(1) Number of pages 80

(2) Date of repair

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Public Works DEPARTMENT

G.O. No. / B.P. No. 389 W

Press. / Mis.

Dated 7-2-1979 198 .

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389 W
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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

7th February 1879, No. 389 W.

Buildings and Roads.

Civil Works.

Read the following paper:—

No. 56. Proceedings of the Board of Revenue, dated 16th January 1879, No. 98.

From C. W. W. MARTIN, Esq., Acting President of the Local Fund Boards, Madura, to the Acting Secretary to the Board of Revenue, dated 27th November 1878, No. 96.

1. Emergent estimate for Rupees 6,300 for repairing the damaged portions of road No. 23, Kariaputty to Pandalgudy.
2. Emergent estimate for Rupees 2,500 for closing breaches and repairing damaged portions of road No. 13, Melur to Shivaganga.
3. Emergent estimate for Rupees 29,500 for closing breaches and repairing damaged portions on road No. 3, Madura to Sayalgudy.

I HAVE the honor to submit for sanction the estimates noted in the margin passed by the Local Fund Board, Madura Circle, in Proceedings Nos. 133, 134, and 135 of 1878, copies of which are herewith sent.

2. The roads are important ones and the repairs are very necessary. Funds will be provided for them when available.

ENCLOSURES Nos. 1 to 3.—Estimates.

ENCLOSURES Nos. 4 to 6.—Extracts from Proceedings of Local Fund Boards.

WITH the foregoing letter the President submits for sanction three emergent estimates aggregating Rupees 38,300 for the repairs of the undermentioned roads in the Madura Circle—

	RS.
1. Repairing the damaged portions of road No. 23, Kariaputty to Pandalgudy	6,300
2. Closing breaches and repairing damaged portions of road No. 13, Melur to Shivaganga	2,500
3. Closing breaches and repairing damaged portions on road No. 3, Madura to Sayalgudy	29,500
Total ...	38,300

(1) Rupees	6,300
(3) Do.	29,500
	35,800

2. The President states that the roads are important and that the repairs are very necessary.

3. The sanction of Government is requested for the estimates for the first and third works.

4. The Board sanction the estimate for the second work and note that funds will be provided for all the works when available.

(A true Copy and Extract.)

(Signed) J. STURROCK,
Acting Secretary.

No. 57. ORDER THEREON, 7th February 1879, No. 389 W.

THE estimates for the repairs of the under-mentioned roads in the Madura District are sanctioned—

	RS.	Register No.	
1. Repairing and closing breaches of road No. 23 from Kariaputty to Pandalgudy	6,300	229	B. of 1878-79.
2. Repairing and closing breaches of road No. 3 from Madura to Sayalgudy	29,500	230	

2. This sanction has been registered as Local and numbered as above.

(True Extract.)

Colonel, R.E.,
Ag. Secretary to Govt., P.W.D.

To the Superintending Engineer, Fifth Circle.
" Examiner of Public Works Accounts.
" Board of Revenue.
" Financial Department.

Exd. E. C. Shunker.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1879) Madras.

PUBLIC WORKS.

To

The SUPERINTENDING ENGINEER
FIFTH CIRCLE,
&c., &c., &c.

Dated February 7th.

Issued

Recd. *Encl.*

G. O., 7th February 1879, No. 389 W.

FEBRUARY.

Nos. 6-7.

Roads in Madura District.—Sanctions estimates for repairs to certain—.

3

No. 98.

Proceedings of the Board of Revenue, dated 16th January 1879.

Read the following letter from C. W. W. MARTIN, Esq., Acting President of the Local Fund Boards, Madura, to C. A. GALTON, Esq., Acting Secretary to the Board of Revenue, dated 27th November 1878, No. 96 :—

I have the honor to submit for sanction the estimates noted in the margin passed by the Local Fund Board, Madura Circle, in Proceedings Nos. 133, 134, and 135 of 1878, copies of which are herewith sent.

1. Emergent estimate for Rs. 6,300 for repairing the damaged portions of Road No. 23, Kariaputty to Pandalgudy.
2. Emergent estimate for Rs. 2,500 for closing breaches and repairing damaged portions of Road No. 13, Melur to Shivaganga.
3. Emergent estimate for Rs. 29,500 for closing breaches and repairing damaged portions on Road No. 3, Madura to Sayalgudy.

2. The roads are important ones and the repairs are very necessary. Funds will be provided for them when available.

Enclosures Nos. 1 to 3.—Estimates.

Enclosures Nos. 4 to 6.—Extracts from Proceedings of Local Fund Boards.

With the foregoing letter the President submits for sanction three emergent estimates aggregating Rupees 38,300 for the repairs of the undermentioned roads in the Madura Circle.

	RS.
1. Repairing the damaged portions of Road No. 23, Kariaputty to Pandalgudy	6,300
2. Closing breaches and repairing damaged portions of Road No. 13, Melur to Shivaganga	2,500
3. Closing breaches and repairing damaged portions on Road No. 3, Madura to Sayalgudy	29,500
Total ...	38,300

2. The President states that the roads are important and that the repairs are very necessary.

3. The sanction of Government is requested for the estimates for the first and third works.

	RS.
(1) ...	6,300
(3) ...	29,500
	35,800

4. The Board sanction the estimate for the second work and note that funds will be provided for all the works when available.

(A true Copy and Extract.)

Acting Secretary.

To the Secretary to Government, Public Works Department, with two enclosures, to be returned.
" President of the Local Fund Boards, Madura District, with one enclosure returned.
" Superintending Engineer, 5th Circle.
" Examiner of Public Works Accounts.

Exd. G. Freeman.

11 1879

1879.

Board of Revenue,

MADRAS.

To

The SECRETARY to GOVT.,
PUBLIC WORKS DEPT.,
&c., &c., &c.

Dated January 16th.

Printed 20th.

Received

PROCEEDINGS, 16TH JANUARY 1879, No. 98.

Dept 27/1/79 - 2.

JANUARY.
No. 98.

Roads—from Kariaputty to Pandalgudy and from Madura to Sayalgudy in Madura Local Fund Circle.—Requesting sanction of Government for the estimates for repairing the —, and **sanctioning estimate for repairing the road from Melur to Shivaganga.**

Pro 27th January 79 No 389

Road No 23

4

26

METALLING NEW ROADS.

1. The broken stone is to consist of pieces capable of passing through a ring 1" in diameter and they must not on any pretence exceed cubes of 1."

2. The broken stone will be laid first on the earthwork and rammed, the thickness laid depending on the provision made in the estimate. In cases where damages to the road surface are being repaired all the old metal stone is to be careful picked up and the road surface sectioned before new material is laid down.

3. Over the stone will come gravel, the thickness laid depending on the provision made in the estimate.

4. On no account are any stones, pebbles, sand, earth etcetera to be mixed with the gravel—which will be sifted on to the broken stone to insure the exclusion of pebbles &c.

5. The gravel having been properly spread should be watered moderately by having water sprinkled on it and should be well tamped.

6. Too much water is as bad as two little and no water at all will leave the road loose and dusty.

7. While portions of roads are being remetalled they should be invariably closed to traffic, and kept closed for a week or so after the metalling is laid to allow of the latter consolidating.

8. To avoid inconveniencing traffic unnecessarily, the road, or portion of road, should not be closed sooner or longer than necessary and while it is closed care should be taken, by forming ramps of easy gradient and removing any obstacles in track, to provide the traffic with a passable substitute for the proper road.

H B Hutchings

District Engineer. *Range Officer.*

4

EARTH WORK.

1. All earth is to be dug from the side trenches in cases of roads and from regular oblong pits in rear or in front of the bund in case of tanks.

2. The Maistry in charge of any tank or roadwork will lay out these pits and see that the Contractor digs regularly in them.

3. All earthwork is to be tamped layer by layer as it is thrown on the bank, no layer is to exceed 1½ ft. in thickness.

4. All work is to be sectioned out by the Maistry or if he is unable to do it by the Overseer or Sub-Overseer.

5. These sections are to show the Contractor what height and width he is to make the bank and what the slopes are to be.

6. In the case of tanks the inside slope should be never less than 2 to 1 or the outside less than 1½ to 1.

7. In the case of roads 1½ to 1 will generally be found a sufficient slope.

8. When the earthwork has been completed as shown by the sections. The top and slopes of the bank should be well tamped and if necessary turfed.

9. In the case of roads, embankments, were turf, nannal, prickly pear &c., are difficult to get or difficult to keep alive small banks or Varaippus may be made along the top edge of the road on each side.

10. These Varaippus must have openings in them to let the drainage escape every 5 yards and there should be channels made in the slope of the embankment to guide the water gradually down the slope and thus prevent serious scour.

11. In the case of roads too the centre of the embankment should be slightly higher than the sides say 3 in a breadth of 4 yards to facilitate drainage.

12. It is the Overseer's or Sub-Overseer's duty to explain all the above rules to the Maistry in charge who will see, on pain of dismissal, that the Contractor carries them out.

H.B. Hutchings

District Engineer. Range Officer.

16

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Particulars	No.	Measurement L	B	H	Contents
Appendix No. I Extending 1½ x 1½ feet Tunnel in 2d Mile					
Foundation to Side walls	4	1	3/4	1	3
Do above	4	1	1/2	1	2
Do Wing walls including foundation	4	1	1/2	1 7/8	3 3/4
Filling Sides of Covering Stone	4	1	1/4	1/4	1/4
Coping over Covering Stone	2	1	1½	1/8	3/8
Parapet walls	2	1½	1/2	1/2	3/4
Total Rough stone in Chunam C yds					10 1/8
Covering Stone	2	1.		1/4	1/2
Total Cut stone C yds					1/2
Appendix No. II Extending 1½ x 1½ feet Tunnel in 2d Mile					
Particulars as above No. I					
Appendix No. III Repairing 19 yds Flood Dam.					
Repg the top of Side Dam		15	3/4	1/4	2 13/16
Sundry repairs					1
Total Rough stone in Chunam C yds					3 13/16
Plastering to Parapets	2	6	2¼	1½	40½
Total Plastering Sqr feet					40½
or Squares					40½/100
Appendix No. IV Repg 9 x 4½ feet arch Tunnel					
Flooring with Rough stone in Chunam for the undermined portion of Tunnel		7	8	1½	84
Total Rough stone in Chunam C feet					84
or C yds					3 1/9
Plastering &c Sundries					
Appendix No. V Extending 1½ x 1½ feet Tunnel in 2d Mile					
Foundation to Side walls	4	2	3/4	1	6
Do above	4	2	1/2	1	4
Do Wing walls including foundation	4	1	1/2	1 7/8	3 3/4
Filling Sides of Covering Stone	4	2	1/4	1/4	1/2

	No.	L	B	H	Contents
[illegible]					
Total Roughstone in Chunam Cyds					
Covering Stone	2	2	1	¼	
Total Cut Stone Cyds					1
Appendix No VI Repg 5 Vent Tunnel and Constructing Apron.					
Foundation to Side walls		2½	1¼	½	1 9/16
Do to Pier		1½	1¼	½	15/16
Do to Wing wall		3	1¼	½	1 7/8
Do to Retaining wall	2	1¼	½	½	5/8
Apron Retaining wall.		27.	¾	1½	30 3/8
Do Side walls.		4½	5	½	11¼
Flooring		10½	6	½	31½
Reconstructing foundation to Side wall.		2½	1	1	2½
Do to Pier		1½	1	1	1½
Do to Wings		3	1	1	3
Do to Retaining walls	2	1¼	½	1	1¼
Side walls above		2½	¾	1	1 7/8
Do to Pier		1½	¾	1	1⅛
Do to Wings		3	¾	1¼	2 13/16
Flooring	2	2	1¼	⅜	1 7/8
Total Roughstone in Chunam Cyds.					97 13/32
of which Old Roughstone Cyds					11 13/16
New Roughstone in Chunam Cyds					85 19/32
Brick work. Parapets		5½	½	1	2¾
Wings		3	½	½	¾
Total Brick in Chunam Cyds.					3½
Plastering to Parapets		16½	7½	"	123¾
Do to Wings		9	4½	"	40½
Total Square feet					164¼
or Squares					1 64¼/100.
Appendix No VII Extending one Vent Tunnel of 4½ x 4½ feet on 5 furlong of 6th Mile					
Foundation to one Abutments	1	7	1	1	7
Do to Wings	2	1½	1	1	3
Do to Cutwaters	2	1	1	1	2
Retaining walls	1	1¼	½	1	5/8
Flooring to Vent	1	1¼	[illegible]	[illegible]	2 13/16
Abutments above	1	7	¾	1½	7⅞
Wings above	2	1½	¾	1⅞	4 7/32

Emergent Detailed Estimate No of 1878-79

District Madura Division Madura Tiroochooly

Work. Closing breaches from Madura to Sayalagoody on Road No 3.

19

	Measurement			Contents								
Mile	L	B	H	Earth	Gravel	Metalling	Gravelling	Turfing	Planting manure	Spl. Cold	Spl. Cold	
												Commencing from 2d Mile Stone.
2d	14											Good
	1											Lengthening 2d yards on both sides for 1½ x 1½ feet Tunnel as per appendix No 1.
	154											Good
	1											Lengthening 2 yards on both sides for 1½ x 1½ feet Tunnel as per appendix No 2.
	292											Good
	19											Repairing the 19 yards Road Dam as per appendix No 3
	84	6	"	"	"	"	"	504	"	"	"	Turfing on both sides
	52	6	1	312	"	"	"	"	"	"		Repairing & Widening the washed parts on both sides.
		4	⅛	"	"	26	"	"	"			Metalling
1		5	⅛	"	"	"	32½	"	"	234	"	Gravelling
		6						312				Turfing
	48	11	2	1056								Closing breach
		8¾	½	210								Do Filling hollows
		4	⅛	"	"	24						Metalling
		5	⅛	"	"	"	30			216	"	Gravelling
		6						288				Turfing
	10	6	1	60								Repairing the washed portions both sides.
		4	⅛	"	"	5						Metalling
		5	⅛				6¼			45	"	Gravelling
		6						60				Turfing
	11	5	⅛				6⅞			"	55	Gravelling over 9 x 4½ feet Tunnel
Carried Over				1638	"	55	75⅝	1164		495	55	

Mile	Length	Breadth	Height	Earth	Gravel	Metall	Gravell	Turfing	Planting trees	Rs As Ps	Rs As Ps	
Brought fd				1638	„	55	75⅝	1164		495	55	

Repairing 9 × 4½ feet Tunnel as per appendix No 4

	68	4½	1	306 ✓								Repairing the washed portions on both sides
		4	⅛			34 ✓						Metalling
		5	⅛				42½ ✓			}306		Gravelling
		5						340 ✓				Turfing
	16	11	1½	264 ✓								closing breach
		4	¾	48 ✓								Filling hollows
		4	⅛			8 ✓						Metalling
		5	⅛				10			}72		Gravelling
		5½						88 ✓				Turfing
	21	4	¾	63 ✓								Repairing the washed portions on both sides
		4	⅛			10½						Metalling
		5	⅛				13⅛			}94½ ✓		Gravelling
		5						105 ✓				Turfing

Lengthening 2 yards on both sides for 1½ × 1½ feet Tunnel as per appendix No V.

	80	3	¾	180 ✓								Repairing the washed portions
		6	¼	120								Filling hollows & Repairing Road
		4	⅛			40 ✓						Metalling
		5	⅛				50 ✓			}360 ✓		Gravelling
		4						320 ✓				Turfing
	48	2	½	48 ✓								Repairing the washed portions
		4	⅛			24 ✓						Metalling
		5	⅛				30 ✓			}216		Gravelling
		3½						168 ✓				Turfing
	44	4	⅛				22				176	Gravelling
	264	„	„									Good up to 2d Mile stone
				2667		171½	243¼	2185		1543½	231	
	32	4	⅛			16				}144		Metalling to washed portions
		5	⅛				20 ✓					Gravelling
	12	4	⅛				6 ✓				48	Do
				„	„	16	26	„	„	144	48	

Mile	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting trees	Rs As Ps	Rs As Ps	
4	„	„	„	„	„	„	„	„	„	„	„	Good.
5	64	1	½	32 ✓								Raising boundary on west
	40	3	1	120 ✓								Repairing the washed portions
		4	⅛			20 ✓						Metalling
		5	⅛				25 ✓			}180 ✓		Gravelling
	24	3	½	36 ✓								Repairing the washed portions

Repairing 5 Vent Tunnel with constructing apron as per appendix No VI

	5	3	2	30 ✓								closing breach near wing wall
	26	3	½	39 ✓								Repairing the washed portions
	76	4	½	152 ✓								Do
		4	⅛			38 ✓						Metalling
		5	⅛				47½ ✓			}342		Gravelling
				409	–	58	72½	–	–	522		
6	52	4	½	104 ✓								Repairing the washed portions
		6½	¼	84½ ✓								Raising Road in average
		4	⅛			26 ✓						Metalling
		5	⅛				32½ ✓			}234		Gravelling
	20	2	1	40 ✓								closing breach
		4	1/16				5 ✓				80	Gravelling

Extending one Vent in addition to the present 4½ × 4½ one Vent Tunnel as per appendix No VII

	5	2	2½	25 ✓								closing breach in side of wing wall
	74	3	¾	166½ ✓								Repairing washed portion
		4	⅛				37 ✓				296	Gravelling
				420	–	26	74½			234	376	
7	40	6⅜	¼	63¾ ✓								Raising road in average
		4	⅛				20 ✓				160	Gravelling
	80	3	½	120 ✓								Repairing the washed portion
		7½	1	600 ✓								Raising north approach
				783¾		„	20	„	„	„	160	

Mile	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	[illegible]	[illegible]	
				783¾			20			160	
1	80	4	1/8	"	"	"	40	"	"	320	Gravelling
	20	7½	1	150	"	"	"	"	"	"	Raising road on south
		4	1/8	"	"	"	10	"	"	80	Gravelling
	44	4	1/8	"	"	"	22	"	"	176	Do
	44	2	1/2	44	"	"	"	"	"	"	Closing the washed portion
		4	1/8	"	"	"	22	"	"	176	Gravelling
	16	"	"	"	"	"	"	"	"	"	Good up to mile stone
				977¾	"	"	114	"	"	912	
5	36	"	"	"	"	"	"	"	"	"	Good
	64	4	1/8	"	"	"	32	"	"	256	Gravelling to washed portion
				"	"	"	32	"	"	256	
10	20	4	1/8	"	"	"	10	"	"	80	Gravelling
	15	5	1/8	"	"	"	9⅜	"	"	75	Do to 15 yards Side Dam
	276	4	1/8	"	"	"	138	"	"	1104	Do
				"	"	"	157⅜	"	"	1259	
12	22	3	1/2	33	"	"	"	"	"	"	Repairing washed portion
	"	4	1/8	"	"	"	11	"	"	88	Gravelling
	"	5		"	"	"	"	110	"	"	Turfing
	36	4	1	144	"	"	"	"	"	"	Repairing washed portion
	"	4	1/8	"	"	"	18	"	"	144	Gravel
	"	5		"	"	"	"	180	"	"	Turfing
	80	2	1/2	80	"	"	"	"	"	"	Repairing the washed portion
		4	1/8	"	"	"	40	"	"	320	Gravelling
		6		"	"	"	"	480	"	"	Turfing
	72	7	1/2	252	"	"	"	"	"	"	Repairing the washed portion
	"	4	1/8	"	"	"	36	"	"	288	Gravelling
	"	6		"	"	"	"	432	"	"	Turfing
	46	2	1/2	46	"	"	"	"	"	"	Repairing the washed portion
	"	4	1/8	"	"	"	23	"	"	184	Gravelling
	"	4		"	"	"	"	184	"	"	Turfing
										1024	

	B	H	Earth	Gravel	Metalling	Gravelling	Turfing	Planting Jungle	Tamping	
			555			128	1386		1024	
	3	3/4	63							Repairing the washed portion
	2	1/2	9							Repairing the washed portion upto well
			627	"	"	128	1386		1024	
6	4	1	464							Repairing the washed portions
	4	1/8				58			464	Gravelling
4	3	3/4	144							Repairing the washed portions
	4	1/8				32			256	Gravelling
6	4	1	32							Repairing washed portion
	4	1/8				4			32	Gravelling
8	3	2½	60							Closing breach up to Tunnel
	4	1/8				4			32	Gravelling
3	4	1/8				1½			12	Do over 4½ x 3 Tunnel
0	6⅝	3/8	99⅜							Repairing the washed portion
	3½	1/8			17½			1154		Metalling
	4	1/8				20		290	"	Gravelling
4	6¾	1/2	148½							Repairing the washed portions
	3½	1/8			19¼			137		Metalling
	4	1/8				22		319	"	Gravelling
152	2	1/2	152							Repairing the washed portion
	3½	1/8			66½			[illegible]		Metalling
	4	1/8				76		1102	"	Gravelling
76	3	3/4	171							Repairing the washed portion upto 3 Vent Tunnel
	4	1/8				38			304	Gravelling
7½	6	1/8				5⅝			45	Do over 3 Vents Tunnel
129	4	3/4	387							Raising the washed portions & repairing slopes
	3½	1/8			56 7/16					Metalling
	4	1/8				64½		935¼	"	Gravelling up to 15 yds side Dam

Lengthening 6 yds on both sides to 15 yards Side Dam as per appendix No VIII.

	B	H	Earth	Gravel	Metalling	Gravelling	Turfing	Planting Jungle	Tamping	
15	4	1/4			15					Metalling
	5	1/8				9⅜		17½		Gravelling
22	6¾	1/2	74¼							Repairing the washed portion upto 13 Mile Stone
			1732⅛			174 11/16	335	436½ 2713	111	

Mile	L	B	H	Earth	Gravel	Metalling	Gravelling	Turfing	Planting			
				1732⅛		174 11/16	335	"	"	2713¾	1145	
13	22	3½	⅛			9⅝				159½	"	Metalling
		4	⅛				11					Gravelling
				1732⅛		184 5/16	346	"	"	2873¼	1145	
14												Commencing from Tharaganathal Tank
	168	7⅛	¾	-	897¾							Raising road & closing breach
	104	3	¾		234							Do
	140	3	½		210							Do
		4	⅛				70				560	Gravelling
	124	1	½	62								Repairing the washed portions & Slopes.
	36	3	½	54								Do
	28	2	½	28								Do up to 14 Mile
				144	1341¾		70				560	
15	30	3	1	90								Repairing the washed portions north of Tunnel
		6						180				Turfing
	16	3	1	48								Repairing the washed portions
		7						112				Turfing
	56	6¾	½	189								Repairing the washed portions
		4	⅛				28				224	Gravelling
		4						224				Turfing
				327			28	516			224	
16	3	8	½	12								Repairing the washed portions
	32	7⅛	¾	171								Closing Breach
		4	⅛				16				128	Gravelling
		6						192				Turfing
	16	7½	¾	90								Closing breach
		4	~~Appendix IX Repg the ruined Tu~~					64				Turfing of 4½ × 4½ feet
				273			16	256			128	
17	156	2	½	156								Repairing the washed portions
				156								

Mile	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting Tamarind	[illegible]	Spreading Gravel	
				156								
17	156	4	⅛				78				624	Gravelling
	132	2	½	132								Repairing moondaries
	104	2	½	104								Do Do.
		4	⅛				52				416	Gravelling
		4						416				Turfing
	136	3½	½	238								Repg Washed portion
		4	⅛				68				444	Gravelling
		4½						612				Turfing
	80	4	1	320								Closing breach
		4	⅛				40				320	Gravelling
		5						400				Turfing
	36	8	1¼	360								Closing breach
		4	3/16				27				144	Gravelling
		6	"					216				Turfing
	10	7½	1	75								Closing breach
		4	3/16				7½				40	Gravelling
		5½						55				Turfing
	66	11	2½	1815								Closing breach upto
		4	3/16				49½				264	Gravelling
		7						462				Turfing
	9											Good over the tunnel
	60	3½	1	210								Repairing the washed portion
		4	⅛				30				240	Gravelling
		7½						450				Turfing
	72	4	½	144								Repairing washed portion
		4	⅛				36				288	Gravelling
		4½	"					324				
	52	7⅛	¾	277⅞								Closing breach
		4	⅛				26				208	Gravelling
		4½						234				Turfing
	30	3	½	45								Repairing washed portion
				3876⅞			414	3169			2988	

Mile	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting [illegible]	[illegible]	[illegible]	
				228		47½	182¾		496		1824	
22	500	1	½	250 ✓								Repairing washed portion
		4	1/16				125 ✓				2000	Gravelling
	60											Good 7 23
		4	1/8				30 ✓				240	Gravelling
	140	1	½	70 ✓								Repairing washed portion
		4	1/16				35 ✓				560	Gravelling upto 20 yds S.D.
												Appendix No. XI 12×3 Apron required for 20 yds S Dam will repair
				548		47½	372¾		496		4624	

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Appendix No. XII Constructing 90 yds S Dam with 60×3 yds apron by remaining the ruined 40 yds S Dam.

Mile	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting [illegible]	[illegible]	[illegible]	
	56	7½	¾	315 ✓								Closing breach & raising road
		4	1/8				28 ✓				224 ✓	Gravelling
		4						224 ✓				Turfing
	226	6¾	½	762¾ ✓								Closing breach & raising washed portion
		4	1/8				113 ✓				904 ✓	Gravelling
		5						1130 ✓				Turfing upto 10 yds S.D.
	10	4	1/8				5 ✓				40 ✓	Gravelling
	250	2	½	250 ✓								Repairing washed portion & raising road
	32	2	½	32 ✓								Do washed portion
		4	1/8				16 ✓				128 ✓	Gravelling
	84	7⅛	¾	448⅞ ✓								Closing breach & raising washed portion
		4	1/8				42 ✓				336 ✓	Gravelling
	152	3	½	228 ✓								Repg washed portions
	18	4	½	36 ✓								Do
		4	1/8				9 ✓				72 ✓	Gravelling
		3						54 ✓				Turfing
	46	7½	1	345 ✓								Closing breach
		4	1/8				23 ✓				184 ✓	Gravelling
		3						138 ✓				Turfing on east side
	65											Side dam
		4	1/8	✓			32½ ✓				260	Gravelling
				2417⅝			268½	1546			2148	

	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting [illegible]	[illegible]	[illegible]	
			1194			230½	2340			1960	
	3½	¾	178½ ✓								Repairing washed portion
	4	1/8				34 ✓				272 ✓	Gravelling 8
	6						408 ✓				Turfing on both sides 24
8	3	¾	198 ✓								Repairing washed portion
	4	1/8				44 ✓				352	Gravelling
	5						440 ✓				Turfing on both sides
0	3	1¼	450 ✓								Repairing washed portion
	4	1/8				60 ✓				480	Gravelling
	6						720 ✓				Turfing on both sides
2	3	¾	117 ✓								Repairing washed portion
	4	1/8				26 ✓				208 ✓	Gravelling
	6						312				Turfing on both sides
4	3	¾	54 ✓								Repg washed portion
	4	1/8				12 ✓				96 ✓	Gravelling
	6						144 ✓				Turfing
			2191½			406½	4364			3368	

	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting [illegible]	[illegible]	[illegible]	
80	3½	1½	420 ✓								Repairing washed portion & rising road
	4	1/8				40 ✓				320 ✓	Gravelling
	6	..					480 ✓				Turfing on both sides
114	3	¾	256½ ✓								Repairing washed portion & rising road
	4	1/8				57 ✓				456 ✓	Gravelling
	6						684 ✓				Turfing on both sides
6	2	2	24 ✓								Filling north side of S.D.
8	6	1	48 ✓								Do in Rear of S.D.
46											Side Dam
	4	¼		46 ✓				207			Metalling
	5	1/8				28¾ ✓					Gravelling
10	3	½	15 ✓								Filling hollows of S.D.
6	8	1½	72 ✓								Do in Rear
12	7⅛	¾	64⅛ ✓								Closing breach 11
4	10	1	40 ✓								Filling hollows of S.D.
	4	1/8				2 ✓				16 ✓	Gravelling
			939⅝	46		127¾	1164	207		792	

Mile	Furlg	Length	Breadth	Height	Earth	Metalling	Gravelling	Turfing	Planting band	Sprd Turf & Gravel & Sdg	Sprd & Gr	
					939 5/8	46	127 3/4	1164		207	792	
26	4	4	5	"	"	"	"	20 ✓				Turfing
:		278	2½	½	347½ ✓	"	"					Repg & Rg the washed portion
			4	1/8	"	"	139 ✓				1112 ✓	Gravelling
			5	"	"	"	"	1390 ✓				Turfing
		10										S Dam

Appendix No. XVIII Repg the Parapets of 10 yds S D

Mile	Furlg	Length	Breadth	Height	Earth	Metalling	Gravelling	Turfing	Planting band	Sprd Turf & Gravel & Sdg	Sprd & Gr	
			4	1/8	"	5 ✓				} 45 ✓		Metalling
			5	1/8	"		6¼ ✓					Gravelling
		80	2	½	80 ✓							Repg Slopes
			4	1/8			40 ✓				320 ✓	Gravelling
			5					400 ✓				Turfing
		64	2	½	64 ✓							Repairing the washed portion
			4	1/8			32 ✓				256 ✓	Gravelling
			5					320 ✓				Turfing
		44	6 9/16	3/8	108 2/32 ✓							Filling hollows of washed portions & raising road
			4	1/8			22 ✓				176 ✓	Gravelling
		288	3	½	432 ✓							Repairing washed portions & raising road
			4	1/8			144 ✓				1152 ✓	Gravelling
		136	3	½	204 ✓							Filling hollows & Rg upto 10 yds S Dam.
			4	1/8			68 ✓				544 ✓	Gravelling
		10	0	0	00							10 yds S D good
		32	7 1/8	3/4	171 ✓							Closing the breach & raising Road
			4	1/8			16 ✓				128 ✓	Gravelling
		100	6 3/4	½	337½ ✓							Raising road by filling hollows
			4	1/8			50 ✓				400 ✓	Gravelling
		128	3	½	192 ✓							Filling hollows & Rg Road
			4	1/16			32 ✓				512 ✓	Gravelling
		180	7 1/8	3/4	534 3/8 ✓							Closing breach & repairing road upto 20 yds S D.
			4	1/8			50 ✓				400 ✓	Gravelling
		20										S Dam
			4	1/4		20 ✓				} 90 ✓		Metalling
	5		15	1/8	"		12½ ✓				876 ✓	Gravelling Do
		224	4	1/16	3[illegible]						2668 ✓	

Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting	Sprg Turf & Gravel Sdg	Sprd Gravel & Sdg	
44	4	1/16				11 ✓				176 ✓	Gravelling
60	6	1/4	90 ✓								Filling washed portions
	4	1/16				15 ✓				240 ✓	Gravelling ~~4~~ 25
92	2	½	92 ✓								Raising road by filling hollows
	4	1/16				23 ✓				368 ✓	Gravelling Repairing washed portion
140	4 6¾	1/16 ½	135 ✓		"	20 ✓	"	"		160	Gravelling
84	14 7 1/8	1/8 3/4	448 7/8 ✓								Raising road upto 46 yds S D
	4	1/8				42 ✓				336 ✓	Gravelling
46											S Dam
	4	1/4			46 ✓				} 207 ✓		Metalling
	5	1/8				28¾ ✓					Gravelling
168	2	½	168 ✓								Repg washed portions
	4	1/16				42 ✓				672 ✓	Gravelling
20											S Dam good
143											good upto 10 yds S D.
456											Do
100	3	½	150 ✓								Repairing washed portions
	4	1/8				50 ✓				400 ✓	Gravelling
40											Side Dam
	4	1/4			40 ✓				} 180 ✓		Metalling
	5	1/8				25 ✓					Gravelling

Appendix No. XIX Repg the ruined portions of 40 yds S D.

Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting	Sprg Turf & Gravel Sdg	Sprd Gravel & Sdg	
210	3	½	315 ✓								Filling sides of washed portions
	4	1/8				105 ✓				840 ✓	Gravelling
24	1	1	24 ✓								Raising left side of 40 yds Road Dam
	6 3/4	½	81 ✓								Raising road
	4	1/8				12 ✓				96 ✓	Gravelling
40											S Dam
	4	1/4			40 ✓				} 180 ✓		Metalling
	5	1/8				25 ✓					Gravelling
8	6 3/4	½	27 ✓								Raisg Road
	4	1/8				4 ✓				32 ✓	Gravelling
84	4	3/8	126 ✓		✓	✓				✓	Raising road by filling hollows
			1556 7/8		126	402 3/4			567	3320	

Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting [illegible]	Sprg [illegible]	Sprdg [illegible] 1 yd	
				1656 7/8		126	402 3/4			567	3320	
27	84	4	1/8				42 ✓				336 ✓	Gravelling
	40	2	1/2	40 ✓								Repg washed portion
		4	1/16				10 ✓				160 ✓	Gravelling
	56	3	1/2	84 ✓								Repg washed portion
		4	1/16				14 ✓				224 ✓	Gravelling
				1780 7/8		126	468 3/4			567	4040	
28	200	2	1/2	200 ✓								Repg washed portion
		4	1/16				50 ✓				800 ✓	Gravelling
	16	6	1/4	24 ✓								Raising road opp to S D
		4	1/8				8				64	Gravelling
	24											Appendix No. XX Repg 8 yds on the South end of 24 yds Side Dam
		4	1/8	..	..	12	8.			}108	D	Metalling
		5	1/8	..	..	..	15 ✓					Gravelling
	152	2	1/2	152 ✓								Repg washed portions
		4	1/8				76 ✓				608 ✓	Gravelling
	300	6 3/4	1/2	1012 1/2 ✓								Raising road by filling hollows
		4	1/8				150 ✓				1200 ✓	Gravelling
	176	3	1/2	264 ✓								Raising road by filling hollows
		4	1/8				88 ✓				704	Gravelling
	44	6 9/16	3/8	108 9/32 ✓								Raising road by closing breaches
		4	1/8				22 ✓				176	Gravelling
	6	4	1/2	12 ✓								Filling hollows in 50 yds S D
	50											S Dam
		4	1/4			50 ✓				}225		Metalling
		5	1/8				31 1/4 ✓					Gravelling
	34	6 3/4	1/2	114 3/4 ✓								Raising road
		4	1/8				17 ✓				136 ✓	Gravelling
	112	3	1/2	168 ✓								Filling hollows & repairing road
		4	1/8				56 ✓				448 ✓	Gravelling
	80	6 9/16	3/8	196 7/8 ✓								Raising road by closing breaches
		4	1/8				40 ✓				320 ✓	Gravelling
	10											S.D.
				2252 13/32		62	553 1/4			333	4456	

Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Placing [illegible]	Sprg [illegible]	Sprdg [illegible] 1 yd	
			1386 1/2		60	360 1/2			270	2744	
8	4	1/8				24				192 ✓	Gravelling
	3	1/2	84 ✓								Repairing washed portion
	4	1/8				28 ✓				224 ✓	Gravelling
	3 3/4	1	165 ✓								Repairing washed portion
	4	1/8				22 ✓				176 ✓	Gravelling
											Appendix No. XXI Repg the ruined portions of 10 yds S Dam
											Side Dam
	4	1/8			5 ✓				}45 ✓		Metalling
	5	1/8				6 1/4 ✓					Gravelling
	7 1/2	1	1170 ✓								Closing breach Rg Road
	4	1/8				78 ✓				624 ✓	Gravelling
	4 1/2	3/4	81 ✓								Closing breach & repairing road
	4	1/8				12 ✓				96 ✓	Gravelling
	2	1/2	8 ✓								Repg washed portion
	4	1/8				4 ✓				32 ✓	Gravelling
	3 3/4	1/2	45 ✓								Filling sides of washed portions
	4	1/8				12 ✓				96 ✓	Gravelling
	7 1/2	1	750 ✓								Closing breach
	4	1/8				50 ✓				400 ✓	Gravelling
	3 3/4	1/2	22 1/2 ✓								Closing breach
	4	1/8				6 ✓				48 ✓	Gravelling
	3	1/2	15 ✓								Filling washed portions
	4	1/8				5 ✓				40 ✓	Gravelling
	7 1/2	1	255 ✓								Closing breach & Rg Road
	4	1/8				17 ✓				136 ✓	Gravelling
	3 3/4	1/2	82 1/2 1/2								Closing breach & repairing Road
	4	1/8				22 ✓				176 ✓	Gravelling
	2	1/2	28 ✓								Repg washed portion
	4	1/8				14 ✓				112 ✓	Gravelling
	7 1/2	1	67 1/2 ✓								Closing breach
	4	1/8				4 1/2 ✓				36 ✓	Gravelling
	7 1/2	1	202 1/2								Closing breach & Rg Road
			4362 1/2	..	65	665 1/4	-	..	315	5732	

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Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting [illegible]	Spreading [illegible]	Spreading gravel [illegible]	
				2252 13/32		62	553¼			333	4456	
28	10	4	1/8			5				}45		Metalling
		5	1/8				6¼					Gravelling
	486	3	1/2	729								Filling hollows Rg Road
		4	1/8				243				1944	Gravelling
				2981 13/32		67	802½			378	6400	
29	178	3	1/2	267								Repg washed portions
		4	1/8				89				712	Gravelling
	16	6 3/4	1/2	54								Raising road by filling hollows
		4	1/8				8				64	Gravelling
	50											Side Dam
		4	1/4			50				}225		Metalling
		5	1/8				31¼					Gravelling
	76	6 3/4	1/2	256½								Raising road by filling washed portions
		4	1/8				38				304	Gravelling
	48	2	1/2	48								Repg washed portions
		4	1/8				24				192	Gravelling
	140	3	1/2	210								Widening on both sides
		4	1/8				70				560	Gravelling
	56	3	3/4	126								Closing breach & raising both side
		4	1/8				28				224	Gravelling
	40	3	1/2	60								Raising washed portions
		4	1/8				20				160	Gravelling
	10											S Dam
		4	1/4			10				}45		Metalling
		5	1/8				6¼					Gravelling
	60	3 3/4	1/2	112½								Closing breach
		4	1/8				30				240	Gravelling
	72	6 3/4	1/2	[illegible]								Closing breach & Raising road
		4	1/8				36				288	Gravelling
	48	3 3/4	1/2	90								Repg washed portions
				1336½		60	360½			270	2744	

Mile	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Placing [illegible]	[illegible]	[illegible]	
				4312½		65	665¼	"	"	315	5132	
29	27	4	1/8				13½				108	Gravelling
	24	6 3/4	1/2	81								Closing the bottom of the breach & Repairing road
		4	1/8				12				96	Gravelling
	76	3	1/2	114								Repg washed portion
		4	1/8				38				304	Gravelling
	29	9	1½	391½								Closing the bottom of the breach
	31	6 3/4	1/2	104 5/8								Closing breach & repairing road
		4	1/8				15½				124	Gravelling
	42	6½	3/8	102 3/8								Repairing washed portion
		4	1/8				21				168	Gravelling
				5106	"	65	765¼	"	"	315	5932	
30	40	6 3/4	1/2	135								Repairing washed portion
		4	1/8				20				160	Gravelling
	22	9	3/4	148½								Closing the bottom of the breach
	26	8	1	208								Closing breach & repairing road
		4	1/8				13				104	Gravelling
	40	4	1/2	80								Repg washed portion
		4	1/8				20				160	Gravelling
	28	2	1/2	28								Repairing washed portion
		4	1/8				14				112	Gravelling
	230	2	1/2	230								Repairing washed portion
		4	1/16				57½				920	Gravelling
	10	Appendix No. XXII										Constructing 10 yds S Dam
	278	2	1/2	278								Repairing washed portion
		4	1/16				69½				1112	Gravelling
	370	2	1/2	370								Clearing side trench & Rg road
		4	1/8				185				1480	Gravelling
	300	3	1/2	450								Filling washed portion
		4	1/8				150				1200	Gravelling
	~~10~~ 11											Side Dam
		4	1/8			5				}45		Metalling
		5	1/8				6¼					Gravelling
	112	3	3/4	252								Widening the washed portion on both sides
		4	1/8				56				448	Gravelling
				2179½	"	5	591¼			45	1696	

Mile	Length	Breadth	Height	Earth	Gravel	Metalling	Gravel	Turfing	Planting manual	[illegible]	[illegible]	
				2179½	"	5	591½	"	"	45	5696	
30	10											Side Dam
	"	4	⅛			5						Metalling
	"	5	⅛				6¼			∫45 ✓		Gravelling
	44	6¾	½	148½ ✓								Repairing washed portion
		6⅜	¼	70⅛ ✓								Raising road
		4	⅛				22 ✓				176 ✓	Gravelling
	36	6¾	½	121½ ✓								Filling hollows of washed portions
		4	⅛				18 ✓				144 ✓	Gravelling
	28	2	½	28 ✓								Wg Road on both sides
		6	¼	42 ✓								Rg by filling hollows
		4	⅛				14 ✓				112 ✓	Gravelling
	40	2	½	40 ✓								Wg Road on both sides
		4	⅛				20 ✓				160 ✓	Gravelling
	20	6¾	½	67½ ✓								Raising Road
		4	⅛				10 ✓				80 ✓	Gravelling
	16	6¾	½	54 ✓								Filling hollows and repairing road
		4	⅛				8 ✓				64 ✓	Gravelling
	68	6¾	½	229½ ✓								Filling hollows and repairing road
		4	⅛				34 ✓				272 ✓	Gravelling
	90	2	½	90 ✓								Repg washed portion
		4	1/16				22½ ✓				360/2 ✓	Gravelling
				3070⅝	"	10	746	"	"	90	7064	
31	12	2	½	12 ✓								Raising & filling Road
		4	⅛				6 ✓				48 ✓	Gravelling
	30											Side Dam
		Appendix No ~~XXIII~~ Repg								30 yds		S Dam
		4	⅛			15 ✓						Metalling
		5	⅛				18¾ ✓			∫135 ✓		Gravelling
	120	3	½	180 ✓								Filling hollows & repairing road
				192		15	24¾	"	"	135	48	

Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting manuals	[illegible]	[illegible]	
				192	"	15	24¾	"	"	135	48	
31	120	4	⅛				60 ✓				480 ✓	Gravelling
		3							360 ✓			Planting manuals on river side
	120	7½	1	900 ✓								Closing breach & Rg road
		4	⅛				60 ✓				480 ✓	Gravelling
		3							360 ✓			Planting manual
												Wg & Closing washed portion
	34	3½	¾	89¼ ✓								
		4	⅛				17 ✓				136 ✓	Gravelling
		3							102 ✓			Planting manual
	40											Side Dam
		Appendix No ~~XXV~~							Repg	40 yds		Side Dam
	40	4	⅛			20 ✓						Metalling
		5	⅛				25 ✓			∫180 ✓		Gravelling
												Wg & Raising washed portion
	240	6¾	½	810 ✓								
		4	⅛				120 ✓				960 ✓	Gravelling
	90	4½	½	202½ ✓								Rg & Wg washed portion
		4	⅛				45 ✓				360 ✓	Gravelling
	150	3	½	225 ✓	-	-	-	-	-		-	Closing & Wg the washed portion
		4	⅛				75 ✓	-	-		600 ✓	Gravelling
	150	6¾	½	506¼ ✓								Closing breach portion
		4	⅛				75 ✓				600 ✓	Gravelling
	150	3	8½	225 ✓			75 ✓					
	90	2	½	90								Wg washed portion
		4	⅛				45 ✓				360 ✓	Gravelling
	20	3½	¾	52½ ✓								
	60	2	½	60 ✓			10 ✓				80 ✓	Widening washed portion
		4	⅛				30 ✓				240 ✓	Gravelling
	20	2½	¾	52½								Closing washed portion on both side
		4	⅛				10				80	Gravelling
	90	6¾	½	303¾ ✓								Closing breach
		4	⅛				45 ✓ 30				360 ✓ ~~240~~	Gravelling
	60	3	½	90 ✓								Widening washed portion
		4	⅛				45				360 240 ✓	Gravelling
		3							100			Planting manual
				3746¾	"	35	736¾	"	1002	315	5544	

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Mile	Length	Breadth	Height	Earth	Granite	Metalling	Gravelling	Turfing	Planting manual	Sq. [illegible]	Sq. [illegible]	
32	480											River Maramuttiaroo
	30	8	5/8	150 ✓								Cutting Slopes in each bank of the river
		4	1/8				15 ✓				120 ✓	Gravelling
	90	6¾	1/2	303¾ ✓								Raising washed portion
		4	1/8				45 ✓				360 ✓	Gravelling
	406	3	1/2	609 ✓								Widening washed portion
		4	1/8				203 ✓				1624 ✓	Gravelling
	30	6¾	1/2	101¼ ✓								Closing breach
		4	1/8				15 ✓				120 ✓	Gravelling
		Appendix ~~XXV~~		Rough stone revetment for preventing the rush of Channel water								
	150	3	1/2	225 ✓								Widening washed portion
		4	1/8				75 ✓				600 ✓	Gravelling
	60	6¾	1/2	202½ ✓								Closing breach
		4	1/8				30 ✓				240 ✓	Gravelling
	30	2	1	60 ✓								Cutting Channel side & widening
		1							30 ✓			Planting Manual
	796	3	1/2	1194 ✓								Widening washed portion
		4	1/8				398 ✓				3184 ✓	Gravelling
	16	6¾	1/2	54 ✓								Filling & Raising Slopes upto Road Dam
		4	1/8				8 ✓				64	Gravelling
				2899½	"	"	789	"	30		6312	
33	30											Side Dam under progress in Construction
		4	1/8		15	15 ✓				} 135 ✓		Metalling
		5	1/8		12¾		18¾ ✓					Gravelling
	120	7⅛	3/4	641¼ ✓								Closing breach widening road
		4	1/8		[illegible]		60 ✓				480 ✓	Gravelling
		3							360 ✓			Planting manual
	60	3	1/2	90 ✓								Raising & widening road
		4	1/8		30		30 ✓				240 ✓	Gravelling
	244	3¾	1/2	457½ ✓								Widening the Washed portion
				1188¾	"	15	108¾	"	360	135	720	

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Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Planting manual	Turfing	Sq. feet [illegible]	Sq. ft. [illegible]	
			1188¾		15	108¾	360		135	720	
244	4	1/8				122 ✓				976 ✓	Gravelling
16	6	3/8	36 ✓								Raising & Sloping
	4	1/8				8 ✓				64 ✓	Gravelling
10											S.D. ~~in~~ Construction under progress
	4	1/8			5 ✓				} 45 ✓		Metalling
	5	1/8				6¼ ✓					Gravelling
6	6¾	1/2	20¼ ✓								Raising washed portion
	4	1/8				3 ✓				24 ✓	Gravelling
210	3	1/2	315 ✓								Widening washed portion
	4	1/8				105 ✓				840 ✓	Gravelling
180	6¾	1/2	607½ ✓								Raising road in cpt
	4	1/8				90 ✓				720 ✓	Gravelling
	4						720 ✓				Planting manual
60	7⅛	3/4	320⅝ ✓								Raising road
	4	1/8				30 ✓				240 ✓	Gravelling
	6						360 ✓				Planting manual
90	6¾	1/2	303¾ ✓								Raising washed portion
	4	1/8				45 ✓				360 ✓	Gravelling
	6						540 ✓				Planting manual
124	7⅛	3/4	662⅝ ✓								Raising road
	4	1/8				62 ✓				496 ✓	Gravelling
	6						744 ✓				Planting manual
10											Side Dam in Construction under progress
	4	1/8			5 ✓				} 45 ✓		Metalling
	5	1/8				6¼ ✓					Gravelling
30	6 9/16	3/8	73 53/64 ✓								Raising washed portion
	4	1/8				15 ✓				120 ✓	Gravelling
60	6¾	1/2	202½ ✓								Closing breach
	4	1/8				30 ✓				240 ✓	Gravelling
246	6 9/16	3/8	605 25/64 ✓								Raising washed portion
	4	1/8	"		"	123	"	"	"	984	Gravelling
10		Appendix XXVI									S. Dam is to be constructed now in Construction
			4336 7/32		25	767¼	2724		225	5784	

Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	[illegible]	[illegible]	[illegible]	
				4336 7/32		25	754 1/4		2724	225	5784	
	10	4	1/8			5						Metalling
		5	1/8				6 1/4			} 45		Gravelling
	210	6 3/8	1/4	334 11/16								Repairing washed portion
		4	1/8				105				840	Gravelling
				4670 29/32		30	865 1/2		2724	270	6624	
34	120	6 3/4	1/2	405								Repairing washed portion
	120	6 3/8 4	1/4 1/8	191 1/4			60				480	Gravelling
	210	3	1/2	315			60				480	Repairing washed portion Gravelling Rep. washed portion
		4	1/8				105				840	Gravelling
	120	3	1	360								Repairing washed portion up to
		1	1/8				1					4½ × 3 = One 7th Tunnel. good
		4	1/8				60				480	Gravelling
		4						600				Turfing
	60	3	1	180								Repairing washed portion
		4	1/8				30				240	Gravelling
		5						300				Turfing
	210	3	3/4	472 1/2								Widening washed portion
		4	1/8				105				840	Gravelling
		5						1050				Turfing
	180	3 3/4	1/2	337 1/2								Widening washed portion
		4	1/8				90				720	Gravelling
	30	6 3/4	1/2	91 1/4								Closing breach
		4	1/8				15				120	Gravelling
	210	6 1/2	3/8	444 3/8								Raising washed portion
		4	1/8				105				840	Gravelling
	8	6 3/4	1/2	27								Closing breach
		4	1/8				4				32	Gravelling
	92	6 1/2	3/8	224 1/4								Repairing washed portion
		4	1/8				46				368	Gravelling
				3078 1/8			680	1950			5440	

2°

L	B	D	Earth	[illegible]	[illegible]	[illegible]	Turfing	Planting	[illegible]	[illegible]	[illegible]	
58	6 1/2	3/8	141 3/8									Rep. washed portion
	4	1/8				29					232	Gravelling 14
450	3	1/2	675									Widening the washed portion
	4	1/8				225					1800	Gravelling
16	6 3/4	1/2	54									Raising Road
	4	1/8				8					64	Gravelling
10												Side Dam Gap
16	6 3/4	1/2	54									Raising Road
	4	1/8				8					64	Gravelling
510	3	1/2	765									Widening the washed portion
	4	1/8				255					2040	Gravelling
290	3	1/2	435									Rep. washed portion
	4	1/8				145					1160	Gravelling
10	6 3/4	1/2	33 3/4									Closing breach
	4	1/8				5					40	Gravelling
510	3	3/4	1147 1/2									Widening the washed portion
	4	1/8				255					2040	Gravelling
4												3 × 1½ feet Tunnel under progress in construction
186	3	1/2	279									Widening the washed portion
	4	1/16				46 1/2					744	Gravelling
10												Side Dam. Gap
100	3	1/2	150									Widening the washed portion
	4	1/16				25					400	Gravelling
			3734 5/8	.	.	1001 1/2					8584	

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L	B	D	Earth									
160	3	1/2	240									Rep. washed portion
	4	1/16				40					640	Gravelling
10												Side Dam Gap
			240			40					640	

Mile	L	B	D	Earth	G.G.	Metal	Gravelling	Surfacing	Planting Grass	Sp. G.G. P.D.	Sp. G.G.	
				240	"	"	40	"	"	"	840	
36	225	3	1/2	337½ ✓								Wg both sides of washed portn
		4	1/16				56¼ ✓				900	Gravelling
	22	8¼	1½	272¼ ✓								Closing breach
		4	1/8				11 ✓				88 ✓	Gravelling
	30	6¾	1/2	101¼ ✓								Repg washed portion
		4	1/8				15 ✓				120	Gravelling
	10	7	1/2	35 ✓								Closing the bottom of breach
	40	6¾	1/2	135 ✓								Raising Road
		4	1/8				20 ✓				160	Gravelling
	510	3	1/2	765 ✓								Wg washed portion
		4	1/8				255 ✓				2040	Gravelling
	5	Appendix XXXII Cause of 1½ × 3 feet Tunnel										
	22	5¼	1½	173¼ ✓								Widening the washed portion
		4	1/8				11 ✓				88 ✓	Gravelling
	200	3	1/2	300 ✓								Repg washed portion
		4	1/16				50 ✓				800 ✓	Gravelling
	80	5½	1½	660 ✓								Widening washed portion
		4	1/16				20 ✓				320	Gravelling
	20											S Dam Gap
	30	4½	1	135 431								Widening washed portion
		4	1/16				7½ ✓				120	Gravelling
Carried Over				3154¼			483¾				5276	

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Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting Grass	[illegible]	[illegible]	
			3154¼			486¾				5276	
225	3	1/2	337½								Widening washed portion
	4	1/16	7½			56¼ ✓				900	Gravelling
10		1/2	[illegible]								Side Dam
136	3¾	1/2	255 ✓								Repg washed portion
1..	4	1/16	"			34 ✓				544	Gravelling
			3746¾			576				6720	
422	3¾	1/2	791¼ ✓								Widening the washed portion
	4	1/16				105½ ✓				1688	Gravelling
16											Side Dam is to be constructed in construction
317	3	1/2	475½ ✓								Widening washed portion
	4	1/16				79¼				1268 ✓	Gravelling
10											Side Dam to be constructed on construction
137	3	1/2	205½ ✓								Repairing washed portion
	4	1/16				34¼ ✓				548 ✓	Gravelling
30	4	1/2	60 ✓								Repairing washed portion
	4	1/16				7½ ✓				120 ✓	Gravelling
75	3	1/2	112½ ✓								Repairing washed portion
	4	1/16				18¾ ✓				300 ✓	Gravelling
10											Side Dam to be constructed on construction
200	2	1/2	200 ✓								Raising Slopes
	4	1/16	"	"	"	50 ✓				800 ✓	Gravelling
150	6¾	1/2	506¼ ✓								Raising washed portion
	4	1/8				75 ✓				600 ✓	Gravelling
60	6¾	1/2	202½ ✓								Raising washed portion
	4	1/8				30				240 ✓	Gravelling
333	3	1/2	499½								Filling washed portion & raising road
	4	1/16				83¼				1332 ✓	Gravelling
			3053			483½				6896	

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Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Surfacing	[illegible]	[illegible]	[illegible]	
38	57	3	1/2	85 1/2								Filling washed portion
		4	1/16				14 1/4				228	Gravelling
	60	3	1/2	90								Widening washed portion
		4	1/16				15				240	Gravelling
	30	4	1/2	60								Filling washed portion
		4	1/16				7 1/2				120	Gravelling
	15	6 3/4	1/2	50 5/8								Closing breach
		4	1/16				3 3/4				60	Gravelling
	4											3×1 1/2 feet Tunnel to be constructed from Construction
	90	3	1/2	135								Widening washed portion
		4	1/16				22 1/2				360	Gravelling
	150											Good upto Station of Anyholum
	405											Good
	10	Appendix ~~XXVIII~~										Side Dam to be constructed
	600											Good
	310	3	1/2	465								Widening washed portion
		4	1/16				77 1/2				1240	Gravelling
	10											Side Dam to be constructed
				886 1/8			140 1/2				~~2240~~	

Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Surfacing	[illegible]	[illegible]	[illegible]	
39	50	3	1/2	75								Widening washed portion
		4	1/16				12 1/2				200	Gravelling
	8	3	1/2	12								Closing breach
		4	1/16				2				32	Gravelling
	150	3	1/2	225								Widening washed portion
		4	1/16				37 1/2				600	Gravelling
	510											Good upto 20 yds Side Dam
	20											Side Dam on Construction
	170	3	1/2	255								Widening washed portion
		4	1/16				40				680	Gravelling
	10			567			92				1512	Side Dam to be constructed in Construction

Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Surfacing	[illegible]	[illegible]	[illegible]	
				567			92				1512	
39	300	3	1/2	450								Widening washed portion
		4	1/16				75				1200	Gravelling
												Repairing washed portion
	360	2	1/2	360								
		4	1/16				90				1440	Gravelling
												Widening washed portion
	165	3	1/2	247 1/2								
		4	1/16				41 1/4				660	Gravelling
												Closing breach
	90	3 3/4	1/2	168 3/4								
		4	1/8				45				360	Gravelling
				1793 1/4			343 1/4				5172	

Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Surfacing	[illegible]	[illegible]	[illegible]	
												Closing breach
0	20	6 3/4	1/2	67 1/2								
		4	1/8				10				80	Gravelling
												Closing breach
	270	6 3/4	1/2	911 1/4								
		4	1/8				135				1080	Gravelling
												Repairing washed portion
	18	2	1/2	18								
		4	1/16				4 1/2				72	Gravelling
												Closing breach
	20	3	1/2	30								
		4	1/16				5				80	Gravelling
												Closing washed portion
	120	3	1/2	180								
		4	1/16				30				480	Gravelling
												Closing breach
	24	3 3/4	1/2	45								
		4	1/16				6				96	Gravelling
												Repairing washed portion
	30	2	1/2	30								
		4	1/16				7 1/2				120	Gravelling
												Closing breach & Repairing washed portion
	170	3 3/4	1/2	318 3/4								
		4	1/16				42 1/2				680	Gravelling
												Repairing washed portion
	110	2	1/2	110								
				1710 1/2			240 1/2				2688	

Miles	Length	Breadth	Height	Earth	Gravel	Metalling	Gravelling	Turfing	Planting old	[illegible]	[illegible]	
				1710½	"	"	240½				2688	
40	40	4	1/16				27½				440	Gravelling
	170	4	1/2	340			[illegible]				[illegible]	~~Closing~~ Closing washed portion
		4	1/16				42½				680	Gravelling
	20	6¾	1/2	67½								Closing breach
		4	1/8				10				80	Gravelling
	15	3	1/2	22½								Closing washed portion
		4	1/16				3¾				60	Gravelling
	55	6¾	1/2	185⅝								Closing breach
		4	1/8				27½				220	Gravelling
	30	3	1/2	45								Closing washed portion
		4	1/8				15				120	Gravelling
	60	2	1/2	60								Closing breach
		4	1/16				15				240	Gravelling
	260	6¾	1/2	877½								Closing breach
		4	1/8				130				1040	Gravelling
	180	2	1/2	180								Closing washed portion
		4	1/16				45				720	Gravelling
	360	4½	3/4	2025								Closing breach
		4	1/8				180				1440	Gravelling
	60	6¾	1/2	202½								Closing breach
		4	1/8				30				240	Gravelling
	208	7½	3/4	1170								Closing breach & Repairing Road
		4	1/8				104				832	Gravelling
		6						1248				Turfing
		6							1248			Planting Nanal
				6836⅝			870¾	1248	1248		8800	

Miles	L	B	H	Earth	Gravel	Metalling	Gravelling	Turfing	Planting Nanals	[illegible]	[illegible]	
41	192	7½	3/4	1080								Closing breach & Raising Road.
		4	1/8				96				768	Gravelling
		6						1152				Turfing ~~17~~
		6							1152			Planting Nanal
	294											Rain Mandalamani Rai
	68	4	1/2	136								Repg washed portion
		4	1/16				17				272	Gravelling
	10											Side Dam to be constructed from construction
	60	4	1/2	120								Repg washed portion
		4	1/16				15				240	Gravelling
	240	3	1/2	360								Widening washed portion
		4	1/16				60				960	Gravelling
	4											3×1½ feet Drain to be constructed from construction
	206											Good
	10											S Dam to be constructed from construction
	676											Good
				1696	"	"	188	1152	1152	"	2240	
42	164											Good.
	16	3¾	1/2	30								Closing washed portion
		4	1/16				4				64	Gravelling
	20											S.D. to be constd from construction
	214											Good upto Pulloyar Coil oor aua
	10	6¾	1/2	33¾								Widening washed portion
		4	1/8				5				40	Gravelling
	20											Appendix No XXIX Repg ruined Side Dam
	240											Good upto Tamarind tree
	30	2	1/2	30								Closing washed portion
		4	1/16				7½				120	Gravelling
	170	3	1/2	255								Closing breach
		4	1/16				42½				680	Gravelling
	12	6¾	1/2	40½								Closing breach
		4	1/8				6				48	Gravelling
				389¼	"	"	65	"			952	

Mile	L	B	D	Earth	Gravel	Metal	Gravel	Sq. yds	
				389¼			65	952	Closing breach
42	150	3	1/2	225					
		4	1/16				37½	600	Gravelling
	300								Good up to Sawathaughey
				614¼			102½	1552	
43	450	2	1/2	450					Repg washed portion
	20								S.D. to be Constd from Construction
	570								Good.
	10								S.D. to be Constd from Construction
	540	2	1/2	540					Repg washed portion
		4	1/16				135	2160	Gravelling
	10								S.D. to be Constd from Construction
	360	2	1/2	360					Repg washed portion
		4	1/8				180	1440	Gravelling
	60	2	1/2	60					Repg washed portion
		4	1/16				15	240	Gravelling
	180	-	..						Good.
				1410	-	-	330	3840	
44	150								Good.
	10								S.D. to be Constd from Construction,
	420								Good up to Pareyal d open
	210	4	1/2	420					Cutting Side trench & W.g both Sides up to 6×3 Tunnel
		4	1/16				52½	840	Gravelling
	"	"							6×3 Tunnel.
	180	3	3/4	405					Closing breach & W.g washed portion
		4	1/16				45	720	Gravelling
	180	3	1/2	270	"	"	45 "	720	Widening washed portion Gravelling
	300	4	1/16	"	"	"			Good.
									Widening washed portion
	110	3	1/2	165					
		4	1/16				27½	440	Gravelling
	30								S.D. to be Constd from Construction
				1260			170	2720	

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Mile	L	B	D	Earth	Gravel	Metalling	Gravelling	[illegible]	Sq. yds	
45	210	2	1/2	210						Repg washed portion
		4	1/16				52½		840	Gravelling
	10	Appendix XXX								Construction 10 yds side drain.
		4	1/8			5		}45 "		Metalling
		5	1/8				6¼			Gravelling
	180	3	1/2	270						Raising washed portion
		4	1/16				45		720	Gravelling
	190	2	1/2	190						Repg washed portion
		4	1/16				47½		760	Gravelling
	10									S.D. to be Constd from Construction
	120	2	1/2	120						Repg washed portion
		4	1/16				30		480	Gravelling
	10									S.D. to be Constd from Construction
	165	6	1/4	247½						Raising washed portion
		4	1/16				41¼		660	Gravelling
	10									S.D. required to be Const.d from Construction
	50	6	1/4	75						Repg washed portion
		4	1/16				12½		200	Gravelling
	150	2	1/2	150						Repg washed portion
		4	1/16				37½		600	Gravelling
	210	4	1/2	420						Repg washed portion
		4	1/8				105		840	Gravelling
	22	4	1½	132						Repg washed portion
		4	1/8				11		88	Gravelling
	14	8	1	112						Closing breach
		4	1/8				7		56	Gravelling
	60	4	1/2	120						Repg washed portion
		4	1/8				30		240	Gravelling
				2046½		5	425½	45	5484	

Miles	L	B	D	Earth	C.C.	Metalling	Gravelling	Turfing	[illegible]	[illegible]	[illegible]	
				2046½	"	5	425½	"	"	45	5484	
45	10											S.D. to be Constd from Construction
	28	3	½	42								Raising Road upto [illegible] Canal
	4	⅛					14				112	Gravelling
	56	2	½	56								Cutting Side trench & Raising Road
	4	⅛					28				224	Gravelling
	56	6	¼	84								Cutting Side trench & Raising Road.
	4	⅛					28				224	Gravelling
	180	2	½	180								Cutting Side trench & Raising Road.
	4	⅛					90				720	Gravelling
	32	6¾	½	108								Raising Road
	4	⅛					16				128	Gravelling
	10											S.D. to be Constd from Construction
	70	6⅜	¼	111 9/16								Cutting Side trench & Raising Road
	4	⅛					35				280	Gravelling
	25	1	½	12½								Cutting Side trench & Raising Road.
	4	⅛					12½				100	Gravelling
				2640 9/16	.	5	649			45	7272	
46	31	1	½	15½								Cutting Side trench & Raising Road.
	4	⅛					15½				124	Gravelling
	88	6 9/16	⅜	216 9/16								Cutting Side trench & Raising Road
	4	⅛					44				352	Gravelling
	40	6¾	½	135								Cutting Side trench & Raising Road.
	4	⅛					20				160	Gravelling
	10											S.D. to be Constructed from Construction
	8	1	½	4								Cutting Side trench & Rg Road
	4	⅛					4				32	Gravelling
	44	1	½	22								Cutting Side trench & Rg Road
	4	⅛					22				176	Gravelling
				393 1/16			105½				844	

M	L	B	D	Earth	C.C.	[illegible]	Gravelling	[illegible]	[illegible]	[illegible]	[illegible]	
				393 1/16	"	"	105½	"	"	"	844	
6	16	7⅛	¾	85½								Raise Road by filling hollows.
	4	⅛					8				64	Gravelling
	10											S.D. to be Constructed from Construction
	28	7⅛	¾	149 5/8								Cutting Side trench & Raising Road
	4	⅛					14				112	Gravelling
	28	6 9/16	⅜	68 29/32								Cutting Side trench & Raising Road.
	4	⅛					14				112	Gravelling
	40	1	½	20								Cutting Side trench & Raising Road
	4	⅛					20				160	Gravelling
	150	2	½	150								Cutting Side trench & Raising Road
	4	⅛					75				600	Gravelling
	225	4	⅛				112½				900	Gravelling
	10											S.D. to be Constructed from Construction
		4	⅛				5				40	Gravelling
	95	2	½	95								Cutting Side trench by filling hollows.
	4	⅛					47½				380	Gravelling
	237	1	½	118½								Cutting Side trench & filling gullies
	4	⅛					118½				948	Gravelling 3 x 1½ feet Tunnel

Appendix No XXXI Repg the Tunnel of 3 x 1½ feet.

M	L	B	D	Earth	C.C.	[illegible]	Gravelling	[illegible]	[illegible]	[illegible]	[illegible]	
	190	4	⅛	"			95				760	Gravelling
	10	6⅜	¼	15 15/16								Repg washed portion
	4	⅛					5				40	Gravelling
	234	6⅜	¼	372 15/16								Repg washed portion by Raising Road
	4	[illegible]					117				936	Gravelling
	10											S.D. to be Const. from Construction
				1469 15/32	"	"	737	"	-	-	5896	

				1469 15/32	737	5896	
46	230	4	1/8		115	920	Gravelling
	30						L.D. [illegible]
	30	4	1/8		15	120	Gravelling
				1469 15/32	867	6936	
47	130	6½	1/4	211¼			Repg washed portion
		4	1/8		65	520	Gravelling
	200	2	1/2	200			Repg washed portion
		4	1/8		100	800	Gravelling
	50	6¾	1/2	168¾			Raising washed portion
		4	1/8		25	200	Gravelling
	70						S. Dam to be constd from construction
	120	6¾	1/2	405			Raising Roads
		4	1/8		60	480	Gravelling
	120	6	1/4	180			Repg washed portion
		4	1/8		60	480	Gravelling
				1165	310	~~2440~~	
48	20	6⅜	1/4	31 7/8			Repg washed portion
		4	1/8		10	80	Gravelling
	30	6¾	1/2	101¼			Raising Roads
		4	1/8		15	120	Gravelling
	10	6 9/16	3/8	24 39/64			Repg washed portion
	70						Roads.
	10	6 9/16	3/8	24 39/64			Raising Roads
		4	1/8		5	40	Gravelling
				182 11/32	30	240	

49.	53	6	1/4	79½			Repg washed portion
		4	1/8		26½	212	Gravelling D°
	20	6 9/16	3/8	49 7/32			Closing breach
	240	2	1/2	240			Repg washed portion
	270	1	1/2	135			Do Do
	40	6¾	1/2	135			Do Do
	30						Gap for constn of D
	40	6¾	1/2	135			Closing breach
				773 23/32	26½	212	
	60	2	1/2	60			Cutting side trench & Repg washed portion
		4	1/8		30	240	Gravelling
				60	30	240	
	105	6¾	1/2	354⅜			Raising washed portion
3	Appendix XXXII	3 × 1½ feet Tunnel Requires Repair					
	102	6	1/4	153			Repg washed portion
				507⅜			
	495	2	1/2	495			Repg washed portion
	60	2	1/2	60			Do Do
	40	6¾	1/2	135			Do Do
	80	8¼	1½	990			Closing breach
	30	2	1/2	30			Repg sides of slopes upto 9 × 4½ 2 Vents bridge
				1710			
53	85	8¼	1½	1051 7/8			Closing breach
	25	3	1/2	37½			Repg washed portion
	96	2	1/2	95			Do Do
				1184 3/8			

No	L	B	H	Earth Cft	
				1184 3/8	
53	290	3	1/2	435	Repg washed portion
	96	2	1/2	96	Do Do
				1715 3/8	
54	227	2	1/2	227	Repairing washed portn
	313	2	1/2	313	Do Do
	15	6 3/8	1/4	23 29/32	Repg washed portions
	195	2	1/2	195	Do Do
	275	2	1/2	275	Do Do
				1033 29/32	
55	90	6	1/4	135	Repg washed portions
	810	6	1/4	1215	Cutting side trench & Raising washed portion
	20	6 3/4	1/2	67 1/2	Closing breach
	70	2	1/2	70	Repg washed portions
	30	6 3/4	1/2	101 1/4	Closing breach
	20				S Dam to be Constd in Construction
	95	6 3/4	1/2	320 5/8	Closing breach
	60	6	1/4	90	Repg washed portion
	45	6 9/16	3/8	110 75/128	Repg washed portions
	60	7 1/8	3/4	320 5/8	Closing breach
	14	6 3/8	1/4	22 5/16	Repg washed portion
				2452 7/8	
56	116	6 3/8	1/4	184 7/8	Repg washed portions
	20				S Dam to be Constd from Construction
	210	6 3/8	1/4	334 11/16	Repg washed portion
	30	6 3/4	1/2	101 1/4	Do Do.

No	L	B	H	Earth Cft	
				620 13/16	
56	60	7 1/2	1	450	Raising Flood in average 37
	50				S Dam to be Constd from Construction
	15	4	1	60	Filling hollows.
	225	2	1/2	225	21 Repg washed portions
	45	8 1/4	1 1/2	556 7/8	Closing breach
	25	3	1/2	37 1/2	Repg washed portion
	25	8 1/4	1 1/2	309 3/8	Closing breach
	50	7 1/8	3/4	267 3/16	Closing breach
	20	8 1/4	1/2	82 1/2	Closing breach
	10	6 3/4	1/2	33 3/4	Closing breach
	115	2	1/2	115	Repg washed portion
	20	7 1/8	3/4	106 7/8	Closing breach
	20	2	1/2	20	Repg washed portion
	12	7 1/2	1	90	Closing breach.
	140	2	1/2	140	Raising washed portion
	30	7 1/8	3/4	160 5/16	Closing breach
	30	6 3/4	1/2	101 1/4	Closing breach
	90	6	1/4	135	Repg washed portion
	10	6 3/4	1/2	33 3/4	Repg washed portion
				3545 3/16	
57	20	2	1/2	20	Repg washed portion
	10	6	1/4	15	Do. Do
	10	6 3/4	1/2	33 3/4	Do. Do
	150	2	1/2	150	Do Do.
	135	6 3/4	1/2	455 5/8	Do. Do.
	80	6 3/4	1/2	270	27 Closing breach
	170	1	1/2	85	Repg washed portion
				1029 3/8	

				1029 3/8	
1	20				Side Dam to be carried from [illegible]
	90	6	1/4	135	Repg washed portion
	135	2	1/2	135	Do Do
	345	2	1/2	345	Do Do
	40	6	3/8	90	Closing breach
	20				S Dam
	92	3	1/2	138	Repg washed portion
				1872 3/8	
58	98	3	1/2	147	Repg washed portion
	240	2	1/2	240	Do Do
	60	3	1/2	90	Do Do
	130	6 3/4	1/2	438 3/4	Closing breach
	30	6	1/4	45	Repg washed portion
	70	2	1/2	70	Repg washed portion
	50	6 3/4	1/2	168 3/4	Closing breach
	20				Side Dam
	100	2	1/2	100	Repg washed portion
	220	6	1/4	330	Do Do
				1629 1/2	
59	30	6 3/4	1/2	101 1/4	Closing breach
	20				S Dam
	10	6	1/4	15	Closing breach
	80	6	1/4	120	Repg washed portion
	40	6 3/4	1/2	135	Closing Breach
	20				S Dam
	30	3	1/2	45	Closing breach
				416 1/4	

				416 1/4	
59	10	6 3/4	1/2	33 3/4	Closing Breach
	45	2	1/2	45	75 Repg washed portion
	10	6 3/4	1/2	33 3/4	25 Closing breach
	30	6 3/4	1/2	101 1/4	Repg washed portion
	60	7 1/8	3/4	320 5/8	Closing breach
	35	6 3/8	1/4	53 25/32	Repg washed portion
	12	7 1/8	3/4	64 1/8	Closing breach
	35	6 3/4	1/2	118 1/8	Closing breach
	90	1	1/2	45	Repg washed portion
	20	7 1/8	3/4	106 7/8	Closing breach
	15	2	1/2	15	Repg washed portion
	10	7 1/8	3/4	53 7/16	Closing breach
				1409 3/32	
60	20	7 1/8	3/4	106 7/8	Closing breach
	6	3	1/2	9	Repg washed portion
	7	8	1	56	Do Do
	10	7 1/8	3/4	53 7/16 1113¼	Closing breach
	430	2	1/2	430	Repg washed portion
	35	6 3/4	1/2	118 1/8	Closing breach
	165	2	1/2	165	Repg washed portion
	60	4 3/4	1/2	142 1/2	Closing breach
	80	3	1/2	120	Repg washed portion
	189	7 1/8	3/4	1009 31/32	Closing breach
				2210 29/32	

25

61	91	7⅛	¾	486 9/32	Closing breach
	260	2	½	260	Repg washed portion
				746 9/32	
64	240	2	½	240	Repg washed portion
	28	6¾	½	94½	Closing breach
	132	3	½	198	Repg washed portion
	75	3	½	112½	Do
	53	7½	1	397½	Closing breach
	Appendix No XXXIII				Repg Tunnel of 3×1½ feet
	52	3	½	78	Repg washed portion
				1120½	

Detailed Estimate of the masonry work

No 11
55

Particulars	No	L	B	H	Contents
		Measurements			
No 1 Extending one Vent in addition to the present 6×4½ 1 Vent Tunnel on 23d Mile					
Foundation to abutments	1	7	1	1	7
Do Wings	2	1½	1	1	3
Do Cutwaters	2	1	1	1	2
Retaining walls	2	1¾	½	1	1¾
Flooring to Vent	1	6	1¾	3/8	3 15/16
Abutments above	1	7	¾	1½	7 7/8
Wings above	2	1½	¾	1⅞	4 7/32
Filling the sides of Covering Stone	1	7	¾	¼	1 5/16
Cutwater including Caps	1	¾	3/8	1⅛	1/3
Coping Over Covering Stone	.	7	3	⅛	2 5/8
Parapet walls	2	3½	½	½	1¾
Total Rough Stone in Chunam					35 77/96
Cut Stone		7	2½	¼	4 3/8
Total Cut Stone Cyds					4 3/8
No 2. Repairing the ruined Road Dam of 20 yds on 31st Mile		Feet Measurement			
Foundation to body of north wall		60	3	4½	810
above in average		60	2¼	1	135
Do to Retaining wall and sides of apron		57¼	3	3	515¼
Do above		57	2¼	1½	192 3/8
					1652 5/8
Total Rough Stone in Chunam or Cubic yards					61 5⅝/27
Small Rubble Stone to Bottom of Roadway		60	17¼	1	1035
Do to Do of apron		41¼	6⅝	1	273 9/32
					1308 9/32
Total Jelly Stone C feet or Cubic yards		27			48 12¼/27

Concrete over Jelly to Roadway	60	17¼	½	517½ ✓
Total Cubic feet				517½
or Cubic yards				18 21½/27
Broken Stone over Concrete	60	17¼	¾	776¼ ✓
Total Cubic feet				776¼
or Cubic yards				28¾ ✓
Gravel over Broken Stone	60	17¼	½	517½
Total Cubic feet				517½
or Cubic yards				18 21½/27
Dry Stone paving to apron	40½	6¾	1½	410 1/16
Total Cubic feet				410 1/16
or Cubic yards				18 24 1/16/27
Pointing with Ground Chunam for Rough Stone paving	40½	6¾	"	273⅜
Total Sqs				2¾ ✓
No 3. Apron of 15 yds Road Dam on 33 Mile 12/0.				
Retaining walls on 2 Sides	49	2¼	3½	385⅞ Cft
Total Cubic feet yds				14 7⅞/27 ✓
Small rubble stone to bottom of Road way	45	17¼	1	776¼ ✓
Do. for Apron	31½	6¾	1	212⅝ ✓
Total Jelly Stone C feet				988⅞
or Cubic yards				36 16⅞/27
Concrete over Jelly	45	17¼	½	388⅛ Cft
or Cubic yards				14 10⅛/27
Gravelling over Metalling	45	17¼	½	388⅛ Cft
or Cubic yards				14 10⅛/27
Rough Stone paving to floor of apron	31½	6¾	1½	318 15/16 ✓
Total Cubic feet				318 15/16 ✓
or Cubic yards				[illegible] 21 15/16/27
Pointing with Ground Chunam	" 31½	6¾		212⅝
Total Sqs feet				212⅝
or Squares				2⅛

Detailed Estimate No of 1878/79
District Madura Division Madura [illegible]
Work Closing breaches on Road No 23 from Kareyapetty
to Pundalagoody.

(5)

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Mile	L	B	D	Earth	Gravelling	Metalling	Clearing	[illegible]	Removing	Rock	[illegible]	[illegible]	Remarks
Commencing from the Junction of Road No 3 from Madura to Sayalagoody													
18¾													Good.
19.	5	4	1/8	"	2½ ✓		-	-	-	-		20	Gravelling
	60	7½	3/4	337½ ✓									Closing breaches.
		4	1/8	"	30 ✓							240	Gravelling
	8	3	1/2	12 ✓									Reps washed portion
		4	1/8	"	4 ✓							32	Gravelling
	12	7½	3/4	67½ ✓									Closing breach
		4	3/16	"		9 ✓							Metalling
		4½	1/8	"	6¾ ✓							} 51	Gravelling
	39	2	1/2	39 ✓									Widening
	36	2	1/2	36 ✓									Do upto 2 Vent tunnel.
	6	4	3/4	18 ✓									Reps washed portion
		4	3/16	"		4½ ✓							Metalling
		4½	1/8	"	3⅜ ✓							} 25½ "	Gravelling
	20	8½	1¼	212½ ✓									Closing breach
		4	3/16	"		15 ✓							Metalling
		4½	1/8		11¼ ✓							} 85 ✓ "	Gravelling
	100	2	3/4	150 ✓									Widening & side dressing
	200	2	1/2	200 ✓									Do. Do.
	16	4¾	1/2	38 ✓									Raising
		3½	3/16	"	10½ ✓								Metalling
		4	1/8	"	8							} 57	Gravelling
													Raising
	36	2	1/2	36 ✓									Reps washed portion
	20	5	1/2	50 ✓									Metalling
		3½	3/16	"		13⅛						} 75 "	Gravelling
		4	1/8	"	10								
				1196½	[illegible]	41⅝						292½ 292½	

Mile	L	B	D	Earth	Gravelling	Metalling	Turfing	[illegible]	[illegible]	[illegible]	Remark
				1196½	86 6/8	41 5/8		"	"	293½ 292	
19	28	8½	1½	357							Closing breach
		4	3/16			21					Metalling
		4½	1/8	"	15¾					119	Gravelling
	12	5½	1	66							Repg washed portion
		4	3/16			9					Metalling
		4½	1/8	"	6¾					57	Gravelling
	8	8½	¾	57							Closing breach
		4	3/16			6					Metalling
		4½	1/8	"	4½					34	Gravelling
	16	8½	1¼	170							Closing breach
		4	3/16			12					Metalling
		4	1/8		8					64	Gravelling
	60	4	¾	180							Repg washed portion
		3	3/16			33¾					Metalling
		3½	1/8		26¼					195 "	Gravelling
		4					240				Turfing the side slope.
	18	3	½	27							Repg washed portion
		2	3/16	"	"	6¾					Metalling
		2	1/8	"	4½					36 "	Gravelling
	12	8	1	96							Closing breach
		4	3/16	"	"	9					Metalling
		4½	1/8	"	6¾					57	Gravelling
		5					60				Turfing the side slope
	17	4¾	½	40 3/8							Closing breach
		3	3/16			9 9/16					Metalling
		3½	1/8		7 7/16					55 "	Gravelling
	14	7½	¾	78¾							Closing breach
		4	3/16			10½					Metalling
		4½	1/8	"	7 7/8					59½ "	Gravelling
		4					56				Turfing on both sides
	18										Good
	12	4	1/8	"	6		"	"		48	Gravelling

M	L	B	D	Earth	Gravelling	Metalling	Turfing	[illegible]	[illegible]	[illegible]	Remarks &c.
				2262 5/8	180 9/16	159 7/16	356	"	"	958 340.	
19	16	4	¾	48							Repg washed portion
		4	3/16	"	"	12					Metalling do
		4½	1/8		9					68 "	Gravelling
		4					64				Turfing
	28	8	1¼	280							Closing breach
		4	3/16	"	"	21					Metalling
		4½	1/8	"	15¾					119 "	Gravelling
		5½					154				Turfing on both sides
	20	8	1	160							Closing breach
		4	3/16			15					Metalling
		4½	1/8		11¼					85	Gravelling
		5					100				Turfing on both sides
	8	6	½	24							Repg washed portions
		4	3/16			6					Metalling
		4½	1/8	"	4½					34	Gravelling
	[illegible]	3	"				24				Turfing on both sides
	120	3	¾	270							Repg washed portion
		3½	3/16			78¾					Metalling
		4	1/8		60					450 "	Gravelling
		4					480				Turfing on both sides
	60	7¼	¾	326¼							Closing breach
		4	3/16			45					Metalling
		4½	1/8		33¾						Gravelling
		4	"				240				Turfing on both sides
				3370 7/8 ×	~~311 7/16~~ 364 ×	336 15/16 ×	1418	"	"	1714 340.	× of which old Stone Cyds 45 new Broken Stone Cyds 290 11/16
20	16	3	½	24							Repg washed portions
	22	4	½	44							Do Do
		3	1/8	"	8¼					" 6	Gravelling
				68	8¼					66	

[illegible]	[illegible]	[illegible]	[illegible]	Earth	Gravelling	Metalling	Turfing	Removing	[illegible]	Remarks
21	27	3	1¾	141¾ ✓						Repg washed portion
		2	3/16	.		10⅛ ✓			} 81 ✓	Metalling
		4	1/8		13½ ✓					Gravelling 3 inch Sand
		7					189 ✓			Turfing on both Sides
	300	3	1/2	450 ✓						Repg washed portion
		4	3/16			225 ✓			} 1200 ✓	Metalling
		4	1/8		150 ✓					Gravelling
		4					1200 ✓			Turfing on both Sides
	56	9	1½	756 ✓						Closing breach
		4	3/16			42 ✓			} 238	Metalling
		4½	1/8		31½ ✓					Gravelling
		7					392 ✓			Turfing on both Sides
	25	4	1	100 ✓						Repg washed portion
		4	3/16			18¾ ✓			} 106 ✓	Metalling
		4½	1/8		14 1/16 ✓					Gravelling
		5					125 ✓			Turfing on both Sides
	106									Good up to River Vackangood
	6	2	1/2			..	..	6 ✓		Removing Rock in bed of River
	20	7	1	140 ✓						Removing the high ground between the river & Stream
	..	4	3/16	..	.	15 ✓			} 85 ✓	Metalling
		4½	1/8		11¼ ✓					Gravelling
	40									40 yds Road Damg up to the Stream
	44	6	1/2	132 ✓						Repg washed portion
		4	1/8	.	22 ✓				176	Gravelling
		2½					110 ✓			Turfing on both Sides
	56	2	1/2	56 ✓						Widening the Sides
		4	1/16	.	14 ✓				224 ✓	Gravelling
		3					168 ✓			Turfing on both sides
										of which old B D Culvts 20
				1775	256 5/16	:	2184	.. 6	1710 400	New B D Stone Culvts 291

[illegible]	[illegible]	[illegible]	[illegible]	Earth	Gravelling	Metalling	Turfing	[illegible]	[illegible]	Remarks
22	40	6¾	1/2	135 ✓						Raising Road.
		4	1/8	.	2 ✓					Gravelling
		2					80 ✓			Turfing on both sides
	32									Good.
	18	8½	1⅛	167						Closing breach
		4	3/16	..	.	13½ ✓		} 76½ ✓		Metalling
		4½	1/8	.	10⅛ ✓					Gravelling
		5					90 ✓			Turfing on both sides
	352	2	1/2	352 ✓						Repg & filling the sides
		2					704 ✓			Turfing on both sides
	24									Good from on [illegible] 4½ × 3 feet
	40	4	1/8	.	20 ✓				160 ✓	Gravelling
	120	8	1/2	180 ✓						Repg washed portion
		4	/16	.		30 ✓			480 ✓	Gravelling
	20[illegible]									Good.
	18	3	3/8	20¼						Widening the washed portion
		3½					60 ✓			Turfing on both sides
	76	4	3/4	228 ✓						Widening the washed portion
		2	3/16	.		28½ ✓				Metalling
		4	1/8	.	38 ✓			} 228 ✓		Gravelling
		4					304 ✓			Turfing on both sides
	8	8	3/4	48 ✓						Closing breach
		4	3/16	.	..	6 ✓				Metalling
		4½	1/8	.	4½ ✓			} 34 ✓		Gravelling
		4		.	.		32 ✓			Turfing on both Sides
	12	8	1	96 ✓						Closing breach
		4	3/16			9 ✓		} 51 ✓		Metalling
		4½	1/8		6¾					Gravelling
		5					60 ✓			Turfing on both sides
	44	8	3/4	264 ✓						Closing breach
		4	3/16			33 ✓		} 187 ✓		Metalling
		4½	1/8	.	24¾		132	578½	640	Gravelling
		3	..	1460½	154½	90	1465			Turfing on both Sides

Mile	L	B	D	Earth	Gravelling	Metalling	Surfacing	[illegible]	[illegible]	Sq ft Cl. [illegible]	Sq ft Cl. Surfacing	Remarks
				1490¼	154⅛	90	1466		"	576½	640	
22	40	6	½	120								Up the worst portions
		3	3/16			22½						Metalling
		4	⅛		20					}140		Gravelling
		2½					100					Surfacing on both sides
	12	8	¼	12								Closing breach
		4	3/16			9						Metalling
		4½	⅛		6¾					}57		Gravelling
		3					36					Surfacing on both sides
	44	9	1¼	495								Closing breach
		4	3/16			33						Metalling
		4½	⅛		24¾					}187		Gravelling
		5					220					Surfacing on both Sides
	4	4	¾	12								Closing Side breach
		4	3/16			3						Metalling
		4½	⅛		2¼					}17		Gravelling
		3					12					Surfg
	4											Good cross Drain [illegible] of 4½ x 3 feet.
	8	6	1¼	60								Widening & closing the breach
		4	3/16			6						Metalling
		4½	⅛		4½					}34		Gravelling
		5					40					Surfacing on both Sides
	63	7½	¾	354⅜								Closing breach
		4	3/16			47¼						Metalling
		4½	⅛		35 7/16					}268		Gravelling
		3					189					Surfacing on both Side
	56	9½	1¾	931								Closing breach
		4	3/10			42						Metalling
		4½	⅛		31½					}238		Gravelling
		7					392					Surfacing on both Side
	8	4	¾	24								Widening
		3	3/16			4½						Metalling
		4	⅛		4					}28		Gravelling
		3½					28					Surfacing on both Side
				3558⅞	283 5/16	257¼	2482	"	"	1539½	640	

Length	B	D	Earth	Gravelling	Metalling	Surfacing	[illegible]	[illegible]	Sq ft Cl. Bedding	Sq ft Cl. Surfacing	Remarks
			3568⅝	283 5/16	257¼	2482	"	"	1539½	640	8 ~~3/8~~
8											Good
	4	⅛		4					32		Gravelling
10	6	1¼	75								Filling & closing breach
	3	3/16			5⅝						Metalling
	4	⅛		5					}35		Gravelling
	5					50					Surfacing on both Sides
17	8	1	136								Closing breach
	4	3/16			12¾						Metalling
	4½	⅛		9 9/16					87¼		Gravelling
	4					68					Surfacing on both Sides
11	9½	1¾	182⅞								Closing breach
	4	3/16			8¼						Metalling
	4½	⅛		6 3/16					}47		Gravelling
	8					88					Surfacing on both sides
40	7½	¾	225								Closing breach
	4	3/16			30						Metalling
	4½	⅛		22½					}170		Gravelling
	3½					440					Surfacing on both Sides
16	8½	1¼	170								Closing breach
	4	3/16			12						Metalling
	4½	⅛		9					}68		Gravelling
	6					96					Surfacing on both Side
8	9	1½	108								Closing breach
	4	3/16			6						Metalling
	4½	⅛		1½					}84		Gravelling
	7					56					Surfacing on both Sides
60	10	2	1200								Closing breach & Raising Road
	4	3/16			45						Metalling
	4½	⅛		33¾					}255		Gravelling
	9					540					Surfacing on both Sides
10											Good 5 Vent Tunnel
50	4					200					Surfacing to side of washed portions
			5656½	377 3/16	376⅞	3720			2114½	[illegible]	
										64	

Mile	L	B	D	Earth	Gravelling	Metalling	Surfacing	[illegible]	Removing Rock	[illegible]	[illegible]	
				2655½	377 13/16	376 7/8	3720			2114½	32	
22	18	5	1½	135								Widening the road on both sides
		2	1/8			4½						Metalling
		3	1/8		6¾					}45		Gravelling
	12											Good.
	12	1	3/4	9								Widening
	31	3	3/4	69¾								Widening the washed portions
	8	2	3/4	12								Do Do.
	40											Good.
				588¼	384 9/16	381 3/8	3720	..	..	2169½	672	× of which old Stone C yds 50 New Do Stone C yds 331⅜
23	280											Good.
	8											Good one Vent Tunnel of 4½ × 3 feet Tunnel.
	40	4	3/8	60								Repg washed portion
		4	1/8		20						160	Gravelling
		3					120					Surfacing on one side
	24	1	1/2	12								Repg the washed portion
		4	1/8		12						96	Gravelling
	14	4	1/8		7						56	Gravelling
	2	8	3/4	12								Filling the gap of the road
	7	4	1/8		3½						28	Gravelling
	22											Good.
		4	1/16		5½						88	Gravelling
	24	4	1/8		12						96	Do Over washed por
	36											Good, up to [illegible]

No 1 Open Vent tunnel of 6 × 4½ feet near Melasache Village is necessarily required to be extended as two Vents tunnel as the water Comes heavily from a Distance of 3 Miles.

				84	60	–	120	–	–	–	524	

L	B	D	Earth	Gravelling	Metalling	Surfacing	[illegible]	Removing Rock	[illegible]	[illegible]	Remarks.
											Good.
8	3	1/2	12								Repg the washed portion
	4	1/8		4						100	Gravelling
50	5	1/8		31¼						200	Do
140	3	1/2	210								Clearing the washed portion
	4	1/8		70						560	Gravelling
60	5½	3/4	230 5/8								Clearing the washed portion
	4	1/8		30						240	Gravelling
16	7½	3/4	90								Clearing drench
	3½	1/8			7						Metalling
	4	1/8		8					}60		Gravelling
18	4	1/2	36								Clearing the washed portion
	4	1/8		9						72	Gravelling
56	2	1/2	56								Clearing the washed portion
	4	1/8		28						224	Gravelling
40 5	Repg 50 yds Side Dam.										
			634 5/8	180¼	7	–	–	–	60	1376	
40											40 yds of Dam required
76	2	1/2	76								Clearing the washed portion
	4	1/8		38						304	Gravelling
17											Good.
			76	38	–	–	–	–	–	304	
											Good.
12											Repg the washed portion
16	2	1/2	16								
	4	1/8		8						264	Gravelling
			16	8	–	–	–	–	–	64	

Mile	L	B	D	Earth	Gravelling	Metalling	Surfacing	Rough Stone revetment	Repairing	Rock Ditto & Supplying	Ditto Close Tamping	Remarks
Carried over				1	8						64	
27	20	3¾	½	37½								Closing breach
		3½	⅛			8¾						Metalling
		4	⅛		10					}75		Gravelling
	20	3¾	½	37½								Repg the washed portion
		3½	⅛			8¾						Metalling
		4	⅛		10					}75		Gravelling
	28	7½	¾	157½								Closing the breach
		3½	⅛			12¼						Metalling
		4	⅛		14					}105		Gravelling
	28	3¾	½	52½								Repg washed portion
		4	⅛		14						112	Gravelling
	50	3	¾	112½								Closing breach
	52											Good
				443½	56	29¾	.	.	.	255	176	
28												Good
29												Do.
30	104	6	1/16		39						624	Gravelling from tank bund.
	20	3	½	30								Filling washed portion
		6	⅛		15						120	Gravelling
	20											Side Dam in good order
				30	54						744	
M. 31-7	340	2	½	340								Filling sides of washed portion Same the other
		4	⅛		170						1360	Gravelling
	120	3	¼	90								Filling sides of washed por.
		4½	⅛		67½						540	Gravelling
	184	3	½	276								Repg the washed portion
		4	⅛		92						736	Gravelling
	9	8½	1	76½								Closing breach from 20 yds R.D.
	No 2 Road Dam of 20 yds being ruined it requires repair											
				782½	329½						2636	

Mile	L	B	D	Earth	Gravelling	Metalling	Surfacing	Rough Stone revetment	Repairing	Rock Ditto & Supplying	Ditto Close Tamping	Remarks 10/22
				782½	329½	–					2636	
7-7	9	4	⅛	"		4½				}38¼		Metalling
	"	4½	⅛		5 1/16							Gravelling
	40	5½	1	220								Closing breach
		4	⅛		20						160	Gravelling
	16	4	⅛			8				}68		Metalling
		4½	⅛		9							Gravelling
	3	3	¾	6¾								Filling the washed portn
	40	3	½	60								Do Do.
		6	⅛		30						240	Gravelling
	99	1¼	1½					185⅝				Rough stone revetment from Road Dam.
	96	2	½	96								Repg the sides
		4	⅛		48						384	Gravelling
	60	6	¾	270								Closing breach
		4	⅛		30						240	Gravelling
	152	4	⅛		76						608	Do
	30	2½	½	37½								Widening the washed portion
	152											Good.
				1472¾	547 9/16	12½		185⅝		106¼	4268	
32	160	2	½	160								Repg the side washed off
		4	1/16		40						640	Gravelling
				160	40	–	–	–	–	–	640	
33	No. 3 The Road Dam of 15 yds required apron											
34												good
35	92	⅝	2					115				Rough stone revetment on one side
				–	–	–	–	115	–	–		
36	16	4	⅛		8						64	Gravelling
	9	11	1½	148½								Closing breach
		4	⅛		4½						36	
	15											37 Side Dam of 15 yds
				148½	12½	–	–	–	–	–	100	

Mile	L	B	D	Earth	Gravelling	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Sq. feet of Gravelling	
				148½	12½						100	
36	15	4	½	30								Closing the worked portion
		4	1/8		7½						60	Gravelling
24	4½	¾		81								Closing breach
		4	1/8		12						96	Gravelling
24	2	½		24								Repg the worked portion
300	4	1/16			75						1200	Gravelling
250	4	1/16			62½						1000	Do.
20	No. 4 Side Dam of 20 yds requires Apron											
40	4½	¾		135								Closing breach
	4	1/8			20						160	Gravelling
24	6½	¾		117								Closing breach
	4	1/8			12						96	Gravelling
4	4	1/8			2						16	Do.
34	5½	¾		140¼								Closing breach
	4	1/8			17						136	Gravelling
16	4	1/8			8						64	Do.
825												Goods.
				~~6 [illegible]~~							2928	

30	6¾	½	101¼	Do
			629 13/16	

Do to wing walls.	6	1	1	6.
Retaining walls to flooring	2½	½	1.	1¼.
Flooring	1¼	6	3/8	2 13/16
Abutments above	14	¾	1	10½
Wing walls above	6	¾	1 3/8	6 3/16
Spandrils to Side walls.	14	½	¼	1¾
Jetty and platform	3	7	1/8	2 5/8
Parapet walls	6	½	½	1½
Total Rough Stone in Chunam		Cyds.		46 5/8
Covering Stone	2	7	¼	3½
Total Cut Stone Cyds				3½

Appendix No. XXVIII Constructing 10 yds Side Dam.

Particulars as above detailed No. XXII

Appendix No. XXIX Repg the ruined Side Dam of 20 yds.

Repairing the ruined portion on the top	20	1	½	10
Sundry Repairs				2
Total Rough Stone in Chunam Cyds				12

Appendix No. XXX Constructing 10 yds Side Dam.

Particulars as above detailed in No. XXII

Appendix No. XXXI Repg 371½ feet Tunnel 33

Plastering & Sundry Repairs

Filling the Sides of Coursing Stone	1	7	3/4	1/4	1 5/16
Cutwater including Caps	1	3/4	3/8	1/8	1/3
Parapet walls	2	2 3/4	1/2	1/2	1 3/8
Total Rough Stone in Chunam Cyds					31 21/32
Coursing Stone	1	7	2	1/4	3 1/2
Total Cut Stone Cyds					3 1/2
Extending the 15 yds Side Dam 6 yds on both sides on 8 Furlong of 13th Mile as per Appendix No VIIII					17
Foundation to Side wall	2	3	1	1	6
Do above	2	3	3/4	1	4 1/2
Parapet walls	2	1	3/4	1/2	3/4
Total Rough Stone in Chunam Cyds					11 1/4
Appendix No IX Repg the Tunnel of 4 1/2 × 4 1/2 feet in 16th Mile					
Foundation to North wing wall on each	1	1 1/2	1	1 1/2	2 1/4
Do above		1 1/2	3/4	1 3/8	1 35/64
Total Rough Stone in Chunam Cyds					3 51/64
Appendix No X Constructing apron of 40×3 to 90 yds Side Dam on 22d Mile					
Retaining walls on 3 Sides		44	1	1 1/2	66
Flooring		42	2	1/2	42
Total Rough Stone in Chunam Cyds					108
Appendix No XI Constructing apron of 12×3 for 20 yds Side Dam on 22d Mile					
Repg the undermined portion		6	1	1/2	3
Apron Retaining walls on 2 sides		16 1/2	3/4	1 1/2	18 9/16
Flooring		10 1/2	2 1/4	1/2	11 13/16
Total Rough Stone in Chunam Cyds					33 3/8

Appendix No XII Constructing 90 yds Road Dam in

Appendix No. XIII Constg apron of 30 yds
for 6½ yds Road Dam
Retaining wall on 3 Sides 31 1 1½
Flooring 28 2 ½
Total Rough Stone in Chunam C yds.

Appendix No. XIV Constg 35 yds apron
for 85 yds Side Dam.
Retaining walls for apron 39 1 1½
Flooring 33 2 ½
Total Rough Stone in Chunam C yds.

Appendix No XV Sundry Repairs to
10 yds Side Dam.
Sundry Repairs

Appendix No XVI Sundry Repairs to
10 yds Side Dam
Sundry Repairs

Appendix No XVII Repg 10 yds Side Dam
Repg the ruined portion of Centre part 5 ½ 1¼
Parapets 1 ½ ½
Total Rough Stone in Chunam C yds.

Appendix No. XVIII Repg the ruined
portion of 10 yds. Side Dam.
Sundry Repairs

Appendix No XIX Repg the ruined portion
of 40 yds Side Dam
Repairing the undermined portion in Centre 2 1 ½
Sundry repairs to Do.
Total Rough Stone in Chunam C yds.

Appendix No XX Repg the ruined portion
of 24 yds Side Dam.

No. 4 Side Dam of 20 yds Requires apron 15 × 3
Retaining wall on 3 Sides ∫ 58½ 2¼ 4½ 592 7/16
Total Rough Stone in Chunam 592 7/16
or Cubic yds ∫ 21 25 7/16 / 27
Flooring between ∫ 40½ 6¾ 1½ 410 ✓
Total Dry Stone C feet 410.
or C yds 15 5/27 ✓
Pointing ∫ 40½ 6¾ 273 ✓
Total Ground Chunam C feet 273 ✓
or Squares 2¾ ✓

No. 5 Side Dam of 50 yds requires repairs
on 25th mile Sundry repairs

Abstract Estimate of 1878-79

[illegible] Division, Madura District [illegible]

Work - Closing breaches of Road No. 23 from 12

Kadanjapatty to Pundalagoody

Quantities	Description of works	Rate	amount	Total
	19th mile			
3370/?	Cyds of Earth including sectioning & ramming	1 3	283 5 7	
[illegible]	Cyds of Gravelling [illegible]	9 6	186 11 2	
[illegible]0	Cyds of [illegible] on sides of the Road	4	10 [illegible] 5	
307 7/16	Cyds of new broken stone 2½ miles		307 7	
[illegible] 18	Cyds of spreading broken stone			
197	Cyds of gravel including watering & ramming &c per cyd	3	30 [illegible]	
1418	Cyds of Turfing per cyd	1	22 10	
340	Cyds of spreading gravel including watering & ramming	2 3	38	290 [illegible]
	20th mile			
68	Cyds of Earth including sectioning & ramming	1 3	5 6	
8¼	Cyds of Gravelling 2½ miles distance	11 4	6 13 6	
66	Cyds of spreading Gravel including watering & ramming	2	11	11 13 6
	21st mile			
7776	Cyds of Earth including sectioning & ramming	1 3	138 12	
266	Cyds of Gravelling 3 miles distance	13 3	212	896
	Carried over		850 12	902 3 4

	Brought forward		[illegible]	922 3 11
	C yds of Old brokenstone sides of the road	" 2 "	3 " "	
297	C yds of New Do 3½ mile distance	1 "	291 " "	
218¾	S yds of Turfing at	" 7	136 8 "	
6	C yds of Removing Rock at	1 " "	6 " "	
1710	S yds of Spreading brokenstone & Gravel including watering & Ramming at	" 3	26 11 6	
400	S yds of Spreading Gravel watering & Ramming at	" " 2	4 2 8	922 2
	22½ mile			
5880½	C yds Earth including Section-ing & Ramming at	" 1 3	459 [illegible] 6	
384⅞	C yds of Gravelling 3 miles distance	1 " "	19 4 [illegible]	
50	C yds of Old brokenstone sides of the road at	" 4 "	[illegible]	
331⅜	C yds of New brokenstone at 3½ miles distance	" 4 6	74 [illegible] 9	
3720	S yds of Turfing	" 1	23 [illegible]	
2265¾	S yds of Spreading brokenstone & Gravel watering & Ramming at	" " 3	28 13 3	
672	S yds of Spreading Gravel watering & Ramming at	" " 2	[illegible]	1155 15 [illegible]
	23½ mile			
84	C yds of Earth including section-ing & Ramming at	" 1 3	5 5 "	
60	C yds of Gravelling 2½ miles distance at	" 11	2 15 "	
120	S yds of Turfing at	" 1	" 10 "	
524	S yds of Spreading brokenstone & Gravel watering & Ramming	" " 2	4 7 4	60 12 4
	Do 1			
	Extending one Vent Tunnel in addition to the present 6 + 4½ feet			
	Carried over			3332 15 3

~~3337 8 3~~

	Brought forward			3324 [illegible]
3577	C yds of Roughstone in channels at	3 8 "		
	at	12 " "		
4⅜	C yds of Cutstone			
	Excavating foundations & Sinking			
	25th mile			
634⅝	C yds of Earth including section-ing & Ramming at	" 1 3	49 9 2	
		" 15 "	168 15 9	
180¼	C yds of Gravelling 3½ miles distance	6 9	9 15 3	
7	C yds of Metalling 3½ miles distance		2 [illegible] 15 "	
60	S yds of Spreading brokenstone & Gravel watering & Ramming at			
1378	S yds of Spreading Gravel watering & Ramming at	" " 2	13 13 4	248 4 7
	Do 1			
	Repairing the Tunnel [illegible]		20 " "	20
	Sundry repairs			
	26th mile			
76	C yds of Earth including section-ing & Ramming at	" 1 3	4 15 "	
38	C yds of Gravelling 3 miles distance		31 7 6	
304	S yds of Spreading Gravel watering & Ramming at	" " 2	3 2 8	40 9 2
	27th mile			
1443½	C yds of Earth including section-ing & Ramming at	" 1 2	84 10 4	
		9 6	33 4 "	
56	C yds of Gravelling 2 miles distance Do	1 " "	27 12 "	
29¾	C yds of Metalling 2½ miles	" " 3	3 15 9	
255	S yds of Spreading brokenstone & Gravelling watering & Ramming			
176	S yds of Spreading Gravelling watering & Ramming at	" " 2	1 13 4	103 7 5
	30th mile			
30	C yds of Earth including watering & Ramming at	" 1 3	1 17 6	
			27 "	29 5 6
54	C yds of Gravelling 1½ miles distance			
	Carried over			3930 [illegible]

	…ht Forward		29 5 6	3434
	…Gravel … …ping	at " " 2	7 12 "	5…
	… mile			
	…earth including …ning & ramming	at " 1 3	115 " 9	
	…of Gravelling 2½ miles distance	" 13 3	453 9 2	
	…of Metalling 1¼ mile distance	" 11 6	8 15 9	
186 5/8	c yds of Roughstone revetment	at 1 12 "	324 13 6	
106¼	c yds of Spreading broken stone & gravel watering & ramming	at " " 3	1 10 7	
426 8	c yds of Spreading gravel watering & ramming	at " " 2	44 7 4	918
	No. 2 Repairing the ruined Road Dam of 20 yds on 31st mile			
61 2/9	c yds of Roughstone in chunam	3 8 "	214 4 5	
48 4/9	c yds of Small rubble stone	at " 12 "	36 5 4	
19 1/9	c yds of Concrete	at 1 12 "	33 7 1	
28 3/4	c yds of Metalling 2½ miles distance	1 " "	28 12 "	
19 1/7	c yds of Gravel 2½ miles Do	" 11 "	13 2 2	
18 8/9	c yds of Roughstone paving	at 1 12 "	33 " 10	
2 3/4	c yds of Pointing with gravel & lime	2 4 "	6 3 "	
	Excavating foundation & Sundries		14 13 2	380
	32nd miles			
160	c yds of Earth including sectioning & ramming	at " 1 3	12 8 "	
40	c yds of Gravelling 2 miles distance	" 15 6	38 12 "	
640	c yds of Gravel spread watering & ramming	at " " 2	6 10 8	57
	33½ mile			
	No. 3 The Road Dam of 10 yards required Repair			
14 8/27	c yds of Roughstone in chunam	3 8 "	50 " 7	
36 16/27	" of Small rubble stone 2½ m Do	1 " "	36 9 5	
14 16/27	" of Concrete	at 1 12 "	25 2 4	
21	" of Metalling 3¼ miles distance	1 4 "	26 15 7	
14 /27	" of Gravelling 2 miles Do	" 11 "	9 14 1	5353
	Carried over		148 9 6	5353

30 6 3/7 1/2 101¼ Do 2
620 13/16

	Brought Forward		148 9 6	5353 6
7/9	c yds of Roughstone paving	at 1 12 "	20 9 9	
2 1/8	c yds of Pointing with gravel chunam	at 2 4 "	4 12 6	
	Excavating foundations & Sundries		6 " 3	180 " "
	35th mile			
115	c yds of Roughstone revetment	1 12 "	201 4 "	201 4 "
	36th mile			
176	c yds of Earth including settling & ramming	at " 1 3	52 13	
	" of Gravelling 2½ miles distance	" 13 3	189 10 3	
292	c yds of Spreading gravel watering & ramming	at " " 2	30 8	272 15 3
	No. 4 Repair of 20 yds Road Dam			
21 8/9	c yds of Roughstone in chunam	3 8 "	76 9 9	
15 5/27	" of dry stone paving	1 12 "	26 9 2	
2 3/4	c yds of Pointing with chunam	at 2 4 "	6 3 "	
	Excavating foundation & Sundries		5 10 1	115 " "
				6122 14
				~~6127 9 11~~
				177 8
	Sundries & Superintendence at about 2¾ per cent			172 6 1
	Total Estimate Rs			6300 " "

24th Septr 78

Sd/ S. Pachyanarattha Pillay
Sub Overseer, Tirrochooly

Central Office

(Inveespref)

(Camp)
Tirrochooly
23rd October 78

H B Hutchings,
Assistant Engineer,
Madura Division.

J. H. Harrington
District Engineer
Madura

Countersig

…ncial Depts
HBH

I hereby certify that the above Estimate for clos
reaches of Road No. 23 from Kariaputty to Sundal
goody amounting to Rs (6300) six thousand and three
undred only provides for every thing necessary
nd that no supplementary works will afterwards
e required.

H B Hutchings
Range officer
Madura

Enclosure to letter
Supt. of Revenue Settlement
No. 95 date 30th Nov 78
Madura District
Madura Range
R S R No. 10/80.
Copy of Estimate
for Closing the breaches
on Road No 23 from
Kariaputty to Sundalgudy
Estimate Rs 6300

30 6 3/4 1/2 10 1/4
620 12/16

139A
Awaits

No. 389 W Public Works Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 7th Feby 1879

Read the following :—

39

Pro: of the Board of Rev: (H.E. No. 98 d/16th Jany 1879)

The estimates for the repairs of the undermentioned roads in the Madura District are sanctioned.

1 Repairing and closing breaches of road No. 23 from Kariaputty to Sandalgudy } Rs 6,300
Registered
229
} B.H. 10/2/79
2 — do — do — road No. 3 from Madura to Sayalgudy — 230 . 29,500

W.H. 3/2/79

W.T. 4/2

This sanction has been registered as local & numbered as above.

Supg. Engr. Fifth Circle
Exr. & P. W. Accounts — with Abstract Estimate
Board of Revenue
Financial Dept.

Despd 19-2-79. J.G.

[illegible]

Surgt Dept 7-2

Cor. 4/2 R 7.2.

P

C 138

Govt. of {1879} Madras.

PUBLIC WORKS.

10-2-79

To

(40)

Dated

Issued

Recd.

Encl.

G. O., 7 Feby 1879, No. 389 W

Nos. 56-57

Roads in Madura Dt

Sanctions estimates for

repairs to certain —