1.815 cum
Providing and laying in position cement concrete (1 : 4 : 8) stone aggregate 40mm nominal size with nallah stone aggregate. 1 x 1.65 x 0.2	0.33 cum
Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering –All work upto plinth level. 1 : 3 : 6 (1 cement : 3 coarse sand : 6 graded nallah stone aggregate 20mm nominal size) $= 1 \times \frac{1.3 + 0.60}{2} \times 3.00$	2.85 cum

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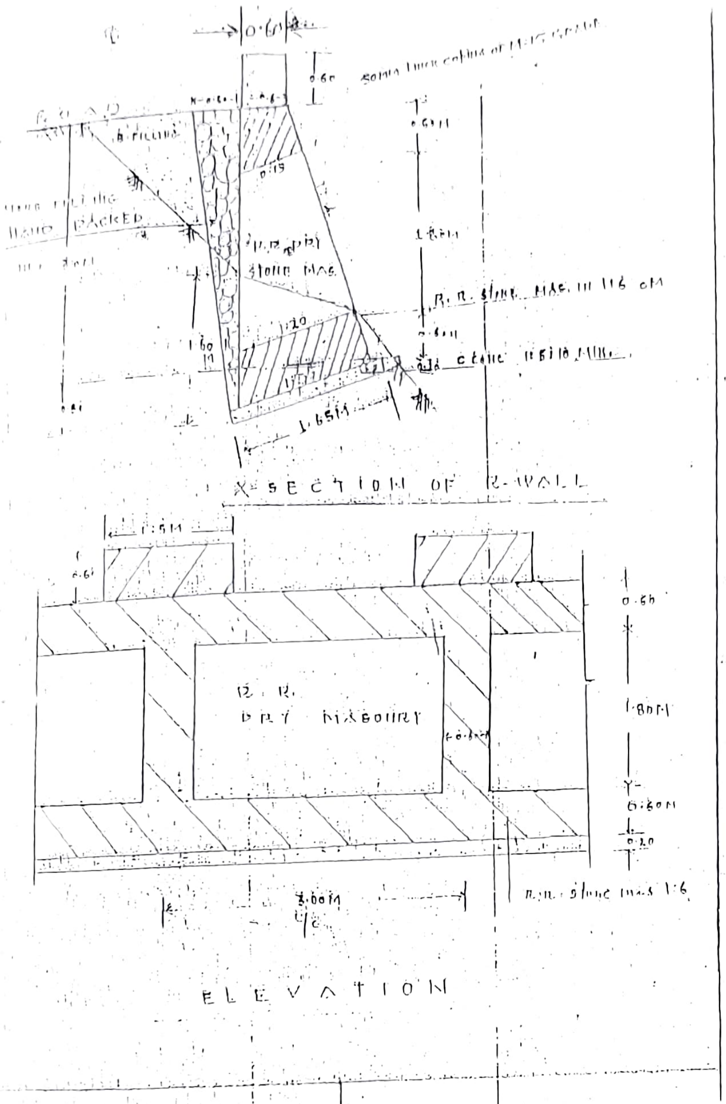

...ABLE DRAWING FOR
...OF R.WALL. (HT.: 5 MTR.)

SCALE : 1CM. : 50 MTRS.

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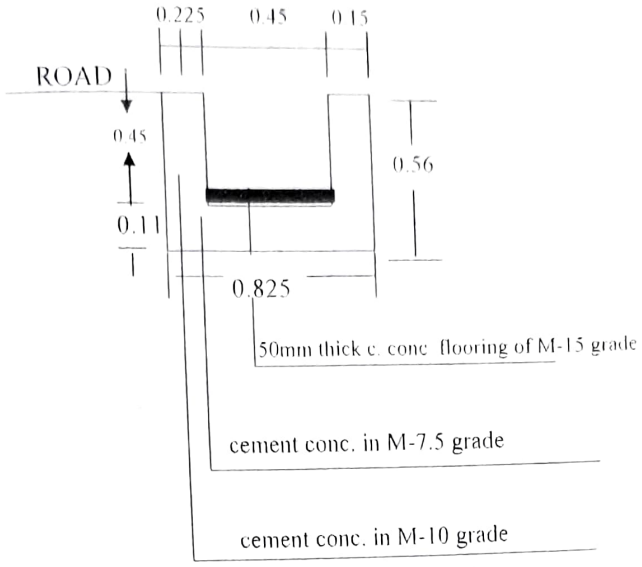
Basohli

TYPICAL ESTIMATE FOR THE CONSTRUCTION OF PUCCA DRAIN ON VARIOUS ROADS OF (R&B) DIVISION BASOHLI



S.NO.	PARTICULARS OF ITEMS	Qty.
1	Earth work in excavation by manual means in trenches for foundations, drains,pipes ,cables etc. (Not exceeding 1.5mts in width) & for shafts, wells, cesspits & the like not exceeding 10 sqm on plan, depth upto 1.5mts including disposal of excavated earth upto 50mts from cutting edge,disposed earth is to be levelled & neaty dressed in all kinds of soil 1 x 10.00 x 0.825 x 0.56	= 4.62 cum
2	Providing and laying in position cement conc. of specified grade excl. the cost of centring and shuttering – All work upto plinth level 1:4:8 (1 cement :4 fine sand : 8 graded stone agg. 40mm nominal size) Crushed 1 x 10.00 x 0.825 x 0.11	= 0.91 cum
3	Providing and laying in position cement conc. of specified grade excl. the cost of centring and shuttering – All work upto plinth level 1:3:6 (1 cement :3 coarse sand :6 graded stone agg. 20mm nominal size) Crushed 1 x 10.00 x 0.225 x 0.45 = 1.01 cum 1 x 10.00 x 0.15 x 0.45 = 0.675 cum	= 1.685 cum

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~~Basohli~~ BANI

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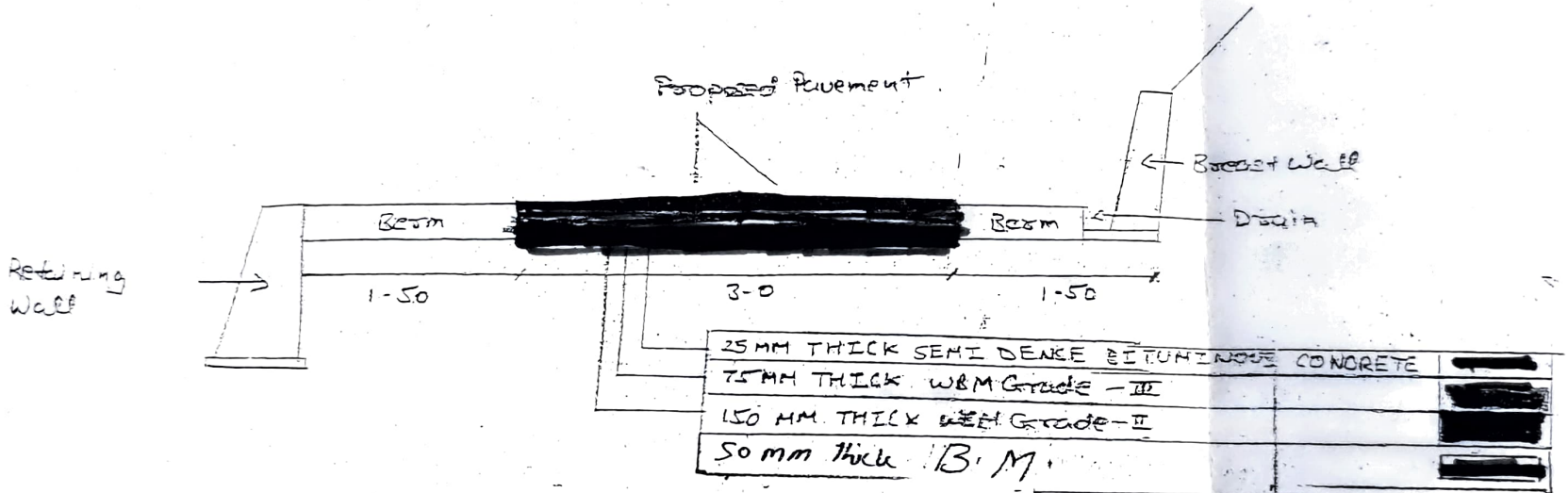
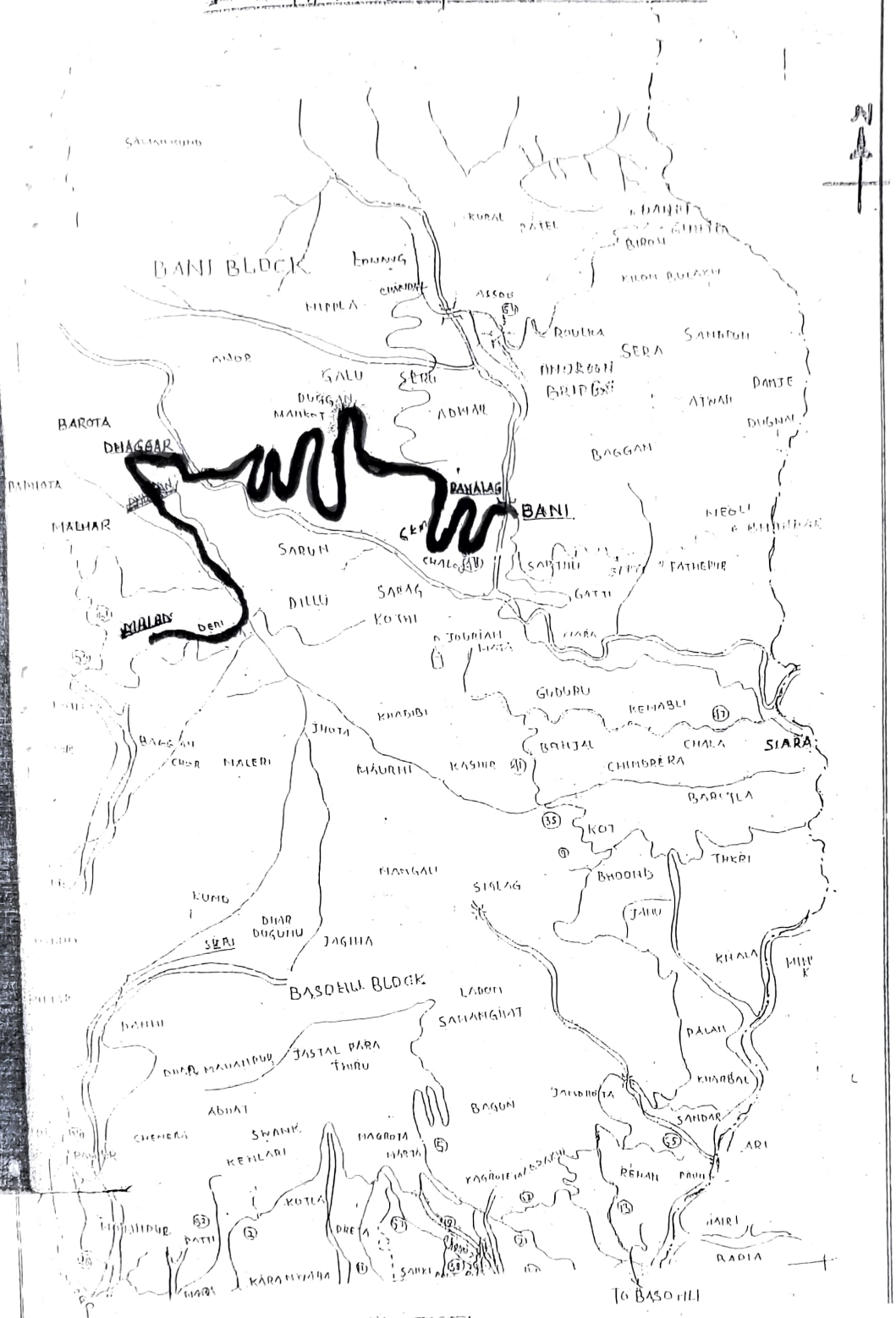
Basohli



TYPICAL X-SECTION FOR CONSTRUCTION ROAD FROM BANI TO BILLAWAR VIA DHAGGER DHEEMAN AND DERI CALLA UNDER C.R.F

Executive Engineer
P.W.D (R&B) Division
Basohli

INDEX MAP OF SUB DN. BANI



1. FAIR WEATHER SPECIFICATION UP TO PENYALG 6 KM
2. UNDER PMGSY BEING CONSTRUCTED UP TO DUGGIAN 7KM
3. PROPOSED UNDER PMGSY PHASE X UP TO DHAMIAN 18 KM.
4. PROPOSED UNDER CRF FROM DHAMIAN TO DERI GALLA MALAD 10 KM

CONST. OF ROAD FROM BANI TO BILLAWAR VIA DHAGGAR, DHAMIAN AND DERI GALLA UNDER CRF.

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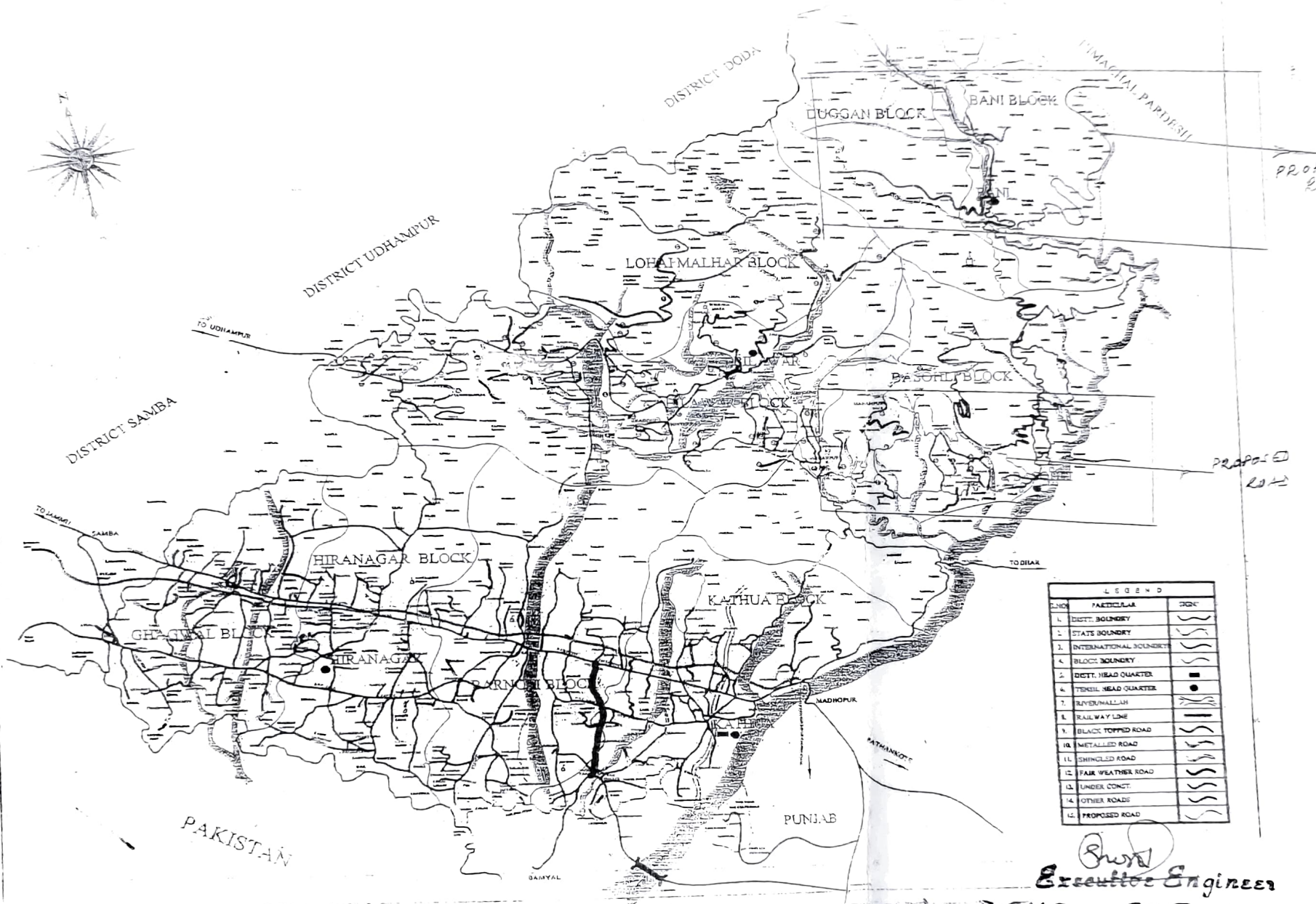

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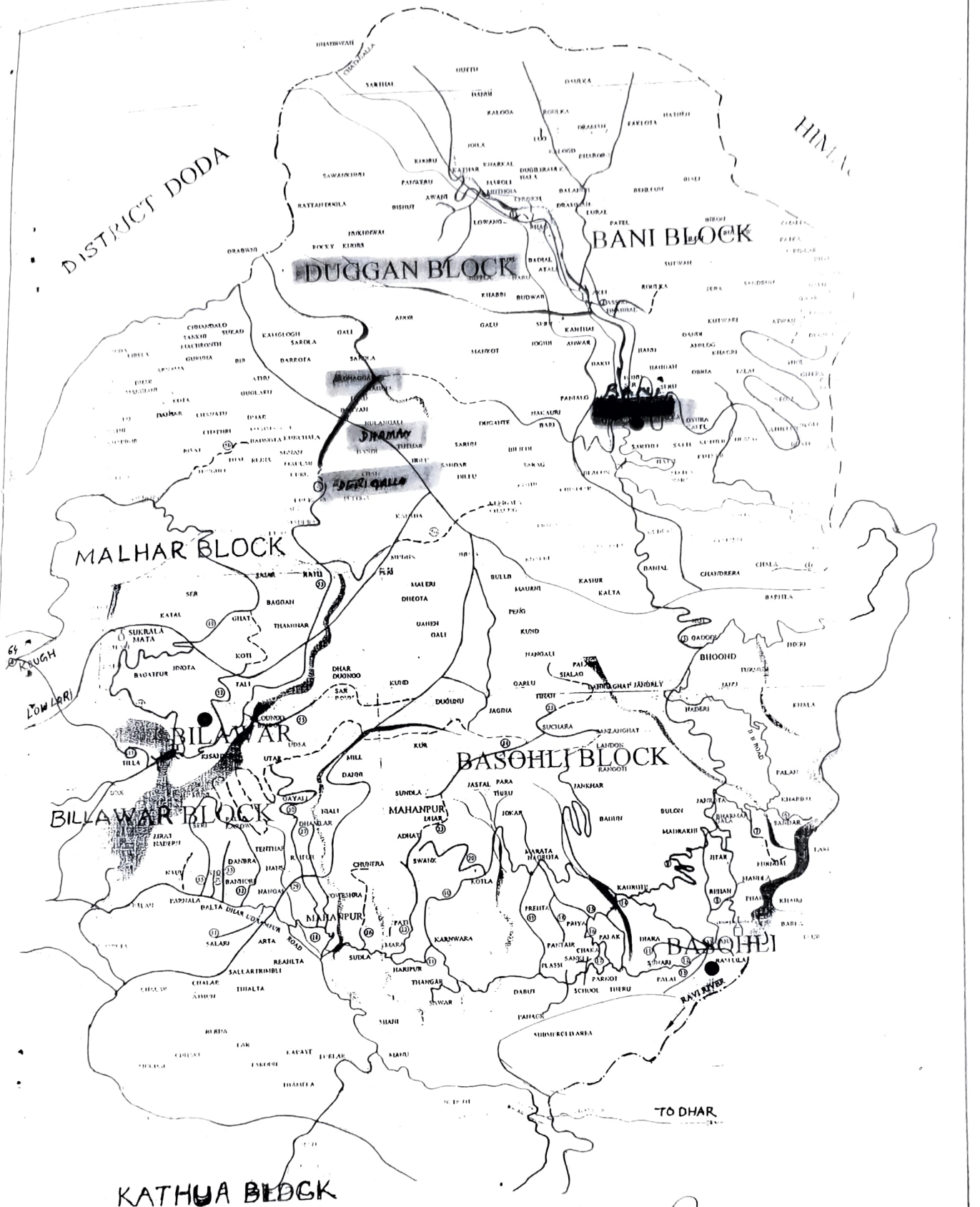
ROAD MAP OF DISTT. KATHUA



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