

GOVT OF JAMMU & KASHMIR

PWD (R & B) CIRCLE DODA
PWD (R & B) SPL SUB DIVISION
DODA



DETAILED PROJECT REPORT
FOR THE
CONSTRUCTION OF LINK ROAD FROM
UDHYANPUR TO RAISARWALA KM 1ST TO
KM 5TH
Estimated Cost : 245.00 lacs

Executive Engineer
PWD (R & B) SPL Sub.Div.
Doda

Distt. Superintending Engineer
PWD (R & B) Circle
Doda

TECHNICAL REPORT

Name of Project : Construction of road from Udhyanpur To Rai Serwala.

Authority:- Chief Engineer PWD (R&B) Jammu.

History and Necessity:

The entire Siraj belt right from Ramban to Kuntwara is vast area having rugged terrain on right side of river Chenab almost 120 kms in length. The area consists of high mountains, deep nullahs with plateaus here and there and some valleys with altitude ranging from 4000 to 5000 feet from MSL. Due to inaccessibility, the area has remained most backward, neglected and poor.

The village Udhyanpur To Rai Serwala are located on the right bank of river Chenab at an altitude of about 3000 to 4000 mtr above MSL. The road under subject has been proposed to connect villages Gwari, Bothan, Lower and School Ladi Dak and Rai with the Udhyanpur-Hanch road and Bhabore Jijote Road at Rai. The proposed road shall takeoff from existing Udhyanpur-Hanch road and upto Bhabore Jijote Road at Rai. This link will act as a circular road between villages Udhyanpur To Rai Serwala. At present the general public of the villages Gwari, Bothan, Lower and School Ladi Dak, Rai and Serwala etc have to travel by foot vertically to reach Udhyanpur-Hanch road and Bhabore Jijote Road at Rai for further journey towards District HQ Doda or Tehsil. The proposed road shall also act as alternate of Udhyanpur-Hanch road and Bhabore Jijote Road during any sought of emergency.

Take off point and Alignment:-

The proposed Road shall take off from already constructed Udhyanpur-Hanch road at KM 2nd and moves in downward gradient .

LAND:

The Land involved in the constt. of road is largely state/ Pvt. Land. Every effort has been taken to avoid steep slopes and to minimize the no. of major X-Drainages.

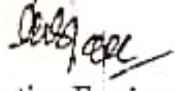
Physical Details & Technical Specifications:-

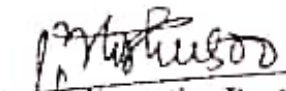
The proposed road shall have total length of 5 KMS. The formation width shall be 6.0 mtr with 3.0 mts as carriage way width. The walling has been proposed at valley and curve point to improve the geometrics of the road. Proper radii of zigs, super elevation, cross slope/camber has been proposed as per I R C specifications.

A longitudinal kaccha drain has been proposed on uphill side all along the road. The requisite number of X-drainages works have been proposed in shape of HP Culverts / RCC Culverts to drain out Nallah water. Semi Pucca B/walls have been proposed to protect the private houses, land and to retain the back slope wherever necessary, R/walls have been proposed to protect the road & to achieve the full road width.

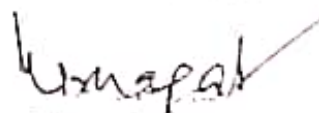
Estimated cost and Time of completion:-

The total estimated cost of the project shall Rs 245-lacs and it shall take 02(two) years to complete the project subject to early sanction and availability of funds.


Asstt. Executive Engineer
PWD (R & B) East Sub Div.
Doda


Executive Engineer,
PWD (R & B) Spl Sub Division
DODA


Asstt. Executive Engineer
PWD (R & B) East Sub Division
Doda


Executive Engineer
PWD (R & B) Spl. Sub Division
Doda

ABSTRACT OF COST

Name of Work: Construction of link road from Udhyampur to Rai Sarwala.

Length: 05.0 Km

Formation width: 6.0 mtr.

Carriage Way width: 3.0 mtr.

S.No	Description of Items	Unit	Quantity	Rate in Rs.	Amount in lacs	Remarks
01	Earth Work d) All kinds of soils e) Ordinary Rock f) Hard Rock required blasing	As per detailed estimates			176.39	
02	Cross Drainage works b) 900mm dia H/P Culvert	No.	12 No.	390000	46.80	
	Protection Works: a). Retaining Wall 4.0 Mts Ht	Mtr	50	17000	8.50	
	b). Breast Wall 2.0 Mts Ht	Mtr	100	6770	6.77	

Total = Rs. 238.46 lacs
Add 3 % W.C and Quality Control = Rs. 6.80 lacs

Total = Rs. 245.26 lacs

Say Rs. 245.00 Lakhs

Asst. Executive Engineer
PWD (R & B) East Sub Div
Doda

Asstt. Executive Engineer
PWD (R&B) East Sub Division
Doda

Executive Engineer,
PWD (R & B) Sub Division
DODA

Asstt. Engineer
PWD (R&B) Sub Division
Doda

ABSTRACT OF COST

Name of State: - Jammu & Kashmir

Name of Work:- Construction of link road from Udhyanpur to Rai Sarwala.
Length:- 05.00 KM

Item No.	Particulars	Unit	Qty.	Rate	Amount in Rupees
1.	Earth work in mechanical means (Hydraulic excavator) over areas (exceeding 30cm in depth, 1.50 mtr in width as well as 10 sq.m on plan) including disposal of excavated earth lead upto 50 mtr and lift upto 1.50 mtr disposed earth to be leveled and neatly dressed.				
i.	All kinds of soils.	Cum	45000.00	148.25	6671250 ✓
ii.	Ordinary Rock	Cum	15000.00	263.65	3954750 ✓
iii.	Hard Rock requiring blasting	Cum	15000.00	467.55	7013250 ✓
				Total	17639250

Asst. Executive Engineer
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#773
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PWD (R & B) East Sub Division
Doda

10/4/2020
Executive Engineer
PWD (R & B) Sub Division
DODA

Asst. Executive Engineer
PWD (R & B) Sub Division
Doda

BREAKUP OF QUANTITIES FOR THE CONSTRUCTION OF LINK ROAD FROM
UDHYANUR TO RAI SARWALA KM 1ST TO 5TH RD 0-1000

km	Quantity	All kinds of soil	Ordinary Rock	Hard Rock
1 st	18298.75	8018.62	4646.62	5633.5
2 nd	14590.00	8024.50	4377.00	2188.50
3 rd	15667.50	11750.62	1566.75	2350.12
4 th	8231.25	6585.00	823.12	823.12
5 th	18215.00	10929.00	3643.00	3643.00
TOTAL	75002.50	45007.74 45007.74	15056.49 15056.49	14938.24 14938.24

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 Asstt. Executive Engineer,
 PWD (R & B) East Sub-Division
 Doda

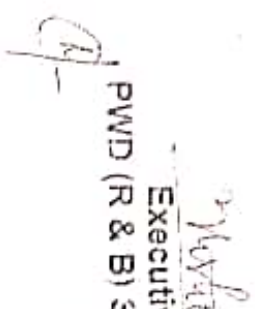
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 Executive Engineer,
 PWD (R & B) SPL Sub-Divn.
 Doda

EARTH WORK CHART FOR THE CONSTRUCTION OF LINK ROAD FROM UDHYANUR TO

RAI SARWALA KM 1ST RD 0-1000

EARTH WORK						RD 0-500 (Total Qty)	CLASSIFICATION		
RD	Area	T.A	M.A	Length	Qty. Cum		Hard Soil	Soft Rock	Hard Rock
0/0	9.82	-----	-----	-----	-----				
0/250	23.56	33.38	16.69	250	4172.50	9868.75	30%	30%	40%
0/500	22.01	45.57	22.78	250	5696.25		2960.62	2960.62	3947.5
0/750	9.50	31.51	15.75	250	3938.75	8430.00	60%	20%	20%
0/1000	16.95	26.45	13.22	250	3306.25		5058.00	1686.00	1686.00
TOTAL					17113.75				
Add for passing zone 3x25x15.80					1185.00				
Grand Total					18298.75	8018.62	4646.62	5633.5	


Asstt. Executive Engineer,
PWD (R & B) East Sub-Division
Doda


Executive Engineer,
PWD (R & B) SPL Sub-Divn.
Doda

③ $4 \times 1.5 = 6$ ④ $6 \times 2.2 = 13.2$

① $480 + 60 = 540$ 2.50

Dr. 0.36

19. 82

9-11-1919

WEEKEND
Executive Engineer,
(R&R) Special Services Division
GDDA

E/w/w

$$a) = \frac{1}{2} \times 1.80 \times 2.10 = 1.89 \text{ m}$$

$$b) = \frac{1.80 + 4.10}{2} \times 1.50 = 4.42 \text{ m}$$

$$c) = \frac{4.10 + 4.80}{2} \times 2.0 = 8.90 \text{ m}$$

$$d) = \frac{4.80 + 6.0}{2} \times 1.50 = 8.10 \text{ m}$$

$$e) = 0.50 \times 0.50 = 0.25 \text{ m}$$

$$T = 23.56 \text{ m}$$

R.O. 250

E/w/w

$$a) = \frac{1}{2} \times 1.40 \times 2.80 = 1.96 \text{ m}$$

$$b) = \frac{4.40 + 6.0}{2} \times 3.0 = 15.6 \text{ m}$$

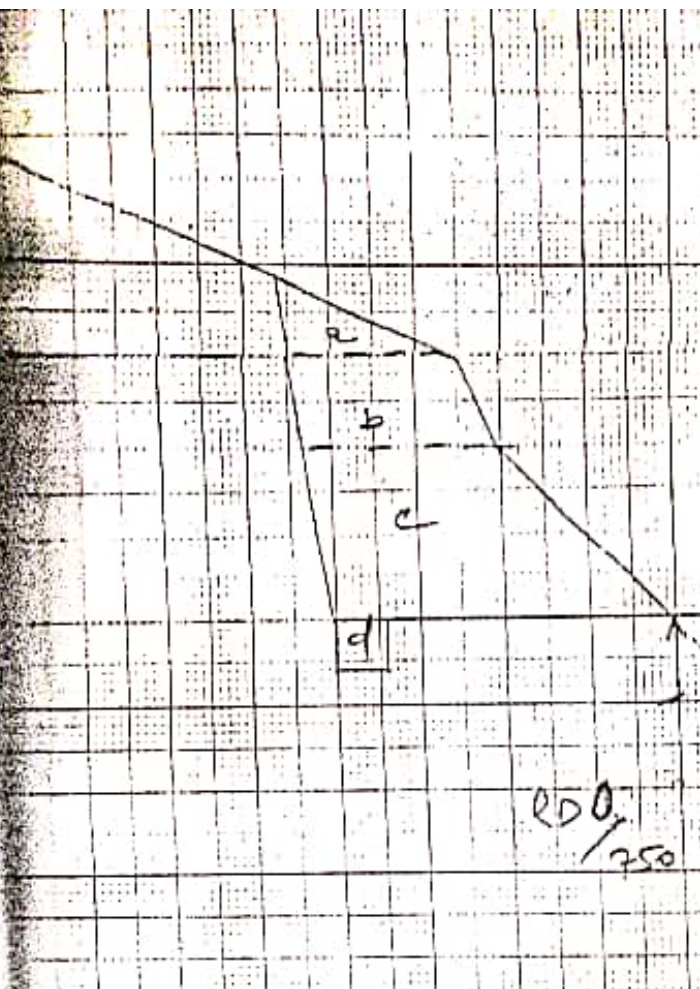
$$c) = 0.50 \times 0.50 = 0.25 \text{ m}$$

$$T = 22.01 \text{ m}$$

R.O. 500

Executive Engineer
PWD (R&B) Special Sub Division
DODA

Asst. Executive Engineer
PWD (R&B) East Sub-Div
DODA



200
250

E/works

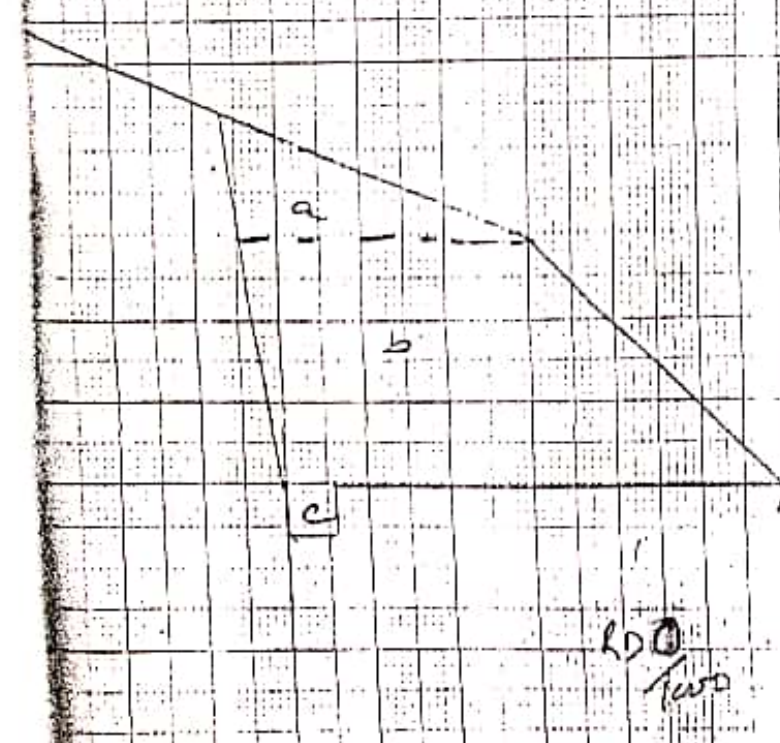
$$a) = \frac{1}{2} \times 2.0 \times 0.80 = 0.80 \text{ m}$$

$$b) = \frac{2.0 + 2.30}{2} \times 1.0 = 2.15 \text{ m}$$

$$c) = \frac{2.30 + 4.0}{2} \times 2.0 = 6.30 \text{ m}$$

$$d) = 0.50 \times 0.50 = 0.25 \text{ m}$$

T = 9.50 m



200
Two

E/works

$$a) = \frac{1}{2} \times 3.50 \times 1.40 = 2.45 \text{ m}$$

$$b) = \frac{3.50 + 6.0}{2} \times 3.0 = 14.25 \text{ m}$$

$$c) = 0.50 \times 0.50 = 0.25 \text{ m}$$

T = 16.95 m

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Asstt. Executive Engineer

PWD (R&B) East Sub-Div

Executive En
PWD (R&B) Special
DOD

EARTH WORK CHART FOR THE CONSTRUCTION OF LINK ROAD FROM UDHYANUR TO

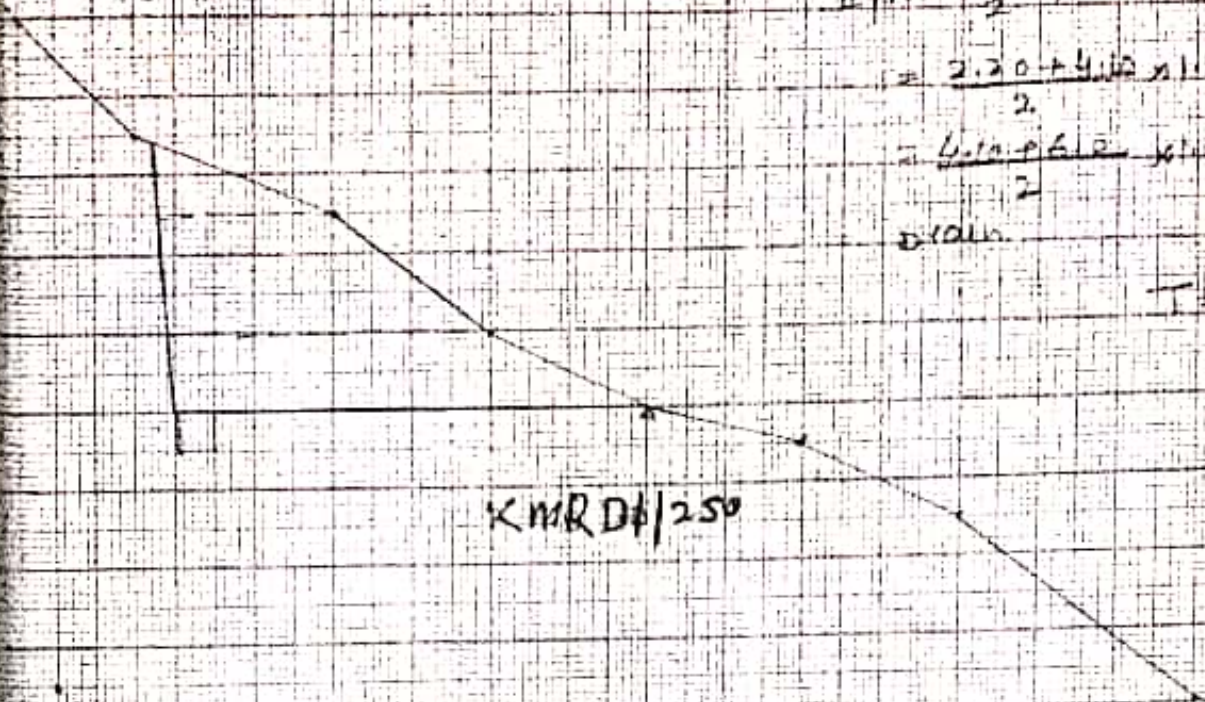
RAI SARWALA KM 2nd RD 0-1000

EARTH WORK						CLASSIFICATION		
RD	Area	T.A	M.A	Length	Qty. Cum	Hard Soil	Soft Rock	Hard Rock
1/0	16.95	---	---	---	---	55%	30%	15%
1/250	11.87	38.82	14.41	250	3602.5			
1/500	15.22	27.09	13.54	250	3385.00			
1/750	9.46	24.68	12.34	250	3085.00			
1/1000	17.20	26.66	13.33	250	3332.50			
TOTAL					13405.00			
Add for passing zone 3x25x15.80					1185.00			
Grand Total					14590.00	8024.5	4377.00	2188.5

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Asstt. Executive Engineer,
PWD (R & B) East Sub-Division
Doda

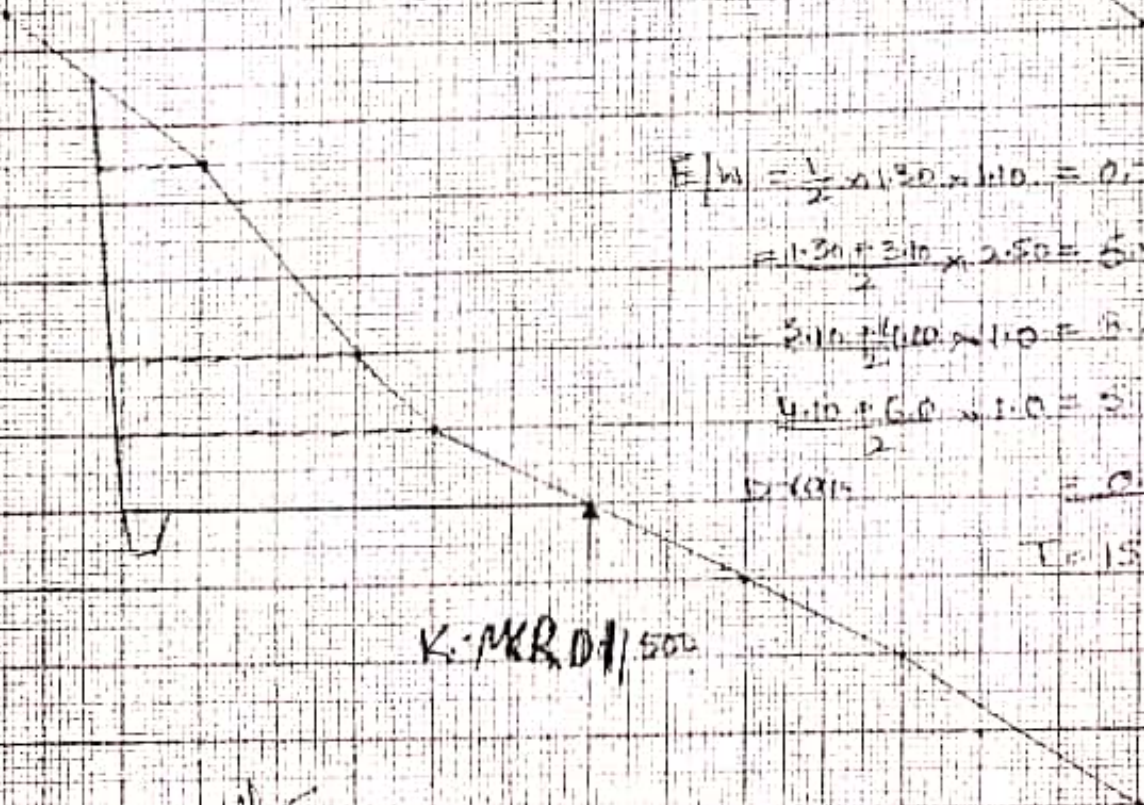
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Executive Engineer,
PWD (R & B) SPL Sub-Divn.
Doda

km 11/12



KMR D^{4/3} / 250

$$\begin{aligned} E/W &= \frac{1}{2} \times 2.00 \times 0.90 = 0.90 \text{ m}^2 \\ &= \frac{2.00 + 6.00 \times 1.50}{2} = 5.05 \text{ m}^2 \\ &= \frac{4.00 + 6.00}{2} \times 1.0 = 5.05 \text{ m}^2 \\ &= 0.90 \text{ m}^2 \\ T &= 11.33 \text{ m}^2 \end{aligned}$$



KMR D^{4/3} / 500

$$\begin{aligned} E/W &= \frac{1}{2} \times 1.00 \times 1.00 = 0.50 \text{ m}^2 \\ &= \frac{1.00 + 3.00 \times 1.00}{2} = 2.00 \text{ m}^2 \\ &= \frac{2.00 + 3.00}{2} \times 1.0 = 2.50 \text{ m}^2 \\ &= \frac{4.00 + 6.00}{2} \times 1.0 = 5.05 \text{ m}^2 \\ &= 0.50 \text{ m}^2 \\ T &= 15.00 \text{ m}^2 \end{aligned}$$

Shankar
16

12/10
10/10
0.2

WATERSCO
10/10
0.2

$$E/W = \frac{1}{2} \times 2.30 \times 0.70 = 0.805 \text{ m}^2$$

$$= \frac{2.30 \times 0.70}{2} = 0.805 \text{ m}^2$$

Draw

$$= 0.34 \text{ m}^2$$

$$T = 9.46 \text{ m}^2$$

KM 1200/750

Km 714

$$E/W = \frac{1}{2} \times 3.00 \times 2.20 = 3.30 \text{ m}^2$$

$$= \frac{3.00 \times 2.20}{2} = 3.30 \text{ m}^2$$

$$= \frac{3.00 \times 2.20}{2} = 3.30 \text{ m}^2$$

Draw

$$= 1.34 \text{ m}^2$$

$$T = 17.20 \text{ m}^2$$

KM 1200/1000

Special 301

Special 301

Special 301
Special 301
Special 301

EARTH WORK CHART FOR THE CONSTRUCTION OF LINK ROAD FROM UDHYANUR TO

RAI SARWALA KM 3rd RD 0-1000

EARTH WORK					CLASSIFICATION			
RD	Area	T.A	M.A	Length	Qty. Cum	Hard Soil	Soft Rock	Hard Rock
2/0	17.20	---	---	---	---	75%	10%	15%
2/250	13.71	30.91	15.45	250	3862.50			
2/500	13.86	27.57	13.78	250	3445.00			
2/750	14.76	28.62	14.31	250	3577.50			
2/1000	14.03	28.79	14.39	250	3597.50			
TOTAL					14482.50			
Add for passing zone 3x25x15.80					1185.00			
Grand Total					15667.50	11750.62	1566.75	2350.12

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Asstt. Executive Engineer,
PWD (R & B) East Sub-Division
Doda

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Executive Engineer,
PWD (R & B) SPL Sub-Divn.
Doda

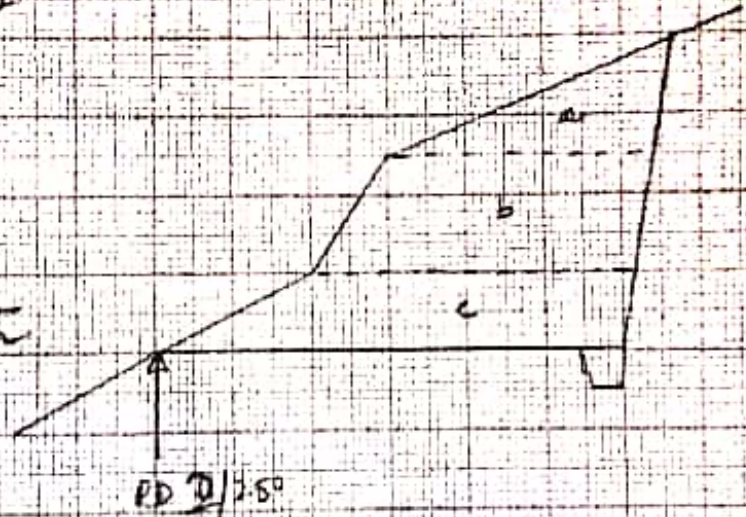
$$Q_1 = \frac{1}{2} \times 3.40 \times 1.50 = 2.55 \text{ m}^2$$

$$Q_2 = \frac{3.40 + 6.20}{2} \times 1.50 = 5.70 \text{ m}^2$$

$$Q_3 = \frac{4.20 + 6.00}{2} \times 1.50 = 5.10 \text{ m}^2$$

$$\text{Drain} = 0.36 \text{ m}^2$$

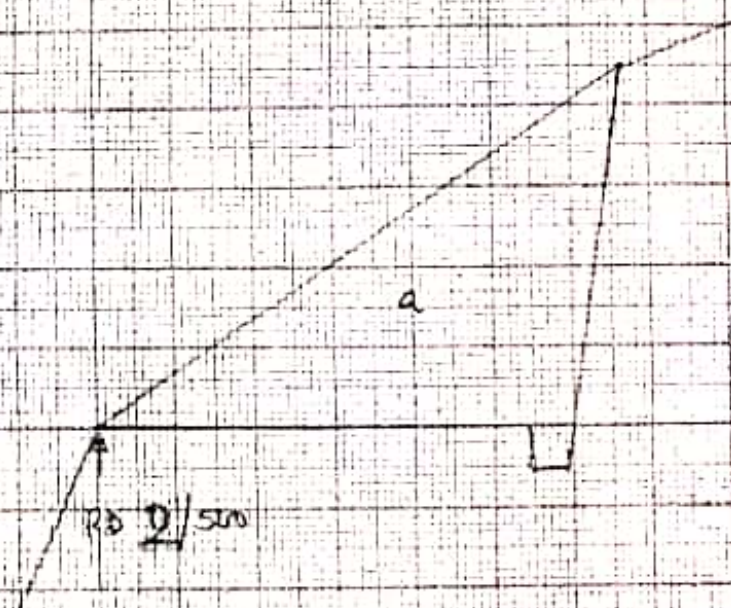
$$T = 13.71 \text{ m}^2$$



$$Q_1 = \frac{1}{2} \times 6.00 \times 1.50 = 4.50 \text{ m}^2$$

$$\text{Drain} = 0.36 \text{ m}^2$$

$$T = 13.86 \text{ m}^2$$



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 Executive Engineer,
 PWD (R&R) Special Sub Division,
 DODA

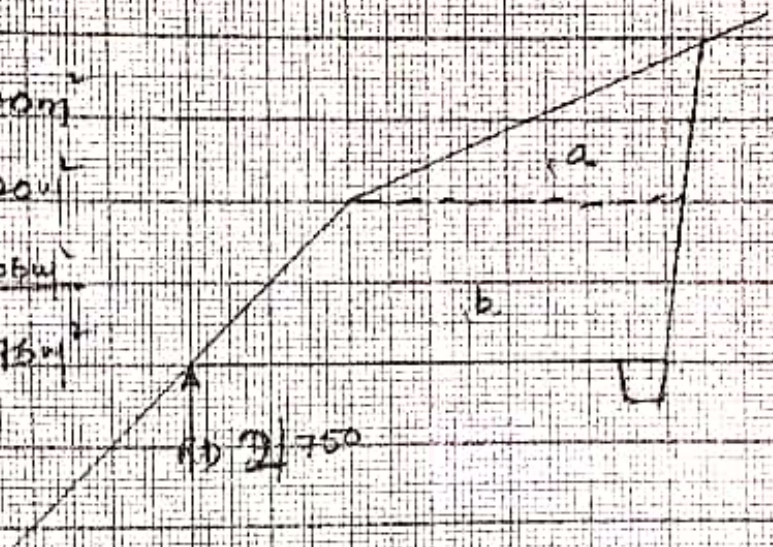
$$a = \frac{1}{2} \times 4.20 \times 2.0 = 4.20 \text{ m}^2$$

$$b = \frac{4.20 + 6.0}{2} \times 2.0 = 10.20 \text{ m}^2$$

Draw

$$a = 0.36 \text{ m}^2$$

$$I = 14.76 \text{ m}^2$$



$$a = \frac{1}{2} \times 2.50 \times 2.0 = 2.50 \text{ m}^2$$

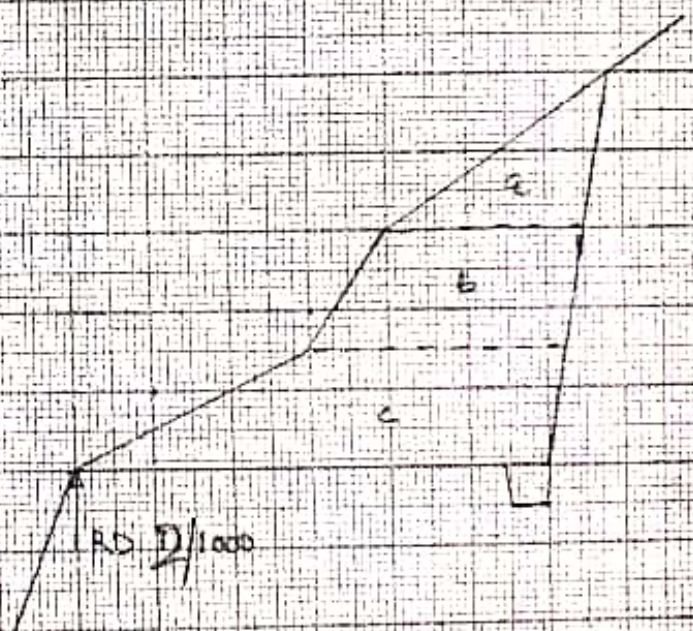
$$b = \frac{2.50 + 3.25}{2} \times 1.50 = 4.27 \text{ m}^2$$

$$c = \frac{3.25 + 6.0}{2} \times 1.50 = 6.94 \text{ m}^2$$

Draw

$$a = 0.36 \text{ m}^2$$

$$I = 14.03 \text{ m}^2$$



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Executive Engineer
PS (S & D) Special Sub Division
LODA

EARTH WORK CHART FOR THE CONSTRUCTION OF LINK ROAD FROM UDHYANUR TO

RAI SARVALA KM 4th RD 0-1000

EARTH WORK						CLASSIFICATION		
RD	Area	T.A	M.A	Length	Qty. Cum	Hard Soil	Soft Rock	Hard Rock
3/0	14.03	---	---	---	---	80%	10%	10%
3/250	9.00	23.03	11.51	250	2878.75			
3/500	8.00	17.00	8.50	250	2125.00			
3/750	4.00	12.00	6.00	250	1500.0			
3/1000	9.82	13.82	6.91	250	1727.50			
TOTAL					8231.25	6585.00	823.12	823.12

[Signature]
Asstt. Executive Engineer,
PWD (R & B) East Sub-Division
Doda

[Signature]
Executive Engineer,
PWD (R & B) SPL Sub-Divn.
Doda



10(3/250)

$$\textcircled{1} \frac{1}{2} \times 2.30 \times 0.30 = 0.345 \text{ m}$$

$$\textcircled{2} 2.30 \times 0.30 = 0.69 \text{ m}$$

$$3 \times 0.69 \times 0.30 = 0.621 \text{ m}$$

$$\frac{0.621}{7} = 0.0887 \text{ m}$$



10(3/250)

10(3/250)
 Executive Engineer
 (P.W.D. & R) Special Sub Division
 DODA

(A)

(B)

Rel 3
500

1. 3000 60 0.36

2. 1.300 60 7.20

3. 1.600 60 9.36

4. 1.800 60 10.80

(C)

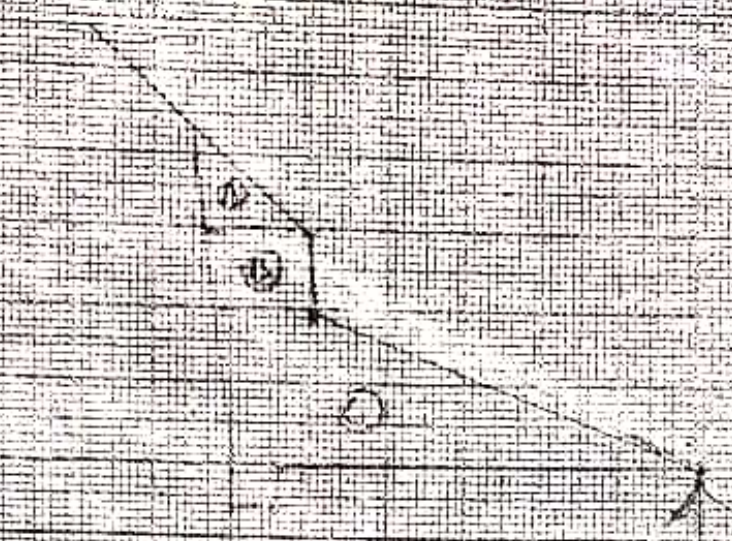
Rel 3
250

5. 1.800 80 3.60

6. 1.800 80 3.60

7. 1.800 80 3.60

W. R. R. S. O.
Alternative Projects
P. W. R. S. O. Special Sub Division
D. O. A.



3
1000

BY SGT. J. H. HARRIS, JR. 10-16

③ 1.400 1.250 1.000 1.500

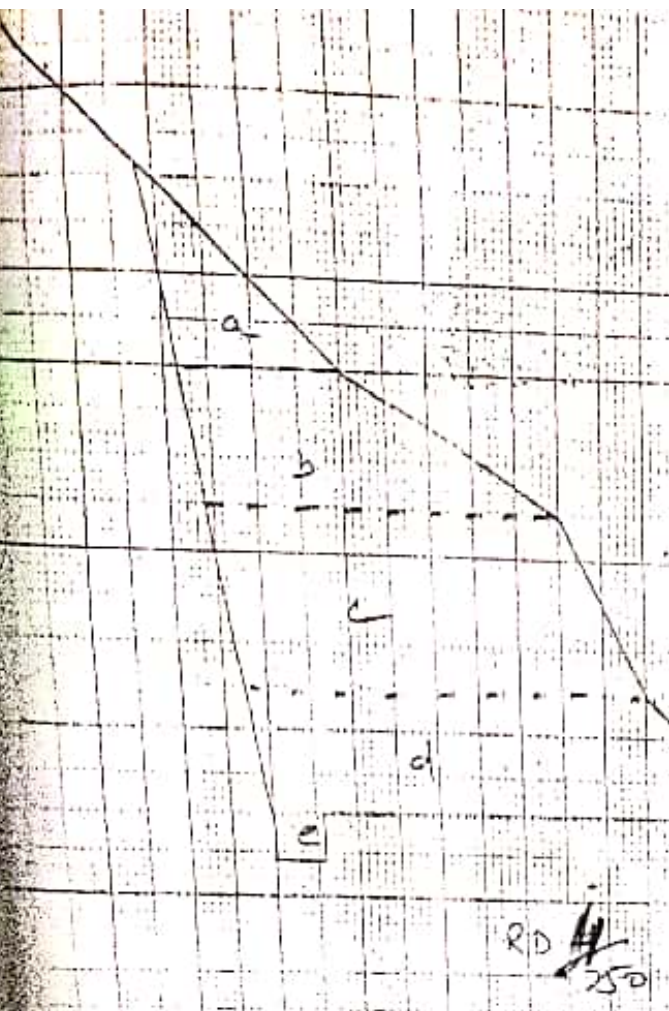
④ 1.250 1.500 1.000 1.250

1.250 1.500 1.000 1.250
9.800 m

1.250
1.500
1.000
1.250

~~1.250~~
~~1.500~~
~~1.000~~
~~1.250~~

1.250
1.500
1.000
1.250
9.800 m
DADA



E/Work

$$A) = \frac{1}{2} \times 1.80 \times 2.10 = 1.89 \text{ m}$$

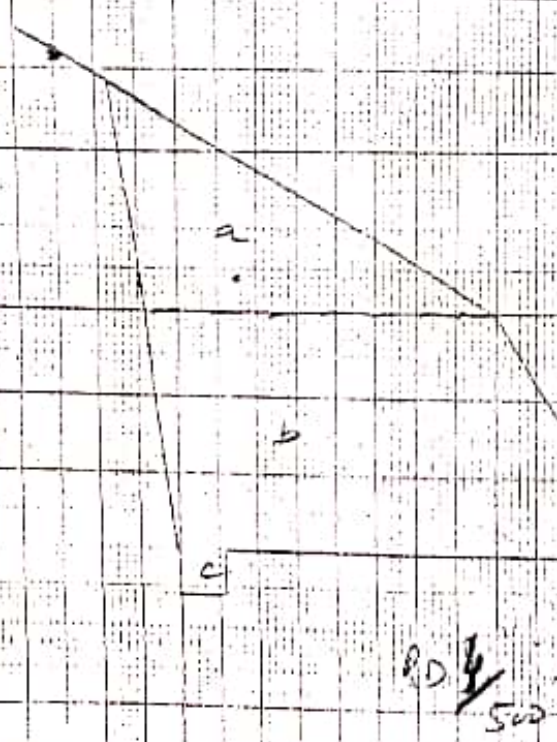
$$B) = \frac{1.80 + 4.10}{2} \times 1.50 = 4.42 \text{ m}$$

$$C) = \frac{4.10 + 4.80}{2} \times 2.6 = 8.90 \text{ m}$$

$$D) = \frac{4.80 + 6.9}{2} \times 1.50 = 8.10 \text{ m}$$

$$E) = 0.50 \times 0.50 = 0.25 \text{ m}$$

$$T = 23.56 \text{ m}$$



E/Work

$$A) = \frac{1}{2} \times 1.40 \times 2.80 = 6.16 \text{ m}$$

$$B) = \frac{4.40 + 6.0}{2} \times 3.0 = 15.6 \text{ m}$$

$$C) = 0.50 \times 0.50 = 0.25 \text{ m}$$

$$T = 22.01 \text{ m}$$

[Signature]

[Signature]

Executive Engineer
PWD (R&B) Special
DOD

Asstt. Executive Engineer
PWD (R&B) East Sub-Div
DOD

E/work

$$a) = \frac{1}{2} \times 2.0 \times 0.80 = 0.80 \text{ m}$$

$$b) = \frac{2.0 + 2.30}{2} \times 1.0 = 2.15 \text{ m}$$

$$c) = \frac{2.30 + 4.0}{2} \times 2.0 = 6.30 \text{ m}$$

$$d) = 0.50 \times 0.50 = 0.25 \text{ m}$$

$$T = 9.50 \text{ m}$$

RD 4/1950

E/work

$$a) = \frac{1}{2} \times 3.50 \times 1.40 = 2.45 \text{ m}$$

$$b) = \frac{3.50 + 6.0}{2} \times 3.0 = 14.25 \text{ m}$$

$$c) = 0.50 \times 0.50 = 0.25 \text{ m}$$

$$T = 16.95 \text{ m}$$

RD 4/1950

RD 4/1950

Executive E
PWD (R&B) Spec
DOD

Asstt. Executive Engineer
PWD (R&B) East Sub-Div
DOD

Typical estimate for constt. of 900 mm dia Hume pipe culvert on various Roads of PWD (R&B) Spl Sub Division Doda

Sl No	Name of the particulars	Amount
01	Earth work in excavation in trenches for foundations disposal lead 25 m and lift upto 1.5 mtr. in 70% all kinds of soil and 30% ordinary rock. Back cutting $\frac{1}{2} \times 2.40 \times 2.40 \times 7.0 = 20.16 \text{ Cum}$ D/wall $\frac{1}{2} \times 4.70 \times 1.80 \times 2.0 = 8.46 \text{ Cum}$ $1 \times 4.80 \times 0.70 = 3.36 \text{ Cum}$ Catch pit $2.0 \times 2.30 \times 2.00 = 8.20 \text{ Cum}$ App. Walls $2 (0.60 + 1.30) \times 2.25 \times 4.20 = 17.95 \text{ Cum}$ 02 Total 59.00 Cum @ Rs. 145.78/Cum	620377.00
02	Providing and laying in position cement concrete 1:5:10 with stone aggregate 40mm nominal size) Naialah. D/wall $4.00 \times 2.0 \times 0.10 = 0.80 \text{ Cum}$ Catch pit $2.0 \times 2.30 \times 0.10 = 0.46 \text{ Cum}$ 02 Total 1.26 Cum @ Rs. 2098.90/Cum	1405.30
03	Providing and laying in position cement concrete 1:3:6 with 20% plants (Crusher bajree) D/Walls $2 (0.60 + 2.50) \times 5.70 \times 2.0 = 17.52 \text{ Cum}$ 02 Catch pit $2.0 \times 2.30 \times 0.50 \times 1.80 = 4.14 \text{ Cum}$ $2.0 \times 1.50 \times 0.50 \times 1.50 = 2.25 \text{ Cum}$ Fps $5 (0.50 \times 0.30 + (0.50 + 0.20) \times 0.30) \times 1.0 = 1.35 \text{ Cum}$ 02 App. Walls B Band $2 \times 4.20 \times 2.20 (\text{avg}) \times 0.30 = 5.54 \text{ Cum}$ C Band $2 \times 4.20 \times 1.40 (\text{avg}) \times 0.20 = 3.35 \text{ Cum}$ T Band $2 \times 4.20 \times 0.60 \times 0.15 = 0.76 \text{ Cum}$ Vert. pillars $2 (1.40 + 0.65) \times 2.25 \times 0.20 = 0.92 \text{ Cum}$ 02 Total = 36.49 Cum D/d pipe area $785 \text{ M}^2 \times (1.50 + 1.20) = 601.06 \text{ Cum}$ 02 $785 \text{ M}^2 \times 0.50 = 392.50 \text{ Cum}$ Net = 15.00 Cum @ Rs. 1037.60/Cum	(106319.00)
04	Form work including centering shuttering propping & strutting etc. and removal of the same D/Walls Face $1 \times 2.0 \times 5.70 \text{M} = 11.40 \text{ Sqm}$ Back $1 \times 2.0 \times 4.10 = 8.00 \text{ Sqm}$ Side $1 \times 2.0 (0.60 + 2.50) \times 5.70 = 17.67 \text{ Sqm}$ 02 Total = 37.07 Sqm Catch pit $2.0 (1.50 + 1.80) \times 1.50 = 9.90 \text{ Sqm}$ Approaches B Band $2 \times 1 \times 4.20 \times 0.30 = 2.52 \text{ Sqm}$ C Band $2 \times 2 \times 4.20 \times 0.20 = 3.36 \text{ Sqm}$ T Band $2 \times 2 \times 4.20 \times 0.15 = 2.52 \text{ Sqm}$ Vert. pillars $2 \times 2 (2.25 + 2.10) \times 0.20 = 3.48 \text{ Sqm}$ Side $2 \times 2.0 (2.15 + 1.45) \times 2.20 = 13.42 \text{ Sqm}$	

	$\frac{2 \times 2.0 (1.40 + 0.60) \times 2.25}{0.02} = 4.50 \text{ Sqm}$ Top: $2 \times 2 \times 1 \times 0.60$ = 2.40 Sqm Sides: $5 \times 2 \times 0.50 \times 0.30$ = 1.50 Sqm $\frac{2 \times 2.0 (0.50 + 0.30) \times 0.30}{0.02} = 1.20 \text{ Sqm}$ D/d pipe area $3 \times 0.785 \text{ M}^2$ T = 87.17 Sqm @ 2.25 Sqm Net = 84.80 Sqm @ Rs. 342.80/Sqm	29069.00
05	Dry random rubble masonry using Nailah stone in foundation and plinth. App. Walls $2 \frac{(2.15 + 1.45) \times 2.10 \times 4.0}{0.02} = 10.24 \text{ Cum}$ $2 \frac{(1.40 + 0.60) \times 2.25 \times 4.0}{0.02} = 18.00 \text{ Cum}$ T = 48.20 Cum @ 1304.45/Cum	62874.00
06	Hand packed stone filling in wire crate including carriage of stone $4 \times 6.0 \times 1.20 \times 1.20 = 8.64 \text{ Cum}$ @ Rs. 421.50/Cum	3642.00
07	Filling available excavated earth with 50% stone behind walling 50% earth. D/Walls $\frac{1}{2} \times 1.40 \times 3.20 = 2.24 \text{ Sqm}$ $\frac{(3.50 + 3.90) \times (0.50 + 0.80)}{0.02} = 2.40 \text{ Sqm}$ T = 4.71 Sqm $\times 2.0 = 9.63 \text{ Cum}$ App. Walls $2 \frac{(0.40 + 0.90) \times 3.50 \times 6.0}{0.02} = 27.30 \text{ Cum}$ T = 36.73 Cum @ Rs. 230.52/Sqm	8467.00
08	Labour for laying of NP3 pipes (900 mm) dia with Collars jointed with stiff mixture of 1:2 complete (i) Mason 1 for one day @ Rs. 500/day = 500.00 (ii) Labour Mazdoor 12 for one day @ Rs. 300/day = 3600.00	4100.00
09	Providing and laying 50 mm thick cement concrete flooring with 1:2:4 mix C/pit $1 \times 1.80 \times 1.50 = 2.70 \text{ Sqm}$ @ 275.45/Sqm	744.00
10	Carriage of material:- (i) Stones for an avg. distance of 5.0 km by MT Qty. vide item No. 03 = 35.0 Cum @ 20% = 7.00 Cum Qty. vide item No. 05 = 48.00 Cum Qty. vide item No. 06 = 9.00 Cum Total = 64 Cum @ Rs. 137.81/Cum = 8820.00 (ii) Sand for an avg. distance of 30 km by MT Qty. vide item No. 02 = 1.26 Cum @ 47% = 0.56 Cum Qty. vide item No. 03 = 35.0 Cum @ 37% = 12.95 Cum Qty. vide item No. 09 = 2.70 Cum @ 0.022 Sand = 0.06 Cum T = 26.60 Cum @ Rs. 302.18/Cum = 8038.00 (iii) Stone agg. crusher for an avg. dist. 50 km by MT Qty. vide item No. 03 = 35.0 Cum @ 75% = 26.25 Cum Qty. vide item No. 09 = 2.70 Cum @ 0.045 Cum = 0.12 Cum T = 26.37 Cum @ 418.73/Cum = 11042.00	11042.00

(iv). Hume pipes from Divl. Store for an avg. distance of 19km by MT

3x2.50M=7.50RM @ 12933.27/100RM

970.00

TOTAL

257863.00

Add 30% above SFR 2012

80359.00

Add Cost of pipes 3 @ Rs 12000/Each

36000.00

Add Cost of wire scales @ Rs 5000/Each

5000.00

G.TOTAL

389222.00

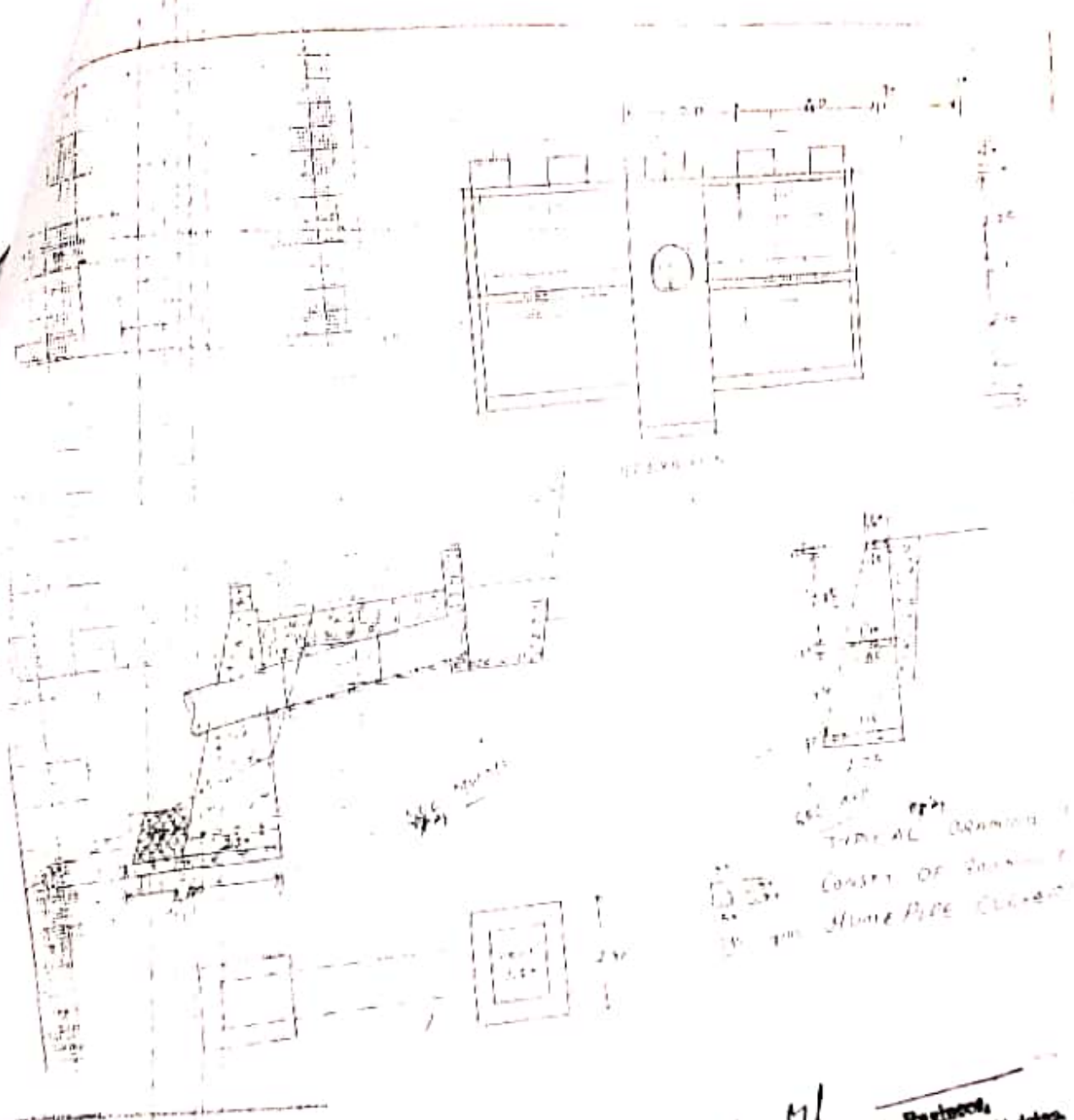
Say 3.90 LACS

108/2012
Asstt. Executive Engineer,
PWD(R&B) West Sub-Divn
Doda

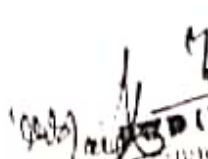
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PWD(R&B) Sub-Divn
Doda



SEE ALSO
TYPICAL DRAWING
CONST. OF BUILDING
25' x 100' Stone Pile Foundation


 Asstt. Executive Engineer
 PWD (R&B) Special Sub Division
 Doda

Typical estimate for constl. of semi pucca retaining wall 4.00 M height in Doda Area.

L = 11.00 M

S.No	Name of the particulars	Amount
01	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width as well as 10 sqm on plan) including dressing of sides and ramming of bottoms lead up to 01 m and 1.0 upto 1.5m including getting out the excavated soil and disposal of surplus excavated soil as directed in all kinds of soil 80% OR 20% Qty. = $\frac{1}{2} \times 1.75 \times 1.00 = 0.875 \text{ Sqm}$ = $(1.75 + 1.95)/2 \times 0.75 = 1.387$ = $2.26 \times 11.00 = 24.86 \text{ Cum @ } 292.55/\text{Cum}$	7273.00
02	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40mm nominal size) Nallah Bed = $11.00 \times 1.95 \times 0.15 = 3.21 \text{ Cum}$ Total = $3.21 \text{ Cum @ } 2698.90/\text{Cum}$	8663.00
03	Random rubble masonry with hard stone from Nallah in foundation and plinth including leveling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) at plinth level with cement mortar 1:6 (1 cement : 6 fine sand) BR = $(1.75 + 1.95)/2 \times 0.60 \times 11.00 = 12.71 \text{ Cum}$ TB = $(0.60 + 0.80)/2 \times 0.60 \times 11.00 = 4.62 \text{ Cum}$ Vp = $(0.80 + 1.75)/2 \times 0.60 \times 2.65 \times 5 = 10.13 \text{ Cum}$ Total = $26.96 \text{ Cum @ } 2583.50/\text{Cum}$	69651.00
04	Dry Random rubble masonry with hard stone in foundation and plinth using Nallah stone without bond stone. Qty. = $(0.80 + 1.75)/2 \times 2 \times 2.65 \times 4 = 27.01 \text{ Cum @ } 1304.45/\text{Cum}$	35259.00
05	Providing and laying damp proof course 50mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) crushed Qty. = $1 \times 11.00 \times 0.60 = 6.60 \text{ Sqm @ } 275.43/\text{Cum}$	1818.00
06	Centering and shuttering including strutting, propping etc. and removal of form work for Retaining walls return walls, walls (any thickness) including attached pilasters buttresses plinth and string courses fillets etc. Bed = $1 \times 11.00 \times 0.15 = 1.65 \text{ Sqm}$ Total = $1.65 \text{ Sqm @ } 179.25/\text{Cum}$	296.00
07	Dumping stone including cost of stones in horizontal on level Qty. = $\frac{1}{2} \times 1.50 \times 2.50 \times 11.00 = 20.62 \text{ Cum}$ = $20.62 \text{ Cum @ } 358.85/\text{Cum}$	7399.00
08	Carriage of crusher bajree an avg. distance of 50 km by MT including loading, unloading and stacking complete Qty. vide item No. 5 = $6.60 \text{ Sqm} \times 0.045 \text{ Cum/Sqm} = 0.29 \text{ Cum}$ = $0.29 \text{ Cum @ } 418.78/\text{Cum}$	121.00
09	Carriage of sand an avg. distance of 30 km by MT including loading, unloading and stacking complete. Qty. vide item No. 2 = $3.21 \text{ Cum @ } 0.47/\text{Cum} = 1.50 \text{ Cum}$ Qty. vide item No. 3 = $26.96 \text{ Cum @ } 0.38/\text{Cum} = 10.24 \text{ Cum}$ Qty. vide item No. 7 = $6.60 \text{ Sqm @ } 0.23 \text{ Cum/Sqm} = 0.15 \text{ Cum}$ = $11.89 \text{ Cum @ } 302.18/\text{Cum}$	3593.00

Carriage of stone an avg. distance of 03 km by MT including loading, unloading and stacking complete	
Qty. vide item No. 3 = 26.96 Cum	
Qty. vide item No. 4 = 27.03 Cum	
Qty. vide item No. 6 = 20.62 Cum	
= 74.61 Cum @ 125.648/cum	9374.99
Carriage of stone aggregate 40 mm an avg. distance of 03 km by MT including loading, unloading and stacking complete	
Qty. vide item No. 5 = 3.21 Cum x 0.89 Cum/Sqm = 2.85 Cum	
= 2.85 Cum @ 116.08/Cum	331.00
Total	143778.00
Add 30% above	43123.00
G. Total	186911.00
Cost per Rmt.	16992.00
Say 17000.00/ Rmt.	

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 Doda

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 Executive Engineer,
 PWD (R&B) Spl Sub Division,
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 PWD (R&B) East Sub Division
 Doda

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 PWD (R&B) Spl Sub Division,
 Doda

TYPICAL SECTION OF R/W WALL



FRONT ELEVATION OF WALL

ASSAULT, CALIFORNIA
PMD (RSB) East Sub Division

Datta

Executive Director,
(R & B) Special Sub Division,
DODA,

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ical estimate for constt. of semi pucca B/wall 2.00 M height in Doda Area.

Name of the particulars	Amount
Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width as well as 10 sqm on plan) including dressing of sides and raiming of bottoms lead up to 91 m and lift upto 1.5m including getting out the excavated soil and disposal of surplus excavated soil as directed in all kinds of soil Qty. = $\frac{1}{2} \times 0.30 \times 0.75 = 0.11 \text{ Sqr}$ $= (0.30 + 1.20/2) \times 0.75 = 0.56 \text{ Sqr}$ $= (1.20 + 1.10/2) \times 0.65 = 0.74 \text{ Sqr}$ $= 1.41 \times 11.00 = 15.59 \text{ Cum @ } 286.45/\text{Cum}$	4464.00
02 Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level 1:5:10 (1 cement :5 coarse sand :10 graded stone aggregate 40mm nominal size) Nallah. Bed = $11.00 \times 1.10 \times 0.15 = 1.81 \text{ Cum}$ Total = 1.81 Cum @ 2698.90/Cum	4885.00
03 Random rubble masonry with hard stone from Nallah in foundation and plinth including leveling up with cement concrete 1:6:12 (1 cement: 6 coarse sand: 12 graded stone aggregate 20mm nominal size) at plinth level with cement mortar 1:6 (1 cement : 6 fine sand) BB = $(1.00+1.10)/2 \times 0.60 \times 11.00 = 6.93 \text{ Cum}$ TB = $(0.60+0.70)/2 \times 0.60 \times 11.00 = 4.29 \text{ Cum}$ Vp = $(0.70+1.00)/2 \times 0.60 \times 0.80 \times 5 = 2.04 \text{ Cum}$ Total = 13.26 Cum @ 2583.50/Cum	34257.00
04 Dry Random rubble masonry with hard stone in foundation and plinth using Nallah stone without bond stone Qty. = $(0.70 + 1.00)/2 \times 0.80 \times 4.00 = 5.44 \text{ Cum @ } 1304.45/\text{Cum}$	7096.00
05 Providing and laying damp proof course 50mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) crushed. Qty. = $1 \times 11.00 \times 0.60 = 6.60 \text{ Sqr @ } 275.45/\text{Cum}$	1818.00
06 Centering and shuttering including strutting, propping etc. and removal of form work for Retaining walls (retin walls, walls (any thickness) including attached pilasters buttresses plinth and string courses fillets etc. Bed = $1 \times 11.00 \times 0.15 = 1.65 \text{ Sqr}$ Total = 1.65 Sqr @ 179.25 / m²	296.00
07 Carriage of crusher bajree an avg. distance of 50 km by MT including loading, unloading and stacking complete Qty. vide item No. 5 = 6.60 Sqr x 0.045 Cum / Sqr = 0.29 Cum = 0.29 Cum @ 418.78/Cum	121.00
08 Carriage of sand an avg. distance of 30 km by MT including loading, unloading and stacking complete Qty. vide item No. 2 = 1.81 Cum @ 0.47/Cum/Cum = 0.85 Cum Qty. vide item No.3 = 13.26 Cum @ 0.38/Cum/Cum = 5.03 Cum Qty. vide item No.7 = 6.60 Sqr @ 0.23/Cum/Sqr = 0.15 Cum = 6.03 Cum @ 302.18/Cum	1822.00
09 Carriage of stone an avg. distance of 03 km by MT including loading, unloading and stacking complete Qty. vide item No. 3 = 15.26 Cum Qty. vide item No.4 = 5.44 Cum = 18.70 Cum @ 125.60/Cum	2349.00

Carriage of stone aggregate 40 load an avg. distance of 95 km by
 MT including loading, unloading and stacking complete
 Qty. vide item No. 5 = 1.81 Cum + 0.80 Cum + 1.61 Cum
 = 4.22 Cum @ 116.03/Cum

	187.00
Total	57295.00
Add 30% above	17188.50
G. Total	74483.50
Cost per Rut	6771.00
Qty 6779.00/ Rut	

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 Asstt. Executive Engineer
 PWD (R&B) East Sub Division
 Doda

[Signature]
 Executive Engineer,
 PWD (R&B) Spl Sub Division,
 Doda

[Signature]
 Asstt. Executive Engineer
 PWD (R&B) East Sub Division
 Doda

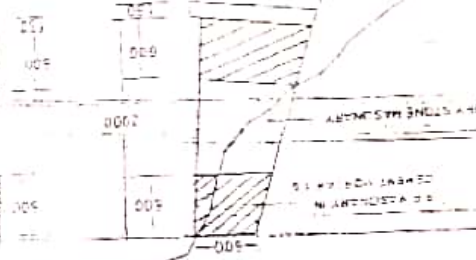
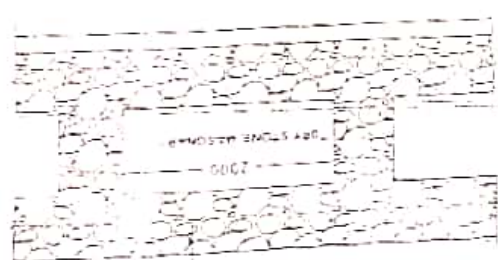
[Signature]
 Executive Engineer
 PWD (R&B) Spl Sub Division
 Doda

SAC, R&B (R&B) Special Sub Division
 BODA

Asstt. Engineer
 PWD (R&B) East Sub Division
 Port

FRONT ELEVATION OF SMALL

TYPICAL SECTION OF SMALL



IF MASONRY IN IS CEMENT MORTAR

THE WALL SHALL BE CONSTRUCTED OF

THE HEIGHT OF COURSE SHALL

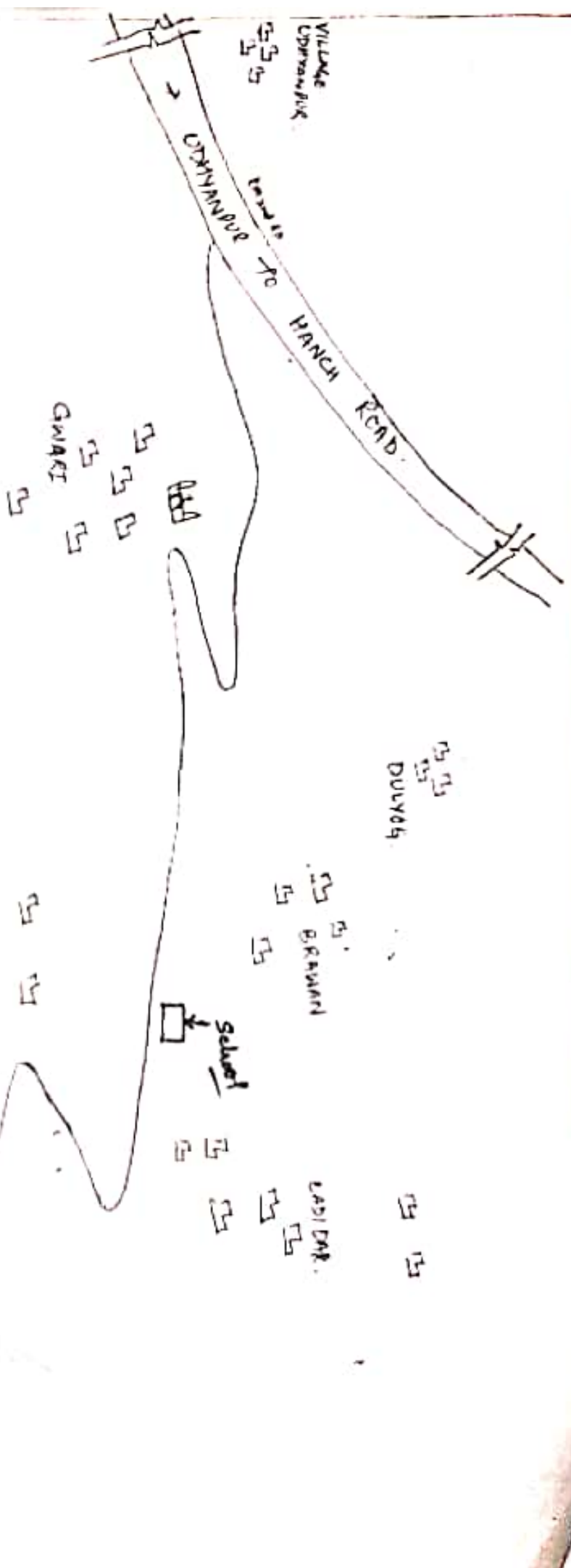
THE HEIGHT OF COURSE SHALL

THE FACE JOINTS SHALL BE NOT

THE STONE MASONRY SHALL BE

NOTES

INDEX MAP OF UDHYANPUR TO RAI SERWALA (NOT TO SCALE)



Asst. Executive Engineer
P.W.D. & Transport Sub-Div.
Bhopal

Asst. Executive Engineer
P.W.D. & Transport Sub-Div.
Bhopal

RAI SERWALA
RAI SERWALA
RAI SERWALA