1.4. Approach Bridge (P36-P41)

1.Summary of Quantity

5-SPANS PC-BOX GIRDER P36-P41

Item		Work Item		Unit	Quantity	Remarks
Concrete	Class B	Cantilever		cu.m	4,803.3	σck=40Mpa
		Pier Head		cu.m	1,801.7	
		Scaffolding		cu.m	691.2	
		Total		cu.m	7,296.2	
	Class E	Barrier		cu.m	174.7	σck=24Mpa
Form		External	Cantilever	sq.m	6,324.8	
			Pier Head	sq.m	1,294.0	
			Support	sq.m	1,041.7	
			Total	sq.m	8,660.6	
		Internal	Cantilever	sq.m	6,303.6	
			Pier Head	sq.m	1,423.0	
			Support	sq.m	982.4	
			Total	sq.m	8,708.9	
		Total		sq.m	17,369.5	
		Barrier		sq.m	1,202.0	
Re-bar		Cantilever	~D14	ton	441.9	
			D16~D22	ton	213.8	
			D25~			
			Total	ton	655.7	
		Pier Head	~D14	ton	52.1	
			D16~D22	ton	81.3	
			D25~			
			Total	ton	133.4	
		Support	~D14	ton	36.4	
			D16~D22	ton	17.3	
			D25~			
			Total	ton	53.7	
		Barrier	~D14	ton	14.5	
			D16~D22	ton	0.2	
			D25~			
			Total	ton	14.7	
		Total	~D14	ton	544.9	
			D16~D22	ton	312.6	
			D25~			
			Total	ton	857.5	
PC Steel	12S12.7B	Internal Longitudinal Prestressing Tendons		ton	156.5	SWPR7B
	19S15.2B	External Longitudinal Prestressing Tendons		ton	28.9	SWPR7B
	1T21.8	Internal Transverse Tendons		ton	27.1	
Expansion joint		Type A		m	44.2	
		Concrete		cu. m	2.2	

5-SPANS PC-BOX GIRDER P36-P41

Item		Work Item	Unit	Quantity	Remarks
Bearing	Elastomeric Bearing	1620*1620*265	Nos.	12	
		720*720*130	Nos.	6	
	Anchor Bar	Φ90 L=2520	Nos.	40	
		Φ115 L=3120	Nos.	40	
		Φ40 L=1130	Nos.	12	
	Anchor Cap	Φ140/120 L=980	Nos.	40	
		Φ125 L=950	Nos.	40	
		Φ90/70 L=480	Nos.	12	
Railing			m	339.8	
			ton	0.0	
Manhole Cover			Nos.	6	
			kg	723.0	
Pavement	Asphalt concrete surface course	t=75mm	sq.m	7,305.7	
	Water Proofing	t= 5mm	sq.m	7,305.7	
	Road Marking		sq.m	292.2	
Drainage	Pot		Nos.	52	
	Pipe	Φ150	m	126.4	
		Φ200	m	679.7	
	Hunger	Φ150	Nos.	80	
		Φ200	Nos.	240	
Concrete Central Reserve		precast L=2000	Nos.	165.9	
Temporary Works		Suspended Scaffolding	ton	525.4	
		Temporary Fixation PC-bar Φ32	ton	7.7	
		Concrete	cu.m	13.8	

2. Concrete

2-1. Total of Quantity

Item	Quantity (cu. m)						
	Girder	Diaphragm	Manhole	Haunch	Expansion	Anchorage	Total
Cantilever part	4,695.017	89.320				18.960	4,803.297
Pier Head part	1,315.824	482.796		3.117			1,801.737
Supporting Part	638.027	55.775	-2.580	0.972	-1.040		691.154
Total	6,648.868	627.891	-2.580	4.089	-1.040	18.960	7,296.188

2-2. Girder

(1) Supporting Part on P36 Side

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
1	1	34.145					
	2	34.145	34.145	1.500	51.218	51.218	
	3	15.515	24.830	0.000	0.000	0.000	
	4	14.403	14.959	5.000	74.795	74.795	
	5	14.403	14.403	5.900	84.978	84.978	
Total				12.400	210.991	210.991	

(2) Cantilever part on P36 -> P37

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	5	14.403					
2	6	14.551	14.477	4.000	57.908	57.908	
3	7	15.589	15.070	4.000	60.280	60.280	
4	8	16.397	15.993	4.000	63.972	63.972	
5	9	17.258	16.828	3.500	58.896	58.896	
6	10	18.964	18.111	3.500	63.389	63.389	
7	11	20.209	19.587	3.500	68.553	68.553	
8	12	21.915	21.062	3.000	63.186	63.186	
9	13	23.333	22.624	3.000	67.872	67.872	
10	14	26.158	24.746	3.000	74.237	74.237	
Total				31.500	578.293	578.293	

(3) Pier Head part on P37

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	14	26.158					
	15	28.166	27.162	4.500	122.229	122.229	
	16	28.166	28.166	0.000			
11	17	28.166	28.166	3.000	84.498	84.498	
	18	28.166	28.166	0.000			
	19	26.158	27.162	4.500	122.229	122.229	
Total				12.000	328.956	328.956	

(4) Cantilever part on P37 -> P38

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	19	26.158					
12	20	23.333	24.746	3.000	74.237	74.237	
13	21	21.915	22.624	3.000	67.872	67.872	
14	22	20.209	21.062	3.000	63.186	63.186	
15	23	18.964	19.587	3.500	68.553	68.553	
16	24	17.258	18.111	3.500	63.389	63.389	
17	25	16.397	16.828	3.500	58.896	58.896	
18	26	15.589	15.993	4.000	63.972	63.972	
19	27	14.551	15.070	4.000	60.280	60.280	
20	28	14.403	14.477	4.000	57.908	57.908	
Total				31.500	578.293	578.293	

(5) Supporting Part on center of Span

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	28	14.403					
21	29	14.403	14.403	5.000	72.015	72.015	
Total				5.000	72.015	72.015	

(6) Cantilever part on P37 -> P38

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	28	14.403					
22	27	14.551	14.477	3.000	43.431	43.431	
23	26	15.589	15.070	3.000	45.210	45.210	
24	25	16.397	15.993	3.000	47.979	47.979	
25	24	17.258	16.828	3.500	58.896	58.896	
26	23	18.964	18.111	3.500	63.389	63.389	
27	22	20.209	19.587	3.500	68.553	68.553	
28	21	21.915	21.062	4.000	84.248	84.248	
29	20	23.333	22.624	4.000	90.496	90.496	
30	19	26.158	24.746	4.000	98.982	98.982	
Total				31.500	601.184	601.184	

(7) Pier Head part on P38

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	19	26.158					
	18	28.166	27.162	4.500	122.229	122.229	
	17	28.166	28.166	0.000			
31	16	28.166	28.166	3.000	84.498	84.498	
	15	28.166	28.166	0.000			
	14	26.158	27.162	4.500	122.229	122.229	
Total				12.000	328.956	328.956	

(8) Cantilever part on P38 -> P39

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	14	26.158					
32	13	23.333	24.746	3.000	74.237	74.237	
33	12	21.915	22.624	3.000	67.872	67.872	
34	11	20.209	21.062	3.000	63.186	63.186	
35	10	18.964	19.587	3.500	68.553	68.553	
36	9	17.258	18.111	3.500	63.389	63.389	
37	8	16.397	16.828	3.500	58.896	58.896	
38	7	15.589	15.993	4.000	63.972	63.972	
39	6	14.551	15.070	4.000	60.280	60.280	
40	5	14.403	14.477	4.000	57.908	57.908	
Total				31.500	578.293	578.293	

(9) Supporting Part on center of Span

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	5	14.403					
41	5	14.403	14.403	5.000	72.015	72.015	
Total				5.000	72.015	72.015	

(10) Cantilever part on P38 -> P39

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	5	14.403					
40	6	14.551	14.477	3.000	43.431	43.431	
39	7	15.589	15.070	3.000	45.210	45.210	
38	8	16.397	15.993	3.000	47.979	47.979	
37	9	17.258	16.828	3.500	58.896	58.896	
36	10	18.964	18.111	3.500	63.389	63.389	
35	11	20.209	19.587	3.500	68.553	68.553	
34	12	21.915	21.062	4.000	84.248	84.248	
33	13	23.333	22.624	4.000	90.496	90.496	
32	14	26.158	24.746	4.000	98.982	98.982	
					0.000		
Total				31.500	601.184	601.184	

(11) Pier Head part on P39

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	14	26.158					
	15	28.166	27.162	4.500	122.229	122.229	
	16	28.166	28.166	0.000			
31	17	28.166	28.166	3.000	84.498	84.498	
	18	28.166	28.166	0.000			
	19	26.158	27.162	4.500	122.229	122.229	
Total				12.000	328.956	328.956	

(12) Cantilever part on P39 -> P40

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	19	26.158					
30	20	23.333	24.746	3.000	74.237	74.237	
29	21	21.915	22.624	3.000	67.872	67.872	
28	22	20.209	21.062	3.000	63.186	63.186	
27	23	18.964	19.587	3.500	68.553	68.553	
26	24	17.258	18.111	3.500	63.389	63.389	
25	25	16.397	16.828	3.500	58.896	58.896	
24	26	15.589	15.993	4.000	63.972	63.972	
23	27	14.551	15.070	4.000	60.280	60.280	
22	28	14.403	14.477	4.000	57.908	57.908	
Total				31.500	578.293	578.293	

(13) Supporting Part on center of Span

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	28	14.403					
21	29	14.403	14.403	5.000	72.015	72.015	
Total				5.000	72.015	72.015	

(14) Cantilever part on P39 -> P40

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	28	14.403					
20	27	14.551	14.477	3.000	43.431	43.431	
19	26	15.589	15.070	3.000	45.210	45.210	
18	25	16.397	15.993	3.000	47.979	47.979	
17	24	17.258	16.828	3.500	58.896	58.896	
16	23	18.964	18.111	3.500	63.389	63.389	
15	22	20.209	19.587	3.500	68.553	68.553	
14	21	21.915	21.062	4.000	84.248	84.248	
13	20	23.333	22.624	4.000	90.496	90.496	
12	19	26.158	24.746	4.000	98.982	98.982	
Total				31.500	601.184	601.184	

(15) Pier Head part on P40

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	19	26.158					
	18	28.166	27.162	4.500	122.229	122.229	
	17	28.166	28.166	0.000			
11	16	28.166	28.166	3.000	84.498	84.498	
	15	28.166	28.166	0.000			
	14	26.158	27.162	4.500	122.229	122.229	
Total				12.000	328.956	328.956	

(14) Cantilever part on P40 -> P41

Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
	14	26.158					
10	13	23.333	24.746	3.000	74.237	74.237	
9	12	21.915	22.624	3.000	67.872	67.872	
8	11	20.209	21.062	3.000	63.186	63.186	
7	10	18.964	19.587	3.500	68.553	68.553	
6	9	17.258	18.111	3.500	63.389	63.389	
5	8	16.397	16.828	3.500	58.896	58.896	
4	7	15.589	15.993	4.000	63.972	63.972	
3	6	14.551	15.070	4.000	60.280	60.280	
2	5	14.403	14.477	4.000	57.908	57.908	
Total				31.500	578.293	578.293	

(15) Supporting Part on P41 Side

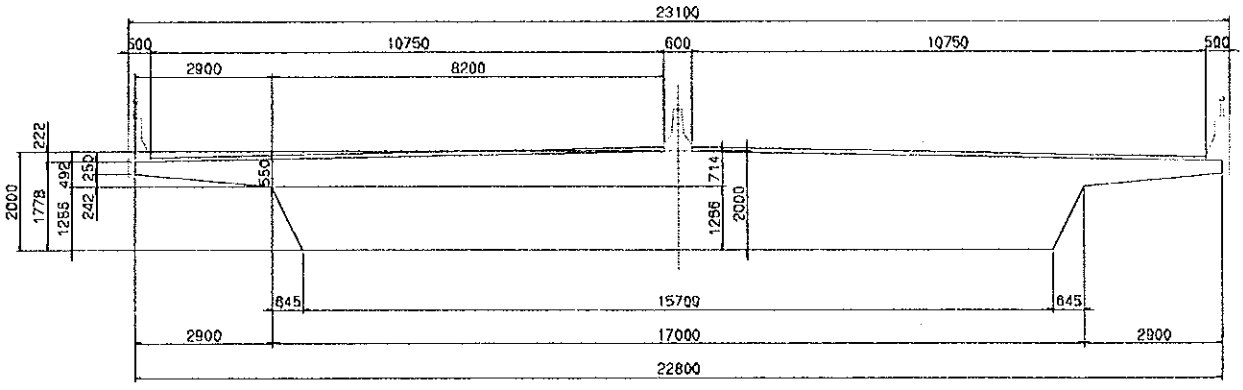
Block Number	Section Number	Section Area (sq. m)	Average of Sectional Area (sq. m)	Length of Block (m)	Concrete Volume (cu. m)	Total of each Block (cu. m)	Remarks
1	5	14.403					
	4	14.403	14.403	5.900	84.978	84.978	
	3	15.515	14.959	5.000	74.795	74.795	
	2	34.145	24.830	0.000	0.000	0.000	
	1	34.145	34.145	1.500	51.218	51.218	
Total				12.400	210.991	210.991	

(16) Total

Item	Girder
Cantilever part	4,695.017
Pier Head part	1,315.824
Supporting Part	638.027
Total	6,648.868

Concrete

Item	Formula	Quantity
1) Section area		
Section 1,2		

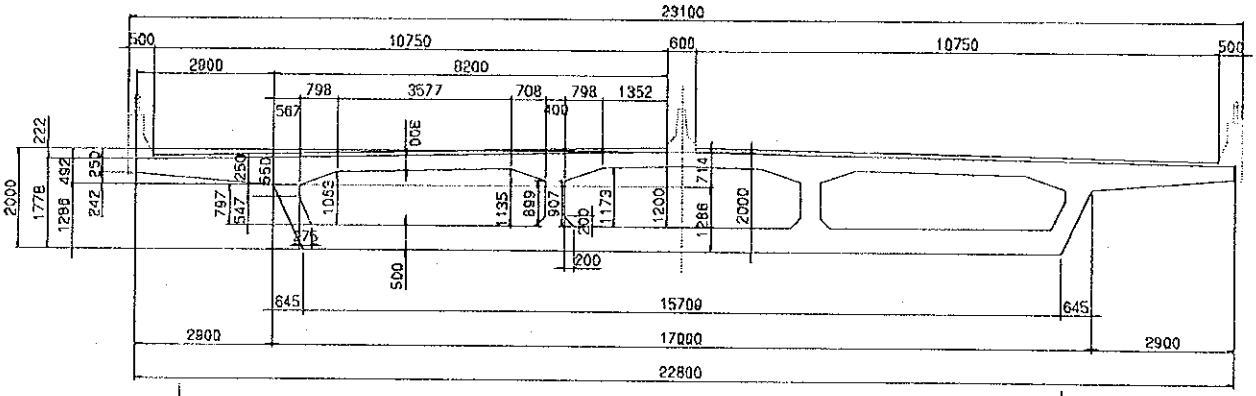


A1 = (	17.000	+	15.709	)×	1/2	×	1.286	=	21.032	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6					=	0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Total				34.145	m²

Concrete

Item	Formula	Quantity

Section 3



A1 = (	17.000	+	15.709	)×	1/2	×	1.286	=	21.032	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6					=	0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Sub total				34.145	m²

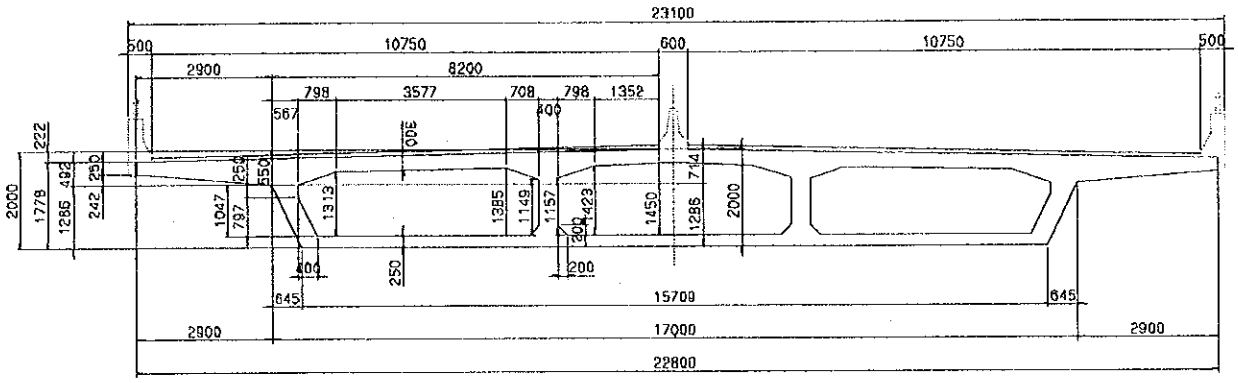
Subtraction

A5 =	1.200	×	0.600					=	0.720	m²
A6 = (	1.200	+	1.173	)×	1/2	×	1.352			
×	2							=	3.208	m²
A7 = ((	1.173	+	0.907	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2			
								=	1.620	m²
A8 = ((	0.899	+	1.135	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2			
								=	1.400	m²
A9 = (	1.135	+	1.630	)×	1/2	×	3.577			
×	2							=	9.89	m²
A10 = ((	1.630	+	0.797	)×	1/2	×	0.798			
-	0.527	×	0.275	×	1/2	)×	2	=	1.792	m²
					Sub total				18.630	m²
					Total				15.515	m²

Concrete

Item	Formula	Quantity

Section 4,5,28,29

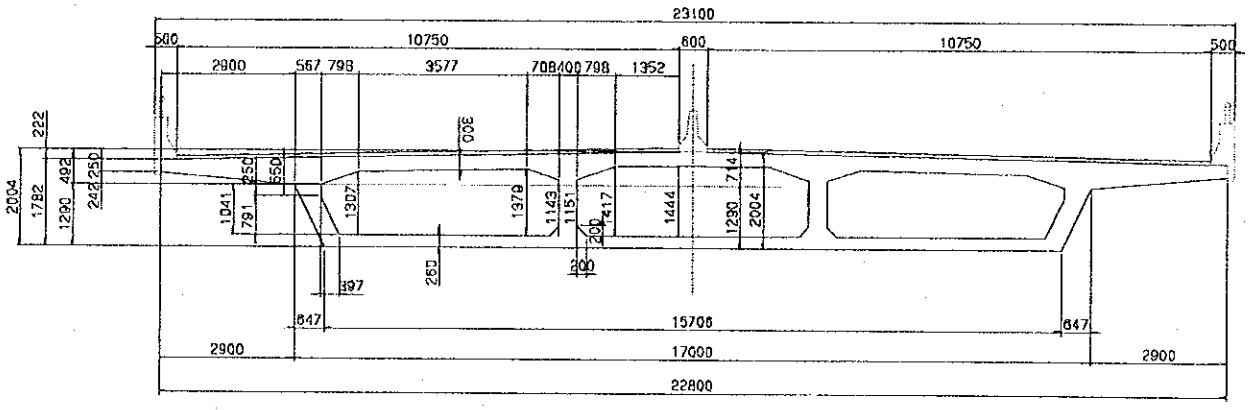


A1 = (	17.000	+	15.709	)×	1/2	×	1.286			
						=				21.032 ㎡
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2					=				10.365 ㎡
A3 =	0.714	×	0.6			=				0.428 ㎡
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2					=				2.320 ㎡
					Sub total					34.145 ㎡
Subtraction										
A5 =	1.450	×	0.600					=		0.870 ㎡
A6 = (	1.450	+	1.423	)×	1/2	×	1.352			
×	2							=		3.884 ㎡
A7 = ((	1.423	+	1.157	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=		2.019 ㎡
A8 = ((	1.149	+	1.385	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=		1.754 ㎡
A9 = (	1.385	+	1.313	)×	1/2	×	3.577			
×	2							=		9.651 ㎡
A10 = ((	1.313	+	1.047	)×	1/2	×	0.798			
-	0.797	×	0.400	×	1/2	)×	2	=		1.564 ㎡
					Sub total					19.742 ㎡
					Total					14.403 ㎡

Concrete

Item	Formula	Quantity

Section 6,27

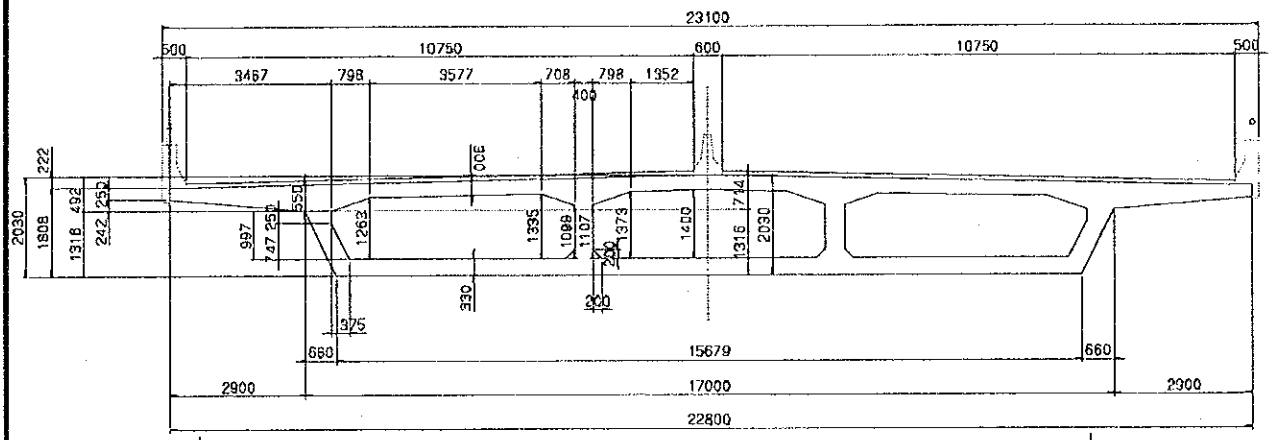


A1 = (	17.000	+	15.706	)×	1/2	×	1.290	=	21.095	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6					=	0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Sub total				34.208	m²

Subtraction

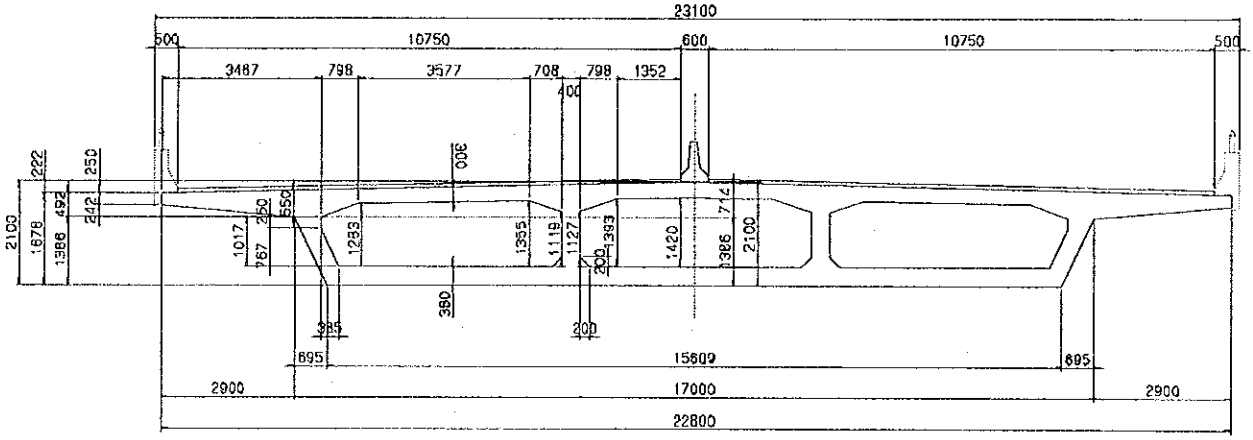
A5 =	1.444	×	0.600					=	0.866	m²
A6 = (	1.444	+	1.417	)×	1/2	×	1.352			
×	2							=	3.868	m²
A7 = ((	1.417	+	1.151	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=	2.009	m²
A8 = ((	1.143	+	1.379	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	1.746	m²
A9 = (	1.379	+	1.307	)×	1/2	×	3.577			
×	2							=	9.608	m²
A10 = ((	1.307	+	1.041	)×	1/2	×	0.798			
-	0.791	×	0.397	×	1/2	)×	2	=	1.560	m²
					Sub total				19.657	m²
					Total				14.551	m²

Concrete

Item	Formula	Quantity
Section 7,26		

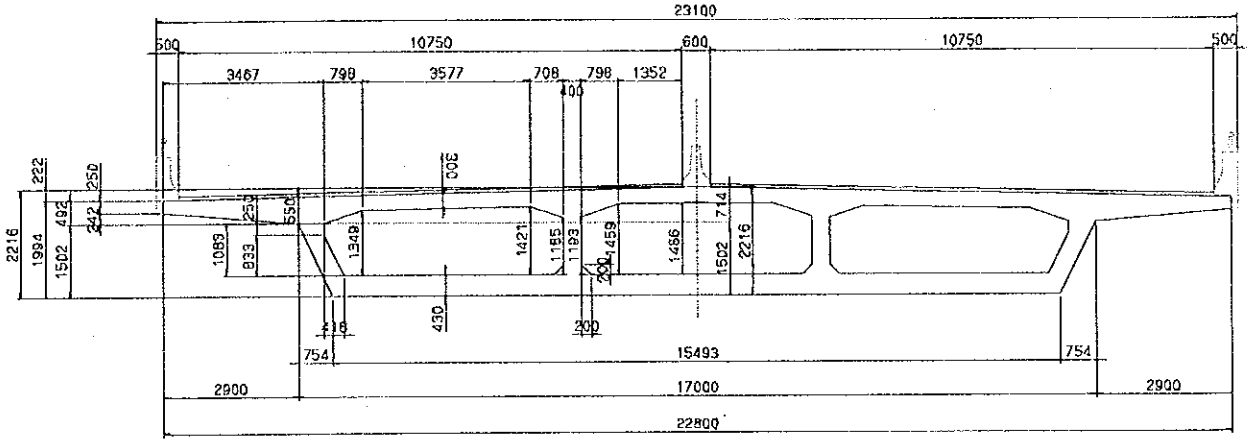
A1 = (	17.000	+	15.679	)×	1/2	×	1.316	=	21.503	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6					=	0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Sub total				34.616	m²
Subtraction										
A5 =	1.400	×	0.600					=	0.840	m²
A6 = (	1.400	+	1.373	)×	1/2	×	1.352			
×	2							=	3.749	m²
A7 = ((	1.373	+	1.107	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=	1.939	m²
A8 = ((	1.099	+	1.335	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	1.683	m²
A9 = (	1.335	+	1.263	)×	1/2	×	3.577			
×	2							=	9.293	m²
A10 = ((	1.263	+	0.997	)×	1/2	×	0.798			
-	0.747	×	0.375	×	1/2	)×	2	=	1.523	m²
					Sub total				19.027	m²
					Total				15.589	m²

Concrete

Item	Formula	Quantity
Section 8,25		

A1 = (	17.000	+	15.609	)×	1/2	×	1.386	=	22.598	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6					=	0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Sub total				35.711	m²
Subtraction										
A5 =	1.420	×	0.600					=	0.852	m²
A6 = (	1.420	+	1.393	)×	1/2	×	1.352			
×	2							=	3.803	m²
A7 = ((	1.393	+	1.127	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2			
								=	1.971	m²
A8 = ((	1.119	+	1.355	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2			
								=	1.712	m²
A9 = (	1.355	+	1.283	)×	1/2	×	3.577			
×	2							=	9.436	m²
A10 = ((	1.283	+	1.017	)×	1/2	×	0.798			
-	0.767	×	0.385	×	1/2	)×	2			
								=	1.540	m²
					Sub total				19.314	m²
					Total				16.397	m²

Concrete

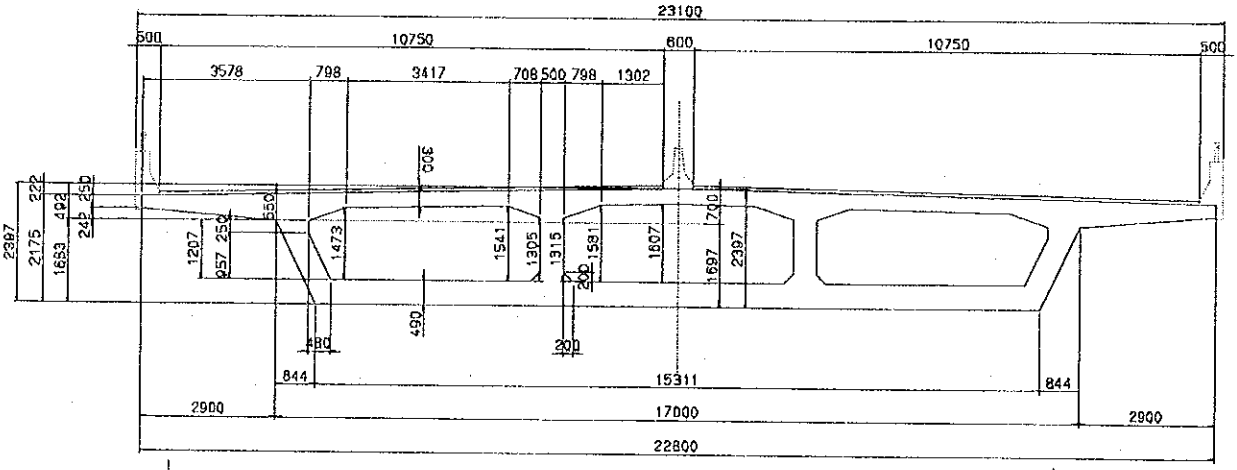
Item	Formula	Quantity
Section 9,24		

A1 = (	17.000	+	15.493	)×	1/2	×	1.502	=	24.402	㎡
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	㎡
A3 =	0.714	×	0.6					=	0.428	㎡
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	㎡
					Sub total				37.515	㎡
Subtraction										
A5 =	1.486	×	0.600					=	0.892	㎡
A6 = (	1.486	+	1.459	)×	1/2	×	1.352			
×	2							=	3.982	㎡
A7 = ((	1.459	+	1.193	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2			
								=	2.076	㎡
A8 = ((	1.185	+	1.421	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	1.805	㎡
A9 = (	1.421	+	1.349	)×	1/2	×	3.577			
×	2							=	9.908	㎡
A10 = ((	1.349	+	1.083	)×	1/2	×	0.798			
-	0.833	×	0.416	×	1/2	)×	2	=	1.594	㎡
					Sub total				20.257	㎡
					Total				17.258	㎡

Concrete

Item	Formula	Quantity

Section 10,23

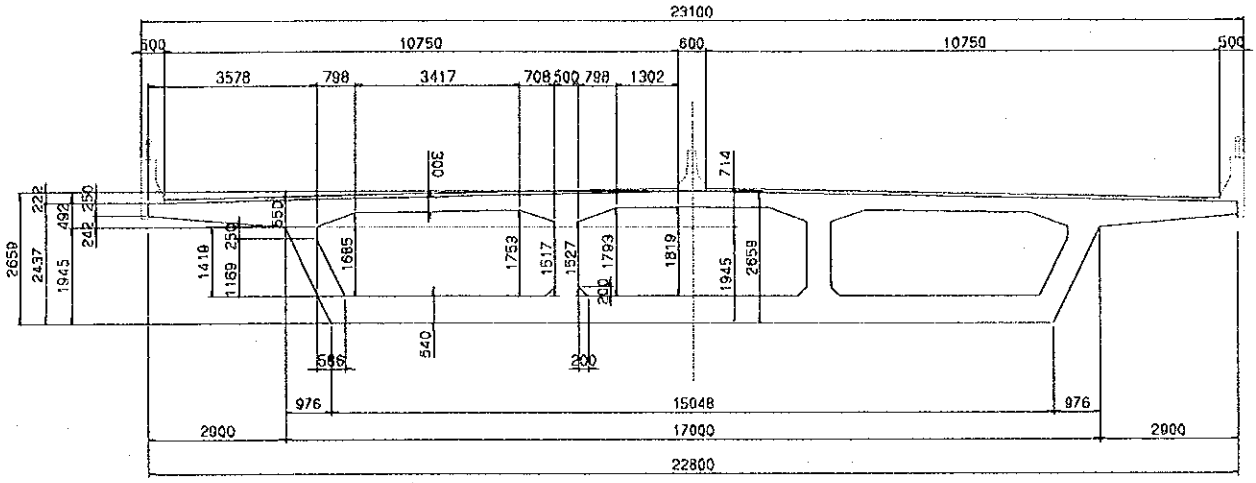


A1 = (	17.000	+	15.311	)×	1/2	×	1.683	=	27.19	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6					=	0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Sub total				40.303	m²

Subtraction

A5 =	1.607	×	0.600					=	0.964	m²
A6 = (	1.607	+	1.581	)×	1/2	×	1.302			
×	2							=	4.151	m²
A7 = ((	1.581	+	1.315	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=	2.271	m²
A8 = ((	1.305	+	1.541	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	1.975	m²
A9 = (	1.541	+	1.473	)×	1/2	×	3.417			
×	2							=	10.299	m²
A10 = ((	1.473	+	1.207	)×	1/2	×	0.798			
-	0.957	×	0.480	×	1/2	)×	2	=	1.679	m²
					Sub total				21.339	m²
					Total				18.964	m²

Concrete

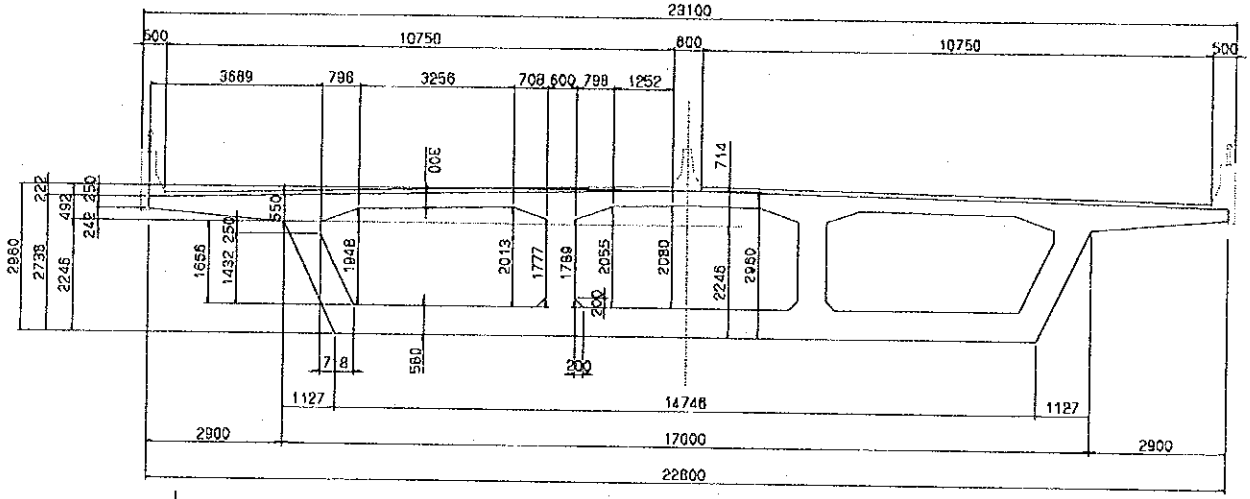
Item	Formula	Quantity
Section 11,22		

A1 = (	17.000	+	15.048	)×	1/2	×	1.945	=	31.167	㎡
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	㎡
A3 =	0.714	×	0.6					=	0.428	㎡
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	㎡
					Sub total				44.280	㎡
Subtraction										
A5 =	1.819	×	0.600					=	1.091	㎡
A6 = (	1.819	+	1.793	)×	1/2	×	1.302			
×	2							=	4.703	㎡
A7 = ((	1.793	+	1.527	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=	2.609	㎡
A8 = ((	1.517	+	1.753	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	2.275	㎡
A9 = (	1.753	+	1.685	)×	1/2	×	3.417			
×	2							=	11.748	㎡
A10 = ((	1.685	+	1.419	)×	1/2	×	0.798			
-	1.419	×	0.586	×	1/2	)×	2	=	1.645	㎡
					Sub total				24.071	㎡
					Total				20.209	㎡

Concrete

Item	Formula	Quantity

Section 12,21



A1 =	(	17.000	+	14.746	)×	1/2	×	2.246	=	35.651 m²
A2 =	(	0.550	+	0.714	)×	1/2	×	8.200		
	×	2							=	10.365 m²
A3 =		0.714	×	0.6					=	0.428 m²
A4 =	(	0.250	+	0.550	)×	1/2	×	2.900		
	×	2							=	2.320 m²
						Sub total				48.764 m²

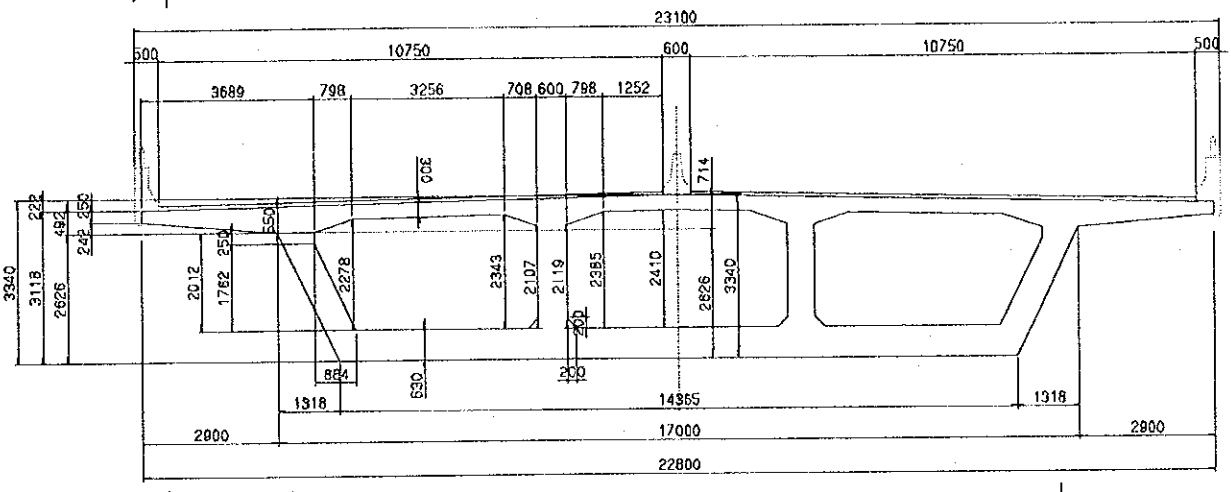
Subtraction

A5 =		2.080	×	0.600					=	1.248 m²
A6 =	(	2.080	+	2.055	)×	1/2	×	1.252		
	×	2							=	5.177 m²
A7 =	((	2.055	+	1.789	)×	1/2	×	0.798		
	-	0.200	×	0.200	×	1/2	)×	2	=	3.028 m²
A8 =	((	1.777	+	2.013	)×	1/2	×	0.708		
	-	0.200	×	0.200	×	1/2	)×	2	=	2.643 m²
A9 =	(	2.013	+	1.948	)×	1/2	×	3.256		
	×	2							=	12.897 m²
A10 =	((	1.948	+	1.666	)×	1/2	×	0.798		
	-	0.718	×	1.432	×	1/2	)×	2	=	1.856 m²
						Sub total				26.849 m²
						Total				21.915 m²

Concrete

Item	Formula	Quantity

Section 13,20



A1 = (	17.000	+	14.365	)×	1/2	×	2.626	=	41.182	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6					=	0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Sub total				54.295	m²

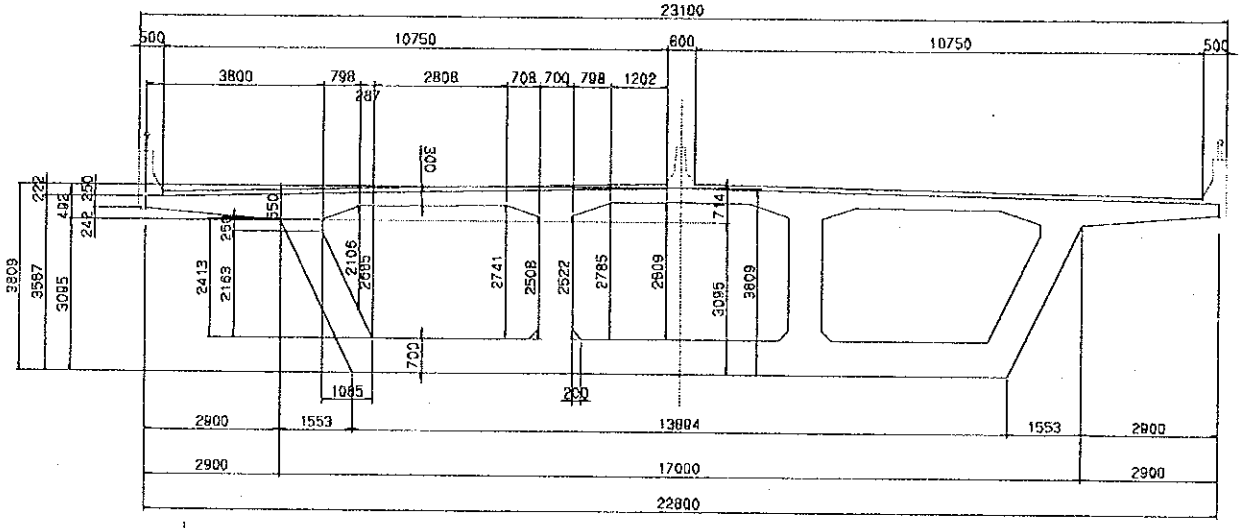
Subtraction

A5 =	2.410	×	0.600					=	1.446	m²
A6 = (	2.410	+	2.385	)×	1/2	×	1.252			
×	2							=	6.003	m²
A7 = ((	2.385	+	2.119	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=	3.554	m²
A8 = ((	2.017	+	2.343	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	3.047	m²
A9 = (	2.343	+	2.278	)×	1/2	×	3.256			
×	2							=	15.046	m²
A10 = ((	2.278	+	2.012	)×	1/2	×	0.798			
-	1.762	×	0.884	×	1/2	)×	2	=	1.866	m²
					Sub total				30.962	m²
					Total				23.333	m²

Concrete

Item	Formula	Quantity

Section 14.19



A1 = (	17.000	+	13.894	)×	1/2	×	3.095	=	47.808	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6			=			0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Sub total				60.921	m²

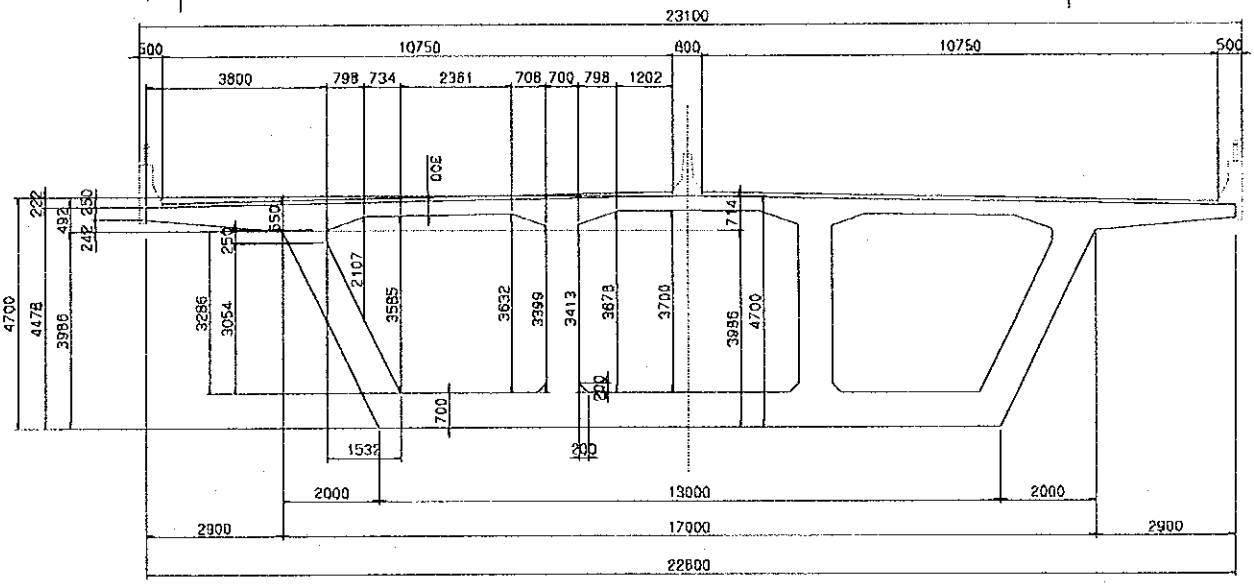
Subtraction

A5 =	2.809	×	0.600					=	1.685	m²
A6 = (	2.809	+	2.785	)×	1/2	×	1.202			
×	2							=	6.724	m²
A7 = ((	2.785	+	2.522	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=	4.195	m²
A8 = ((	2.508	+	2.741	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	3.676	m²
A9 = (	2.741	+	2.685	)×	1/2	×	0.287			
×	2							=	1.557	m²
A10 = ((	2.685	+	2.106	)×	1/2	×	0.287			
×	2							=	1.375	m²
A11 = ((	2.106	+	0.250	)×	1/2	×	0.798			
×	2							=	1.880	m²
					Sub total				21.092	m²
					Total				39.829	m²

Concrete

Item	Formula	Quantity

Section 15,18

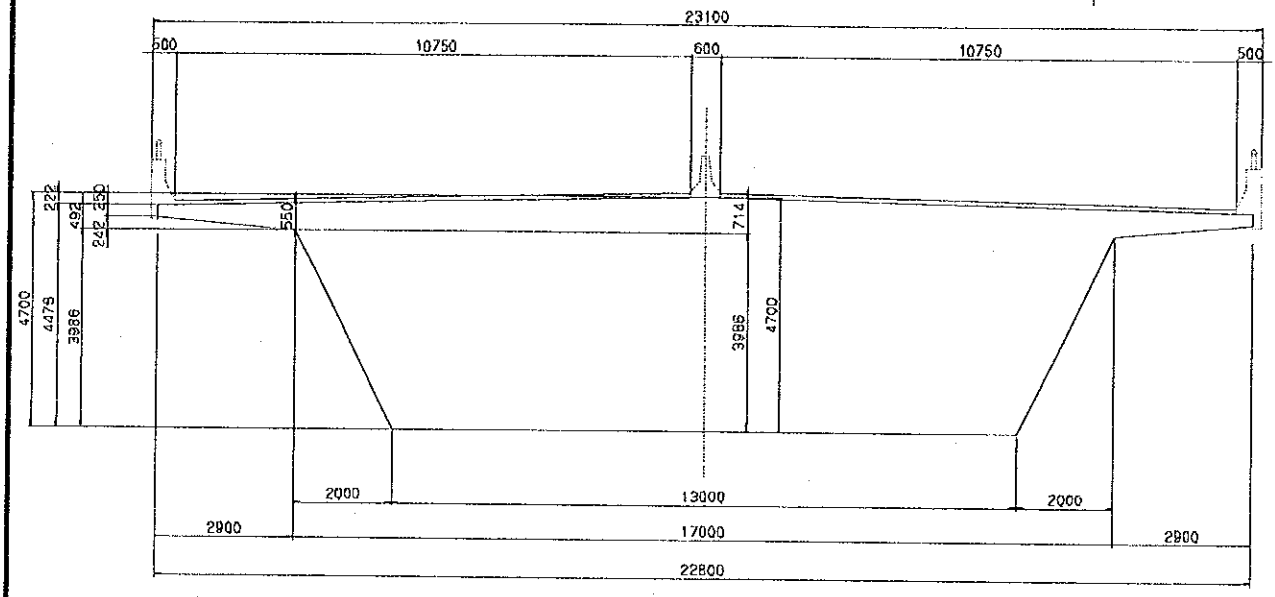


A1 = (	17.000	+	13.000	)×	1/2	×	3.986	=	59.790	㎡
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	㎡
A3 =	0.714	×	0.6					=	0.428	㎡
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	㎡
					Sub total				72.903	㎡

Subtraction

A5 =	3.700	×	0.600					=	2.220	㎡
A6 = (	3.700	+	3.678	)×	1/2	×	1.202			
×	2							=	8.868	㎡
A7 = ((	3.678	+	3.413	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=	5.619	㎡
A8 = ((	3.399	+	3.632	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	4.938	㎡
A9 = (	3.632	+	3.583	)×	1/2	×	2.361			
×	2							=	17.035	㎡
A10 = ((	3.583	+	2.107	)×	1/2	×	0.734			
×	2							=	4.176	㎡
A11 = ((	2.107	+	0.250	)×	1/2	×	0.798			
×	2							=	1.881	㎡
					Sub total				44.737	㎡
					Total				28.166	㎡

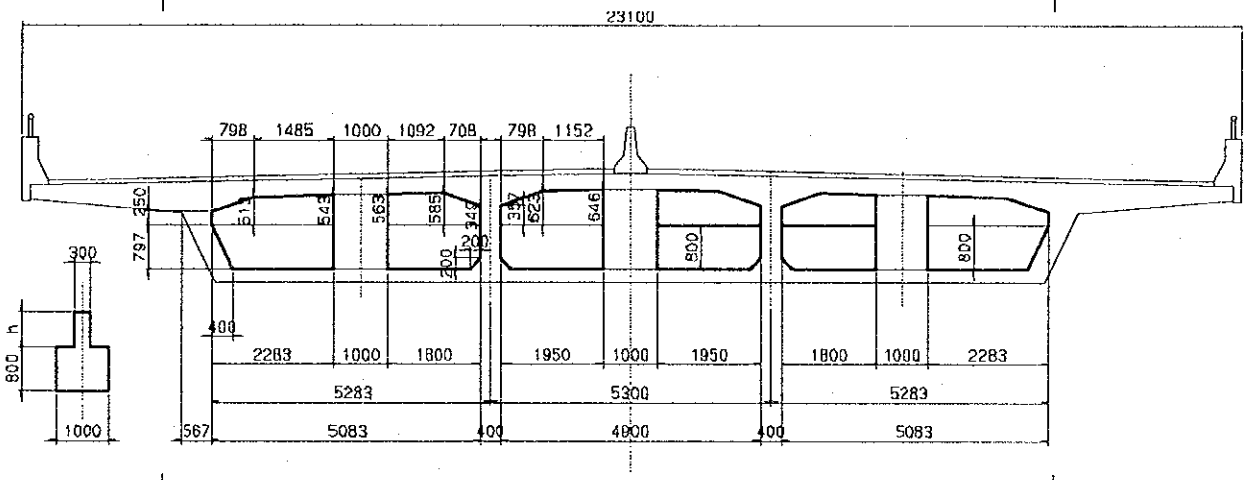
Concrete

Item	Formula	Quantity
Section 16,17		

A1 = (	17.000	+	13.000	)×	1/2	×	3.986	=	59.790	m²
A2 = (	0.550	+	0.714	)×	1/2	×	8.200			
×	2							=	10.365	m²
A3 =	0.714	×	0.6					=	0.428	m²
A4 = (	0.250	+	0.550	)×	1/2	×	2.900			
×	2							=	2.320	m²
					Total				72.903	m²

Concrete

Item	Formula	Quantity
2-3. Diaphragm, Manhole Anchorage etc		
	(1) Center Bulkhead	
	· Supporting Part on center of Span	

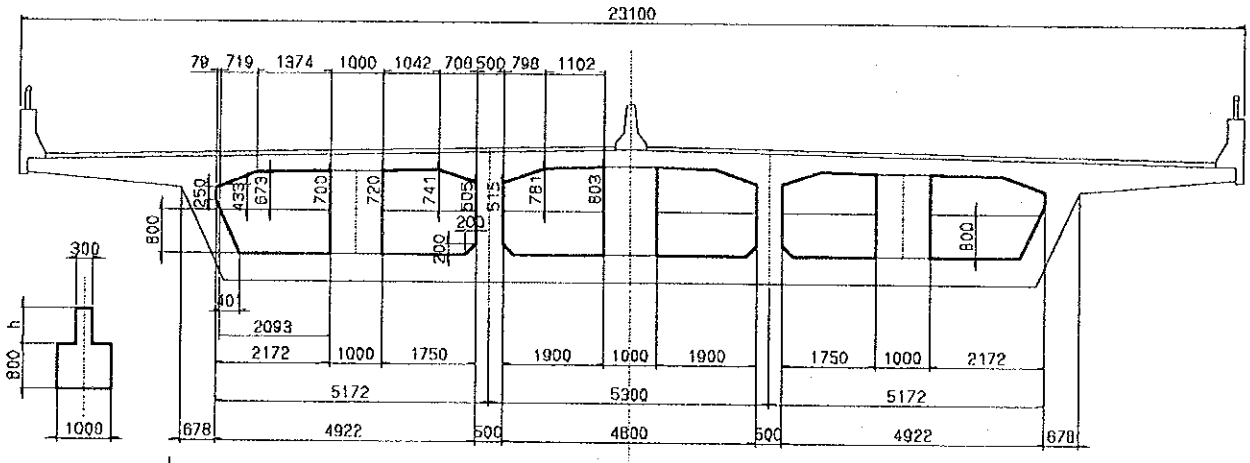


V1 = (	0.646	+	0.623	)×	1/2	×	1.152				
×	2	×	0.300					=	0.439	m^3	
V2 = (	0.623	+	0.357	)×	1/2	×	0.798				
×	2	×	0.300					=	0.235	m^3	
V3 = (	0.349	+	0.585	)×	1/2	×	0.708				
×	2	×	0.300					=	0.198	m^3	
V4 = (	0.585	+	0.563	)×	1/2	×	1.092				
×	2	×	0.300					=	0.376	m^3	
V5 = (	0.543	+	0.513	)×	1/2	×	1.485				
×	2	×	0.300					=	0.470	m^3	
V6 = (	0.513	+	0.250	)×	1/2	×	0.798				
×	2	×	0.300					=	0.183	m^3	
V7 = (	1.950	×	0.800	-	1/2	×	0.200				
×	0.200	)×	2	×	1.000			=	3.080	m^3	
V8 = (	1.800	×	0.800	-	1/2	×	0.200				
×	0.200	)×	2	×	1.000			=	2.840	m^3	
V9 = (	2.283	×	0.800	-	1/2	×	0.797				
×	0.400	)×	2	×	1.000			=	3.334	m^3	
					Total				11.155	m^3	per each 11.155 m^3
V =	11.155	×	5					=	55.775	m^3	Total 55.775 m^3

Concrete

Item	Formula	Quantity

· Cantilever part



V1 = (	0.803	+	0.781	)×	1/2	×	1.102			
×	2	×	0.300					=	0.524	m³
V2 = (	0.781	+	0.515	)×	1/2	×	0.798			
×	2	×	0.300					=	0.310	m³
V3 = (	0.505	+	0.741	)×	1/2	×	0.708			
×	2	×	0.300					=	0.265	m³
V4 = (	0.741	+	0.720	)×	1/2	×	1.042			
×	2	×	0.300					=	0.457	m³
V5 = (	0.700	+	0.673	)×	1/2	×	1.374			
×	2	×	0.300					=	0.566	m³
V6 = (	0.673	+	0.433	)×	1/2	×	0.719			
×	2	×	0.300					=	0.239	m³
V7 = (	0.433	+	0.250	)×	1/2	×	0.079			
×	2	×	0.300					=	0.016	m³
V8 = (	1.900	×	0.800	-	1/2	×	0.200			
×	0.200	)×	2	×	1.000			=	3.000	m³
V9 = (	1.750	×	0.800	-	1/2	×	0.200			
×	0.200	)×	2	×	1.000			=	2.760	m³
V10 = (	2.093	×	0.800	-	1/2	×	0.401			
×	0.800	)×	2	×	1.000			=	3.028	m³
					Total				11.165	m³

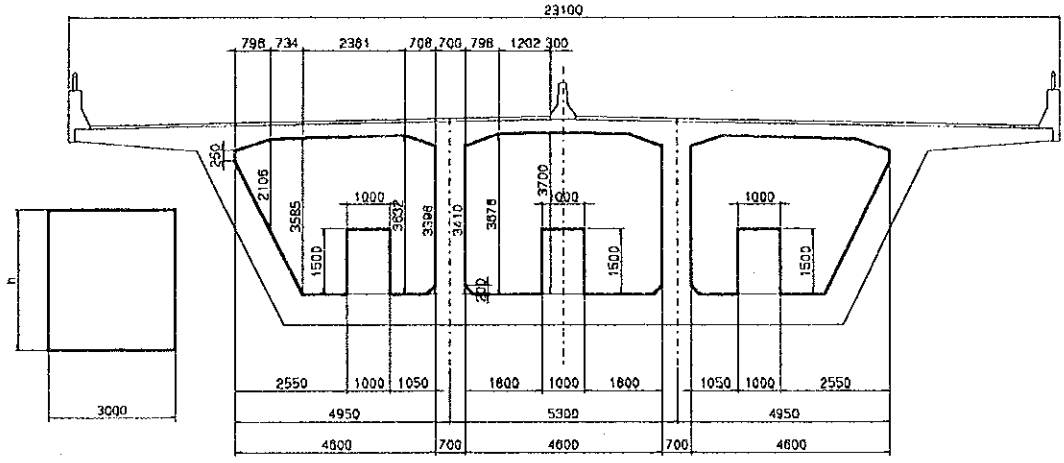
per each 11.165 m³

V =	11.165	×	8	=	89.32	m³

Total 89.320 m³

Concrete

Item	Formula	Quantity
	(2) Intermediate Cross Beam on Pier Head ・Cross Beam	



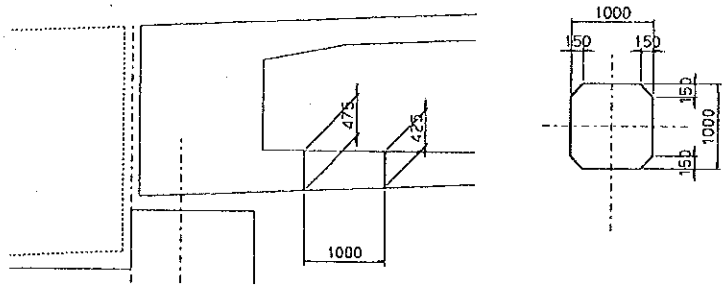
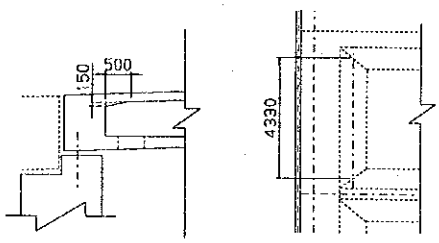
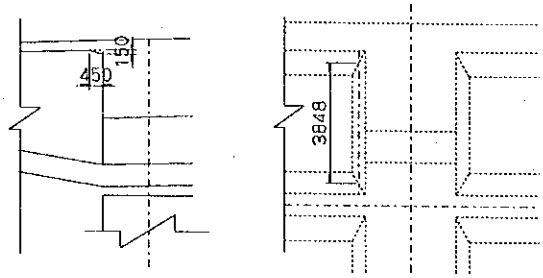
V1 =	0.300	×	3.700	×	2	×	3.000	=	6.660	m^3
V2 = (	3.700	+	3.676	)×	1/2	×	1.202			
×	2	×	3.000					=	26.598	m^3
V3 = ((	3.676	+	3.410	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2			
×	3.000							=	16.844	m^3
V4 = ((	3.396	+	3.632	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2			
×	3.000							=	14.807	m^3
V5 = (	3.632	+	3.585	)×	1/2	×	2.361			
×	2	×	3.000					=	51.118	m^3
V6 = (	3.585	+	2.106	)×	1/2	×	0.734			
×	2	×	3.000					=	12.532	m^3
V7 = (	2.106	+	0.250	)×	1/2	×	0.798			
×	2	×	3.000					=	5.640	m^3
V8 = -	1.500	×	1.000	×	3.000	×	3			
								=	-13.500	m^3
					Total				120.699	m^3

per each 120.699 m^3

V =	120.699	×	4	=	482.796	m^3

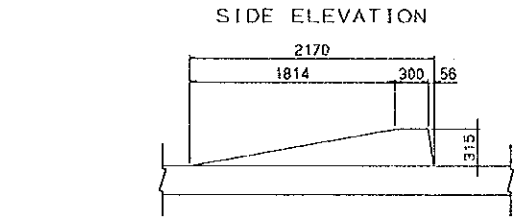
Total 482.796 m^3

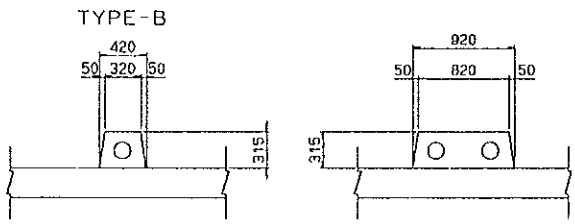
Concrete

Item	Formula	Quantity
	(3) Supporting Part on Side of Span (Manhole, Haunch etc)	
	· Manhole-A (Subtraction) -Bottom Slab	
		
	A = -1.000 × 1.000 + 4×1/2 × 0.150 × 0.150 = -0.955 m²	per each
	V = -0.955 × 1/2 ×(0.425 + 0.475)=	-0.430 m³
	V = -0.430 × 6 = -2.580 m³	Total -2.580 m³
	· Haunch (Top Slab)	
		
	A = 1/2 × 0.500 × 0.150 = 0.038 m²	per each
	V = 0.038 × 4.330 =	0.162 m³
	V = 0.162 × 6 = 0.972 m³	Total 0.972 m³
		
	A = 1/2 × 0.450 × 0.150 = 0.034 m²	per each
	V = 0.034 × 3.848 =	0.130 m³
	V = 0.130 × 24 = 3.117 m³	Total 3.117 m³

Concrete

Item	Formula	Quantity
	· Expansion Joint Part V = -22.100 × 0.336 × 0.070 × 2 = -1.040	-1.040 m^3
	(4)Anchorage	





· TYPE-A V = 1/6 × 0.315 ×(2.170 × 0.420 +(2.170 + 0.300)×(0.420 + 0.320) + 0.300 × 0.320) = 0.149 m^3	per each	0.149 m^3
· TYPE-B V = 1/6 × 0.315 ×(2.170 × 0.920 +(2.170 + 0.300)×(0.920 + 0.820) + 0.300 × 0.820) = 0.343 m^3	per each	0.343 m^3

Block №	Anchorage Type A .(0.149 m^3)	Anchorage Type B .(0.343 m^3)	Concrete m^3	Remarks
5	0	4	1.372	
8	4	0	0.596	
14	6	0	0.894	
17	6	0	0.894	
18	4	0	0.596	
24	4	0	0.596	
25	2	2	0.984	
28	2	2	0.984	
34	2	2	0.984	
37	2	2	0.984	
38	4	0	0.596	
Sub-Total	36	24	###	per 1-40 block

Total	9.480 × 2 = 18.960		18.960 m^3

3. External Form

3-1. Total Quantity

Item	Quantity					Remarks
	Girder	Manhole	Expansion		Total	
Cantilever part	6,324.786				6,324.786	
Pier Head part	1,294.032				1,294.032	
Supporting Part	1,047.411	-4.122	-1.547		1,041.742	
Total	8,666.229	-4.122	-1.547		8,660.560	

3-2. Girder

(1) Supporting Part on P36 Side

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
1	1	24.601				34.145	Girder End
	2	24.601	24.601	1.500	36.902	36.902	
	3	24.601	24.601	0.000	0.000	0.000	
	4	24.601	24.601	5.000	123.005	123.005	
	5	24.601	24.601	5.900	145.146	145.146	
Total				12.400	305.053	339.198	

(2) Cantilever part on P36 -> P37

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	5	24.601					
2	6	24.606	24.604	4.000	98.414	98.414	
3	7	24.631	24.619	4.000	98.474	98.474	
4	8	24.701	24.666	4.000	98.664	98.664	
5	9	24.817	24.759	3.500	86.657	86.657	
6	10	24.997	24.907	3.500	87.175	87.175	
7	11	25.258	25.128	3.500	87.946	87.946	
8	12	25.558	25.408	3.000	76.224	76.224	
9	13	25.937	25.748	3.000	77.243	77.243	
10	14	26.404	26.171	3.000	78.512	78.512	
Total				31.500	789.309	789.309	

(3) Pier Head part on P37

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	14	26.404					
	15	27.292	26.848	4.500	120.816	120.816	
	16	27.292	27.292	0.000			
11	17	27.292	27.292	3.000	81.876	81.876	
	18	27.292	27.292	0.000			
	19	26.404	26.848	4.500	120.816	120.816	
Total				12.000	323.508	323.508	

(4) Cantilever part on P37 -> P38

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	19	26.404					
12	20	25.937	26.171	3.000	78.512	78.512	
13	21	25.558	25.748	3.000	77.243	77.243	
14	22	25.258	25.408	3.000	76.224	76.224	
15	23	24.997	25.128	3.500	87.946	87.946	
16	24	24.817	24.907	3.500	87.175	87.175	
17	25	24.701	24.759	3.500	86.657	86.657	
18	26	24.631	24.666	4.000	98.664	98.664	
19	27	24.606	24.619	4.000	98.474	98.474	
20	28	24.601	24.604	4.000	98.414	98.414	
Total				31.500	789.309	789.309	

(5) Supporting Part on center of Span

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	28	24.601					
21	29	24.601	24.601	5.000	123.005	123.005	
Total				5.000	123.005	123.005	

(6) Cantilever part on P37 -> P38

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	28	24.601					
22	27	24.606	24.604	3.000	73.811	73.811	
23	26	24.631	24.619	3.000	73.856	73.856	
24	25	24.701	24.666	3.000	73.998	73.998	
25	24	24.817	24.759	3.500	86.657	86.657	
26	23	24.997	24.907	3.500	87.175	87.175	
27	22	25.258	25.128	3.500	87.946	87.946	
28	21	25.558	25.408	4.000	101.632	101.632	
29	20	25.937	25.748	4.000	102.990	102.990	
30	19	26.404	26.171	4.000	104.682	104.682	
Total				31.500	792.747	792.747	

(7) Pier Head part on P38

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	19	26.404					
	18	27.292	26.848	4.500	120.816	120.816	
	17	27.292	27.292	0.000			
31	16	27.292	27.292	3.000	81.876	81.876	
	15	27.292	27.292	0.000			
	14	26.404	26.848	4.500	120.816	120.816	
Total				12.000	323.508	323.508	

(8) Cantilever part on P38 -> P39

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	14	26.404					
32	13	25.937	26.171	3.000	78.512	78.512	
33	12	25.558	25.748	3.000	77.243	77.243	
34	11	25.258	25.408	3.000	76.224	76.224	
35	10	24.997	25.128	3.500	87.946	87.946	
36	9	24.817	24.907	3.500	87.175	87.175	
37	8	24.701	24.759	3.500	86.657	86.657	
38	7	24.631	24.666	4.000	98.664	98.664	
39	6	24.606	24.619	4.000	98.474	98.474	
40	5	24.601	24.604	4.000	98.414	98.414	
Total				31.500	789.309	789.309	

(9) Supporting Part on center of Span

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (㎡)	Total of each Block (㎡)	Remarks
	5	24.601					
41	5	24.601	24.601	5.000	123.005	123.005	
Total				5.000	123.005	123.005	

(10) Cantilever part on P38 -> P39

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (㎡)	Total of each Block (㎡)	Remarks
	5	24.601					
40	6	24.606	24.604	3.000	73.811	73.811	
39	7	24.631	24.619	3.000	73.856	73.856	
38	8	24.701	24.666	3.000	73.998	73.998	
37	9	24.817	24.759	3.500	86.657	86.657	
36	10	24.997	24.907	3.500	87.175	87.175	
35	11	25.258	25.128	3.500	87.946	87.946	
34	12	25.558	25.408	4.000	101.632	101.632	
33	13	25.937	25.748	4.000	102.990	102.990	
32	14	26.404	26.171	4.000	104.682	104.682	
					0.000		
Total				31.500	792.747	792.747	

(11) Pier Head part on P39

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (㎡)	Total of each Block (㎡)	Remarks
	14	26.404					
	15	27.292	26.848	4.500	120.816	120.816	
	16	27.292	27.292	0.000			
31	17	27.292	27.292	3.000	81.876	81.876	
	18	27.292	27.292	0.000			
	19	26.404	26.848	4.500	120.816	120.816	
Total				12.000	323.508	323.508	

(12) Cantilever part on P39 -> P40

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (㎡)	Total of each Block (㎡)	Remarks
	19	26.404					
30	20	25.937	26.171	3.000	78.512	78.512	
29	21	25.558	25.748	3.000	77.243	77.243	
28	22	25.258	25.408	3.000	76.224	76.224	
27	23	24.997	25.128	3.500	87.946	87.946	
26	24	24.817	24.907	3.500	87.175	87.175	
25	25	24.701	24.759	3.500	86.657	86.657	
24	26	24.631	24.666	4.000	98.664	98.664	
23	27	24.606	24.619	4.000	98.474	98.474	
22	28	24.601	24.604	4.000	98.414	98.414	
Total				31.500	789.309	789.309	

(13) Supporting Part on center of Span

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
	28	24.601					
21	29	24.601	24.601	5.000	123.005	123.005	
Total				5.000	123.005	123.005	

(14) Cantilever part on P39 -> P40

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
	28	24.601					
20	27	24.606	24.604	3.000	73.811	73.811	
19	26	24.631	24.619	3.000	73.856	73.856	
18	25	24.701	24.666	3.000	73.998	73.998	
17	24	24.817	24.759	3.500	86.657	86.657	
16	23	24.997	24.907	3.500	87.175	87.175	
15	22	25.258	25.128	3.500	87.946	87.946	
14	21	25.558	25.408	4.000	101.632	101.632	
13	20	25.937	25.748	4.000	102.990	102.990	
12	19	26.404	26.171	4.000	104.682	104.682	
Total				31.500	792.747	792.747	

(15) Pier Head part on P40

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
	19	26.404					
	18	27.292	26.848	4.500	120.816	120.816	
	17	27.292	27.292	0.000			
11	16	27.292	27.292	3.000	81.876	81.876	
	15	27.292	27.292	0.000			
	14	26.404	26.848	4.500	120.816	120.816	
Total				12.000	323.508	323.508	

(14) Cantilever part on P40 -> P41

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	
	14	26.404					
10	13	25.937	26.171	3.000	78.512	78.512	
9	12	25.558	25.748	3.000	77.243	77.243	
8	11	25.258	25.408	3.000	76.224	76.224	
7	10	24.997	25.128	3.500	87.946	87.946	
6	9	24.817	24.907	3.500	87.175	87.175	
5	8	24.701	24.759	3.500	86.657	86.657	
4	7	24.631	24.666	4.000	98.664	98.664	
3	6	24.606	24.619	4.000	98.474	98.474	
2	5	24.601	24.604	4.000	98.414	98.414	
Total				31.500	789.309	789.309	

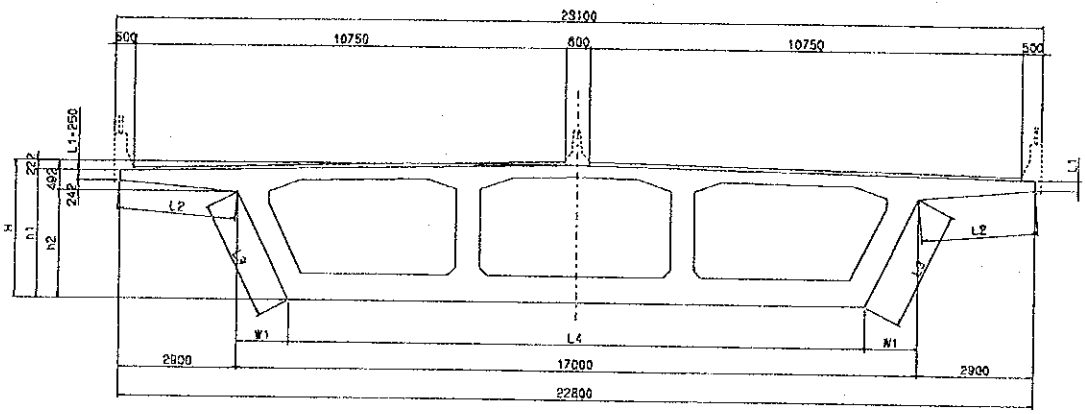
(15) Supporting Part on P41 Side

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
	5	24.601				34.145	Girder End
	4	24.601	24.601	5.900	145.146	145.146	
1	3	24.601	24.601	5.000	123.005	123.005	
	2	24.601	24.601	0.000	0.000	0.000	
	1	24.601	24.601	1.500	36.902	36.902	
Total				5.900	305.053	339.198	

(16) Total

Item	Quantity	Remark
Cantilever part	6,324.786	
Pier Head part	1,294.032	
Supporting Part	1,047.411	
Total	8,666.229	

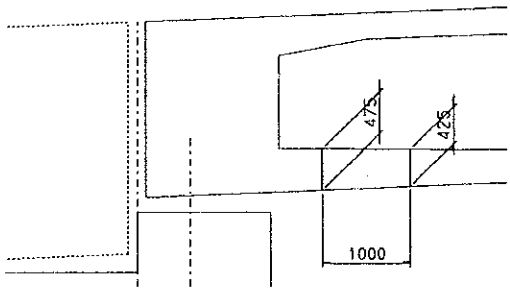
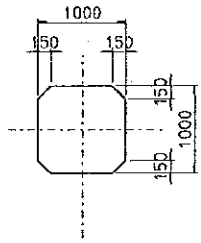
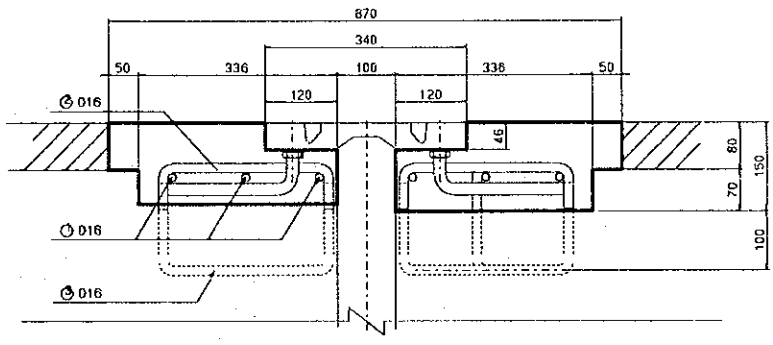
(17) Dimensions of External Form



(Unit: millimeter)

Section	H	h1	h2	W1	L1	L2	L3	L4	ΣL
1,2	2.000	1.778	1.286	0.645	0.250	2.910	1.286	15.709	24.601
3	2.000	1.778	1.286	0.645	0.250	2.910	1.286	15.709	24.601
4,5,28,29	2.000	1.778	1.286	0.645	0.250	2.910	1.286	15.709	24.601
6,27	2.004	1.782	1.290	0.647	0.250	2.910	1.290	15.706	24.606
7,26	2.030	1.808	1.316	0.660	0.250	2.910	1.316	15.679	24.631
8,25	2.100	1.878	1.386	0.695	0.250	2.910	1.386	15.609	24.701
9,24	2.216	1.994	1.502	0.754	0.250	2.910	1.502	15.493	24.817
10,23	2.397	2.175	1.683	0.844	0.250	2.910	1.683	15.311	24.997
11,22	2.659	2.437	1.945	0.976	0.250	2.910	1.945	15.048	25.258
12,21	2.960	2.738	2.246	1.127	0.250	2.910	2.246	14.746	25.558
13,20	3.340	3.118	2.626	1.318	0.250	2.910	2.626	14.365	25.937
14,19	3.809	3.587	3.095	1.553	0.250	2.910	3.095	13.894	26.404
15,18	4.700	4.478	3.986	2.000	0.250	2.910	3.986	13.000	27.292
16,17	4.700	4.478	3.986	2.000	0.250	2.910	3.986	13.000	27.292

External Form

Item	Formula	Quantity
3-3. Manhole etc	(1) Manhole	
	A1 = -1.000 × 1.000 + 4×1/2 × 0.150 × 0.150 = -0.955 m²	
	A2 = 0.450 ×(0.700 + 0.700 + 0.700 + 0.700 + 0.212 × 4) = 1.642 m²	per each
	. A = -0.955 + 1.642 = 0.687 m²	0.687 m²
		Total
	A = -0.687 × 6 = -4.122	-4.122 m²
		
		
	(2) Expansion	
	A = -22.100 × 0.070 × 2 = -1.547	-1.547 m²
		

4. Internal Form

4-1. Total Quantity

Item	Quantity					Remarks
	Main part	Bulkhead	Hunch	Anchorage	Total	
Cantilever part	6,050.696	189.936		62.976	6,303.608	
Pier Head part	1,170.256	208.932	43.776		1,422.964	
Supporting Part	857.092	111.705	13.560		982.357	
Total	8,078.044	510.573	57.336	62.976	8,708.929	

4-2. Girder

(1) Supporting Part on P36 Side

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
1	1	0.000				18.630	End Wall
	2		0.000	1.500	0.000	0.000	
	3	20.930	20.930	0.000	0.000	0.000	
	4	22.490	21.710	5.000	108.550	108.550	
	5	22.490	22.490	5.900	132.691	132.691	
Total				12.400	241.241	259.871	

(2) Cantilever part on P36 -> P37

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	5	22.490					
2	6	22.452	22.471	4.000	89.884	89.884	
3	7	22.178	22.315	4.000	89.260	89.260	
4	8	22.304	22.241	4.000	88.964	88.964	
5	9	22.714	22.509	3.500	78.782	78.782	
6	10	23.052	22.883	3.500	80.091	80.091	
7	11	24.374	23.713	3.500	82.996	82.996	
8	12	25.622	24.998	3.000	74.994	74.994	
9	13	27.770	26.696	3.000	80.088	80.088	
10	14	29.728	28.749	3.000	86.247	86.247	
Total				31.500	751.306	751.306	

(3) Pier Head part on P37

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	14	29.728					
	15	35.286	32.507	4.500	146.282	146.282	
	16	0.000	17.643	0.000			
11	17	0.000	0.000	3.000	0.000	0.000	
	18	35.286	17.643	0.000			
	19	29.728	32.507	4.500	146.282	146.282	
Total				12.000	292.564	292.564	

(4) Cantilever part on P37 -> P38

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	19	29.728					
12	20	27.770	28.749	3.000	86.247	86.247	
13	21	25.622	26.696	3.000	80.088	80.088	
14	22	24.374	24.998	3.000	74.994	74.994	
15	23	23.052	23.713	3.500	82.996	82.996	
16	24	22.714	22.883	3.500	80.091	80.091	
17	25	22.304	22.509	3.500	78.782	78.782	
18	26	22.178	22.241	4.000	88.964	88.964	
19	27	22.452	22.315	4.000	89.260	89.260	
20	28	22.490	22.471	4.000	89.884	89.884	
Total				31.500	751.306	751.306	

(5) Supporting Part on center of Span

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (㎡)	Total of each Block (㎡)	Remarks
	28	22.490					
21	29	22.490	22.490	5.000	112.450	112.450	
Total				5.000	112.450	112.450	

(6) Cantilever part on P37 -> P38

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (㎡)	Total of each Block (㎡)	Remarks
	28	22.490					
22	27	22.452	22.471	3.000	67.413	67.413	
23	26	22.178	22.315	3.000	66.945	66.945	
24	25	22.304	22.241	3.000	66.723	66.723	
25	24	22.714	22.509	3.500	78.782	78.782	
26	23	23.052	22.883	3.500	80.091	80.091	
27	22	24.374	23.713	3.500	82.996	82.996	
28	21	25.622	24.998	4.000	99.992	99.992	
29	20	27.770	26.696	4.000	106.784	106.784	
30	19	29.728	28.749	4.000	114.996	114.996	
Total				31.500	764.722	764.722	

(7) Pier Head part on P38

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (㎡)	Total of each Block (㎡)	Remarks
	19	29.728					
	18	35.286	32.507	4.500	146.282	146.282	
	17	0.000	17.643	0.000			
31	16	0.000	0.000	3.000	0.000	0.000	
	15	35.286	17.643	0.000			
	14	29.728	32.507	4.500	146.282	146.282	
Total				12.000	292.564	292.564	

(8) Cantilever part on P38 -> P39

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (㎡)	Total of each Block (㎡)	Remarks
	14	29.728					
32	13	27.770	28.749	3.000	86.247	86.247	
33	12	25.622	26.696	3.000	80.088	80.088	
34	11	24.374	24.998	3.000	74.994	74.994	
35	10	23.052	23.713	3.500	82.996	82.996	
36	9	22.714	22.883	3.500	80.091	80.091	
37	8	22.304	22.509	3.500	78.782	78.782	
38	7	22.178	22.241	4.000	88.964	88.964	
39	6	22.452	22.315	4.000	89.260	89.260	
40	5	22.490	22.471	4.000	89.884	89.884	
Total				31.500	751.306	751.306	

(9) Supporting Part on center of Span

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
	5	22.490					
41	5	22.490	22.490	5.000	112.450	112.450	
Total				5.000	112.450	112.450	

(10) Cantilever part on P38 -> P39

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
	5	22.490					
40	6	22.452	22.471	3.000	67.413	67.413	
39	7	22.178	22.315	3.000	66.945	66.945	
38	8	22.304	22.241	3.000	66.723	66.723	
37	9	22.714	22.509	3.500	78.782	78.782	
36	10	23.052	22.883	3.500	80.091	80.091	
35	11	24.374	23.713	3.500	82.996	82.996	
34	12	25.622	24.998	4.000	99.992	99.992	
33	13	27.770	26.696	4.000	106.784	106.784	
32	14	29.728	28.749	4.000	114.996	114.996	
					0.000		
Total				31.500	764.722	764.722	

(11) Pier Head part on P39

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
	14	29.728					
	15	35.286	32.507	4.500	146.282	146.282	
	16	0.000	17.643	0.000			
31	17	0.000	0.000	3.000	0.000	0.000	
	18	35.286	17.643	0.000			
	19	29.728	32.507	4.500	146.282	146.282	
Total				12.000	292.564	292.564	

(12) Cantilever part on P39 -> P40

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
	19	29.728					
30	20	27.770	28.749	3.000	86.247	86.247	
29	21	25.622	26.696	3.000	80.088	80.088	
28	22	24.374	24.998	3.000	74.994	74.994	
27	23	23.052	23.713	3.500	82.996	82.996	
26	24	22.714	22.883	3.500	80.091	80.091	
25	25	22.304	22.509	3.500	78.782	78.782	
24	26	22.178	22.241	4.000	88.964	88.964	
23	27	22.452	22.315	4.000	89.260	89.260	
22	28	22.490	22.471	4.000	89.884	89.884	
Total				31.500	751.306	751.306	

(13) Supporting Part on center of Span

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	28	22.490					
21	29	22.490	22.490	5.000	112.450	112.450	
Total				5.000	112.450	112.450	

(14) Cantilever part on P39 -> P40

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	28	22.490					
20	27	22.452	22.471	3.000	67.413	67.413	
19	26	22.178	22.315	3.000	66.945	66.945	
18	25	22.304	22.241	3.000	66.723	66.723	
17	24	22.714	22.509	3.500	78.782	78.782	
16	23	23.052	22.883	3.500	80.091	80.091	
15	22	24.374	23.713	3.500	82.996	82.996	
14	21	25.622	24.998	4.000	99.992	99.992	
13	20	27.770	26.696	4.000	106.784	106.784	
12	19	29.728	28.749	4.000	114.996	114.996	
Total				31.500	764.722	764.722	

(15) Pier Head part on P40

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	19	29.728					
	18	35.286	32.507	4.500	146.282	146.282	
	17	0.000	17.643	0.000			
11	16	0.000	0.000	3.000	0.000	0.000	
	15	35.286	17.643	0.000			
	14	29.728	32.507	4.500	146.282	146.282	
Total				12.000	292.564	292.564	

(14) Cantilever part on P40 -> P41

Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m²)	Total of each Block (m²)	Remarks
	14	29.728					
10	13	27.770	28.749	3.000	86.247	86.247	
9	12	25.622	26.696	3.000	80.088	80.088	
8	11	24.374	24.998	3.000	74.994	74.994	
7	10	23.052	23.713	3.500	82.996	82.996	
6	9	22.714	22.883	3.500	80.091	80.091	
5	8	22.304	22.509	3.500	78.782	78.782	
4	7	22.178	22.241	4.000	88.964	88.964	
3	6	22.452	22.315	4.000	89.260	89.260	
2	5	22.490	22.471	4.000	89.884	89.884	
Total				31.500	751.306	751.306	

(15) Supporting Part on P41 Side

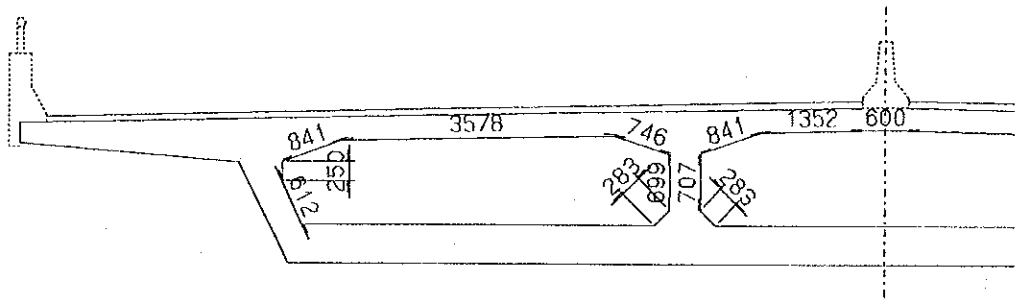
Block №	Section №	Form Length (m)	Average of Form Length (m)	Length of Block (m)	Form Area (m^2)	Total of each Block (m^2)	Remarks
1	5	22.490		0.000			
	4	22.490	22.490	5.900	132.691	132.691	
	3	20.930	21.710	5.000	108.550	108.550	
	2		20.930	0.000	0.000	0.000	
	1	0.000	0.000	1.500	0.000	0.000	
						18.630	End Wall
Total				12.400	241.241	259.871	

(16) Total

Item	Quantity	Remarks
Cantilever part	6050.696	
Pier Head part	1170.256	
Supporting Part	857.092	
Total	8078.044	

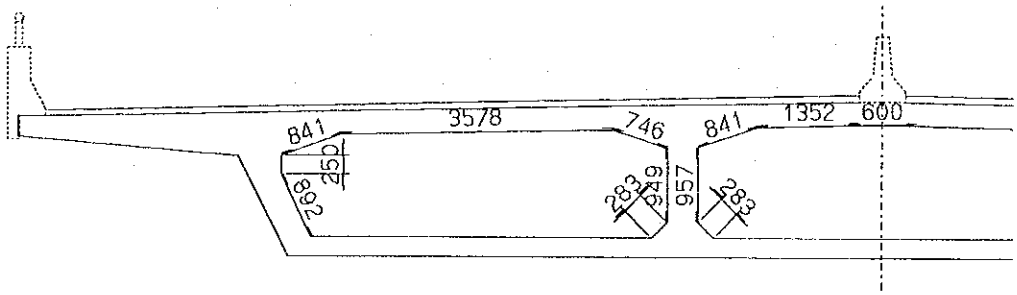
(17) Dimensions of Internal Form

Section 3



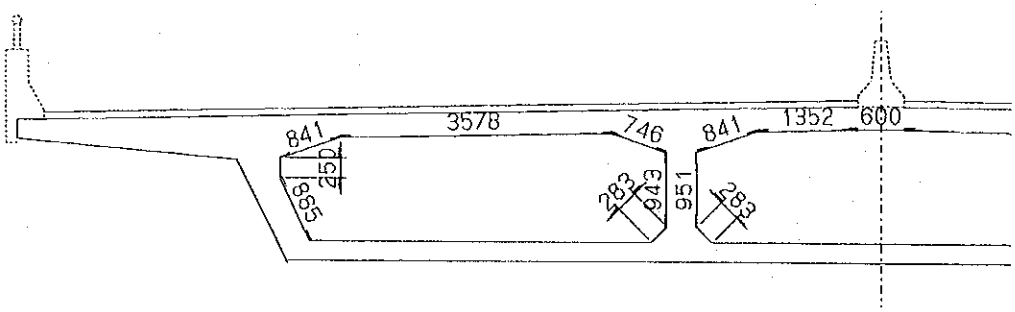
L = (0.612 + 0.250 + 0.814 + 3.578 + 0.746 + 0.699 + 0.283)× 2
+ (0.283 + 0.707 + 0.841 + 1.352)× 2 + 0.600 = 20.930 m

Section 4,5,28,29



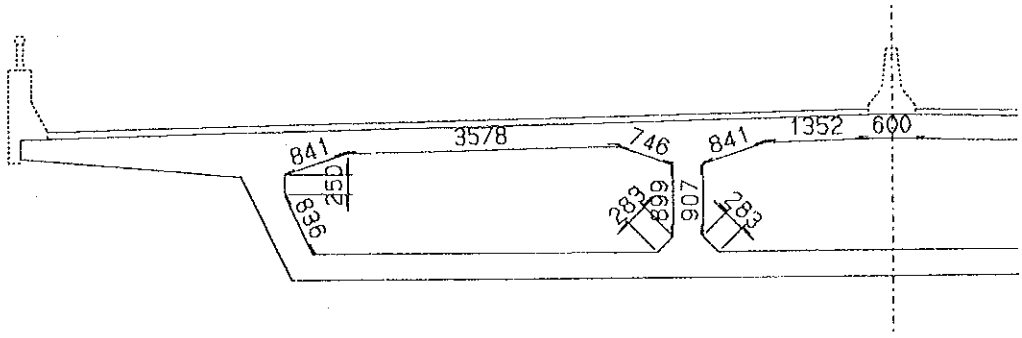
L = (0.892 + 0.250 + 0.814 + 3.578 + 0.746 + 0.949 + 0.283)× 2
+ (0.283 + 0.957 + 0.841 + 1.352)× 2 + 0.600 = 22.490 m

Section 6,27



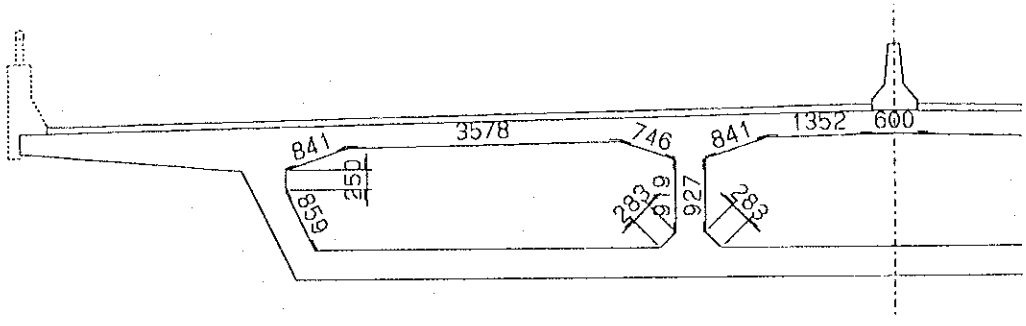
L = (0.885 + 0.250 + 0.814 + 3.578 + 0.746 + 0.943 + 0.283)× 2
+ (0.283 + 0.951 + 0.841 + 1.352)× 2 + 0.600 = 22.452 m

Section 7,26



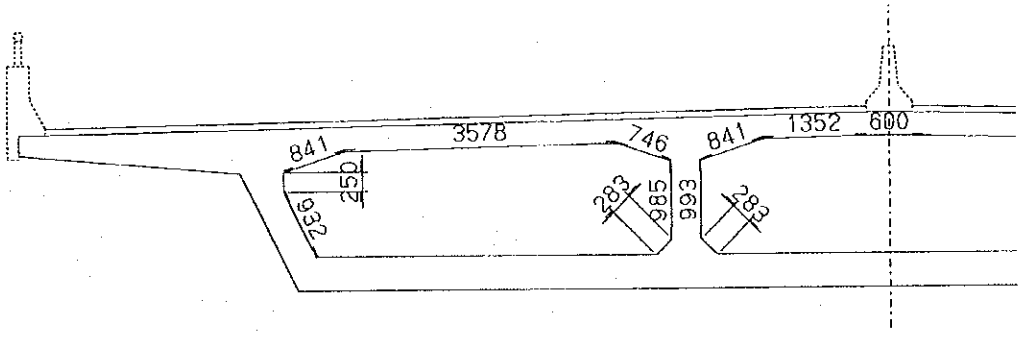
L = (0.836 + 0.250 + 0.814 + 3.578 + 0.746 + 0.899 + 0.283)× 2
+ (0.283 + 0.907 + 0.841 + 1.352)× 2 + 0.600 = 22.178 m

Section 8,25



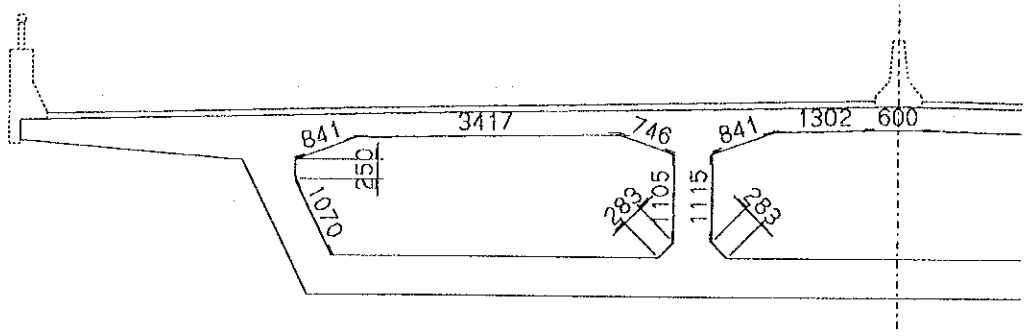
L = (0.859 + 0.250 + 0.814 + 3.578 + 0.746 + 0.919 + 0.283)× 2
+ (0.283 + 0.927 + 0.841 + 1.352)× 2 + 0.600 = 22.304 m

Section 9,24



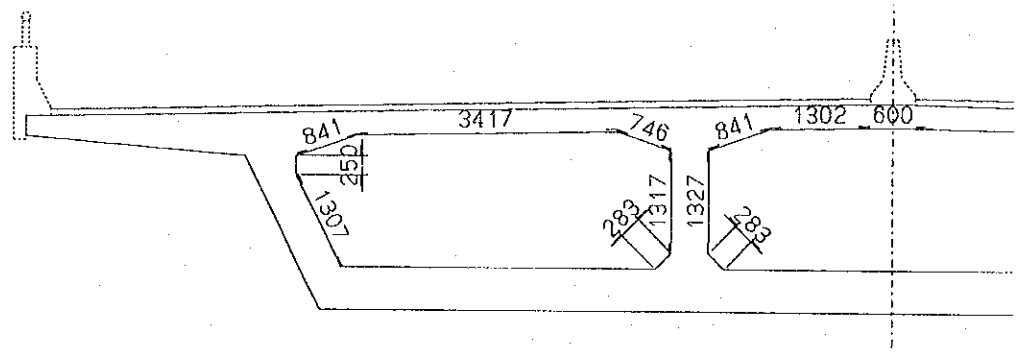
L = (0.932 + 0.250 + 0.814 + 3.578 + 0.746 + 0.985 + 0.283)× 2
+ (0.283 + 0.993 + 0.841 + 1.352)× 2 + 0.600 = 22.714 m

Section 10,23



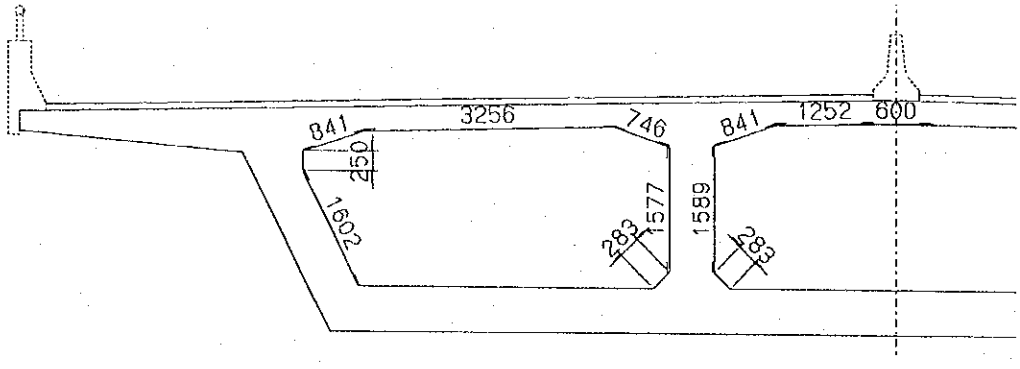
L = (1.070 + 0.250 + 0.814 + 3.417 + 0.746 + 1.105 + 0.283)× 2
+ (0.283 + 1.115 + 0.841 + 1.302)× 2 + 0.600 = 23.052 m

Section 11,22



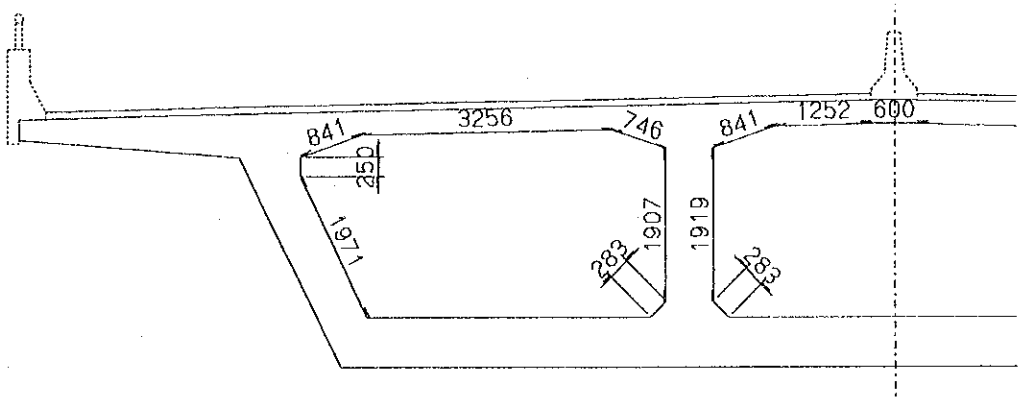
L = (1.307 + 0.250 + 0.814 + 3.417 + 0.746 + 1.317 + 0.283)× 2
+ (0.283 + 1.327 + 0.841 + 1.302)× 2 + 0.600 = 24.374 m

Section 12,21



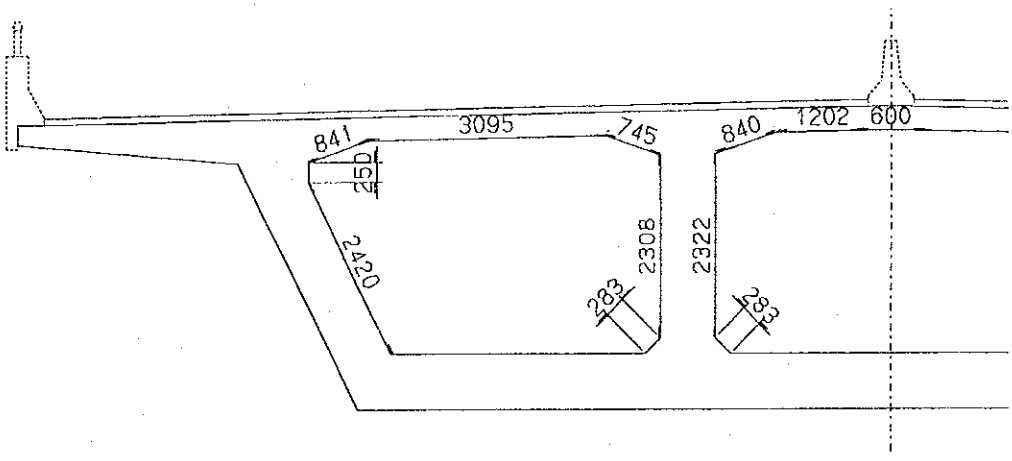
L = (1.620 + 0.250 + 0.814 + 3.256 + 0.746 + 1.577 + 0.283)× 2
+ (0.283 + 1.589 + 0.841 + 1.252)× 2 + 0.600 = 25.622 m

Section 13,20



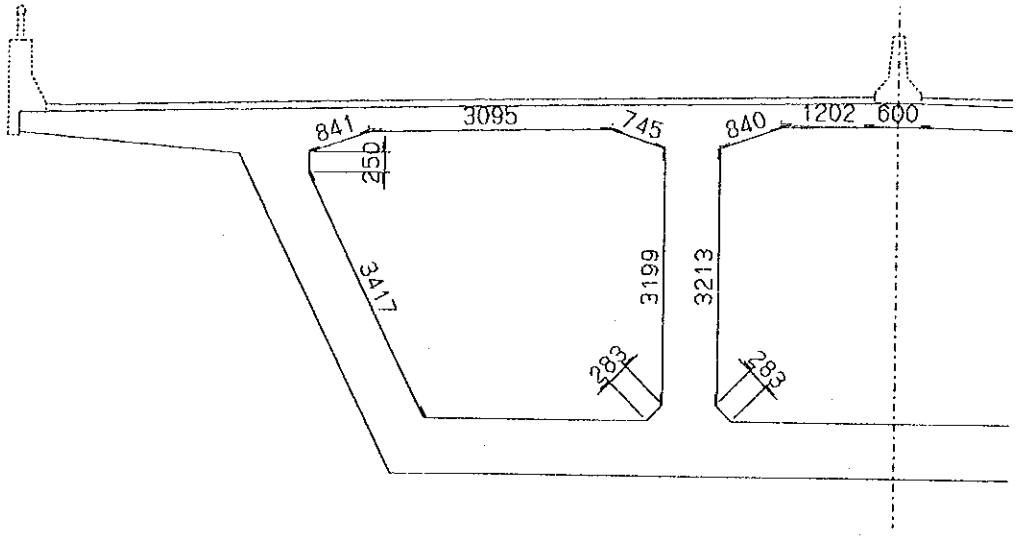
L = (1.971 + 0.250 + 0.814 + 3.256 + 0.746 + 1.970 + 0.283)× 2
+ (0.283 + 1.919 + 0.841 + 1.252)× 2 + 0.600 = 27.770 m

Section 14,19



L = (2.420 + 0.250 + 0.814 + 3.095 + 0.746 + 2.308 + 0.283)× 2
+ (0.283 + 2.322 + 0.841 + 1.202)× 2 + 0.600 = 29.728 m

Section 15,18



L = (3.417 + 0.250 + 0.814 + 3.095 + 0.746 + 3.199 + 0.283)× 2
+ (0.283 + 3.213 + 0.841 + 1.202)× 2 + 0.600 = 35.286 m

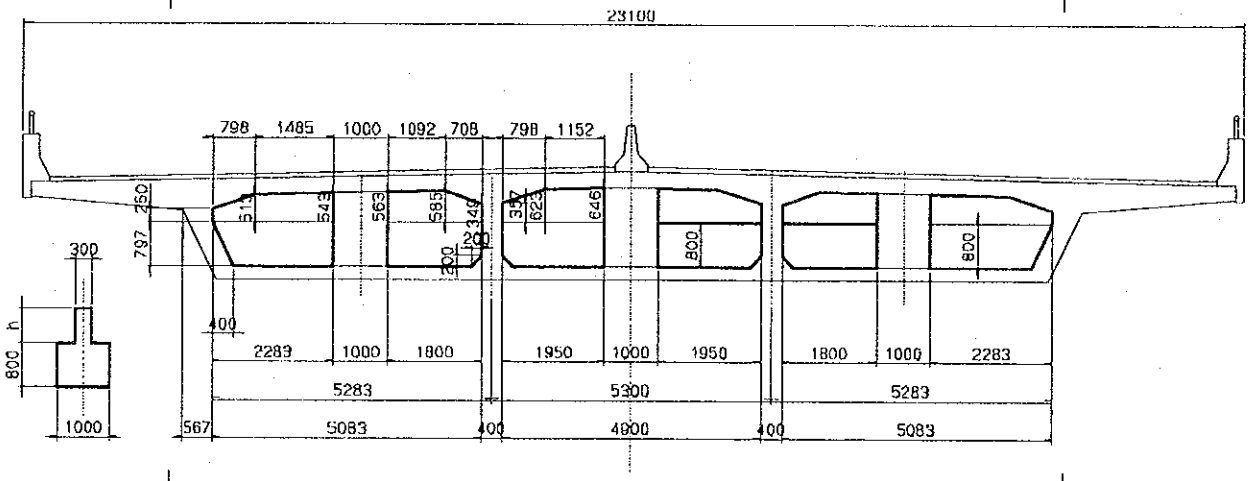
Internal Form

Item	Formula	Quantity

4-3. Bulkhead, Manhole Anchorage etc

(1) Center Bulkhead

· Supporting Part on center of Span



A1 = (	0.646	+	0.623	)×	1/2	×	1.152			
×	2							=	1.462	m^2
A2 = (	0.623	+	0.357	)×	1/2	×	0.798			
×	2							=	0.782	m^2
A3 = (	0.349	+	0.585	)×	1/2	×	0.708			
×	2							=	0.661	m^2
A4 = (	0.585	+	0.563	)×	1/2	×	1.092			
×	2							=	1.254	m^2
A5 = (	0.543	+	0.513	)×	1/2	×	1.485			
×	2							=	1.568	m^2
A6 = (	0.513	+	0.250	)×	1/2	×	0.798			
×	2							=	0.609	m^2
A7 = (	1.950	×	0.800	-	1/2	×	0.200			
×	0.200	)×	2					=	3.080	m^2
A8 = (	1.800	×	0.800	-	1/2	×	0.200			
×	0.200	)×	2					=	2.840	m^2
A9 = (	2.283	×	0.800	-	1/2	×	0.797			
×	0.400	)×	2					=	3.334	m^2
A10 = (	0.543	+	0.563	+	0.646	)×	2			
×	0.300	+	0.800	×	1.000	×	6			
+	1.000	×	0.300	×	3			=	6.751	m^2

		Total	22.341	m^2

per each 22.341 m^2

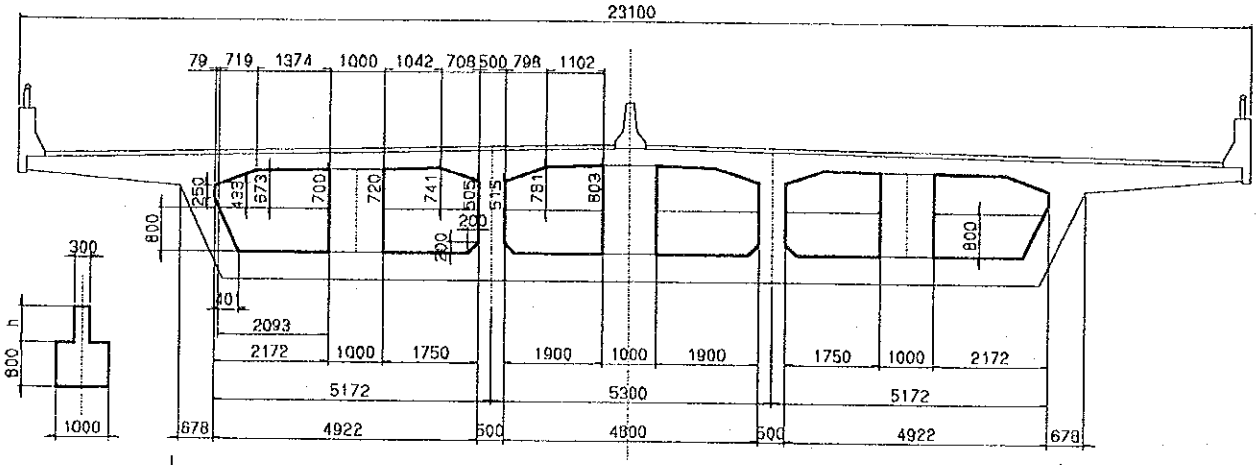
A=	22.341	×	5	=	111.705	m^2

Total 111.705 m^2

Internal Form

Item	Formula	Quantity

· Cantilever part



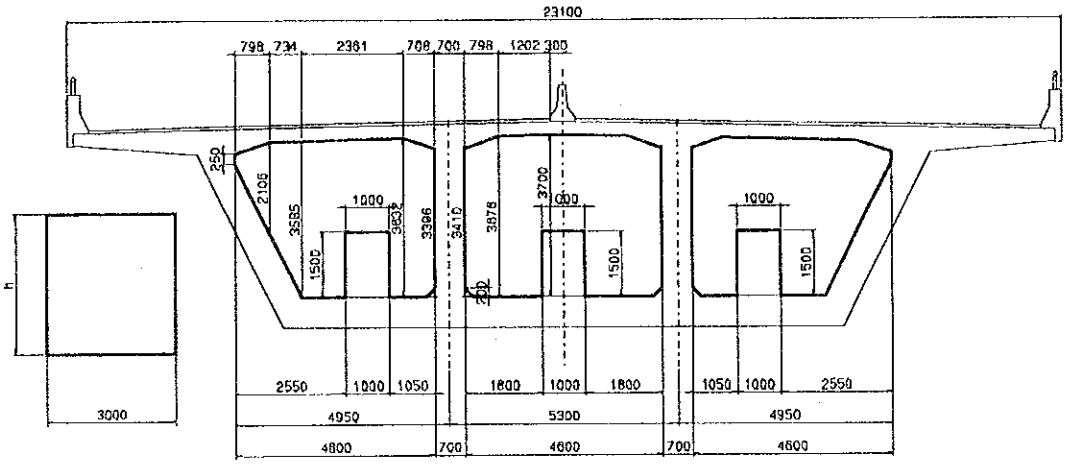
A1 = (	0.803	+	0.781	)×	1/2	×	1.102					
×	2							=	1.746	m^2		
A2 = (	0.781	+	0.515	)×	1/2	×	0.798					
×	2							=	1.034	m^2		
A3 = (	0.505	+	0.741	)×	1/2	×	0.708					
×	2							=	0.882	m^2		
A4 = (	0.741	+	0.720	)×	1/2	×	1.042					
×	2							=	1.522	m^2		
A5 = (	0.700	+	0.673	)×	1/2	×	1.374					
×	2							=	1.887	m^2		
A6 = (	0.673	+	0.433	)×	1/2	×	0.719					
×	2							=	0.795	m^2		
A7 = (	0.433	+	0.250	)×	1/2	×	0.079					
×	2							=	0.054	m^2		
A8 = (	1.900	×	0.800	-	1/2	×	0.200					
×	0.200	)×	2					=	3.000	m^2		
A9 = (	1.750	×	0.800	-	1/2	×	0.200					
×	0.200	)×	2					=	2.760	m^2		
A10 = (	2.093	×	0.800	-	1/2	×	0.401					
×	0.800	)×	2					=	3.028	m^2		
A11 = (	0.700	+	0.720	+	0.803	)×	2					
×	0.300	+	0.800	×	1.000	×	6					
+	1.000	×	0.300	×	3			=	7.034	m^2		
											per each	
					Total				23.742	m^2	23.742	m^2
											Total	
A=	23.742	×	8					=	189.936	m^2	189.936	m^2

Internal Form

Item	Formula	Quantity

(2) Intermediate Cross Beam on Pier Head

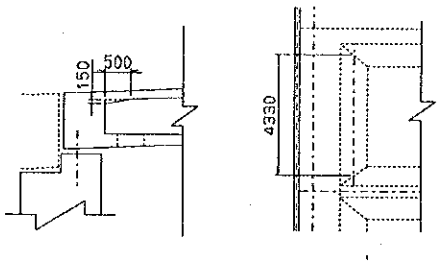
・Cross Beam



A1 =	0.300	×	3.700	×	2			=	2.220 m²	
A2 = (	3.700	+	3.676	)×	1/2	×	1.202			
×	2							=	8.866 m²	
A3 = ((	3.676	+	3.410	)×	1/2	×	0.798			
-	0.200	×	0.200	×	1/2	)×	2	=	5.615 m²	
A4 = ((	3.396	+	3.632	)×	1/2	×	0.708			
-	0.200	×	0.200	×	1/2	)×	2	=	4.936 m²	
A5 = (	3.632	+	3.585	)×	1/2	×	2.361			
×	2							=	17.039 m²	
A6 = (	3.585	+	2.106	)×	1/2	×	0.734			
×	2							=	4.177 m²	
A7 = (	2.106	+	0.250	)×	1/2	×	0.798			
×	2							=	1.880 m²	
A8 = -	1.500	×	1.000	×	3			=	-4.500 m²	
A9 = (	1.500	×	2	+	1.000	)×	3	=	12.000 m²	
					Total				52.233 m²	per each 52.233 m²
A=	52.233	×	4					=	208.932 m²	Total 208.932 m²

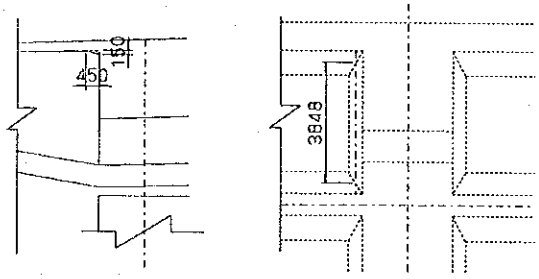
Internal Form

Item	Formula	Quantity
	(3) Supporting Part on Side of Span (Manhole, Haunch etc)	
	· Haunch (Top Slab)	



L = (0.15 ²× 0.500 ²)^1/2 = 0.522 m per each
A = 0.522 × 4.330 = 2.260 m^2

Total
A= 2.260 × 6 = 13.56 m^2 13.560 m^2



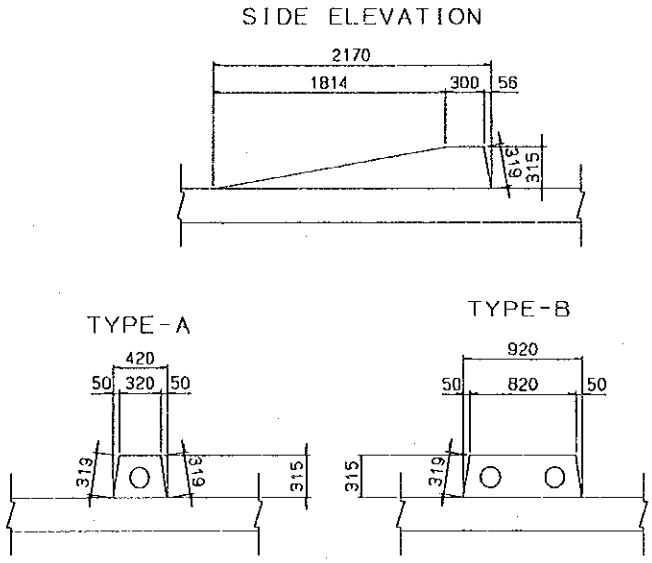
L = (0.15 ²× 0.450 ²)^1/2 = 0.474 m per each
A = 0.474 × 3.848 = 1.824 m^2

Total
A= 1.824 × 24 = 43.776 m^2 43.776 m^2

Internal Form

Item	Formula	Quantity

(4)Anchorage



· TYPE-A

A1 = (0.32 + 0.420)× 1/2 × 0.319
= 0.118 m^2

A2 = (0.300 + 0.356)× 1/2 × 0.319
× 2 = 0.209 m^2

A3 = 1.814 × 1/2 × 0.319 = 0.289 m^2 per each

ΣA = 0.616 m^2 0.616 m^3

· TYPE-B

A1 = (0.92 + 0.820)× 1/2 × 0.319
= 0.278 m^2

A2 = (0.300 + 0.356)× 1/2 × 0.319
× 2 = 0.209 m^2

A3 = 1.814 × 1/2 × 0.319 = 0.289 m^2 per each

ΣA = 0.776 m^2 0.776 m^3

Block №	Anchorage Type A .(0.616 m^3)	Anchorage Type B .(0.776 m^3)	Concrete m^3	Remarks
5	0	4	3.104	
8	4	0	2.464	
14	6	0	3.696	
17	6	0	3.696	
18	4	0	2.464	
24	4	0	2.464	
25	2	2	2.784	
28	2	2	2.784	
34	2	2	2.784	
37	2	2	2.784	
38	4	0	2.464	
Sub-Total	36	24	31.488	per 1-40 block

Total 31.488 × 2 = 62.976 62.976 m^3

5. Reinforcement Bar

5-1. Total of Quantity

	Segment No	Seg 2	Seg 3	Seg 4	Seg 5	Seg 6	Seg 7	Seg 8
	Each	8	8	8	8	8	8	8
Cantilever	-D14	7454	7488	7503	7355	6678	7044	3075
	D14-D25	3424	3449	3505	3236	3444	3735	1194
	D25-							
	Total	10878	10937	11008	10591	10122	10779	4269
	Segment No	Seg 9	Seg 10	Anc-A	Anc-B	Diaphragm	Total	
	Each	8	8	36	24	8	kg	ton
	-D14	4207	3831	28	46	340	441,912	441.9
	D14-D25	856	1161	131	201	1531	213,814	213.8
	D25-						0	0.0
	Total	5063	4992	159	247	1871	655,726	655.7

	Segment No	Seg 11	Diaphragm				Total	
	Each	4	4				kg	ton
Pier Head	-D14	12942	83				52,100	52.1
	D14-D25	13689	6644				81,332	81.3
	D25-							0.0
	Total	26631	6727				133,432	133.4

	Segment No	Seg 1	.Seg41	Diaphragm			Total	
	Each	2	3	5			kg	ton
Support	-D14	11278	4125	289			36,376	36.4
	D14-D25	3183	1347	1377			17,292	17.3
	D25-							0.0
	Total	14461	5472	1666			53,668	53.7

Segment. 1 Support

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size	Dimensions (mm)							Length of Bar	Unit Weight	Number of Bar	Weight	Remarks
	(mm)	a	b	c	d	e	f	g	(mm)	(kg/m)		(kg)	
S 1 - 1	12	3361	600	6039					10000	0.888	53	471	
S 1 - 2	12	8000							8000	0.888	53	377	
S 1 - 3	12	5322		0					5330	0.888	53	251	
S 2 - 1	12	8295	600	1105					10000	0.888	53	471	
S 2 - 2	12	7490							7490	0.888	53	353	
S 3	12	172	3268						3440	0.888	106	324	
S 4	12	1512							1520	0.888	106	143	
S 5	12	1418							1420	0.888	106	134	
S 6	12	1629							1630	0.888	106	153	
S 7 - 1	12	8000							8000	0.888	97	689	
S 7 - 2	12	180	4659						4840	0.888	51	219	
S 7 - 3	12	180	3659						3840	0.888	46	157	
S 8 - 1	12	8000							8000	0.888	127	902	
S 8 - 2	12	4660							4660	0.888	65	269	
S 8 - 3	12	3660							3660	0.888	62	202	
S 9 - 1	12	8000							8000	0.888	96	682	
S 9 - 2	12	4660							4660	0.888	24	99	
S 9 - 3	12	3660							3660	0.888	24	78	
S 0 1	12	102	218	102					430	0.888	77	29	
S 0 2	12	102	312	102					520	0.888	44	20	
S 0 3	12	102	218	102					430	0.888	154	59	
S 0 4	12	102	350	102					560	0.888	44	22	
S 0 5	12	102	328	102					540	0.888	120	58	
B 1 - 1	12	180	9820						10000	0.888	49	435	
B 1 - 2	12	180	6138						6320	0.888	49	275	
B 1 - 3	12	4050							4050	0.888	8	29	
B 1 - 4	12	2147							2150	0.888	8	15	
B 2 - 1	12	180	9820						10000	0.888	49	435	
B 2 - 2	12	180	6558						6740	0.888	21	126	
B 2 - 3	12	6433	180						6620	0.888	19	112	
B 2 - 4	12	6308	180						6490	0.888	9	52	
B 2 - 5	12	4050							4050	0.888	8	29	
B 2 - 6	12	2286							2290	0.888	8	16	
B 3	12	180	1181	180					1550	0.888	212	292	
B 4 - 1	12	2095	5905						8000	0.888	45	320	
B 4 - 1	12	3095	4905						8000	0.888	45	320	
B 4 - 2	12	1451	3204						4660	0.888	44	182	
B 4 - 3	12	1451	2204						3660	0.888	46	150	
B 4 - 4	12	3095	4905						8000	0.888	2	14	
B 4 - 5	12	1451	2204						3660	0.888	2	7	
B 4 - 6	12	2094	5906						8000	0.888	2	14	
B 4 - 7	12	1451	3205						4660	0.888	2	8	
B 4 - 8	12	1451	5000						6460	0.888	2	11	
B 4 - 9	12	3450	5905						9360	0.888	10	83	
B 4 - 10	12	3450	4905						8360	0.888	8	59	
B 4 - 11	12	1451	450						1910	0.888	18	31	
B 5 - 1	12	8000							8000	0.888	102	725	
B 5 - 2	12	180	4660						4840	0.888	52	223	
B 5 - 3	12	180	3660						3840	0.888	50	170	
B 5 - 4	12	180	9357						9540	0.888	12	102	
B 5 - 5	12	180	8357						8540	0.888	14	106	
B 5 - 6	12	180	1902	180					2270	0.888	18	36	
B 5 - 7	12	5174							5180	0.888	4	18	

Segment. 1 Support

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
W 1	20	300	1871	310	1865	300			4650	2.466	106	1,215	
W 2	20	500	310	500					1310	2.466	106	342	
W 3	20	300	1954	347	1962	300			4870	2.466	106	1,273	
W 4	20	500	343	500					1350	2.466	106	353	
W 5	12	180	1482	180					1850	0.888	106	174	
W 0 1	12	102	318	102					530	0.888	44	21	
W 0 2	12	102	356	102					560	0.888	48	24	
W 6 - 1	12	8000							8000	0.888	16	114	
W 6 - 2	12	4660							4660	0.888	8	33	
W 6 - 3	12	3660							3660	0.888	8	26	
W 6 - 4	12	8307							8310	0.888	4	30	
W 7 - 1	12	8000							8000	0.888	12	85	
W 7 - 2	12	4660							4660	0.888	4	17	
W 7 - 3	12	3660							3660	0.888	8	26	
W 7 - 4	12	9848							9850	0.888	4	35	
M 1	13	1500							1500	0.888	48	64	
M 2	13	1700							1700	0.888	48	72	
-D14												11,278	
D16-D22												3,183	
D25-													
Total												14,461	

Segment. 2

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size	Dimensions (mm)							Length of Bar	Unit Weight	Number of Bar	Weight	Remarks
	(mm)	a	b	c	d	e	f	g	(mm)	(kg/m)		(kg)	
S 1 - 1	12	3361	300	300	6039				10000	0.888	57	506	
S 1 - 2	12	8000							8000	0.888	57	405	
S 1 - 3	12	5322		0					5330	0.888	57	270	
S 2 - 1	12	8295	600	1105					10000	0.888	57	506	
S 2 - 2	12	7490							7490	0.888	57	379	
S 3	12	172	3268						3440	0.888	114	348	
S 4	12	1512							1520	0.888	114	154	
S 5	12	1418							1420	0.888	114	144	
S 6	12	1629							1630	0.888	114	165	
S 7	12	4303							4310	0.888	95	364	
S 8	12	4303							4310	0.888	127	486	
S 9	16	4303							4310	1.578	48	326	
S 0 1	12	102	218	102					430	0.888	28	11	
S 0 2	12	102	322	102					530	0.888	16	8	
S 0 3	12	102	218	102					430	0.888	56	21	
S 0 4	12	102	360	102					570	0.888	16	8	
S 0 5	12	102	328	102					540	0.888	40	19	
B 1 - 1	12	180	9820						10000	0.888	57	506	
B 1 - 2	12	180	6136						6320	0.888	57	320	
B 2 - 1	12	180	9820						10000	0.888	57	506	
B 2 - 2	12	180	6311						6500	0.888	57	329	
B 3	12	180	1224	180					1590	0.888	228	322	
B 4 - 1	12	4303							4310	0.888	117	448	
B 4 - 2	12	4306							4310	0.888	2	8	
B 4 - 3	12	4293							4300	0.888	2	8	
B 5 - 1	12	4303							4310	0.888	121	463	
B 5 - 2	12	4297							4300	0.888	6	23	
B 5 - 3	12	4300							4300	0.888	2	8	
B 0 - 1	12	102	173	102					380	0.888	108	36	
W 1	20	300	1867	310	1873	300			4650	2.466	114	1,307	
W 2	20	500	310	500					1310	2.466	114	368	
W 3	20	300	1957	347	1965	300			4870	2.466	114	1,369	
W 4	20	500	343	500					1350	2.466	114	380	
W 5	12	180	1482	180					1850	0.888	114	187	
W 0 1	12	102	318	102					530	0.888	16	8	
W 0 2	12	102	356	102					560	0.888	16	8	
W 6	12	4303							4310	0.888	20	77	
W 7	12	4303							4310	0.888	20	77	
-D14												7,454	
D16-D22												3,424	
D25-													
Total												10,878	

Segment. 3

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
S 1 - 1	12	3361	300	300	6039				10000	0.888	57	506	
S 1 - 2	12	8000							8000	0.888	57	405	
S 1 - 3	12	5322		0					5330	0.888	57	270	
S 2 - 1	12	8295	600	1105					10000	0.888	57	506	
S 2 - 2	12	7490							7490	0.888	57	379	
S 3	12	172	3268						3440	0.888	114	348	
S 4	12	1512							1520	0.888	114	154	
S 5	12	1418							1420	0.888	114	144	
S 6	12	1629							1630	0.888	114	165	
S 7	12	4303							4310	0.888	95	364	
S 8	12	4303							4310	0.888	127	486	
S 9	16	4303							4310	1.578	48	326	
S 0 1	12	102	218	102					430	0.888	28	11	
S 0 2	12	102	322	102					530	0.888	16	8	
S 0 3	12	102	218	102					430	0.888	56	21	
S 0 4	12	102	360	102					570	0.888	16	8	
S 0 5	12	102	328	102					540	0.888	40	19	
B 1 - 1	12	180	9820						10000	0.888	57	506	
B 1 - 2	12	180	6121						6310	0.888	57	319	
B 2 - 1	12	180	9820						10000	0.888	57	506	
B 2 - 2	12	180	6336						6520	0.888	57	330	
B 3	12	180	1372	180					1740	0.888	228	352	
B 4 - 1	12	4305							4310	0.888	117	448	
B 4 - 2	12	4294							4300	0.888	2	8	
B 4 - 3	12	4292							4300	0.888	2	8	
B 5 - 1	12	4302							4310	0.888	121	463	
B 5 - 2	12	4299							4300	0.888	6	23	
B 5 - 3	12	4302							4310	0.888	2	8	
B 0 - 1	12	102	213	102					420	0.888	108	40	
W 1	20	300	1892	310	1898	300			4700	2.466	114	1,321	
W 2	20	500	310	500					1310	2.466	114	368	
W 3	20	300	1982	347	1974	300			4910	2.466	114	1,380	
W 4	20	500	343	500					1350	2.466	114	380	
W 5	12	180	1482	180					1850	0.888	114	187	
W 0 1	12	102	318	102					530	0.888	16	8	
W 0 2	12	102	356	102					560	0.888	16	8	
W 6	12	4303							4310	0.888	20	77	
W 7	12	4303							4310	0.888	20	77	
-D14												7,488	
D16-D22												3,449	
D25-													
Total												10,937	

Segment. 4

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
S 1 - 1	12	3361	300	300	6039				10000	0.888	57	506	
S 1 - 2	12	8000							8000	0.888	57	405	
S 1 - 3	12	5322		0					5330	0.888	57	270	
S 2 - 1	12	8295	600	1105					10000	0.888	57	506	
S 2 - 2	12	7490							7490	0.888	57	379	
S 3	12	172	3268						3440	0.888	114	348	
S 4	12	1512							1520	0.888	114	154	
S 5	12	1418							1420	0.888	114	144	
S 6	12	1629							1630	0.888	114	165	
S 7	12	4303							4310	0.888	95	364	
S 8	12	4303							4310	0.888	127	486	
S 9	16	4303							4310	1.578	48	326	
S 0 1	12	102	218	102					430	0.888	21	8	
S 0 2	12	102	322	102					530	0.888	12	6	
S 0 3	12	102	218	102					430	0.888	42	16	
S 0 4	12	102	360	102					570	0.888	12	6	
S 0 5	12	102	328	102					540	0.888	40	19	
B 1 - 1	12	180	9820						10000	0.888	57	506	
B 1 - 2	12	180	6073						6260	0.888	57	317	
B 2 - 1	12	180	9820						10000	0.888	57	506	
B 2 - 2	12	180	6348						6530	0.888	57	331	
B 3	12	180	1521	180					1890	0.888	228	383	
B 4 - 1	12	4302							4310	0.888	117	448	
B 4 - 2	12	4300							4300	0.888	2	8	
B 4 - 3	12	4300							4300	0.888	2	8	
B 5 - 1	12	4301							4310	0.888	121	463	
B 5 - 2	12	4300							4300	0.888	6	23	
B 5 - 3	12	4300							4300	0.888	2	8	
B 0 - 1	12	102	273	102					480	0.888	91	39	
W 1	20	300	1940	310	1946	300			4800	2.466	114	1,349	
W 2	20	500	310	500					1310	2.466	114	368	
W 3	20	300	2027	347	2035	300			5010	2.466	114	1,408	
W 4	20	500	343	500					1350	2.466	114	380	
W 5	12	180	1482	180					1850	0.888	114	187	
W 0 1	12	102	318	102					530	0.888	12	6	
W 0 2	12	102	356	102					560	0.888	16	8	
W 6	12	4303							4310	0.888	20	77	
W 7	12	4303							4310	0.888	20	77	
-D14												7,503	
D16-D22												3,505	
D25-													
Total												11,008	

Segment. 5

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size	Dimensions (mm)							Length of Bar	Unit Weight	Number of Bar	Weight	Remarks
	(mm)	a	b	c	d	e	f	g	(mm)	(kg/m)		(kg)	
S 1 - 1	12	3361	300	300	6039				10000	0.888	51	453	
S 1 - 2	12	8000							8000	0.888	51	362	
S 1 - 3	12	5322		0					5330	0.888	51	241	
S 2 - 1	12	8295	600	1105					10000	0.888	51	453	
S 2 - 2	12	7490							7490	0.888	51	339	
S 3	12	172	3268						3440	0.888	102	312	
S 4	12	1512							1520	0.888	102	138	
S 5	12	1418							1420	0.888	102	129	
S 6	12	1629							1630	0.888	102	148	
S 7	12	3803							3810	0.888	97	328	
S 8	12	3802							3810	0.888	127	430	
S 9	16	3802							3810	1.578	48	289	
S 0 1	12	102	218	102					430	0.888	21	8	
S 0 2	12	102	322	102					530	0.888	12	6	
S 0 3	12	102	218	102					430	0.888	42	16	
S 0 4	12	102	358	102					570	0.888	12	6	
S 0 5	12	102	328	102					540	0.888	30	14	
B 1 - 1	12	180	9820						10000	0.888	51	453	
B 1 - 2	12	180	5980						6160	0.888	51	279	
B 2 - 1	12	180	9820						10000	0.888	51	453	
B 2 - 2	12	180	6305						6490	0.888	51	294	
B 3	12	180	1224	180					1590	0.888	204	288	
B 4 - 1	12	3801							3810	0.888	117	396	
B 4 - 2	12	3796							3800	0.888	2	7	
B 4 - 3	12	3799							3800	0.888	2	7	
B 4 - 4	12	3799							3800	0.888	2	7	
B 5 - 1	12	3800							3800	0.888	111	375	
B 5 - 2	12	3800							3800	0.888	4	13	
B 5 - 3	12	3800							3800	0.888	4	13	
B 5 - 4	12	3796							3800	0.888	4	13	
B 5 - 5	12	3801							3810	0.888	4	14	
B 5 - 6	12	3800							3800	0.888	107	361	
B 5 - 7	12	3800							3800	0.888	107	361	
B 0 - 1	12	102	323	102					530	0.888	96	45	
W 1	20	300	2023	310	2029	300			4970	2.466	102	1,250	
W 2	20	500	310	500					1310	2.466	102	330	
W 3	20	300	2137	347	2145	300			5230	2.466	102	1,316	
W 4	20	500	343	500					1350	2.466	102	340	
W 5	12	180	1482	180					1850	0.888	102	168	
W 0 1	12	102	318	102					530	0.888	14	7	
W 0 2	12	102	356	102					560	0.888	14	7	
W 6	12	3802							3810	0.888	20	68	
W 7	12	3802							3810	0.888	16	54	
-D14												7,355	
D16-D22												3,236	
D25-													
Total												10,591	

Segment. 6

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
S 1 - 1	12	3361	300	300	6039				10000	0.888	51	453	
S 1 - 2	12	8000							8000	0.888	51	362	
S 1 - 3	12	5322		0					5330	0.888	51	241	
S 2 - 1	12	8295	600	1105					10000	0.888	51	453	
S 2 - 2	12	7490							7490	0.888	51	339	
S 3	12	172	3268						3440	0.888	102	312	
S 4	12	1512							1520	0.888	102	138	
S 5	12	1418							1420	0.888	102	129	
S 6	12	1629							1630	0.888	102	148	
S 7 - 1	12	3802							3810	0.888	91	308	
S 7 - 2	12	3802							3810	0.888	2	7	
S 7 - 3	12	3800							3800	0.888	2	7	
S 7 - 4	12	3802							3810	0.888	2	7	
S 8 - 1	12	3802							3810	0.888	119	403	
S 8 - 2	12	3802							3810	0.888	2	7	
S 8 - 3	12	3802							3810	0.888	2	7	
S 8 - 4	12	3802							3810	0.888	2	7	
S 8 - 5	12	2220							2220	0.888	2	4	
S 9	16	3802							3810	1.578	48	289	
S 0 1	12	102	218	102					430	0.888	25	10	
S 0 2	12	102	330	102					540	0.888	14	7	
S 0 3	12	102	218	102					430	0.888	48	18	
S 0 4	12	102	378	102					590	0.888	14	7	
S 0 5	12	102	328	102					540	0.888	36	17	
B 1 - 1	12	180	9820						10000	0.888	51	453	
B 1 - 2	12	180	5831						6020	0.888	51	273	
B 2 - 1	12	180	9820						10000	0.888	51	453	
B 2 - 2	12	180	6211						6400	0.888	51	290	
B 3	12	180	1372	180					1740	0.888	204	315	
B 4 - 1	12	3800							3800	0.888	111	375	
B 4 - 2	12	3801							3810	0.888	2	7	
B 4 - 3	12	3801							3810	0.888	2	7	
B 4 - 4	12	3804							3810	0.888	2	7	
B 4 - 5	12	3801							3810	0.888	2	7	
B 4 - 6	12	3803							3810	0.888	2	7	
B 5 - 1	12	3800							3800	0.888	107	361	
B 5 - 2	12	3800							3800	0.888	4	13	
B 5 - 3	12	3800							3800	0.888	4	13	
B 5 - 4	12	3802							3810	0.888	4	14	
B 5 - 5	12	3798							3800	0.888	4	13	
B 5 - 6	12	3795							3800	0.888	2	7	
B 5 - 7	12	2917							2920	0.888	2	5	
B 0 - 1	12	102	378	102					590	0.888	87	46	

Segment. 6

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
W 1	20	300	2171	360	2178	300			5310	2.466	102	1,336	
W 2	20	500	360	500					1360	2.466	102	342	
W 3	20	300	2308	403	2307	300			5620	2.466	102	1,414	
W 4	20	500	399	500					1400	2.466	102	352	
W 5	12	180	1594	180					1960	0.888	102	178	
W 6 - 1	12	3802							3810	0.888	20	68	
W 6 - 2	12	1563							1570	0.888	4	6	
W 7 - 1	12	3802							3810	0.888	16	54	
W 7 - 2	12	2010							2010	0.888	4	7	
W 0 - 1	12	102	368	102					580	0.888	20	10	
W 0 - 2	12	102	412	102					620	0.888	16	9	
-D14												6,678	
D16-D22												3,444	
D25-													
Total												10,122	

Segment. 7

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
S 1 - 1	12	3361	300	300	6039				10000	0.888	51	453	
S 1 - 2	12	8000							8000	0.888	51	362	
S 1 - 3	12	5322		0					5330	0.888	51	241	
S 2 - 1	12	8295	600	1105					10000	0.888	51	453	
S 2 - 2	12	7490							7490	0.888	51	339	
S 3	12	172	3268						3440	0.888	102	312	
S 4	12	1512							1520	0.888	102	138	
S 5	12	1418							1420	0.888	102	129	
S 6	12	1629							1630	0.888	102	148	
S 7 - 1	12	3801							3810	0.888	93	315	
S 7 - 2	12	3802							3810	0.888	2	7	
S 8	12	3802							3810	0.888	125	423	
S 9	16	3802							3810	1.578	48	289	
S 0 1	12	102	218	102					430	0.888	17	6	
S 0 2	12	102	339	102					550	0.888	10	5	
S 0 3	12	102	218	102					430	0.888	36	14	
S 0 4	12	102	395	102					600	0.888	10	5	
S 0 5	12	102	328	102					540	0.888	34	16	
B 1 - 1	12	180	9820						10000	0.888	51	453	
B 1 - 2	12	180	5609						5790	0.888	51	262	
B 2 - 1	12	180	9820						10000	0.888	51	453	
B 2 - 2	12	180	6044						6230	0.888	51	282	
B 3	12	180	1521	180					1890	0.888	204	342	
B 4 - 1	12	3801							3810	0.888	113	382	
B 4 - 2	12	3799							3800	0.888	2	7	
B 4 - 3	12	3801							3810	0.888	2	7	
B 4 - 4	12	3802							3810	0.888	2	7	
B 5 - 1	12	3803							3810	0.888	107	362	
B 5 - 2	12	3800							3800	0.888	4	13	
B 5 - 3	12	3800							3800	0.888	4	13	
B 5 - 4	12	3799							3800	0.888	6	20	
B 5 - 5	12	3799							3800	0.888	4	13	
B 5 - 6	12	3800							3800	0.888	111	375	
B 0 - 1	12	102	433	102					640	0.888	65	37	
W 1	20	300	2392	410	2400	300			5810	2.466	102	1,461	
W 2	20	500	410	500					1410	2.466	102	355	
W 3	20	300	2551	459	2551	300			6170	2.466	102	1,552	
W 4	20	500	454	500					1460	2.466	102	367	
W 5	12	180	1705	180					2070	0.888	102	187	
W 0 - 1	12	102	418	102					630	0.888	16	9	
W 0 - 2	12	102	468	102					680	0.888	20	12	
W 6	12	3802							3810	0.888	24	81	
W 7 - 1	12	3802							3810	0.888	20	68	
W 7 - 2	12	1090							1090	0.888	4	4	
-D14												7,044	
D16-D22												3,735	
D25-													
Total												10,779	

Segment. 8

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
S 1 - 1	12	3361	300	300	6039				10000	0.888	15	133	
S 1 - 2	12	8000							8000	0.888	15	107	
S 1 - 3	12	5322		0					5330	0.888	15	71	
S 2 - 1	12	8295	600	1105					10000	0.888	15	133	
S 2 - 2	12	7490							7490	0.888	15	100	
S 3	12	172	3268						3440	0.888	30	92	
S 4	12	1512							1520	0.888	30	40	
S 5	12	1418							1420	0.888	30	38	
S 6	12	1629							1630	0.888	30	43	
S 7 - 1	12	3302							3310	0.888	87	256	
S 7 - 2	12	3301							3310	0.888	2	6	
S 7 - 3	12	3301							3310	0.888	2	6	
S 7 - 4	12	3302							3310	0.888	2	6	
S 7 - 5	12	3299							3300	0.888	2	6	
S 8 - 1	12	3302							3310	0.888	120	353	
S 8 - 2	12	3300							3300	0.888	2	6	
S 8 - 3	12	3300							3300	0.888	2	6	
S 8 - 4	12	3302							3310	0.888	2	6	
S 9	16	3302							3310	1.578	24	125	
S 0 - 1	12	102	218	102					430	0.888	21	8	
S 0 - 2	12	102	339	102					550	0.888	12	6	
S 0 - 3	12	102	218	102					430	0.888	34	13	
S 0 - 4	12	102	395	102					600	0.888	12	6	
S 0 - 5	12	102	328	102					540	0.888	30	14	
B 1 - 1	12	180	9820						10000	0.888	15	133	
B 1 - 2	12	180	5327						5510	0.888	15	73	
B 2 - 1	12	180	9820						10000	0.888	15	133	
B 2 - 2	12	180	5807						5990	0.888	15	80	
B 3	12	180	1655	180					2020	0.888	60	108	
B 4 - 1	12	3304							3310	0.888	105	309	
B 4 - 2	12	3299							3300	0.888	2	6	
B 4 - 3	12	3300							3300	0.888	2	6	
B 4 - 4	12	3284							3290	0.888	2	6	
B 4 - 5	12	3303							3310	0.888	2	6	
B 4 - 6	12	2834							2840	0.888	4	10	
B 5 - 1	12	3307							3310	0.888	105	309	
B 5 - 2	12	2305							2310	0.888	2	4	
B 5 - 3	12	3306							3310	0.888	2	6	
B 5 - 4	12	3306							3310	0.888	2	6	
B 5 - 5	12	3305							3310	0.888	2	6	
B 5 - 6	12	3086							3090	0.888	2	5	
B 5 - 7	12	2285							2290	0.888	8	16	
B 0 - 1	12	102	458	102					670	0.888	63	37	
W 1	20	300	2673	460	2682	300			6420	2.466	30	475	
W 2	20	500	410	500					1410	2.466	30	104	
W 3	20	300	2861	515	2872	300			6850	2.466	30	507	
W 4	20	500	454	500					1460	2.466	30	108	
W 5	12	180	1705	180					2070	0.888	30	55	
W 6 - 1	12	3302							3310	0.888	28	82	
W 6 - 2	12	1610							1610	0.888	4	6	
W 7	12	3302							3310	0.888	24	71	
W 0 - 1	12	102	418	102					630	0.888	18	10	
W 0 - 2	12	102	468	102					680	0.888	20	12	
-D14												3,075	
D16-D22												1,194	
D25-													
Total												4,269	

Segment. 9

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
S 1 - 1	12	3361	300	300	6039				10000	0.888	15	133	
S 1 - 2	12	8000							8000	0.888	15	107	
S 1 - 3	12	5322		0					5330	0.888	15	71	
S 2 - 1	12	8295	600	1105					10000	0.888	15	133	
S 2 - 2	12	7490							7490	0.888	15	100	
S 3	12	172	3268						3440	0.888	30	92	
S 4	12	1512							1520	0.888	30	40	
S 5	12	1418							1420	0.888	30	38	
S 6	12	1629							1630	0.888	30	43	
S 7	12	3302							3310	0.888	97	285	
S 8	12	3302							3310	0.888	120	353	
S 9	16	3302							3310	1.578	24	125	
S 0 - 1	12	102	218	102					430	0.888	21	8	
S 0 - 2	12	102	356	102					560	0.888	12	6	
S 0 - 3	12	102	218	102					430	0.888	42	16	
S 0 - 4	12	102	351	102					560	0.888	6	3	
S 0 - 5	12	102	328	102					540	0.888	30	14	
B 1 - 1	12	180	9820						10000	0.888	15	133	
B 1 - 2	12	180	4985						5170	0.888	15	69	
B 2 - 1	12	180	9820						10000	0.888	15	133	
B 2 - 2	12	180	5510						5690	0.888	15	76	
B 3	12	180	1789	180					2150	0.888	60	115	
B 4 - 1	12	3309							3310	0.888	107	315	
B 4 - 4	12	3307							3310	0.888	107	315	
B 4 - 5	12	3309							3310	0.888	107	315	
B 4 - 6	12	1529							1530	0.888	2	3	
B 5 - 1	12	3313							3320	0.888	119	351	
B 5 - 6	12	2223							2230	0.888	2	4	
B 5 - 7	12	3313							3320	0.888	8	24	
B 0 - 1	12	102	523	102					730	0.888	57	37	
W 1	20	300	3013	510	3023	300			7150	2.466	30	529	
W 2	20	500	510	500					1510	2.466	30	112	
W 3	20	300	3242	571	3254	300			7670	2.466	30	567	
W 4	20	500	565	500					1570	2.466	30	116	
W 5	12	180	1928	180					2290	0.888	30	61	
W 0 - 1	12	102	518	102					730	0.888	24	16	
W 0 - 2	12	102	580	102					790	0.888	24	17	
W 6 - 1	12	3302							3310	0.888	32	94	
W 6 - 2	12	1274							1280	0.888	4	5	
W 7 - 1	12	3302							3310	0.888	28	82	
W 7 - 2	12	1910							1910	0.888	4	7	
-D14												4,207	
D16-D22												856	
D25-													
Total												5,063	

Segment. 10

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size	Dimensions (mm)							Length of Bar	Unit Weight	Number of Bar	Weight	Remarks
	(mm)	a	b	c	d	e	f	g	(mm)	(kg/m)		(kg)	
S 1 - 1	12	3361	300	300	6039				10000	0.888	15	133	
S 1 - 2	12	8000							8000	0.888	15	107	
S 1 - 3	12	5322		0					5330	0.888	15	71	
S 2 - 1	12	8295	600	1105					10000	0.888	15	133	
S 2 - 2	12	7490							7490	0.888	15	100	
S 3	12	172	3268						3440	0.888	30	92	
S 4	12	1512							1520	0.888	30	40	
S 5	12	1418							1420	0.888	30	38	
S 6	12	1629							1630	0.888	30	43	
S 7 - 1	12	3302							3310	0.888	87	256	
S 7 - 2	12	3300							3300	0.888	2	6	
S 7 - 3	12	3300							3300	0.888	2	6	
S 7 - 4	12	3302							3310	0.888	2	6	
S 7 - 5	12	3301							3310	0.888	2	6	
S 8 - 1	12	3302							3310	0.888	112	329	
S 8 - 2	12	3301							3310	0.888	2	6	
S 8 - 3	12	3300							3300	0.888	2	6	
S 8 - 4	12	3301							3310	0.888	2	6	
S 9	16	3302							3310	1.578	24	125	
S 0 - 1	12	102	218	102					430	0.888	14	5	
S 0 - 2	12	102	372	102					580	0.888	8	4	
S 0 - 3	12	102	218	102					430	0.888	28	11	
S 0 - 4	12	102	386	102					590	0.888	4	2	
S 0 - 5	12	102	328	102					540	0.888	30	14	
B 1 - 1	12	180	9820						10000	0.888	15	133	
B 1 - 2	12	180	4559						4740	0.888	15	63	
B 2 - 1	12	180	9820						10000	0.888	15	133	
B 2 - 2	12	180	5144						5330	0.888	15	71	
B 3	12	180	1945	180					2310	0.888	60	123	
B 4 - 1	12	3315							3320	0.888	95	280	
B 4 - 2	12	3315							3320	0.888	2	6	
B 4 - 3	12	3300							3300	0.888	2	6	
B 4 - 4	12	3324							3330	0.888	2	6	
B 4 - 5	12	3307							3310	0.888	2	6	
B 4 - 6	12	1763							1770	0.888	2	3	
B 5 - 1	12	1300	3023						4330	0.888	97	373	
B 5 - 2	12	1300	3000						4300	0.888	2	8	
B 5 - 3	12	1300	2000						3300	0.888	2	6	
B 5 - 4	12	3320							3320	0.888	2	6	
B 5 - 5	12	3023	186						3210	0.888	2	6	
B 5 - 6	12	2134	301						2440	0.888	4	9	
B 5 - 7	12	1300	3023						4330	0.888	8	31	
B 5 - 8	12	2023							2030	0.888	2	4	
B 0 - 1	12	102	618	102					830	0.888	44	32	

Segment. 10

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
W 1	22	330	3436	559	3447	330			8110	2.984	30	726	
W 2	22	550	608	550					1710	2.984	30	153	
W 3	22	330	3715	626	3729	330			8730	2.984	30	782	
W 4	22	550	674	550					1780	2.984	30	159	
W 5	12	180	2151	180					2520	0.888	30	67	
W 6 - 1	12	3302							3310	0.888	36	106	
W 6 - 2	12	3276							3280	0.888	4	12	
W 7 - 1	12	3302							3310	0.888	32	94	
W 7 - 2	12	1701							1710	0.888	4	6	
W 0 - 1	12	102	618	102					830	0.888	18	13	
W 0 - 2	12	102	691	102					900	0.888	30	24	
-D14												3,831	
D16-D22												1,161	
D25-													
Total												4,992	

Segment. 11

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
S 1 - 1	12	3361	300	300	6039				10000	0.888	51	453	
S 1 - 2	12	8000							8000	0.888	51	362	
S 1 - 3	12	5322		0					5330	0.888	51	241	
S 2 - 1	12	8295	600	1105					10000	0.888	51	453	
S 2 - 2	12	7490							7490	0.888	51	339	
S 3	12	172	3268						3440	0.888	102	312	
S 4	12	1512							1520	0.888	102	138	
S 5	12	1418							1420	0.888	102	129	
S 6	12	1629							1630	0.888	102	148	
S 7 - 1	12	10000							10000	0.888	95	844	
S 7 - 2	12	4905							4910	0.888	47	205	
S 7 - 3	12	2905							2910	0.888	48	124	
S 8 - 1	12	10000							10000	0.888	117	1,039	
S 8 - 2	12	4905							4910	0.888	58	253	
S 8 - 3	12	2905							2910	0.888	59	152	
S 9 - 1	16	10000							10000	1.578	48	757	
S 9 - 2	16	5105							5110	1.578	24	194	
S 9 - 3	16	3105							3110	1.578	24	118	
S 0 - 1	12	102	218	102					430	0.888	14	5	
S 0 - 2	12	102	362	102					570	0.888	8	4	
S 0 - 3	12	102	218	102					430	0.888	28	11	
S 0 - 4	12	102	375	102					580	0.888	4	2	
S 0 - 5	12	102	328	102					540	0.888	30	14	
B 1 - 1	12	10000							10000	0.888	51	453	
B 1 - 2	12	180	4324						4510	0.888	38	152	
B 1 - 3	12	180	3877						4060	0.888	13	47	
B 2 - 1	12	10000							10000	0.888	15	133	
B 2 - 2	12	180	4944						5130	0.888	15	68	
B 2 - 3	12	180	4497						4680	0.888	15	62	
B 3	12	180	1945	180					2310	0.888	60	123	
B 4 - 1	12	5863	3001	1136					10000	0.888	44	391	
B 4 - 2	12	5079							5080	0.888	44	198	
B 4 - 3	12	4863	3001	2136					10000	0.888	45	400	
B 4 - 4	12	3079							3080	0.888	45	123	
B 4 - 5	12	4904							4910	0.888	8	35	
B 4 - 6	12	2944							2950	0.888	8	21	
B 4 - 7	12	5877	3001	1122					10000	0.888	1	9	
B 4 - 8	12	5123							5130	0.888	1	5	
B 4 - 9	12	4884	3001	2115					10000	0.888	1	9	
B 4 - 10	12	3125							3130	0.888	1	3	
B 5 - 1	12	5863	3001	1136					10000	0.888	47	417	
B 5 - 2	12	5079							5080	0.888	47	212	
B 5 - 3	12	4863	3001	2136					10000	0.888	46	408	
B 5 - 4	12	3079							3080	0.888	46	126	
B 5 - 5	12	3453							3460	0.888	8	25	
B 5 - 6	12	3658							3660	0.888	8	26	
B 5 - 7	12	5877	3001	1122					10000	0.888	8	71	
B 5 - 8	12	5123							5130	0.888	8	36	
B 5 - 9	12	4884	3001	2115					10000	0.888	10	89	
B 5 - 10	12	3125							3130	0.888	10	28	
B 0 - 1	12	102	618	102					830	0.888	203	150	

Segment. 11

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
W 1 - 1	22	330	4555	608	4567	330			10390	2.984	102	3,162	
W 1 - 2	22	330	4110	608	4122	330			9500	2.984	102	2,891	
W 2	22	550	608	550					1710	2.984	102	520	
W 3 - 1	22	330	4968	680	4983	330			11300	2.984	102	3,439	
W 3 - 2	22	330	4470	680	4485	330			10300	2.984	102	3,135	
W 4	22	550	674	550					1780	2.984	102	542	
W 5	12	180	2146	180					2510	0.888	102	227	
W 0 - 1	12	102	618	102					830	0.888	154	114	
W 0 - 2	12	102	691	102					900	0.888	164	131	
W 6 - 1	12	10000							10000	0.888	44	391	
W 6 - 2	12	4905							4910	0.888	22	96	
W 6 - 3	12	2905							2910	0.888	22	57	
W 6 - 4	12	7985							7990	0.888	32	227	
W 8	12	11905							11910	0.888	44	465	
W 9 - 1	12	10000							10000	0.888	40	355	
W 9 - 2	12	4905							4910	0.888	20	87	
W 9 - 3	12	2905							2910	0.888	20	52	
W 9 - 4	12	8036							8040	0.888	28	200	
W 13	12	11905							11910	0.888	40	423	
-D14												12,942	
D16-D22												13,689	
D25-													
Total												26,631	

Segment. 41

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
S 1 - 1	12	3361	600	6039					10000	0.888	23	204	
S 1 - 2	12	8000							8000	0.888	23	163	
S 1 - 3	12	5322							5330	0.888	23	109	
S 2 - 1	12	8295	600	1105					10000	0.888	23	204	
S 2 - 2	12	7490							7490	0.888	23	153	
S 3	12	172	3268						3440	0.888	46	141	
S 4	12	1512							1520	0.888	46	62	
S 5	12	1418							1420	0.888	46	58	
S 6	12	1629							1630	0.888	46	67	
S 7 - 1	12	5001		0					5010	0.888	51	227	
S 7 - 2	12	3001							3010	0.888	46	123	
S 8 - 1	12	5001							5010	0.888	65	289	
S 8 - 2	12	3001							3010	0.888	62	166	
S 9 - 1	12	5001							5010	0.888	24	107	
S 9 - 2	12	3001							3010	0.888	24	64	
B 1 - 1	12	180	9820						10000	0.888	23	204	
B 1 - 2	12	6138	180						6320	0.888	23	129	
B 2 - 1	12	180	9820						10000	0.888	23	204	
B 2 - 2	12	6308	180						6490	0.888	23	133	
B 3	12	180	1004	180					1370	0.888	92	112	
B 4 - 1	12	5001							5010	0.888	60	267	
B 4 - 2	12	3001							3010	0.888	61	163	
B 5 - 1	12	5001							5010	0.888	64	285	
B 5 - 2	12	3001							3010	0.888	65	174	
W 1	20	300	1871	310	1865	300			4650	2.466	46	527	
W 2	20	500	310	500					1310	2.466	46	149	
W 3	20	300	1954	347	1962				4570	2.466	46	518	
W 4	20	500	343	500					1350	2.466	46	153	
W 5	12	180	1482	180					1850	0.888	46	76	
W 6 - 1	12	5001							5010	0.888	8	36	
W 6 - 2	12	3001							3010	0.888	12	32	
W 7 - 1	12	5001							5010	0.888	8	36	
W 7 - 2	12	3001							3010	0.888	8	21	
So 1	12	102	218	102					430	0.888	24	9	
So 0 2	12	102	322	102					530	0.888	16	8	
So 3	12	102	218	102					430	0.888	48	18	
So 4	12	102	360	102					570	0.888	14	7	
So 5	12	102	328	102					540	0.888	46	22	
Bo 1	12	102	168	102					380	0.888	108	36	
Woo 1	12	102	318	102					530	0.888	14	7	
Bo 2	12	102	356	102					560	0.888	18	9	
-D14												4,125	
D16-D22												1,347	
D25-													
Total												5,472	

Anchorage Type A

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
T 1	16	2770	261	489	240				3760	1.578	2	12	
T 2	16	240	486	246	486	240			1700	1.578	3	8	
T 3	16	100	481	180	481	100			1350	1.578	3	6	
T 4	16	240	457	246	457	240			1640	1.578	3	8	
T 5	16	100	452	180	452	100			1290	1.578	3	6	
T 6	16	195	290	246	290	195			1220	1.578	11	21	
T 7	14	100	107	180	107	100			600	1.208	11	8	
T 8	14	100	168	246	168	100			790	1.208	7	7	
T 9	14	100	166	180	166	100			720	1.208	7	6	
T 10	14	1200		0	0				1200	1.208	5	7	
U 1	19	350							350	1.998	13	9	
U 2	16	3500							3500	1.578	11	61	
-D14												28	
D16-D22												131	
D25-													
Total												159	

Anchorage Type B

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
T 1	16	2770	261	489	240				3760	1.578	5	30	
T 2	16	240	487	747	487	240			2210	1.578	3	10	
T 3	16	100	481	180	481	100			1350	1.578	6	13	
T 4	16	240	458	246	458	240			1650	1.578	3	8	
T 5	16	100	452	180	452	100			1290	1.578	6	12	
T 6	16	195	291	246	291	195			1220	1.578	11	21	
T 7	14	100	107	180	107	100			600	1.208	22	16	
T 8	14	100	168	747	168	100			1290	1.208	7	11	
T 9	14	100	166	180	166	100			720	1.208	14	12	
T 10	14	1200		0	0				1200	1.208	5	7	
U 1	19	350							350	1.998	19	13	
U 2	16	3500							3500	1.578	17	94	
-D14												46	
D16-D22												201	
D25-													
Total												247	

Diaphragm Cantilever

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
E 1	16	240	1176	4050	1176	4050			10700	1.578	12	203	
E 2	16	240	1318	2525	1176	1926			7190	1.578	12	136	
E 3	16	240	4050	973	240				5510	1.578	12	104	
E 4	16	240	2525	973	240				3980	1.578	12	75	
E 5	16	240	4082	240					4570	1.578	8	58	
E 6	16	240	2263	240					2750	1.578	8	35	
E 7	16	240	1208	936	1208	240			3840	1.578	20	121	
E 8	16	226	1176	226	1176	226			3030	1.578	72	344	
E 9	16	1250	250						1500	1.578	178	421	
E 10	16	900							900	1.578	24	34	
E 11	12	4051							4060	0.888	4	14	
E 12	12	2830							2830	0.888	4	10	
E 13	12	4050							4050	0.888	12	43	
E 14	12	2689							2690	0.888	12	29	
E 15	12	180	2275	180					2640	0.888	104	244	
E 16	12	180	1845	180					2210	0.888	4	8	
-D14												340	
D16-D22												1,531	
D25-													
Total												1,598	

Diaphragm Pier Head

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
E 1 - 1	16	232	4600	1906	4600	232			11570	1.578	72	1,315	
E 1 - 2	16	232	3222	1906	3222	232			8820	1.578	16	223	
E 2	16	232	2400	1906	2400	232			7170	1.578	30	339	
E 3	16	232	600	1906	600	232			3570	1.578	30	169	
E 4	16	232	1906	232					2370	1.578	72	269	
E 5	16	240	1100	1600	1100	1600	240		5880	1.578	13	121	
E 6	16	240	2860	240					3340	1.578	12	63	
E 7	16	1605							1610	1.578	102	259	
E 8	16	240	2860	240					3340	1.578	84	443	
E 9	16	226	4600	226	4600				9660	1.578	104	1,585	
E 10	16	232	2340	1906	2340				6820	1.578	52	560	
E 11 - 1	16	240	9760						10000	1.578	16	252	
E 11 - 2	16	6730	240						6970	1.578	16	176	
E 12 - 1	16	10000							10000	1.578	16	252	
E 12 - 2	16	6490							6490	1.578	16	164	
E 13	16	240	3450	240					3930	1.578	24	149	
E 14	16	3450							3450	1.578	24	131	
E 15	16	240	2042	240					2530	1.578	24	96	
E 16	16	2042							2050	1.578	24	78	
E 17	12	2200							2200	0.888	24	47	
E 18	12	1700							1700	0.888	24	36	
-D14												83	
D14-D25												6,644	
D25-													
Total												6,727	

Diaphragm Support

SCHEDULE OF REINFORCEMENT

Symbol of Bar	Size (mm)	Dimensions (mm) a	b	c	d	e	f	g	Length of Bar (mm)	Unit Weight (kg/m)	Number of Bar	Weight (kg)	Remarks
E 1	16	240	945	4050	945	4050			10230	1.578	12	194	
E 2	16	240	1057	2598	965	2124			6990	1.578	12	132	
E 3	16	240	4050	600	240				5130	1.578	12	97	
E 4	16	240	2425	600	240				3510	1.578	12	66	
E 5	16	240	4082	240					4570	1.578	8	58	
E 6	16	240	2457	240					2940	1.578	8	37	
E 7	16	240	977	936	977	240			3370	1.578	22	117	
E 8	16	226	945	226	945	226			2570	1.578	72	292	
E 9	16	1500							1500	1.578	148	350	
E 10	16	900							900	1.578	24	34	
E 11	12	4051							4060	0.888	4	14	
E 12	12	2832							2840	0.888	4	10	
E 13	12	4050							4050	0.888	8	29	
E 14	12	2726							2730	0.888	8	19	
E 15	12	180	1900	180					2260	0.888	108	217	
-D14												289	
D16-D22												1,377	
D25-													
Total												1,430	

6. PC Steel

1) Longitudinal Prestressing Internal Tendons

12S12.7B(SWPR7B)

Unit Weight: 9.288 kg/m

(1) P37,P40 Tendons on Top Slab

PC Steel No.	Length of PC Steel (m)	Unit Weight (kgf)	Each	Weight of PC Steel (kgf)	Remarks
S101	74.804	694.8	4	2,779.2	
S102	66.804	620.5	4	2,482.0	
S103	58.777	545.9	4	2,183.6	
S104	50.777	471.6	4	1,886.4	
S105	43.752	406.4	4	1,625.6	
S106	36.752	341.4	4	1,365.6	
S107	29.717	276.0	4	1,104.0	
S108	23.717	220.3	4	881.2	
S109	17.700	164.4	4	657.6	
S110	11.700	108.7	4	434.8	
S111	74.804	694.8	4	2,779.2	
S112	66.804	620.5	4	2,482.0	
S113	58.777	545.9	4	2,183.6	
S114	50.777	471.6	4	1,886.4	
S115	43.752	406.4	4	1,625.6	
S116	36.752	341.4	4	1,365.6	
S117	29.717	276.0	4	1,104.0	
S118	23.717	220.3	4	881.2	
S119	17.700	164.4	4	657.6	
S120	11.700	108.7	4	434.8	
Total	829.000		80	30,800.0	

(2) P38,P39 Tendons on Top Slab

PC Steel No.	Length of PC Steel (m)	Unit Weight (kgf)	Each	Weight of PC Steel (kgf)	Remarks
S201	74.804	694.8	4	2,779.2	
S202	66.804	620.5	4	2,482.0	
S203	58.777	545.9	4	2,183.6	
S204	50.777	471.6	4	1,886.4	
S205	43.752	406.4	4	1,625.6	
S206	36.752	341.4	4	1,365.6	
S207	29.717	276.0	4	1,104.0	
S208	23.717	220.3	4	881.2	
S209	17.700	164.4	4	657.6	
S210	11.700	108.7	4	434.8	
S211	74.804	694.8	4	2,779.2	
S212	66.804	620.5	4	2,482.0	
S213	58.777	545.9	4	2,183.6	
S214	50.777	471.6	4	1,886.4	
S215	43.752	406.4	4	1,625.6	
S216	36.752	341.4	4	1,365.6	
S217	29.717	276.0	4	1,104.0	
S218	23.717	220.3	4	881.2	
S219	17.700	164.4	4	657.6	
S220	11.700	108.7	4	434.8	
Total	829.000		80	30,800.0	

(3) P36,P41 Tendons on Bottom Slab

PC Steel No.	Length of PC Steel (m)	Unit Weight (kgf)	Each	Weight of PC Steel (kgf)	Remarks
S301	27.250	253.1	4	1,012.4	
S302	27.250	253.1	4	1,012.4	
S303	29.900	277.7	4	1,110.8	
S304	27.250	253.1	4	1,012.4	
S305	27.250	253.1	4	1,012.4	
S306	29.900	277.7	4	1,110.8	
Total	168.800		24	6,271.2	

(4) P37-P38,P39-40 Tendons on Bottom Slab

PC Steel No.	Length of PC Steel (m)	Unit Weight (kgf)	Each	Weight of PC Steel (kgf)	Remarks
S401	25.000	232.2	4	928.8	
S402	33.000	306.5	4	1,226.0	
S403	54.000	501.6	4	2,006.4	
S404	60.000	557.3	4	2,229.2	
S405	40.000	371.5	4	1,486.0	
S406	25.000	232.2	4	928.8	
S407	17.000	157.9	4	631.6	
S408	25.000	232.2	4	928.8	
S409	33.000	306.5	4	1,226.0	
S410	54.000	501.6	4	2,006.4	
S411	60.000	557.3	4	2,229.2	
S412	40.000	371.5	4	1,486.0	
S413	17.000	157.9	4	631.6	
Total	483.000		52	17,944.8	

(5) P38-P39 Tendons on Bottom Slab

PC Steel No.	Length of PC Steel (m)	Unit Weight (kgf)	Each	Weight of PC Steel (kgf)	Remarks
S501	25.000	232.2	2	464.4	
S502	33.000	306.5	2	613.0	
S503	54.000	501.6	2	1,003.2	
S504	60.000	557.3	2	1,114.6	
S505	40.000	371.5	2	743.0	
S506	25.000	232.2	2	464.4	
S507	17.000	157.9	2	315.8	
S508	25.000	232.2	2	464.4	
S509	33.000	306.5	2	613.0	
S510	54.000	501.6	2	1,003.2	
S511	60.000	557.3	2	1,114.6	
S512	40.000	371.5	2	743.0	
S513	17.000	157.9	2	315.8	
Total	483.000		26	8,972.4	

(6) Tendons on Web

PC Steel No.	Length of PC Steel (m)	Unit Weight (kgf)	Each	Weight of PC Steel (kgf)	Remarks
W 101	74.872	695.4	8	5,563.2	
W 102	66.868	621.1	8	4,968.8	
W 103	58.846	546.6	8	4,372.8	
W 104	50.841	472.2	8	3,777.6	
W 105	43.801	406.8	8	3,254.4	
W 106	36.816	341.9	8	2,735.2	
W 107	29.844	277.2	8	2,217.6	
W 108	23.865	221.7	8	1,773.6	
W 109	17.862	165.9	8	1,327.2	
W 110	11.911	110.6	8	884.8	
W 111	74.844	695.2	8	5,561.6	
W 112	66.843	620.8	8	4,966.4	
W 113	58.792	546.1	8	4,368.8	
W 114	50.822	472.0	8	3,776.0	
W 115	43.783	406.7	8	3,253.6	
W 116	36.802	341.8	8	2,734.4	
W 117	29.806	276.8	8	2,214.4	
W 118	23.857	221.6	8	1,772.8	
W 119	17.857	165.9	8	1,327.2	
W 120	11.915	110.7	8	885.6	
Total	830.847		160	61,736.0	

		(kgf)	(ton)
Sub-Total Weight of PC Cable	Wp =	156,524.4	156.5
Tension Unit	Ns =	422.0	= 844.0

2) Longitudinal Prestressing External Tendons

19S15.2B(SWPR7B)

Unit Weight: 20.919 kg/m

(1) P4-P5 Tendons

PC Steel No.	Length of PC Steel (m)	Unit Weight (kgf)	Each	Weight of PC Steel (kgf)	Remarks
C1	131.174	2,744.0	4	10,976.0	
C2	83.055	1,737.4	4	6,949.6	
C3	131.183	2,744.2	4	10,976.8	
Total	345.412		12	28,902.4	

		(kgf)	(ton)
Sub-Total Weight of PC Cable	Wp =	28,902.4	28.9
Tension Unit	Ns =	12.0	= 24

3) Transverse Prestressing Tendons (Top Slab)

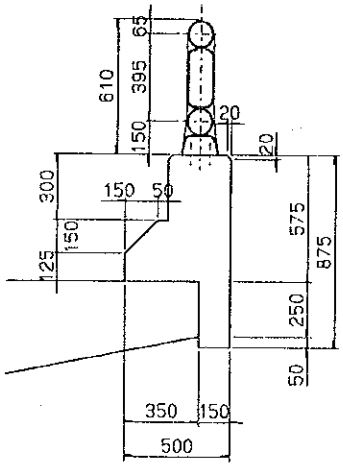
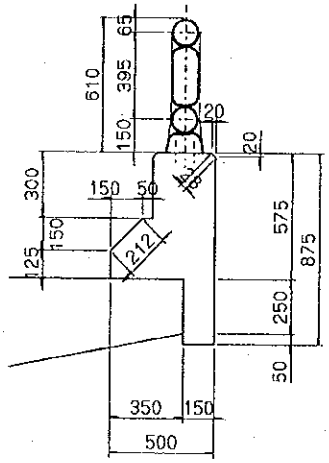
1T21.8

Unit Weight: 2.482 kg/m

PC Steel No.	Segment Number	Length of PC Steel (m)	Unit Weight (kgf)	Each	Weight of PC Steel (kgf)	Remarks
3.0m Segment	24	22.823	56.6	4	5,433.6	
3.5m Segment	24	22.823	56.6	5	6,792.0	
4.0m Segment	24	22.823	56.6	6	8,150.4	
Closure Segment	3	22.823	56.6	7	1,188.6	
Pier Segment	4	22.823	56.6	16	3,622.4	
End Segment	2	22.823	56.6	17	1,924.4	
Total		136.938		55	27,111.4	

		(kgf)	(ton)
Sub-Total Weight of PC Cable	Wp =	27,111.4	27.1
Tension Unit	Ns =	55.0	= 110

7 Barrier

Item	Formula	Quantity
1) Concrete	A1 = 0.300 × 0.300 = 0.090 m^2 A2 =(0.300 + 0.500)× 1/2 × 0.150 = 0.060 m^2 A3 = 0.500 × 0.125 = 0.063 m^2 A4 = 0.150 × 0.300 = 0.045 m^2 A5 = - 0.020 × 0.020 × 1/2 × 2.0 = -0.001 m^2 ΣA = = 0.257 m^2 V = 0.257 × 339.800 × 2 = 174.657 m^3	174.657 m^3
	 Concrete	
	 Foam	
2) Form	A1 =(0.125 + 0.212 + 0.300 + 0.028 + 0.028 + 0.875 + 0.150 + 0.050) × 339.800 × 2 = 1201.533 m^2 A2 = 0.300 × 0.300 = 0.090 m^2 A3 =(0.300 + 0.500)× 1/2 × 0.150 = 0.060 m^2 A4 = 0.500 × 0.125 = 0.063 m^2 A5 = 0.150 × 0.300 = 0.045 m^2 A6 = - 0.020 × 0.020 × 1/2 × 2.0 = -0.001 m^2 ΣA2~A6 = = 0.257 m^2 A = 1201.533 + 0.257 × 2 = 1202.047 m^2	1202.047 m^2

Item	Formula	Quantity

3) Re-Ber

Bar Mark		Size (mm)	Length (mm)	Weight/m (kg)	Weight/one (kg)	Number of Bar	Weight (kg)
P36-P37	P1	14	2030	1.208	2.452	670	1,643
	P2	14	1270	1.208	1.534	670	1,028
	P3	14	9800	1.208	11.838	8	95
	P4	14	9900	1.208	11.959	24	287
	P5	14	9950	1.208	12.02	8	96
	P6	14	12000	1.208	14.496	56	812
	P7	14	4350	1.208	5.255	14	74
	P8	16	1380	1.578	2.178	32	70
P37-P40	P1	14	2030	1.208	2.452	1072	2,629
	P2	14	1270	1.208	1.534	1077	1,652
	P3	14	9900	1.208	11.959	16	191
	P4	14	9900	1.208	11.959	32	383
	P5	14	9900	1.208	11.959	16	191
	P6	14	12000	1.208	14.496	70	1,015
	P7	14	10000	1.208	12.08	14	169
	P8	14	8000	1.208	9.664	14	135
	P9	14	5920	1.208	7.151	14	100
	P10	16	1380	1.578	2.178	48	105
P40-P41	P1	14	2030	1.208	2.452	670	1,643
	P2	14	1270	1.208	1.534	670	1,028
	P3	14	9800	1.208	11.838	8	95
	P4	14	9900	1.208	11.959	24	287
	P5	14	9950	1.208	12.02	8	96
	P6	14	12000	1.208	14.496	56	812
	P7	14	4350	1.208	5.255	14	74
	P8	16	1380	1.578	2.178	32	70
Total		-D14					14,535
		D16-D22					245
		D25-					
		Total					14,780

4) Rearing

per 10m

Item	Size	Material	Unit/Weight	Quantity	Unit	WEIGHT (kg)
Post	610*180*130	FCD-450	18.1	5	each	90.5
Upper Rail	114.3*3.5T	STK-400	19.5	10	m	195.0
Bottom Rail	76.392.5T	STK-400	5.77	10	m	57.7
Connection	90*300	STK-400	2.13	1.67	each	3.6
	87.5*300	STK-400	1.4	1.67	each	2.3
Anchor Bolt	M22-650	SS-400	2.9	20	each	58.0
Vertical Member	FBB*32*300	SS-400	2.09	65	each	135.9
						542.9

W = 339.800 × 542.9 × 1/10 × 2

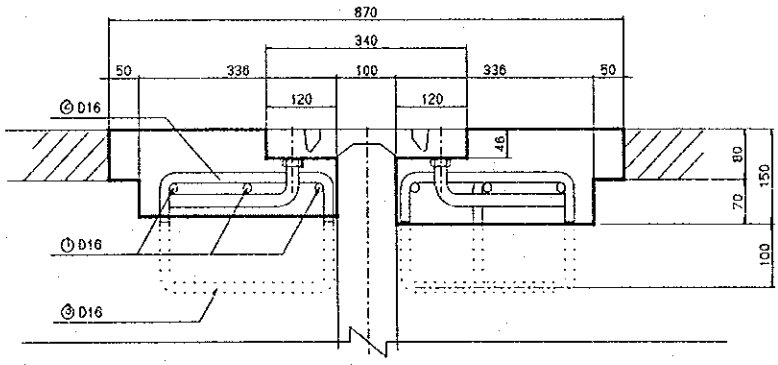
= 36,895.5

36,895.5 kg

36.9 ton

8. ACCESSORY

Item	Formula	Quantity
1. Expansion Joint		
	1) Expansion Joint	
	Nos. LENGTH L = 22.100	
	Nos. = 2	
	TOTAL LENGTH	
	L = 22.100 × 2 =	44.200 m
	2) CONCRETE	



A1	=	0.336 ×	0.150 -	0.12 ×	0.046	=	0.045	
A2	=	0.080 ×	0.050			=	0.004	
				Total			0.049 m²	
V	=	0.049 ×	22.100 ×	2		=	2.166 m³	2.166 m³

2. BEARING PAI ELASTOMERIC		
	1) 1600*1600*265	
	Nos. for One SPAN	
	Nos. = 3	
	TOTAL Nos.	Nos.
	Nos. = 3 × 4 =	12
	2) 720*720*130	
	Nos. for One SPAN	
	Nos. = 3	
	TOTAL Nos.	Nos.
	Nos. = 3 × 2 =	6

Item	Formula				Quantity
3. ANCHOR BAR					
	Φ90 L=2520 (MOVE)				Nos.
	Nos. = 20	×	2	=	40
	Φ115 L=3120 (FIX)				Nos.
	Nos. = 20	×	2	=	40
	Φ40 L=1130 (MOVE)				Nos.
	Nos. = 6	×	2	=	12
4. ANCHOR CAP (SGP)					
	Φ140/120 L=980 (MOVE)				Nos.
	Nos. = 20	×	2	=	40
	Φ140 L=1230 (MOVE)				Nos.
	Nos. = 20	×	2	=	40
	Φ90/70 L=480 (FIX)				Nos.
	Nos. = 6	×	2	=	12

Item	Formula	Quantity

5. Manhole Cover

Nos.

N = 3 × 2 = 6

W = 6 × 120.5 = 723.0 kg

1) Rail

Par each

Item	Size	Number	Weight / l. m	Weight par each	Total Weight	Remarks
Plate	155 * 6 * 2520	2	7.301	18.399	36.8	
Plate	155 * 6 * 1080	1	7.301	7.885	7.9	
Plate	125 * 6 * 125	10	5.888	0.736	7.4	
Angle	50 * 50 * 4 * 1068	1	3.060	3.268	3.3	
Angle	75 * 75 * 9 * 1300	10	9.960	-	0.0	
Flat Bar	50 * 6 * 100	2	2.355	0.236	0.5	
Flat Bar	50 * 6 * 50	2	2.355	0.118	0.2	
Bolt Nut	Dia. 16 * 40	4		0.170	0.7	
Concrete Anchor	16 * 100	10			-	
				Sub-total =	56.8	

Plate	t= 6	52.1
Angle	50*50*4	3.3
Angle	75*75*9	0.0
Flat Bar	t= 6	0.7
Bolt Nut	M16×40	0.7
	計	56.8 kg

2) Cover

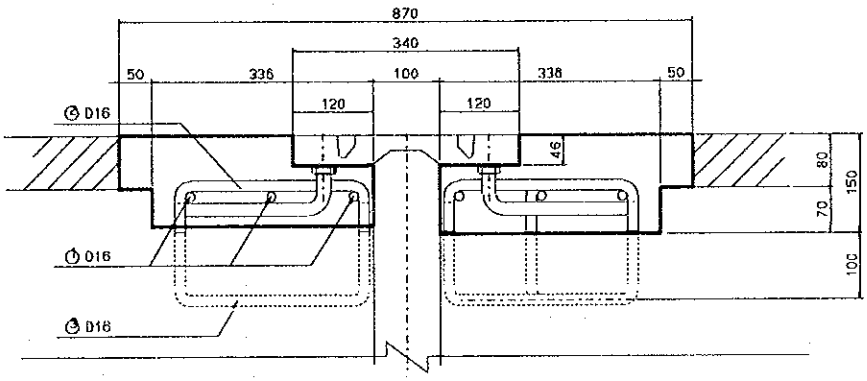
Item	Size	Number	Weight / l. m	Weight par each	Total Weight	Remarks
Plate	850 * 4.5 * 1250	1	30.026	37.533	37.5	
Angle	50 * 50 * 6 * 1050	2	4.430	4.652	9.3	
Angle	50 * 50 * 6 * 1150	2	4.430	5.095	10.2	
Angle	50 * 50 * 6 * 950	1	4.430	4.209	4.2	
Flat Bar	44 * 4.5 * 60	1	1.554	0.093	0.1	
Flat Bar	44 * 4.5 * 35	1	1.554	0.054	0.1	
Re-Bar	Dia. 32 * 16	2		0.100	0.2	
Re-Bar	Dia. 16 * 848	1		1.340	1.3	
Re-Bar	Dia. 16 * 150	1		0.250	0.3	
Re-Bar	Dia. 16 * 84	2		0.130	0.3	
Screw	Dia. 5 * 10	24		0.010	0.2	
Screw	Dia. 5 * 10	2		0.010	0.0	
Bearing	Dia. 38	6			—	
				Sub-total =	63.7	

Plate	t= 6	37.5
Angle	50*50*6	23.7
Flat Bar	t= 6	0.2
Re-Bar	Dia.32	0.2
Re-Bar	Dia.16	1.9
Screw	Dia.16×40	0.2
	計	63.7

Total 56.8 + 63.7 = 120.5 kg

9. Pavement

	Formula	Quantity
1) Asphalt Concrete Surface Course t=75mm	A = 10.750 × 2 ×(339.800 - 0.386 × 2) = 7,305.700 ㎡	7,305.7 ㎡
2) Water Proofing t=5mm	A = 10.750 × 2 ×(339.800 - 0.386 × 2) = 7,305.700 ㎡	7,305.7 ㎡



2) Road marking

Bridge Length L= 339.800 m

Side Line

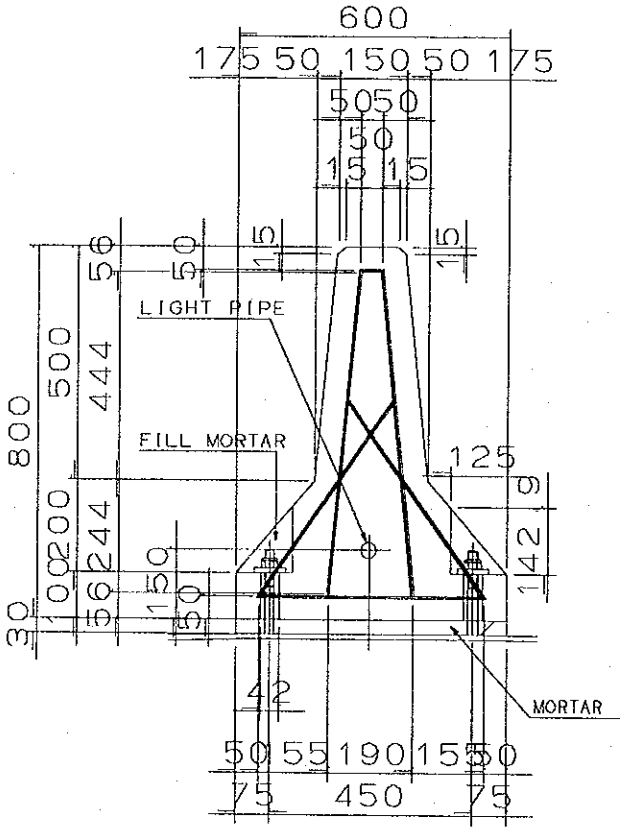
A1 = 339.800 × 0.200 × 4 = 271.840 ㎡

Center Line

A2 = 339.800 × 0.100 × 3/10 × 2 = 20.388 ㎡

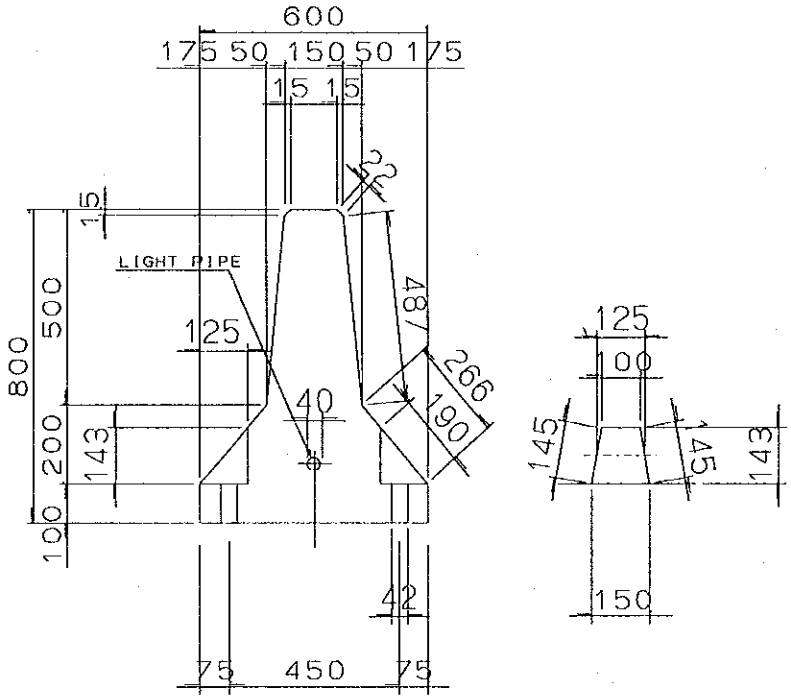
Total 271.840 + 20.388 = 292.228 ㎡ 292.2 ㎡

10. Precast central reverse

Item	Formula	Quantity
	Light Exp N= (340.000 - 0.800 × 8 - 0.870 × 2)/ 2.000 = 165.9	Nos. 165.9
1) Concrete	 Per 2.0m	
	V 1 = { 0.150 + 0.250)× 1/2 × 0.500 × 1.990 = 0.199 V 2 = { 0.250 + 0.600)× 1/2 × 0.200 × 1.990 = 0.169 V 3 = 0.100 × 0.600 × 1.990 = 0.119 V 4 = - { 0.100 + 0.150)× 1/2 × 0.125 × 0.143 × 1/2 × 10 = -0.089 V 5 = - 0.015 × 0.015 × 1/2 × 2 × 1.990 = -0.001 ΣV = 0.397 m³	0.397 m³

A1-P12

Item	Formula	Quantity
2) .Form	Per 2.0m	



A1 = { 0.100 + 0.266 + 0.487 + 0.022)× 2 × 1.990 = 3.483
A2 = { 0.150 + 0.250)× 1/2 × 0.500 × 2 = 0.200
A3 = { 0.250 + 0.600)× 1/2 × 0.200 × 2 = 0.170
A4 = 0.100 × 0.600 × 2 = 0.120
A5 = - 0.015 × 0.015 × 1/2 × 2 × 2 = -0.001
A6 = 0.125 × 0.143 × 10 = 0.179
A7 = 0.143 × 0.145 × 1/2 × 2 × 10 = 0.208
A8 = - 0.266 × 0.125 × 10 = -0.333

ΣA = 4.026 m² | 4.026 m²

3) Re-Bar

Per 2.0m

BAR MARK	SIZE (mm)	LENGTH (mm)	WEIGHT/M (kg/m)	WEIGHT /One (kg)	NO. of BARS	WEIGHT (kg)
B1	6	1460	0.222	0.324	20	6
B2	6	590	0.222	0.131	20	3
B3	6	1540	0.222	0.342	10	3
B4	6	1910	0.222	0.424	14	6
						18

18 kg

Per 2.0m

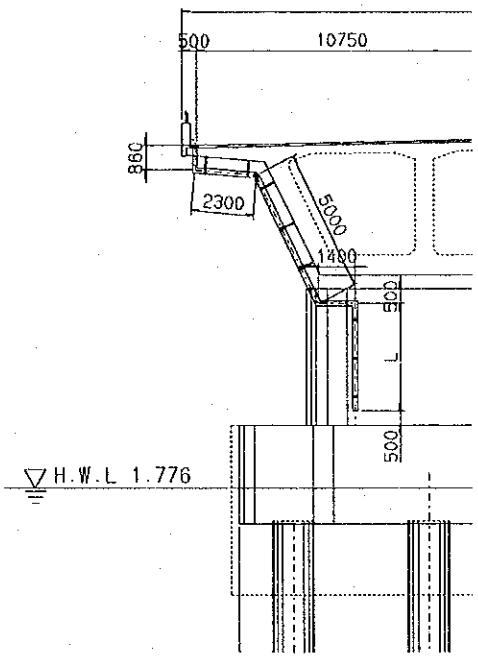
4) STUD,PL (SS400)

10-STUD Φ22*180 — 6 kg
10-PL 70*12*70 — 3 kg

Item	Formula										Quantity
5) MORTAR									Per 2.0m		
	V =	0.600	×	0.030	×	2.000			=	0.036 m³	0.036 m³
6) FILL MORTAR									Per 2.0m		
		A2 =		{ 0.150 +	0.250	)×	1/2	× 0.500	=	0.100	
		A3 =		{ 0.250 +	0.600	)×	1/2	× 0.200	=	0.085	
		A4 =		0.100	×	0.600			=	0.060	
		A5 =	-	0.015	×	0.015	× 1/2	× 2	=	-0.001	
								Σ A	=	0.244 m²	
	V 1 =	0.244	×	0.010					=	0.002 m³	
	V 2 =	0.125	×	0.143	×	1/2	× 0.125	× 10	=	0.011 m³	
								ΣV	=	0.013 m³	0.013 m³

11. Drainage Facilities

Item	Formula	Quantity
	Pot 300*250 (Drain Box, Screen and Deck Drain)	each
	N =(6 + 4 + 3)× 2 × 2 =	52
	Pipe Φ150	
	N =(5 + 3 + 2)× 2 × 2 = 40	
	L =(0.860 + 2.300)× 40 =	126.4 m
	Pipe Φ200	
	L1 =(0.960 + 2.300 + 5.000 + 1.400)× 12 = 115.9 m	
	L2 =(67.000 + 37.000 + 25.000)× 4 = 516.0 m	
	L3 = 23.9 × 2 = 47.8 m	
	Total 679.7 m	679.7 m



	L 2
P36	4.6
P37	3.2
P38	3.8
P39	3.8
P40	3.2
P41	5.3
Total	23.9
Av	4.0

Item	Formula	Quantity

Hunger . 150

each

N = 40 × 2 = 80 | 80

per One

BAR MARK	SIZE (mm)	WEIGHT /One (kg)	NO. of BARS	WEIGHT (kg)
PL	100*6*399	0.188	2	0.376
PL	100*6*363	0.171	1	0.171
PL	100*8*70	0.044	1	0.044
				0.591

0.591 kg

Hunger . 200

N1 =(34 + 19 + 13)× 2 = 132

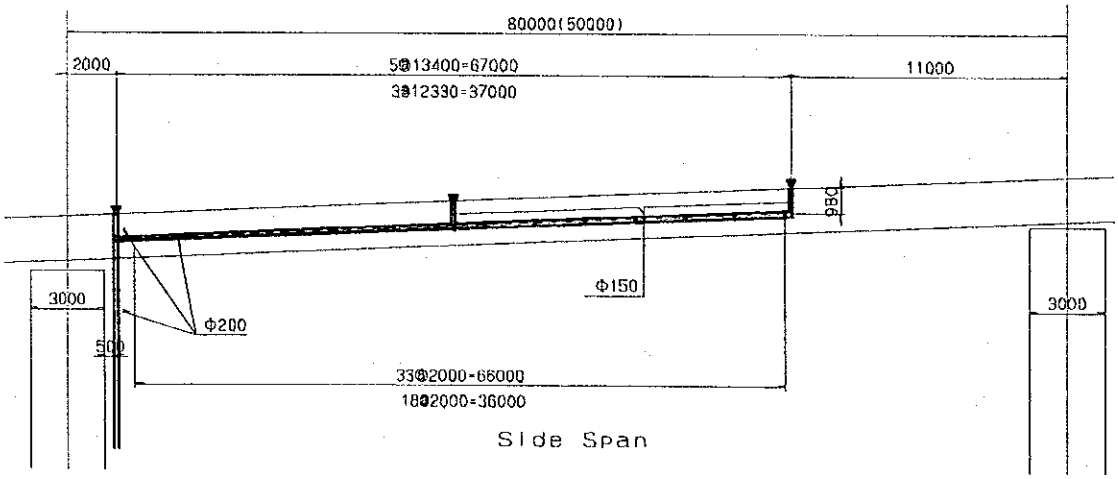
N2 =(2 + 4 + 3)× 12 = 108

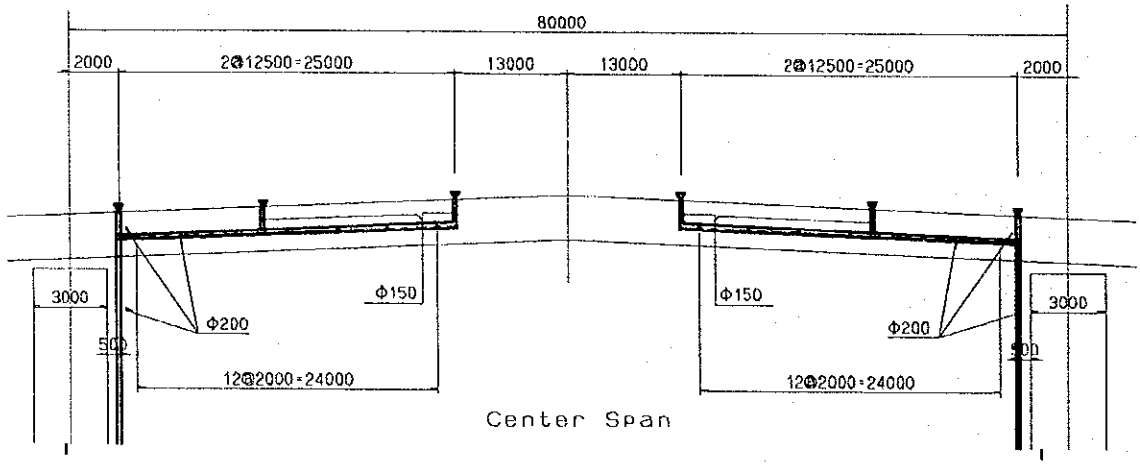
Total 240 | 240 each

per One

BAR MARK	SIZE (mm)	WEIGHT /One (kg)	NO. of BARS	WEIGHT (kg)
PL	100*6*481	0.227	2	0.454
PL	100*6*363	0.171	1	0.171
PL	100*8*70	0.044	1	0.044
				0.669

0.669 kg





12. Temporary Works

Item	Formula	Quantity
1) Suspended Scaffolding		
	At Pier Head	
	A1 =(23.100 + 4.000)×(12.000 + 4.000) = 433.6 m²	
	A2 =-(14.000 + 1.000)×(3.000 + 1.000) = -60 m²	
	A = 373.6 m²	
	W1 = 373.600 × 250.0 (kg/m2) × 4 = 373,600 kg	
	At Mid Span	
	W2 =(5.000 + 1.000)× 23.100 × 150.000 (kg/m2) × 3 = 62,370 kg	
	At Side Support Part	
	W3 =(12.400 + 0.500)× 23.100 × 150.000 (kg/m2) × 2 = 89,397 kg	
	W = 525,367 kg	525,367 kg
		525.4 ton
2) Temporary Fixation Works		
	Concrete	
	V = 12.000 × 0.600 ×(0.500 + 0.300) × 0.600 × 4 = 13.824 m³	13.824 m³
	PC-Ber Φ32	
	L = 4.000 + 0.500 + 4.700 + 0.300 = 9.500 m3	
	N = 32.000	
	W = 9.500 × 32.000 × 6.310 kg/m × 4 = 7,673 kg	7,673 kg
		7.7 ton