ESTIMATE AND BILL OF QUANTITIES

SOUTH UDA UDAIPUR

Name of work	SOUTH UDA UDAIPUR
Client	-
Location	-
Prepared by	-
Features measured	2
Total estimated cost	■ 2,27,44,991
Date	31 Oct 2026

Lengths measured on the map

Feature type	Length (m)
Side drain	**292.3**
Road / carriageway	**658.5**

Abstract of cost

S. no.	Description	Amount (■)
1	Earthwork	**53,76,592**
2	Pavement	**1,18,91,388**
3	Structures	**12,53,407**
4	Road furniture	**1,92,609**
	Sub-total	**1,87,13,996**
6	Contingencies @ 3 %	**5,61,420**
7	GST @ 18 %	**34,69,575**
	Total estimated cost	**2,27,44,991**

Bill of quantities

No.	Description of item	Unit	Quantity	Rate (₹)	Amount (₹)
	EARTHWORK				
1	Clearing and grubbing of road land	m²	**19,754.78**	**25**	**4,93,869**
2	Construction of embankment with approved material, compacted	m³	**8,560.40**	**380**	**32,52,953**
3	Construction of subgrade, compacted, CBR ≥ 8 %	m³	**3,621.71**	**450**	**16,29,769**
	Total - Earthwork				**53,76,592**
	PAVEMENT				
4	Bituminous concrete (BC) Grading II	m³	**184.38**	**11,500**	**21,20,346**
5	Dense bituminous macadam (DBM) Grading II	m³	**276.57**	**9,800**	**27,10,355**
6	Granular sub-base (GSB) Grading I	m³	**1,396.00**	**2,100**	**29,31,609**
7	Prime coat over granular base	m²	**4,807.00**	**45**	**2,16,315**
8	Granular / earthen shoulder, compacted	m³	**691.42**	**900**	**6,22,275**
9	Tack coat	m²	**9,218.90**	**18**	**1,65,940**
10	Wet mix macadam (WMM)	m³	**1,201.75**	**2,600**	**31,24,547**
	Total - Pavement				**1,18,91,388**
	STRUCTURES				
11	PCC M15 levelling course / bedding	m³	**35.08**	**5,600**	**1,96,454**
12	RCC M25 in structures (excluding steel)	m³	**92.09**	**8,200**	**7,55,118**
13	Reinforcement Fe 500D - supply, cut, bend and place	t	**2.72**	**78,000**	**2,12,378**
14	Excavation for structures, incl. backfilling	m³	**298.19**	**300**	**89,457**
	Total - Structures				**12,53,407**
	ROAD FURNITURE				
15	Thermoplastic road marking 2.5 mm	m²	**296.32**	**650**	**1,92,609**
	Total - Road furniture				**1,92,609**
	Sub-total (carried to abstract)				**1,87,13,996**

Detailed estimate - item-wise measurements

Each quantity = Nos × L × B × D (metres). Locations are chainages along the drawn features; numbers in brackets refer to the feature list and layout plan.

No.	Description / location	Nos	L	B	D / H	Quantity	Unit
1	**Clearing and grubbing of road land**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: Clearing and grubbing of road land	**1**	**658.493**	**30.000**		**19,754.777**	m²
	Total item 1					**19,754.777**	m²
2	**Construction of embankment with approved material, compacted**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: Embankment: mean width = top 11 + 2 × 1 (side slopes 2H:1V)	**1**	**658.493**	**13.000**	**1.000**	**8,560.403**	m³
	Total item 2					**8,560.403**	m³
3	**Construction of subgrade, compacted, CBR ≥ 8 %**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: Subgrade 500 mm (0.5 m extra each side)	**1**	**658.493**	**11.000**	**0.500**	**3,621.709**	m³
	Total item 3					**3,621.709**	m³
4	**Bituminous concrete (BC) Grading II**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: BC 40 mm over carriageway	**1**	**658.493**	**7.000**	**0.040**	**184.378**	m³
	Total item 4					**184.378**	m³
5	**Dense bituminous macadam (DBM) Grading II**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: DBM 60 mm over carriageway	**1**	**658.493**	**7.000**	**0.060**	**276.567**	m³
	Total item 5					**276.567**	m³
6	**Granular sub-base (GSB) Grading I**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: GSB 200 mm (0.3 m extra each side)	**1**	**658.493**	**10.600**	**0.200**	**1,396.004**	m³
	Total item 6					**1,396.004**	m³
7	**Prime coat over granular base**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: Prime coat on WMM (0.15 m extra each side)	**1**	**658.493**	**7.300**		**4,806.996**	m²
	Total item 7					**4,806.996**	m²
8	**Granular / earthen shoulder, compacted**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: Granular / earthen shoulders, depth = pavement thickness	**2**	**658.493**	**1.500**	**0.350**	**691.417**	m³
	Total item 8					**691.417**	m³
9	**Tack coat**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: Tack coat on DBM (below BC)	**1**	**658.493**	**7.000**		**4,609.448**	m²
	Tack coat on primed WMM (below DBM)	**1**	**658.493**	**7.000**		**4,609.448**	m²
	Total item 9					**9,218.896**	m²
10	**Wet mix macadam (WMM)**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: WMM 250 mm (0.15 m extra each side)	**1**	**658.493**	**7.300**	**0.250**	**1,201.749**	m³
	Total item 10					**1,201.749**	m³
11	**PCC M15 levelling course / bedding**						
	(1) Side drain 1, Ch. 0+000.00 to 0+292.34: PCC M15 levelling course 100 mm	**1**	**292.342**	**1.200**	**0.100**	**35.081**	m³
	Total item 11					**35.081**	m³
12	**RCC M25 in structures (excluding steel)**						
	(1) Side drain 1, Ch. 0+000.00 to 0+292.34: RCC M25 side walls 0.15 m thick	**2**	**292.342**	**0.150**	**0.600**	**52.621**	m³
	RCC M25 base slab, outer width 0.9 m	**1**	**292.342**	**0.900**	**0.150**	**39.466**	m³
	Total item 12					**92.088**	m³
13	**Reinforcement Fe 500D - supply, cut, bend and place**						
	(1) Side drain 1, Ch. 0+000.00 to 0+292.34: Reinforcement Fe500D as designed (IS 456): 9.31 kg per m of drain incl. 5 % laps - t per m	**1**	**292.342**	**0.009**		**2.723**	t
	Total item 13					**2.723**	t

No.	Description / location	Nos	L	B	D / H	Quantity	Unit
14	**Excavation for structures, incl. backfilling**						
	(1) Side drain 1, Ch. 0+000.00 to 0+292.34: Excavation (one side): outer width 0.9 + 0.3 working space	**1**	**292.342**	**1.200**	**0.850**	**298.188**	m^3
	Total item 14					**298.188**	m^3
15	**Thermoplastic road marking 2.5 mm**						
	(2) Road / carriageway 2, Ch. 0+000.00 to 0+658.49: Road marking - centre and edge lines, 150 mm wide	**3**	**658.493**	**0.150**		**296.322**	m^2
	Total item 15					**296.322**	m^2

Feature-wise cost

No.	Feature	Type	Location	Length (m)	Drawing	Amount (■)
1	Side drain 1	Side drain	Ch. 0+000.00 to 0+292.34	**292.3**	D-1	**12,53,407**
2	Road / carriageway 2	Road / carriageway	Ch. 0+000.00 to 0+658.49	**658.5**	D-2	**1,74,60,589**
	Total (before contingencies and taxes)					**1,87,13,996**

Layout plan

Numbers refer to the feature list, the detailed estimate and the drawings: feature (n) is shown on drawing D-n. Geometry as drawn on the map (WGS 84); lengths are geodesic.

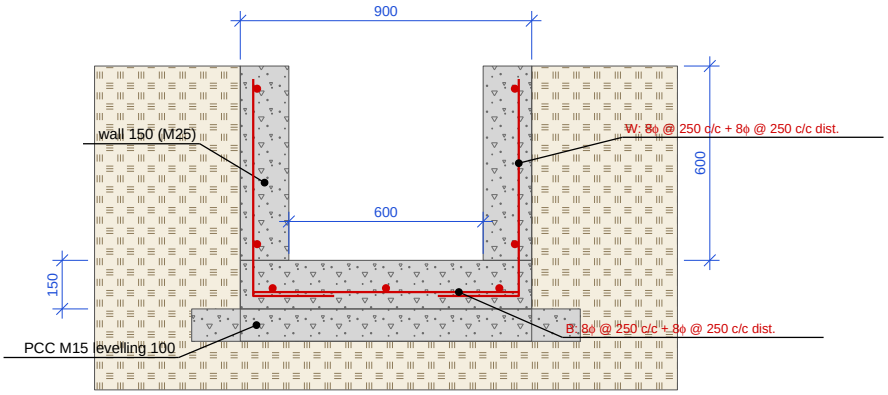
Drawings - typical sections and details

Drawing D-n shows feature (n) of the layout plan, drawn from the inputs used for its quantities. Dimensions in mm unless noted; sections are typical along the whole length of the feature.

D-1 (1) Side drain 1 - Side drain Ch. 0+000.00 to 0+292.34, 292.3 m

RCC OPEN DRAIN

one side of the road



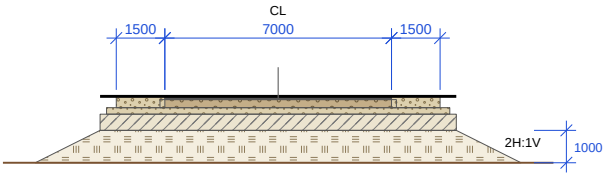
dimensions in mm

Drain type	**RCC open U-drain**	Drain on	**One side**
Clear width (m)	**0.6**	Clear depth (m)	**0.6**
Wall thickness (m)	**0.15**	Base slab thickness (m)	**0.15**
Concrete grade (walls, base, cover)	**M25**	PCC levelling course (mm)	**100**
PCC levelling grade	**M15**	Steel grade	**Fe500D**
Reinforcement	**Design to IS 456 (walls, base, cover slab)**	Clear cover to bars (mm)	**40**
Soil unit weight (kN/m³)	**18**	Angle of internal friction ϕ (deg)	**30**
Surcharge next to the drain (kN/m²)	**10**	Side wall (each) - main / distribution	**8ϕ @ 250 c/c / 8ϕ @ 250 c/c**
Base slab - main / distribution	**8ϕ @ 250 c/c / 8ϕ @ 250 c/c**	Reinforcement per m of drain	**9.31 kg (incl. 5 % laps)**

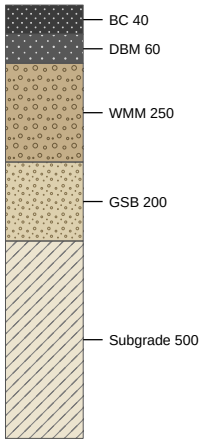
D-2 (2) Road / carriageway 2 - Road / carriageway Ch. 0+000.00 to 0+658.49, 658.5 m

ROAD - TYPICAL CROSS SECTION

1 × 7 m carriageway, earthen shoulders 1.5 m



PAVEMENT (not to scale)



dimensions in mm

Pavement data	**Simple: carriageway + shoulders**	Pavement type	**Flexible (bituminous)**
Carriageway width (m)	**7**	Number of carriageways	**1**
Shoulder width each side (m)	**1.5**	Shoulder	**Granular / earthen**
BC thickness (mm)	**40**	DBM thickness (mm)	**60**
WMM thickness (mm)	**250**	GSB thickness (mm)	**200**
Subgrade thickness (mm)	**500**	Average embankment height (m)	**1**
Average cutting depth (m)	**0**	Side slope (H : 1V)	**2**
Width of land to clear (m)	**30**	Road marking (centre + edge lines)	**Yes**