SUB HEAD : 16.0
ROAD WORK

SUB HEAD : 16.0

16.0 ROAD WORK

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.1	**Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.**				
	Details of cost for 100sqm. (A) preparation of subgrade. Earth work in excavation including dressing etc. 100sqm.x22.5cm (average depth) = 22.5cum.				
	LABOUR				
0128	Mate	day	1.80	325.00	585.00
0115	Coolie	day	18.00	318.00	5724.00
0114	Beldar	day	0.27	306.00	82.62
0003	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.05	3000.00	162.00
0113	Chowkidar	day	0.05	322.00	17.39
9999	Sundries	L.S.	6.76	2.12	14.33
	(B) Conslidation of subgrade Roller charges (one roller does 1860 sqm. of conosolidation of sub - grade with road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth or quarry spoils etc. and rerolling the subgrade				
0003	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.05	3000.00	162.00
0113	Chowkidar	day	0.05	322.00	17.39
9999	Sundries	L.S.	6.76	2.12	14.33
	TOTAL				6779.06
	Add 1 % Water charges				67.79
	TOTAL				6846.85 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				961.98
	Total				7808.83 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1171.32
	TOTAL				8980.16
	Cost for 100 sqm.				8980.16
	Cost per sqm.				89.80
	add 1% labour cess				0.90
	Total				90.70
	Say		Per sqm		**90.70**
16.2	**Extra for compaction of earth work in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (proctor density).**				
	LABOUR (Extra to item No.2.3 in Earth work)				
0101	Bhisti Roller charges (one roller does 1860sqm. Of consolidation per day of 8 hours and uses 18 litres diesel)	day	0.17	332.00	56.44
0003	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.01	3000.00	24.00
0113	Chowkidar	day	0.01	322.00	2.58
9999	Sundries	L.S.	1.43	2.12	3.03
	TOTAL				86.05
	Add 1 % Water charges				0.86
	TOTAL				86.91 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				12.21
	Total				99.12 (Y)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 15 % Contractor's profit and overheads on "Y"				14.87
	TOTAL				113.99
	Cost of 10 cum.				113.99
	Cost per cum.				11.40
	add 1% labour cess				0.11
	Total				11.51
	Say		Per cum		**11.50**
16.3	**Supplying and stacking at site.**				
16.3.1	**90 mm to 45 mm size stone aggregate**				
	Details of cost for 1 cum.				
	MATERIAL				
2901	Stone Aggregate (Single size) : 100 mm nominal size	cum	0.10	442.63	44.26
2902	Stone Aggregate (Single size) : 80 mm nominal size	cum	0.65	442.63	287.71
0291	Stone Aggregate (Single size) : 63 mm nominal size	cum	0.25	473.70	118.43
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	1.00	178.19	178.19
	Total				628.59
	Add 1 % Water charges				6.29
	TOTAL				634.87 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				89.20
	Total				724.07 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				108.61
	TOTAL				832.68
	Cost for 1 cum				832.68
	add 1% labour cess				8.33
	Total				841.01
	Say				**841.00**
16.3.2	**63 mm to 45 mm size stone aggregate**				
	Details of cost for 1 cum.				
	MATERIAL				
2902	Stone Aggregate (Single size) : 80 mm nominal size	cum	0.10	442.63	44.26
0291	Stone Aggregate (Single size) : 63 mm nominal size	cum	0.65	473.70	307.91
0292	Stone Aggregate (Single size) : 50 mm nominal size	cum	0.25	473.70	118.43
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	1.00	178.19	178.19
	Total				648.78
	Add 1 % Water charges				6.49
	TOTAL				655.27 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				92.07
	Total				747.34 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				112.10
	TOTAL				859.44
	Cost for 1 cum				859.44
	add 1% labour cess				8.59
	Total				868.03
	Say				**868.00**
16.3.3	**53 mm to 22.4 mm size stone aggregate**				
	Details of cost for 1 cum.				
	MATERIAL				
0291	Stone Aggregate (Single size) : 63 mm nominal size	cum	0.05	473.70	23.69

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
0292	Stone Aggregate (Single size) : 50 mm nominal size	cum	0.30	473.70	142.11
0293	Stone Aggregate (Single size) : 40 mm nominal size	cum	0.65	486.92	316.50
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	1.00	178.19	178.19
	Total				660.48
	Add 1 % Water charges				6.60
	TOTAL				667.09 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				93.73
	Total				760.81 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				114.12
	TOTAL				874.94
	Cost for 1 cum				874.94
	add 1% labour cess				8.75
	Total				883.69
	Say				**883.70**
16.3.4	**Over burnt (Jhama) brick aggregate 120 mm to 40 mm**				
	Details of cost for 1 cum.				
	MATERIAL				
2908	Over burnt (Jhama) Brick Aggregate: 120 mm to 40 mm size	cum	1.00	1222.00	1222.00
2260	Carriage of Brick aggregate	cum	1.00	178.19	178.19
	Total				1400.19
	Add 1 % Water charges				14.00
	TOTAL				1414.19 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				198.69
	Total				1612.89 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				241.93
	TOTAL				1854.82
	Cost for 1 cum				1854.82
	add 1% labour cess				18.55
	Total				1873.37
	Say				**1873.40**
16.3.5	**Over burnt (Jhama) brick aggregate 90 mm to 45 mm**				
	Details of cost for 1 cum.				
	MATERIAL				
2909	Over burnt (Jhama) Brick Aggregate: 90 mm to 40 mm size	cum	1.00	1222.00	1222.00
2260	Carriage of Brick aggregate	cum	1.00	178.19	178.19
	Total				1400.19
	Add 1 % Water charges				14.00
	TOTAL				1414.19 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				198.69
	Total				1612.89 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				241.93
	TOTAL				1854.82
	Cost for 1 cum				1854.82
	add 1% labour cess				18.55
	Total				1873.37
	Say				1873.40
16.3.6	**Stone screening 13.2 mm nominal size (Type A)**				
	Details of cost for 1 cum.				
	MATERIAL				
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	0.05	686.05	34.30
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	0.80	657.91	526.33

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2903	Stone chippings/ screenings 4.75 mm nominal size	cum	0.15	249.22	37.38
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	1.00	0.00	0.00
	TOTAL				598.01
	Add 1 % Water charges				5.98
	TOTAL				603.99 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				84.86
	Total				688.85 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				103.33
	TOTAL				792.18
	Cost for one cum.				792.18
	add 1% labour cess				7.92
	Total				800.10
	Say				800.10
16.3.7	**Stone screening 11.2 mm nominal size (Type B)**				
	Details of cost for 1 cum.				
	MATERIAL				
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	0.10	657.91	65.79
2903	Stone chippings/ screenings 4.75 mm nominal size	cum	0.75	249.22	186.92
2904	Stone chippings/ screenings 150 micron nominal size	cum	0.15	234.89	35.23
2202	Carriage of Stone aggregate below 40 mm	cum	0.85	0.00	0.00
2267	Carriage of Stone dust	cum	0.15	163.93	24.59
	TOTAL				312.53
	Add 1 % Water charges				3.13
	TOTAL				315.65 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				44.35
	Total				360.00 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				54.00
	TOTAL				414.00
	Cost for one cum.				414.00
	add 1% labour cess				4.14
	Total				418.14
	Say				418.10
16.3.8	**Red bajri**				
	Details of cost for 1 cum.				
	MATERIAL				
0304	Bajri	cum	1.00	1000.00	1000.00
2311	Carriage of Red bajri	cum	1.00	163.93	163.93
	TOTAL				1163.93
	Add 1 % Water charges				11.64
	TOTAL				1175.57 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				165.17
	Total				1340.74 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				201.11
	TOTAL				1541.85
	Cost for one cum.				1541.85
	add 1% labour cess				15.42
	Total				1557.27
	Say				1557.30
16.3.9	**Good earth**				
	Details of cost for 1 cum.				
	Excavation :				
	LABOUR				
0114	Beldar	day	0.18	306.00	54.16
0115	Coolie	day	0.17	318.00	53.11

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
0979	Royalty for good earth	cum	1.00	33.00	33.00
2241	Carriage of Good earth by mechanical transport upto 3 km lead	cum	1.00	0.00	0.00
	TOTAL				140.27
	Add 1 % Water charges				1.40
	TOTAL				141.67 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				19.90
	Total				161.58 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				24.24
	TOTAL				185.81
	Cost per cum.				185.81
	add 1% labour cess				1.86
	Total				187.67
	Say				**187.70**
16.3.10	**Moorum**				
	Details of cost for 1 cum.				
	MATERIAL				
0810	Moorum	cum	1.00	158.35	158.35
2265	Carriage of Moorum	cum	1.00	163.93	163.93
	TOTAL				322.28
	Add 1 % Water charges				3.22
	TOTAL				325.50 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				45.73
	Total				371.24 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				55.69
	TOTAL				426.92
	Cost for one cum.				426.92
	add 1% labour cess				4.27
	Total				431.19
	Say				431.20
16.4	**Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road / vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate, watering and compacting to the required density**				
	LABOUR				
0114	Beldar	day	0.26	306.00	79.56
0115	Coolie	day	0.26	318.00	82.68
0101	Bhisti	day	0.26	332.00	86.32
	Roller charges (one roller does 30 cum consolidation per day of 8 hours and uses 18 litres of diesel oil).				0.00
0003	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.03	3000.00	99.00
0113	Chowkidar	day	0.03	322.00	10.63
9999	Sundries	L.S.	2.73	2.12	5.79
	TOTAL				363.97
	Add 1 % Water charges				3.64
	TOTAL				367.61 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				51.65
	Total				419.26 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				62.89
	TOTAL				482.15
	Cost for 1 cum				482.15
	add 1% labour cess				4.82
	Total				486.97
	Say				487.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.5	**Laying water bound macadam sub-base with brick aggregate and binding material, earth etc. including screening, sorting and spreading to template and consolidation with light power road-roller etc. complete.(payment for brick aggregate and moorum etc. to be made separately)**				
16.5.1	Over burnt (Jhama) brick aggregate 120 mm to 40 mm				
	Details of cost for 1 cum.				
	LABOUR				
0114	Beldar	day	0.35	306.00	107.10
0115	Coolie	day	0.26	318.00	82.68
0101	Bhisti	Day	0.18	332.00	59.76
	Roller charges (one roller does 230cum. consolidation per day of 8 hours and uses 18 litres of diesel oil)				0.00
0003	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.00	3000.00	12.00
0113	Chowkidar	day	0.00	322.00	1.29
9999	Sundries	L.S.	2.73	2.12	5.79
	TOTAL				268.62
	Add 1 % Water charges				2.69
	TOTAL				271.30 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				38.12
	Total				309.42 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				46.41
	TOTAL				355.83
	Cost for one cum.				355.83
	add 1% labour cess				3.56
	Total				359.39
	Say				359.40
16.5.2	**Over burnt (Jhama) brick aggregate 90 mm to 45 mm**				
	Details of cost for 1 cum.				
	LABOUR				
114	Beldar	day	0.35	306.00	107.10
115	Coolie	day	0.26	318.00	82.68
101	Bhisti	day	0.18	332.00	59.76
	Roller charges (one roller does 230cum. consolidation per day of 8 hours and uses 18 litres of diesel oil)				0.00
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.00	3000.00	12.00
113	Chowkidar	day	0.00	322.00	1.29
9999	Sundries	L.S.	2.73	2.12	5.79
	TOTAL				268.62
	Add 1 % Water charges				2.69
	TOTAL				271.30 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				38.12
	Total				309.42 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				46.41
	TOTAL				355.83
	Cost for one cum.				355.83
	add 1% labour cess				3.56
	Total				359.39
	Say				359.40

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.6	**Supplying, stacking and Spreading 6 mm thick red bajri, watering and rolling complete including preparation of the surface and rolling.**				
16.6.1	**With road roller/ hand roller**				
	Details of cost for 6 mm thick and 100 sqm area = 0.60 cum. (A) Supplying and stacking of Red bajri at site.				
	MATERIAL				
0304	Bajri	cum	0.60	1000.00	600.00
2311	Carriage of Red bajri	cum	0.60	163.93	98.36
	(B) Spreading of red bajri				0.00
	LABOUR				0.00
0114	Beldar	day	0.54	306.00	165.24
0101	Bhisti	day	0.54	332.00	179.28
	Roller charges (one roller does 1860sqm consolidation per day of 8 hours and uses 18 litres of diesel oil).				0.00
0003	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.05	3000.00	162.00
0113	Chowkidar	day	0.05	322.00	17.39
	TOTAL				1222.27
	Add 1 % Water charges				12.22
	TOTAL				1234.49 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				173.45
	Total				1407.93 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				211.19
	TOTAL				1619.12
	Cost for 100 sqm.				1619.12
	Cost per sqm.				16.19
	add 1% labour cess				0.16
	Total				16.35
	Say				16.40
16.7	**Brick edging in full brick width and half brick depth including excavation, refilling and disposal of surplus earth lead upto 50 metres.**				
16.7.1	**With common burnt clay F.P.S. (non modular) bricks of class designation 7.5**				
	Details of cost for 10m. MATERIAL				
2602	Common burnt clay F.P.S. (non modular) bricks class designation 7.5including 12% wastage	1000 Nos	0.16	4852.00	776.32
2201	Carriage of Bricks	1000 Nos	0.16	0.00	0.00
	LABOUR				
123	Mason (brick layer) 1st class	day	0.17	413.00	70.21
124	Mason (brick layer) 2nd class	day	0.17	369.00	62.73
115	Coolie	day	0.35	318.00	111.30
9999	Removal of rubbish	L.S.	17.94	2.12	38.03
9999	Sundries	L.S.	8.97	2.12	19.02
	TOTAL				1077.61
	Add 1 % Water charges				10.78
	TOTAL				1088.39 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				152.92
	Total				1241.30 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				186.20
	TOTAL				1427.50
	Cost for 10m.				1427.50
	Cost per m.				142.75
	add 1% labour cess				1.43
	Total				144.18
	Say				144.20

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.8	**Brick edging laid lengthwise with half brick depth including excavation, refilling and disposal of surplus earth lead upto 50 metres :**				
16.8.1	**With common burnt clay F.P.S. (non modular) bricks of class designation 7.5**				
	Details of cost for 10m.				
	MATERIAL				
2602	Common burnt clay F.P.S. (non modular) bricks class designation 7.5 including 12% wastage	1000 Nos	0.05	4852.00	237.75
2201	Carriage of Bricks	1000 Nos	0.05	0.00	0.00
	LABOUR				0.00
0123	Mason (brick layer) 1st class	day	0.04	413.00	16.52
0124	Mason (brick layer) 2nd class	day	0.04	369.00	14.76
0115	Coolie	day	0.09	318.00	28.62
9999	Removal of rubbish	L.S.	4.16	2.12	8.82
	TOTAL				306.47
	Add 1 % Water charges				3.06
	TOTAL				309.53 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				43.49
	Total				353.02 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				52.95
	TOTAL				405.97
	Cost for 10m.				405.97
	Cost per m.				40.60
	add 1% labour cess				0.41
	Total				41.00
	Say				41.00
16.9	**Scarifying metalled (water-bound) road surface including disposal of rubbish, lead upto 50 m and consolidation of the aggregate received from scarifying with power road roller of 8 to 10 tonne capacity.**				
	Details of cost for 100sqm. LABOUR				
0114	Beldar	day	1.35	306.00	413.10
0115	Coolie Consolidation of scarified material 100sqm.x50mm = 5cum + Less 20% wastage = 1 cum. = 4 cum.	day	1.08	318.00	343.44
0003	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.13	3000.00	396.00
0113	Chowkidar	day	0.13	322.00	42.50
9999	Sundries	L.S.	5.46	2.12	11.58
	TOTAL				1206.62
	Add 1 % Water charges				12.07
	TOTAL				1218.69 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				171.23
	Total				1389.91 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				208.49
	TOTAL				1598.40
	Cost for 100 sqm.				1598.40
	Cost per sqm.				15.98
	add 1% labour cess				0.16
	Total				16.14
	Say				**16.10**
16.10	**Making bajri path including preparation of subgrade, supplying and laying brick aggregate of 50 mm nominal size 7.5 cm deep with blinding material consisting of 12 mm moorum and 12 mm red bajri consolidated with road roller.**				
	Details of cost for 100sqm.				
	Earth work in excavation including dressing etc 100x0.075=7.5cum.				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹	
2.6.1	(Rate as per item no.2.6.1 of S.H. Earth work) Collection and stacking of brick aggregate 53mm nominal size 100x0.075 =7.50cum	cum	7.50	331.65	2487.40	(A)
0286	Brick Aggregate (Single size) : 50 mm nominal size	cum	7.50	1351.00	10132.50	
2260	Carriage of Brick aggregate Supply staking Red Bajri 100x0.012= 1.2 cum	cum	7.50	178.19	1336.43	
16.3.8	Rate as per Item Number 16.3.8 of SH: Road Work Collection and stacking of moorum at site 100x0.012 = 1.20cum.	cum	1.20	1541.85	1850.22	(A)
16.3.10	Rate as per Item Number 16.3.10 of SH: Road Work Spreading and consolidation of brick aggregate and blinding material etc	cum	1.20	426.92	512.31	(A)
	LABOUR					
114	Beldar	day	1.95	306.00	596.70	
115	Coolie	day	2.63	318.00	836.34	
101	Bhisti	day	1.35	332.00	448.20	
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.14	3000.00	405.00	
113	Chowkidar	day	0.14	322.00	43.47	
9999	Sundries Spreading of red bajri, watering and rolling	L.S.	20.15	2.12	42.72	
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.05	3000.00	162.00	
113	Chowkidar	day	0.05	322.00	17.39	
	TOTAL				18870.66	
	Add 1 % Water charges on all except (A)				140.21	
	TOTAL				19010.87	
	Add GST 12% on "X" except all (A) (multiplying factor 0.1405)				1989.61	
	Total				21000.48	
	Add 15 % Contractor's profit and overheads on all except (A)				2422.58	
	Cost for 100 sqm.				23423.07	
	Cost per sqm.				234.23	
	add 1% labour cess				2.34	
	Total				236.57	
	Say				236.60	
16.11	**Dry stone pitching 22.5 cm thick including supply of stones and preparing surface complete.**					
	Details of cost for 10 sqm.					
	MATERIAL					
1158	Stone for pitching 15 cm x 22.5 cm	cum	2.25	600.00	1350.00	
2216	Carriage of Stone blocks white & red sand stone & kota stone slab 2.25x2245/1000 = 5.05 t	tonne	5.05	145.72	735.89	
	LABOUR				0.00	
123	Mason (brick layer) 1st class	day	1.08	413.00	446.04	
124	Mason (brick layer) 2nd class	day	1.08	369.00	398.52	
114	Beldar	day	2.15	306.00	657.90	
115	Coolie	day	1.61	318.00	511.98	
9999	Sundries	L.S.	6.76	2.12	14.33	
	TOTAL				4114.66	
	Add 1 % Water charges				41.15	
	TOTAL				4155.80	(X)
	Add GST 12% on "X" (multiplying factor 0.1405)				583.89	
	Total				4739.69	(Y)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 15 % Contractor's profit and overheads on "Y"				710.95
	TOTAL				5450.65
	Cost for 10 sqm.				5450.65
	Cost per sqm.				545.06
	add 1% labour cess				5.45
	Total				550.52
	Say				**550.50**
16.12	**Dry brick pitching half brick thick in drains including supply of bricks and preparing the surface complete :**				
16.12.1	**With common burnt clay F.P.S. (non modular) bricks of class designation 7.5**				
	Details of cost for 10 sqm.				
	MATERIAL				
2602	Common burnt clay F.P.S. (non modular) bricks class designation 7.5	1000 Nos	0.65	4852.00	3129.54
2201	Carriage of Bricks	1000 Nos	0.65	0.00	0.00
	LABOUR				0.00
123	Mason (brick layer) 1st class	day	0.40	413.00	165.20
124	Mason (brick layer) 2nd class	day	0.40	369.00	147.60
114	Beldar	day	1.08	306.00	330.48
	TOTAL				3772.82
	Add 1 % Water charges				37.73
	TOTAL				3810.55 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				535.38
	Total				4345.93 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				651.89
	TOTAL				4997.82
	Cost for 10 sqm.				4997.82
	Cost per sqm				499.78
	add 1% labour cess				5.00
	Total				504.78
	. Say				**504.80**
16.13	**Cutting road and making good the same including supply of extra quantities of materials i.e. aggregate, moorum screening, red bajri and labour required.**				
16.13.1	**Bituminous Portion**				
	Details of cost for 1.08cum.				
	(road 6 metreswide, 0.6 metre length wise and 0.30m (average depth) volume = 1.08 cum).				
	MATERIAL				
	Supplying and stacking stone aggregate 53mm to 24 mm nominal size at site.				
16.3.3	Rate as per Item Number 16.3.3 of SH: Road Work Supplying and stacking red bajri at site	cum	0.09	874.94	78.74 (A)
16.3.8	Rate as per Item Number 16.3.8 of SH: Road Work Supplying and stacking moorum at site	cum	0.02	1541.85	35.46 (A)
16.3.10	Rate as per Item Number 16.3.10 of SH: Road Work	cum	0.02	426.92	9.39 (A)
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	0.09	657.91	60.53
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	0.09	0.00	0.00
309	Paving bitumen VG-10 of approved quality	tonne	0.01	48902.00	537.92
2211	Carriage of Tar bitumen	tonne	0.01	163.93	1.80
	LABOUR				
	For cutting road and taking out soling and metalling including sorting and screening				
114	Beldar	day	0.96	306.00	293.76

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
115	Coolie	day	0.48	318.00	152.64
	Relaying soling stone 3.6x0.15=0.54cum.				
114	Beldar	day	0.24	306.00	73.44
115	Coolie Relaying road metal with extra quantity and consolidation to 0.10m, thickness 3.6x0.10=0.36cum.	day	0.24	318.00	76.32
114	Beldar	day	0.71	306.00	217.26
115	Coolie	day	0.48	318.00	152.64
101	Bhisti Painting two coats, 3.6sqm. including labour for spreading grit	day	0.10	332.00	33.20
114	Beldar	day	0.48	306.00	146.88
115	Coolie	day	0.48	318.00	152.64
9999	Barrier, chowkidar, sprayman, mate, etc.	L.S.	40.43	2.12	85.71
	TOTAL				2108.34
	Add 1 % Water charges on all except (A) i.e. on (2242.87 - 187.78) = 2055.09				19.85
	TOTAL				2128.19 (X)
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				281.65
	Total				2409.84 (Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A) i.e. on (2263.42 - 187.78) = 2075.64				342.94
	Cost for 1.08 cum.				2752.77
	Cost per cum.				2548.86
	add 1% labour cess				25.49
	Total				2574.35
	. Say				**2574.40**
16.13.2	**Water bound macadam**				
	Details of cost for 0.90cum.				
	Consider a road 6 metres wide and 0.6m. lengthwise and 0.25m cm average depth =0.90cum.				
	MATERIAL				
	Supplying and stacking stone aggregate 53mm to 24mm nominal size at site.				
16.3.3	Rate as per Item Number 16.3.3 of SH: Road Work Supplying and stacking red bajri at site	cum	0.09	874.94	78.74 (A)
16.3.8	Rate as per Item Number 16.3.8 of SH: Road Work Supplying and stacking moorum at site.	cum	0.02	1541.85	35.46 (A)
16.3.10	Rate as per Item Number 16.3.10 of SH: Road Work	cum	0.02	426.92	9.39 (A)
	LABOUR				
	For cutting road and taking out soling and metalling including sorting and screening.				
114	Beldar	day	0.48	306.00	146.88
115	Coolie	day	0.24	318.00	76.32
	For relaying soling stone 3.6x0.15=0.54cum.				
114	Beldar	day	0.24	306.00	73.44
115	Coolie	day	0.24	318.00	76.32
	For relaying road metal with extra quantity and consolidation to 0.10m thickness - 3.6x0.10=0.36cum.				
114	Beldar	day	0.48	306.00	146.88
115	Coolie	day	0.48	318.00	152.64
101	Bhisti	day	0.10	332.00	33.20
9999	Barrier and chowkidar etc.	L.S.	53.82	2.12	114.10
	TOTAL				943.38

Code	Description	Unit	Quantity	Rate ₹	Amount ₹	
	Add 1 % Water charges on all except (A) i.e. on (1116.47 - 187.78) = 928.69				8.20	
	TOTAL				951.58	(X)
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				116.33	
	Total				1067.91	(Y)
	Add 15 % Contractor's profit and overheads on 'Y' except (A) i.e. on (1125.76 - 187.78) = 937.98				141.65	
	Cost for 0.90 cum.				1209.55	
	Cost per cum.				1343.95	
	add 1% labour cess				13.44	
	Total				1357.39	
	Say				1357.40	
16.14	**Cutting bajri paths and making good the same including supply of extra quantities of brick aggregate, moorum and red bajri required.**					
	Details of cost for 10 sqm. 10x0.075=0.75cum.					
	MATERIAL					
	Supplying and stacking 50mm brick aggregate at site(extra quantity)					
286	Brick Aggregate (Single size) : 50 mm nominal size	cum	0.19	1197.00	227.43	
2260	Carriage of Brick aggregate Supplying and stacking red bajri at site	cum	0.19	112.79	21.43	
16.3.8	Rate as per Item Number 16.3.8 of SH: Road Supplying and stacking moorum at site	cum	0.06	1514.35	90.86	(A)
16.3.10	Rate as per Item Number 16.3.10 of SH: Road	cum	0.06	643.2	38.59	(A)
	LABOUR					
	For cutting, sorting out, spreading and consolidation of aggregate					
114	Beldar	day	1.60	306.00	489.60	
115	Coolie	day	0.80	318.00	254.40	
	TOTAL				1122.31	
	Add 1 % Water charges on all except (A) i.e. on (1176.58 - 129.45) = 1047.13				9.93	
	TOTAL				1132.24	(X)
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				159.08	
	Total				1291.32	(Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A) i.e. on (1187.05 - 129.45) = 1057.6				174.28	
	Cost for 10 sqm.				1465.60	
	Cost per sqm.				146.56	
	add 1% labour cess				1.47	
	Total				148.03	
	Say				148.00	

16.15 Supplying at site :

16.15.1 R.C.C. Standards post/ struts/rails/ pales of mix 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 12.5 mm nominal size) with wooden plugs or 6mm bar nibs wherever required as per direction of Engineer-in- charge (cost of earth works in excavation, concrete works in foundation to be paid separately).

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 10 posts = 0.336cum Cubical contents of one post Area bottom A1 = (15+12.5)/2 x8.75+½x3.14 x$(6.25)^2$ =120.31+61.38=181.69sqcm. Area bottom A2 = (10+7.5)/2 x6.25+½x 3.14 x$(3.75)^2$ sqm = 54.68+22.08 = 76.76 sqcm. (A1A2)^½ = 118.10sqcm A1+A2+(A1A2))^½ = 0.03766 sqm Volume = (1.05)/3x0.03766 = 0.01316 cum =0.0132cum. Volume of lower and square portion (16.5x16.5x75) / 100^3 = 0.0204cum. Total volume = 0.0132+0.0204 cum '= 0.0336 cum.				
	Qty. for 10 post '= 0.0336x10 '= 0.336cum Cement concrete 1:1.5:3 (1 Cement : 1.5 Coarse sand : 3 graded stone aggregate 12.5mm nominal size)				
4.1.2	Rate as per item no 4.1.2 of S.H. Concrete Work. Extra labour for laying cement concrete in RCC work	cum	0.34	4377.00	1470.67 (A)
114	Beldar	day	0.03	306.00	10.40
101	Bhisti	day	0.07	332.00	22.24
123	Mason (brick layer) 1st class	day	0.01	413.00	5.37
124	Mason (brick layer) 2nd class	day	0.01	369.00	4.80
128	Mate	day	0.01	325.00	4.23
	M.S. Reinforcement 6mm dia. bars 10x4x1.88m = 75.20m+ 10x9x0.50m =45.00m = 120.20m 120.20m@0.22kg/m =26.44kg.				
5.22.2	Rate as per Item No.5.22.2 of SH: Reinforced cement concrete work Centering and shuttering	kg	26.44	93.52	2472.69 (A)
5.9.1	Rate as per item No.5.9.1 of SH : Reinforced cement concrete work6mm C.Plaster 1:2 (1 Cement : 2 fine sand) Details of cost for 9.88 sqm. (0.072)/10x9.88 = 0.071	sqm	6.99	209.47	1464.21 (A)
367	Portland Cement (OPC-43 grade)	tonne	0.05	4408.00	220.40
2209	Carriage of Cement	tonne	0.05	145.72	7.29
983	Fine sand (zone IV)	cum	0.07	141.85	9.93
2261	Carriage of Fine sand (1 : 2)		0.07	163.93	11.48
	LABOUR				
114	Beldar	day	0.05	306.00	15.30
101	Bhisti	day	0.02	332.00	6.64
155	Mason (average)	day	0.64	369.00	236.16
115	Coolie	day	0.80	332.00	265.60
101	Bhisti	day	0.27	332.00	89.64
9999	Hire and running charges of mixer	L.S.	1.95	2.12	4.13
9999	Extra for removing burr, cleaning with wire brushes, pock making with pointed tool etc. complete	L.S.	13.26	2.12	28.11
9999	Scaffolding and sundries	L.S.	11.57	2.12	24.53
9977	Carriage of RCC posts		53.82	2.12	114.10
9999	Wooden plugs or 6mm bar nibs	L.S.	12.22	2.12	25.91
9999	Sundries	L.S.	13.52	2.12	28.66
	TOTAL				6542.49
	Add 1 % Water charges on all except (A) i.e. on (6430.91 - 5109.94) = 1320.97				11.35
	TOTAL				6553.84 (X)
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				161.05
	TOTAL				6714.89 (Y)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 15 % Contractor's profit and overheads on "Y" all except (A) i.e. on (6444.12 '- 5109.94) = 1334.18				196.10
	Cost for 0.336 cum				6910.98
	Cost for one cum				20568.40
	add 1% labour cess				205.68
	Total				20774.09
	Say				20774.10
16.15.2	**Welded steel wire fabric of required width having rectangular mesh painted with two or more coats of enamel paint of approved shade over a coat of primer (Priming & Painting to be paid for separately).**				
	Details of cost for 27 sqm (209.25 kg).				
	MATERIAL				
	Steel wire fabric 0.9m wide rectangular mesh 75x25mm size weight not less than 7.75kg/sqm. 30x0.9 = 27sqm				
1021	Hard drawn steel wire fabric	sqm	27.00	430.00	11610.00
2314	Carriage of Barbed wire 7.75x27=209.25kg=0.209tonne	tonne	0.21	145.72	30.46
	TOTAL				11640.46
	Add 1 % Water charges				116.40
	TOTAL				11756.86 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1651.84
	Total				13408.70 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2011.30
	Cost for 209.25 kg				15420.00
	Cost per kg.				73.69
	add 1% labour cess				0.74
	Total				74.43
	Say				74.40
16.16	**Supplying and fixing turn buckles and straining bolts for barbed wire fencing.**				
	Details of cost for one set				
	MATERIAL				
1030	Galvanised steel turn buckles	each	1.00	25.00	25.00
1028	Straining bolts	each	1.00	80.00	80.00
9977	Carriage of turn buckles and straining bolts	L.S.	2.73	2.12	5.79
	Labour for fixing straining bolts and turn buckles				
103	Blacksmith 2nd class	day	0.10	369.00	36.90
	TOTAL				147.69
	Add 1 % Water charges				1.48
	TOTAL				149.16 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				20.96
	Total				170.12 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				25.52
	Cost per set				195.64
	add 1% labour cess				1.96
	Total				197.60
	Say				197.60
16.17	**Fencing with R.C.C. post placed at required distance, embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post one side only, provided with horizontal lines and two diagonals of barbed wire weighing 9.38 kg per 100 metres (minimum), between the two posts fitted and fixed with G.I. staples on wooden plugs or G.I. binding wire tied to 6 mm bar nibs fixed while casting the post (cost of R.C.C. posts, struts, earth work and concrete to be paid for separately) :- Payment to be made per metre cost of total length of barbed wire used**				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.17.1	**With G.I. barbed wire**				
	Details of cost for 30m				
	MATERIAL				
	G.I. barbed wire 30x9 = 270m + 10x6.32 = 63m				
	Total = 333m 333m @9.38kg/100m =31.24kg = 0.31q				
1029	Galvanised steel barbed wire	quintal	0.31	5500.00	1705.00
2314	Carriage of Barbed wire	tonne	0.03	145.72	4.37
9999	G.I. staples or binding wire	L.S.	49.40	2.12	104.73
	LABOUR				
	Labour for fixing costs in line, fixing and stretching wire				
123	Mason (brick layer) 1st class	day	0.12	413.00	49.56
124	Mason (brick layer) 2nd class	day	0.12	369.00	44.28
114	Beldar	day	0.50	306.00	153.00
102	Blacksmith 1st class	day	0.50	413.00	206.50
103	Blacksmith 2nd class	day	0.50	369.00	184.50
9999	Sundries	L.S.	13.52	2.12	28.66
	TOTAL				2480.60
	Add 1 % Water charges				24.81
	TOTAL				2505.41 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				352.01
	Total				2857.42 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				428.61
	Cost for 333m				3286.03
	Cost per m				9.87
	add 1% labour cess				0.10
	Total				9.97
	Say				10.00
16.18	**Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires, of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples, turn buckles etc. complete. (Cost of posts, struts, earth work and concrete work to be paid for separately). Payment to be made per metre cost of total length of barbed wire used.**				
16.18.1	**With G.I. barbed wire**				
	Details of cost for 30m				
	MATERIAL				
	G.I. barbed wireb 30x9 = 270.00m				
	2x10x(12+32)1/2 = 63.24 '= 333.24m 333.24m				
	@ 9.38kg/100m '=31.26 kg say 0.31 q				
1029	Galvanised steel barbed wire	quintal	0.31	5500.00	1705.00
2314	Carriage of Barbed wire Supplying and fixing Turn buckle & staple	tonne	0.03	145.72	4.52
16.16	Rate as per Item Number 16.16 of SH: Road Work	each set	10.00	195.64	1956.40 (A)
9999	G.I. staples Labour for fixing posts in line and fixing and stretching wire:	L.S.	49.40	2.12	104.73
123	Mason (brick layer) 1st class	day	0.12	413.00	49.56
124	Mason (brick layer) 2nd class	day	0.12	369.00	44.28
114	Beldar	day	0.50	306.00	153.00
102	Blacksmith 1st class	day	0.50	413.00	206.50
103	Blacksmith 2nd class	day	0.50	369.00	184.50
	TOTAL				4408.49
	Add 1 % Water charges on all except (A)				24.52
	TOTAL				4433.01 (X)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				347.96
	TOTAL				4780.97 (Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A) i.e. on (3867.92 -1504.50)'= 2363.42				423.69
	TOTAL				5204.66
	Cost for 333.24m Cost per m				15.62
	add 1% labour cess				0.16
	Total				15.77
	Say				15.80
16.19	**Supplying at site Angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling holes upto 10 mm dia. etc. complete.**				
	Details of cost for 1 qunital				
	MATERIAL				
	M.S. angle = 1.00 qtl. Add 5% wastage = 0.05 qtl.Total = =1.05 qtl				
1007	Structurals such as tees,angles channels and R.S. joists	quintal	1.05	5640.00	5922.00
2205	Carriage of Steel	tonne	0.11	145.72	15.30
	LABOUR				
103	Blacksmith 2nd class	day	0.75	369.00	276.75
114	Beldar	day	0.50	306.00	153.00
	For spotting, bending of angle and drilling holes etc. :				
103	Blacksmith 2nd class	day	1.00	369.00	369.00
114	Beldar	day	1.00	306.00	306.00
9999	Sundries such as drilling bit etc.	L.S.	19.76	2.12	41.89
	TOTAL				7083.94
	Add 1 % Water charges				70.84
	TOTAL				7154.78 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1005.25
	Total				8160.03 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1224.00
	Cost for 1 qunital				9384.03
	Cost of one kg				93.84
	add 1% labour cess				0.94
	Total				94.78
	Say				94.80
16.20	**Welded steel wire fabric fencing with posts of specified material and of standard design placed and embedded in cement concrete blocks 45x45x 60 cm of mix 1:5:10 (1 cement:5 fine sand : 10 graded stone aggregate 40 mm nominal size), every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and struts embedded in cement concrete blocks 70x45x50 cm of the same mix, provided with welded steel wire fabric fixed between the posts fitted and fixed with G.I. staples on wooden plugs or tied to 6 mm bar nibs with G.I. binding wire (cost of posts, welded steel wire fabric, painting, earth work in excavation and concrete to be paid for separately).**				
	Details of cost for 30 metres i.e.30x1.20 =36.00sqm				
	Labour for fixing posts in line fixing and stretching - welded wire fabric :				
123	Mason (brick layer) 1st class	day	0.12	413.00	49.56
124	Mason (brick layer) 2nd class	day	0.12	369.00	44.28
114	Beldar	day	0.50	306.00	153.00
102	Blacksmith 1st class	day	0.50	413.00	206.50
103	Blacksmith 2nd class	day	0.50	369.00	184.50
9999	G.I. staple or binding wire	L.S.	53.82	2.12	114.10

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
9999	Sundries	L.S.	53.82	2.12	114.10
	TOTAL				866.04
	Add 1 % Water charges				8.66
	TOTAL				874.70 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				122.89
	Total				997.59 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				149.64
	Cost for 36 sqm				1147.23
	Cost per sqm				31.87
	add 1% labour cess				0.32
	Total				32.19
	Say				32.20
16.21	**Engraving letters in hard stone**				
	Details of cost for 6 letters 8 cm height				
	LABOUR				
	For Engraving stone-				
126	Mason (for ornamental stone work) 1st class	day	0.38	413.00	156.94
9999	Sundries	L.S.	6.76	2.12	14.33
	TOTAL				171.27
	Add 1 % Water charges				1.71
	TOTAL				172.98 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				24.30
	Total				197.29 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				29.59
	Cost of 6 letters of 8cm heights				226.88
	Cost per cm. height per letter				4.73
	add 1% labour cess				0.05
	Total				4.77
	Say				4.80
16.22	**Providing and fixing 15x15x90 cm boundary stone of hard stone with top 30 cm chisel dressed on all four sides including top (cost of excavation, refilling and concrete etc. to be paid for separately).**				
	Details of cost for one stone				
1151	Boundry stone top chisel dressed 15x15x90 cm	each	1.00	80.00	80.00
	Labour for fixing				
114	Beldar	day	0.12	306.00	36.72
9977	Carriage to site	L.S.	4.16	2.12	8.82
	TOTAL				125.54
	Add 1 % Water charges				1.26
	TOTAL				126.79 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				17.81
	Total				144.61 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				21.69
	Cost of each.				166.30
	add 1% labour cess				1.66
	Total				167.96
	Say				168.00
16.23	**Providing and fixing 15 cm dia at top, 20 cm at bottom and 90 cm high precast reinforced cement concrete 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) boundary stone as per standard design, including finishing smooth with cement mortar 1:3 (1 cement : 3 fine sand) (cost of excavation, refilling and concreting to be paid for separately).**				
	Details of cost for one stone				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	(i) Cement concrete 1:1½:3 (1 cement : 1½ Coarse sand : 3 graded stone aggregate 20mm nominal size) Volume of frustum of cone: L/3 x [A1+A2+sqrt(A1A2)] = 0.825/3 x [$0.095^2+0.075^2$ + sqrt(0.095 x 0.075^2)]x3.142 =0.01882 (A) Volume of hemi sphere: ½ x 4 /3 x PI x r^3 =½x(4/3)x(22/7)x0.075^3=0.00100 (B) Total volume = A+B = 0.01982 Say 0.02cum				
4.1.2	Rate as per item no 4.1.2 of S.H. Concrete Work.	cum	0.02	4377.00	87.54 (A)
	(ii) Extra for laying cement concerte in RCC work				
	LABOUR				
114	Beldar	day	0.00	306.00	0.61
101	Bhisti	day	0.00	332.00	1.33
123	Mason (brick layer) 1st class	day	0.00	413.00	0.33
124	Mason (brick layer) 2nd class	day	0.00	369.00	0.30
128	Mate	day	0.00	325.00	0.26
	(iii) M.S. reinforcement- 6mm dia. Bar 5.99 metre =5.99x0.22 =1.32kg.				
5.22.1	Rate as per item no. 5.22.1 of SH : RCC work	kg	1.32	93.52	123.45 A
	(iv) Centering and shuttering- 1/2x3.142 (0.19+0.15)x0.825 =0.441 + 3.142/4$(0.19)^2$ =0.028 + 1/2x4x3.142$(0.075)^2$ = 0.035 = 0.504 Say 0.50sqm.				
5.9.1	Rate as per item No.5.9.1 of SH : Reinforced cement concrete work	sqm	0.50	209.47	104.74 A
	(v) 6mm cement plaster 1:3 (1 Cement : 3 fine sand)- 1/2x3.142 (0.19+0.15)x0.825 =0.44 +3.142/4$(0.19)^2$ =0.028 + 1/2x4x3.142$(0.075)^2$ = 0.035 = 0.504 Say 0.50sqm				
	. MATERIAL				
367	Portland Cement (OPC-43 grade)	tonne	0.00	4408.00	7.93
2209	Carriage of Cement	tonne	0.00	145.72	0.26
983	Fine sand (zone IV)	cum	0.04	141.85	5.46
2261	Carriage of Fine sand (1 part badarpur sand : 2 parts jamuna sand)	cum	0.04	163.93	6.31
	Labour for mortar				
114	Beldar	day	0.00	306.00	0.83
101	Bhisti	day	0.00	332.00	0.07
9999	Hire and running charges of mixer	L.S.	0.10	2.12	0.21
9999	Sundries	L.S.	0.05	2.12	0.11
	Labour for plaster				
155	Mason (average)	day	0.03	369.00	9.59
115	Coolie	day	0.04	318.00	12.08
101	Bhisti	day	0.05	332.00	15.27
9999	Extra for removing burr	L.S.	0.68	2.12	1.44
9999	Scaffolding, sundries etc.	L.S.	0.60	2.12	1.27
	(vi) Labour for fixing				
114	Beldar	day	0.12	306.00	36.72
9977	Carriage to site	L.S.	4.16	2.12	8.82
	TOTAL				424.93
	Add 1 % Water charges on all except (A) i.e. on (435.36 - 288.47) = 146.89				1.09
	TOTAL				426.02 (X)
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				15.50

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	TOTAL				441.52 (Y)
	Add 15 % Contractor's profit and overheads on all except (A) i.e. on (436.83 - 288.47) = 148.36				18.87
	Cost of each.				460.39
	add 1% labour cess				4.60
	Total				464.99
	Say				**465.00**
16.24	**Providing and fixing precast reinforced cement concrete 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) kilometre stone as per standard design, including finishing smooth in 1:3 cement mortar (1 cement : 3 fine sand) but excluding the cost of earth work, concrete in foundation, painting and lettering etc. which shall be paid for separately.**				
16.24.1	**35x111x25 cm size**				
	Details of cost for one stone				
	(i) Cement concrete 1:1.5:3 (1 cement :1.5 Coarse sand :3 graded stone aggregate 20mm nominal size) in Kilometre stone 0.35x0.25x0.835m = 0.073 0.37x0.27x0.10m = 0.010 1/2x22/7x(0.175)²x0.25m = 0.012 = 0.095cum Say 0.10cum.				
4.1.2	Rate as per item no 4.1.2 of S.H. Concrete Work.	cum	0.10	4377.00	437.70 (A)
	(ii) Extra for laying cement concrete in RCC work				
114	Beldar	day	0.01	306.00	3.06
101	Bhisti	day	0.02	332.00	6.64
123	Mason (brick layer) 1st class	day	0.00	413.00	1.65
124	Mason (brick layer) 2nd class	day	0.00	369.00	1.48
128	Mate	day	0.00	325.00	1.30
	(iii) M.S. reinforcement- 0.10cum @48.06kg/cum. =4.806kg. Say 4.81kg.				
5.22.1	Rate as per item no. 5.22.1 of SH : Reinforced cement concrete work	kg	4.81	93.52	449.84 (A)
	(iv) Centering and shuttering- (0.35+2x0.25)x0.835 = 0.710 sqm 0.35x0.25 = 0.088sqm (0.37+2x0.27)x0.10 = 0.091sqm 2x0.37x0.01 = 0.007 sqm 2x2x0.25x0.1 = 0.010sqm 1/2x3.142/4x(0.35)² = 0.048sqm 1/2x0.35x0.25x3.142 = 0.138sqm. = 1.092sqm. Say 1.09 sqm				
5.9.1	Rate as per item No.5.9.1 of SH : Reinforced cement concrete work	sqm	1.09	209.47	228.33 (A)
	(v) 6mm cement plaster 1:3 (1 Cement : 3 fine sand)- Qty. as per centering and shuttering = 1.092sqm 0.35x0.835 = 0.292sqm 0.37x0.10 = 0.037sqm 1/2x3.142/4x(0.35)²= 0.048sqm 2x0.37x0.01 = 0.007 sqm = 1.476 sqm Say 1.48 sqm				
367	Portland Cement (OPC-43 grade)	tonne	0.05	4408.00	238.03
2209	Carriage of Cement	tonne	0.05	145.72	7.87
983	Fine sand (zone IV)	cum	0.01	141.85	1.56
2261	Carriage of Fine sand (1 part badarpur sand : 2 parts jamuna sand)		0.01	163.93	1.80
	Labour for mortar				
114	Beldar	day	0.01	306.00	2.45
101	Bhisti	day	0.00	332.00	0.23
9999	Hire and running charges of mixer	L.S.	0.03	2.12	0.06
9999	Sundries	L.S.	0.13	2.12	0.28

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Labour for plaster				
155	Mason (average)	day	0.08	369.00	27.68
115	Coolie	day	0.11	318.00	35.30
101	Bhisti	day	0.14	332.00	45.15
9999	Extra for removing burr	L.S.	1.95	2.12	4.13
9999	Scaffolding, sundries etc.	L.S.	1.82	2.12	3.86
	(vi) Labour for fixing				
114	Beldar	day	0.20	306.00	61.20
9977	Carriage to site	L.S.	13.52	2.12	28.66
	TOTAL				1588.25
	Add 1 % Water charges on all except (A)				4.72
	TOTAL				1592.98 (X)
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				67.03
	TOTAL				1660.01 (Y)
	Add 15 % Contractor's profit and overheads on 'Yexcept (A) i.e. on (436.83 - 288.47) = 148.36				81.62
	Cost per stone				1741.63
	add 1% labour cess				17.42
	Total				1759.05
	Say				1759.10
16.24.2	**50x152.5x25 cm size**				
	Details of cost for one stone (i) Cement concrete 1:1.5:3 (1 cement :1.5 Coarse sand :3 graded stone aggregate 20mm nominal size) 0.50x0.25x1.145m = 0.143cum. + 0.52x0.27x0.13m = 0.018cum. + 1/2x22/7x(0.25)²x0.25m = 0.025cum. = 0.186 cum. Say 0.19cum.				
4.1.2	Rate as per item no 4.1.2 of S.H. Concrete Work.	cum	0.19	4377.00	831.63 (A)
	(ii) Extra for laying cement concrete in RCC work				
114	Beldar	day	0.02	306.00	5.81
101	Bhisti	day	0.04	332.00	12.62
123	Mason (brick layer) 1st class	day	0.01	413.00	3.30
124	Mason (brick layer) 2nd class	day	0.01	369.00	2.95
128	Mate	day	0.01	325.00	2.60
	(iii) M.S. reinforcement- 0.19cum @48.06kg/cum. =9.131kg. Say 9.13 kg.				0.00
5.22.1	Rate as per item no. 5.22.1 of SH : Reinforced cement concrete work	kg	9.13	93.52	853.85 (A)
	(iv) Centering and shuttering- (0.50+2x0.25)x1.145 = 1.145 sqm 1/2x(0.25)²x3.142 = 0.098 3.142(0.25)x(0.25) =0.196 (0.52+2x0.27)x0.13 =0.138 2x0.52x0.01 =0.10 2x2x0.25x0.01 =0.010 1x0.50x0.25 =0.125				
5.9.1	Rate as per item No.5.9.1 of SH : Reinforced cement concrete work	sqm	1.72	209.47	360.29 (A)
	(v) 6mm cement plaster 1:3 (1 Cement : 3 fine sand)- Qty. as per centering and shuttering '= 1.722sqm. + 0.50x1.145 = 0.572 + 0.52x0.13 = 0.068sqm. + 1/2x(0.25)²x3.142 = 0.098 + 2x0.52x001 = 0.010 '= 2.470sqm Sq. 2.47 sqm. =1.722sqm. Say 1.72 sqm				
	MATERIAL				
367	Portland Cement (OPC-43 grade)	tonne	0.09	4408.00	396.72

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2209	Carriage of Cement	tonne	0.09	145.72	13.11
983	Fine sand (zone IV)	cum	0.20	141.85	28.37
2261	Carriage of Fine sand (1 part badarpur sand : 2 parts jamuna sand)		0.20	163.93	32.79
	Labour for mortar				
114	Beldar	day	0.01	306.00	3.98
101	Bhisti	day	0.00	332.00	0.33
9999	Hire and running charges of mixer	day	0.52	2.12	1.10
9999	Sundries		0.26	2.12	0.55
	Labour for plaster				
155	Mason (average)	day	0.13	369.00	46.49
115	Coolie	day	0.19	318.00	58.83
101	Bhisti	day	0.23	332.00	75.36
9999	Extra for removing burr	L.S	3.38	2.12	7.17
9999	Scaffolding, sundries etc.	L.S	2.86	2.12	6.06
	(vi) Labour for fixing				0.00
114	Beldar		0.20	306.00	61.20
9977	Carriage to site		13.52	2.12	28.66
	TOTAL				2833.79
	Add 1 % Water charges on all except (A)				7.88
	TOTAL				2841.67 (X)
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				111.82
	TOTAL				2953.49 (Y)
	Add 15 % Contractor's profit and overheads on 'Yexcept (A)				136.16
	Cost per stone				3089.65
	add 1% labour cess				30.90
	Total				3120.55
	Say				**3120.50**
16.24.3	**35x93.5x18 cm**				
	Details of cost for one stone				
	(i) Cement concrete 1:1.5:3 (1 cement :1.5 Coarse sand :3 graded stone aggregate 20mm nominal size) 0.50x0.25x1.145m = 0.143cum. + 0.52x0.27x0.13m = 0.018cum. + 1/2x22/7x(0.25)²x0.25m = 0.025cum. = 0.186 cum. Say 0.19cum.				
4.1.2	Rate as per item no 4.1.2 of S.H. Concrete Work.	cum	0.06	4377.00	262.62 (A)
	(ii) Extra for laying cement concrete in RCC work				
114	Beldar	day	0.006	306.00	1.84
101	Bhisti	day	0.012	332.00	3.98
123	Mason (brick layer) 1st class	day	0.0024	413.00	0.99
124	Mason (brick layer) 2nd class	day	0.0024	369.00	0.89
128	Mate	day	0.0024	325.00	0.78
	(iii) M.S. reinforcement- 0.19cum @48.06kg/cum. =9.131kg. Say 9.13 kg.				0.00
5.22.1	Rate as per item no. 5.22.1 of SH : Reinforced cement concrete work	kg	2.88	93.52	269.34 (A)
	(iv) Centering and shuttering- (0.50+2x0.25)x1.145 = 1.145 sqm 1/2x(0.25)²x3.142 = 0.098 3.142(0.25)x(0.25) =0.196 (0.52+2x0.27)x0.13 =0.138 2x0.52x0.01 =0.10 2x2x0.25x0.01 =0.010 1x0.50x0.25 =0.125				
5.9.1	Rate as per item No.5.9.1 of SH : Reinforced cement concrete work	sqm	0.81	209.47	169.67 (A)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	(v) 6mm cement plaster 1:3 (1 Cement : 3 fine sand)- Qty. as per centering and shuttering '= 1.722sqm. + 0.50x1.145 = 0.572 + 0.52x0.13 = 0.068sqm. + 1/2x(0.25)²x3.142 = 0.098 + 2x0.52x001 = 0.010 '= 2.470sqm Sq. 2.47 sqm. =1.722sqm. Say 1.72 sqm				
	MATERIAL				
367	Portland Cement (OPC-43 grade)	tonne	0.042	4408.00	185.14
2209	Carriage of Cement	tonne	0.042	145.72	6.12
983	Fine sand (zone IV)	cum	0.009	141.85	1.28
2261	Carriage of Fine sand (1 part badarpur sand : 2 parts jamuna sand)		0.009	163.93	1.48
	Labour for mortar				
114	Beldar	day	0.006	306.00	1.84
101	Bhisti	day	0.0006	332.00	0.20
9999	Hire and running charges of mixer	day	0.60	2.12	1.27
9999	Sundries		0.13	2.12	0.28
	Labour for plaster				
155	Mason (average)	day	0.06	369.00	21.40
115	Coolie	day	0.09	318.00	27.35
101	Bhisti	day	0.11	332.00	34.86
9999	Extra for removing burr	L.S	1.56	2.12	3.31
9999	Scaffolding, sundries etc.	L.S	1.30	2.12	2.76
	(vi) Labour for fixing				0.00
114	Beldar		0.10	306.00	30.60
9977	Carriage to site		13.52	2.12	28.66
	TOTAL				1056.64
	Add 1 % Water charges on all except (A)				3.55
	TOTAL				1060.19 (X)
	Add GST 12% on 'X' except 'A'(multiplying factor 0.1405)				50.38
	TOTAL				1110.56 (Y)
	Add 15 % Contractor's profit and overheads on 'Yexcept (A)				61.34
	Cost per stone				1171.90
	add 1% labour cess				11.72
	Total				1183.62
	Say				**1183.60**
16.25	**Surface dressing on new surface with paving bitumen of grade VG - 10 of approved quality using 2.25 kg of bitumen per sqm with 1.65 cum of stone chippings 13.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity etc. complete:**				
	Details of cost for 100 sqm.				
	MATERIAL				
	Bitumen S-90@2.25kg per sqm. =225 kg = 0.225 tonne.				
309	Paving bitumen VG-10 of approved quality	tonne	0.23	48902.00	11002.95
2211	Carriage of Tar bitumen Stone aggregate 13.2mm nominal size @ 1.65cum. per 100sqm	tonne	0.23	163.93	36.88
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	1.65	686.05	1131.98
2202	Carriage of Stone aggregate below 40 mm nominal size Steam coal for heating bitumen @2 quintal per tonne of bitumen = 2x0.225=0.450q	cum	1.65	0	0.00
370	Coal (steam)	quintal	0.45	440.00	198.00
2200	Carriage of steam coal Labour for cleaning the road surface, heating and spraying bitumen and aggregate	tonne	0.05	187.35	8.43
	(a) For cleaning :				
128	Mate	day	0.11	325.00	35.75

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating and spraying bitumen :				
130	Mistry	day	0.08	306.00	24.48
138	Sprayer (for bitumen, tar etc.)	day	0.11	322.00	35.42
114	Beldar	day	0.93	306.00	284.58
	(c) For screening and spreading aggregate :				
128	Mate	day	0.11	325.00	35.75
114	Beldar	day	0.93	306.00	284.58
115	Coolie	day	1.55	318.00	492.90
	(d) Consolidation Charges				
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52
0003	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
0001	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.12	800	96.00
0007	Hire charges of Coaltar Sprayer	day	0.11	350.00	38.50
	(e) Misc:				
0364	Wire brush	each	0.11	20.00	2.20
0365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	6.76	2.12	14.33
	TOTAL				15070.53
	Add 1 % Water charges				150.71
	TOTAL				15221.24 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2138.58
	Total				17359.82 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2603.97
	TOTAL				19963.79
	Cost for 100 Sqm.				19963.79
	Cost per Sqm.				199.64
	add 1% labour cess				2.00
	Total				201.63
	Say				**201.60**

16.26 Surface dressing on new surface in two coats with bitumen of grade VG -10 of approved quality using 1.8 kg of bitumen per sqm with 1.5 cum of stone chippings 13.2 mm nominal size per 100 sqm of road surface for first coat and 1.1 kg. of bitumen per sqm with 1.00 cu. metre of stone chippings 11.2 mm nominal size per 100 sqm of road surface for second coat, including consolidation of each coat separately with road roller of 6 to 8 tonne capacity etc. complete.

	Details of cost for 100 sqm.				
	MATERIAL				
	Bitumen S-90/A-90 @ 1.8kg/sqm.=180kg.=0.18 tonne				
309	Paving bitumen VG-10 of approved quality	tonne	0.18	48902.00	8802.36
2211	Carriage of Tar bitumen	tonne	0.18	163.93	29.51
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	1.50	686.05	1029.08
2202	Carriage of Stone aggregate below 40 mm nominal size Steam coal for heating bitumen @2 qunital per tonne	cum	1.50	0	0.00
370	Coal (steam)	quintal	0.36	440.00	158.40
2200	Carriage of steam coal Labour for cleaning the road surface, heating and spraying bitumen and aggregate	tonne	0.04	187.35	6.74
	(a) For cleaning :				
128	Mate	day	0.11	325.00	35.75

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating and spraying bitumen :				
130	Mistry	day	0.08	306.00	24.48
138	Sprayer (for bitumen, tar etc.)	day	0.11	322.00	35.42
114	Beldar	day	1.38	318.00	438.84
	(c) For screening and spreading aggregate :				
128	Mate	day	0.27	325.00	87.75
114	Beldar	day	0.85	306.00	260.10
115	Coolie	day	0.85	318.00	270.30
	(d) Consolidation Charges				
113	Chowkidar	day	0.11	322.00	35.42
101	Bhisti	day	0.11	332.00	36.52
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.12	800	96.00
7	Hire charges of Coaltar Sprayer	day	0.11	350.00	38.50
	(e) Misc:				
364	Wire brush	each	0.11	20.00	2.20
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	16.38	2.12	34.73
	Second Coat				
	MATERIAL				
	Bitumen S-90/A-90 @ 1.10kg per sqm = 110kg.=0.11 tonne				
309	Paving bitumen VG-10 of approved quality	tonne	0.11	48902.00	5379.22
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	1.00	657.91	657.91
2211	Carriage of Tar bitumen	tonne	0.11	163.93	18.03
2202	Carriage of Stone aggregate below 40 mm nominal size Steam coal for heating bitumen @2 qunital per tonne of bitumen	cum	1.00	0	0.00
370	Coal (steam)	quintal	0.22	440.00	96.80
2200	Carriage of steam coal	tonne	0.02	187.35	4.12
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate				
	(a) For cleaning and brushing loose chips:				
128	Mate	day	0.06	325.00	19.50
115	Coolie	day	0.97	318.00	308.46
	(b) For heating and spraying bitumen :				0.00
130	Mistry	day	0.05	306.00	15.30
138	Sprayer (for bitumen, tar etc.)	day	0.07	322.00	22.54
114	Beldar	day	0.75	306.00	229.50
	(c) For screening and spreading aggregate :				
128	Mate	day	0.07	325.00	22.75
114	Beldar	day	0.62	306.00	189.72
115	Coolie	day	0.62	318.00	197.16
	(d) Consolidation Charges				
113	Chowkidar	day	0.15	322.00	48.30
101	Bhisti	day	0.06	332.00	19.92
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.06	3000.00	180.00
7	Hire charges of Coaltar Sprayer	day	0.07	350.00	24.50
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.06	800	48.00
	(e) Misc:				
364	Wire brush (with thick wire)	each	0.03	20.00	0.60
365	Soft brush	each	0.09	20.00	1.80

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				20150.68
	Add 1 % Water charges				201.51
	TOTAL				20352.18 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2859.48
	Total				23211.67 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				3481.75
	TOTAL				26693.41
	Cost for two coats per 100sqm.				26693.41
	Cost per Sqm.				266.93
	add 1% labour cess				2.67
	Total				269.60
	Say				269.60
16.27	**Surface dressing on old surface with hot bitumen of grade VG - 10 of approved quality using 1.95 kg of bitumen per sqm with 1.50 cum of stone chippings 11.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity, etc. complete.**				
	Details of cost for 100 sqm.				
	MATERIAL				
	Bitumen 1.95kg./sqm.= 195kg. or 0.195t				
309	Paving bitumen VG-10 of approved quality	tonne	0.20	48902.00	9535.89
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @ 1.50cum. per 100 sqm.	cum	1.50	657.91	986.87
2211	Carriage of Tar bitumen	tonne	0.20	163.93	31.97
2202	Carriage of Stone aggregate below 40 mm nominal size Steam coal for heating bitumen @2 quintal per tonne of bitumen	cum	1.50	0	0.00
370	Coal (steam)	quintal	0.39	440.00	171.60
2200	Carriage of steam coal	tonne	0.04	187.35	7.31
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate etc.				
	(a) For cleaning :				0.00
128	Mate	day	0.06	325	19.50
114	Beldar	day	0.49	306.00	149.94
115	Coolie	day	0.97	318.00	308.46
	(b) For heating and spraying bitumen :				
130	Mistry	day	0.05	306.00	15.30
138	Sprayer (for bitumen, tar etc.)	day	0.06	322.00	19.32
114	Beldar	day	0.69	306.00	211.14
	(c) For screening and spreading aggregate :				
128	Mate	day	0.66	325.00	214.50
114	Beldar	day	0.51	306.00	156.06
115	Coolie	day	0.51	318.00	162.18
	(d) Consolidation Charges				
113	Chowkidar	day	0.15	322.00	48.30
101	Bhisti	day	0.06	332.00	19.92
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.06	3000.00	180.00
7	Hire charges of Coaltar Sprayer	day	0.06	350.00	21.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.06	800	48.00
	(e) Misc:				
	Brushes etc. for cleaning				
364	Wire brush (with thick wire)	each	0.05	20.00	1.00
365	Soft brush	each	0.12	20.00	2.40
9999	Brooms and gunny bags	L.S.	2.73	2.12	5.79
9999	Sundries	L.S.	5.33	2.12	11.30
	TOTAL				12327.74
	Add 1 % Water charges				123.28

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	TOTAL				12451.01 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1749.37
	Total				14200.38 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2130.06
	TOTAL				16330.44
	Cost for 100 sqm.				16330.44
	Cost per Sqm.				163.30
	add 1% labour cess				1.63
	Total				164.94
	Say				164.90

16.28 Surface dressing one coat on new surface with bitumen of specified grade at a rate of 1.95 kg/sqm of surface area with 1.5 cum of stone chippings 13.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity , etc. complete :

16.28.1 Using bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS : 8887)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 100 sqm.				
	MATERIAL				
310	Bitumen emulsion	tonne	0.20	55602.00	10842.39
2211	Carriage of Tar bitumen	tonne	0.20	163.93	31.97
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size @1.50 cum. per 100 sqm. = 1.50cum	cum	1.50	686.05	1029.08
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	1.50	0	0.00
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate :				
	(a) For cleaning :				
128	Mate	day	0.11	325.00	35.75
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For Spraying bitumen emulsion :				
130	Mistry	day	0.07	306.00	21.42
138	Sprayer (for bitumen, tar etc.)	day	0.10	322.00	32.20
114	Beldar	day	1.00	306.00	306.00
	(c) For screening and spreading aggregate :				
128	Mate	day	0.11	325.00	35.75
114	Beldar	day	0.85	306.00	260.10
115	Coolie	day	0.85	318.00	270.30
	(d) Consolidation Charges				
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.27	332.00	89.64
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
7	Hire charges of Coaltar Sprayer	day	0.10	350.00	35.00
	(e) Misc:				
	Brushes etc. for cleaning				
364	Wire brush (with thick wire)	each	0.11	20.00	2.20
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				14323.18
	Add 1 % Water charges				143.23
	TOTAL				14466.41 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2032.53
	Total				16498.94 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2474.84
	TOTAL				18973.79

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Cost for 100 sqm.				18973.79
	Cost per Sqm.				189.74
	add 1% labour cess				1.90
	Total				191.64
	Say				191.60
16.29	**Surface dressing one coat on old surface with bitumen of specified grade at the rate of 1.22 kg/ sqm of surface area with 1.10 cum of stone chippings 11.2 mm nominal size per 100 sqm of road surface, including consolidation with road roller of 6 to 8 tonne capacity etc. complete :**				
16.29.1	**Using bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS : 8887)**				
	Details of cost for 100 sqm.				
	MATERIAL				
	Bitumen emulsion @1.22 kg per Sqm. =122 kg. or 0.122 tonne				
310	Bitumen emulsion	tonne	0.12	55602.00	6783.44
2211	Carriage of Tar bitumen	tonne	0.12	163.93	20.00
	Stone chippings 11.2mm nominal size @ 1.10cum. per 100 sqm				
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	1.10	657.91	723.70
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	1.10	0	0.00
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate :				
	(a) For cleaning :				
128	Mate	day	0.06	325.00	19.50
114	Beldar	day	0.49	306.00	149.94
115	Coolie	day	0.97	318.00	308.46
	(b) For Spraying bitumen emulsion :				
130	Mistry	day	0.05	306.00	15.30
138	Sprayer (for bitumen, tar etc.)	day	0.06	322.00	19.32
114	Beldar	day	0.63	306.00	192.78
	(c) For screening and spreading aggregate :				
128	Mate	day	0.07	325.00	22.75
114	Beldar	day	0.62	306.00	189.72
115	Coolie	day	0.62	318.00	197.16
	(d) Consolidation Charges				
113	Chowkidar	day	0.15	322.00	48.30
101	Bhisti	day	0.15	332.00	49.80
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.06	3000.00	180.00
7	Hire charges of Coaltar Sprayer	day	0.06	350.00	21.00
	(e) Misc:				
	Brushes etc. for cleaning				
364	Wire brush (with thick wire)	each	0.11	20.00	2.20
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	2.73	2.12	5.79
9999	Sundries	L.S.	5.33	2.12	11.30
	TOTAL				8966.86
	Add 1 % Water charges				89.67
	TOTAL				9056.53 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1272.44
	Total				10328.97 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1549.35
	TOTAL				11878.32
	Cost for 100 sqm.				11878.32
	Cost per Sqm.				118.78
	add 1% labour cess				1.19
	Total				119.97
	Say				120.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.30	**Providing and applying tack coat using hot straight run bitumen of grade VG - 10, including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications :**				
16.30.1	On W.B.M. @ 0.75 Kg / sqm				
	Details of cost for 100 sqm.				
	MATERIAL				
2916	Paving Asphalt VG -10 of approved quality	tonne	0.08	24500.00	1837.50
2211	Carriage of Tar bitumen	tonne	0.08	163.93	12.29
370	Coal (steam)	quintal	0.15	440.00	66.00
2200	Carriage of steam coal	tonne	0.02	187.35	2.81
	MATERIAL				
364	Wire brush (with thick wire)	each	0.05	20.00	1.00
365	Soft brush	each	0.12	20.00	2.40
9999	Gunny bags	L.S.	7.80	2.12	16.54
7	Hire charges of Coaltar Sprayer	day	0.03	350.00	10.50
9999	Sundries	L.S.	9.10	2.12	19.29
	LABOUR				
	(a) For cleaning :				
128	Mate	day	0.06	325.00	19.50
114	Beldar	day	1.46	306.00	446.76
	(b) For heating bitumen:				
114	Beldar	day	0.19	306.00	58.14
	(c) For applying tack coat:				
114	Beldar	day	0.47	306.00	143.82
	TOTAL				2636.55
	Add 1 % Water charges				26.37
	TOTAL				2662.92 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				374.14
	Total				3037.06 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				455.56
	TOTAL				3492.62
	Cost for 100 sqm.				3492.62
	Cost per Sqm.				34.93
	add 1% labour cess				0.35
	Total				35.28
	Say				**35.30**
16.30.2	**On bituminous surface @ 0.50 Kg / sqm**				
	Details of cost for 100 sqm.				
	MATERIAL				
2916	Paving Asphalt VG -10 of approved quality	tonne	0.05	24500.00	1225.00
2211	Carriage of Tar bitumen	tonne	0.05	163.93	8.20
370	Coal (steam)	quintal	0.10	440.00	44.00
2200	Carriage of steam coal	tonne	0.01	187.35	1.87
	MATERIAL				
364	Wire brush (with thick wire)	each	0.05	20.00	1.00
365	Soft brush	each	0.12	20.00	2.40
9999	Gunny bags	L.S.	7.80	2.12	16.54
7	Hire charges of Coaltar Sprayer	day	0.03	350.00	10.50
9999	Sundries	L.S.	7.80	2.12	16.54
	LABOUR				
	(a) For cleaning :				
128	Mate	day	0.06	325.00	19.50
114	Beldar	day	1.46	306.00	446.76
	(b) For heating bitumen:				
114	Beldar	day	0.19	306.00	58.14
	(c) For applying tack coat:				
114	Beldar	day	0.47	306.00	143.82
	TOTAL				1994.26

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 1 % Water charges				19.94
	TOTAL				2014.20 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				283.00
	Total				2297.20 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				344.58
	TOTAL				2641.78
	Cost for 100 sqm.				2641.78
	Cost per Sqm.				26.42
	add 1% labour cess				0.26
	Total				26.68
	Say				26.70
16.31	**Providing and applying tack coat using bitumen emulsion conforming to IS: 8887, using emulsion pressure distributer including preparing the surface & cleaning with mechanical broom.**				
16.31.1	With rapid setting bitumen emulsion				
16.31.1.1	On W.B.M / W.M.M. @ 0.4kg/sqm				
	Details of cost for 3500 sqm.				
	MATERIAL				
7382	Bitumen emulsion rapid setting (R.S1.) confirming to IS : 8887-2004	tonne	1.40	52759.00	73862.60
2211	Carriage of Tar bitumen	tonne	1.40	163.93	229.50
	MACHINERY				
0075	Road sweeper (Mechamical Broom) @ 1250 sqm. Per hour.	hour	2.80	450.00	1260.00
0058	Air compressor	hour	2.80	200.00	560.00
0061	Emulsion Pressure Distributor @ 1750 sqm per hour	hour	2.00	700.00	1400.00
	LABOUR				0.00
0128	Mate	day	0.08	325.00	26.00
0114	Beldar	day	2.00	306.00	612.00
	TOTAL				77950.10
	Add 1 % Water charges				779.50
	TOTAL				78729.60 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				11061.51
	Total				89791.11 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				13468.67
	TOTAL				103259.78
	Cost for 3500 sqm.				103259.78
	Cost per Sqm.				29.50
	add 1% labour cess				0.30
	Total				29.80
	Say				**29.80**
16.31.1.2	**On bituminous surface @ 0.25kg/sqm**				
	Details of cost for 3500 sqm.				
	MATERIAL				
7382	Bitumen emulsion rapid setting (R.S.) confirming to IS : 8887-1995	tonne	0.88	52759.00	46164.13
2211	Carriage of Tar bitumen	tonne	0.88	163.93	143.44
	MACHINERY				0.00
75	Road sweeper (Mechamical Broom) @1250 sqm. Per hour.	hour	2.80	450.00	1260.00
58	Air compressor	hour	2.80	200.00	560.00
61	Emulsion Pressure Distributor @ 1750 sqm per hour	hour	2.00	700.00	1400.00
	LABOUR				
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	2.00	306.00	612.00
	TOTAL				50165.56
	Add 1 % Water charges				501.66

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	TOTAL				50667.22 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				7118.74
	Total				57785.96 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				8667.89
	Cost for 3500 sqm.				66453.86
	Cost per Sqm.				18.99
	add 1% labour cess				0.19
	Total				19.18
	Say				19.20
16.31.2	**With medium setting bitumen emulsion**				
16.31.2.1	**On W.B.M / W.M.M. @ 0.4kg/sqm**				
	Details of cost for 3500 sqm.				
	MATERIAL				
7742	Bitumen emulsion medium setting (M.S.) confirming to IS : 8887-2004	tonne	1.40	55152.00	77212.80
2211	Carriage of Tar bitumen	tonne	1.40	163.93	229.50
	MACHINERY				
75	Road sweeper (Mechamical Broom) @ 1250 sqm. Per hour.	hour	2.80	450.00	1260.00
58	Air compressor	hour	2.80	200.00	560.00
61	Emulsion Pressure Distributor @ 1750 sqm per hour	hour	2.00	700.00	1400.00
	LABOUR				
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	2.00	306.00	612.00
	TOTAL				81300.30
	Add 1 % Water charges				813.00
	TOTAL				82113.31 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				11536.92
	Total				93650.22 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				14047.53
	Cost for 3500 sqm.				107697.76
	Cost per Sqm.				30.77
	add 1% labour cess				0.31
	Total				31.08
	Say				**31.10**
16.31.2.2	**On bituminous surface @ 0.25kg/sqm**				
	Details of cost for 3500 sqm.				
	MATERIAL				
7742	Bitumen emulsion medium setting (M.S.) confirming to IS : 8887-1995	tonne	0.88	55152.00	48258.00
2211	Carriage of Tar bitumen	tonne	0.88	163.93	143.44
	MACHINERY				
75	Road sweeper (Mechamical Broom) @ 1250 sqm. Per hour.	hour	2.80	450.00	1260.00
58	Air compressor	hour	2.80	200.00	560.00
61	Emulsion Pressure Distributor @ 1750 sqm per hour	hour	2.00	700.00	1400.00
	LABOUR				
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	2.00	306.00	612.00
	TOTAL				52259.44
	Add 1 % Water charges				522.59
	TOTAL				52782.03 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				7415.88
	Total				60197.91 (Y)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 15 % Contractor's profit and overheads on "Y"				9029.69
	Cost for 3500 sqm.				69227.60
	Cost per Sqm.				19.78
	add 1% labour cess				0.20
	Total				19.98
	Say				**20.00**
16.32	**2cm premix carpet surfacing with 1.8 cum and 0.90 cum of stone chippings of 13.2 mm size and 11.2 mm size respectively per 100 sqm and 52 kg and 56 kg of hot bitumen per cum of stone chippings of 13.2 mm and 11.2 mm size respectively, including a tack coat with hot straight run bitumen, including consolidation with road roller of 6 to 9 tonne capacity etc. complete (tack coat to be paid for separately).**				
16.32.1	With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt Details of cost for 100 sqm. Asphalt 80/100 (i) Hot bitumen @52kg.per cum. of stone chippings 1.8cum. of 13.2mm nominal size chippings. (ii) Hot bitumen @56kg. per cum. of stone chippings 0.90cum. of 11.2mm nominal size chippings. Bitumen :52xl.8+56x0.9=144kg. or 0.144 tonne				
	MATERIAL				
2916	Paving Asphalt VG 10 of approved quality	tonne	0.14	24500.00	3528.00
2211	Carriage of Tar bitumen Solvent 70gms/kg. for 0.144 t = 10.08kg.	tonne	0.14	163.93	23.61
2914	Solvent	kilogram	10.08	30.00	302.40
2342	Carriage of solvent/ Diesel.	quintal	0.10	16.39	1.64
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size @1.80cum. per 100 sqm	cum	1.80	686.05	1234.89
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @0.90cum. per 100 sqm	cum	0.90	657.91	592.12
2202	Carriage of Stone aggregate below 40 mm nominal size Steam coal for heating bitumen @ 2 qunitals per tonne of bitumen = 2x0.144=0.288q	cum	2.70	0	0.00
370	Coal (steam)	quintal	0.29	440.00	126.72
2200	Carriage of steam coal	tonne	0.03	187.35	5.40
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate : (a) For cleaning :				
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen:				
114	Beldar	day	0.57	306.00	174.42
	(c) For screening and spreading premixed aggregate :				
130	Mistry	day	0.19	306.00	58.14
114	Beldar	day	5.00	306.00	1530.00
	(d) Consolidation Charges				
113	Chowkidar (at barrier for night watch and for road roller)	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.13	800	104.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.04	3500.00	140.00
	(e) Misc:				
364	Wire brush (with thick wire)	each	0.11	20.00	2.20
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				9217.44
	Add 1 % Water charges				92.17
	TOTAL				9309.61 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1308.00
	Total				10617.61 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1592.64
	Cost for 100 sqm.				12210.26
	Cost per Sqm.				122.10
	add 1% labour cess				1.22
	Total				123.32
	Say				**123.30**
16.32.2	**With paving Asphalt grade VG - 30 with no solvent**				
	Details of cost for 100 sqm. Asphalt 60/70 (i) Hot bitumen @52kg.per cum. of stone chippings 1.8cum. of 13.2mm nominal size chippings. (ii) Hot bitumen @56kg. per cum. of stone chippings 0.90cum. of 11.2mm nominal size chippings. Bitumen :52xl.8+56x0.9=144kg. or 0.144 tonne				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality	tonne	0.14	38150.00	5493.60
2211	Carriage of Tar bitumen	tonne	0.14	163.93	23.61
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size @1.80cum. per 100sqm.	cum	1.80	686.05	1234.89
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @0.90cum. per 100sqm	cum	0.90	657.91	592.12
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	2.70	0	0.00
	Steam coal for heating of bitumen @2 quintals per tonne of bitumen =2x0.144=0.288q				
370	Coal (steam)	quintal	0.29	440.00	126.72
2200	Carriage of steam coal	tonne	0.03	187.35	5.40
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate :				
	(a) For cleaning :				
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen:				
114	Beldar	day	0.57	306.00	174.42
	(c) For screening and spreading premixed aggregate :				
130	Mistry	day	0.19	306.00	58.14
114	Beldar	day	5.00	306.00	1530.00
	(d) Consolidation Charges				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.13	800	104.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.04	3500.00	140.00
	(e) Misc:				
364	Wire brush (with thick wire)	each	0.11	20.00	2.20
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				10879.00
	Add 1 % Water charges				108.79
	TOTAL				10987.79 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1543.78
	Total				12531.58 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1879.74
	Cost for 100 sqm.				14411.31
	Cost per Sqm.				144.11
	add 1% labour cess				1.44
	Total				145.55
	Say				**145.60**

16.32.3 **With Refinery Modified Bitumen CRMB 55 conforming to IRC: SP: 53**

Details of cost for 100 sqm.
Asphalt 80/100
(i) Hot bitumen @52kg.per cum. of stone chippings 1.8cum. of 13.2mm nominal size chippings.
(ii) Hot bitumen @56kg. per cum. of stone chippings 0.90cum. of 11.2mm nominal size chippings.
Modified Bitumen CRMB - 55 (Refinary produced) :52xl.8+56x0.9=144kg. or 0.144 tonne

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	MATERIAL				
7739	Modified Bitumen Refinary produced CRMB - 55	tonne	0.14	53728.00	7736.83
2211	Carriage of Tar bitumen Solvent 70gms/kg. for 0.144 t = 10.08kg	tonne	0.14	163.93	23.61
2914	Solvent	kilogram	10.08	30.00	302.40
2342	Carriage of solvent/ Diesel. Stone chippings 13.2mm nominal size @ 1.80cum. per 100sqm.	quintal	0.10	16.39	1.64
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size @1.80cum. per 100sqm.	cum	1.80	686.05	1234.89
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @0.90cum. per 100sqm	cum	0.90	657.91	592.12
2202	Carriage of Stone aggregate below 40 mm nominal size Steam coal for heating bitumen @ 2 quintals per tonne of bitumen = 2x0.144=0.288q	cum	2.70	0	0.00
370	Coal (steam)	quintal	0.29	440.00	126.72
2200	Carriage of steam coal	tonne	0.03	187.35	5.40
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate :				0.00
	(a) For cleaning :				0.00
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	(b) For heating bitumen:				0.00
114	Beldar	day	0.57	306.00	174.42
	(c) For screening and spreading premixed aggregate :				0.00
130	Mistry	day	0.19	306.00	58.14
114	Beldar	day	5.00	306.00	1530.00
	(d) Consolidation Charges				0.00
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.13	800	104.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.04	3500.00	140.00
	(e) Misc:				0.00
364	Wire brush	each	0.11	20.00	2.20
	(with thick wire)				0.00
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				13426.27
	Add 1 % Water charges				134.26
	TOTAL				13560.53 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1905.26
	Total				15465.79 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2319.87
	Cost for 100 sqm.				17785.66
	Cost per Sqm.				177.86
	add 1% labour cess				1.78
	Total				179.64
	Say				179.60

16.33 **2.5 cm premix carpet surfacing with 2.25 cum and 1.12 cum of stone chippings of 13.2 mm and 11.2 mm size respectively per 100 sqm and 52 kg and 56 kg of hot bitumen per cum of stone chippings of 13.2 mm and 11.2 mm size respectively, including a tack coat with hot straight run bitumen, including consolidation with road roller of 6 to 9 tonne capacity etc. complete (tack coat to be paid for separately).**

16.33.1 With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt

Details of cost for 100 sqm.

Paving Asphalt 80/100

(i) Hot bitumen @52kg.per cum. of stone chippings @2.25cum. of 13.2mm nominal size chippings.

(ii) Hot bitumen @56kg. per cum. Of aggregate @1.12cum. of 11.2mm nominal size. Bitumen :52x2.25+56x1.12= 180kg

MATERIAL

2916	Paving Asphalt VG -10 of approved quality	tonne	0.18	24500.00	4410.00
	Solvent 0.07x180=12.60kg.				
2914	Solvent	kilogram	12.60	30.00	378.00
2211	Carriage of Tar bitumen	tonne	0.18	163.93	29.51
2342	Carriage of solvent/ Diesel.	quintal	0.13	16.39	2.07
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size @1.80cum. per 100 sqm.	cum	2.25	686.05	1543.61
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @0.90cum. per 100 sqm	cum	1.12	657.91	736.86

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2202	Carriage of Stone aggregate below 40 mm nominal size 2.25+1.12=3.37 cum Steam coal for heating of bitumen @2 quintals per tonne of bitumen =2x0.18=0.36q	cum	3.37	0	0.00
370	Coal (steam)	quintal	0.36	440.00	158.40
2200	Carriage of steam coal	tonne	0.04	187.35	6.74
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate :				
	(a) For cleaning :				
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen:				
114	Beldar	day	0.71	306.00	217.26
	(c) For screening and spreading premixed aggregate :				
130	Mistry	day	0.19	306.00	58.14
114	Beldar	day	6.25	306.00	1912.50
	(d) Consolidation Charges				
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.15	800	120.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.04	3500.00	140.00
	(e) Misc:				
364	Wire brush (with thick wire)	each	0.11	20.00	2.20
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				11109.20
	Add 1 % Water charges				111.09
	TOTAL				11220.29 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1576.45
	Total				12796.74 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1919.51
	Cost for 100 sqm.				14716.25
	Cost per Sqm.				147.16
	add 1% labour cess				1.47
	Total				148.63
	Say				148.60

16.33.2 With paving Asphalt grade VG - 30 with no solvent

Details of cost for 100 sqm. Paving Asphalt 60/70

(i) Hot bitumen @52kg.per cum. of stone chippings @2.25cum. of 13.2mm nominal size

(ii) Hot bitumen @56kg. per cum. of stone aggregate@1.12cum. of 11.2mm nominal size size Bitumen :52x2.25+50xl. 12= 180kg

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality	tonne	0.18	38150.00	6867.00
2211	Carriage of Tar bitumen	tonne	0.18	163.93	29.51
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size @2.25cum. per 100sqm	cum	2.25	686.05	1543.61
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @1.12cum. per 100sqm	cum	1.12	657.91	736.86

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2202	Carriage of Stone aggregate below 40 mm nominal size 2.25+1.12=3.37 cum.	cum	3.37	0	0.00
370	Coal (steam)	quintal	0.36	440.00	158.40
2200	Carriage of steam coal	tonne	0.04	187.35	6.74
	Labour for cleaning the road surface, heatingand spraying bitumen and aggregate :				
	(a) For cleaning :				
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen:				
114	Beldar	day	0.71	306.00	217.26
	(c) For cleaning, mixing and spreading pre-mix aggregate :				
130	Mistry	day	0.19	306.00	58.14
114	Beldar 1.05x0.18)/0.267 = 0.71 Nos.	day	6.25	306.00	1912.50
	(d) Consolidation Charges				
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.15	800	120.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.04	3500.00	140.00
	(e) Misc:				
364	Wire brush (with thick wire)	each	0.11	20.00	2.20
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				13186.13
	Add 1 % Water charges				131.86
	TOTAL				13318.00 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1871.18
	Total				15189.17 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2278.38
	Cost for 100 sqm.				17467.55
	Cost per Sqm.				174.68
	add 1% labour cess				1.75
	Total				176.42
	Say				176.40
16.33.3	**With Refinery Modified Bitumen CRMB 55 conforming to IRC: SP: 53**				
	Details of cost for 100 sqm.				
	MATERIAL				
	Paving Asphalt 80/100				
	(i) Hot bitumen @52kg.per cum. of stone chippings @2.25cum. of 13.2mm nominal size chippings.				
	(ii) Hot bitumen @56kg. per cum. Of aggregate @1.12cum. of 11.2mm nominal size.				
	52x2.25+56x1.12=180kg				
7739	Modified Bitumen Refinary produced CRMB - 55	tonne	0.18	53728.00	9671.04
	Solvent 0.07x180=12.60kg				
2914	Solvent	kilogram	12.60	30.00	378.00
2211	Carriage of Tar bitumen	tonne	0.18	163.93	29.51
2342	Carriage of solvent/ Diesel.	quintal	0.13	16.39	2.07
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size @2.25 cum. per 100sqm	cum	2.25	686.05	1543.61

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @1.12 cum. per 100sqm	cum	1.12	657.91	736.86
2202	Carriage of Stone aggregate below 40 mm nominal size 2.25+1.12=3.37 cum.+ Steam coal for heating of bitumen @2 quintals per tonne of bitumen =2x0.18=0.36q	cum	3.37	0	0.00
370	Coal (steam)	quintal	0.36	440.00	158.40
2200	Carriage of steam coal	tonne	0.04	187.35	6.74
	Labour for cleaning the road surface, heating and spraying bitumen and aggregate :				
	(a) For cleaning :				
128	Mate	day	0.08	325.00	26.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen:				0.00
114	Beldar	day	0.71	306.00	217.26
	(c) For screening and spreading premixed aggregate :				
130	Mistry	day	0.19	306.00	58.14
114	Beldar	day	6.25	306.00	1912.50
	(d) Consolidation Charges				
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.15	800	120.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.04	3500.00	140.00
	(e) Misc:				
364	Wire brush (with thick wire)	each	0.11	20.00	2.20
365	Soft brush	each	0.32	20.00	6.40
9999	Brooms and gunny bags	L.S.	6.76	2.12	14.33
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				16370.24
	Add 1 % Water charges				163.70
	TOTAL				16533.94 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2323.02
	Total				18856.96 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2828.54
	Cost for 100 sqm.				21685.50
	Cost per Sqm.				216.86
	add 1% labour cess				2.17
	Total				219.02
	Say				219.02

16.34 2 cm premix carpet surfacing with 2.4 cum of stone chippings 11.2 mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 65% bitumen content) complying with IS : 8887, using 96 kg per cum of chippings, including consolidation with road roller of 6 to 9 tonne capacity etc. complete.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 100 sqm.				
	MATERIAL				
	Bitumen emulsion M.S. @ 96kg per cum. of aggregate 96x2.4=230kg =0.230t				
7742	Bitumen emulsion medium setting (M.S.) confirming to IS : 8887-1995	tonne	0.23	55152.00	12684.96
2211	Carriage of Tar bitumen	tonne	0.23	163.93	37.70
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @ 2.4cum. per 100 sqm	cum	2.40	657.91	1578.98

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	2.40	0	0.00
	LABOUR				
	(a) For mixing and spreading premix aggregate :				
130	Mistry	day	0.19	306.00	58.14
114	Beldar	day	3.54	306.00	1083.24
	(b) Consolidation Charges				
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.04	3500.00	140.00
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				16056.61
	Add 1 % Water charges				160.57
	TOTAL				16217.17 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2278.51
	Total				18495.69 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2774.35
	Cost for 100 sqm.				21270.04
	Cost per Sqm.				212.70
	add 1% labour cess				2.13
	Total				214.83
	Say				**214.80**

16.35 2.5 cm premix carpet surfacing with 3 cum of stone chippings 10 mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 65% bitumen contents) complying with IS : 8887, using 96 kg per cum of chippings of road surface, including consolidation with road roller etc complete .

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 100 sqm.				
	MATERIAL				
	Bitumen emulsion M.S. @ 96kg per cum. of aggregate 96x3 = 288 kg = 0.288 t				
7742	Bitumen emulsion medium setting (M.S.) confirming to IS : 8887-1995	tonne	0.29	55152.00	15883.78
2211	Carriage of Tar bitumen	tonne	0.29	163.93	47.21
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size @ 3.00 cum. per 100 sqm	cum	3.00	657.91	1973.73
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	3.00	0	0.00
	LABOUR				
	(a) For mixing and spreading premix aggregate :				
130	Mistry	day	0.19	306.00	58.14
114	Beldar	day	4.10	306.00	1254.60
	(b) Consolidation Charges				0.00
113	Chowkidar	day	0.27	322.00	86.94
101	Bhisti	day	0.11	332.00	36.52
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.11	3000.00	330.00
9999	Sundries	L.S.	9.49	2.12	20.12
	TOTAL				19691.04
	Add 1 % Water charges				196.91
	TOTAL				19887.95 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2794.26
	Total				22682.20 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				3402.33
	Cost for 100 sqm.				26084.53
	Cost per Sqm.				260.85
	add 1% labour cess				2.61
	Total				263.45
	Say				263.50

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.36	**Providing and laying Bitumen Penetration Macadam with hard stone aggregate of quality, size and grading as specified, with bitumen of suitable penetration grade, including required key aggregate as specified, spreading coarse aggregate with the help of self propelled/ tipper tail mounted aggregate spreader and applying bitumen by a pressure distributor and then spreading key aggregate with the help of aggregate spreader complete, including consolidation with road roller of minimum 8 to 10 tonne capacity to achieve specified values of compaction and surface accuracy :**				
16.36.1	**For 50mm compacted thickness using coarse aggregate of size 50-20 mm graded @ 0.60 cum per 10 sqm key aggregate of size 12.5 mm graded @ 0.15 cum per 10 sqm. With paving asphalt grade VG - 10 @ 50 kg/ 10 sqm.**				
	Details of cost for 370 sqm.				
	MATERIAL				
	Taking stone aggregate 40mm = 45% 20mm = 44% 11.2mm = 8% Stone dust = 3%				
293	Stone Aggregate (Single size) : 40 mm nominal size	cum	9.99	486.92	4864.33
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	9.77	595.36	5816.67
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	1.78	657.91	1171.08
1159	Stone dust	cum	0.60	117.23	70.34
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	2.33	595.36	1387.19
296	Stone Aggregate (Single size) : 12.5 mm nominal size	cum	2.66	686.05	1824.89
1159	Stone dust	cum	0.56	117.23	65.65
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	9.99	178.19	1780.12
2202	Carriage of Stone aggregate below 40 mm nominal size i.e. 20mm nominal size	cum	12.10	0	0.00
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	4.44	0	0.00
2267	Carriage of Stone dust	cum	1.16	163.93	190.16
2916	Paving Asphalt VG -10 of approved quality @ 50kg/10 sqm.	tonne	1.85	24500.00	45325.00
2211	Carriage of Tar bitumen	tonne	1.85	163.93	303.27
	(B) Labour:				
114	Beldar for spreading stone metal	day	16.67	306.00	5101.02
114	Beldar for hand packing	day	5.33	306.00	1630.98
114	Beldar dry rolling	day	2.67	306.00	817.02
114	Beldar Bajri spreader	day	1.33	306.00	406.98
138	Sprayer (for bitumen, tar etc.)	day	0.67	322.00	215.74
114	Beldar for spreading key aggregate	day	1.33	306.00	406.98
114	Beldar for spraying bitumen	day	6.67	306.00	2041.02
114	Beldar of power roller	day	0.67	306.00	205.02
128	Mate	day	1.77	325.00	575.25
	(C) Machinery :				
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.45	800	360.00
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.61	3000.00	1830.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
9999	Misc. items as spray nozzle, joint paper, coconut oil, country soap etc.	L.S.	351.00	2.12	744.12
	TOTAL				77132.82
	Add 1 % Water charges				771.33
	TOTAL				77904.15 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				10945.53
	Total				88849.69 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				13327.45
	Cost for 370 Sqm.				102177.14
	Cost per sqm.				276.15
	add 1% labour cess				2.76
	Total				278.92
	Say				278.90
16.36.2	**For 75 mm compacted thickness in two layers using stone aggregate of size 63-41 mm graded @ 0.90 cum per 10 sqm key aggregate of size 20.0 mm graded @ 0.18 cum per 10 sqm. With paving asphalt grade VG - 10 @ 68 kg/10 sqm.**				
	Details of cost for 300 sqm.				
	MATERIAL				
	Taking output as 300 sqm. for single layer. Coarse agg. = 300/10x0.90 = 27 cum. Key agg = 300/10x0.18 = 5.4 cum. Bitumen = 300/10x68 = 2.04 t.				
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	8.10	178.19	1443.34
292	Stone Aggregate (Single size) : 50 mm nominal size	cum	8.10	473.70	3836.97
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	14.58	595.36	8680.35
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	4.32	657.91	2842.17
294	Stone Aggregate (Single size) : 25 mm nominal size	cum	2.05	570.13	1168.77
296	Stone Aggregate (Single size) : 12.5 mm nominal size	cum	2.57	686.05	1763.15
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	0.81	657.91	532.91
2916	Paving Asphalt VG -10 of approved quality	tonne	2.04	24500.00	49980.00
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	24.33	0	0.00
2211	Carriage of Tar bitumen	tonne	2.04	163.93	334.42
	LABOUR				0.00
114	Beldar for spreading stone metal	day	25.00	306.00	7650.00
114	Beldar for hand packing	day	8.00	306.00	2448.00
114	Beldar dry rolling	day	4.00	306.00	1224.00
114	Beldar/Bajri spreader	day	2.00	306.00	612.00
138	Sprayer (for bitumen, tar etc.)	day	1.00	322.00	322.00
114	Beldar for spreading key aggregate	day	2.00	306.00	612.00
114	Beldar for spraying bitumen	day	10.00	306.00	3060.00
114	Beldar road roller	day	1.00	306.00	306.00
128	Mate	day	2.65	325.00	861.25
	MACHINERY				
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.50	800	400.00
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.75	3000.00	2250.00
9999	Misc. items as spray nozzle, joint paper, coconut oil, country soap etc.	L.S.	429.00	2.12	909.48
	TOTAL				91236.80

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 1 % Water charges				912.37
	TOTAL				92149.17 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				12946.96
	Total				105096.12 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				15764.42
	Cost for 300 Sqm.				120860.54
	Cost per sqm.				402.87
	Add 1% labour cess				4.03
	TOTAL				406.90
	Say				406.90
16.37	**Providing and laying bitumen mastic wearing course (as per specifications) with industrial bitumen of grade 85/25 conforming to IS : 702, prepared by using mastic cooker and laid to required level and slope, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of approved size at the rate of 0.005 cum per 10 sqm and at approximate spacing of 10 cm centre to centre in both directions, pressed into surface protruding 1 mm to 4 mm over mastic surface, including cleaning the surface, removal of debris etc. all complete. (Considering bitumen using 10.2% as per MORTH specification).**				
16.37.1	**25 mm thick**				
	Details of cost for surface area of 17.40 sqm for single layer of 25 mm finished thickness.				
	MATERIAL				
	Taking wearing coat as 1 tonne and density as 2.3 gm/c.c Volume of bitumen mastic = 1000/2300= 0.435 cum surface area = 0.435/0.025 = 17.4 sqm.				
	(i) Bitumen of penetration 85/25 @ 10.2% by weight of mix				
313	Blown type petroleum bitumen of penetration 85/25 of approved quality	tonne	0.10	34790.00	3548.58
2211	Carriage of Tar bitumen	tonne	0.10	163.93	16.72
	(ii) Weight of coarse aggregate @ 40% (1000 - 150) x 40/100 = 340 kg. Stone aggregate : 340/43.38x0.0283 = 0.222 cum.				
0295	Stone Aggregate (Single size) : 20 mm nominal size	cum	0.02	595.36	11.91
296	Stone Aggregate (Single size) : 12.5 mm nominal size	cum	0.20	686.05	138.58
	(iii) Weight of fine aggregate @ 15% 850 x15/100 = 127.5 kg., volume of fine aggregate: 127.5/43.103x0.0283 =0.083 cum				
1159	Stone dust	cum	0.08	117.23	9.73
	(iv) Weight of lime stone dust @ 45% (850- 340-127.5) = 382.50 kg., Volume of lime stone dust 382.50/2200 =0.174 cum.				
784	Marble dust/ powder cum 0.174 1000.00 174.00				
	(v) Precoated stone chipping for surface finish: Volume of chips @ 0.005 cum/10				
297	Stone Aggregate (Single size) : 10 mm nominal size Bitumen for precoated stone chipping @ 2% =0.009x1600x2/100= 0.288 say 0.30 kg.	cum	0.01	657.91	5.92
313	Blown type petroleum bitumen of penetration 85/25 of approved quality	tonne	0.00	34790.00	10.44
2211	Carriage of Tar bitumen	tonne	0.00	163.93	0.05
2202	Carriage of Stone aggregate below 40 mm nominal size (0.222 + 0.009) =0.231 cum.	cum	0.23	0	0.00
2267	Carriage of Stone dust	cum	0.08	163.93	13.61
2208	Carriage of Lime	cum	0.17	163.93	28.52
	LABOUR				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
139	Skilled Beldar (for floor rubbing etc.)	day	1.50	369.00	553.50
130	Mistry	day	0.50	306.00	153.00
138	Sprayer (for bitumen, tar etc.)	day	3.50	322.00	1127.00
139	Skilled Beldar (for floor rubbing etc.)	day	0.25	369.00	92.25
128	Mate	day	0.50	325.00	162.50
16	Mastic Cooker	day	0.50	750.00	375.00
9999	sundries (Sealing of joints, placing angles, wastage materials)	L.S.	153.27	2.12	324.93
	Total				6572.24
	Add 1 % Water charges				65.72
	TOTAL				6637.96 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				932.63
	Total				7570.60 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1135.59
	Cost for 17.40 sqm				8706.19
	Cost per sqm				500.36
	Add 1% labour cess				5.00
	TOTAL				505.36
	Say				505.40
16.37.2	**40 mm thick**				
	Details of cost for surface area of 10.875sqm for single layer of 25 mm finished thickness.				
	MATERIAL				
	Taking wearing coat as 1 tonne and density as 2.3 gm/c.c Volume of bitumen mastic = as 2.3 gm/c.c Volume of bitumen mastic = 1000/2300= 0.435 cum surface area = 0.435/0.040 = 10.875 sqm.				
313	Blown type petroleum bitumen of penetration 85/25 of approved quality	tonne	0.10	34790.00	3548.58
2211	Carriage of Tar bitumen	tonne	0.10	163.93	16.72
	(ii) Weight of coarse aggregate @ 40% (1000 - 150) x 40/100 = 340 kg. Stone aggregate : 340/43.38x0.0283 = 0.222 cum.				
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	0.02	595.36	11.91
296	Stone Aggregate (Single size) : 12.5 mm nominal size	cum	0.20	686.05	138.58
	(iii) Weight of fine aggregate @ 15% 850 x15/100 = 127.5 kg., volume of fine aggregate: 127.5/43.103x0.0283 =0.083 cum				0.00
1159	Stone dust	cum	0.08	117.23	9.73
	(iv) Weight of lime stone dust @ 45% (850- 340- 127.5) = 382.50 kg., Volume of lime stone dust 382.50/2200 =0.174 cum.				0.00
784	Marble dust/ powder	cum	0.17	1130.00	196.62
	(v) Precoated stone chipping for surface finish: Volume of chips @ 0.005 cum/10 sqm=17.4x0.005/10 = 0.0087 cum saysqm=17.4x0.005/10 = 0.0087 cum say 0.009 cum				0.00
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	0.01	657.91	5.92
	Bitumen for precoated stone chipping @ 2% =0.009x1600x2/100= 0.288 say 0.30 kg.				0.00
313	Blown type petroleum bitumen of penetration 85/25 of approved quality	tonne	0.00	34790.00	10.44
2211	Carriage of Tar bitumen	tonne	0.00	163.93	0.05

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2202	Carriage of Stone aggregate below 40 mm nominal size (0.222 + 0.009) =0.231 cum	cum	0.23	0	0.00
2267	Carriage of Stone dust	cum	0.08	163.93	13.61
2208	Carriage of Lime	cum	0.17	163.93	28.52
	for mastic cooker (Taking capacity of cooker as one tonne)				0.00
	LABOUR				0.00
139	Skilled Beldar (for floor rubbing etc.)	day	1.50	369.00	553.50
130	Mistry	day	0.50	306.00	153.00
138	Sprayer (for bitumen, tar etc.)	day	3.50	322.00	1127.00
139	Skilled Beldar (for floor rubbing etc.)	day	0.25	369.00	92.25
128	Mate	day	0.50	325.00	162.50
16	Mastic Cooker	day	0.50	750.00	375.00
9999	sundries (Sealing of joints, placing angles, wastage materials)	L.S.	153.27	2.12	324.93
	Total				6768.86
	Add 1 % Water charges				67.69
	TOTAL				6836.55 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				960.54
	Total				7797.08 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1169.56
	Cost for 10.875 sqm				8966.65
	Cost per sqm				824.52
	Add 1% labour cess				8.25
	TOTAL				832.76
	Say				832.80

16.38 **2.5 cm thick bitumastic sheet with hot bitumen of approved quality, using stone chippings (60% with 12.5 mm nominal size and 40% with 10 mm nominal size) @1.65 cum per 100 sqm and coarse sand @ 1.65 cum per 100 sqm of road surface and with bitumen @ 56 kg/cum of stone chippings and @ 128 kg/cum of sand over a tack coat with hot straight run bitumen, including consolidation with road roller of 8 to 10 tonne etc. complete. (tack coat to be paid separately) :**

16.38.1 **With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt**

Details of cost for 100sqm.
80/100 bitumen @56kg. per cum. Of aggregate and 128kg. per cum. of sand: 56x1.65=92.4kg. = 0.092t +128x1.65 = 211.2kg = 0.211t

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	MATERIAL				
2916	Paving Asphalt VG -10 of approved quality	tonne	0.30	24500.00	7423.50
	Solvent 0.070 kg. x 303 kg. = 21.21kg				
2914	Solvent	kilogram	21.21	30.00	636.30
2211	Carriage of Tar bitumen	tonne	0.30	163.93	49.67
2342	Carriage of solvent/ Diesel.	quintal	0.21	16.39	3.47
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	0.99	686.05	679.19
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	0.66	657.91	434.22
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	1.65	0	0.00
370	Coal (steam)	quintal	0.61	440.00	266.64
2200	Carriage of steam coal	tonne	0.06	187.35	11.35
982	Coarse sand (zone III)	cum	1.65	175.80	290.07
2203	Carriage of Coarse sand	cum	1.65	0	0.00
	Labour for cleaning road surface, heating bitumen mixing and spreading aggregate :				
	(a) For cleaning :				
128	Mate	day	0.16	325.00	52.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen :				
114	Beldar	day	1.19	306.00	364.14
	(c) For cleaning, mixing and spreading pre-mix aggregate :				
130	Mistry	day	0.24	306.00	73.44
114	Beldar	day	6.12	306.00	1872.72
	(d) Consolidation charges :				
113	Chowkidar (at barriers for night watch and for road roller)	day	0.34	322.00	109.48
101	Bhisti	day	0.13	332.00	43.16
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.13	3000.00	390.00
1	Hire charges of Coaltar Boiler 900 to1400 litres	day	0.21	800	168.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.05	3500.00	175.00
	(e) Misc :				
	Wire brush (with thick wire)				
364	Wire brush	each	0.13	20.00	2.60
365	Soft brush	each	0.40	20.00	8.00
9999	Brooms and gunny bags	L.S.	7.15	2.12	15.16
9999	Sundries	L.S.	8.97	2.12	19.02
	TOTAL				13960.73
	Add 1 % Water charges				139.61
	TOTAL				14100.34 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1981.10
	Total				16081.44 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				2412.22
	Cost for 100 sqm.				18493.65
	Cost per sqm.				184.94
	Add 1% labour cess				1.85
	TOTAL				186.79
	Say				186.80
16.38.2	**With paving Asphalt grade VG - 30**				
	Details of cost for 100sqm.				
	60/70 bitumen @56kg. per cum. Of aggregate and 128kg. per cum. of sand: 56x1.65=92.4kg. = 0.092t + 128x1.65 = 211.2kg = 0.211t Total= 0.303t				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality	tonne	0.30	38150.00	11559.45
2211	Carriage of Tar bitumen	tonne	0.30	163.93	49.67
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	0.99	686.05	679.19
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	0.66	657.91	434.22
2202	Carriage of Stone aggregate below 40 mm nominal size Steam coal for heating bitumen @ 2 quintals per tonne of bitumen = 2x0.303=0.606q	cum	1.65	0	0.00
370	Coal (steam)	quintal	0.61	440.00	266.64
2200	Carriage of steam coal	tonne	0.06	187.35	11.35
982	Coarse sand (zone III)	cum	1.65	175.80	290.07
2203	Carriage of Coarse sand	cum	1.65	0	0.00
	Labour for cleaning road surface, heating bitumen mixing and spreading aggregate :				0.00
	(a) For cleaning :				0.00
128	Mate	day	0.16	325.00	52.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen :				0.00
114	Beldar	day	1.19	306.00	364.14
	(c) For cleaning, mixing and spreading pre-mix aggregate :				0.00
130	Mistry	day	0.24	306.00	73.44
114	Beldar	day	6.12	306.00	1872.72
	(d) Consolidation charges :				0.00
113	Chowkidar (at barriers for night watch and for road roller)	day	0.34	322.00	109.48
101	Bhisti	day	0.13	332.00	43.16
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.13	3000.00	390.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.21	800	168.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.05	3500.00	175.00
	(e) Misc :				0.00
364	Wire brush (with thick wire)	each	0.13	20.00	2.60
365	Soft brush	each	0.40	20.00	8.00
9999	Brooms and gunny bags	L.S.	7.15	2.12	15.16
9999	Sundries	L.S.	8.97	2.12	19.02
	TOTAL				17456.91
	Add 1 % Water charges				174.57
	TOTAL				17631.48 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2477.22
	Total				20108.70 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				3016.31
	Cost for 100 sqm.				23125.01
	Cost per sqm.				231.25
	Add 1% labour cess				2.31
	TOTAL				233.56
	Say				**233.60**
16.38.3	**With Refinery Modified Bitumen CRMB 55 conforming to IRC: SP : 53**				
	Details of cost for 100sqm.				
	MATERIAL				
7739	Modified Bitumen Refinary produced CRMB - 55 @56kg. per cum. of aggregate and 128kg. per cum. of sand: 56x1.65=92.4kg. = 0.092t + 128x1.65 = 211.2kg = 0.211t Total = 0.303 t	tonne	0.30	53728.00	16279.58
2914	Solvent 0.070 kg. x 303 kg. = 21.21kg	kilogram	21.21	30.00	636.30
2211	Carriage of Tar bitumen	tonne	0.30	163.93	49.67
2342	Carriage of solvent/ Diesel.	quintal	0.21	16.39	3.47
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	0.99	686.05	679.19
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	0.66	657.91	434.22
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	1.65	0	0.00
370	Coal (steam)	quintal	0.61	440.00	266.64
2200	Carriage of steam coal	tonne	0.06	187.35	11.35
982	Coarse sand (zone III)	cum	1.65	175.80	290.07
2203	Carriage of Coarse sand	cum	1.65	0	0.00
	Labour for cleaning road surface, heating bitumen mixing and spreading aggregate :				0.00
	(a) For cleaning :				0.00
128	Mate	day	0.16	325.00	52.00
114	Beldar	day	1.40	306.00	428.40

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen :				0.00
114	Beldar	day	1.19	306.00	364.14
	(c) For cleaning, mixing and spreading				0.00
	pre-mix aggregate :				0.00
130	Mistry	day	0.24	306	73.44
114	Beldar	day	6.12	306.00	1872.72
	(d) Consolidation charges :				0.00
113	Chowkidar	day	0.34	322.00	109.48
101	Bhisti	day	0.13	332.00	43.16
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.13	3000.00	390.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.21	800	168.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.05	3500.00	175.00
	(e) Misc :				0.00
364	Wire brush (with thick wire)	each	0.13	20.00	2.60
365	Soft brush	each	0.40	20.00	8.00
9999	Brooms and gunny bags	L.S.	7.15	2.12	15.16
9999	Sundries	L.S.	8.97	2.12	19.02
	TOTAL				22816.82
	Add 1 % Water charges				228.17
	TOTAL				23044.99 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				3237.82
	Total				26282.81 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				3942.42
	Cost for 100 sqm.				30225.23
	Cost per sqm.				302.25
	Add 1% labour cess				3.02
	TOTAL				305.27
	Say				305.30

16.39 4 cm thick bitumastic sheet with hot bitumen of approved quality, using stone chippings (60% with 12.5 mm nominal size and 40% with 10 mm nominal size) @ 2.60 cum per 100 sqm and coarse sand @ 2.60 cum per 100 sqm of road surface and with bitumen @ 56 kg/cum of stone chippings and @ 128 kg/cum of sand over a tack coat with hot straight run bitumen, including consolidation with road roller of 8 to 10 tonne etc. complete. (tack coat to be paid separately) :

16.39.1 With paving Asphalt grade VG - 10 heated and then mixed with solvent at the rate of 70 grams per kg of asphalt

	Details of cost for 100sqm.				
	MATERIAL				
2916	Paving Asphalt VG -10 of approved quality @56kg. per cum. of aggregate and 128kg. per cum. of sand: 56x2.60=145.6kg. = 0.146t + 128x2.60 = 332.8kg = 0.333t Total = 0.479 t	tonne	0.48	24500.00	11735.50
2914	Solvent 0.70kg.x479=33.53kg	kilogram	33.53	30.00	1005.90
2342	Carriage of solvent/ Diesel.	quintal	0.34	16.39	5.49
2211	Carriage of Tar bitumen	tonne	0.48	163.93	78.52
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	1.56	686.05	1070.24
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	1.04	657.91	684.23
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	2.60	0	0.00
982	Coarse sand (zone III)	cum	2.60	175.80	457.08
2203	Carriage of Coarse sand	cum	2.60	0	0.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Steam coal for heating bitumen @ 2 qunitals per tonne of bitumen = 2x0.479=0.958q				
370	Coal (steam)	quintal	0.96	440.00	421.52
2200	Carriage of steam coal	tonne	0.10	187.35	17.95
	Labour for cleaning road surface, heating bitumen mixing and spreading aggregate :				
	(a) For cleaning :				
128	Mate	day	0.16	325.00	52.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen :				0.00
114	Beldar	day	1.88	306.00	575.28
	(c) For cleaning, mixing and spreading pre-mix aggregate :				
130	Mistry	day	0.31	306	94.86
114	Beldar	day	9.46	306.00	2894.76
	(d) Consolidation charges :				
113	Chowkidar	day	0.45	322.00	144.90
101	Bhisti	day	0.18	332.00	59.76
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.18	3000.00	540.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.30	800	240.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.03	3500.00	105.00
	(e) Misc :				
364	Wire brush (with thick wire)	each	0.09	20.00	1.80
365	Soft brush	each	0.27	20.00	5.40
9999	Brooms and gunny bags	L.S.	5.33	2.12	11.30
9999	Sundries	L.S.	16.12	2.12	34.17
	TOTAL				21109.26
	Add 1 % Water charges				211.09
	TOTAL				21320.35 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2995.51
	Total				24315.86 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				3647.38
	Cost for 100 sqm.				27963.24
	Cost per sqm.				279.63
	Add 1% labour cess				2.80
	TOTAL				282.43
	Say				**282.40**
16.39.2	**With paving asphalt grade VG - 30 with no solvent**				
	Details of cost for 100sqm.				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality @56kg. per cum. of aggregate and 128kg. per cum. of sand: 56x2.60=145.6kg. = 0.146t + 128x2.60 = 332.8kg = 0.333t Total = 0.479 t	tonne	0.48	38150.00	18273.85
2211	Carriage of Tar bitumen	tonne	0.48	163.93	78.52
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	1.56	686.05	1070.24
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	1.04	657.91	684.23
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	2.60	0	0.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
982	Coarse sand (zone III)	cum	2.60	175.80	457.08
2203	Carriage of Coarse sand	cum	2.60	0	0.00
	Steam coal for heating bitumen @ 2 qunitals per tonne of bitumen =2x0.479=0.958 qtl				
370	Coal (steam)	quintal	0.96	440.00	421.52
2200	Carriage of steam coal	tonne	0.10	187.35	17.95
	Labour for cleaning road surface, heating bitumen mixing and spreading aggregate :				
	(a) For cleaning :				
128	Mate	day	0.16	325.00	52.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen :				
114	Beldar	day	1.88	306.00	575.28
	(c) For cleaning, mixing and spreading pre-mix aggregate :				
130	Mistry	day	0.31	306	94.86
114	Beldar	day	9.46	306.00	2894.76
	(d) Consolidation charges :				
113	Chowkidar	day	0.45	322.00	144.90
101	Bhisti	day	0.18	332.00	59.76
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.18	3000.00	540.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.30	800	240.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.03	3500.00	105.00
	(e) Brushes etc. for cleaning :-				0.00
364	Wire brush (with thick wire)	each	0.09	20.00	1.80
365	Soft brush	each	0.27	20.00	5.40
9999	Brooms and gunny bags	L.S.	5.33	2.12	11.30
9999	Sundries	L.S.	16.12	2.12	34.17
	TOTAL				26636.22
	Add 1 % Water charges				266.36
	TOTAL				26902.58 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				3779.81
	Total				30682.39 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				4602.36
	Cost for 100 sqm.				35284.75
	Cost per sqm.				352.85
	Add 1% labour cess				3.53
	TOTAL				356.38
	Say				356.40

16.39.3 With Refinery Modified Bitumen CRMB 55 conforming to IRC: SP : 53

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 100sqm.				
	MATERIAL				
7739	Modified Bitumen Refinary produced CRMB - 55 @56kg. per cum. of aggregate and 128kg. per cum. of sand: 56x2.60=145.6kg. = 0.146t + 128x2.60 = 332.8kg = 0.333t Total = 0.479 tonne	tonne	0.48	53728.00	25735.71
2914	Solvent 0.70kg.x479=33.53kg.	kilogram	33.53	30.00	1005.90
2342	Carriage of solvent/ Diesel.	quintal	0.34	16.39	5.49
2211	Carriage of Tar bitumen	tonne	0.48	163.93	78.52
2910	Stone chippings/ screenings 12.5/ 13.2 mm nominal size	cum	1.56	686.05	1070.24

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2911	Stone chippings/ screenings 10/ 11.2 mm nominal size	cum	1.04	657.91	684.23
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	2.60	0	0.00
982	Coarse sand (zone III)	cum	2.60	175.80	457.08
2203	Carriage of Coarse sand	cum	2.60	0	0.00
	Steam coal for heating bitumen @ 2 qunitals per tonne of bitumen = 2x0.479=0.958q				0.00
370	Coal (steam)	quintal	0.96	440.00	421.52
2200	Carriage of steam coal	tonne	0.10	187.35	17.95
	Labour for cleaning road surface, heating bitumen mixing and spreading aggregate :				0.00
	(a) For cleaning :				0.00
128	Mate	day	0.16	325.00	52.00
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(b) For heating bitumen :				0.00
114	Beldar	day	1.88	306.00	575.28
	(c) For cleaning, mixing and spreading				0.00
	pre-mix aggregate :				0.00
130	Mistry	day	0.31	306	94.86
114	Beldar	day	9.46	306.00	2894.76
	(d) Consolidation charges :				0.00
113	Chowkidar	day	0.45	322.00	144.90
101	Bhisti	day	0.18	332.00	59.76
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.18	3000.00	540.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.30	800	240.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.03	3500.00	105.00
	(e) Misc :				0.00
364	Wire brush (with thick wire)	each	0.09	20.00	1.80
365	Soft brush	each	0.27	20.00	5.40
9999	Brooms and gunny bags	L.S.	5.33	2.12	11.30
9999	Sundries	L.S.	16.12	2.12	34.17
	TOTAL				35109.47
	Add 1 % Water charges				351.09
	TOTAL				35460.57 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				4982.21
	Total				40442.78 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				6066.42
	TOTAL				46509.19
	Cost for 100 sqm.				465.09
	Cost per sqm.				4.65
	Add 1% labour cess				469.74
	TOTAL				469.74
	Say				469.70

16.40 Providing and laying seal coat of premixed fine aggregate (passing 2.36 mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade VG - 10 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface, including rolling and finishing with road roller all complete.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 100sqm.				
	MATERIAL				
2916	Paving Asphalt VG -10 of approved quality @ 128kg/cum. of sand 128x0.60 = 76.80kg. = 0.0768 m.t	tonne	0.08	24500.00	1881.60
2211	Carriage of Tar bitumen	tonne	0.08	163.93	12.59
982	Coarse sand (zone III)	cum	0.60	175.80	105.48

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2203	Carriage of Coarse sand	cum	0.60	0	0.00
	Steam coal for heating bitumen @ 2 qunitals per tonne of bitumen =2x0.768=0.1.536 qtl				
370	Coal (steam)	quintal	1.54	440.00	675.84
2200	Carriage of steam coal	tonne	0.15	187.35	28.78
	Labour for cleaning road surface, heating bitumen mixing and spreading aggregate :				
	(a) For cleaning :				
128	Mate	day	0.06	325.00	19.50
114	Beldar	day	0.49	306.00	149.94
115	Coolie	day	0.97	318.00	308.46
	(b) For heating bitumen :				0.00
114	Beldar 0.38/96x76.8	day	0.30	306.00	91.80
	(c) For cleaning, mixing and spreading pre-mix aggregate :				
114	Beldar 11.39/0.75x0.60	day	1.11	306.00	339.66
130	Mistry 0.06/0.75x0.60	day	0.05	306	15.30
	(d) Miscellaneous :				
113	Chowkidar	day	0.15	322.00	48.30
101	Bhisti	day	0.06	332.00	19.92
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.06	3000.00	180.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.05	800	40.00
23	Hot Bitumen mixer 0.5 cum i/c hand cart	day	0.01	3500.00	35.00
	(e) Misc :				
364	Wire brush (with thick wire)	each	0.05	20.00	1.00
365	Soft brush	each	0.12	20.00	2.40
9999	Sundries	L.S.	18.20	2.12	38.58
	TOTAL				3994.15
	Add 1 % Water charges				39.94
	TOTAL				4034.09 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				566.79
	Total				4600.88 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				690.13
	Cost for 100 sqm.				5291.01
	Cost per sqm.				52.91
	add 1% labour cess				0.53
	Total				53.44
	Say				53.40

16.41 Providing and laying seal coat over prepared surface of road with bitumen heated in bitumen boiler fitted with the spray set spraying using 98 kg of bitumen of grade VG - 10 and blinding surface with 0.90 cum of stone aggregate of 6.7 mm size (Passing 11.2 mm sieve and retained on 2.36 mm sieve) per 100 sqm of road surface, including rolling and finishing with power road roller all complete.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 100sqm.				
	MATERIAL				
2916	Paving Asphalt VG -10 of approved quality	tonne	0.10	24500.00	2401.00
2211	Carriage of Tar bitumen	tonne	0.10	163.93	16.07
298	Stone Aggregate (Single size) : 06 mm nominal size	cum	0.90	454.98	409.48
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	0.90	0	0.00
	Steam coal for heating bitumen @ 2 qunitals per tonne of bitumen =2x0.0.98=1.96 qtl				
370	Coal (steam)	quintal	1.96	440.00	862.40
2200	Carriage of steam coal	tonne	0.20	187.35	36.72

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Labour for cleaning road surface, heating bitumen mixing and spreading aggregate :				
	(a) For heating and spraying bitumen :				
130	Mistry	day	0.04	306	12.24
138	Sprayer (for bitumen, tar etc.)	day	0.06	322.00	19.32
114	Beldar	day	0.69	306.00	211.14
	(b) For cleaning :				
128	Mate	day	0.11	325.00	35.75
114	Beldar	day	1.40	306.00	428.40
115	Coolie	day	1.40	318.00	445.20
	(c) For screening and spraying aggregate :				0.00
128	Mate	day	0.05	325.00	16.25
114	Beldar	day	0.51	306.00	156.06
	(d) Misc :				
113	Chowkidar	day	0.15	322.00	48.30
101	Bhisti	day	0.06	332.00	19.92
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.06	3000.00	180.00
7	Hire charges of Coaltar Sprayer	day	0.06	350.00	21.00
1	Hire charges of Coaltar Boiler 900 to 1400 litres	day	0.06	800	48.00
	(e) Misc :				
364	Wire brush (with thick wire)	each	0.05	20.00	1.00
365	Soft brush	each	0.12	20.00	2.40
9999	Sundries	L.S.	18.20	2.12	38.58
9999	Brooms and gunny bags	L.S.	2.73	2.12	5.79
	TOTAL				5415.02
	Add 1 % Water charges				54.15
	TOTAL				5469.17 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				768.42
	Total				6237.59 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				935.64
	Cost for 100 sqm.				7173.23
	Cost per sqm.				71.73
	add 1% labour cess				0.72
	Total				72.45
	Say				72.40

16.42 Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 1.00 cum.				
	MATERIAL				
293	Stone Aggregate (Single size) : 40 mm nominal size	cum	0.52	486.92	253.20
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	0.22	595.36	130.98
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	0.11	657.91	72.37
2206	Carriage of Stone aggregate 40 mm nominal size	cum	0.52	178.19	92.66
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	0.33	0	0.00
982	Coarse sand (zone III)	cum	0.45	175.80	78.23
2203	Carriage of Coarse sand	cum	0.45	0.00	0.00
367	Portland Cement (OPC-43 grade)	tonne	0.32	5700	1824.00
2209	Carriage of Cement	tonne	0.32	145.72	46.63
	LABOUR				0.00
155	Mason (average)	day	0.10	369.00	36.90

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar	day	1.63	306.00	498.78
101	Bhisti	day	0.70	332.00	232.40
	MACHINERY				
2	Hire charges of Concrete Mixer 0.25 to 0.40 cum with hooper	day	0.08	800.00	61.60
12	Vibrator (Needle type 40 mm)	day	0.07	350.00	24.50
9999	Sundries	L.S.	26.00	2.12	55.12
	Side shuttering Taking the slab to be 5cm thick and width to be 6 metre, length of road 27 metre = 9.90/24.30 = 0.407 sqm				
5.9.1	Rate as per item no 5.9.1 of SH : Reinforced cement concrete work	sqm	0.41	209.47	85.26 (A)
9999	Sundries	L.S.	1.43	2.12	3.03
	TOTAL				3495.65
	Add 1 % Water charges on all except (A)				34.10
	TOTAL				3529.76 (X)
	Add GST 12% on "X" except A (multiplying factor 0.1405)				483.95
	Total				4013.71 (Y)
	Add 15 % Contractor's profit and overheads on "Y" except A				589.27
	TOTAL				4602.98
	Cost for 1 cum.				4602.98
	add 1% labour cess				46.03
	Total				4649.01
	Say				4649.00

16.43 Providing and laying design mix cement concrete of M-30 grade, in roads/ taxi tracks/ runways, using cement content as per design mix, using coarse sand and graded stone aggregate of 40 mm nominal size in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel form work with sturdy M.S. channel sections, curing, making provision for contraction/ expansion, construction & longitudinal joints (10 mm wide x 50 mm deep) by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer-in- charge (Item of joint fillers, sealants, dowel bars with sleeve/ tie bars to be paid separately).

Note:- Cement content considered in M-30 is @ 340 kg/cum. Nothing extra shall be payable for additional materials components recommended through design mix report in variance with CPWD specifications

16.43.1 Cement concrete prepared with batch mixing machine

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 1 cum.				
	MATERIAL				
367	Portland slag Cement	tonne	0.34	4408.00	1498.72
2209	Carriage of Cement	tonne	0.34	145.72	49.54
293	Stone Aggregate (Single size) : 40 mm nominal size	cum	0.52	486.92	253.20
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	0.22	595.36	130.98
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	0.11	657.91	72.37
982	Coarse sand (zone III)	cum	0.45	175.80	78.23
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	0.52	178.19	92.66
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	0.33	0.00	0.00
2203	Carriage of Coarse sand	cum	0.45	0.00	0.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	LABOUR :- FOR MIXING AND LAYING				0.00
114	Beldar	day	2.00	306.00	612.00
101	Bhisti	day	0.27	332.00	89.64
123	Mason (brick layer) 1st class	day	0.05	413.00	20.65
124	Mason (brick layer) 2nd class	day	0.05	369.00	18.45
128	Mate	day	0.04	325.00	13.00
	For compaction by vibrator				0.00
155	Mason (average)	day	0.07	369.00	25.83
114	Beldar	day	0.07	306.00	21.42
	MACHINERY				0.00
4	Production cost of concrete by batch mix plant. (Assuming 25 cum. per day)	cum	1.00	400.00	400.00
9	Pumping charges of concrete including Hire charges of pump, piping work & accessories etc.	cum	1.00	210.00	210.00
21	Pin vibrator (SHP) with 50 cum. output per day	day	0.03	250.00	6.25
22	Surface Vibrator with 25 cum. output per day	day	0.05	300.00	15.00
	Add for steel form work				
16.43B	Rate as per Item Number 16.43B of SH: Road work	cum	1.00	460.78	460.78
9999	Cutting and making joints	L.S.	50.00	2.12	106.00
	TOTAL				4174.73
	Add 1 % Water charges				41.75
	TOTAL				4216.47 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				592.41
	Total				4808.89 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				721.33
	Cost per cum.				5530.22
	add 1% labour cess				55.30
	Total				5585.52
	Say				5585.50

16.43.2 Cement concrete manufactured in automatic batching plant (RMC plant) i/c transportation to site in transit mixer

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 1 cum.				
	MATERIAL				
367	Portland Cement (OPC-43 grade)	tonne	0.34	4408.00	1498.72
2209	Carriage of Cement	tonne	0.34	145.72	49.54
293	Stone Aggregate (Single size) : 40 mm nominal size	cum	0.52	486.92	253.20
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	0.22	595.36	130.98
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	0.11	657.91	72.37
982	Coarse sand (zone III)	cum	0.45	175.80	78.23
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	0.52	178.19	92.66
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	0.33	0.00	0.00
2203	Carriage of Coarse sand	cum	0.45	0.00	0.00
	LABOUR :- FOR MIXING AND LAYING				
114	Beldar	day	2.00	306.00	612.00
101	Bhisti	day	0.27	332.00	89.64
123	Mason (brick layer) 1st class	day	0.05	413.00	20.65
124	Mason (brick layer) 2nd class	day	0.05	369.00	18.45
128	Mate	day	0.04	325.00	13.00
	For compaction by vibrator				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
155	Mason (average)	day	0.07	369.00	25.83
114	Beldar	day	0.07	306.00	21.42
	MACHINERY				
4	Production cost of concrete by batch mix plant. (Assuming 25 cum. per day)	cum	1.00	400.00	400.00
29	Carriage of concrete by transit mixer.	km/ cum	10.00	37.30	373.00
9	Pumping charges of concrete including Hire charges of pump, piping work & accessories etc.	cum	1.00	210.00	210.00
21	Pin vibrator (SHP) with 50 cum. output per day	day	0.03	250.00	6.25
22	Surface Vibrator with 25 cum. output per day	day	0.05	300.00	15.00
	Add for steel form work				
16.43B	Rate as per Item Number 16.43B of SH: Road work	cum	1.00	460.78	460.78
9999	Cutting and making joints	L.S.	50.00	2.12	106.00
	TOTAL				4547.73
	Add 1 % Water charges				45.48
	TOTAL				4593.20 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				645.35
	Total				5238.55 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				785.78
	Cost per cum.				6024.33
	add 1% labour cess				60.24
	Total				6084.57
	Say				6084.60
16.43A	**Annexure 'A' to Item number 16.43**				
	Details of cost for 8.5 cum. MATERIAL:				
	(i) Painting with primer				
	(i) Construction joint 6.15m. long 30cm deep				
	6.15x(0.30+0.01)= 1.91sqm.+(ii) Dummy joints				
	4.61m long and 10cm deep 10mm wide				
	4.6 lx(0.10+0.10+0.01) = 0.97 sqm.				
	= 2.88 sqm.				
	2.88sqm. @0.26 lit./sqm. = 0.75 lit. +				
	Add 5% wastage = 0.03				
	Total =0.78 lit				
316	Bitumen solution primer of approved quality	litre	0.78	47.00	36.66
9977	Carriage	L.S.	0.91	2.12	1.93
	(ii) Joint sealing compound (GradeA) for construction joint 6.15m long 10mm wide 25mm deep.				
	6.15x2x2.5cm = 3075cucm				
	For dummy joints				
	461xl.0xl0cm. = 4610cucm.				
	= 7685 cum				
	Add 5% wastage = 384 cucm				
	Total = 8069 cucm				
	Say 8.07 cudm. @1.2kg/cudm = 9.68 kg				
314	Bitumen hot sealing compound : grade A	kilogram	9.68	29.00	280.72
9977	Carriage	L.S.	0.91	2.12	1.93
370	Coal (steam)	quintal	0.02	440.00	6.60
9977	Carriage	L.S.	0.91	2.12	1.93
	LABOUR:				0.00
	(ii) For applying primer qty. = 2.88 sqm				0.00
123	Mason (brick layer) 1st class	day	3.00	413.00	1239.00
131	Painter	day	0.10	391.00	39.10

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	(iii) Labour for heating and filling sealing compound.				0.00
124	Mason (brick layer) 2nd class	day	0.25	369.00	92.25
	(iv) Beldar for heating = 0.06 +				0.00
114	Beldar	day	0.68	306.00	208.08
	Cost for 8.5 cum				1908.20
	Cost per cum.				224.49
	add 1% labour cess				2.24
	Total				226.74
	Say				226.70
16.43B	**Annexure 'B' to Item number 16.43**				
	ANALYSIS OF ANNEXTURE 'B' 16.43B (Required in 16.43) STEEL FORM WORK : Part-I Cost of materials : Assuming that pavement 30m long 22.5m wide and 0.30m deep having panel size 6.15x4.61x0.30m or 8.50cu. laid in a day of 8 hrs. Hence form work to be provided for 2 days.				
	MATERIAL				
	22x30.75 = 676.50 2x46.10 = 92.20 Total = 768.70m.				
	768.70 @ 83.10 kg/ m = 25.44 M.T				
	Total = 768.70m.				
	768.70 @ 83.10 kg/ m = 25.44 M.T.				
	Assuming that channel will become unserviceable after use for 5000 slab (100 times) and salvage value of steel shall fetch 20% of its basic cost.				
1007	Structurals such as tees,angles channels and R.S. joists	quintal	0.04	5703.33	232.18
2205	Carriage of Steel	tonne	0.00	145.72	0.59
	Part-II Labour for assembling, errection, dismeritelling and cleaning the shuttering. Assuming that 255 labour for steel shuttering shall be required as compared to timber shuttering. Contact area of 50 slabs of steel shuttering. Long channel = 11x20x0.30 = 66.00 = 2x45.10x0.30 = 27.06				0.00
	Total= 93.06				
	LABOUR				0.00
103	Blacksmith 2nd class	day	2.86	369.00	1055.34
114	Beldar	day	2.86	306.00	875.16
	Carriage of steel for extra lead of runway				0.00
114	Beldar	day	5.73	306.00	1753.38
	TOTAL				3916.66
	Cost for 50 slabs / 8.5 cum				3916.66
	Cost per cum.				460.78
	add 1% labour cess				4.61
	Total				465.39
	Say				465.40
16.44	**Extra for providing and mixing hardening compound of approved quality as per manufacturer's specification in cement concrete.**				
	Details of cost for 1 litre				
	MATERIAL				
7254	Hardening compound (including cartage)	litre	1.00	36.00	36.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	TOTAL				36.00
	Add 1 % Water charges				0.36
	TOTAL				36.36 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				5.11
	Total				41.47 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				6.22
	Cost per litre				47.69
	add 1% labour cess				0.48
	Total				48.17
	Say				48.20
16.45	**Providing and fixing in position pre-moulded joint filler in expansion joints.**				
	Details of cost for 18mm thick 15cm deep and 300m in length				
	MATERIAL				
317	Premoulded joint filler 12 mm thick = 300x0.15 = 45 sqm.	sqm	45.00	360.00	16200.00
2211	Carriage of Tar bitumen 45x0.018 =0.81cum. Weight 256.3kg. per cum. = 256.3x0.81 = 207.6kg. say 0.21 tonne	tonne	0.21	163.93	34.43
	Labour for fixing etc. :				0.00
124	Mason (brick layer) 2nd class	day	1.00	369.00	369.00
114	Beldar	day	3.00	306.00	918.00
9999	Sundries	L.S.	26.91	2.12	57.05
	TOTAL				17578.47
	Add 1 % Water charges				175.78
	TOTAL				17754.26 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				2494.47
	Total				20248.73 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				3037.31
	Cost for 300m length, 18mm width and 15cm depth				23286.04
	Cost for one cm. depth one cm. width per metre length.				2.87
	add 1% labour cess				0.03
	Total				2.90
	Say				2.90
16.46	**Providing and laying in position bitumen hot sealing compound for expansion joints etc.**				
16.46.1	**Using grade 'A' sealing compound.**				
	Details of cost for 20mm wide 20mm deep and Sealing compound- 300x0.02x0.02 = 0.12cum. Weight 256.3kg. per cum. = 256.3x0.12 = 30.76 kg				
	MATERIAL				
314	Bitumen hot sealing compound : grade A	kilogram	30.76	29.00	892.04
2211	Carriage of Tar bitumen 30.76 = 0.3076 Say 0.03 tonne	tonne	0.03	163.93	4.92
	Labour for filling :				
124	Mason (brick layer) 2nd class	day	1.00	369.00	369.00
114	Beldar	day	2.50	306.00	765.00
9999	Sundries	L.S.	20.67	2.12	43.82
	TOTAL				2074.78
	Add 1 % Water charges				20.75
	TOTAL				2095.53 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				294.42
	Total				2389.95 (Y)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 15 % Contractor's profit and overheads on "Y"				358.49
	Cost for 20mm depth, 20mm width and 300m length				2748.44
	Cost for one cm. depth one cm. width per metre length.				2.29
	add 1% labour cess				0.02
	Total				2.31
	Say				**2.30**

16.47 **Painting runway/taxi track/apron marking with adequate nos of coats to give uniform finish with road marking paint of superior make as approved by the Engineer-in- charge, i/c cleaning the surface of ail dirt, scales, oil, grease and other foreign mater;al etc. and lining out complete.**

16.47.1 **New work (Two or more coats)**

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 10sqm.				
	MATERIAL				
	1st Coat - 1.66 + 2nd Coat -1.13				
	Total = 2.79				
7256	Superior quality road making paint (water based)	litre	2.79	130.00	362.70
9977	Carriage of paint	L.S.	5.07	2.12	10.75
	LABOUR				
131	Painter	day	0.54	391.00	211.14
114	Beldar	day	0.54	306.00	165.24
9999	Sundries (including painting brush, wire brush, labour for controlling traffic and other T&P etc.)	L.S.	36.40	2.12	77.17
	TOTAL				827.00
	Add 1 % Water charges				8.27
	TOTAL				835.27 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				117.35
	Total				952.62 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				142.89
	Cost for 10 sqm.				1095.51
	Cost per sqm.				109.55
	add 1% labour cess				1.10
	Total				110.65
	Say				**110.60**

16.47.2 **Old work (One or more coats)**

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 10sqm.				
	MATERIAL				
7256	Superior quality road marking paint (water based)	litre	1.66	130.00	215.80
9977	Carriage of paint	L.S.	1.12	2.12	2.37
	LABOUR				0.00
131	Painter	day	0.36	391.00	140.76
114	Beldar	day	0.36	306.00	110.16
9999	Sundries (including painting brush, wire brush, labour for controlling traffic and other T&P etc.)	L.S.	24.44	2.12	51.81
	TOTAL				520.91
	Add 1 % Water charges				5.21
	TOTAL				526.12 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				73.92
	Total				600.04 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				90.01
	Cost for 10 sqm.				690.04

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Cost per sqm.				69.00
	add 1% labour cess				0.69
	Total				69.69
	Say				**69.70**
16.48	**Painting road surface marking with adequate nos of coats to give uniform finish with ready mixed road marking paint conforming to IS : 164, on bituminous surface in white/yellow shade, including cleaning the surface of all dirt, scales, oil, grease and foreign material etc. complete.**				
16.48.1	**New work (Two or more coats)**				
	barricading				
	MATERIAL				
7255	Road marking paint (spirit based) (confirming to IS 164 spirit base)	litre	1.48	115.00	170.20
9977	Carriage of paint (1.48/0.8x0.08x6.9)	L.S.	2.65	2.12	5.62
	LABOUR				0.00
128	Mate	day	0.10	325.00	32.50
131	Painter	day	0.54	391.00	211.14
114	Beldar	day	1.68	306.00	514.08
	for stretching of rope & errecting of				0.00
9999	Sundries (including painting brush, wire brush, labour for controlling traffic and other T&P etc.)	L.S.	36.40	2.12	77.17
	TOTAL				1010.71
	Add 1 % Water charges				10.11
	TOTAL				1020.81 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				143.42
	Total				1164.24 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				174.64
	Cost for 10 sqm.				1338.87
	Cost per sqm.				133.89
	add 1% labour cess				1.34
	Total				135.23
	Say				135.20
16.48.2	**Old work (One or more coats)**				
	Details of cost for 10sqm.				
	MATERIAL				
7255	Road marking paint (spirit based) (confirming to IS 164 spirit base)	litre	0.89	115.00	102.35
9977	Carriage of paint.	L.S.	0.65	2.12	1.38
	LABOUR				0.00
128	Mate	day	0.06	325.00	19.50
131	Painter	day	0.36	391.00	140.76
114	Beldar	day	1.12	306.00	342.72
	(stretching of rope & errecting of barricading etc.)				0.00
9999	Sundries (including painting brush, wire brush, labour for controlling traffic and other T&P etc.)	L.S.	24.44	2.12	51.81
	TOTAL				658.52
	Add 1 % Water charges				6.59
	TOTAL				665.11 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				93.45
	Total				758.55 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				113.78
	Cost for 10 sqm.				872.34
	Cost per sqm.				87.23
	add 1% labour cess				0.87
	Total				88.11
	Say				**88.10**

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.49	**Making bell mouth opening/ entrance of size 100x50x50 cm for drainage pipe under footpath, including providing cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) for shape of bell mouth, including plastering providing and fixing precast R.C.C./ S.F.R.C. slab including plastering with cement mortar 1:3 (1 cement : 3 fine sand) of 6 mm thickness on exposed surface of the slab & bell mouth including centring, shuttering & neat cement punning inside the bell mouth etc. all complete.**				
	Details of cost for 10 Nos. (i) Earth work in excavation Channel :- 10x1x1.00x0.20x0.15 = 0.30+ Bell mouth :-10x1x1.00x0.50x (0.18+0.075)/2 = 0.64 Total = 0.94				
	MATERIAL				
2.8.1	(Rate as per item no. 2.8.1 of SH: Earth work) (ii) Cement concrete 1:4:8 Channel :- 10x1x1.00x0.20x0.075 = 0.15 cum.	cum	0.94	379.87	357.08 (A)
4.1.8	Rate as per item no 4.1.8 of SH : Concrete Work (iii) Cement concrete 1:3:6 Channel 10x1x1.00x0.20x0.75 = 0.15 + Bed of bell mouth : 10x1x1.00x0.50x(0.18+0.075)/2 = 0.64 + Haunches portion 10x2x(0.35+0.075)/2x0.25x0.375 = 0.40 + Rect part :- 10x2x0.35x0.25x0.375 = 0.65 + Quadrant portion :- 10x1[(0.30x0.30)-3.142/4$(0.30)^2$]x0.30 =0.06+ Central middle part :- 10x1x0.30x0.25x0.075 = 0.05 Total = 1.95 cum.	cum	0.15	2945.72	441.86 (A)
4.1.5	(Rate as per item no.4.1.5 S.H. : Cement Concrete) (iv) RCC in shelves 10x1x1.00x0.50x0.05 = 0.25cum.	cum	1.95	3400.02	6630.04 (A)
5.3	Rate as per item no. 5.3 SH : Reinforced cement concrete work (v) Reinforcement for RCC @100kg/cum. 0.25x100=25kg.	cum	0.25	5335.95	1333.99 (A)
5.22.1	Rate as per item no. 5.22.1 SH : Reinforced cement concrete work (vi) Centering and shuttering For shelves (sides) 10x2(1.00+0.50)x0.05 = 1.50+ Front side of bell mouth : 10x2(0.446)x0.375 = 3.34 + Pipe portion: 10x[0.30x0.375-3.142/4$(030)^2$] = 0.04 + Out side of bell mouth Total= 10x(1.00 =0.50)x0.45 = 9.00+ Deduct pipe opening Total =10x0.785x0.30x0.30 = (-)0.71 Total = 13.17	kg	25.00	93.52	2338.02 (A)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹	
5.9.1	Rate as per item No.5.9.1 of SH : RCC (vii) cement plaster on RCC slab 10x1.00x0.50 = 5.00 + 10x2(1.00+0.50)x0.05 = 1.50+ Total = 6.50 sqm.	sqm	13.17	209.47	2758.75	(A)
5.23	Rate as per item no.13.16.1 (viii) Neat cement punning: Qty. same as marked (x) at (9vi) = Total =3.34+0.04 = 3.38 sqm. Channel portion: 10x1x(0.85+0.30)/2x0.25 = 1.43 Total = 4.81	sqm	6.50	125.94	818.60	(A)
13.26	Rate as per item no.13.18 S.H. Finishing	sqm	4.81	40.11	192.91	(A)
367	Portland Cement (OPC-43 grade)	tonne	0.02	4408.00	105.79	
2209	Carriage of Cement	tonne	0.02	145.72	3.50	
983	Fine sand (zone IV)	cum	0.05	141.85	7.09	
2261	Carriage of Fine sand (1 part badarpur sand : 2 parts jamuna sand)	cum	0.05	163.93	8.20	
	LABOUR				0.00	
114	Beldar	day	0.04	306.00	10.71	
101	Bhisti	day	0.00	332.00	1.00	
9999	Hire charges of mixer	L.S.	1.27	2.12	2.69	
9999	Sundries	L.S.	1.27	2.12	2.69	
	Labour for plaster				0.00	
155	Mason (average)	day	0.33	369.00	121.77	
115	Coolie	day	0.49	318.00	155.18	
101	Bhisti	day	0.60	332.00	199.20	
9999	Extra for removing burr	L.S.	8.71	2.12	18.47	
9999	Scaffolding	L.S.	7.62	2.12	16.15	
	TOTAL "A"				14871.24	
	TOTAL				15523.69	
	Add 1 % Water charges on all except (A) i.e. on (15523.69-14871.24)				6.52	
	TOTAL				15530.21	(X)
	Add GST 12% on "X" except "A" (multiplying factor 0.1405) (15530.21-14871.24)				92.58	
	TOTAL				15622.80	(Y)
	Add 15 % Contractor's profit and overheads on"Y" except (A) i.e. On (15622.8-14871.24)				112.73	
	Cost for 10 nos.				15735.53	
	Cost for one bell mouth				1573.55	
	add 1% labour cess				15.74	
	Total				1589.29	
	Say				1589.30	

16.50 **Providing and fixing Glow studs of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro- reflective surface shall be 35 (+/-5) degress to base .The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4 : 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge.**

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 15 Nos.				
	MATERIAL				
7426	Cat's eye	each	15.00	80.00	1200.00
9977	Carriage of cats eyes	L.S.	2.60	2.12	5.51
	LABOUR				
124	Mason (brick layer) 2nd class	day	0.50	369.00	184.50
114	Beldar	day	0.50	306.00	153.00
9999	Sundries	L.S.	39.00	2.12	82.68
	(including material required for fixing cats eyes and providing barricading to divert traffic)				
	TOTAL				1625.69
	Add 1 % Water charges				16.26
	TOTAL				1641.95 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				230.69
	Total				1872.64 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				280.90
	Cost for 15 Nos.				2153.54
	Cost for one cat's eye.				143.57
	add 1% labour cess				1.44
	Total				145.00
	Say				**145.00**

16.51 Preparation of sub-base road pavement with commercial dry lime (slaked), fly ash stabilised soil with a mix of 3% lime, 12% fly ash and 85% local suitable soil by weight, so as to achieve minimum field C.B.R. of 20, including mixing, rolling with road roller curing etc. all complete.

16.51.1 Minimum thickness 15 cm

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 6.67 sqm. or 1 cum.				
	MATERIAL				
777	Dry hydrated lime (factory made)	quintal	0.41	290.00	118.90
2208	Carriage of Lime	cum	0.07	163.93	11.15
1980	Flyash	cum	0.28	0.00	0.00
2267	Carriage of Stone dust	cum	0.28	163.93	45.41
	LABOUR				
	(i)For earth work :				
114	Beldar	day	0.12	306.00	35.50
115	Coolie	day	0.12	318.00	36.89
979	Royalty for good earth	cum	0.66	33.00	21.62
2241	Carriage of Good earth	cum	0.66	204.92	134.22
	(ii) For mixing :				
114	Beldar	day	0.03	306.00	7.65
115	Coolie	day	0.03	318.00	7.95
	(iii) For rolling layers :				
113	Chowkidar	day	0.00	322.00	0.26
3	Hire charges of Diesel Road Roller - 8 to 10 tonne	day	0.00	3000.00	2.40
9999	Sundries	L.S.	0.18	2.12	0.38
	(iv) Labour for spreading and watering :				
114	Beldar	day	0.26	306.00	79.56
115	Coolie	day	0.26	318.00	82.68
101	Bhisti	day	0.18	332.00	59.76
	TOTAL				644.32
	Add 1 % Water charges				6.44
	TOTAL				650.76 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				91.43
	Total				742.19 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				111.33
	Cost for 1 cum.				853.52
	add 1% labour cess				8.54

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Total				862.06
	Say				**862.10**
16.52	**Providing and fixing precast lime fly ash concrete blocks 1:2:3:6 (1 lime: 2 fly ash : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size), including finishing with 10mm thick cement mortar 1:3 (1 cement : 3 coarse sand) in foot paths, including preparation of sub grade with a hand rammer, laying 10 mm thick leveling course of fine sand (jamuna sand) and filling the joints with fine sand.**				
	Details of cost for a path of area 10sqm. no. of blocks required for 10sqm. = 108 nos.				
	(a) Concrete in blocks (108x0.30x0.30x0.09 = 0.875 cum.)				
16.52Y	Rate as per sub analysis Item Number 16.52Y of SH:Road Work	cum	0.88	1734.89	1518.03
	(b) Labour for surface excavation :				
114	Beldar	day	0.72	306.00	220.32
115	Coolie	day	0.60	318.00	190.80
	(c) For levelling course of fine sand				
6501	Sand zone V (Jamuna)	cum	0.10	141.85	14.19
2335	Carriage of Jamuna sand	cum	0.10	163.93	16.39
	LABOUR				
114	Beldar	day	0.01	306.00	2.72
115	Coolie	day	0.01	318.00	3.40
101	Bhisti	day	0.00	332.00	1.16
	(d) For finishing with 10mm thick cement plaster cement plaster with cement mortar 1:3(1 Cement: 3 Coarse sand)				
	qty. for 9.72sqm. = 0.0972 cum				
3.8	Rate as per Item Number 3.8 of SH: Mortars	cum	0.10	4723.5	459.12
155	Mason (average)	day	0.79	369.00	290.40
115	Coolie	day	0.79	318.00	250.27
101	Bhisti	day	0.26	332.00	86.98
9999	Scaffolding and sundries	L.S.	12.22	2.12	25.91
	(e) For laying blocks and filling joints with Jamuna sand for filling joints 5mm (av.) thick				
6501	Sand zone V (Jamuna)	cum	0.01	141.85	0.71
2335	Carriage of Jamuna sand	cum	0.01	163.93	0.82
123	Mason (brick layer) 1st class	day	0.90	279.00	251.10
115	Coolie	day	1.98	318.00	629.64
101	Bhisti	day	0.05	332.00	16.60
	TOTAL				3978.57
	Add 1 % Water charges				39.79
	TOTAL				4018.35 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				564.58
	Total				4582.93 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				687.44
	Cost for 10sqm. or 0.9cum.				5270.37
	Rate per cum.				5855.97
	add 1% labour cess				58.56
	Total				5914.53
	Say				**5914.50**
16.52X	**Sub Analysis X for sub analysis item Number 16.52Y**				
	Sub Analysis 16.52X for use in sub analysis of 16.52Y				
	Details of cost for 1cum of lime Flyash mortar 1:2:3 (lime:2 flyash:3 coarse sand).				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	MATERIAL				
773	Unslaked lime	quintal	1.52	300.00	456.00
1980	Flyash	cum	0.48	0.00	0.00
982	Coarse sand (zone III)	cum	0.72	175.80	126.58
2208	Carriage of Lime	cum	0.24	163.93	39.34
2266	Carriage of Surkhi	cum	0.48	163.93	78.69
2203	Carriage of Coarse sand	cum	0.72	0.00	0.00
	LABOUR				
	Labour for slaking the lime making, lime putty, grinding, measuring, carrying, depositing and mixing.				
114	Beldar	day	0.90	306.00	275.40
101	Bhisti	day	0.45	332.00	149.40
9999	Running and upkeep of mortar mill	L.S.	26.91	2.12	57.05
9999	Sundries	L.S.	13.52	2.12	28.66
	TOTAL				1211.12
	Cost of 1.00 cum				1211.12
	add 1% labour cess				12.11
	Total				1223.23
	Say				**1223.20**
16.52Y	**Sub Analysis Y for Item Number 16.52**				
	Sub Analysis 'Y' (16.52Y) for use in Item No. 16.52				
	Details of cost for 1 cum. of cement concrete				
	MATERIAL				
	Lime Flyash mortar				
16.52X	Rate as per sub analysis of Item No 16.52X	cum	0.40	1211.12	484.45 A
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	0.64	595.36	381.03
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	0.21	657.91	138.16
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	0.85	0	0.00
	LABOUR				0.00
114	Beldar	day	0.65	306.00	198.90
115	Coolie	day	0.60	318.00	190.80
101	Bhisti	day	0.27	332.00	89.64
123	Mason (brick layer) 1st class	day	0.05	413.00	20.65
124	Mason (brick layer) 2nd class	day	0.05	369.00	18.45
128	Mate	day	0.04	325.00	13.00
9999	Hire and running charges of mixer	L.S.	26.91	2.12	57.05
9999	Sundries	L.S.	13.52	2.12	28.66
9999	Hire charges of steel moulds, table vibrators, rammers, bolts, nuts and washers etc.	L.S.	53.82	2.12	114.10
	TOTAL				1734.89
	Cost of 1.00 cum				1734.89
	add 1% labour cess				17.35
	Total				1752.24
	Say				**1752.20**

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.53	**Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4 m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Spring core (2.5mm thick) wire of high tensile strength of 165 kg/ sq.mm with tape (0.52 mm thick) and weight 43.478 gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)**				
	Details of cost for 30.00 m length				
	MATERIAL				
8691	Punched tape concertina coil 600 mm dia 10 m openable length (Total length 90 m) (Having 50 Nos. of rounds per 6 meter = 1 bundles) Therefore, Nos. of bundles 30/10=3bundles)	bundle	5.00	600.00	3000.00
8692	RBT reinforced barbed wire 9 rounds = 9x30 = 270m	metre	270.00	7.00	1890.00
8693	Turn buckle and strengthening bolt	each set	10.00	42.00	420.00
9999	G.I. staples clips etc.	L.S.	49.40	2.12	104.73
	LABOUR				
	Labour for fixing straightening cutting of tape/ coils & wire				
114	Beldar 0.50x2 = 1.00 Nos (Taken double due to height)	day	1.00	306.00	306.00
102	Blacksmith 1st class	day	0.50	413.00	206.50
103	Blacksmith 2nd class	day	0.50	369.00	184.50
	Total				6111.73
	Add 1 % Water charges				61.12
	TOTAL				6172.85 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				867.28
	Total				7040.13 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1056.02
	cost for 30.00 metre				8096.15
	cost per metre				269.87
	add 1% labour cess				2.70
	Total				272.57
	Say				272.60
16.54	**Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specificatons and directions of Engineer-in-Charge.**				
16.54.1	**50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.**				
	Details of cost for 195 cum (or 450 M.T.)				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality (percentage by weight of total mix)	tonne	22.50	38150.00	858375.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2211	Carriage of Tar bitumen Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 22.50 tonnes Weight of aggregate = 450 -22.50 = 427.50tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =427.50/1.5 =285cum Grading - II/19 mm (Nominal Size) 25 - 10mm size = 30% of 285 = 85.5 cum 10 - 5mm size = 28% of 285 = 79.8 cum 5mm and below = 40% of 285 = 114 cum	tonne	22.50	163.93	3688.43
294	Stone Aggregate (Single size) : 25 mm nominal size Qty = 85.5 * 50 /100	cum	42.75	570.13	24373.06
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.75	657.91	28125.65
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 79.8 * 50 /100	cum	39.90	657.91	26250.61
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 79.8 * 50 /100	cum	39.90	454.98	18153.70
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 285 * 40 /100	cum	114.00	249.22	28411.08
2202	Carriage of Stone aggregate below 40 mm nominal size Lime Filler @ 2% (percentage by weight of aggregate)	cum	279.30	0.00	0.00
777	Dry hydrated lime (factory made)	quintal	85.50	280	23940.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V =8.55/1.29 = 6.63 cum V =8.55/1.29 = 6.63 cum	cum	6.63	163.93	1086.86
	MACHINERY/ HIRE CHARGES:				
62	Hot mix Plant -120 TPH capacity	hour	3.00	15000.00	45000.00
63	Hot mix Plant 100 TPH Capacity	hour	3.00	13000.00	39000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1146531.38

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 1 % Water charges				11465.31
	TOTAL				1157996.70 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				162698.54
	Total				1320695.23 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				198104.28
	Cost for 195 cum(450 M.T.)				1518799.52
	Cost per cum.				7788.72
	add 1% labour cess				77.89
	Total				7866.60
	Say				7866.60
16.54.2	**50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.**				
	Details of cost for 195 cum (or 450 M.T.)				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality (percentage by weight of total mix)	tonne	22.50	38150.00	858375.00
2211	Carriage of Tar bitumen Aggregate	tonne	22.50	0	0.00
	Total weight of mix = 450 tonnes Weight of bitumen = 22.50 tonnes Weight of aggregate = 450 -22.50 = 427.50 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =427.50/1.5 =285cum Grading - II/19 mm (Nominal Size) 25 - 10mm size = 30% of 285 = 85.5 cum 10 - 5mm size = 28% of 285 = 79.8 cum 5mm and below = 40% of 285 = 114 cum				
294	Stone Aggregate (Single size) : 25 mm nominal size Qty = 85.5 * 50 /100	cum	42.75	570.13	24373.06
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.75	657.91	28125.65
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 79.8 * 50 /100	cum	39.90	657.91	26250.61
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 79.8 * 50 /100	cum	39.90	454.98	18153.70
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 285 * 40 /100	cum	114.00	249.22	28411.08
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	279.30	0.00	0.00
	Lime Filler @ 2% (percentage by weight of aggregate)				
777	Dry hydrated lime (factory made)	quintal	85.50	280	23940.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V =8.55/1.29 = 6.63 cum V =8.55/1.29 = 6.63 cum	cum	6.63	163.93	1086.86
	MACHINERY/ HIRE CHARGES:				
76	Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	6.00	12000.00	72000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1130842.96
	Add 1 % Water charges				11308.43
	TOTAL				1142151.39 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				160472.27
	Total				1302623.66 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				195393.55
	Cost for 195 cum(450 M.T.)				1498017.20
	Cost per cum.				7682.14
	add 1% labour cess				76.82
	Total				7758.96
	Say				7759.00

16.55 Providing and laying bituminous macadam using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specificatons and directions of Engineer-in-Charge

16.55.1 50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100- 120 TPH capacity.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 205 cum (or 450 M.T.)				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality 3.5% of 450 MT = 15.75 MT	tonne	15.75	38150.00	600862.50
2211	Carriage of Tar bitumen Weight of mix = 205 * 2.5 = 450 tonnes	tonne	15.75	0	0.00
	Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 15.75 tonnes Weight of aggregate = 450 -15.75 = 434.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =434.25/1.5 =289.50cum Grading - II/19 mm (Nominal Size) 25 - 10mm size = 40% of 289.50 = 115.8 cum 10 - 5mm size = 40% of 289.50 = 115.8 cum 5mm and below = 20% of 289.50 = 57.9 cum				
294	Stone Aggregate (Single size) : 25 mm nominal size Qty = 115.8 * 50 /100	cum	57.90	570.13	33010.53

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 115.8 * 50 /100	cum	57.90	657.91	38092.99
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 115.8 * 50 /100	cum	57.90	657.91	38092.99
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 115.8 * 50 /100	cum	57.90	454.98	26343.34
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 289.50 * 20 /100	cum	57.90	249.22	14429.84
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	289.50	0.00	0.00
	MACHINERY				0.00
62	Hot mix Plant -120 TPH capacity @75tonne per hour actual output	hour	3.00	15000.00	45000.00
63	Hot mix Plant 100 TPH Capacity @75tonne per hour actual output	hour	3.00	13000.00	39000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH @75tonne per hour actual output	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading X * 10 / 100 = 13500.00 * 10 / 100				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom,paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				884959.19
	Add 1 % Water charges				8849.59
	TOTAL				893808.78 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				125580.13
	Total				1019388.91 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				152908.34
	Cost for 205 cum(450 M.T.)				1172297.25
	Cost per cum.				5718.52
	add 1% labour cess				57.19
	Total				5775.71
	Say				5775.70
16.55.2	**50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.**				
	Details of cost for 205 cum (or 450 M.T.)				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality 3.5% of 450 MT = 15.75 MT	tonne	15.75	38150.00	600862.50

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2211	Carriage of Tar bitumen Weight of mix = 205 * 2.5 = 450 tonnes Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 15.75 tonnes Weight of aggregate = 450 -15.75 = 434.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =434.25/1.5 =289.50cum Grading - II/19 mm (Nominal Size) 25 - 10mm size = 40% of 289.50 = 115.8 cum 10 - 5mm size = 40% of 289.50 = 115.8 cum 5mm and below = 20% of 289.50 = 57.9 cum	tonne	15.75	163.93	2581.90
294	Stone Aggregate (Single size) : 25 mm nominal size Qty = 115.8 * 50 /100	cum	57.90	570.13	33010.53
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 115.8 * 50 /100	cum	57.90	657.91	38092.99
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 115.8 * 50 /100	cum	57.90	657.91	38092.99
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 115.8 * 50 /100	cum	57.90	454.98	26343.34
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 289.50 * 20 /100	cum	57.90	249.22	14429.84
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	289.50	0.00	0.00
	MACHINERY				
76	Drum Type HMP of 60-90 TPH capacity @75 tonne per hour actual output @75tonne per hour actual output	hour	6.00	12000.00	72000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH @75tonne per hour actual output	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				875541.08
	Add 1 % Water charges				8755.41
	TOTAL				884296.49 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				124243.66
	Total				1008540.15 (Y)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 15 % Contractor's profit and overheads on "Y"				151281.02
	Cost for 205 cum(450 M.T.)				1159821.17
	Cost per cum.				5657.66
	add 1% labour cess				56.58
	Total				5714.24
	Say				5714.20

16.56 **Providing and laying semi- dense Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in- Charge.**

16.56.1 **25 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity**

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 195 cum (450 tonnes) Area covered for 25 mm thickness=7800 sqm MATERIAL				
7309	Paving Asphalt VG-30 of approved quality 5% of 450 MT = 22.50 MT	tonne	22.50	38150.00	858375.00
2211	Carriage of Tar bitumen	tonne	22.50	163.93	3688.43
	Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 22.50 tonnes Weight of aggregate = 450 -22.50 = 427.50 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =427.50/1.5 =285cum Grading - II/19 mm (Nominal Size) 9.5 - 4.75 mm size = 57% of 285 = 162.45 cum 4.75mm and below = 41% of 285 = 116.85 cum				
0296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 162.45 * 50 /100	cum	81.23	686.05	55724.41
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 162.45 * 50 /100	cum	81.23	657.91	53438.74
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 285 * 41 /100	cum	116.85	249.22	29121.36
2202	Carriage of Stone aggregate below 40 mm nominal size nominal size	cum	279.30	0.00	0.00
	Lime Filler @ 2% (percentage by weightof aggregate)				
777	Dry hydrated lime (factory made)	quintal	85.50	290.00	24795.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V =8.55/1.29 = 6.63 cum	cum	6.63	163.93	1086.86
	MACHINERY/ HIRE CHARGES:				
62	Hot mix Plant -120 TPH capacity @75tonne per hour actual output	hour	3.00	15000.00	45000.00
63	Hot mix Plant 100 TPH Capacity @75tonne per hour actual output	hour	3.00	13000.00	39000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH @75tonne per hour actual output	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar	day	14.00	306.00	4284.00
	working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance				
	for setting out lines, levels and layout of construction				
	for checking line & levels				
	Total				1158511.79
	Add 1 % Water charges				11585.12
	TOTAL				1170096.91 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				164398.62
	Total				1334495.52 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				200174.33
	Cost for 7800 Sqm				1534669.85
	Cost per sqm				196.75
	add 1% labour cess				1.97
	Total				198.72
	Say				198.70
16.56.2	**25 mm compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.**				
	Details of cost for 195 cum (450 tonnes)				
	Area covered for 25 mm thickness=7800 sqm				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality 5% of 450 MT = 22.50 MT	tonne	22.50	38150.00	858375.00
2211	Carriage of Tar bitumen	tonne	22.50	163.93	3688.43
	Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 22.50 tonnes Weight of aggregate = 450 -22.50 =427.50tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =427.50/1.5 =285cum Grading - II/19 mm (Nominal Size) 9.5 - 4.75mm size = 57% of 285 = 162.45 cum 475mm and below = 41% of 285 = 116.85 cum				
296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 162.45 * 50 /100	cum	81.23	686.05	55724.41
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 162.45 * 50 /100	cum	81.23	657.91	53438.74
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 285 * 41 /100	cum	116.85	249.22	29121.36
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	279.30	0.00	0.00
	Lime Filler @ 2% (percentage by weight of aggregate)				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
777	Dry hydrated lime (factory made)	quintal	85.50	290.00	24795.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V =8.55/1.29 = 6.63 cum	cum	6.63	163.93	1086.86
	MACHINERY/ HIRE CHARGES: @75tonne per hour actual output				
76	Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output @75tonne per hour actual output	hour	6.00	12000.00	72000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH @75tonne per hour actual output	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction for checking line & levels	day	14.00	306.00	4284.00
	Total				1146511.79
	Add 1 % Water charges				11465.12
	TOTAL				1157976.91 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				162695.76
	Total				1320672.66 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				198100.90
	Cost for 7800 Sqm				1518773.56
	Cost per sqm				194.71
	add 1% labour cess				1.95
	Total				196.66
	Say				196.70

16.57 Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.

16.57.1 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity

	Details of cost for 191 cum (450 tonnes)				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality @5.50% (percentage by weight of total mix	tonne	24.75	38150.00	944212.50

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2211	Carriage of Tar bitumen	tonne	24.75	163.93	4057.27
	Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =425.25/1.5 =283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum				
296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	686.05	29174.28
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	657.91	27977.62
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	657.91	23316.33
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	454.98	16124.49
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 283.5 * 40 /100	cum	119.07	249.22	29674.63
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	275.00	0.00	0.00
	Lime Filler @ 2% (percentage by weight of aggregate)				
777	Dry hydrated lime (factory made)	quintal	127.60	290.00	37004.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.89	163.93	1621.27
	MACHINERY/ HIRE CHARGES:				
62	Hot mix Plant -120 TPH capacity	hour	3.00	15000.00	45000.00
63	Hot mix Plant 100 TPH Capacity	hour	3.00	13000.00	39000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
0052	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
0055	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
0054	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
0056	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction for checking line & levels	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.)for checking line & levels	day	5.00	369.00	1845.00
	Total				1247289.38
	Add 1 % Water charges				12472.89
	TOTAL				1259762.28 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				176996.60
	Total				1436758.87 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				215513.83
	Cost for 191 cum(450 Tonne)				1652272.71
	Cost per cum.				8650.64
	add 1% labour cess				86.51
	Total				8737.15
	Say				**8737.10**

16.57.2 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in Batch Type Hot Mix Plant of 100- 120 TPH capacity.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 191 cum (450 tonnes) MATERIAL				
7309	Paving Asphalt VG-30 of approved quality @5.50% (percentage by weight of total mix	tonne	24.75	38150.00	944212.50
2211	Carriage of Tar bitumen	tonne	24.75	163.93	4057.27
	Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =425.25/1.5 =283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum Waste Plastic @ 8% of the weigh of bitumen i.e. 24.75*8%				
7280	Waste plastic additive	tonne	1.98	38100.00	75438.00
296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	686.05	29174.28
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	657.91	27977.62
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	657.91	23316.33
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	454.98	16124.49
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 283.5 * 40 /100	cum	119.07	249.22	29674.63
2202	Carriage of Stone aggregate below 40 mm nominal size Lime Filler @ 2% (percentage by weight of aggregate)	cum	275.00	0.00	0.00
777	Dry hydrated lime (factory made)	quintal	127.60	290.00	37004.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.89	163.93	1621.27
	MACHINERY/ HIRE CHARGES:				
62	Hot mix Plant -120 TPH capacity	hour	3.00	15000.00	45000.00
63	Hot mix Plant 100 TPH Capacity	hour	3.00	13000.00	39000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.0	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1322727.38
	Add 1 % Water charges				13227.27
	TOTAL				1335954.66 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				187701.63
	Total				1523656.28 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				228548.44
	Cost for 191 cum(450 Tonne)				1752204.73
	Cost per cum.				9173.85
	add 1% labour cess				91.74
	Total				9265.59
	Say				**9265.60**

16.57.3 40/50 mm compacted thickness with bitumen of grade PMB-40 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.

Details of cost for 191 cum (450 tonnes)

	MATERIAL				
0312	Bitumen grade PMB - 40 @5.50% (percentage by weight of total mix	M.T.	24.75	32950.00	815512.50

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2211	Carriage of Tar bitumen	tonne	24.75	163.93	4057.27
	Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =425.25/1.5 =283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum				
0296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	686.05	29174.28
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	657.91	27977.62
0297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	657.91	23316.33
0298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	454.98	16124.49
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 283.5 * 40 /100	cum	119.07	249.22	29674.63
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	275.00	0	0.00
	Lime Filler @ 2% (percentage by weight of aggregate)				
0777	Dry hydrated lime (factory made)	quintal	127.60	290.00	37004.00
2208	Carriage of Lime(consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.89	163.93	1621.27
	MACHINERY/ HIRE CHARGES:				
0062	Hot mix Plant -120 TPH capacity	hour	3.00	15000.00	45000.00
0063	Hot mix Plant 100 TPH Capacity	hour	3.00	13000.00	39000.00
0064	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
0069	Generator 250 KVA	hour	6.00	400.00	2400.00
0052	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
0053	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
0055	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300	1170.00
0054	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600	2340.00
0056	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200	4680.00
	LABOUR				
0128	Mate	day	0.84	325.00	273.00
0114	Beldar	day	14.00	306.00	4284.00
	working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
0139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1118589.38
	Add 1 % Water charges				11185.89
	TOTAL				1129775.28 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				158733.43
	Total				1288508.70 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				193276.31
	Cost for 191 cum(450 Tonne)				1481785.01
	Cost per cum.				7758.04
	add 1% labour cess				77.58
	Total				7835.62
	Say				7835.60

16.57.4 40/50 mm compacted thickness with bitumen of grade CRMB-60 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 191 cum (450 tonnes) MATERIAL				
7741	Modified Bitumen Refinary produced CRMB - 60 @5.50% (percentage by weight of total mix	tonne	24.75	53728.00	1329768.00
2211	Carriage of Tar bitumen	tonne	24.75	163.93	4057.27
	Aggregate Total weight of mix = 450 tonnes Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =425.25/1.5 =283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum				
296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	686.05	29174.28
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	657.91	27977.62
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	657.91	23316.33
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	454.98	16124.49
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 283.5 * 40 /100	cum	119.07	249.22	29674.63
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	275.00	0	0.00
	Lime Filler @ 2% (percentage by weight of aggregate)				0.00
777	Dry hydrated lime (factory made)	quintal	127.60	290.00	37004.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.89	163.93	1621.27
	MACHINERY/ HIRE CHARGES:				
62	Hot mix Plant -120 TPH capacity	hour	3.00	15000.00	45000.00
63	Hot mix Plant 100 TPH Capacity	hour	3.00	13000.00	39000.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1632844.88
	Add 1 % Water charges				16328.45
	TOTAL				1649173.33 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				231708.85
	Total				1880882.18 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				282132.33
	Cost for 191 cum(450 Tonne)				2163014.51
	Cost per cum.				11324.68
	add 1% labour cess				113.25
	Total				11437.93
	Say				11437.90

16.57.5 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 191 cum (450 tonnes)				
	MATERIAL				
7309	Paving Asphalt VG-30 of approved quality @5.50% (percentage by weight of total mix	tonne	24.75	38150.00	944212.50
2211	Carriage of Tar bitumen	tonne	24.75	163.93	4057.27
	Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =425.25/1.5 =283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum				
0296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	686.05	29174.28

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	657.91	27977.62
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	657.91	23316.33
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	454.98	16124.49
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 283.5 * 40 /100	cum	119.07	249.22	29674.63
2202	Carriage of stone aggregate below 40mm nominal size Lime filler @2%(percentage by weight of aggregate)	cum	275.00	0	0.00
777	Dry hydrated lime (factory made)	quintal	127.60	290.00	37004.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.89	163.93	1621.27
	MACHINERY/ HIRE CHARGES:				
76	Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	6.00	12000.00	72000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1235289.38
	Add 1 % Water charges				12352.89
	TOTAL				1247642.28 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				175293.74
	Total				1422936.01 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				213440.40
	Cost for 191 cum(450 Tonne)				1636376.42
	Cost per cum.				8567.42
	add 1% labour cess				85.67
	Total				8653.09
	Say				8653.10

16.57.6 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) and waste plastic additive @ 8% (percentage by weight of bitumen) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.

Details of cost for 191 cum (450 tonnes)

MATERIAL

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
7309	Paving Asphalt VG-30 of approved quality @5.50% (percentage by weight of total mix	tonne	24.75	38150.00	944212.50
2211	Carriage of Tar bitumen Waste Plastic @ 8% of the weigh of bitumen i.e. 24.75*8%	tonne	24.75	163.93	4057.27
7280	Waste plastic additive Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =425.25/1.5 =283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum	tonne	1.98	38100.00	75438.00
296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	686.05	29174.28
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	657.91	27977.62
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	657.91	23316.33
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	454.98	16124.49
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 283.5 * 40 /100	cum	119.07	249.22	29674.63
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	275.00	0	0.00
	Lime Filler @ 2% (percentage by weight of aggregate)				0.00
777	Dry hydrated lime (factory made)	quintal	127.60	290.00	37004.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.89	163.93	1621.27
	MACHINERY/ HIRE CHARGES:				
76	Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	6.00	12000.00	72000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity				0.00
	(incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller	hour	3.90	1200.00	4680.00
	Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)				0.00
	LABOUR				0.00
128	Mate	day	0.84	325.00	273.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar	day	14.00	306.00	4284.00
	working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction				0.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1310727.38
	Add 1 % Water charges				13107.27
	TOTAL				1323834.66 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				185998.77
	Total				1509833.42 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				226475.01
	Cost for 191 cum(450 Tonne)				1736308.44
	Cost per cum.				9090.62
	add 1% labour cess				90.91
	Total				9181.53
	Say				**9181.50**

16.57.7 40/50 mm compacted thickness with bitumen of grade PMB-40 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in drum Type Hot Mix Plant of 60-90 TPH capacity.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 191 cum (450 tonnes)				
	MATERIAL				
312	Bitumen grade PMB - 40 @5.50% (percentage by weight of total mix	M.T.	24.75	32950.00	815512.50
2211	Carriage of Tar bitumen	tonne	24.75	163.93	4057.27
	Aggregate Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =425.25/1.5 =283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum				
296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	686.05	29174.28
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	657.91	27977.62
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	657.91	23316.33
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	454.98	16124.49
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 283.5 * 40 /100	cum	119.07	249.22	29674.63
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	275.00	0	0.00
	Lime Filler @ 2% (percentage by weight of aggregate)				0.00
777	Dry hydrated lime (factory made)	quintal	127.60	290.00	37004.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.89	163.93	1621.27
	MACHINERY/ HIRE CHARGES:				0.00
76	Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	6.00	12000.00	72000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				0.00
128	Mate	day	0.84	325.00	273.00
114	Beldar	day	14.00	306.00	4284.00
	working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction				0.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1106589.38
	Add 1 % Water charges				11065.89
	TOTAL				1117655.28 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				157030.57
	Total				1274685.84 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				191202.88
	Cost for 191 cum(450 Tonne)				1465888.72
	Cost per cum.				7674.81
	add 1% labour cess				76.75
	Total				7751.56
	Say				7751.60

16.57.8. 40/50 mm compacted thickness with bitumen of grade CRMB-60 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Drum Type Hot Mix Plant of 60-90 TPH capacity.

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 191 cum (450 tonnes)				
	MATERIAL				
7741	Modified Bitumen Refinary produced CRMB - 60 @5.50% (percentage by weight of total mix	tonne	24.75	53728.00	1329768.00
2211	Carriage of Tar bitumen	tonne	24.75	163.93	4057.27
	Aggregate				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Total weight of mix = 450 tonnes Weight of bitumen = 24.75 tonnes Weight of aggregate = 450 -24.75 = 425.25 tonnes Taking density of aggregate = 1.5 tonne/cum Volume of aggregate =425.25/1.5 = 283.50cum Grading - II/19 mm (Nominal Size) 13.2 - 10mm size = 30% of 283.50 = 85.05 cum 10 - 5mm size = 25% of 283.50 = 70.88 cum 5mm and below = 42% of 283.50 = 119.07 cum				
296	Stone Aggregate (Single size) : 12.5 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	686.05	29174.28
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 85.5 * 50 /100	cum	42.53	657.91	27977.62
297	Stone Aggregate (Single size) : 10 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	657.91	23316.33
298	Stone Aggregate (Single size) : 06 mm nominal size Qty = 70.88 * 50 /100	cum	35.44	454.98	16124.49
2903	Stone chippings/ screenings 4.75 mm nominal size Qty = 283.5 * 40 /100	cum	119.07	249.22	29674.63
2202	Carriage of Stone aggregate below 40 mm nominal size Lime Filler @ 2% (percentage by weight of aggregate)	cum	275.00	0.00	0.00
777	Dry hydrated lime (factory made)	quintal	127.60	290.00	37004.00
2208	Carriage of Lime (consitering density of lime as 1.29 T per cum) V = 12.758/1.29 = 9.89 cum	cum	9.89	163.93	1621.27
	MACHINERY/ HIRE CHARGES:				
76	Drum Type HMP of 60-90 TPH capacity @ 75 tonne per hour actual output	hour	6.00	12000.00	72000.00
64	Paver finisher Hydrostatic with sensor control 100 TPH	hour	6.00	1500.00	9000.00
69	Generator 250 KVA	hour	6.00	400.00	2400.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
55	Smooth Wheeled Roller 8 to 10 tonne for initial break down rolling.(6*0.65)	hour	3.90	300.00	1170.00
54	Vibratory roller 8 to 10 tonne for intermediate rolling.(6*0.65)	hour	3.90	600.00	2340.00
56	Tandem Road Roller Finish rolling with 6-8 tonnes smooth wheeled tandem roller.(6*0.65)	hour	3.90	1200.00	4680.00
	LABOUR				0.00
128	Mate	day	0.84	325.00	273.00
114	Beldar working with HMP, mechanical broom, paver, roller, asphalt cutter and assistance for setting out lines, levels and layout of construction	day	14.00	306.00	4284.00
139	Skilled Beldar (for floor rubbing etc.) for checking line & levels	day	5.00	369.00	1845.00
	Total				1620844.88
	Add 1 % Water charges				16208.45
	TOTAL				1637053.33 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				230005.99

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Total				1867059.32 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				280058.90
	Cost for 191 cum(450 Tonne)				2147118.22
	Cost per cum.				11241.46
	add 1% labour cess				112.41
	Total				11353.87
	Say				**11353.90**
16.59	**Manufacturing, supplying and fixing retro reflective sign boards made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D- 4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours).Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing , specification and direction of Engineer--in-charge.**				
16.59.1	**Mandatory/ Regulatory sign boards of 900 mm diametre with support length of 3750 mm**				
	Details cost for 1 no. of 0.636 sqm MATERIAL Aluminium sheet 2 mm thick 3.14/4x(0.9)x(0.9)=0.636 sqm add 10% wastage = 0.064 i.e. 0.700sqm @ 5.60kg/ sqm = 3.92kg				
2704	Aluminium Strip 40 mm wide and 2 mm thick	kilogram	3.92	240.00	940.80
2302	Carriage of G.I. sheet and accessories 3.92kg or 0.00392 MTHigh intensity retro reflective sheet = 0.70 sqm. High intensity sheet for lettering / sign and border etc. Taking 40% Area =0.28sqm,total = 0.70 + 0.28 = 0.98 sqm	tonne	0.00	145.72	0.57
8690	High intensity retro - reflective sheet Steel work Supporting frame 25x25x3mm for 900mm dia board:- 3.14D=3.1416x0.90=2.83 metre @ 1.10kg/m =3.11kg Angle iron 35x35x.5mm for fixing the support frame with vertical Tee-iron support post 2x0.05=0.10m @ 2.6 kg/m = 0.26kg Vertical post of M.S. tee of section ISNT 50x50x6mm = 3.75 metre @ 4.50kg/m = 16.88 kg Bass plate to be welded at bottom end of tee (As hold fast) (100x100x5mm)x7850/133)=0.39kg, total = 3.11 + 0.26 +16.88 + 0.39 = 20.64kg. Add wastage @ 5% = 1.03 Total = 20.64 + 1.03 = 21.67kg	sqm	0.98	1443.00	1414.14
10.2	Rate as per item no 10.2 of SH : Steel work	kg	21.67	95.38	2066.99 (A)
	LABOUR				
128	Mate	day	0.01	325.00	3.25
114	Beldar	day	0.25	306.00	76.50

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
9999	Cost of material for drilling holes, nut bolts & rivets, fabrication etc. Painting with synthetic enamel paint on steel work support frame 25x25x3mm =2.83x0.10=0.283 sqm Fixing angle 35x35x5mm = 2x0.50x0.14=0.014 sqm Vertical post Tee 50x50x6mm =3.75x0.20=0.750sqm Base plate 100x100x5mm Surface area = 2x[0.10x0.10] =0.02 4x0.10x0.005 = 0.002 Total = 1.069 sqm	L.S.	65.00	2.12	137.80
13.61.1	Rate as per item no 13.61.1 of SH : Finishing Painting with epoxy paint on back side of aluminium sheet.	sqm	1.07	115.35	123.43 (A)
13.52.1	Rate as per Item no. 13.52.1 of SH: Finishing	sqm	0.64	119.33	75.89 (A)
9999	Sundries and hold fast etc.	L.S.	78.00	2.12	165.36
	Total				5004.73
	Total A				2266.31
	Add 1 % Water charges on all except (A) i.e.				27.38
	Total				5032.12 (X)
	Add GST 12% on "X" (multiplying factor 0.1405) on all except A				388.60
	Total				5420.71 (Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A)				473.16
	Cost of 1 no.				5893.87
	add 1% labour cess				58.94
	Total				5952.81
	Say				5952.80
16.59.2	**Cautionary /warning sign boards of equilateral triangular shape having each side of 900 mm with support length of 3650 mm**				
	Details cost for 1 board of 0.35 sqm MATERIAL Aluminium sheet 2 mm thick Area 1/2x(0.9)x(0.78)=0.35 sqm add 10% wastage = 0.04 i.e. 0.39sqm @ 5.60kg/ sqm = 2.18kg				
2704	Aluminium Strip 40 mm wide and 2 mm thick	kilogram	2.18	240.00	523.20
2302	Carriage of G.I. sheet and accessories 2.18kg or 0.00218 MT High intensity retro reflective sheet = 0.39 sqm. High intensity sheet for lettering / sign/ symbol/ border etc. Taking 40% Area =0.16sqm, total = 0.39 + 0.16 = 0.55 sqm	tonne	0.00	145.72	0.32

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
8690	High intensity retro - reflective sheet Steel work Supporting frame 25x25x3mm for 900mm dia board:- 3.14D=3.1416x0.90=2.83 metre @ 1.10kg/m =3.11kg Angle iron 35x35x.5mm for fixing the support frame with vertical Tee-iron support post 2x0.05=0.10m @ 2.6 kg/m = 0.26kg Vertical post of M.S. tee of section ISNT 50x50x6mm = 3.75 metre @ 4.50kg/m = 16.88 kg Bass plate to be welded at bottom end of tee (As hold fast) (100x100x5mm)x7850/133)=0.39kg, total = 3.11 + 0.26 +16.88 + 0.39 = 20.64kg. Add wastage @ 5% = 1.03 Total = 20.64 + 1.03 = 21.67kg.	sqm	0.55	1443.00	793.65
10.2	Rate as per item no 10.2 of SH : Steel work	kg	21.05	95.38	2007.85 (A)
	LABOUR				0.00
128	Mate	day	0.01	325.00	3.25
114	Beldar	day	0.25	306.00	76.50
9999	Cost of material for drilling holes, nut bolts & rivets, fabrication etc. Painting with synthetic enamel paint on Angle iron . support frame 25x25x3mm =1x2.7x0.10=0.27 sqm. Angle 35x35x5mm = 2x0.50x0.14=0.014 sqm Tee 50x50x6mm =1x3.65x0.20 =0.73sqm Base plate to be welded at bottom end of Tee 100x100x5mm 0.022 sqm Total = 1.036 sqm	L.S.	65.00	2.12	137.80
13.94.1	Rate as per item no 13.61.1 of SH : Finishing Painting with epoxy paint on back side of aluminium sheet. 0.35 sqm	sqm	1.04	115.35	119.51 (A)
13.82B.1	Rate as per Item no. 13.52.1 of SH: Finishing	sqm	0.35	119.33	41.77 (A)
9999	Sundries & hold fast etc.	L.S.	65.00	2.12	137.80
	Total				3841.64
	Total A				2169.12
	Add 1 % Water charges on all except (A) i.e.				16.73
	Total				3858.36 (X)
	Add GST 12% on "X" (multiplying factor 0.1405) on all except A				237.34
	Total				4095.70 (Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A)				288.99
	Cost of 1 board.				4384.69
	Say				4384.70

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.60	**Manufacturing, supplying and fixing retro reflective overhead signage boards made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity and encapsulated lens type heat activated retro reflective sheeting conforming to type - III of ASTM-D-4956-01 as approved by Engineer-in-charge, letters, borders etc. as per IRC : 67-2001 in silver white with blue colour back ground and with high intensity grade, pasted on substrate by pressure sensitive adhesive backing which shall be activated by applying pressure conforming to class II of ASTM-D- 4956-01 and fixing the same to the plate of structural frame work by means of suitable sized aluminium alloys, rivets or bolts & nuts @ 300 mm centre to centre all along the periphery as well as in two vertical rows along with theft resistant measures, including the cost of painting with two or more coats of epoxy paint in grey colour on the back side of aluminium sheet including appropriate priming coat. The rate includes the cost of rounding off the corners, lowering down the structural frame work from the gantry, fixing and erecting the same in position all complete as per drawings, specification and direction of the engineer-in- charge.(Structural frame work including M.S. plate to be provided separately. Rectangular area of the sheet only shall be measured for payment).**				
16.60.1	**Overhead informatory road signage**				
	Details of cost for boards area 3.00x1.20 =3.60 sqm				
	MATERIAL				
2704	Aluminium Strip 40 mm wide and 2 mm thick Add 5% wastage = 1.01 kg Total = 20.16 + 1.01 = 21.17 kg.	kilogram	21.17	240.00	5080.80
2302	Carriage of G.I. sheet and accessories high itensity sheet for written matter. Taking 40% 3.60x40% = 1.44 sqm. Total = 3.60 + 1.44 = 5.04 sqm.	tonne	0.02	145.72	3.08
8690	High intensity retro - reflective sheet	sqm	5.04	1443.00	7272.72
588	Chromium plated Brass screws 25 mm for peripheries = 2x(300+120)/30=28 nos. For vertical Rows = 2x (120/30-2)=4 nos. Total= 28 + 4 = 32nos. For wastage @ 5% =2 nos. Total = 32 +2 = 34 nos.	100 Nos	0.34	180.00	61.20
	Labour charges for drilling holes				
9999	Hire charges of drill machine and sundries	L.S.	52.00	2.12	110.24
9999	Hoisting board	L.S.	390.00	2.12	826.80
	Labour charges for manufacturing of board including .				0.00
9999	fixing retro reflective sheet Painting with epoxy paint on back side of Aluminium sheet,	L.S.	564.20	2.12	1196.10
13.82B.1	Rate as per Item no. 13.52.1 of SH: Finishing	sqm	3.60	119.33	429.59 (A)
	Total				14980.54
	Add 1 % Water charges on all except (A) i.e. on				145.51
	Total				15126.05 (X)
	Add GST 12% on "X" (multiplying factor 0.1405) on all except A				2064.85
	Total				17190.90
	Add 15 % Contractor's profit and overheads on all except (A) i.e. on				2514.20
	Cost of 3.60 sqm				19705.10
	Cost of 1 sqm.				5473.64
	add 1% labour cess				54.74
	Total				5528.37
	Say				5528.40

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.61	**Providing Retro-reflective regulatory sign board of size 900 mm dia meter made out of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated lens type retro - reflective sheeting as approved by Engineer-in-charge . Letter, symbols, borders etc. will be as per IRC - 67 with required colour scheme on the boards and with the high intensity grade A. The aluminium sheet to be riveted to M.S. frame of angle iron of size 40x40x4 mm. The boards will be fixed to 1 No. 50x50 mm square post made of M.S. angle 50x50x4 mm, 4 m long welded to the frame with adequate anti-theft arrangement .Sheet work to be painted with two or more coats of synthetic enamel paint over an under coat (primer) and back side of aluminium sheet to be painted with two or more coats of epoxy paint including appropriate priming coat complete in all respects as per direction of Engineer-in-charge.**				
	Details cost for one board of 0.635 sqm Aluminium sheet 2mm thick = 0.635 sqm. Add 10% wastage = 0.06 sqm, total = 0.635 + 0.06 = 0.695 sqm. Say 0.70 sqm @ 5.6kg/sqm = 3.98 kg				
	MATERIAL				
2704	Aluminium Strip 40 mm wide and 2 mm thick	kilogram	3.98	240.00	955.20
	0.70 sqm High intensity retro reflective sheet = 0.70 sqm high intensity sheet for lettering/ sing and border etc. Taking 40% Area=0.28 sqm, total = 0.70 + 0.28 = 0.98 sqm.				
8690	High intensity retro - reflective sheet Angle iron 40x40x4mm = 4x0.60=2.40@ 2.4kg/ mtr = 5.76 kg 50x50x5 mm = 2x4m =8m @ 3kg/ mtr =24.00 kg Total = 5.76 + 24.00 = 29.76 kg	sqm	0.98	1443.00	1414.14
10.3	Rate as per item no 10.3 of SH : Steel work	kg	29.76	94.44	2810.68 (A)
	LABOUR				
128	Mate	day	0.01	325.00	3.25
114	Beldar	day	0.25	306.00	76.50
9999	Cost of material for drilling holes, nut bolts & rivets, facrication etc. @ 2% on (X + Y + A). (e) Painting with synthetic enamel paint 1x2.40.12=0.29 sqm 1x4.00x0.12=0.80 sqm, Total = 0.29 + 0.80 = 1.09 sqm	L.S.	70.23	2.12	148.89
13.94.1	Rate as per item no 13.94.1 of SH : Finishing	sqm	1.09	115.35	125.74 (A)
13.82B.1	Painting with epoxy paint on back side of aluminium sheet, Rate as per Item no. 13.82B.1 of SH: Finishing	sqm	0.64	119.33	75.77 (A)
9999	Sundries & hole fast etc,	L.S.	31.20	2.12	66.14
	Total				5676.31
	Add 1 % Water charges on all except (A) i.e. on				26.64
	Total				5702.95 (X)
	Add GST 12% on "X" (multiplying factor 0.1405) on all except A				378.05
	Total				6081.00 (Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A)				460.32
	Cost for 1 board				6541.32
	add 1% labour cess				65.41
	Total				6606.74
	Say				6606.70

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.62	**Providing and applying 2.5 mm thick road marking strips (retro- reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.**				
	Details of cost for 200 sqm (Area covered on one day):-				
	MATERIAL				
	Thermoplastic paint screeded in paint form for 2.5 mm thick road making stripe including glass beads etc. as pe specifications				
	200 sqm @ 5kg/ sqm = 1000 kg				
	Wastage @ 5% = 50kg				
	Total = 1050 kg				
8687	Thermoplastic paint Glass beads (B-class) to be sprayed over the paint stripe @ 250 gms. Per sqm = 100x0.25=25 kg	kg	1050.00	66.00	69300.00
8688	Glass beads	kg	50.00	72.00	3600.00
	MACHINERY				0.00
33	Paint applicator.	day	1.00	800.00	800.00
83	Hire charges of TATA 407 or equivalent for local shifting.	day	1.00	1400.00	1400.00
1241	Commercial LPG in cylinder.	kg	142.00	84.00	11928.00
	LABOUR				0.00
157	Operator (Pile/ Special machine)	day	1.00	520.00	520.00
139	Skilled Beldar (for floor rubbing etc.)	day	4.00	369.00	1476.00
114	Beldar	day	4.00	306.00	1224.00
	Total				90248.00
	Add 1 % Water charges				902.48
	TOTAL				91150.48 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				12806.64
	Total				103957.12 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				15593.57
	Cost for 200 sqm				119550.69
	Cost per sqm				597.75
	add 1% labour cess				5.98
	Rate including labour cess				603.73
	Say				603.70
16.63	**Providing, laying and making kerb channel 30 cm wide and 50 mm thick with cement concrete 1:3:6 (1 cement: 3 coarse sand:6 graded stone aggregate 20 mm nominal size) over 75mm bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth etc. complete and as per direction of Engineer-in-charge.**				
	Details of cost for 10 sqm.				
	METERIAL				
287	Brick Aggregate (Single size) : 40 mm nominal size	cum	1.00	1322.00	1322.00
2260	Carriage of Brick aggregate	cum	1.00	178.19	178.19
6501	Sand zone V (Jamuna)	cum	0.08	141.85	11.35
2335	Carriage of Jamuna sand	cum	0.08	163.93	13.11
	Labour for spreading, ramming and consolidation.				0.00
114	Beldar	day	0.35	306.00	107.10
115	Coolie	day	0.26	318.00	82.68

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
101	Bhisti	day	0.18	332.00	59.76
	Cement concrete-1:3:6				
4.1.6	Rate as per item no 4.1.6 of SH : Concrete Work	cum	0.50	3247.33	1623.66 (A)
	Total				3397.86
	Add 1 % Water charges on all except (A) i.e. on				17.74
	Total				3415.60 (X)
	Add GST 12% on "X" (multiplying factor 0.1405) on all except A				478.30
	Total				3893.90 (Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A)				340.53
	Cost for 10 sqm.				4234.43
	Cost for 1 sqm.				423.44
	add 1% labour cess				4.23
	Total				427.68
	Say				427.70
16.64	**Providing and laying 75 mm thick compacted bed of dry brick aggregate of 40 mm thick nominal size including spreading, well ramming, consolidating and grouting with jamuna sand, including finishing smooth etc. complete as per direction of Engineer-in-charge.**				
	Details of cost for 10 sqm.				
	METERIAL				
287	Brick Aggregate (Single size) : 40 mm nominal size	cum	1.00	1322.00	1322.00
2260	Carriage of Brick aggregate	cum	1.00	178.19	178.19
6501	Sand zone V (Jamuna)	cum	0.08	141.85	11.35
2335	Carriage of Jamuna sand	cum	0.08	163.93	13.11
	Labour for spreading, ramming and consolidation.				0.00
114	Beldar	day	0.35	306.00	107.10
115	Coolie	day	0.26	318.00	82.68
101	Bhisti	day	0.18	332.00	59.76
	Total				1774.19
	Add 1 % Water charges				17.74
	TOTAL				1791.93 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				251.77
	Total				2043.70 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				306.56
	Cost for 10 sqm.				2350.26
	Cost for 1 sqm.				235.03
	add 1% labour cess				2.35
	Total				237.38
	Say				237.40
16.65	**Providing and fixing post delineators made of ABS round body fitted with 2 nos 100 mm dia high reflective reflectors and mounted on MS pipe of 65 mm dia duly powder coated anti-rust and anti theft steel to be installed as per direction of Engineer-in- charge.**				
	Details of cost for 1 no.				
	MATERIAL				
8685	Delineator	each	1.00	336.00	336.00
9999	Fixing materials.	L.S.	78.00	2.12	165.36
9999	Fixing charges.	L.S.	39.00	2.12	82.68
	Total				584.04
	Add 1 % Water charges				5.84
	TOTAL				589.88 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				82.88
	Total				672.76 (Y)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹	
	Add 15 % Contractor's profit and overheads on "Y"				100.91	
	Cost of 1 no.				773.67	
	add 1% labour cess				7.74	
	Total				781.41	
	Say				781.40	
16.66	**Excavating holes upto 0.10 cum, including getting out the excavated soil, then returning the soil as deported in layers not exceeding 20 cm in depth, including consolidating and deposited layer by ramming watering etc., disposing of surplus excavated soil as directed with in a lead of 50 mm and lift upto 1.5 m.**					
16.66.1	**All kind of soil**					
	Details of cost for 30 holes-					
	Earth work 30x0.10 = 3.0 cum.					
	Extra labour for filling and ramming					
2.8.1	Rate as per item no. 2.8.1 of SH: Earth work	cum	3.00	379.87	1139.60	(A)
9999	Sundries	L.S.	13.52	2.12	28.66	
	TOTAL				1168.27	
	Add 1 % Water charges on all except (A) i.e. on				0.29	
	Total				1168.55	(X)
	Add GST 12% on "X" (multiplying factor 0.1405) on all except A				4.07	
	Total				1172.62	(Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A)				4.95	
	Cost of 30 holes				1177.57	
	Cost of 1 hole				39.25	
	add 1% labour cess				0.39	
	Total				39.64	
	Say				**39.60**	
16.67	**Providing and fixing at or near ground level factory made RCC pavement slab of M- 30 grade of size 450x450x50 mm, including reinforcement with 6 mm dia M.S. bars 4 nos on each side, including setting in position in footpath to the required level and line over a bed of 20 mm average thick cement mortar 1:5 (1 cement : 5 coarse sand), having joint thickness not more than 5mm except on curve, including filling of joints with same cement mortar and making grooves etc. complete as per direction of Engineer-in-charge.**					
	Details of cost for 10 sqm					
	MATERIAL					
8694	Precast pavement slab 450 x 450 x 50 mm (M - 30)	each	48.00	145.00	6960.00	
9977	Carriage of slab.	L.S.	52.00	2.12	110.24	
	20mm (bed and joints) CM. 1:5 (1 cement: 5 coarse sand)				0.00	
2114	Rate as per Item Number 2114 of SH: Mortars	cum	0.25	1938.21	484.55	
	LABOUR				0.00	
155	Mason (average)	day	1.10	369.00	405.90	
100	Bandhani	day	1.10	325.00	357.50	
114	Beldar	day	0.55	306.00	168.30	
101	Bhisti	day	0.27	332.00	89.64	
9999	Sundries	L.S.	10.79	2.12	22.87	
	Total				8599.01	
	Add 1 % Water charges				85.99	
	TOTAL				8685.00	(X)
	Add GST 12% on "X" (multiplying factor 0.1405)				1220.24	
	Total				9905.24	(Y)
	Add 15 % Contractor's profit and overheads on "Y"				1485.79	
	Cost for 10 sqm.				11391.03	
	Cost for 1 sqm				1139.10	

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	add 1% labour cess				11.39
	Total				1150.49
	Say				1150.50
16.68	**Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge.**				
	Details of cost for 10.00 sqm				
	MATERIAL				
8689	Interlocking C.C. paver block (60 mm thick, M-30) Bedding layer - 50mm thick	sqm	10.00	440.00	4400.00
982	Coarse sand (zone III) =10x0.050=0.50 cum	cum	0.50	175.80	87.90
2203	Carriage of Coarse sand	cum	0.50	0.00	0.00
983	Fine sand (zone IV)	cum	0.15	141.85	21.28
2203	Carriage of Coarse sand	cum	0.15	0.00	0.00
	Laying charges (Bassed on actual observation)				
	LABOUR				
123	Mason (brick layer)	day	0.50	369.00	184.50
124	1st class Mason (brick layer)	day	0.50	369.00	184.50
114	2nd class Beldar	day	1.00	306.00	306.00
115	Coolie	day	0.50	318.00	159.00
	Total				5343.18
	Add 1 % Water charges				53.43
	TOTAL				5396.61 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				758.22
	Total				6154.83 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				923.22
	Cost for 10.00 sqm				7078.06
	Cost for 1.00 sqm.				707.81
	add 1% labour cess				7.08
	Total				714.88
	Say				714.90
16.69	**Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).**				
	Details of cost 100 metre i.e. 100x0.375x0.20=7.50 cum. 100x0.375x0.20=7.50 cum. No. of kerb stones = 100/0.405=247 Nos Precast C.C. Kerb stone M - 25 = 247x0.40x0.375x0.20=7.41 cum				
	METERIAL				
8686	Precast C.C. Kerb stone M - 25 Mortar 1:3 for fixing joints = 246x1x [(0.115+0.20)/2] x 0.375x0.005 = 0.073 cum. Cement mortar 1:3 (1 cement : 3 coarse sand)	cum	7.41	5600.00	41496.00
2112	Rate as per Item Number 2112 of SH: Mortars	cum	0.07	2848.95	207.97
	Labour for fixing of kerb stones				0.00
123	Mason (brick layer) 1st class	day	2.50	369.00	922.50
124	Mason (brick layer) 2nd class	day	2.50	369.00	922.50

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar	day	2.50	306.00	765.00
115	Coolie	day	1.65	318.00	524.70
	Total				44838.67
	Add 1 % Water charges				448.39
	TOTAL				45287.06 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				6362.83
	Total				51649.89 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				7747.48
	Cost of 7.50 cum				59397.38
	cost for 1 cum.				7919.65
	add 1% labour cess				79.20
	Total				7998.85
	Say				**7998.80**

16.7 Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in-charge.

16.70.1 Made of G.I. wire of dia 4 mm

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 10 sqm.				
	MATERIAL				
	G.I. chain link 50x50 mm mesh = 10.00 sqm. Wastage @ 5% = 0.50 sqm. Total = 10.50 sqm.				
8695	Chain link fabric fencing mesh of size 50x50 mm made of G.I. wire of dia 4 mm	sqm	10.50	300.00	3150.00
9977	Carriage.	L.S.	156.00	2.12	330.72
	LABOUR				0.00
103	Blacksmith 2nd class	day	2.14	369.00	789.66
114	Beldar	day	1.62	306.00	495.72
9999	Sundries including G.I. wire, nuts and bolts and warshers.	L.S.	174.75	2.12	370.47
	Total				5136.57
	Add 1 % Water charges				51.37
	TOTAL				5187.94 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				728.90
	Total				5916.84 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				887.53
	Cost for 10 sqm.				6804.37
	Cost for 1 sqm.				680.44
	add 1% labour cess				6.80
	Total				687.24
	Say				**687.20**

16.70.2 Made of G.I. wire of dia. 4 mm, PVC coated to achieve outer dia not less than 5 mm in required colour and shade

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 10 sqm.				
	MATERIAL				
	G.I. chain link 50x50 mm mesh PVC Coated = 10.00 sqm Wastage @ 5% = 0.50 sqm. Total = 10.50 sqm.				
8696	Chain link fabric fencing mesh of size 50x50 mm made of G.I. wire of dia 4 mm, PVC coated to outer dia 5 mm	sqm	10.50	330.00	3465.00
9977	Carriage.	L.S.	156.00	2.12	330.72
	LABOUR				
103	Blacksmith 2nd class	day	2.14	369.00	789.66
114	Beldar	day	1.62	306.00	495.72

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
9999	Sundries including G.I. wire, nuts and bolts and warshers.	L.S.	174.75	2.12	370.47
	Total				5451.57
	Add 1 % Water charges				54.52
	TOTAL				5506.09 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				773.61
	Total				6279.69 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				941.95
	Cost for 10 sqm.				7221.64
	Cost for 1 sqm.				722.16
	add 1% labour cess				7.22
	Total				729.39
	Say				**729.40**
16.71	**Providing and fixing G.I. chain link fabric fencing of required width in mesh size 25x25 mm made of G.I. wire of dia 3 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-in- charge.**				
	Details of cost for 10 sqm.				
	MATERIAL				
	G.I. chain link 25x25 mm mesh = 10.00 sqm.				
	Wastage @ 5% = 0.50 sqm. Total = 10.50 sqm.				
8697	Chain link fabric fencing mesh of size 25x25 mm made of G.I. wire of dia 3 mm	sqm	10.50	380.00	3990.00
9977	Carriage.	L.S.	156.00	2.12	330.72
	LABOUR				
103	Blacksmith 2nd class	day	2.14	369.00	789.66
114	Beldar	day	1.62	306.00	495.72
9999	Sundries including G.I. wire, nuts and bolts and warshers.	L.S.	174.75	2.12	370.47
	Total				5976.57
	Add 1 % Water charges				59.77
	TOTAL				6036.34 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				848.11
	Total				6884.44 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1032.67
	Cost for 10 sqm.				7917.11
	Cost for 1 sqm.				791.71
	add 1% labour cess				7.92
	Total				799.63
	Say				**799.60**
16.72	**Supplying and stacking of hard stone (for stone pitching) 22.5 cm thick at site**				
	Detail of cost for 2.25 cum				
	MATERIAL				
	22.5 cm thick stone (Hard)				
1158	Stone for pitching 15 cm x 22.5 cm	cum	2.25	600.00	1350.00
	Carriage by mechanical transport i/c loading unloading and stacking				
2215	Carriage of Soling stone & masonary stone	cum	2.25	192.86	433.94
	TOTAL				1783.94
	Add 1 % Water charges				17.84
	TOTAL				1801.77 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				253.15
	Total				2054.92 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				308.24
	Cost for 2.25 cum				2363.16
	Cost for one cum				1050.29

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	add 1% labour cess				10.50
	Total				1060.80
	Say				1060.80
16.73	**Dry stone pitching 22.5 cm thick laid in courses and required profile with hammer dressed stones having no side less than 15 cm, with minimum depth of 20 cm including preparing the bedding surface etc. all complete. (Payment for Stone to be made separately).**				
	Detail of cost for 10 sqm				
	LABOUR				
123	Mason (brick layer) 1st class	day	1.08	413.00	446.04
124	Mason (brick layer) 2nd class	day	1.08	369.00	398.52
114	Beldar	day	2.15	306.00	657.90
115	Coolie	day	1.61	318.00	511.98
9999	Sundries	L.S.	6.76	2.12	14.33
	TOTAL				2028.77
	Add 1 % Water charges				20.29
	TOTAL				2049.06 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				287.89
	Total				2336.95 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				350.54
	Cost for 10 sqm				2687.49
	Cost for one sqm				268.75
	add 1% labour cess				2.69
	Total				271.44
	Say				271.40
16.74	**75 mm thick back filling for pitching including supplying of required materials and consolidation etc. complete with :**				
16.74.1	Moorum				
	Details of cost for 100 sqm				
	MATERIAL				
810	Moorum	cum	7.50	158.35	1187.63
	Carriage by mechanical transport i/c loading unloading and stacking				
2265	Carriage of Moorum	cum	7.50	163.93	1229.48
	LABOUR				
114	Beldar	day	1.64	306.00	501.84
101	Bhisti	day	0.13	332.00	43.16
	TOTAL				2962.10
	Add 1 % Water charges				29.62
	TOTAL				2991.72 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				420.34
	Total				3412.06 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				511.81
	Cost for 100 sqm				3923.87
	Cost per sqm				39.24
	add 1% labour cess				0.39
	Total				39.63
	Say				39.60
16.74.2	**Stone aggregate 20 mm nominal size**				
	Detail of cost for 100 sqm				
	MATERIAL				
295	Stone Aggregate (Single size) : 20 mm nominal size 100sqm x7.50cm= 7.50 cum	cum	7.50	595.36	4465.20
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	7.50	0	0.00
	LABOUR				0.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
114	Beldar	day	2.05	306.00	627.30
101	Bhisti	day	0.13	332.00	43.16
	TOTAL				5135.66
	Add 1 % Water charges				51.36
	TOTAL				5187.02 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				728.78
	Total				5915.79 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				887.37
	Cost for 100 sqm				6803.16
	Cost per sqm				68.03
	add 1% labour cess				0.68
	Total				68.71
	Say				68.70
16.74.3	**Stone aggregate 40 mm nominal size**				
	Detail of cost for 100 sqm				
	MATERIAL				
293	Stone Aggregate (Single size) : 40 mm nominal size 100sqm x7.50cm= 7.50 cum	cum	7.50	486.92	3651.90
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	7.50	0.00	0.00
	LABOUR				0.00
114	Beldar	day	2.05	306.00	627.30
101	Bhisti	day	0.13	332.00	43.16
	TOTAL				4322.36
	Add 1 % Water charges				43.22
	TOTAL				4365.58 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				613.36
	Total				4978.95 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				746.84
	Cost for 100 sqm				5725.79
	Cost per sqm				57.26
	add 1% labour cess				0.57
	Total				57.83
	Say				57.80
16.75	**Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).**				
	Details of cost for 1.00 cum				
	MATERIAL				
	Ready mix concrete M 25 = 1.00 cum. i/c placing of concrete, vibrating, leveling etc.				
5.37.1	Rate as per Item No.5.37.1 of SH:RCC	cum	1.00	5507.34	5507.34 (A)
9999	Operational charges for vacuum dewatering system i/c screed vibration , placing of filter mat , top mat, vacuum process, floating ,troweling, Brooming etc.	L.S.	57.20	2.12	121.26
9999	T& P charges i/c consumable power charges, loading , unloading and hire charges of equipments	L.S.	41.60	2.12	88.19
	Total				5716.80
	Add 1 % Water charges on all except (A) i.e. on				2.09
	Total				5718.89 (X)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add GST 12% on "X" (multiplying factor 0.1405) on all except A				29.72
	Total				5748.61 (Y)
	Add 15 % Contractor's profit and overheads on "Y" all except (A)				36.19
	Cost for 1 cum				5784.80
	add 1% labour cess				57.85
	Total				5842.65
	Say				5842.70
16.76	**Deduct for using of M-20 grade concrete instead of M-25 grade concrete in C.C. pavement.**				
	Details of cost for 1 cum. Cement for M-25 mix = 0.410 t Cement for M - 20 mix = 0.383 t				
	METERIAL				
367	Portland Cement (OPC-43 grade)	tonne	0.03	4408.00	119.02
2209	Carriage of Cement Plasticizer for M- 25 mix = 2.050kg Plasticizer for M- 20 mix = 1.915 kg Difference = 0.135 kg	tonne	0.03	145.72	3.93
7318	Plasticizer / super plasticizer	kilogram	0.14	29.00	3.92
	Total				126.87
	Add 1 % Water charges				1.27
	TOTAL				128.13 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				18.00
	Total				146.14 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				21.92
	Cost for 1 cum.				168.06
	add 1% labour cess				1.68
	Total				169.74
	Say				169.70
16.77	**Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material within all lifts and lead upto 1km (by mechanical means).**				
	Details of cost for 100 sqm				
	LABOUR				
128	Mate	day	0.01	325.00	3.25
114	Beldar	day	0.25	306.00	76.50
	MACHINERY				0.00
38	Tractor with ripper attachment.	day	0.01	1200.00	12.00
14	Front end loader capacity 1.00 cum	day	0.03	6000.00	150.00
17	Hire and running charges of tipper	day	0.03	3750.00	107.81
	TOTAL				349.56
	Add 1 % Water charges				3.50
	TOTAL				353.06 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				49.60
	Total				402.66 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				60.40
	Cost for 100 sqm				463.06
	Cost for 1 sqm				4.63
	add 1% labour cess				0.05
	Total				4.68
	Say				4.70
16.78	**Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.**				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.78.1	**With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30**				
	Details of cost for 225 cum (450 tonnes)				
	MATERIAL				
	Close graded graunlar sub-base material as per Grading-I of specifications 53mm to 9.5mm @ 50% = 144 cum 9.5 mm to 2.36mm @ 20% = 57 cum 2.36mm below @ 30% = 86.40 cum				
292	Stone Aggregate (Single size) : 50 mm nominal size	cum	72.00	473.70	34106.40
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	72.00	657.91	47369.52
	nominal size				
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	72.00	178.19	12829.68
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	72.00	0.00	0.00
1179	Crushed stone 2.36 mm to 12.5 mm size nominal size	cum	57.00	900.00	51300.00
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	57.00	0.00	0.00
2903	Stone chippings/ screenings 4.75 mm nominal size	cum	43.20	249.22	10766.30
2904	Stone chippings/ screenings 150 micron nominal size	cum	43.20	234.89	10147.25
2203	Carriage of Coarse sand	cum	86.40	0.00	0.00
	Machinery/ Hire charges:				
59	Wet Mix Plant 60 TPH @75 tonne capacity	hour	6.00	950.00	5700.00
70	Generator 100 KVA/125 KVA	hour	6.00	300.00	1800.00
57	Water Tanker 5 to 6 KL capacity 5 km lead with one trip per hour	hour	4.50	200.00	900.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
	Tipper 10 tonne capacity(taking lead= 10 Km) =450x10 =4500 t.Km				
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
50	Motor Grader 3.35 metre blade	hour	6.00	2400.00	14400.00
54	Vibratory roller 8 to 10 tonne	hour	6.00	600.00	3600.00
	LABOUR				
128	Mate	day	0.40	325.00	130.00
139	Skilled Beldar (for floor rubbing etc.)	day	2.00	369.00	738.00
114	Beldar	day	8.00	306.00	2448.00
	Total				220370.15
	Add 1 % Water charges				2203.70
	TOTAL				222573.85 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				31271.63
	Total				253845.48 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				38076.82
	Cost for 225 cum(450 Tonne)				291922.30
	Cost per cum.				1297.43
	add 1% labour cess				12.97
	Total				1310.41
	Say				1310.40
16.78.2	**With material conforming to Grade-II (size range 53 mm to 0.075 mm) having CBR Value-25**				
	Details of cost for 225 cum (450 tonnes)				
	MATERIAL				

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Close graded graunlar sub-base material as per Grading-I of specifications 26.5mm to 9.5mm @ 35% = 100.80 cum 9.5 mm to 2.36mm @ 25% = 72 cum 2.36mm below @ 40% = 115.20 cum				
294	Stone Aggregate (Single size) : 25 mm nominal size	cum	50.40	570.13	28734.55
297	Stone Aggregate (Single size) : 10 mm nominal size	cum	50.40	657.91	33158.66
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	100.80	0	0.00
1179	Crushed stone 2.36 mm to 12.5 mm size nominal size	cum	72.00	900.00	64800.00
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	72.00	0.00	0.00
2903	Stone chippings/ screenings 4.75 mm nominal size	cum	57.60	249.22	14355.07
2904	Stone chippings/ screenings 150 micron nominal size	cum	57.60	234.89	13529.66
2203	Carriage of Coarse sand	cum	115.20	0.00	0.00
	Machinery/ Hire charges:				
59	Wet Mix Plant 60 TPH @75 tonne capacity	hour	6.00	950.00	5700.00
70	Generator 100 KVA/125 KVA	hour	6.00	300.00	1800.00
57	Water Tanker 5 to 6 KL capacity 5 km lead with one trip per hour	hour	4.50	200.00	900.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
	Tipper 10 tonne capacity(taking lead= 10 Km) =450x10 =4500 t.Km				
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
50	Motor Grader 3.35 metre blade	hour	6.00	2400.00	14400.00
54	Vibratory roller 8 to 10 tonne	hour	6.00	600.00	3600.00
	LABOUR				
128	Mate	day	0.40	325.00	130.00
139	Skilled Beldar (for floor rubbing etc.)	day	2.00	369.00	738.00
114	Beldar	day	8.00	306.00	2448.00
	Total				208428.95
	Add 1 % Water charges				2084.29
	TOTAL				210513.24 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				29577.11
	Total				240090.35 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				36013.55
	Cost for 225 cum(450 Tonne)				276103.90
	Cost per cum.				1227.13
	add 1% labour cess				12.27
	Total				1239.40
	Say				1239.40

16.78.3 With material conforming to Grade-III (size range 26.5 mm to 0.075 mm) having CBR Value-20

Details of cost for 225 cum (450 tonnes)
MATERIAL
Close graded graunlar sub-base material as per Grading-III of specifications
9.5mm to 4.75mm @ 35% = 100.80 cum
4.75 mm to 2.36mm @ 12.5% = 36.00 cum
2.36mm below @ 52.5% = 151.20 cum

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
1179	Crushed stone 2.36 mm to 12.5 mm size	cum	100.80	900.00	90720.00
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	100.80	0.00	0.00
1179	Crushed stone 2.36 mm to 12.5 mm size	cum	36.00	900.00	32400.00
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	36.00	0.00	0.00
2903	Stone chippings/ screenings 4.75 mm nominal size	cum	75.60	249.22	18841.03
2904	Stone chippings/ screenings 150 micron nominal size	cum	75.60	234.89	17757.68
2203	Carriage of Coarse sand	cum	151.20	0.00	0.00
	Machinery/ Hire charges:				
59	Wet Mix Plant 60 TPH @75 tonne capacity	hour	6.00	950.00	5700.00
70	Generator 100 KVA/125 KVA	hour	6.00	300.00	1800.00
57	Water Tanker 5 to 6 KL capacity5 km lead with one trip per hour	hour	4.50	200.00	900.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
	Tipper 10 tonne capacity(taking lead= 10 Km) =450x10 =4500 t.Km				
53	Tipper -5 Cum	tonne km	4500.00	3.30	14850.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1485.00
50	Motor Grader 3.35 metre blade	hour	6.00	2400.00	14400.00
54	Vibratory roller 8 to 10 tonne	hour	6.00	600.00	3600.00
	LABOUR				
128	Mate	day	0.40	325.00	130.00
139	Skilled Beldar (for floor rubbing etc.)	day	2.00	369.00	738.00
114	Beldar	day	8.00	306.00	2448.00
	Total				213569.72
	Add 1 % Water charges				2135.70
	TOTAL				215705.41 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				30306.61
	Total				246012.02 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				36901.80
	Cost for 225 cum(450 Tonne)				282913.83
	Cost per cum.				1257.39
	add 1% labour cess				12.57
	Total				1269.97
	Say				1270.00

16.79 Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub- base / base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.

Details of cost for 225 cum (495 tonne)
MATERIAL
Conforming to table ……

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	45mm to22.4mm @ 30% = 89.10 cum Qty for 0292,0293,0294,0295 codes = 89.10 / 4 = 22.275 cum Qty for 2206, 2202 codes = 89.10 /2 = 4 4.55 cum 22.4 mm to 2.36mm @ 40% = 118.80 cum Qty for 0294,0295 codes = 118.80 /4 = 29.70 cum Qty for 1179 code = 118.80 /2 = 59.40 cum 2.36 mm to 75 microon @ 30% = 89.10 cum Qty for 2903, 2904 codes = 89.10 / 2 = 44.55 cum				
292	Stone Aggregate (Single size) : 50 mm nominal size	cum	22.28	473.70	10551.67
293	Stone Aggregate (Single size) : 40 mm nominal size	cum	22.28	486.92	10846.14
294	Stone Aggregate (Single size) : 25 mm nominal size	cum	22.28	570.13	12699.65
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	22.28	595.36	13261.64
2206	Carriage of Stone aggregate 40 mm nominal size and above	cum	44.55	178.19	7938.36
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	44.55	0.00	0.00
294	Stone Aggregate (Single size) : 25 mm nominal size	cum	29.70	570.13	16932.86
295	Stone Aggregate (Single size) : 20 mm nominal size	cum	29.70	595.36	17682.19
1179	Crushed stone 2.36 mm to 12.5 mm size	cum	59.40	900.00	53460.00
2202	Carriage of Stone aggregate below 40 mm nominal size nominal size	cum	118.80	0.00	0.00
2903	Stone chippings/ screenings 4.75 mm nominal size	cum	44.55	249.22	11102.75
2904	Stone chippings/ screenings 150 micron nominal size	cum	44.55	234.89	10464.35
2203	Carriage of Coarse sand	cum	89.10	0.00	0.00
	Machinery/ Hire charges:				
59	Wet Mix Plant 60 TPH @75 tonne capacity	hour	6.60	950.00	6270.00
70	Generator 100 KVA/125 KVA	hour	6.00	300.00	1800.00
57	Water Tanker 5 to 6 KL capacity 5 km lead with one trip per hour	hour	3.00	200.00	600.00
52	Front end loader 1 cum bucket capacity (incl POL)	hour	6.00	1300.00	7800.00
	Tipper 10 tonne capacity(taking lead= 10 Km) =450x10 =4500 t.Km				
53	Tipper -5 Cum	tonne km	4950.00	3.30	16335.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				1633.50
65	Paver finisher Mechanical 100 TPH	hour	6.00	800.00	4800.00
54	Vibratory roller 8 to 10 tonne	hour	3.90	600.00	2340.00
	LABOUR				
128	Mate	day	0.48	325.00	156.00
139	Skilled Beldar (for floor rubbing etc.)	day	2.00	369.00	738.00
114	Beldar	day	10.00	306.00	3060.00
	Total				210472.12
	Add 1 % Water charges				2104.72
	TOTAL				212576.84 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				29867.05

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Total				242443.89 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				36366.58
	Cost for 225 cum(450 Tonne)				278810.47
	Cost per cum.				1239.16
	add 1% labour cess				12.39
	Total				1251.55
	Say				1251.50
16.80	**Construction of dry lean cement concrete sub base over a prepared sub-grade with coarse and fine aggregate conforming to IS:383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per specifications, cement content not to be less than 150 Kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, for all leads & lifts, laid with a mechanical paver, compacting with 8-10 tonne vibratory roller, finishing and curing etc. complete as per direction of Engineer-in- charge.**				
	Details of cost for 450 cum (990 tonne)				
	MATERIAL				
	Crushed stone coarse aggregate of 25mm & 12.5 mm nominal sizes graded as per specifications @ 0.90 cum/cum of concrete conforming to specification. = 405 cum				
	Coarse Sand @0.45 m3 per cum of concrete = 203 cum				
	Cement @150 Kg. per cum of concrete = 67.50 cum				
	Qty for 0294,0296 codes = 405 / 2 = 202.50 cum				
294	Stone Aggregate (Single size) : 25 mm nominal size	cum	202.50	473.70	95924.25
296	Stone Aggregate (Single size) : 12.5 mm nominal size	cum	202.50	686.05	138925.13
982	Coarse sand (zone III)	cum	203.00	175.80	35687.40
367	Portland Cement (OPC-43 grade)	tonne	67.50	4882.00	329535.00
2202	Carriage of Stone aggregate below 40 mm nominal size	cum	405.00	0	0.00
2203	Carriage of Coarse sand	cum	203.00	0	0.00
2209	Carriage of Cement	tonne	67.50	145.72	9836.10
	Machinery/ Hire charges:				
52	Front end loader 1 cum bucket capacity (incl POL) @75 tonne capacity	hour	6.00	1300.00	7800.00
66	Batching and Mixing Plant @ 75 cum per hour	hour	6.00	2400.00	14400.00
69	Generator 250 KVA 5 km lead with one trip per hour	hour	6.00	400.00	2400.00
65	Paver finisher Mechanical 100 TPH	hour	6.00	800.00	4800.00
54	Vibratory roller 8 to 10 tonne	hour	8.00	600.00	4800.00
57	Water Tanker 5 to 6 KL capacity	hour	8.00	200.00	1600.00
53	Tipper -5 Cum	tonne km	9900.00	3.30	32670.00
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				3267.00
	LABOUR				
128	Mate	day	1.12	325.00	364.00
139	Skilled Beldar (for floor rubbing etc.)	day	6.00	369.00	2214.00
114	Beldar	day	22.00	306.00	6732.00
	Total				690954.88
	Add 1 % Water charges				6909.55
	TOTAL				697864.42 (X)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add GST 12% on "X" (multiplying factor 0.1405)				98049.95
	Total				795914.38 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				119387.16
	Cost for 450 cum(990 Tonne)				915301.53
	Cost per cum.				2034.00
	add 1% labour cess				20.34
	Total				2054.34
	Say				2054.30
16.81	**Providing and erecting 2.00 metre high temporary barricading at site as per drawing/ direction of Engineer-in-Charge which includes writing and painting, arrangement for traffic diversion such as traffic signals during construction at site for day and night, glow lamps, reflective signs, marking, flags, caution tape as directed by the Engineer-in-Charge. The barricading provided shall be retained in position at site continuously i/c shifting of barricading from one location to another location as many times as required during the execution of the entire work till its completion. Rate include its maintenance for damages, painting, all incidentals, labour materials, equipments and works required to execute the job. The barricading shall not be removed without prior approval of Engineer-in-Charge. "(Note: - One time payment shall be made for providing barricading from start of work till completion of work i/c shifting. The barricading provided shall remain to be the property of the contractor on completion of the work).**				
	Details of cost for 2.5 metre				
	MATERIAL				
16.81X	Rate as per Sub Analysis No.16.81X	metre	2.50	43.47	108.68
16.81Y	Rate as per Sub Analysis No.16.81Y	metre	2.50	671.07	1677.68
13.81.1	Rate as per Item No.13.81.1 of SH: FINISHING	sqm	11.00	39.32	432.47 A)
13.94.1.1	Rate as per Item No.13.94.1 of SH: FINISHING	sqm	11.00	115.35	1268.89 A)
	TOTAL				3487.72
	Add 1 % Water charges on all except (A)				17.86
	TOTAL				3505.58 (X)
	Add GST 12% on "X" (multiplying factor 0.1405) on all except (A)				253.49
	Total				3759.07 (Y)
	Add 15 % Contractor's profit and overheads on "Y" on all except (A)				308.66
	Cost of 2.5 metre				4067.73
	Cost of 1 metre				1627.09
	add 1% labour cess				16.27
	Total				1643.36
	Say				1643.40
16.81X	**Sub analysis item for material component of Item No. 16.81**				
	Sub analysis item no.16.81X to be used in Item No. 16.81				
	Details of cost for 2.5 meter				
	MATERIAL				
	M.S. Sheet 1.63mm thick = 1x2.50x2.00 = 5.00 sqm @ 12.80 kg/sqm = 64.00 kg wastage @ 5%= 3.20 kg Total = 67.20 kg				
1013	MS Angle - 40 x 40 x 6 mm Outframe=2x(2.50+2.00)=9.00 m Vertical extra = 2x0.300 = 0.60 m Horizontal = 1x2.50 =2.50 m Bracing = 1x3.20 = 3.20 m Bracing at bottom = 2x0.50 = 1.00 m Total = 16.30 m @ 3.50 kg/m = 57.05 kg + wastage @ 5% = 2.85 kg Total = 59.90 kg	quintal	0.67	4850.00	3259.20

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
1007	Structurals such as tees,angles channels and R.S. joists M.S. Channel = 2x0.50 =1.00 m @ 5.70 kg/m = 5.70 kg+ wastage @ 5% = 0.29 kg Total = 5.99 kg	quintal	0.60	4950.00	2965.05
1007	Structurals such as tees, angles channels and R.S. joists M.S. Flat 30x5 mm Horizontal = 3x2.50 = 7.50 m Vertical = 2x2.00 = 4.00 m Total = 11.50 m @ 1.20 kg/m = 13.80 kg + wastage @ 5% = 0.69 kg Total = 14.49 kg	quintal	0.06	4950.00	296.51
1008	Flats upto 10 mm in thickness	quintal	0.14	4850.00	702.77
2205	Carriage of Steel	tonne	0.15	145.72	21.57
	TOTAL				7245.09
	Add for maintenance @ 10% on				724.51
	Less for salvage value of material @ 50% on				-3622.54
	TOTAL				4347.05 (S)
	Assuming that material will become unserviceable after using 40 times, cost of 2.5 metre using once = S/40				108.68
	Cost of 2.5 meter				108.68
	Cost of 1 meter				43.47
	add 1% labour cess				0.43
	Total				43.91
	Say				43.90
16.81Y	**Sub analysis item for fabrication charges of Item No. 16.81** Sub analysis item no.16.81Y to be used in Item No. 16.81 Details of cost for 2.5 metre MATERIAL				
1215	Welding by electric plant Cutting, assembling and erection charges	cm	165.00	2.00	330.00
	LABOUR				
102	Blacksmith 1st class	day	0.12	413.00	47.50
103	Blacksmith 2nd class	day	0.12	369.00	42.44
100	Bandhani	day	0.11	325.00	35.75
114	Beldar	day	0.83	306.00	253.98
9999	Sundries	L.S.	12.10	2.12	25.65
	Labour for riveting / bolting / cutting etc.				0.00
116	Fitter (grade 1)	day	0.41	420.00	172.20
103	Blacksmith 2nd class	day	0.54	369.00	199.26
100	Bandhani	day	0.70	325.00	227.50
114	Beldar	day	0.54	306.00	165.24
	Sundries	L.S.	12.10	2.12	25.65
	TOTAL				1525.16
	Shifting including transportation, re-erection etc. @ 10%				152.52
	TOTAL				1677.68
	Cost of 2.5 meter				1677.68
	Cost of 1 meter				671.07
	add 1% labour cess				6.71
	Total				677.78
	Say				677.80

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.82	**Taking out existing kerb stones of all types from footpath/ central verge, including removal of mortar etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.**				
	Details of cost for 100 meter				
	LABOUR				
114	Beldar	day	0.75	306.00	229.50
115	Coolie	day	3.00	318.00	954.00
9999	Sundries	L.S.	2.00	2.12	4.24
	TOTAL				1187.74
	Add 1 % Water charges				11.88
	TOTAL				1199.62 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				168.55
	Total				1368.16 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				205.22
	Cost of 100 meter				1573.39
	Cost of 1 meter				15.73
	add 1% labour cess				0.16
	Total				15.89
	Say				15.90

16.82	**Taking out existing kerb stones of all types from footpath/ central verge, including removal of mortar etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.**				
	Details of cost for 100 meter				
	LABOUR				
114	Beldar	day	0.75	306.00	229.50
115	Coolie	day	3.00	318.00	954.00
9999	Sundries	L.S.	2.00	2.12	4.24
	TOTAL				1187.74
	Add 1 % Water charges				11.88
	TOTAL				1199.62 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				168.55
	Total				1368.16 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				205.22
	Cost of 100 meter				1573.39
	Cost of 1 meter				15.73
	add 1% labour cess				0.16
	Total				15.89
	Say				15.90

16.83	**Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.**				
	Details of cost for 10 sqm.				
	LABOUR				
114	Beldar	day	0.25	306.00	76.50
115	Coolie	day	1.00	318.00	318.00
9999	Sundries	L.S.	2.70	2.12	5.72
	TOTAL				400.22
	Add 1 % Water charges				60.03
	TOTAL				460.26 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				64.67
	Total				524.92 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				78.74

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Cost of 10 sqm.				603.66
	Cost of 1 sqm				60.37
	add 1% labour cess				0.60
	Total				60.97
	Say				61.00
16.84	**Laying old cement cocrete interlocking paver blocks of any design/ shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).**				
	Details of cost for 10 sqm.				
	MATERIAL				
	Bedding layer 50mm thick				
982	Coarse sand (zone III) Qty = 10 x 0.05 = 0.50 cum	cum	0.50	175.80	87.90
2203	Carriage of Coarse sand	cum	0.50	0	0.00
983	Fine sand (zone IV)	cum	0.15	141.85	21.28
2261	Carriage of Fine sand (1 part badarpur				0.00
	sand : 2 parts jamuna sand)	cum	0.15	163.93	24.59
	LABOUR				0.00
123	Mason (brick layer) 1st class	day	0.50	413.00	206.50
124	Mason (brick layer) 2nd class	day	0.50	369.00	184.50
114	Beldar	day	1.00	306.00	306.00
115	Coolie	day	0.50	318.00	159.00
	TOTAL				465.00 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				65.33
	Total				530.33 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				79.55
	TOTAL				609.88
	Add 15 % Contractor's profit and overheads				91.48
	Cost of 10 sqm.				701.36
	Cost of 1 sqm				70.14
	add 1% labour cess				0.70
	Total				70.84
	Say				70.80
16.85	**Laying at or near ground level old kerb stones of all types in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement : 3 coarse sand), including making joints with or without grooves (thickness of joints, except at sharp curve, shall not be more than 5 mm), including making drainage opening wherever required etc. complete as per direction of Engineer-in-charge. (Length of finished kerb edging shall be measured for payment). (Old kerb stones shall be supplied by the department free of cost)**				
	Details of cost for 100 meter.				
	MATERIAL				
	Number of kerb stones = 100 / 0.405 = 247 Nos.				
	Qty. = 247 x 0.40 x 0.375 x 0.20 = 7.41cum				
	No. of joints = 247 - 1 = 246 Nos.				
	Cement Mortar 1:3 for fixing joints = 246 x [(0.115 + 0.20)/2 x 0.375 x 0.005] = 0.073 cum				
2113	Rate as per Item No2113 of SH:MORTARS	cum	0.07	2256.97	164.76
	LABOUR				0.00
123	Mason (brick layer) 1st class	day	2.50	413.00	1032.50
124	Mason (brick layer) 2nd class	day	2.50	369.00	922.50
114	Beldar	day	2.50	306.00	765.00
115	Coolie	day	1.65	318.00	524.70
	TOTAL				3409.46

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add 1 % Water charges				34.09
	TOTAL				3443.55 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				483.82
	Total				3927.37 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				589.11
	Cost of 100 meter.				4516.48
	Cost of 1 meter.				45.16
	add 1% labour cess				0.45
	Total				45.62
	Say				45.60
16.86	**Providing and laying gang saw cut 18 mm thick, mirror polished pre moulded and pre polished machine cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring in road side plazas and similar locations, laid over 20mm thick base of cement mortar 1:4 (1cement : 4 coarse sand) including grouting the joints with white cement mixed with matching pigment, epoxy touch ups etc. complete as per direction of Engineer-in-Charge.**				
16.86.1	**With granite stone of area less than 0.50 sqm.**				
	Detail of cost for 0.5sqm. Mirror polished granite 0.5 sqm. Waste @5% = 0.025 +0.5 = 0.525 sqm.				
7295	Granite of any colour, 18 mm thick (slab area upto 0.50 sqm)	sqm	0.53	1800.00	945.00
2113	Rate as per Item No.2113 of SH: MORTARS	cum	0.01	2256.97	27.08
	LABOUR :				0.00
123	Mason (brick layer) 1st class	day	0.56	413.00	231.28
114	Beldar	day	0.05	306.00	15.30
115	Coolie	day	0.05	318.00	15.90
9999	Sundries	L.S.	17.60	2.12	37.31
	TOTAL				1271.88
	Add 1 % Water charges				12.72
	TOTAL				1284.59 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				180.49
	Total				1465.08 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				219.76
	Rate for 0.5 sqm.				1684.84
	Rate per sqm.				3369.68
	add 1% labour cess				33.70
	Total				3403.38
	Say				3403.40
16.87	**Providing and laying gang saw cut 30 mm thick, mirror polished pre moulded and pre polished machine cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring in road side plazas and similar locations, laid over 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement mixed with matching pigment, epoxy touch ups etc. complete as per direction of Engineer-in-Charge.**				
16.87.1	**With granite stone of colour black, cherry/ruby red of area less than 0.50 sqm.**				
	Detail of cost for 0.50 sqm.				
	MATERIAL				
	Mirror polished granite 0.50 sqm. Waste @5% total = 0.025 +0.50 = 0.525 sqm.				
7296	Granite stone slab 30mm thick	sqm	0.53	1900.00	997.50
2113	Rate as per Item No.2113 of SH: MORTARS	cum	0.012	2256.97	27.08
	LABOUR :				
123	Mason (brick layer) 1st class	day	0.56	413.00	231.28
114	Beldar	day	0.05	306.00	15.30

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
115	Coolie	day	0.05	318.00	15.90
9999	Sundries	L.S.	17.60	2.12	37.31
	TOTAL				1324.38
	Add 1 % Water charges				13.24
	TOTAL				1337.62 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				187.94
	Total				1525.55 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				228.83
	Rate for 0.5 sqm.				1754.39
	Rate per sqm				3508.78
	add 1% labour cess				35.09
	Total				3543.86
	Say				3543.90
16.87.2.	**With granite stone of all colour except black, cherry/ruby red of area less than 0.50 sqm.**				
	Detail of cost for 0.50 sqm.				
	MATERIAL				
	Mirror polished granite 0.50 sqm. Waste @5%				
	total = 0.025 +0.50 = 0.525 sqm.				
7300	Granite stone slab 30mm thick	sqm	0.53	2100.00	1102.50
2113	Rate as per Item No.2113 of SH: MORTARS	cum	0.01	2.12	0.03
	LABOUR :				
123	Mason (brick layer) 1st class	day	0.56	369.00	206.64
114	Beldar	day	0.05	306.00	15.30
115	Coolie	day	0.05	318.00	15.90
9999	Sundries	L.S.	17.60	2.12	37.31
	TOTAL				1377.68
	Add 1 % Water charges				13.78
	TOTAL				1391.45 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				195.50
	Total				1586.95 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				238.04
	Rate for 0.5 sqm.				1825.00
	Rate per sqm				3649.99
	add 1% labour cess				36.50
	Total				3686.49
	Say				**3686.50**
16.88	**Providing and laying matt finished vitrified tile of size 100x100x16mm having water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in out door floors such as footpath, court yard multi models etc., laid on 20mm thick base of cement mortar 1:4 (1cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as direction of Engineer-in-Charge.**				
	Detail of cost for 1 sqm. MATERIAL				
	Matt finished vitrified tile 100x100 x16mm =10sqm.				
7895	Matt finished vitrified tile 100x100 x16mm	sqm	1.00	910.00	910.00
9977	Sundries	L.S.	6.24	2.12	13.23
2113	Rate as per Item No.2113 of SH: MORTARS	cum	0.02	2256.97	54.17
9999	Sundries	L.S.	3.64	2.12	7.72
367	Portland Cement (OPC-43 grade)	tonne	0.00	4882.00	16.11
	LABOUR :				
123	Mason (brick layer) 1st class	day	0.20	413.00	82.60
115	Coolie	day	0.20	318.00	63.60
9999	Sundries	L.S.	26.91	2.12	57.05
	TOTAL				1204.47
	Add 1 % Water charges				12.04
	TOTAL				1216.52 (X)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add GST 12% on "X" (multiplying factor 0.1405)				170.92
	Total				1387.44 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				208.12
	Cost per sqm.				1595.55
	add 1% labour cess				15.96
	Total				1611.51
	Say				1611.50
16.89	**Providing and laying matt finished vitrified tile of size 300x300x9.8mm having with water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.**				
	Detail of cost for 1 sqm.				
	MATERIAL				
	Tile 300x300 x9.8mm = 1.00 sqm.				
7896	Vitrified tile	sqm	1.00	450.00	450.00
9977	Sundries	L.S.	6.24	2.12	13.23
2113	Rate as per Item No.2113 of SH: MORTARS	cum	0.02	2256.97	54.17
9999	Sundries	L.S.	3.64	2.12	7.72
367	Portland Cement (OPC-43 grade)	tonne	0.00	4882.00	16.11
	LABOUR :				
123	Mason (brick layer) 1st class	day	0.20	413.00	82.60
115	Coolie	day	0.20	318.00	63.60
9999	Sundries	L.S.	26.91	2.12	57.05
	TOTAL				744.47
	Add 1 % Water charges				7.44
	TOTAL				751.92 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				105.64
	Total				857.56 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				128.63
	Rate per sqm.				986.20
	add 1% labour cess				9.86
	Total				996.06
	Say				996.10
16.90	**Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8mm having with water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge**				
	Detail of cost for 1 sqm.				
	MATERIAL:				
	Tile 300x300 x9.8mm = 1.00 sqm.				
7893	Tactile tile	sqm	1.00	800.00	800.00
9977	Carriage	L.S.	6.24	2.12	13.23
2113	Rate as per Item No.2113 of SH: MORTARS	cum	0.02	2256.97	54.17
9999	Sundries	L.S.	3.64	2.12	7.72
367	Portland Cement (OPC-43 grade)	tonne	0.00	4882.00	16.11
	LABOUR :				
123	Mason (brick layer) 1st class	day	0.20	413.00	82.60
115	Coolie	day	0.20	318.00	63.60
9999	Sundries	L.S.	26.91	2.12	57.05
	TOTAL				1094.47
	Add 1 % Water charges				10.94
	TOTAL				1105.42 (X)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Add GST 12% on "X" (multiplying factor 0.1405)				155.31
	Total				1260.73 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				189.11
	Cosr per sqm				1449.84
	add 1% labour cess				14.50
	Total				1464.34
	Say				1464.30
16.91	**Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.**				
16.91.1	**60mm thick cement concrete paver block of M-35 grade with approved colour, design & pattern.**				
	Details of cost for 10 sqm.				
	MATERIAL :				
7773	Coloured inter locking C.C. paver Block	sqm	10.00	425.00	4250.00
983	Fine sand (zone IV)	cum	0.50	141.85	70.93
2261	Carriage of Fine sand (1 part badarpur sand : 2 parts jamuna sand)	cum	0.65	163.93	106.55
	LABOUR				
123	Mason (brick layer) 1st class	day	0.50	413.00	206.50
124	Mason (brick layer) 2nd class	day	0.50	369.00	184.50
114	Beldar	day	1.00	306.00	306.00
115	Coolie	day	0.50	318.00	159.00
9999	Sundries	L.S.	25.00	2.12	53.00
	TOTAL				5336.48
	Add 1 % Water charges				53.36
	TOTAL				5389.84 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				757.27
	Total				6147.12 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				922.07
	Cost of 10 Cum.				7069.19
	Cost of 1 Cum.				706.92
	add 1% labour cess				7.07
	Total				713.99
	Say				714.00
16.91.2	**80 mm thick C.C. paver block of M-30 grade with approved color design and pattern.**				
	Details of cost for 10.00 sqm.				
	MATERIALS :				
8785	Interlocking C.C. paver block (80 mm thick, M-30)	sqm	10.00	485.00	4850.00
982	Coarse sand (zone 111) (10 x 0.050 = 0.50 cum)	cum	0.50	175.80	87.90
2203	Carriage of Coarse sand	cum	0.50	0	0.00
983	Fine sand (zone IV)	cum	0.15	141.85	21.28
2261	Carriage of Fine sand	cum	0.15	0	0.00
	Labour for Laying				
123	Mason (brick layer) 1st class	day	0.50	413.00	206.50
124	Mason (brick layer) 2nd class	day	0.50	369.00	184.50
114	Beldar	day	1.00	306.00	306.00
115	Coolie	day	0.50	318.00	159.00
	TOTAL				5815.18
	Add 1 % Water charges				58.15

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	TOTAL				5873.33 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				825.20
	Total				6698.53 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				1004.78
	Cost of 10 Cum.				7703.31
	Cost of 1 Cum.				770.33
	add 1% labour cess				7.70
	Total				778.03
	Say				778.00
16.92	**Providing and fixing 10x10x7.50 cm Granite stone block hand cut and chisel dressed on top, for paving in floors, drains etc. laid over 20mm thick base mortar 1:4 (1 cement : 4 coarse sand) with joints 10mm wide filled with same mortar including ruled pointing etc. complete as per direction of engineer-in-charge.**				
	Details of cost for 10.00 sqm.				
	MATERIALS :				
	Stone size 10x10x7.50cm =1sqm+5% wastage=sqm				
7774	Stone size 10x10x7.50cm	each	827.00	9.00	7443.00
2113	Rate as per Item No.2113of SH: MORTARS	cum	0.43	2256.97	979.53
367	Portland Cement (OPC-43 grade)	tonne	0.02	4408.00	88.16
	LABOUR :				
124	Mason (brick layer) 2nd class	day	1.08	369.00	398.52
114	Beldar	day	0.25	306.00	76.50
115	Coolie	day	1.62	318.00	515.16
101	Bhisti	day	0.27	332.00	89.64
13.33.1	Rate as per Item No.13.33.1 of SH: FINISHING	sqm	10.00	115.13	1151.25 (A)
	TOTAL				10741.76
	Add 1 % Water charges on all except (A) i.e.				95.91
	TOTAL				10837.66
	Add GST 12% on "X" (multiplying factor 0.1405)				1360.94
	Total				12198.60
	Add 15 % Contractor's profit and overheads on "Y"				1657.10
	Cost of 10 sqm.				13855.70
	Cost of 1 sqm.				1385.57
	add 1% labour cess				13.86
	Total				1399.43
	Say				1399.40
16.93	**Providing and placing in position 100 mm thick factory made machine batched & machine mixed Precast RCC Rectangular Covers on drains of footpath of various sizes, of M-25 grade cement concrete for RCC work, including cost of centering, shuttering, reinforcement of 8 mm dia TMT bars of Fe 500 grade @ maximum 100mm c/c on both ways , neat cement punning on finished surface, properly encased on all edges with 1.6 mm thick , 100 mm wide MS sheet duly painted over priming coat , reinforcement to be welded at edges with MS sheet and providing 2 Nos. 12 mm dia bar for hooks etc i/c cost of cartage, all leads & lift, handling at site etc. all complete as per direction of Engineer-in-Charge.**				
	Details of cost of 1 No of size 1.50 x 0.40 = 0.60 sqm				
	MATERIALS :				
	Precast RCC M-25				
5.33.1	Rate as per Item No.5.33.1 of SH: REINFORCED CEMENT CONCRETE	cum	0.06	5013.23	300.79 (A)
	Reinforcement TMT				
5.22.7B	Rate as per Item No.5.22.7B of SH: REINFORCED CEMENT CONCRETE Welding by gas plant/ Electric plant	Kg	4.59	93.52	429.26 (A)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹	
10.22	Rate as per Item No.10.22 of SH: STEEL WORK	cm	82.00	3.33	272.67	(A)
	M.S. sheet 1.60 mm thick					
	2x(1.50+0.40)x0.10x0.016x7850=4.77kg					
1013	Mild steel sheets for tanks Paint	quintal	0.05	4850.00	231.35	
	2x(1.50+0.40)x0.10=0.38sqm					
13.93.1	Rate as per Item No.13.93.1 of SH: FINISHING	sqm	0.38	83.67	31.79	(A)
	Neat Cement Punning 1x1.50x0.40=0.60 sqm					
13.26	Rate as per Item No.13.26 of SH: FINISHING	sqm	0.60	40.11	24.06	(A)
	TOTAL				1289.93	
	TOTAL A				1058.58	
	Add 1 % Water charges on all except (A) i.e.				2.31	
	TOTAL				1292.24	
	Add GST 12% on "X" (multiplying factor 0.1405) on all except (A) i.e.				32.83	
	TOTAL				1325.07	
	Add 15 % Contractor's profit and overheads on all except (A)				39.97	
	Cost of 0.60 sqm.				1365.04	
	Cost of 1 sqm.				2275.07	
	add 1% labour cess				22.75	
	Total				2297.82	
	Say				2297.80	

16.94 **Providing & making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012,MORTH Clause 2500, of required size, Mesh Type 10x12 (D=100 mm with tolerance of ± 2%) Zinc coated, Mesh wire diameter 3.0 mm, mechanically edged/selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2mm, supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per direction of Engineer-in-charge.**

Code	Description	Unit	Quantity	Rate ₹	Amount ₹	
	Details cost of one Gabion box/Crates of size 2mx1mx1m = 2 cum					
	MATERIAL					
8576	Crates made of Mesh type 10x12 (D=100 mm) Zn coated. (Mesh wire diameter 3.00 mm). Surface area required = 11.00 sqm.	sqm	11.00	200.00	2200.00	
7753	Stone boulder with least dimension 200mm	cum	2.00	810.00	1620.00	
	LABOUR				0.00	
128	Mate	day	0.10	325.00	32.50	
125	Mason (for plain stone work) 2nd class	day	0.50	369.00	184.50	
114	Beldar	day	1.50	306.00	459.00	
	TOTAL				4496.00	
	Add 1 % Water charges				44.96	
	TOTAL				4540.96	(X)
	Add GST 12% on "X" (multiplying factor 0.1405)				638.00	
	Total				5178.96	(Y)
	Add 15 % Contractor's profit and overheads				776.84	
	Cost of 2 cum				5955.81	
	Cost of 1 cum				2977.90	
	add 1% labour cess				29.78	
	Total				3007.68	
	Say				3007.70	

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
16.95	**Providing & making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012,MORTH Clause 2500, of required size, Mesh Type 10x12(D=100 mm with tolerance of ± 2%) Zinic+PVC coated, Mesh wire diameter2.7/3.7mm, mechanically edged/selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2/3.2mm(ID/OD), supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per directions of Engineer-in-charge.**				
	Details cost of one Gabion box/Crates of size 2mx1mx1m = 2 cum				
	MATERIAL				
8577	Crates made of Mesh type 10x12 (D=100 mm) Zn+PVC coated. Mesh wire diameter 2.70/3.70 mm (ID/OD). Surface area required = 11.00 sqm.	sqm	11.00	250.00	2750.00
7753	Stone boulder with least dimension 200mm	cum	2.00	810.00	1620.00
	LABOUR				
128	Mate	day	0.10	325.00	32.50
125	Mason (for plain stone work) 2nd class	day	0.50	369.00	184.50
114	Beldar	day	1.50	306.00	459.00
	TOTAL				5046.00
	Add 1 % Water charges				50.46
	TOTAL				5096.46 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				716.05
	Total				5812.51 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				871.88
	Cost of 2 cum				6684.39
	Cost of 1 cum				3342.19
	add 1% labour cess				33.42
	Total				3375.62
	Say				3375.60
16.96	**Providing & making Gabion structure with Mechanically Woven Double Twisted Hexagonal Shaped Wire mesh Gabion Boxes as per IS 16014:2012,MORTH Clause 2500, of required size, Mesh Type 10x12(D=100 mm with tolerance of ±2%), Zinic+10% Al alloy+PVC coated, Mesh wire diameter 2.7/3.7mm (ID/OD), mechanically edged/ selvedged with partitions at every 1m interval and shall have minimum 10 numbers of openings per meter of mesh perpendicular to twist, tying with lacing wire of diameter 2.2/3.2mm(ID/OD), supplied @3% by weight of Gabion boxes, filled with boulders with least dimension of 200 mm, as per drawing, all complete as per directions of Engineer-in-charge.**				
	Details cost of one Gabion box/Crates of size 2mx1mx1m = 2 cum				
	MATERIAL				
8578	Crates made of Mesh type 10x12 (D=100 mm) Zn+10% Al alloy + PVC coated. Mesh wire diameter 2.70/3.70 mm (ID/OD). Surface area required = 11.00 sqm.	sqm	11.00	290.00	3190.00
7753	Stone boulder with least dimension 200mm	cum	2.00	810.00	1620.00
	LABOUR				0.00
128	Mate	day	0.10	325.00	32.50
125	Mason (for plain stone work) 2nd class	day	0.50	369.00	184.50
114	Beldar	day	1.50	306.00	459.00
	TOTAL				5486.00
	Add 1 % Water charges				54.86
	TOTAL				5540.86 (X)
	Add GST 12% on "X" (multiplying factor 0.1405)				778.49
	Total				6319.35 (Y)
	Add 15 % Contractor's profit and overheads on "Y"				947.90
	Cost of 2 cum				7267.25
	Cost of 1 cum				3633.63
	add 1% labour cess				36.34
	Total				3669.96
	Say				3670.00