Structure Measurement Details

Item No.	Description	Unit	Quantity (2+230)	Quantity (5+410)	Quantity (6+030)	Total Qty.
MJB						
7.01	Earth work in excavation for foundation of structures in ordinary soil by mechanical means as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material all complete as per Technical specifications and as directed by the Engineer-in-charge.					
a	Ordinary Soil - Depth Upto 3m	cum	1906	1747	3391	**7044**
b	Ordinary Rock - (not requiring blasting)	cum	817	749	1453	**3019**
7.02	Providing and laying Plain cement concrete in Levelling Course, mechanically mixed and compacted, including centering and shuttering all complete as per drawings and Technical specifications and as directed by the Engineer-in-charge.					**0**
a	PCC Grade M15	cum	75	78	151	**305**
a	PCC Grade M20	cum				**0**
7.03	Bored cast-in-situ M35 grade R.C.C. pile excluding reinforcement complete as per drawing and technical specifications and removal of excavated earth with all lifts and lead upto 1000 m. (Pile diameter-1200 mm)	metre	2328	2560	6486	**11374**
7.04	Providing and laying Reinforced Cement Concrete in Foundation mechanically mixed including centering and shuttering but excluding cost of reinforcement, all complete as per drawing and Technical specifications and as directed by the Engineer-in-charge.					**0**
a	RCC Grade M30	cum				**0**
a	RCC Grade M35	cum				**0**
	RCC Grade M40	cum	1262	1342	2770	**5375**
7.05	Providing and laying Reinforced Cement Concrete in Substructure, mechanically mixed and compacted, including centering and shuttering but excluding cost of reinforcement, all complete as per drawings and Technical specifications and as directed by the Engineer-in-charge.					**0**
a	RCC Grade M30	cum				**0**
a	RCC Grade M35	cum				**0**
	RCC Grade M40		970	1774	5630	**8374**
7.06	Providing and laying Reinforced cement concrete in super-structure including centering and shuttering but excluding cost of reinforcement, all complete as per drawing and Technical specifications and as directed by the Engineer-in-charge.					**0**
a	RCC Grade M35	cum				**0**
b	RCC/PSC Grade M40 - Solid Slab	cum	762	618	2060	**3440**
c	RCC/PSC Grade M45 - T Beam & Slab	cum				**0**
d	RCC/PSC Grade M45 - PSC girder	cum	1182	946	3310	**5438**
e	RCC/PSC Grade M50	cum				**0**
7.07	Supply and fabrication of Mild Steel as per IS 2062 including drilling, welding, riveting, grinding supply of bolts, nuts, washers, fixtures etc. at site. Assembling, erection of fabricated steel structure to proper line, level and camber as per approved drawings and technical specifications section 1900 complete including transportation and handling, painting all exposed surfaces of steel work after erection with one coat of red lead primer paint to IS 102 and two coats of paint including all labour consumable other material machinery tools and tackles complete as per specification and directed by engineers including furnishing of detailed erection scheme and getting the same approved from competent authority	MT				**0**
7.08	Supplying, fitting and placing HYSD bar reinforcement all complete as per drawing and Technical specifications and as directed by the Engineer-in-charge.					**0**
a	For Foundation	MT	584	636	1516	**2736**
b	For Substructure	MT	128	232	736	**1096**
c	For Superstructure	MT	239	192	658	**1088**
7.08 d	Providing, supply and placing at position of Bow Steel Girder and Composite steel girder ncluding all lead lift.	MT				**0**
7.09	High tensile steel wires / strands including all accessories for stressing, stressing operations and grouting complete as per drawing and Technical Specifications and as directed by the Engineer-in-charge.	MT	47	38	132	**217**

Structure Measurement Details

Item No.	Description	Unit	Quantity (2+230)	Quantity (5+410)	Quantity (6+030)	Total Qty.
7.10	Supplying, fitting and fixing in position true to line and level POT/PTFEE bearing conforming to IRC: 83 (Part-III) section IX and clause 2006 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications as directed by the Engineer-in-charge.					**0**
(i)	140 tonnes	Nos				**0**
(i)	400 tonnes	Nos				**0**
(iii)	85 tonnes	Nos				**0**
(ii)	205 tonnes	Nos				**0**
(iii)	250 tonnes	Nos				**0**
7.11	Supplying, fitting and fixing in position true to line and level elastomeric bearing conforming to IRC: 83 (Part-II) section IX and clause 2005 of MoRTH specifications complete including all accessories as per drawing and Technical Specifications.	cucm	1040000	832000	2912000	**4784000**
7.12	Construction of Reinforced Earth structures (RES) complete as per additional technical specification Appendix-I					**0**
(a)	Providing and erecting precast concrete fascia panels of M35 grade including reinforcement, soil reinforcing element, foundation pad, all accessories, components and draiange system including ground improvement complete.	sqm				**0**
(b)	Filling, grading and compaction with selected material meeting approved design parameters in layers in reinforced zone complete.	cum				**0**
(c)	Providing and laying in position RCC crash barrier with friction slab, including reinforcement and centering & shuttering, complete.	m				**0**
7.13	Providing and laying Reinforced cement concrete of M35 grade for approach slab including reinforcement and formwork all complete as per drawings and Technical specifications and as directed by the Engineer-in-charge.	cum	35.53	36	36	**107**
7.14	Construction of precast RCC railing of M40 Grade, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, leaving adequate space between vertical post for expansion, complete as per drawing and Technical specifications and as directed by the Engineer-in-charge.	m	364	314	1018	**1696**
7.15	Provision of an Reinforced cement concrete crash barrier constructed with M-40 grade concrete with HYSD reinforcement conforming to IRC:21 and dowel bars 25 mm dia, 450 mm long at expansion joints filled with pre-moulded asphalt filler board, keyed to the structure on which it is built and installed as per design given in the enclosure to MOST circular No. RW/NH - 33022/1/94-DO III dated 24 June 1994 as per dimensions in the approved drawing and at locations directed by the Engineer, complete as per drawing and Technical specifications clause 2703 and as directed by the Engineer-in-charge.	m	364	294	994	**1652**
7.16	Providing and fitting Drainage Spouts complete as per drawing and Technical specifications and as directed by the Engineer-in-charge.	Each	36	29	99	**164**
7.17	Providing and fixing filler type expansion joint in slab bridges and culverts complete as per technical specification section 2600	m	32	32	32	**96**
7.18	Providing and laying of Asphaltic Plug joint to provide for horizontal movement of 25 mm and vertical movement of 2 mm, depth of joint varying from 75 mm to 100 mm, width varying from 500 mm to 750 mm (in traffic direction), covered with a closure plate of 200mm x 6mm of wieldable structural steel conforming to IS: 2062, asphaltic plug to consist of polymer modified bitumen binder, carefully selected single size aggregate of 12.5 mm nominal size and a heat resistant foam caulking/backer rod, all as per approved drawings and specifications.	m				**0**
7.19	Providing and laying of a strip seal expansion joint catering to maximum horizontal movement upto 70 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.	m	64	48	208	**320**
7.20	Providing weepholes in brick masonry/stone masonry, plain/reinforced concrete abutment, wing wall, return wall with 100 mm dia PVC pipe extending through the full width of the structures with slope of 1(V):20(H) towards drawing face complete as per drawing and technical specifications Clause 2200 & 2706	cum				**0**
7.21	Backfilling behind abutment, wing wall, retaining wall, breast wall and return wall complete as per drawings & technical specifications Clause 710.1.4.of IRC:78 & Technical specification clause 305.4.4.	cum	1689	5226	3237	**10152**

Structure Measurement Details

Item No.	Description	Unit	Quantity (2+230)	Quantity (5+410)	Quantity (6+030)	Total Qty.
7.22	Providing and laying 65 mm wearing course on top of deck slab consisting of 25 mm thick mastic asphalt wearing course and 40 mm thick Bituminous concrete laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated finegrained hard stone chipping of 13.2 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces is not less than 1000C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 507 and 516.	Sqm	2548	2058	6958	**11564**
7.23	Providing and laying filter media with granular crushed aggregates as per specification to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and providing over the entire surface behind abutment, wing wall, return wall to the full height, compacted to firm condition complete as per drawing and technical specification Clause 2504.	cum	151	262	185	**598**
7.24	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification	cum		159	89	**248**
7.25	Providing and laying Pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications	cum		318	178	**496**

Input 2+230

General data	
Skew angle	0.00
Skew factor	1.00
No. of carriageway	1.00
Width of carriageway	16.00
Width of carriageway (C2)	
Thk of Levelling Course	0.10
No of span	5.00
length of span	35.00
Span No	
Total length of Span	175.00

Abutment	A1	A2	Pier	P
No. of Abutments	1.00	1.00	No. of pier	4
Width of Foundation	16.20	16.20	Width of Foundation	8.70
Bottom Length of Foundation	12.30	12.30	Bottom Length of Foundation	8.70
Height of foundation	1.80	1.80	Height of foundation	1.80
Sub Structure	**A1**	**A2**	**Sub Structure**	
Width of Abut Wall	16.00	16.00	Dia of Pier	3.00
Side width of Abut Wall	1.50	1.50		
Top Length of Abut Cap	16.00	16.00	Area of pier	7.07
Bottom Length of Abut Cap	16.00	16.00	Top length of pier cap	15.00
Ht. of Abutment wall	5.10	4.17	Bottom length of pier cap	3.20
Thk. of Dirt Wall	0.350	0.350	Pier cap width	3.30
Ht. of Dirt Wall	2.55	2.55	Pier Cap Slant height	1.20
Abutment Cap bottom Width	1.50	1.50	Pier Cap Straight height	0.80
Abutment Cap top Width	2.220	2.220		
Abutment Cap Slant height	0.50	0.50		
Abutment Cap Straight height	0.50	0.50		
Superstruture	**A1**	**A2**	**Superstruture**	**P**
Design Level	2658.399	2658.352	Design Level	2658.311
Ground Level	2652.931	2653.814	Ground Level	2647.244
Pile cap Top leavel	2650.43	2651.31	Pile cap Top leavel	2646.24
Founding level			Founding level	
Wearing Coat	0.065	0.065	Wearing Coat	0.065
Thickness of slab	0.25	0.25	Thickness of slab	0.25
Depth of Girder	2.20	2.20	Depth of Girder	2.20
Length of Pedestal	0.70	0.70	Length of Pedestal	0.70
Width of Pedestal	0.70	0.70	Width of Pedestal	0.70
Height of pedestal	0.35	0.35	Height of pedestal	0.35
Ht. of Abutment Wall	5.10	4.17	Ht. of pier	9.20

PSC Girder Super Structure		Pile Length			
Longitudinal girder			**A1**	2610.63	RL A
No. of carriageway	1.00			2652.43	RL B

Input 2+230

General data

No. of span	5.00		1.80	Cap
Total depth of superstructure, D	2.20		**40.00**	
Total length of girder	34.30		16.00	no.
External Girders		**A2**	2611.51	RL A
No. of Girder	5.00		2651.31	RL B
			1.80	Cap
End section			**38.00**	
Girder bottom	0.70		16.00	no.
Web thickness	0.70	**P1, P2, P3 & P4**	2607.69	RL A
Girder top	1.10		2639.49	RL B
Straight height bottom	0.00		1.80	Cap
Slant height bottom	0.00		**30.00**	
Web height	2.10		36.00	no.
Slant height (top haunch)	0.05			
Straight height (top haunch)	0.15			
Area of end section	1.68			
Length of end section	2.50			
Mid section				
Bottom Width	0.70			
Web width	0.30			
Girder top	1.10			
Straight height bottom	0.25			
Slant height bottom	0.15			
Web height	1.65			
Slant height (top haunch)	0.10			
Straight height (top haunch)	0.15			
Area of mid section	0.98			
Length of mid - section	27.30			
Intermediate section				
Length	1.00			
Slab				
No Of Carrige way	1.00			
Thickness of slab	0.25			
width 1	16.00			
Length	175.00			
Area	**2800.00**			

Quantity calculation **2+230**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
1	***Cast in Situ Piles (M40)***	LM					
	Abutment A1		16	40.00			640.000
	Abutment A2		16	38.00			608.000
	Pier		36	30.00			1080.000
							2328.000
						Cum	**2632.906**
2	***Earthwork in excavation***	Cum					
	Abutment A1		1	12.50	16.400	4.40	902.000
	Abutment A2		1	12.50	16.400	4.40	902.000
	Pier		4	8.90	8.900	2.90	918.836
							2722.836
3	***PCC M-15 grade in levelling course below Foundation***	Cum					
	Abutment A1		1	12.500	16.400	0.100	20.500
	Abutment A2		1	12.500	16.400	0.100	20.500
	Pier		4	8.900	8.900	0.100	31.684
	Deduction at pile		-68		1.131	0.100	-7.691
							64.993
4	***R.C.C. M-40 grade in Foundation***	Cum					
	Abutment A1(Pile Cap)		1	12.300	16.200	1.800	358.668
	Abutment A2(Pile Cap)		1	12.300	16.200	1.800	358.668
	Pier (Pile Cap)		4	8.700	8.700	1.800	544.968
							1262.304
5	***R.C.C. M-40 grade in Sub structure***	Cum					
	Abutment						
	Abutment Wall A1		1	16.000	1.500	5.103	122.472
	Abutment Wall A2		1	16.000	1.500	4.173	100.152
	Abutment Cap A1	top	1	16.000	2.220	0.500	17.760
		bottom	1	16.000	1.860	0.500	14.880
	Abutment Cap A2	top	1	16.000	2.220	0.500	17.760
		bottom	1	16.000	1.860	0.500	14.880
	Pier		4	7.069		9.202	260.169
	Pier cap	bottom	4	3.300	9.100	1.200	144.144
		top	4	3.300	15.000	0.800	158.400
	Return Wall	vertical	4	6.150	4.638	0.750	85.571
		Tapper	4	8.150	1.400	0.750	34.230
							970.418
6	***R.C.C. M-40 grade in Dirt wall***	Cum					
	Abutment A1		1.00	16.000	0.350	2.800	15.680
	Restrainer		1.00	16.000	0.500	0.750	6.000
	Abutment A2		1.00	16.000	0.350	2.800	15.680
	Restrainer		1.00	16.000	0.500	0.750	6.000
							43.360
7	***RCC M-40 in Pedestals***	Cum					
	For bearing		50	0.700	0.700	0.350	8.575
	Restrainer @ pier		28	0.700	0.600	0.850	9.996
							18.571
8	***RCC M-40 in Slab superstructure***	Cum					

Quantity calculation **2+230**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
	Deck slab		1	175.000	16.000	0.250	700.000
							700.000
9	***PSC M-45 in girder superstructure***	Cum					
	End section		50	2.500	1.680		210.000
	Mid section		25	27.300	0.980		668.850
	Intermediate section		50	1.000	1.330		66.500
	Cross Girder		15	0.600	1.950	13.500	236.925
							1182.275
10	***HYSD bar reinforcement***	Tonne					
	In piles		150	Kg/Cum			394.936
	In Foundation		150	Kg/Cum			189.346
	Abutment Wall		130	Kg/Cum			28.941
	Abutment Cap		130	Kg/Cum			8.486
	Pier		130	Kg/Cum			33.822
	Pier cap		130	Kg/Cum			39.331
	Return Wall		130	Kg/Cum			15.574
	Pedestal		80	Kg/Cum			1.486
	Dirt Wall		130	Kg/Cum			5.637
	PSC Girders		120	Kg/Cum			141.873
	Slab Super Structure		130	Kg/Cum			91.000
							950.431
11	***Elastomeric Bearing***	Cucm					
	Bearing Strip		50	40.000	52.000	10.000	1040000
							1040000
12	***HT Strands***	Tonne					
	PSC Girders		50	Kg/Cum			47.268
							47.268
13	***Crash Barrier***	Rmt					
			2	182.00			364.000
							364.000
14	***Drainage spouts***	Nr.					
			36				36.000
							36.000
15	***Wearing course***	Sqm					
			1	182	14.000		2548.00
							2548.00
16	***Filler Type Expansion joint***	Rmt					
			2	16.000			32.000
							32.000
16	***Strip seal Type Expansion joint***	Rmt					
			4	16.000			64.000
							64.000
17	***PCC M-15 in approach slab***	Cum					
	A1 Side		1	14.500	3.500	0.100	5.075
	A2 Side		1	14.500	3.500	0.100	5.075
							10.150
18	***RCC M-35 in approach slab***	Cum					

Quantity calculation **2+230**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
	A1 Side		1	14.500	3.500	0.350	17.763
	A2 Side		1	14.500	3.500	0.350	17.763
							35.525
19	***Filter Media***	Cum					
	Behind abutment		2	14.500	0.600	8.653	150.562
							150.562
20	***Backfilling***	Cum					
	Behind abutment A1		1	14.500	7.494	8.653	940.226
	Behind abutment A2		1	14.500	6.688	7.723	748.981
							1689.21
21	***Railing***	Rmt					
			2	182.00			364.000
							364.000

Input 5+410

General data	
Skew angle	0.00
Skew factor	1.00
No. of carriageway	1.00
Width of carriageway	16.00
Thk of Levelling Course	0.10
No of span	4.00
length of span	35.00
Total length of Span	140.00

Abutment	A1	A2	Pier	P
No. of Abutments	1.00	1.00	No. of pier	3
Width of Foundation	16.20	16.20	Width of Foundation	8.70
Bottom Length of Foundation	16.00	16.00	Bottom Length of Foundation	8.70
Height of foundation	1.80	1.80	Height of foundation	1.80
Sub Structure	**A1**	**A2**	**Sub Structure**	
Width of Abut Wall	16.00	16.00	Dia of Pier	3.00
Side width of Abut Wall	1.50	1.50		
Top Length of Abut Cap	16.00	16.00	Area of pier	7.07
Bottom Length of Abut Cap	16.00	16.00	Top length of pier cap	15.00
Ht. of Abutment wall	11.53	10.19	Bottom length of pier cap	3.20
Thk. of Dirt Wall	0.350	0.350	Pier cap width	3.30
Ht. of Dirt Wall	2.55	2.55	Pier Cap Slant height	1.20
Abutment Cap bottom Width	1.50	1.50	Pier Cap Straight height	0.80
Abutment Cap top Width	2.220	2.220		
Abutment Cap Slant height	0.50	0.50		
Abutment Cap Straight height	0.50	0.50		
Superstruture	**A1**	**A2**	**Superstruture**	**P**
Design Level	2692.825	2692.988	Design Level	2692.825
Ground Level	2679.933	2681.430	Ground Level	2678.689
Pile cap Top leavel	2678.43	2679.93	Pile cap Top leavel	2677.69
Founding level			Founding level	
Wearing Coat	0.065	0.065	Wearing Coat	0.065
Thickness of slab	0.25	0.25	Thickness of slab	0.25
Depth of Girder	2.20	2.20	Depth of Girder	2.20
Length of Pedestal	0.70	0.70	Length of Pedestal	0.70
Width of Pedestal	0.70	0.70	Width of Pedestal	0.70
Height of pedestal	0.35	0.35	Height of pedestal	0.35
Ht. of Abutment Wall	11.53	10.19	Ht. of pier	12.27

PSC Girder Super Structure		Pile Length			
Longitudinal girder			**A1**	2642.63	RL A
No. of carriageway	1.00			2679.43	RL B

Input 5+410

General data

No. of span	4.00			1.80	Cap
Total depth of superstructure, D	2.20			**35.00**	
Total length of girder	34.30			25.00	no.
External Girders			**A2**	2644.13	RL A
No. of Girder	5.00			2680.93	RL B
				1.80	Cap
End section				**35.00**	
Girder bottom	0.70			25.00	no.
Web thickness	0.70		**P1, P2 & P3**	2639.78	RL A
Girder top	1.10			2671.58	RL B
Straight height bottom	0.00			1.80	Cap
Slant height bottom	0.00			**30.00**	
Web height	2.10			27.00	no.
Slant height (top haunch)	0.05				
Straight height (top haunch)	0.15				
Area of end section	1.68				
Length of end section	2.50				
Mid section					
Bottom Width	0.70				
Web width	0.30				
Girder top	1.10				
Straight height bottom	0.25				
Slant height bottom	0.15				
Web height	1.65				
Slant height (top haunch)	0.10				
Straight height (top haunch)	0.15				
Area of mid section	0.98				
Length of mid - section	27.30				
Intermediate section					
Length	1.00	**Stone Pitching**		**A1**	**A2**
Slab		Width		19.34	17.34
No Of Carrige way	1.00	Length		60.75	54.47
Thickness of slab	0.25	Thickness		0.30	0.30
width 1	16.00				
Length	140.00				
Area	**2240.00**				

Quantity calculation **5+410**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
1	***Cast in Situ Piles (M40)***	LM					
	Abutment A1		25	35.00			875.000
	Abutment A2		25	35.00			875.000
	Pier		27	30.00			810.000
							2560.000
						Cum	**2895.292**
2	***Earthwork in excavation***	Cum					
	Abutment A1		1	16.20	16.400	3.40	903.312
	Abutment A2		1	16.20	16.400	3.40	903.312
	Pier		3	8.90	8.900	2.90	689.127
							2495.751
3	***PCC M-15 grade in levelling course below Foundation***	Cum					
	Abutment A1		1	16.200	16.400	0.100	26.568
	Abutment A2		1	16.200	16.400	0.100	26.568
	Pier		3	8.900	8.900	0.100	23.763
	Deduction at pile		-77		1.131	0.100	-8.708
							68.191
4	***R.C.C. M-40 grade in Foundation***	Cum					
	Abutment A1(Pile Cap)		1	16.000	16.200	1.800	466.560
	Abutment A2(Pile Cap)		1	16.000	16.200	1.800	466.560
	Pier (Pile Cap)		3	8.700	8.700	1.800	408.726
							1341.846
5	***R.C.C. M-40 grade in Sub structure***	Cum					
	Abutment						
	Abutment Wall A1		1	16.000	1.500	11.527	276.648
	Abutment Wall A2		1	16.000	1.500	10.193	244.632
	Abutment Cap A1	top	1	16.000	2.220	0.500	17.760
		bottom	1	16.000	1.860	0.500	14.880
	Abutment Cap A2	top	1	16.000	2.220	0.500	17.760
		bottom	1	16.000	1.860	0.500	14.880
	Pier		3	7.069		12.271	260.216
	Pier cap	bottom	3	3.300	9.100	1.200	108.108
		top	3	3.300	15.000	0.800	118.800
	Return Wall	vertical	4	17.400	13.410	0.750	700.002
							1773.686
6	***R.C.C. M-40 grade in Dirt wall***	Cum					
	Abutment A1		1.00	16.000	0.350	2.800	15.680
	Restrainer		1.00	16.000	0.500	0.750	6.000
	Abutment A2		1.00	16.000	0.350	2.800	15.680
	Restrainer		1.00	16.000	0.500	0.750	6.000
							43.360
7	***RCC M-40 in Pedestals***	Cum					
	For bearing		40	0.700	0.700	0.350	6.860
	Restrainer @ pier		21	0.700	0.600	0.850	7.497
							14.357
8	***RCC M-40 in Slab superstructure***	Cum					
	Deck slab		1	140.000	16.000	0.250	560.000

Quantity calculation **5+410**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
							560.000
9	***PSC M-45 in girder superstructure***	Cum					
	End section		40	2.500	1.680		168.000
	Mid section		20	27.300	0.980		535.080
	Intermediate section		40	1.000	1.330		53.200
	Cross Girder		12	0.600	1.950	13.500	189.540
							945.820
10	***HYSD bar reinforcement***	Tonne					
	In piles		150	Kg/Cum			434.294
	In Foundation		150	Kg/Cum			201.277
	Abutment Wall		130	Kg/Cum			67.766
	Abutment Cap		130	Kg/Cum			8.486
	Pier		130	Kg/Cum			33.828
	Pier cap		130	Kg/Cum			29.498
	Return Wall		130	Kg/Cum			91.000
	Pedestal		80	Kg/Cum			1.149
	Dirt Wall		130	Kg/Cum			5.637
	PSC Girders		120	Kg/Cum			113.498
	Slab Super Structure		130	Kg/Cum			72.800
							1059.234
11	***Elastomeric Bearing***	Cucm					
	Bearing Strip		40	10.000	52.000	40.000	832000
							832000
12	***HT Strands***	Tonne					
	PSC Girders		50	Kg/Cum			37.814
							37.814
13	***Crash Barrier***	Rmt					
			2	147.00			294.000
							294.000
14	***Drainage spouts***	Nr.					
			29				29.000
							29.000
15	***Wearing course***	Sqm					
			1	147	14.000		2058.00
							2058.00
16	***Filler Type Expansion joint***	Rmt					
			2	16.000			32.000
							32.000
16	***Strip seal Type Expansion joint***	Rmt					
			3	16.000			48.000
							48.000
17	***PCC M-15 in approach slab***	Cum					
	A1 Side		1	14.500	3.500	0.100	5.075
	A2 Side		1	14.500	3.500	0.100	5.075
							10.150
18	***RCC M-35 in approach slab***	Cum					
	A1 Side		1	14.500	3.500	0.350	17.763

Quantity calculation **5+410**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
	A2 Side		1	14.500	3.500	0.350	17.763
							35.525
19	***Filter Media***	Cum					
	Behind abutment		2	14.500	0.600	15.077	262.340
							262.340
20	***Backfilling***	Cum					
	Behind abutment A1		1	14.500	13.057	15.077	2854.490
	Behind abutment A2		1	14.500	11.902	13.743	2371.711
							5226.20
21	***Railing***	Rmt					
			2	157.15			314.300
							314.300
22	***Stone pitching***	Cum					
	Behind abutment A1		2	15.188	19.338	0.300	176.224
	Behind abutment A2		2	13.616	17.337	0.300	141.641
							317.865
23	***Filter Media Underneath Pitching***	Cum					
	Behind abutment A1		2	15.188	19.338	0.150	88.112
	Behind abutment A2		2	13.616	17.34	0.150	70.821
							158.932

Input 6+030
Viaduct

General data

Skew angle	0.00
Skew factor	1.00
No. of carriageway	1.00
Width of carriageway	16.00
Thk of Levelling Course	0.10
No of span	14.00
length of span	35.00
Total length of Span	490.00

Abutment	**A1**	**A2**
No. of Abutments	1.00	1.00
Width of Foundation	16.20	16.20
Bottom Length of Foundation	12.30	12.30
Height of foundation	1.80	1.80
Sub Structure	**A1**	**A2**
Width of Abut Wall	16.00	16.00
Side width of Abut Wall	1.50	1.50
Top Length of Abut Cap	16.00	16.00
Bottom Length of Abut Cap	16.00	16.00
Ht. of Abutment wall	7.11	8.46
Thk. of Dirt Wall	0.350	0.350
Ht. of Dirt Wall	2.55	2.55
Abutment Cap bottom Width	1.50	1.50
Abutment Cap top Width	2.22	2.22
Abutment Cap Slant height	0.50	0.50
Abutment Cap Straight height	0.50	0.50

Superstruture	**A1**	**A2**
Design Level	2705.886	2730.166
Ground Level	2697.414	2720.343
Pile cap Top leavel	2695.91	2718.84
Founding level		
Wearing Coat	0.065	0.065
Thickness of slab	0.25	0.25
Depth of Girder	2.20	2.20
Length of Pedestal	0.70	0.70
Width of Pedestal	0.70	0.70
Height of pedestal	0.35	0.35
Ht. of Abutment Wall	7.11	8.46

Pier	**P1, 13**	**P6, 7, 8, 9 & 10**	**P2, 3, 4, 5, 11, 12**
No. of pier	2	5	6
Width of Foundation	8.70	12.30	8.70
Bottom Length of Foundation	8.70	8.70	8.70
Height of foundation	1.80	1.80	1.80
Sub Structure			
Dia of Pier	3.00	4.00	4.00
Area of pier	7.07	12.57	12.57
Top length of pier cap	15.00	15.00	15.00
Bottom length of pier cap	3.20	4.20	4.20
Pier cap width	3.30	4.20	4.20
Pier Cap Slant height	1.20	1.20	1.20
Pier Cap Straight height	0.80	0.80	0.80

Superstruture	**P1, 13**	**P6, 7, 8, 9 & 10**	**P2, 3, 4, 5, 11, 12**
Design Level	2718.026	2719.768	2716.575
Ground Level	2704.270	2690.190	2693.179
Pile cap Top leavel	2703.27	2689.19	2692.18
Founding level			
Wearing Coat	0.065	0.065	0.065
Thickness of slab	0.25	0.25	0.25
Depth of Girder	2.20	2.20	2.20
Length of Pedestal	0.70	0.70	0.70
Width of Pedestal	0.70	0.70	0.70
Height of pedestal	0.35	0.35	0.35
Ht. of pier	11.89	27.71	21.53

Input 6+030
Viaduct

General data

PSC Girder Super Structure	
Longitudinal girder	
No. of carriageway	1.00
No. of span	14.00
Total depth of superstructure, D	2.20
Total length of girder	34.30
External Girders	
No. of Girder	5.00
End section	
Girder bottom	0.70
Web thickness	0.70
Girder top	1.10
Straight height bottom	0.00
Slant height bottom	0.00
Web height	2.10
Slant height (top haunch)	0.05
Straight height (top haunch)	0.15
Area of end section	1.68
Length of end section	2.50
Mid section	
Bottom Width	0.70
Web width	0.30
Girder top	1.10
Straight height bottom	0.25
Slant height bottom	0.15
Web height	1.65
Slant height (top haunch)	0.10
Straight height (top haunch)	0.15
Area of mid section	0.98
Length of mid - section	27.30
Intermediate section	
Length	1.00
Slab	
No Of Carrige way	1.00
Thickness of slab	0.25
width 1	16.00
Length	490.00
Area	**7840.00**

Pile Length		
A1	2655.11	RL A
	2696.91	RL B
	1.80	Cap
	40.00	
	16.00	no.
A2	2683.04	RL A
	2719.84	RL B
	1.80	Cap
	35.00	
	20.00	no.
P1	2662.10	RL A
	2693.90	RL B
	1.80	Cap
	30.00	
	9.00	no.
P13	2682.22	RL A
	2714.02	RL B
	1.80	Cap
	30.00	
	9.00	no.
P2, P3, P4, P5, P11 & P12	2643.31	RL A
	2685.51	RL B
	1.80	Cap
	40.40	
	54.00	no.
P6, P7, P8, P9 & P10	2643.31	RL A
	2685.51	RL B
	1.80	Cap
	40.40	
	60.00	no.

Stone Pitching	**A1**	**A2**
Width	12.71	14.73
Length	39.92	46.29
Thickness	0.30	0.30

Quantity calculation **6+030**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
1	***Cast in Situ Piles (M40)***	LM					
	Abutment A1		16	40.00			640.000
	Abutment A2		20	35.00			700.000
	Pier P1, P13		18	30.00			540.036
	P2, P3, P4, P5, P11 & P12		54	40.40			2181.600
	P6, P7, P8, P9 & P10		60	40.40			2424.000
							6485.636
						Cum	**7335.082**
2	***Earthwork in excavation***	Cum					
	Abutment A1		1	12.50	16.400	3.40	697.000
	Abutment A2		1	12.50	16.400	3.40	697.000
	Pier P1, P13		2	8.90	8.900	2.90	459.418
	P2, P3, P4, P5, P11 & P12		6	8.90	8.90	2.90	1378.254
	P6, P7, P8, P9 & P10		5	12.50	8.900	2.90	1613.125
							4844.797
3	***PCC M-15 grade in levelling course below Foundation***	Cum					
	Abutment A1		1	12.500	16.400	0.100	20.500
	Abutment A2		1	12.500	16.400	0.100	20.500
	Pier P1, P13		2	8.900	8.900	0.100	15.842
	P2, P3, P4, P5, P11 & P12		6	8.900	8.900	0.100	47.526
	P6, P7, P8, P9 & P10		5	12.500	8.900	0.100	55.625
	Deduction at pile		-168		1.131	0.100	-19.000
							140.993
4	***R.C.C. M-40 grade in Foundation***	Cum					
	Abutment A1(Pile Cap)		1	12.300	16.200	1.800	358.668
	Abutment A2(Pile Cap)		1	12.300	16.200	1.800	358.668
	Pier (Pile Cap) P1, 13		2	8.700	8.700	1.800	272.484
	Pier (Pile Cap) P2, 3, 4, 5, 11, 12		6	8.700	8.700	1.800	817.452
	Pier (Pile Cap) P6, 7, 8, 9 & 10		5	8.700	12.300	1.800	963.090
							2770.362
5	***R.C.C. M-40 grade in Sub structure***	Cum					
	Abutment						
	Abutment Wall A1		1	16.000	1.500	7.107	170.568
	Abutment Wall A2		1	16.000	1.500	8.458	202.992
	Abutment Cap A1	top	1	16.000	2.220	0.500	17.760
		bottom	1	16.000	1.860	0.500	14.880
	Abutment Cap A2	top	1	16.000	2.220	0.500	17.760
		bottom	1	16.000	1.860	0.500	14.880
	Pier P1, P13		2	7.069		11.892	168.112
	P2, P3, P4, P5, P11 & P12		6	12.566		21.531	1623.399
	P6, P7, P8, P9 & P10		5	12.566		27.713	1741.247
	Pier cap P1, P13	bottom	2	3.300	9.100	1.200	72.072
		top	2	3.300	15.000	0.800	79.200
	Pier cap P2, P3, P4, P5, P11 & P12	bottom	6	4.200	9.600	1.200	290.304
		top	6	4.200	15.000	0.800	302.400
	Pier cap P6, P7, P8, P9 & P10	bottom	5	4.200	9.600	1.200	241.920
		top	5	4.200	15.000	0.800	252.000
	Return Wall A1	vertical	2	11.900	9.657	0.750	172.377
	Return Wall A2	vertical	2	15.000	11.008	0.750	247.680
							5629.551
6	***R.C.C. M-40 grade in Dirt wall***	Cum					
	Abutment A1		1.00	16.000	0.350	2.800	15.680

Quantity calculation **6+030**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
	Restrainer		1.00	16.000	0.500	0.750	6.000
	Abutment A2		1.00	16.000	0.350	2.800	15.680
	Restrainer		1.00	16.000	0.500	0.750	6.000
							43.360
7	***RCC M-40 in Pedestals***	Cum					
	For bearing		140	0.700	0.700	0.350	24.010
	Restrainer @ pier		91	0.700	0.600	0.850	32.487
							56.497
8	***RCC M-40 in Slab superstructure***	Cum					
	Deck slab		1	490.000	16.000	0.250	1960.000
							1960.000
9	***PSC M-45 in girder superstructure***	Cum					
	End section		140	2.500	1.680		588.000
	Mid section		70	27.300	0.980		1872.780
	Intermediate section		140	1.000	1.330		186.200
	Cross Girder		42	0.600	1.950	13.500	663.390
							3310.370
10	***HYSD bar reinforcement***	Tonne					
	In piles		150	Kg/Cum			1100.262
	In Foundation		150	Kg/Cum			415.554
	Abutment Wall		130	Kg/Cum			48.563
	Abutment Cap		130	Kg/Cum			8.486
	Pier		130	Kg/Cum			459.259
	Pier cap		130	Kg/Cum			160.926
	Return Wall		130	Kg/Cum			54.607
	Pedestal		80	Kg/Cum			4.520
	Dirt Wall		130	Kg/Cum			5.637
	PSC Girders		120	Kg/Cum			397.244
	Slab Super Structure		130	Kg/Cum			254.800
							2909.859
11	***Elastomeric Bearing***	Cucm					
	Bearing Strip		140	10.000	52.000	40.000	2912000
							2912000
12	***HT Strands***	Tonne					
	PSC Girders		50	Kg/Cum			132.349
							132.349
13	***Crash Barrier***	Rmt					
			2	497.00			994.000
							994.000
14	***Drainage spouts***	Nr.					
			99				99.000
							99.000
15	***Wearing course***	Sqm					
			1	497	14.000		6958.00
							6958.00
16	***Filler Type Expansion joint***	Rmt					
			2	16.000			32.000
							32.000
16	***Strip seal Type Expansion joint***	Rmt					
			13	16.000			208.000
							208.000
17	***PCC M-15 in approach slab***	Cum					
	A1 Side		1	14.500	3.500	0.100	5.075

Quantity calculation **6+030**

Sl. no.	Description	Unit	No.	Length	Width	Height	Qty.
	A2 Side		1	14.500	3.500	0.100	5.075
							10.150
18	***RCC M-35 in approach slab***	Cum					
	A1 Side		1	14.500	3.500	0.350	17.763
	A2 Side		1	14.500	3.500	0.350	17.763
							35.525
19	***Filter Media***	Cum					
	Behind abutment		2	14.500	0.600	10.657	185.432
							185.432
20	***Backfilling***	Cum					
	Behind abutment A1		1	14.500	9.229	10.657	1426.161
	Behind abutment A2		1	14.500	10.399	12.008	1810.673
							3236.83
21	***Railing***	Rmt					
			2	509.00			1018.000
							1018.000
22	***Stone pitching***	Cum					
	Behind abutment A1		2	9.981	12.708	0.300	76.102
	Behind abutment A2		2	11.572	14.735	0.300	102.309
							178.410
23	***Filter Media Underneath Pitching***	Cum					
	Behind abutment A1		2	9.981	12.708	0.150	38.051
	Behind abutment A2		2	11.572	14.73	0.150	51.154
							89.205