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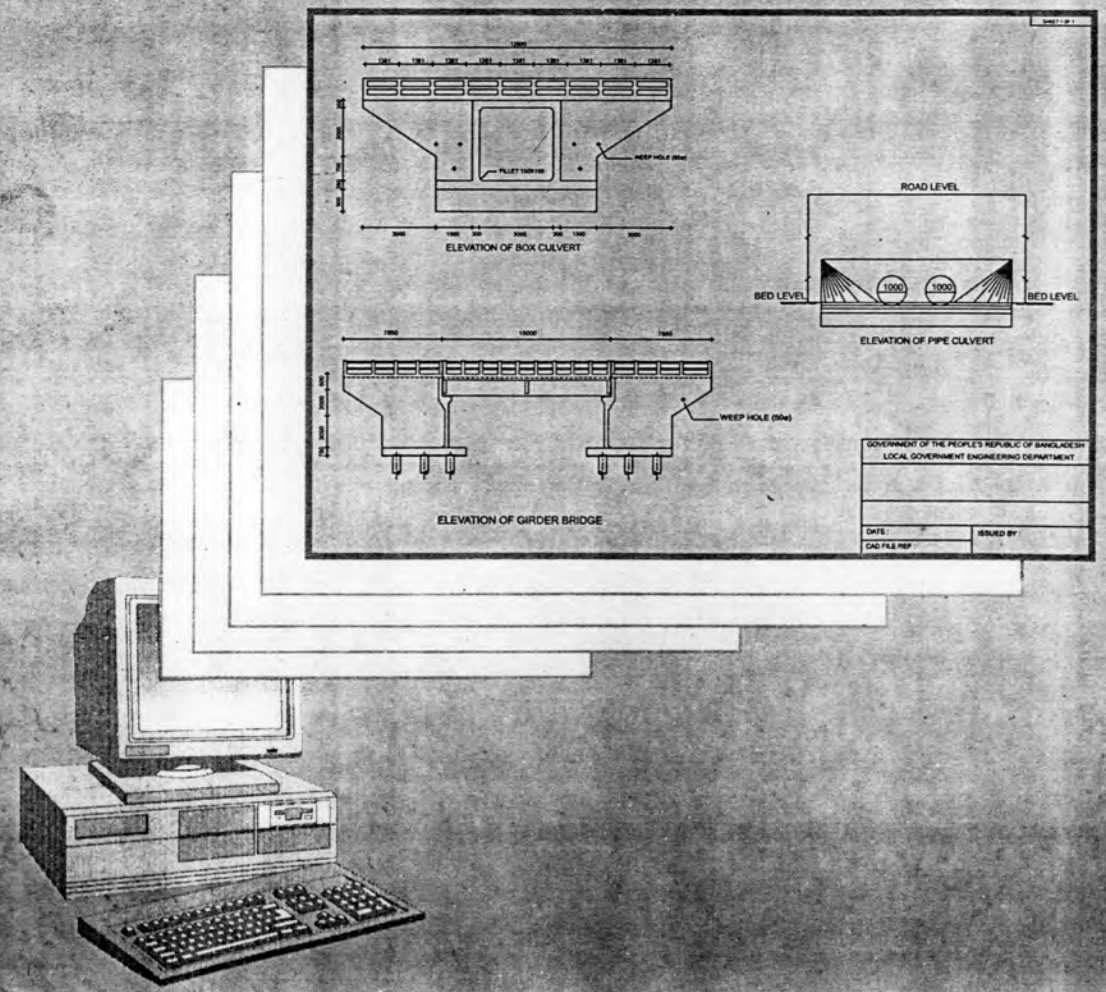
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF LOCAL GOVERNMENT, RURAL DEVELOPMENT & COOPERATIVES

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

ROAD STRUCTURES MANUAL

PART B: STANDARD DESIGNS



VOLUME - 3

FULL DEPTH ABUTMENT
STUB ABUTMENT

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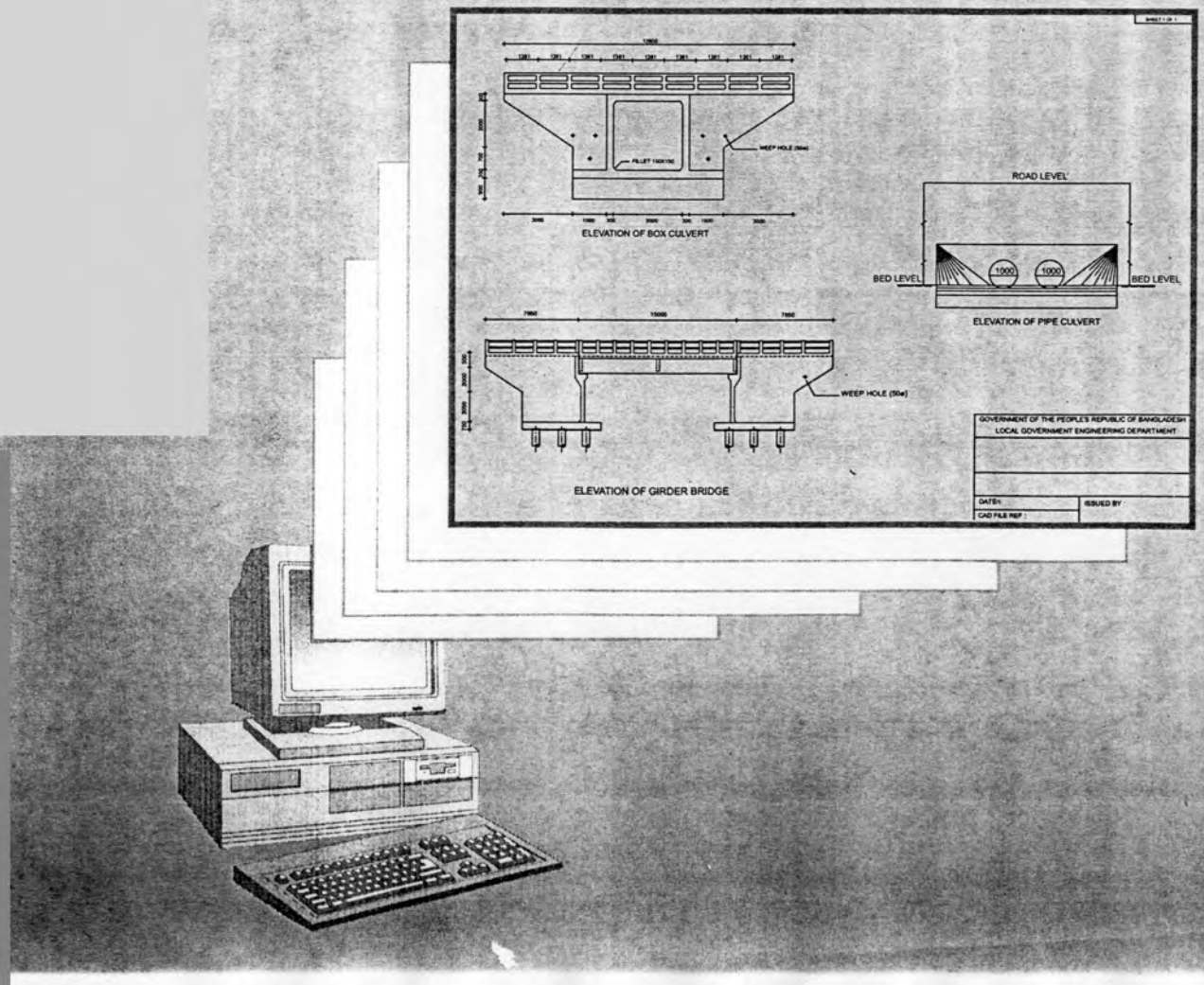

FULL DEPTH ABUTMENT

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Sl. No.	Reference Code	Structure Description	Page No.
41	ABUT\R1210561	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 5.6m	FA-169
42	ABUT\R1210601	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 6.0m	FA-172
43	ABUT\R1210631	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 6.3m	FA-175
44	ABUT\R1210661	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 6.6m	FA-178
45	ABUT\R1210701	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 7.0m	FA-181
46	ABUT\R1210731	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 7.3m	FA-184
47	ABUT\R1210761	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 7.6m	FA-187
48	ABUT\R1210801	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 8.0m	FA-190
49	ABUT\R0120301	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 3.0m	FA-193
50	ABUT\R0120331	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 3.3m	FA-196
51	ABUT\R0120361	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 3.6m	FA-199
52	ABUT\R0120401	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 4.0m	FA-202
53	ABUT\R0120431	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 4.3m	FA-205
54	ABUT\R0120461	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 4.6m	FA-208
55	ABUT\R0120501	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 5.0m	FA-211
56	ABUT\R0120531	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 5.3m	FA-214
57	ABUT\R0120561	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 5.6m	FA-217
58	ABUT\R0120601	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 6.0m	FA-220
59	ABUT\R0120631	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 6.3m	FA-223
60	ABUT\R0120661	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 6.6m	FA-226
61	ABUT\R0120701	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 7.0m	FA-229
62	ABUT\R0120731	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 7.3m	FA-232
63	ABUT\R0120761	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 7.6m	FA-235
64	ABUT\R0120801	Abutment Full Depth; Without Footpath; CW 2.44m; Range 2; H 8.0m	FA-238
65	ABUT\R0220301	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 3.0m	FA-241
66	ABUT\R0220331	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 3.3m	FA-244
67	ABUT\R0220361	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 3.6m	FA-247
68	ABUT\R0220401	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 4.0m	FA-250
69	ABUT\R0220431	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 4.3m	FA-253
70	ABUT\R0220461	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 4.6m	FA-256
71	ABUT\R0220501	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 5.0m	FA-259
72	ABUT\R0220531	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 5.3m	FA-262
73	ABUT\R0220561	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 5.6m	FA-265
74	ABUT\R0220601	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 6.0m	FA-268
75	ABUT\R0220631	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 6.3m	FA-271
76	ABUT\R0220661	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 6.6m	FA-274
77	ABUT\R0220701	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 7.0m	FA-277
78	ABUT\R0220731	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 7.3m	FA-280
79	ABUT\R0220761	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 7.6m	FA-283
80	ABUT\R0220801	Abutment Full Depth; Without Footpath; CW 3.66m; Range 2; H 8.0m	FA-286
81	ABUT\R1220301	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 3.0m	FA-289
82	ABUT\R1220331	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 3.3m	FA-292
83	ABUT\R0220361	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 3.6m	FA-295
84	ABUT\R1220401	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 4.0m	FA-298
85	ABUT\R1220431	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 4.3m	FA-301
86	ABUT\R1220461	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 4.6m	FA-304
87	ABUT\R1220501	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 5.0m	FA-307
88	ABUT\R1220531	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 5.3m	FA-310
89	ABUT\R1220561	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 5.6m	FA-313
90	ABUT\R1220601	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 6.0m	FA-316
91	ABUT\R1220631	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 6.3m	FA-319
92	ABUT\R1220661	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 6.6m	FA-322
93	ABUT\R1220701	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 7.0m	FA-325
94	ABUT\R1220731	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 7.3m	FA-328
95	ABUT\R1220761	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 7.6m	FA-331
96	ABUT\R1220801	Abutment Full Depth; With Footpath; CW 3.66m; Range 2; H 8.0m	FA-334

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SELECTION OF STANDARD DESIGN

FULL DEPTH ABUTMENTS :

Introduction

Standard design of brick and R.C.C. Abutments of various height are presented in the Manual. Height of brick abutment ranges 3.0m to 6.0m with an increment of 0.3m.Three types of R.C.C abutments, open abutment, full depth abutment and stub abutments have been provided in the Manual. Open and full depth abutment with carriageway width (cw) 3.66m with footpath and of height ranges from 3.0m to 8.0m and cw of 3.66m and 2.44m without footpath and of height ranges from 3.0m to 8.0m have been provided in the Manual. Stub abutments have been designed for a low height ranging from 2.0m to 3.0m with and without footpaths.

Procedure of Selection

Selection of an abutment along with its type (whether brick, open, full depth or stub) and height will be determined by following the flow chart given in Chapter Part A of the Manual. Standard designs with detailed drawing of the required type of structure along with bar schedule are available in this section. Brick abutment will be provided in case of open foundation only. R.C.C abutments with open foundation are also available in the manual. The height ranges from 3.0m to 6.0m with an increment of 0.3m.

Selection of a suitable structure may also be done with the assistance of structure WORKS, a computer software. See Part C of the Road Structure Manual for more information.

Quantity Estimate

The estimates of quantities involving different items of works are presented in the form of a Table in the following pages. Estimate for a particular design can be obtained from these tables.

The items of works whose quantities depend on the particular site conditions are included in the table, but their quantities are kept blank. Those are to be determined after actual field measurements.

In preparing the bill of quantities the full description of the related items should be taken from Chapter 16-Bill of Quantities.

List of all full depth abutment are summarized below :

Structural List of Full Depth Abutment

Sl. No.	Reference Code	Structure Description	Page No.
1	ABUT\R0110301	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 3.0m	FA-1
2	ABUT\R0110331	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 3.3m	FA-5
3	ABUT\R0110361	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 3.6m	FA-9
4	ABUT\R0110401	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 4.0m	FA-13
5	ABUT\R0110431	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 4.3m	FA-17
6	ABUT\R0110461	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 4.6m	FA-21
7	ABUT\R0110501	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 5.0m	FA-25
8	ABUT\R0110531	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 5.3m	FA-29
9	ABUT\R0110561	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 5.6m	FA-33
10	ABUT\R0110601	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 6.0m	FA-37
11	ABUT\R0110631	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 6.3m	FA-41
12	ABUT\R0110661	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 6.6m	FA-45
13	ABUT\R0110701	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 7.0m	FA-49
14	ABUT\R0110731	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 7.3m	FA-53
15	ABUT\R0110761	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 7.6m	FA-57
16	ABUT\R0110801	Abutment Full Depth; Without Footpath; CW 2.44m; Range 1; H 8.0m	FA-61
17	ABUT\R0210301	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 3.0m	FA-65
18	ABUT\R0210331	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 3.3m	FA-70
19	ABUT\R0210361	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 3.6m	FA-75
20	ABUT\R0210401	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 4.0m	FA-80
21	ABUT\R0210431	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 4.3m	FA-85
22	ABUT\R0210461	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 4.6m	FA-90
23	ABUT\R0210501	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 5.0m	FA-95
24	ABUT\R0210531	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 5.3m	FA-100
25	ABUT\R0210561	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 5.6m	FA-105
26	ABUT\R0210601	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 6.0m	FA-110
27	ABUT\R0210631	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 6.3m	FA-115
28	ABUT\R0210661	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 6.6m	FA-120
29	ABUT\R0210701	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 7.0m	FA-125
30	ABUT\R0210731	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 7.3m	FA-130
31	ABUT\R0210761	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 7.6m	FA-135
32	ABUT\R0210801	Abutment Full Depth; Without Footpath; CW 3.66m; Range 1; H 8.0m	FA-140
33	ABUT\R1210301	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 3.0m	FA-145
34	ABUT\R1210331	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 3.3m	FA-148
35	ABUT\R1210361	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 3.6m	FA-151
36	ABUT\R1210401	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 4.0m	FA-154
37	ABUT\R1210431	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 4.3m	FA-157
38	ABUT\R1210461	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 4.6m	FA-160
39	ABUT\R1210501	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 5.0m	FA-163
40	ABUT\R1210531	Abutment Full Depth; With Footpath; CW 3.66m; Range 1; H 5.3m	FA-166

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FULL DEPTH ABUTMENT
Estimate Of QuantitiesFor R.C. Abutment On Pre-Cast Pile
E.Q. Table No. 6.c

Abutment Height (m)				4						4.3						4.6					
Foot-Path				Yes		No				Yes		No				Yes		No			
Carriage way Width (m)				3.66				2.44		3.66				2.44		3.66				2.44	
Type of Loading				H20/ H15				H10		H20/ H15				H10		H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit																		
1	1	Mobilization	L. S.																		
2	2	Engineer's office	L. S.																		
3	3/46/47	Diversion	Cu.m/L-m/L-m																		
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m																		
5	6	Earth work in excavation	Cu-m																		
6	7	Bailing out water	L. S.																		
7	10	Brick on edge pavement	Sq-m																		
8	11	Cement concrete (1:3:6)	Cu-m	2.33	2.33	1.99	2.01	1.48	1.49	2.98	3.02	2.68	2.59	1.74	1.92	3.64	3.70	2.51	2.88	1.84	1.92
9	15	a) Reinforcement																			
		i) Pile cap, abutment & railing	Kg	5490	5498	4933	4936	4242	4208	6609	6653	6119	5978	5000	5162	7627	7696	6407	6773	5535	5580
		ii) Pre-cast pile	Kg	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)
		Total of (i) & (ii)	Kg																		
10	16	Metal shoes	Each	20	20	16	16	12	12	24	24	24	24	18	18	30	30	24	24	12	18
11	17	Mobilization for pre-cast piles	L. S.																		
12	18	Driving pre-cast pile																			
		b) Size 350mm x 350mm																			
		i) 0 to 5m depth	L-m	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)
		ii) 5m to above	L-m	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)
13	20	Breaking the head of pile	Cu-m	1.23	1.23	0.98	0.98	0.74	0.74	1.47	1.47	1.47	1.47	1.10	1.10	1.84	1.84	1.47	1.47	0.74	1.10
14	21	Earthwork in temporary cofferdam	Nos.																		
15	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each																		
16	24	R.C.C work (1:2:4)																			
		g) Pile cap, curb, sidewalk, foot-path	Cu-m	24.80	24.80	20.99	21.18	15.84	15.96	31.33	31.76	27.98	27.05	18.59	20.41	38.08	38.73	26.42	30.14	19.68	20.53
		h) Wing wall & abutment	Cu-m	23.31	23.03	21.40	21.12	18.35	18.10	27.43	27.14	25.64	25.10	21.72	22.62	31.32	31.03	28.23	28.41	24.72	24.49
		m) Railing & Post	Cu-m	1.08	1.08	0.98	0.98	0.98	0.98	1.24	1.24	1.11	1.11	1.10	1.11	1.32	1.32	1.11	1.19	1.19	1.19
17	25	R.C.C work (1:1.5:3) for pre-cast pile	Cu-m	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)
18	27	a) Providing weep hole	L-m	9.80	9.80	11.20	9.10	7.70	6.30	14.70	13.30	14.70	11.90	11.90	10.50	17.60	16.10	13.30	13.30	11.90	10.50
19	30	Back filling	Cu-m																		
20	31	Earth work in approaches of bridge	Cu-m																		
21	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.52	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08
22	35	Placing of gunny bagged rip-rap filled	Cu-m																		
23	36	Turfing on embankment	Sq-m																		
24	37	Hanging of sign board	L. S.																		
25	38	Name plate	Each																		
26	42	Marking the post & rail	Sq-m																		
27	48.	Demobilization.	L.S																		
28	51.	Filter material behind the weep holes	Each	28	28	32	26	22	18	42	38	42	34	34	30	50	42	38	38	34	30
Remarks		N = No. of pile in 2 - abutment	No	20	20	16	16	12	12	24	24	24	24	18	18	30	30	24	24	12	18

Lp = Basic length of pile

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Equ. (1) For It. no. 15 (a) (ii) Reinforcement = { 15.42 X (Lp + 0.460) + 11.92 x (0.7Lp<=7.210) + 0.27(10 + 8 x Lp) + 0.20 x (3.33Lp + 10) + 5.18 } kg

Equ. (2) For It. no. 18 (b) (i) Driving pre - cast pile = { 5.0 x N } m

Equ. (2.1) For It. no. 18 (b) (ii) Driving pre cast pile = { (Lp - 3.99) x N } m

Equ .(3) For It. no. 25 R C C work of pile = { 0.1225 x (Lp + 1.01) x N } m^3.

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FULL DEPTH ABUTMENT

Estimate Of QuantitiesFor R.C. Abutment On Pre-Cast Pile

E .Q . Table No. 6.c

Abutment Height (m)				3						3.3						3.6					
Foot-Path				Yes		No				Yes		No				Yes		No			
Carriage way Width (m)				3.66				2.44		3.66				2.44		3.66				2.44	
Type of Loading				H20/ H15				H10		H20/ H15				H10		H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit																		
1	1	Mobilization	L. S.																		
2	2	Engineer's office	L. S.																		
3	3/46/47	Diversion	Cu.m/L-m/L-m																		
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m																		
5	6	Earth work in excavation	Cu-m																		
6	7	Bailing out water	Cu-m																		
7	10	Brick on edge pavement	Sq-m																		
8	11	Cement concrete (1:3:6)	Cu-m	2.16	2.25	1.86	1.99	1.40	1.44	2.16	2.16	1.99	1.88	1.40	1.42	2.33	2.46	1.92	1.92	1.56	1.43
9	15	a) Reinforcement																			
		i) Pile cap, abutment & railing	Kg	4029	4068	3558	3664	3010	2997	4333	4302	3943	3874	3645	3260	4858	4864	4217	4186	3695	3542
		ii) Pre-cast pile	Kg	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)
		Total of (i) & (ii)	Kg																		
10	16	Metal shoes	Each	16	12	12	12	8	8	16	16	12	12	8	8	16	16	8	16	12	12
11	17	Mobilization for pre-cast piles	L. S.																		
12	18	Driving pre-cast pile																			
		b) Size 350mm x 350mm																			
		i) 0 to 5m depth	L-m	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)
		ii) 5m to above	L-m	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)
13	20	Breaking the head of pile	Cu-m	0.98	0.74	0.74	0.74	0.49	0.49	0.98	0.98	0.74	0.74	0.49	0.49	0.98	0.98	0.49	0.98	0.74	0.74
14	21	Earthwork in temporary cofferdam	Nos.																		
15	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each																		
16	24	R.C.C work (1:2:4)																			
		g) Pile cap. curb, sidewalk, foot-path	Cu-m	22.72	23.57	19.32	20.62	14.74	15.16	22.83	22.83	20.30	19.62	14.85	14.99	24.65	25.93	20.10	20.10	16.51	15.25
		h) Wing wall & abutment	Cu-m	13.81	13.80	12.44	12.46	10.31	10.18	15.95	15.68	14.52	14.19	12.12	11.91	19.84	19.72	17.88	17.60	15.61	14.88
		m) Railing & Post	Cu-m	0.74	0.74	0.67	0.67	0.64	0.64	0.90	0.90	0.80	0.80	0.77	0.80	0.98	0.90	0.88	0.88	0.85	0.88
17	25	R.C.C work (1:1.5:3) for pre-cast pile	Cu-m	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)
18	27	a) Providing weep hole	L-m	5.20	6.50	6.50	6.50	5.20	5.90	6.50	6.50	6.50	6.50	5.20	4.60	7.00	7.00	7.00	4.90	5.60	4.20
19	30	Back filling	Cu-m																		
20	31	Earth work in approaches of bridge	Cu-m																		
21	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.52	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08
22	35	Placing of gunny bagged rip-rap filled	Cu-m																		
23	36	Turfing on embankment	Sq-m																		
24	37	Hanging of sign board	L. S.																		
25	38	Name plate	Each																		
26	42	Marking the post & rail	Sq-m																		
27	48.	Demobilization.	L.S																		
28	51.	Filter material behind the weep holes	Each	16	20	20	20	16	18	20	20	20	20	16	14	20	20	20	14	16	12
Remarks		N = No. of pile in 2 - abutment	No	16	12	12	12	8	8	16	16	12	12	8	8	16	16	8	16	12	12

Lp = Basic length of pile

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Equ. (1) For It. no. 15 (a) (ii) Reinforcement = {15.42 X (Lp + 0.460) + 11.92 x (0.7Lp<=7.210) + 0.27(10 + 8 x Lp) + 0.20 x (3.33Lp + 10) + 5.18 } kg

Equ. (2) For It. no. 18 (b) (i) Driving pre - cast pile = {5.0 x N} m

Equ. (2.1) For It. no. 18 (b) (ii) Driving pre cast pile = { (Lp - 3.99) x N } m

Equ .(3) For It. no. 25 R C C work of pile = { 0.1225 x (Lp + 1.01) x N } m^3.

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FULL DEPTH ABUTMENT
Estimate Of QuantitiesFor R.C. Abutment On Pre-Cast Pile
E .Q . Table No. 6.c

Abutment Height (m)				5						5.3						5.6					
Foot-Path				Yes		No				Yes		No				Yes		No			
Carriage way Width (m)				3.66				2.44		3.66				2.44		3.66				2.44	
Type of Loading				H20/ H15				H10		H20/ H15				H10		H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit																		
1	1	Mobilization	L. S.																		
2	2	Engineer's office	L. S.																		
3	3/46/47	Diversion	Cu.m/L-m/L-m																		
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m																		
5	6	Earth work in excavation	Cu-m																		
6	7	Bailing out water	L. S.																		
7	10	Brick on edge pavement	Sq-m																		
8	11	Cement concrete (1:3:6)	Cu-m	3.73	4.00	3.22	3.28	2.40	2.45	3.92	4.05	3.39	3.48	2.52	2.57	4.22	4.33	3.63	3.81	2.68	2.82
9	15	a) Reinforcement																			
		i) Pile cap, abutment & railing	Kg	8869	9286	8182	8184	7076	7145	9803	9879	9163	9163	7900	7944	11530	11285	10669	10572	9460	9571
		ii) Pre-cast pile	Kg	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)
		Total of (i) & (ii)	Kg																		
10	16	Metal shoes	Each	32	32	32	32	18	18	40	40	32	32	24	24	40	40	32	32	24	24
11	17	Mobilization for pre-cast piles	L. S.																		
12	18	Driving pre-cast pile																			
		b) Size 350mm x 350mm																			
		i) 0 to 5m depth	L-m	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)
		ii) 5m to above	L-m	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)
13	20	Breaking the head of pile	Cu-m	1.96	1.96	1.96	1.96	1.10	1.10	2.45	2.45	1.96	1.96	1.47	1.47	2.45	2.45	1.96	1.96	1.47	1.47
14	21	Earthwork in temporary cofferdam	Nos.																		
15	23	Load test (a) Up to 60 ton	Each																		
		(b) Above 60 ton	Each																		
16	24	R.C.C work (1:2:4)																			
		g) Pile cap, curb, sidewalk, foot-path	Cu-m	39.09	41.87	33.64	34.23	25.44	26.00	41.13	42.41	35.42	36.35	26.82	27.24	44.24	45.25	37.95	39.78	28.47	29.87
		h) Wing wall & abutment	Cu-m	38.46	39.40	35.94	35.64	31.37	30.97	46.23	45.90	42.59	42.26	38.29	38.02	55.10	53.11	51.08	49.63	46.25	45.97
		m) Railing & Post	Cu-m	1.42	1.43	1.30	1.30	1.30	1.30	1.58	1.58	1.43	1.43	1.43	1.43	1.66	1.62	1.51	1.48	1.51	1.51
17	25	R.C.C work (1:1.5:3) for pre-cast pile	Cu-m	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)
18	27	a) Providing weep hole	L-m	18.80	18.80	18.80	18.80	17.00	19.30	29.60	29.60	30.70	29.10	24.60	17.40	34.90	34.90	34.30	34.30	29.50	21.80
19	30	Back filling	Cu-m																		
20	31	Earth work in approaches of bridge	Cu-m																		
21	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08
22	35	Placing of gunny hagged rip-rap filled	Cu-m																		
23	36	Turfing on embankment	Sq-m																		
24	37	Hanging of sign board	L. S.																		
25	38	Name plate	Each																		
26	42	Marking the post & rail	Sq-m																		
27	48.	Demobilization.	L.S																		
28	51.	Filter material behind the weep holes	Each	50	50	74	50	34	52	74	74	78	74	82	44	82	82	82	82	70	52
Remarks		N = No. of pile in 2 - abutment	No	32	32	32	32	18	18	40	40	32	32	24	24	40	40	32	32	24	24

Lp = Basic length of pile

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Equ. (1) For It. no. 15 (a) (ii) Reinforcement = {15.42 X (Lp + 0.460) + 11.92 x (0.7Lp<=7.210) + 0.27(10 + 8 x Lp) + 0.20 x (3.33Lp + 10) + 5.18 } kg

Equ. (2) For It. no. 18 (b) (i) Driving pre - cast pile = {5.0 x N} m

Equ. (2.1) For It. no. 18 (b) (ii) Driving pre cast pile = { (Lp - 3.99) x N } m

Equ .(3) For It. no. 25 R C C work of pile = { 0.1225 x (Lp + 1.01) x N } m^3.

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FULL DEPTH ABUTMENT
Estimate Of QuantitiesFor R.C. Abutment On Pre-Cast Pile
E .Q . Table No. 6.c

Abutment Height (m)				6					
Foot-Path				Yes		No			
Carriage way Width (m)				3.66				2.44	
Type of Loading				H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit						
1	1	Mobilization	L. S.						
2	2	Engineer's office	L. S.						
3	3/46/47	Diversion	Cu.m/L-m/L-m						
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m						
5	6	Earth work in excavation	Cu-m						
6	7	Bailing out water	L. S.						
7	10	Brick on edge pavement	Sq-m						
8	11	Cement concrete (1:3:6)	Cu-m	5.03	4.86	4.37	4.45	3.02	3.31
9	15	a) Reinforcement							
		i) Pile cap, abutment & railing	Kg	14032	13915	13282	13179	11782	11890
		ii) Pre-cast pile	Kg	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)	Equ. (1)
		Total of (i) & (ii)	Kg						
10	16	Metal shoes	Each	40	40	40	40	30	30
11	17	Mobilization for pre-cast piles	L. S.						
12	18	Driving pre-cast pile							
		b) Size 350mm x 350mm							
		i) 0 to 5m depth	L-m	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)	Equ. (2)
		ii) 5m to above	L-m	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)	Equ. (2.1)
13	20	Breaking the head of pile	Cu-m	2.45	2.45	2.45	2.45	1.84	1.84
14	21	Earthwork in temporary cofferdam	Nos.						
15	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1
		(b) Above 60 ton	Each						
16	24	R.C.C work (1:2:4)							
		g) Pile cap, curb, sidewalk, foot-path	Cu-m	52.52	50.78	45.54	46.29	31.99	34.93
		h) Wing wall & abutment	Cu-m	62.62	61.48	58.73	57.16	50.69	51.15
		m) Railing & Post	Cu-m	1.77	1.75	1.61	1.61	1.61	1.61
17	25	R.C.C work (1:1.5:3) for pre-cast pile	Cu-m	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)	Equ. (3)
18	27	a) Providing weep hole	L-m	35.10	27.60	31.60	30.40	31.40	33.00
19	30	Back filling	Cu-m						
20	31	Earth work in approaches of bridge	Cu-m						
21	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08
22	35	Placing of gunny bagged rip-rap filled	Cu-m						
23	36	Turfing on embankment	Sq-m						
24	37	Hanging of sign board	L. S.						
25	38	Name plate	Each						
26	42	Marking the post & rail	Sq-m						
27	48.	Demobilization.	L.S						
28	51.	Filter material behind the weep holes	Each	94	72	88	84	86	92
Remarks		N = No. of pile in 2 - abutment	No	40	40	40	40	30	30

Lp = Basic length of pile

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Equ. (1) For It. no. 15 (a) (ii) Reinforcement = { 15.42 X (Lp + 0.460) + 11.92 x (0.7Lp<=7.210) + 0.27(10 + 8 x Lp) + 0.20 x (3.33Lp + 10) + 5.18 } kg

Equ. (2) For It. no. 18 (b) (i) Driving pre - cast pile = { 5.0 x N } m

Equ. (2.1) For It. no. 18 (b) (ii) Driving pre cast pile = { (Lp - 3.99) x N } m

Equ .(3) For It. no. 25 R C C work of pile = { 0.1225 x (Lp + 1.01) x N } m^3.

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FULL DEPTH ABUTMENT
Estimate Of Quantities For R.C Abutment On Cast-In-Situ Pile
E .Q . Table No. 6.6

Abutment Height (m)				3						3.3						3.6					
Foot-Path				Yes		No				Yes		No				Yes		No			
Carriage way Width (m)				3.66				2.44		3.66				2.44		3.66				2.44	
Type of Loading				H20/ H15				H10		H20/ H15				H10		H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit																		
1	1	Mobilization	L. S.																		
2	2	Engineer's office	L. S.																		
3	3/46/47	Diversion	Cu.m/L-m/L-m																		
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m																		
5	6	Earth work in excavation	Cu-m																		
6	7	Bailing out water	Cu-m																		
7	10	Brick on edge pavement	Cu-m																		
8	11	Cement concrete (1:3:6)	Cu-m	2.16	2.25	1.86	1.99	1.40	1.44	2.16	2.16	1.99	1.88	1.40	1.42	2.33	2.46	1.92	1.92	1.56	1.43
9	15	a) Reinforcement																			
		(i) Pile cap, abutment & railing	Kg	4029	4068	3558	3664	3010	2997	4333	4302	3943	3874	3645	3260	4858	4864	4217	4186	3695	3542
		(ii) Cast-in-situ pile	Kg	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)
		Total of (i) & (ii)	Kg	4029	4068	3558	3664	3010	2997	4333	4302	3943	3874	3645	3260	4858	4864	4217	4186	3695	3542
10	19	Boring and casting																			
		a) Boring																			
		(i) 600mm dia/ (ii) 500 mm dia	L-m	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)
		b) Concreting																			
		(i) 600mm dia/ (ii) 500 mm dia	Cu-m	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)
11	20	Breaking the head of pile	Cu-m	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
12	21	Earthwork in temporary cofferdam	Nos.																		
13	22	Supplying steel pipes																			
		(i) 600mm dia/ (ii) 500mm dia	L-m																		
14	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each																		
15	24	R.C.C workb (1:2:4)																			
		g) Pile cap, curb, side walk, foot-path	Cu-m	22.72	23.57	19.32	20.62	14.74	15.16	22.83	22.83	20.30	19.62	14.85	14.99	24.65	25.93	20.10	20.10	16.51	15.25
		h) Wing wall & abutment	Cu-m	13.81	13.80	12.44	12.46	10.31	10.18	15.95	15.68	14.52	14.19	12.12	11.91	19.84	19.72	17.88	17.60	15.61	14.88
		m) Railing & post	Cu-m	0.74	0.74	0.67	0.67	0.64	0.64	0.90	0.90	0.80	0.80	0.77	0.80	0.98	0.90	0.88	0.88	0.85	0.88
16	27	a) Providing weep hole	L-m	5.20	6.50	6.50	6.50	5.20	5.90	6.50	6.50	6.50	6.50	5.20	4.60	7.00	7.00	7.00	4.90	5.60	4.20
17	30	Back filling of abutment	Cu-m																		
18	31	Earth work in approaches of bridge	Cu-m																		
19	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08
20	34	Welding (a) spairal																			
		(i) 600mm dia/ (ii) 500 mm dia	Each spot	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)
		(b) Main reinforcement																			
		(i) 600 mm dia/ (ii) 500 mm dia	Each point	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168	168
21	35	Placing of gunny bagged rip-rap filled	Cu-m																		
22	36	Turfing on embankment	Sq-m																		
23	37	Hanging of sign board	L. S.																		
24	38	Name plate	Each																		
25	42	Marking the post & rail	Sq-m																		
26	48	Demobilization.	L.S																		
27	51	Filter material behind the weep holes	Each	16	20	20	20	16	18	20	20	20	20	16	14	20	20	20	14	16	12
Remarks		N = No. of pile in 2 - abutment	No	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Lp = Basic length of pile

L = 0.7 Lp <= 8.200 m

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Eq. (1) For It. no. 15 (a) (ii) Reinforcement = { 54.00 x L + 11.05 x (Lp - L + 1.200) + 4.54 x (Lp - 0.075)} kg . When dia. of pile = 500 mm.

Eq. (2) For It. no. 19 (a) (ii) Boring of pile = { (Lp + 0.600) x N } m

Eq. (3) For It. no. 19 (b) (ii) Concreting of pile = { 0.197 x (Lp + 0.600) x N } m^3 . When dia. of pile = 500 mm

Eq. (4) For It. no. 34 (a) (ii) Welding = { 7x (L - 0.600)/0.150 + 4.0 x (Lp - L+ 0.600)/0.150} Nos.

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FULL DEPTH ABUTMENT
Estimate Of Quantities For R.C Abutment On Cast-In-Situ Pile
E .Q . Table No. 6.d

Abutment Height (m)				4						4.3						4.6					
Foot-Path				Yes		No				Yes		No				Yes		No			
Carriage way Width (m)				3.66				2.44		3.66				2.44		3.66				2.44	
Type of Loading				H20/ H15				H10		H20/ H15				H10		H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit																		
1	1	Mobilization	L. S.																		
2	2	Engineer's office	L. S.																		
3	3/46/47	Diversion	Cu.m/L-m/L-m																		
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m																		
5	6	Earth work in excavation	Cu-m																		
6	7	Bailing out water	Cu-m																		
7	10	Brick on edge pavement	Cu-m																		
8	11	Cement concrete (1:3:6)	Cu-m	2.33	2.33	1.99	2.01	1.48	1.49	2.98	3.02	2.68	2.59	1.74	1.92	3.64	3.70	2.51	2.88	1.84	1.92
9	15	a) Reinforcement																			
		(i) Pile cap, abutment & railing	Kg	5490	5498	4933	4936	4242	4208	6609	6653	6119	5978	5000	5162	7627	7696	6407	6773	5535	5580
		(ii) Cast-in-situ pile	Kg	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)
		Total of (i) & (ii)	Kg	5490	5498	4933	4936	4242	4208	6609	6653	6119	5978	5000	5162	7627	7696	6407	6773	5535	5580
10	19	Boring and casting																			
		a) Boring																			
		(i) 600mm dia/ (ii) 500 mm dia	L-m	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)
		b) Concreting																			
		(i) 600mm dia/ (ii) 500 mm dia	Cu-m	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)
11	20	Breaking the head of pile	Cu-m	1.41	1.41	1.41	1.41	0.94	0.94	1.41	1.41	1.41	1.41	0.94	0.94	2.11	2.12	1.41	1.41	0.94	0.94
12	21	Earthwork in temporary cofferdam	Nos.																		
13	22	Supplying steel pipes																			
		(i) 600mm dia/ (ii) 500mm dia	L-m																		
14	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each																		
15	24	R.C.C workb (1:2:4)																			
		g) Pile cap, curb, side walk, foot-path	Cu-m	24.80	24.80	20.99	21.18	15.84	15.96	31.33	31.76	27.98	27.05	18.59	20.41	38.08	38.73	26.42	30.14	19.68	20.53
		h) Wing wall & abutment	Cu-m	23.31	23.03	21.40	21.12	18.35	18.10	27.43	27.14	25.64	25.10	21.72	22.62	31.32	31.03	28.23	28.41	24.72	24.49
		m) Railing & post	Cu-m	1.08	1.08	0.98	0.98	0.98	0.98	1.24	1.24	1.11	1.11	1.10	1.11	1.32	1.32	1.11	1.19	1.19	1.19
16	27	a) Providing weep hole	L-m	9.80	9.80	11.20	9.10	7.70	6.30	14.70	13.30	14.70	11.90	11.90	10.50	17.60	16.10	13.30	13.30	11.90	10.50
17	30	Back filling of abutment	Cu-m																		
18	31	Earth work in approaches of bridge	Cu-m																		
19	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08
20	34	Welding (a) spairal																			
		(i) 600mm dia/ (ii) 500 mm dia	Each spot	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)
		(b) Main reinforcement																			
		(i) 600 mm dia/ (ii) 500 mm dia	Each point	252	252	252	252	168	168	252	252	252	252	168	168	378	378	252	252	168	168
21	35	Placing of gunny bagged rip-rap filled	Cu-m																		
22	36	Turfing on embankment	Sq-m																		
23	37	Hanging of sign board	L. S.																		
24	38	Name plate	Each																		
25	42	Marking the post & rail	Sq-m																		
26	48.	Demobilization.	L.S																		
27	51.	Filter material behind the weep holes	Each	28	28	32	26	22	18	42	38	42	34	34	30	50	42	38	38	34	30
Remarks		N = No. of pile in 2 - abutment	No	12	12	12	12	8	8	12	12	12	12	8	8	18	18	12	12	8	8

Lp = Basic length of pile

L = 0.7 Lp <= 8.200 m

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Eq. (1) For It. no. 15 (a) (ii) Reinforcement = { 54.00 x L + 11.05 x (Lp - L + 1.200) + 4.54 x (Lp - 0.075)} kg. , When dia. of pile = 500 mm.

Eq. (2) For It. no. 19 (a) (ii) Boring of pile = { (Lp + 0.600) x N } m

Eq. (3) For It. no. 19 (b) (ii) Concreting of pile = { 0.197 x (Lp + 0.600) x N } m^3 , When dia. of pile = 500 mm

Eq. (4) For It. no. 34 (a) (ii) Welding = { 7x (L - 0.600)/0.150 + 4.0 x (Lp - L+ 0.600)/0.150} Nos.

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FULL DEPTH ABUTMENT
Estimate Of Quantities For R.C Abutment On Cast-In-Situ Pile
E .Q . Table No. 6.d

Abutment Height (m)				5						5.3						5.6					
Foot-Path				Yes		No				Yes		No				Yes		No			
Carriage way Width (m)				3.66				2.44		3.66				2.44		3.66				2.44	
Type of Loading				H20/ H15				H10		H20/ H15				H10		H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit																		
1	1	Mobilization	L. S.																		
2	2	Engineer's office	L. S.																		
3	3/46/47	Diversion	Cu.m/L-m/L-m																		
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m																		
5	6	Earth work in excavation	Cu-m																		
6	7	Bailing out water	Cu-m																		
7	10	Brick on edge pavement	Cu-m																		
8	11	Cement concrete (1:3:6)	Cu-m	3.73	4.00	3.22	3.28	2.40	2.45	3.92	4.05	3.39	3.48	2.52	2.57	4.22	4.33	3.63	3.81	2.68	2.82
9	15	a) Reinforcement																			
		(i) Pile cap, abutment & railing	Kg	8869	9286	8182	8184	7076	7145	9803	9879	9163	9163	7900	7944	11530	11285	10669	10572	9460	9571
		(ii) Cast-in-situ pile	Kg	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)
		Total of (i) & (ii)	Kg	8869	9286	8182	8184	7076	7145	9803	9879	9163	9163	7900	7944	11530	11285	10669	10572	9460	9571
10	19	Boring and casting																			
		a) Boring																			
		(i) 600mm dia/ (ii) 500 mm dia	L-m	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)
		b) Concreting																			
		(i) 600mm dia/ (ii) 500 mm dia	Cu-m	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)
11	20	Breaking the head of pile	Cu-m	2.12	2.12	2.12	2.12	1.41	1.41	2.12	2.12	2.12	2.12	1.41	1.41	2.83	2.83	2.12	2.12	1.41	1.41
12	21	Earthwork in temporary cofferdam	Nos.																		
13	22	Supplying steel pipes																			
		(i) 600mm dia/ (ii) 500mm dia	L-m																		
14	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each																		
15	24	R.C.C workb (1:2:4)																			
		g) Pile cap, curb, side walk, foot-path	Cu-m	39.09	41.87	33.64	34.23	25.44	26.00	41.13	42.41	35.42	36.35	26.82	27.24	44.24	45.25	37.95	39.78	28.47	29.87
		h) Wing wall & abutment	Cu-m	38.46	39.40	35.94	35.64	31.37	30.97	46.23	45.90	42.59	42.26	38.29	38.02	55.10	53.11	51.08	49.63	46.25	45.97
		m) Railing & post	Cu-m	1.42	1.43	1.30	1.30	1.30	1.30	1.58	1.58	1.43	1.43	1.43	1.43	1.66	1.62	1.51	1.48	1.51	1.51
16	27	a) Providing weep hole	L-m	18.80	18.80	18.80	18.80	17.00	19.30	29.60	29.60	30.70	29.10	24.60	17.40	34.90	34.90	34.30	34.30	29.50	21.80
17	30	Back filling of abutment	Cu-m																		
18	31	Earth work in approaches of bridge	Cu-m																		
19	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08
20	34	Welding (a) spairal																			
		(i) 600mm dia/ (ii) 500 mm dia	Each spot	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)
		(b) Main reinforcement																			
		(i) 600 mm dia/ (ii) 500 mm dia	Each point	378	378	378	378	252	252	378	378	378	378	252	252	504	504	378	378	252	252
21	35	Placing of gunny bagged rip-rap filled	Cu-m																		
22	36	Turfing on embankment	Sq-m																		
23	37	Hanging of sign board	L. S.																		
24	38	Name plate	Each																		
25	42	Marking the post & rail	Sq-m																		
26	48.	Demobilization.	L.S																		
27	51.	Filter material behind the weep holes	Each	50	50	74	50	34	52	74	74	78	74	82	44	82	82	82	82	70	52
Remarks		N = No. of pile in 2 - abutment	No	18	18	18	18	12	12	18	18	18	18	12	12	24	24	18	18	12	12

Lp = Basic length of pile

L = 0.7 Lp <= 8.200 m

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Eq. (1) For It. no. 15 (a) (ii) Reinforcement = { 54.00 x L + 11.05 x (Lp - L + 1.200) + 4.54 x (Lp - 0.075)} kg. , When dia. of pile = 500 mm.

Eq. (2) For It. no. 19 (a) (ii) Boring of pile = { (Lp + 0.600) x N } m

Eq. (3) For It. no. 19 (b) (ii) Concreting of pile = { 0.197 x (Lp + 0.600) x N } m^3 , When dia. of pile = 500 mm

Eq. (4) For It. no. 34 (a) (ii) Welding = { 7x (L - 0.600)/0.150 + 4.0 x (Lp - L+ 0.600)/0.150} Nos.

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FULL DEPTH ABUTMENT
Estimate Of Quantities For R.C Abutment On Cast-In-Situ Pile
E .Q . Table No. 6.d

Abutment Height (m)				6						6.3						6.6					
Foot-Path				Yes		No				Yes		No				Yes		No			
Carriage way Width (m)				3.66				2.44		3.66				2.44		3.66				2.44	
Type of Loading				H20/ H15				H10		H20/ H15				H10		H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit																		
1	1	Mobilization	L. S.																		
2	2	Engineer's office	L. S.																		
3	3/46/47	Diversion	Cu.m/L-m/L-m																		
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m																		
5	6	Earth work in excavation	Cu-m																		
6	7	Bailing out water	Cu-m																		
7	10	Brick on edge pavement	Cu-m																		
8	11	Cement concrete (1:3:6)	Cu-m	5.03	4.86	4.37	4.45	3.02	3.31	5.42	5.42	4.52	4.71	3.35	3.46	5.55	5.72	4.82	4.97	3.69	3.69
9	15	a) Reinforcement																			
		(i) Pile cap, abutment & railing	Kg	14032	13915	13282	13179	11782	11890	15934	15764	14389	14975	13051	13121	17364	17443	15804	15911	14717	14705
		(ii) Cast-in-situ pile	Kg	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)
		Total of (i) & (ii)	Kg	14032	13915	13282	13179	11782	11890	15934	15764	14389	14975	13051	13121	17364	17443	15804	15911	14717	14705
10	19	Boring and casting																			
		a) Boring																			
		(i) 600mm dia/ (ii) 500 mm dia	L-m	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)
		b) Concreting																			
		(i) 600mm dia/ (ii) 500 mm dia	Cu-m	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)
11	20	Breaking the head of pile	Cu-m	2.83	2.83	3.77	2.83	1.41	1.88	3.77	3.77	2.83	2.83	1.88	1.88	3.77	3.77	2.83	2.83	1.88	1.88
12	21	Earthwork in temporary cofferdam	Nos.																		
13	22	Supplying steel pipes																			
		(i) 600mm dia/ (ii) 500mm dia	L-m																		
14	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each																		
15	24	R.C.C workb (1:2:4)																			
		g) Pile cap, curb, side walk, foot-path	Cu-m	52.52	50.78	45.54	46.29	31.99	34.93	56.49	56.49	47.12	49.00	35.44	36.58	57.88	59.60	50.23	51.72	38.94	38.94
		h) Wing wall & abutment	Cu-m	62.62	61.48	58.73	57.16	50.69	51.15	70.51	68.75	63.49	63.09	56.71	56.78	74.68	74.25	0.16	69.79	65.60	64.39
		m) Railing & post	Cu-m	1.77	1.75	1.61	1.61	1.61	1.61	1.92	1.92	1.73	1.74	1.73	1.74	2.00	2.00	1.82	1.82	1.82	1.82
16	27	a) Providing weep hole	L-m	35.10	27.60	31.60	30.40	31.40	33.00	37.00	36.00	35.80	33.20	30.60	30.00	39.20	43.40	31.60	38.80	33.40	30.00
17	30	Back filling of abutment	Cu-m																		
18	31	Earth work in approaches of bridge	Cu-m																		
19	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08
20	34	Welding (a) spairal																			
		(i) 600mm dia/ (ii) 500 mm dia	Each spot	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)
		(b) Main reinforcement																			
		(i) 600 mm dia/ (ii) 500 mm dia	Each point	504	504	672	504	252	336	672	672	504	504	336	336	672	672	504	504	336	336
21	35	Placing of gunny bagged rip-rap filled	Cu-m																		
22	36	Turfing on embankment	Sq-m																		
23	37	Hanging of sign board	L. S.																		
24	38	Name plate	Each																		
25	42	Marking the post & rail	Sq-m																		
26	48.	Demobilization.	L.S																		
27	51.	Filter material behind the weep holes	Each	94	72	88	84	86	92	100	96	100	92	86	84	112	120	88	108	90	84
Remarks		N = No. of pile in 2 - abutment	No	24	24	32	24	12	16	32	32	24	24	16	16	32	32	24	24	16	16

Lp = Basic length of pile

L = 0.7 Lp <= 8.200 m

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Eq. (1) For It. no. 15 (a) (ii) Reinforcement = { 54.00 x L + 11.05 x (Lp - L + 1.200) + 4.54 x (Lp - 0.075)} kg. . When dia. of pile = 500 mm.

Eq. (2) For It. no. 19 (a) (ii) Boring of pile = { (Lp + 0.600) x N } m

Eq. (3) For It. no. 19 (b) (ii) Concreting of pile = { 0.197 x (Lp + 0.600) x N } m^3. When dia. of pile = **500** mm

Eq. (4) For It. no. 34 (a) (ii) Welding = { 7x (L - 0.600)/0.150 + 4.0 x (Lp - L+ 0.600)/0.150} Nos.

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FULL DEPTH ABUTMENT
Estimate Of Quantities For R.C Abutment On Cast-In-Situ Pile
E .Q . Table No. 6.d

Abutment Height (m)				7						7.3						7.6					
Foot-Path				Yes		No				Yes		No				Yes		No			
Carriage way Width (m)				3.66				2.44		3.66				2.44		3.66				2.44	
Type of Loading				H20/ H15				H10		H20/ H15				H10		H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit																		
1	1	Mobilization	L. S.																		
2	2	Engineer's office	L. S.																		
3	3/46/47	Diversion	Cu.m/L-m/L-m																		
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m																		
5	6	Earth work in excavation	Cu-m																		
6	7	Bailing out water	Cu-m																		
7	10	Brick on edge pavement	Cu-m																		
8	11	Cement concrete (1:3:6)	Cu-m	5.85	6.19	5.69	5.88	4.26	4.19	6.79	6.66	5.99	5.84	4.22	4.35	7.17	6.87	6.58	5.88	4.40	4.49
9	15	a) Reinforcement																			
		(i) Pile cap, abutment & railing	Kg	21131	21407	20368	20447	18655	18298	23531	23149	21851	21429	18979	19065	25173	24681	24111	23108	17298	17325
		(ii) Cast-in-situ pile	Kg	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)
		Total of (i) & (ii)	Kg	21131	21407	20368	20447	18655	18298	23531	23149	21851	21429	18979	19065	25173	24681	24111	23108	17298	17325
10	19	Boring and casting																			
		a) Boring																			
		(i) 600mm dia/ (ii) 500 mm dia	L-m	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)
		b) Concreting																			
		(i) 600mm dia/ (ii) 500 mm dia	Cu-m	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)
11	20	Breaking the head of pile	Cu-m	3.77	3.77	3.53	3.53	2.36	2.36	4.71	4.71	3.53	3.53	2.36	2.36	4.71	4.71	4.24	3.77	2.36	2.36
12	21	Earthwork in temporary cofferdam	Nos.																		
13	22	Supplying steel pipes																			
		(i) 600mm dia/ (ii) 500mm dia	L-m																		
14	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each																		
15	24	R.C.C workb (1:2:4)																			
		g) Pile cap, curb, side walk, foot-path	Cu-m	68.79	72.67	62.89	64.88	47.66	46.91	79.63	78.12	66.18	64.59	47.33	48.68	84.05	80.66	72.64	65.10	49.38	50.28
		h) Wing wall & abutment	Cu-m	95.68	95.08	93.88	93.41	84.03	81.38	105.57	103.67	102.43	99.46	89.37	89.04	116.36	114.42	112.64	109.49	93.63	93.26
		m) Railing & post	Cu-m	2.08	2.08	1.91	1.91	1.91	1.91	2.24	2.24	2.04	2.04	2.04	2.04	2.32	2.32	2.12	2.12	2.12	2.12
16	27	a) Providing weep hole	L-m	39.20	33.60	45.50	41.30	42.80	45.40	43.40	37.80	52.50	49.70	41.20	42.60	54.60	40.60	55.30	46.90	37.30	37.30
17	30	Back filling of abutment	Cu-m																		
18	31	Earth work in approaches of bridge	Cu-m																		
19	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08	10.02	10.02	8.52	8.52	6.08	6.08
20	34	Welding (a) spairal																			
		(i) 600mm dia/ (ii) 500 mm dia	Each spot	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)
		(b) Main reinforcement																			
		(i) 600 mm dia/ (ii) 500 mm dia	Each point	672	672	630	630	420	420	840	840	630	630	420	420	840	840	756	672	420	420
21	35	Placing of gunny bagged rip-rap filled	Cu-m																		
22	36	Turfing on embankment	Sq-m																		
23	37	Hanging of sign board	L. S.																		
24	38	Name plate	Each																		
25	42	Marking the post & rail	Sq-m																		
26	48.	Demobilization.	L.S																		
27	51.	Filter material behind the weep holes	Each	112	96	124	112	112	120	124	108	144	136	116	120	156	116	152	128	104	102
Remarks		N = No. of pile in 2 - abutment	No	32	32	30	30	20	20	40	40	30	30	20	20	40	40	36	32	20	20

Lp = Basic length of pile

L = 0.7 Lp <= 8.200 m

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Eq. (1) For It. no. 15 (a) (ii) Reinforcement = { 54.00 x L + 11.05 x (Lp - L + 1.200) + 4.54 x (Lp - 0.075)} kg. , When dia. of pile = 500 mm.

Eq. (2) For It. no. 19 (a) (ii) Boring of pile = { (Lp + 0.600) x N } m

Eq. (3) For It. no. 19 (b) (ii) Concreting of pile = { 0.197 x (Lp + 0.600) x N } m^3 , When dia. of pile = **500** mm

Eq. (4) For It. no. 34 (a) (ii) Welding = { 7x (L - 0.600)/0.150 + 4.0 x (Lp - L+ 0.600)/0.150} Nos.

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FULL DEPTH ABUTMENT
Estimate Of Quantities For R.C Abutment On Cast-In-Situ Pile
E .Q . Table No. 6.d

Abutment Height (m)				8					
Foot-Path				Yes		No			
Carriage way Width (m)				3.66				2.44	
Type of Loading				H20/ H15				H10	
Span Range (m)				1.5-12	12.5-20	1.5-12	12.5-20	1.5-12	12.5-20
Sl. No.	Item No.	Brief Description	Unit						
1	1	Mobilization	L. S.						
2	2	Engineer's office	L. S.						
3	3/46/47	Diversion	Cu.m/L-m/L-m						
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m						
5	6	Earth work in excavation	Cu-m						
6	7	Bailing out water	Cu-m						
7	10	Brick on edge pavement	Cu-m						
8	11	Cement concrete (1:3:6)	Cu-m	7.71	7.24	6.75	6.64	4.66	4.61
9	15	a) Reinforcement							
		(i) Pile cap, abutment & railing	Kg	29817	29130	29257	28643	22853	21586
		(ii) Cast-in-situ pile	Kg	Eq. (1.1)	Eq. (1.1)	Eq. (1)	Eq. (1.1)	Eq. (1)	Eq. (1)
		Total of (i) & (ii)	Kg	29817	29130	29257	28643	22853	21586
10	19	Boring and casting							
		a) Boring							
		(i) 600mm dia/ (ii) 500 mm dia	L-m	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)
		b) Concreting							
		(i) 600mm dia/ (ii) 500 mm dia	Cu-m	Eq. (3.1)	Eq. (3.1)	Eq. (3)	Eq. (3.1)	Eq. (3)	Eq. (3)
11	20	Breaking the head of pile	Cu-m	161.79	5.43	4.24	3.53	2.83	2.83
12	21	Earthwork in temporary cofferdam	Nos.						
13	22	Supplying steel pipes							
		(i) 600mm dia/ (ii) 500mm dia	L-m						
14	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1
		(b) Above 60 ton	Each						
15	24	R.C.C workb (1:2:4)							
		g) Pile cap, curb, side walk, foot-path	Cu-m	95.39	89.74	79.06	77.79	52.22	54.83
		h) Wing wall & abutment	Cu-m	140.02	137.95	135.21	128.39	111.76	110.07
		m) Railing & post	Cu-m	2.41	2.41	2.21	2.21	2.23	2.21
16	27	a) Providing weep hole	L-m	58.10	58.80	56.50	58.30	43.80	46.00
17	30	Back filling of abutment	Cu-m						
18	31	Earth work in approaches of bridge	Cu-m						
19	33	Nosing	L-m	10.02	10.02	8.52	8.52	6.08	6.08
20	34	Welding (a) spairal							
		(i) 600mm dia/ (ii) 500 mm dia	Each spot	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)	Eq. (4)
		(b) Main reinforcement							
		(i) 600 mm dia/ (ii) 500 mm dia	Each point	1008	672	756	630	504	504
21	35	Placing of gunny bagged rip-rap filled	Cu-m						
22	36	Turfing on embankment	Sq-m						
23	37	Hanging of sign board	L. S.						
24	38	Name plate	Each						
25	42	Marking the post & rail	Sq-m						
26	48.	Demobilization.	L.S						
27	51.	Filter material behind the weep holes	Each	166	164	154	158	122	128
Remarks		N = No. of pile in 2 - abutment	No	48	32	36	30	24	24

Lp = Basic length of pile

L = 0.7 Lp <= 8.200 m

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

Eq. (1) For It. no. 15 (a) (ii) Reinforcement = 54.00 x L + 11.05 x (Lp - L + 1.200) + 4.54 x (Lp - 0.075) . When dia. of pile = 500 mm.

Eq. (1.1) For It. no. 15 (a) (ii) Reinforcement = 54.00 x L + 11.05 x (Lp - L + 1.200) + 5.95 x (Lp - 0.075) . When dia. of pile = 600 mm.

Eq. (2) For It. no. 19 (a) (ii) Boring of pile = { (Lp + 0.600) x N } m

Eq. (3) For It. no. 19 (b) (ii) Concreting of pile = { 0.197 x (Lp + 0.600) x N } m^3 . When dia. of pile = **500** mm

Eq. (3.1) For It. no. 19 (b) (ii) Concreting of pile = { 0.283 x (Lp + 0.600) x N } m^3 . When dia. of pile = **600** mm

Eq. (4) For It. no. 34 (a) (ii) Welding = 7 x (L - 0.600)/0.150 + 4.0 x (Lp - L+ 0.600)/0.150 Nos.

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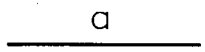

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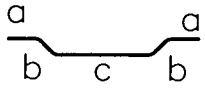

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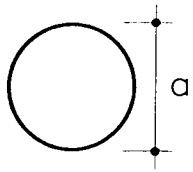

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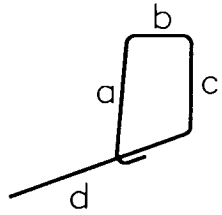

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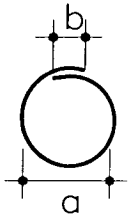

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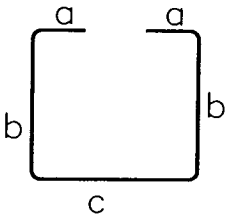

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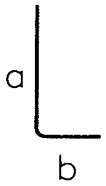

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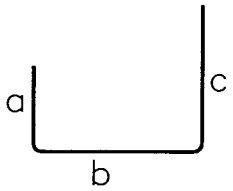

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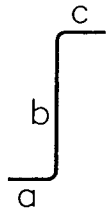

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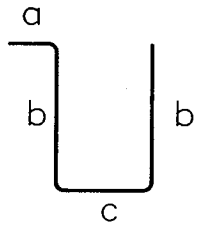

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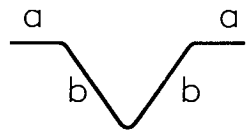

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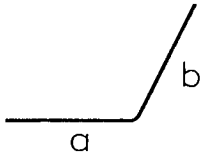

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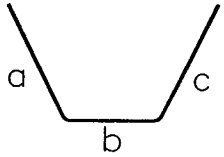

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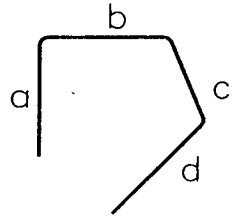

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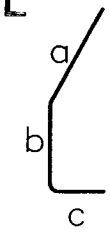

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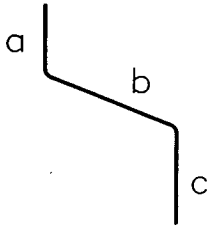

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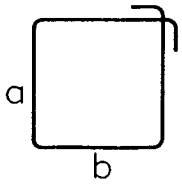

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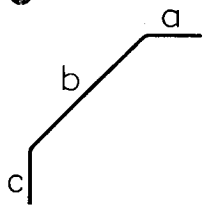

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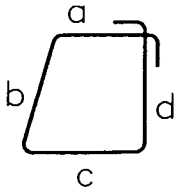

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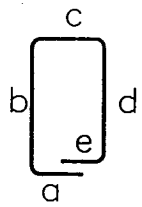

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

STANDARD BAR SHAPE & SHAPE CODE

DATE :

ISSUED BY :

CAD FILE REF : ABUT\S0000001

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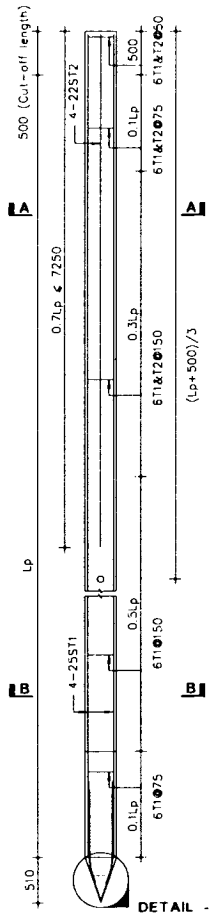
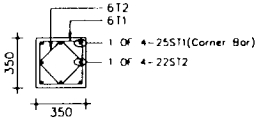


350X350 PRECAST PILE



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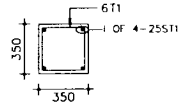

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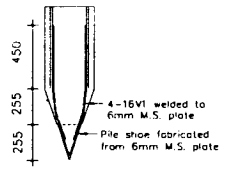

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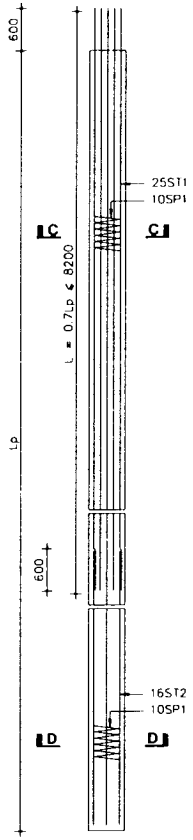
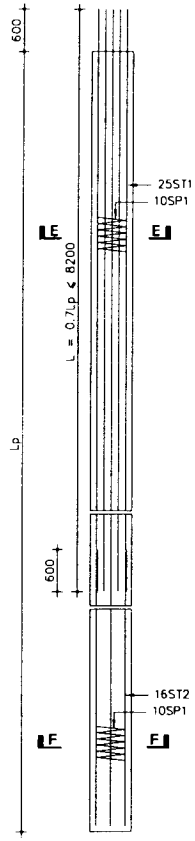


500mm DIA CAST-IN-SITU PILE



600mm DIA CAST-IN-SITU PILE

BAR BENDING SCHEDULE FOR 350X350 PRECAST PILE

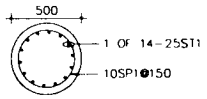
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS				BAR LENGTH
			a	b	c	d	
25	ST1	4	Lp+460				Lp+460
22	ST2	4	0.7Lp≤7210				0.7Lp≤7210
6	T1	(1.2Lp/150)+10	270	270	270	270	1200
6	T2	(0.5Lp/150)+10	191	191	191	191	884
16	V1	4	620	200			820

BAR BENDING SCHEDULE FOR 500mm DIA. CAST-IN-SITU PILE

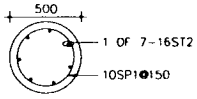
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS				BAR LENGTH
			a	b	c	d	
25	ST1	14	0.7Lp<8200				0.7Lp<8200
16	ST2	7	Lp-L+1200				Lp-L+1200
10	SP1	(Lp-75)/150	1131				1131

BAR BENDING SCHEDULE FOR 600mm DIA. CAST-IN-SITU PILE

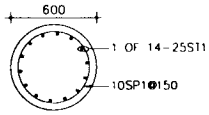
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS				BAR LENGTH
			a	b	c	d	
25	ST1	14	0.7Lp<8200				0.7Lp<8200
16	ST2	7	Lp-L+1200				Lp-L+1200
10	SP1	(Lp-75)/150	1445				1445



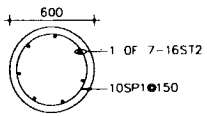
SEC. C-C



SEC. D-D



SEC. E-E



SEC. F-F

NOTES :

1. All dimensions are in millimeter unless otherwise specified.
2. Concrete (Pile), Cylinder strength at 28 days : 21MPa-ASTM C39
3. Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4. Deformed Reinforcing steel, Yield strength : 276MPa-ASTM A615.
5. Dimension Lp are site dependent.
6. Clear cover for : Cast-in-situ Pile - 75mm
   Precast Pile - 40mm

LEGEND :

Lp = Basic length of Pile
L = Length of ST1 bar in cast-in-situ plie.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

DETAILS OF PILES

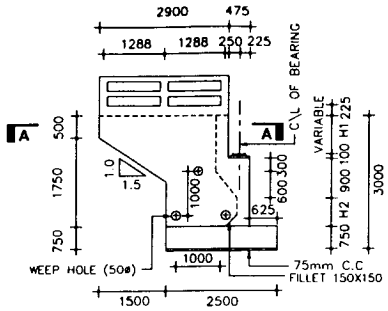
DATE :

ISSUED BY :

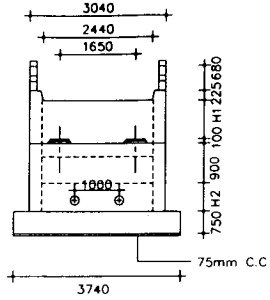
CAD FILE REF : ABUT\P0000001

Web Copy

SHEET 1 OF 4	
SPAN RANGE : 1.5m TO 12m	
SIDE WALK : NO	



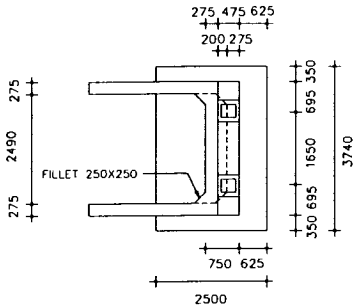
SIDE ELEVATION



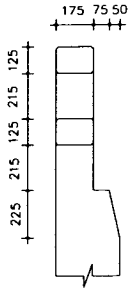
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	300	185	185
11500	800	450	179	179
11000	800	450	175	175
10500	800	450	171	171
10000	800	450	167	167
9500	800	450	165	165
9000	800	450	163	163
8500	600	650	157	157
8000	600	650	155	155
7500	600	650	153	153
7000	600	650	151	151
6500	600	650	149	149
6000	600	650	147	147
5500	350	900	151	151
5000	350	900	147	147
4500	300	950	141	141
4000	300	950	137	137
3500	300	950	135	135
3000	250	1000	131	131
2500	250	1000	129	129
2000	250	1000	127	127
1500	250	1000	125	125



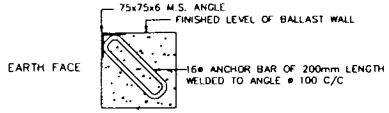
SECTION A-A



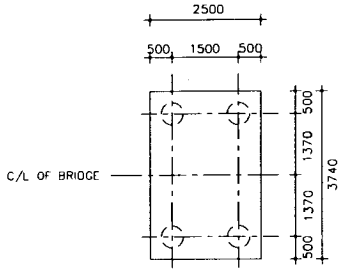
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

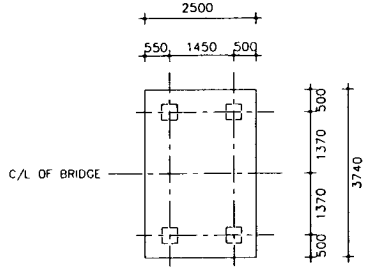
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in, kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.0m , DECK WIDTH 3.04m)

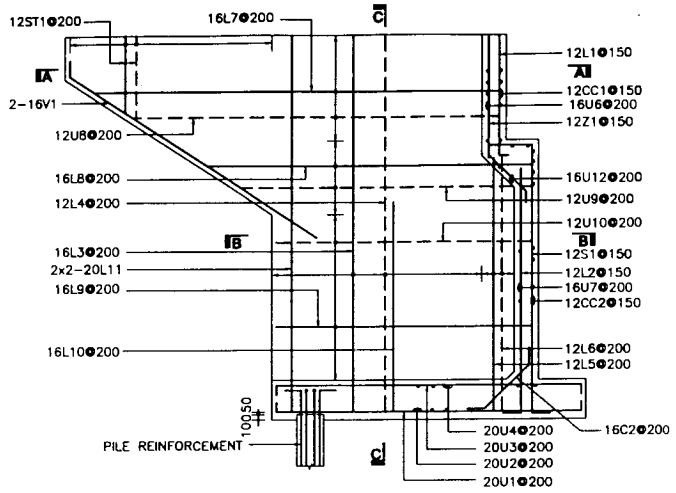
DATE :

CHECKED BY :

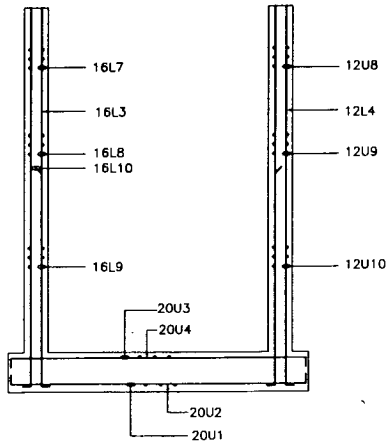
CAD FILE REF : ABUT\ROUTE 3(

Web Copy

SHEET 2 OF 4
SPAN RANGE :1.5m TO 12.0m
SIDE WALK: NO



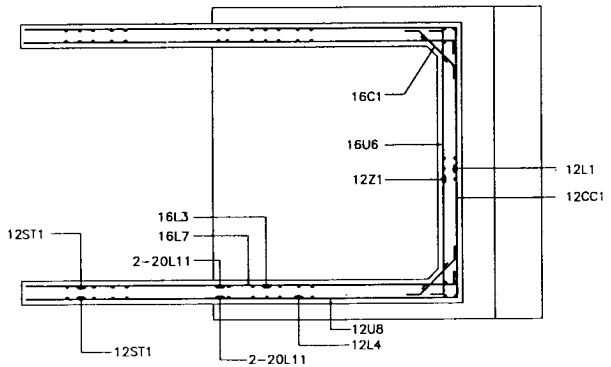
REINFORCEMENT DETAIL



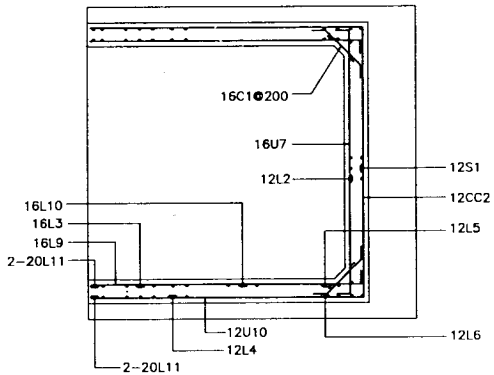
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

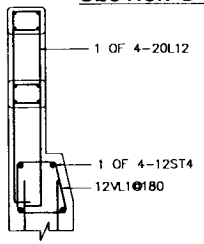
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	21	1300	144			1444
12	L2	21	1200	144			1344
16	L3	8	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 900 to 1500	144			Avg. 1344
12	L6	6	Var. 900 to 1500	144			Avg. 1344
16	L7	12	Var. 1975 to 2800	192			Avg. 2717
16	L8	8	Var. 1775 to 1975	192			Avg. 2067
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	20	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	3	192	2892	192		3276
12	U8	12	Var. 1975 to 2800	175	525		Avg. 3225
12	U9	8	Var. 1775 to 1975	175	525		Avg. 2575
12	U10	6	1775	175	525		2475
16	U12	6	192	2940	192		3324
12	CC1	9	1150	350	2940		4440
12	CC2	11	1150	350	2940		4440
12	Z1	21	1300	866	144		2310
12	S1	21	650	1750	240		2640
16	C1	26	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	128	206	306			512
12	VL1	36	272	200	250	278	1000



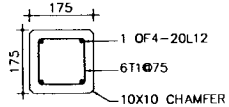
SECTION A-A



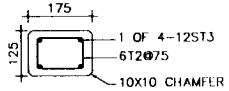
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 3.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110302	

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SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	21	1150	144			1294
12	L2	21	1350	144			1494
16	L3	8	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1050 to 1650	144			Avg. 1494
12	L6	6	Var. 1050 to 1650	144			Avg. 1494
16	L7	10	Var. 2200 to 2800	192			Avg. 2872
16	L8	8	Var. 1775 to 2200	192			Avg. 2180
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	20	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	4	192	2892	192		3276
12	U8	10	Var. 2200 to 2800	175	525		Avg. 3380
12	U9	10	Var. 1775 to 2200	175	525		Avg. 2688
12	U10	6	1775	175	525		2475
16	U12	6	192	2940	192		3324
12	CC1	8	1150	350	2940		4440
12	CC2	12	1150	350	2940		4440
12	Z1	21	1150	866	144		2160
12	S1	21	650	1900	240		2790
16	C1	26	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	128	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	21	950	144			1094
12	L2	21	1550	144			1694
16	L3	8	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1250 to 1850	144			Avg. 1694
12	L6	6	Var. 1250 to 1850	144			Avg. 1694
16	L7	8	Var. 2500 to 2800	192			Avg. 2992
16	L8	10	Var. 1775 to 2500	192			Avg. 2330
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	20	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	6	192	2892	192		3276
16	U7	5	192	2892	192		3276
12	U8	8	Var. 2500 to 2800	175	525		Avg. 3500
12	U9	12	Var. 1775 to 2500	175	525		Avg. 2838
12	U10	6	1775	175	525		2475
16	U12	6	192	2940	192		3324
12	CC1	7	1150	350	2940		4440
12	CC2	13	1150	350	2940		4440
12	Z1	21	950	866	144		1960
12	S1	21	650	2100	240		2990
16	C1	26	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	128	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	21	700	144			844
12	L2	21	1800	144			1944
16	L3	8	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1500 to 2100	144			Avg. 1944
12	L6	6	Var. 1500 to 2100	144			Avg. 1944
16	L7	4	Var. 2875 to 2800	192			Avg. 2917
16	L8	14	Var. 1775 to 2875	192			Avg. 2517
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	20	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	5	192	2892	192		3276
16	U7	6	192	2892	192		3276
12	U8	4	Var. 2875 to 2800	175	525		Avg. 3425
12	U9	14	Var. 1775 to 2875	175	525		Avg. 3025
12	U10	6	1775	175	525		2475
16	U12	6	192	2940	192		3324
12	CC1	5	1150	350	2940		4440
12	CC2	15	1150	350	2940		4440
12	Z1	21	700	866	144		1710
12	S1	21	650	2350	240		3240
16	C1	26	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	128	206	306			512
12	VL1	36	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110303	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	21	650	144			794
12	L2	21	1850	144			1994
16	L3	8	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1550 to 2150	144			Avg. 1994
12	L6	6	Var. 1550 to 2150	144			Avg. 1994
16	L7	4	Var. 2950 to 2800	192			Avg. 2842
16	L8	14	Var. 1775 to 2950	192			Avg. 2555
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	20	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	5	192	2892	192		3276
16	U7	7	192	2892	192		3276
12	U8	4	Var. 2950 to 2800	175	525		Avg. 3350
12	U9	14	Var. 1775 to 2950	175	525		Avg. 3063
12	U10	6	1775	175	525		2475
16	U12	6	192	2940	192		3324
12	CC1	5	1150	350	2940		4440
12	CC2	15	1150	350	2940		4440
12	Z1	21	650	866	144		1660
12	S1	21	650	2400	240		3290
16	C1	26	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	128	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	21	600	144			744
12	L2	21	1900	144			2044
16	L3	8	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1600 to 2200	144			Avg. 2044
12	L6	6	Var. 1600 to 2200	144			Avg. 2044
16	L7	4	Var. 3025 to 2800	192			Avg. 2767
16	L8	14	Var. 1775 to 3025	192			Avg. 2592
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	20	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	4	192	2892	192		3276
16	U7	7	192	2892	192		3276
12	U8	4	Var. 3025 to 2800	175	525		Avg. 3275
12	U9	16	Var. 1775 to 3025	175	525		Avg. 3100
12	U10	6	1775	175	525		2475
16	U12	6	192	2940	192		3324
12	CC1	5	1150	350	2940		4440
12	CC2	15	1150	350	2940		4440
12	Z1	21	600	866	144		1610
12	S1	21	650	2450	240		3340
16	C1	26	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	128	206	306			512
12	VL1	36	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

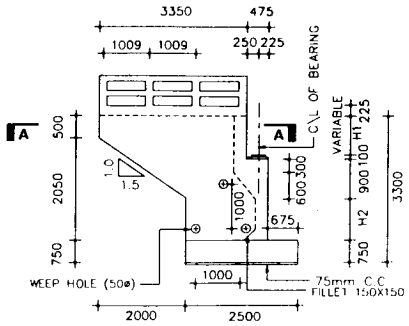
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110304	

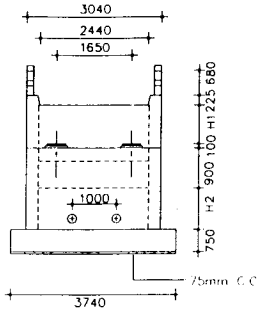
Web Copy

FA-5

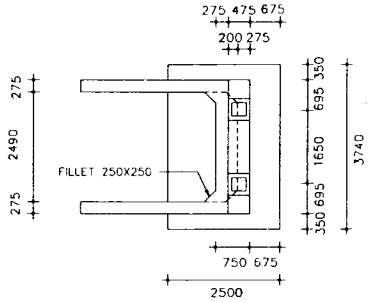
SHEET 1 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO



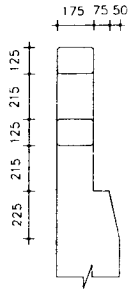
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



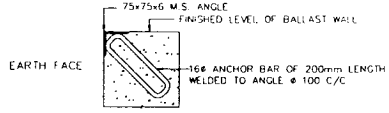
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

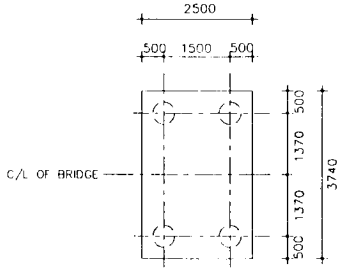
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	600	190	190
11500	800	750	184	184
11000	800	750	180	180
10500	800	750	176	176
10000	800	750	172	172
9500	800	750	170	170
9000	800	750	168	168
8500	600	950	162	162
8000	600	950	160	160
7500	600	950	158	158
7000	600	950	156	156
6500	600	950	154	154
6000	600	950	152	152
5500	350	1200	156	156
5000	350	1200	152	152
4500	300	1250	146	146
4000	300	1250	142	142
3500	300	1250	140	140
3000	250	1300	136	136
2500	250	1300	134	134
2000	250	1300	132	132
1500	250	1300	130	130

TABLE-2

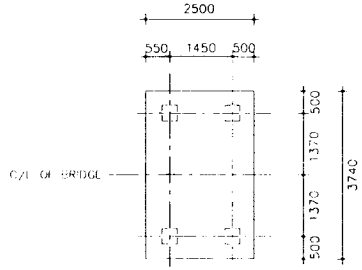
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

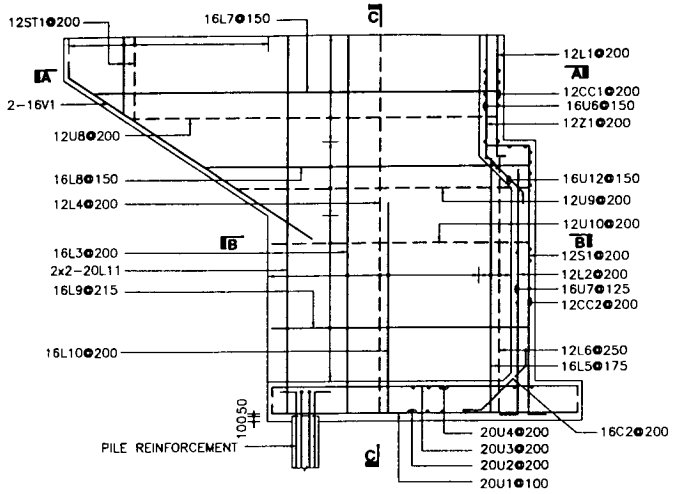
NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

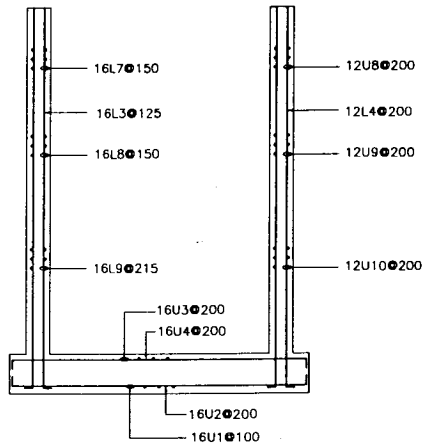
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH LOCAL GOVERNMENT ENGINEERING DEPARTMENT	
GENERAL ARRANGEMENT OF ABUTMENT (HEIGHT = 3.3m , DECK WIDTH 3.04m)	
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110331	

Web Copy

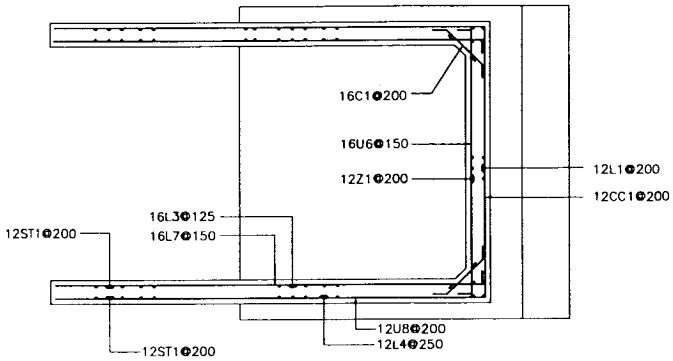
SHEET 2 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



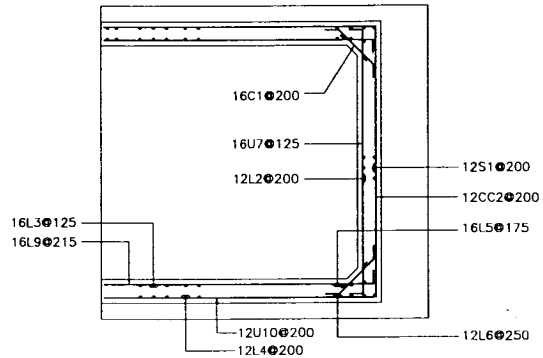
REINFORCEMENT DETAIL



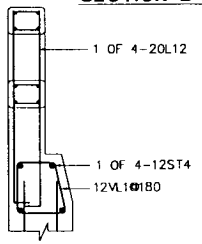
SECTION C-C



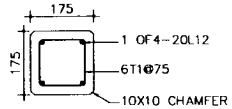
SECTION A-A



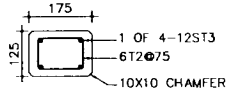
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	16	1300	144			1444
12	L2	16	1500	144			1644
16	L3	8	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1200 to 1800	144			Avg. 1644
12	L6	4	Var. 1200 to 1800	144			Avg. 1644
16	L7	16	Var. 2425 to 3250	192			Avg. 3133
16	L8	14	Var. 1725 to 2425	192			Avg. 2267
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	38	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	10	192	2892	192		3276
16	U7	8	192	2892	192		3276
12	U8	12	Var. 2425 to 3250	175	525		Avg. 3675
12	U9	10	Var. 1725 to 2425	175	525		Avg. 2775
12	U10	6	1725	175	525		2425
16	U12	8	192	2940	192		3324
12	CC1	9	1150	350	2940		4440
12	CC2	13	1150	350	2940		4440
12	Z1	21	1300	866	144		2310
12	S1	21	650	2050	240		2940
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0110332

Web Copy

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =800)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	16	1150	144			1294
12	L2	16	1650	144			1794
16	L3	8	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1350 to 1950	144			Avg. 1794
12	L6	4	Var. 1350 to 1950	144			Avg. 1794
16	L7	14	Var. 2650 to 3250	192			Avg. 3271
16	L8	16	Var. 1725 to 2650	192			Avg. 2380
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	38	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	9	192	2892	192		3276
16	U7	9	192	2892	192		3276
12	U8	10	Var. 2650 to 3250	175	525		Avg. 3830
12	U9	12	Var. 1725 to 2650	175	525		Avg. 2888
12	U10	6	1725	175	525		2425
16	U12	8	192	2940	192		3324
12	CC1	8	1150	350	2940		4440
12	CC2	14	1150	350	2940		4440
12	Z1	21	1150	866	144		2160
12	S1	21	650	2200	240		3090
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	16	950	144			1094
12	L2	16	1850	144			1994
16	L3	8	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1550 to 2150	144			Avg. 1994
12	L6	4	Var. 1550 to 2150	144			Avg. 1994
16	L7	12	Var. 2950 to 3250	192			Avg. 3392
16	L8	18	Var. 1725 to 2950	192			Avg. 2530
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	38	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	10	192	2892	192		3276
12	U8	8	Var. 2950 to 3250	175	525		Avg. 3950
12	U9	14	Var. 1725 to 2950	175	525		Avg. 3038
12	U10	6	1725	175	525		2425
16	U12	8	192	2940	192		3324
12	CC1	7	1150	350	2940		4440
12	CC2	15	1150	350	2940		4440
12	Z1	21	950	866	144		1960
12	S1	21	650	2400	240		3290
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	16	700	144			844
12	L2	16	2100	144			2244
16	L3	8	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1800 to 2400	144			Avg. 2244
12	L6	4	Var. 1800 to 2400	144			Avg. 2244
16	L7	6	Var. 3325 to 3250	192			Avg. 3392
16	L8	22	Var. 1725 to 3325	192			Avg. 2717
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	38	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	6	192	2892	192		3276
16	U7	12	192	2892	192		3276
12	U8	4	Var. 3325 to 3250	175	525		Avg. 3875
12	U9	16	Var. 1725 to 3325	175	525		Avg. 3225
12	U10	6	1725	175	525		2425
16	U12	8	192	2940	192		3324
12	CC1	5	1150	350	2940		4440
12	CC2	17	1150	350	2940		4440
12	Z1	21	700	866	144		1710
12	S1	21	650	2650	240		3540
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 3.3m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0110333

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	16	650	144			794
12	L2	16	2150	144			2294
16	L3	8	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1850 to 2450	144			Avg. 2294
12	L6	4	Var. 1850 to 2450	144			Avg. 2294
16	L7	6	Var. 3400 to 3250	192			Avg. 3342
16	L8	22	Var. 1725 to 3400	192			Avg. 2755
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	38	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	6	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	4	Var. 3400 to 3250	175	525		Avg. 3800
12	U9	18	Var. 1725 to 3400	175	525		Avg. 3263
12	U10	6	1725	175	525		2425
16	U12	8	192	2940	192		3324
12	CC1	5	1150	350	2940		4440
12	CC2	17	1150	350	2940		4440
12	Z1	21	650	866	144		1660
12	S1	21	650	2700	240		3590
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	16	600	144			744
12	L2	16	2200	144			2344
16	L3	8	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1900 to 2500	144			Avg. 2344
12	L6	4	Var. 1900 to 2500	144			Avg. 2344
16	L7	6	Var. 3475 to 3250	192			Avg. 3292
16	L8	22	Var. 1725 to 3475	192			Avg. 2792
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	38	240	2400	240		2880
20	U2	13	240	3640	240		4120
20	U3	20	240	2400	240		2880
20	U4	13	240	3640	240		4120
16	U6	5	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	4	Var. 3475 to 3250	175	525		Avg. 3725
12	U9	18	Var. 1725 to 3475	175	525		Avg. 3300
12	U10	6	1725	175	525		2425
16	U12	8	192	2940	192		3324
12	CC1	5	1150	350	2940		4440
12	CC2	17	1150	350	2940		4440
12	Z1	21	600	866	144		1610
12	S1	21	650	2750	240		3640
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

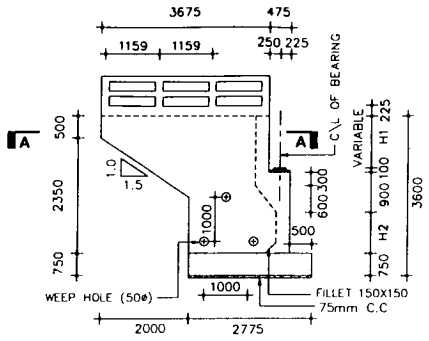
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 3.04m)

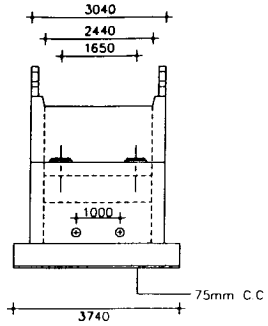
DATE :	ISSUED BY :
CAD_FILE REF : ABUT\R0110334	

Web Copy

SHEET 1 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO



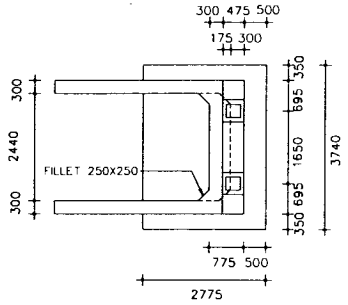
SIDE ELEVATION



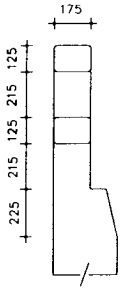
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	900	225	150
11500	800	1050	219	146
11000	800	1050	215	144
10500	800	1050	211	142
10000	800	1050	207	140
9500	800	1050	205	138
9000	800	1050	203	136
8500	600	1250	197	132
8000	600	1250	195	130
7500	600	1250	193	128
7000	600	1250	191	126
6500	600	1250	189	124
6000	600	1250	187	122
5500	350	1500	191	124
5000	350	1500	187	122
4500	300	1550	181	118
4000	300	1550	177	116
3500	300	1550	175	114
3000	250	1600	171	110
2500	250	1600	169	108
2000	250	1600	167	106
1500	250	1600	165	104



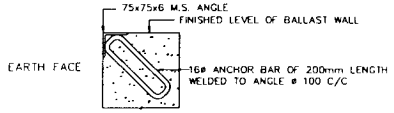
SECTION A-A



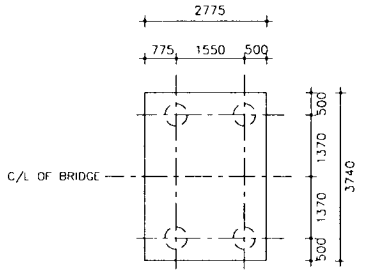
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

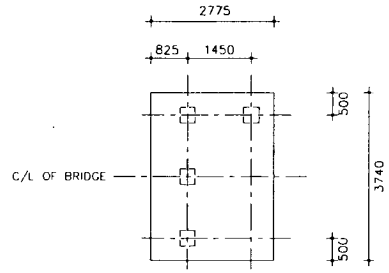
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horozontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

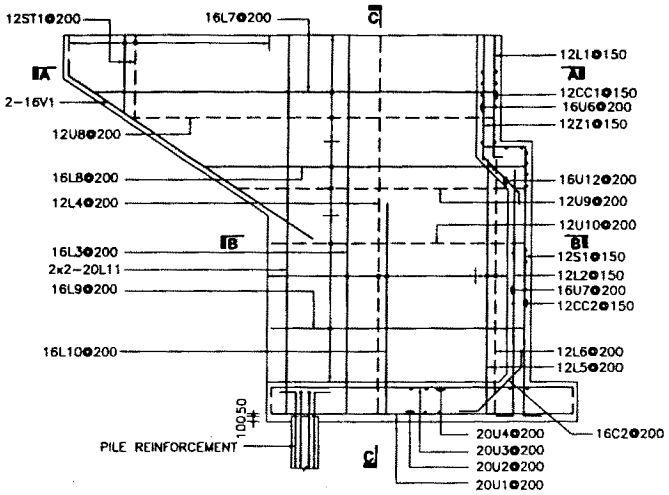
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.6m , DECK WIDTH 3.04m)

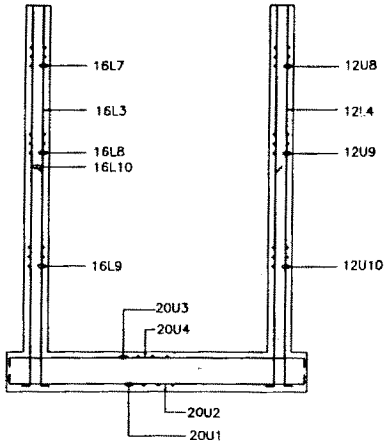
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110361	

Web Copy

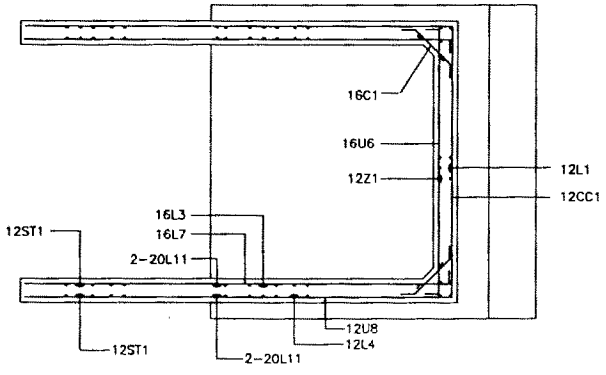
SHEET 2 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



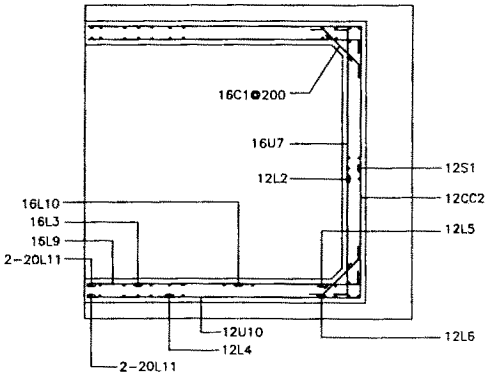
REINFORCEMENT DETAIL



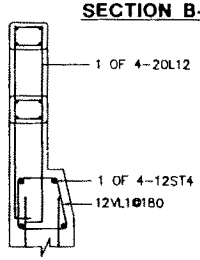
SECTION C-C



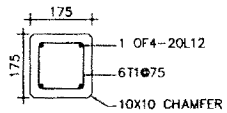
SECTION A-A



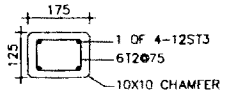
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1300	144			1444
12	L2	21	1800	144			1944
16	L3	8	3400	192			3592
12	L4	8	3400	144			3544
12	L5	6	Var. 1500 to 2100	144			Avg. 1944
12	L6	6	Var. 1500 to 2100	144			Avg. 1944
16	L7	12	Var. 2875 to 3700	192			Avg. 3617
16	L8	10	Var. 2175 to 2875	192			Avg. 2717
16	L9	10	2175	192			2367
16	L10	8	1577	192			1769
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2675	240		3155
20	U2	15	240	3640	240		4120
20	U3	20	240	2675	240		3155
20	U4	15	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	6	192	2892	192		3276
12	U8	12	Var. 2875 to 3700	200	550		Avg. 4175
12	U9	10	Var. 2175 to 2875	200	550		Avg. 3275
12	U10	10	2175	200	550		2925
16	U12	7	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	15	1200	400	2940		4540
12	Z1	21	1300	866	144		2310
12	S1	21	675	2350	240		3265
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3079			3329
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0110362

Web Copy

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1150	144			1294
12	L2	21	1950	144			2094
16	L3	8	3400	192			3592
12	L4	8	3400	144			3544
12	L5	6	Var. 1650 to 2250	144			Avg. 2094
12	L6	6	Var. 1650 to 2250	144			Avg. 2094
16	L7	10	Var. 3100 to 3700	192			Avg. 3772
16	L8	12	Var. 2175 to 3100	192			Avg. 2830
16	L9	10	2175	192			2367
16	L10	8	1577	192			1769
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2675	240		3155
20	U2	15	240	3640	240		4120
20	U3	20	240	2675	240		3155
20	U4	15	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	7	192	2892	192		3276
12	U8	10	Var. 3100 to 3700	200	550		Avg. 4330
12	U9	12	Var. 2175 to 3100	200	550		Avg. 3388
12	U10	10	2175	200	550		2925
16	U12	7	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	16	1200	400	2940		4540
12	Z1	21	1150	866	144		2160
12	S1	21	675	2500	240		3415
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3079			3329
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	950	144			1094
12	L2	21	2150	144			2294
16	L3	8	3400	192			3592
12	L4	8	3400	144			3544
12	L5	6	Var. 1850 to 2450	144			Avg. 2294
12	L6	6	Var. 1850 to 2450	144			Avg. 2294
16	L7	8	Var. 3400 to 3700	192			Avg. 3892
16	L8	14	Var. 2175 to 3400	192			Avg. 2980
16	L9	10	2175	192			2367
16	L10	8	1577	192			1769
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2675	240		3155
20	U2	15	240	3640	240		4120
20	U3	20	240	2675	240		3155
20	U4	15	240	3640	240		4120
16	U6	6	192	2892	192		3276
16	U7	8	192	2892	192		3276
12	U8	8	Var. 3400 to 3700	200	550		Avg. 4450
12	U9	14	Var. 2175 to 3400	200	550		Avg. 3538
12	U10	10	2175	200	550		2925
16	U12	7	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	17	1200	400	2940		4540
12	Z1	21	950	866	144		1960
12	S1	21	675	2700	240		3615
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3079			3329
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	700	144			844
12	L2	21	2400	144			2544
16	L3	8	3400	192			3592
12	L4	8	3400	144			3544
12	L5	6	Var. 2100 to 2700	144			Avg. 2544
12	L6	6	Var. 2100 to 2700	144			Avg. 2544
16	L7	4	Var. 3775 to 3700	192			Avg. 3817
16	L8	16	Var. 2175 to 3775	192			Avg. 3167
16	L9	10	2175	192			2367
16	L10	8	1577	192			1769
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2675	240		3155
20	U2	15	240	3640	240		4120
20	U3	20	240	2675	240		3155
20	U4	15	240	3640	240		4120
16	U6	5	192	2892	192		3276
16	U7	9	192	2892	192		3276
12	U8	4	Var. 3775 to 3700	200	550		Avg. 4375
12	U9	16	Var. 2175 to 3775	200	550		Avg. 3725
12	U10	10	2175	200	550		2925
16	U12	7	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	19	1200	400	2940		4540
12	Z1	21	700	866	144		1710
12	S1	21	675	2950	240		3865
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3079			3329
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110363	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	650	144			794
12	L2	21	2450	144			2594
16	L3	8	3400	192			3592
12	L4	8	3400	144			3544
12	L5	6	Var. 2150 to 2750	144			Avg. 2594
12	L6	6	Var. 2150 to 2750	144			Avg. 2594
16	L7	4	Var. 3850 to 3700	192			Avg. 3742
16	L8	18	Var. 2175 to 3850	192			Avg. 3205
16	L9	10	2175	192			2367
16	L10	8	1577	192			1769
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2675	240		3155
20	U2	15	240	3640	240		4120
20	U3	20	240	2675	240		3155
20	U4	15	240	3640	240		4120
16	U6	5	192	2892	192		3276
16	U7	10	192	2892	192		3276
12	U8	4	Var. 3850 to 3700	200	550		Avg. 4300
12	U9	18	Var. 2175 to 3850	200	550		Avg. 3763
12	U10	10	2175	200	550		2925
16	U12	7	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	19	1200	400	2940		4540
12	Z1	21	650	866	144		1660
12	S1	21	675	3000	240		3915
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3079			3329
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	600	144			744
12	L2	21	2500	144			2644
16	L3	8	3400	192			3592
12	L4	8	3400	144			3544
12	L5	6	Var. 2200 to 2800	144			Avg. 2644
12	L6	6	Var. 2200 to 2800	144			Avg. 2644
16	L7	4	Var. 3925 to 3700	192			Avg. 3667
16	L8	18	Var. 2175 to 3925	192			Avg. 3242
16	L9	10	2175	192			2367
16	L10	8	1577	192			1769
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2675	240		3155
20	U2	15	240	3640	240		4120
20	U3	20	240	2675	240		3155
20	U4	15	240	3640	240		4120
16	U6	4	192	2892	192		3276
16	U7	10	192	2892	192		3276
12	U8	4	Var. 3925 to 3700	200	550		Avg. 4225
12	U9	18	Var. 2175 to 3925	200	550		Avg. 3800
12	U10	10	2175	200	550		2925
16	U12	7	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	19	1200	400	2940		4540
12	Z1	21	600	866	144		1610
12	S1	21	675	3050	240		3965
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3079			3329
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

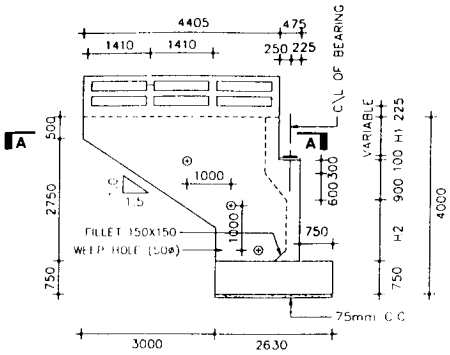
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 3.04m)

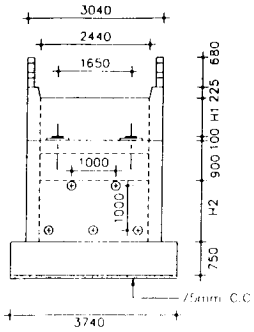
DATE :	ISSUED BY :
CAD FILE NAME : ABUT\R0110364	

Web Copy

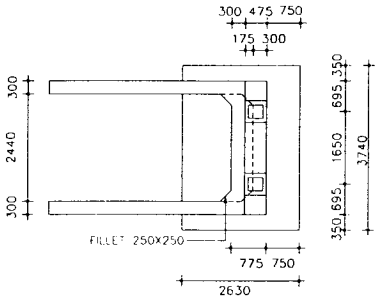
SHEET 1 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO



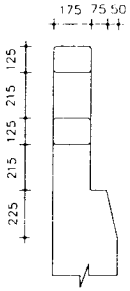
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



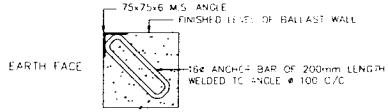
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

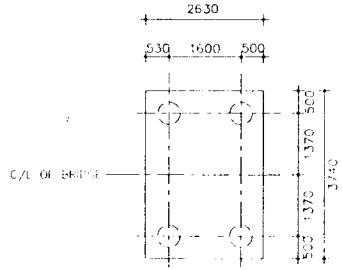
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	1300	220	145
11500	800	1450	214	141
11000	800	1450	210	139
10500	800	1450	206	137
10000	800	1450	202	135
9500	800	1450	200	133
9000	800	1450	198	131
8500	600	1650	192	127
8000	600	1650	190	125
7500	600	1650	188	123
7000	600	1650	186	121
6500	600	1650	184	119
6000	600	1650	182	117
5500	350	1900	186	119
5000	350	1900	182	117
4500	300	1950	176	113
4000	300	1950	172	111
3500	300	1950	170	109
3000	250	2000	166	105
2500	250	2000	164	103
2000	250	2000	162	101
1500	250	2000	160	99

TABLE-2

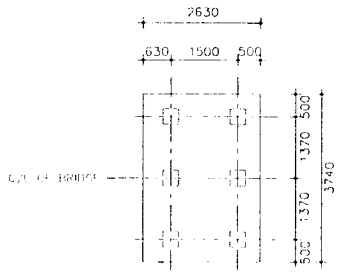
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest [illegible] on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000c/c horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

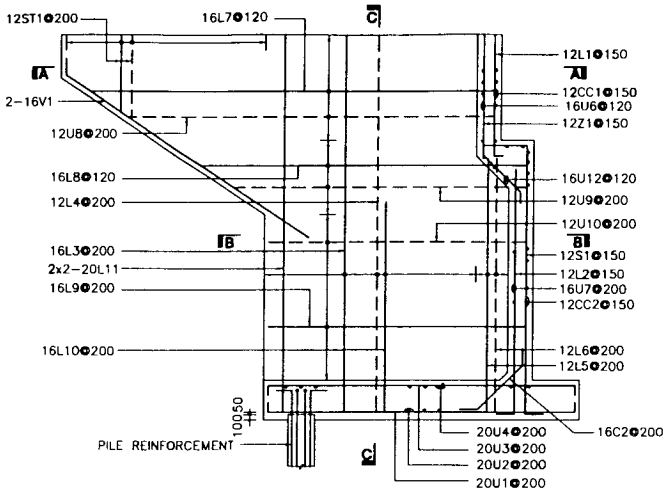
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 4.0m , DECK WIDTH 3.04m)

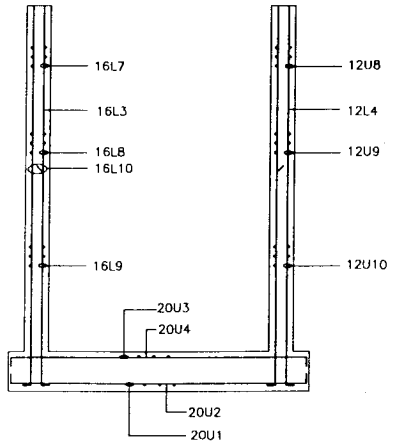
DATE
ISSUED BY :
CAD FILE REF : [illegible]

Web Copy

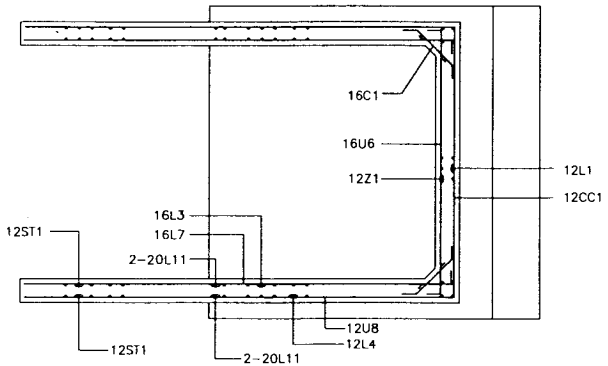
SHEET 2 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



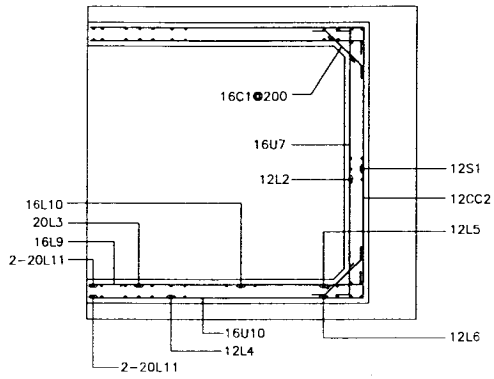
REINFORCEMENT DETAIL



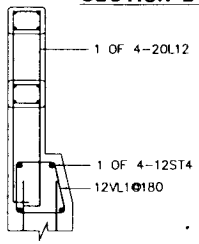
SECTION C-C



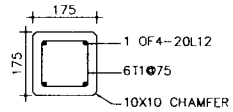
SECTION A-A



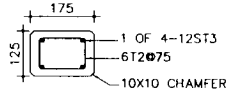
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg 1400
12	ST3	16	4365				4365
12	ST4	8	4355				4355
12	L1	21	1300	144			1444
12	L2	21	2200	144			2344
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1900 to 2500	144			Avg. 2344
12	L6	6	Var. 1900 to 2500	144			Avg. 2344
16	L7	20	Var. 3480 to 4305	192			Avg. 4167
16	L8	28	Var. 1780 to 3480	192			Avg. 2822
16	L9	6	1780	192			1972
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2530	240		3010
20	U2	14	240	3640	240		4120
20	U3	20	240	2530	240		3010
20	U4	14	240	3640	240		4120
16	U6	12	192	2892	192		3276
16	U7	8	192	2892	192		3276
12	U8	12	Var. 3480 to 4305	200	550		Avg. 4780
12	U9	18	Var. 1780 to 3480	200	550		Avg. 3380
12	U10	6	1780	200	550		2530
16	U12	10	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	17	1200	400	2940		4540
12	Z1	21	1300	866	144		2310
12	S1	21	675	2750	240		3665
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessorily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0110402

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FA-15

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4365				4365
12	ST4	8	4355				4355
12	L1	21	1150	144			1294
12	L2	21	2350	144			2494
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2050 to 2650	144			Avg. 2494
12	L6	6	Var. 2050 to 2650	144			Avg. 2494
16	L7	18	Var. 3705 to 4305	192			Avg. 4297
16	L8	30	Var. 1780 to 3705	192			Avg. 2935
16	L9	6	1780	192			1972
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2530	240		3010
20	U2	14	240	3640	240		4120
20	U3	20	240	2530	240		3010
20	U4	14	240	3640	240		4120
16	U6	11	192	2892	192		3276
16	U7	9	192	2892	192		3276
12	U8	10	Var. 3705 to 4305	200	550		Avg. 4935
12	U9	18	Var. 1780 to 3705	200	550		Avg. 3493
12	U10	6	1780	200	550		2530
16	U12	10	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	18	1200	400	2940		4540
12	Z1	21	1150	866	144		2160
12	S1	21	675	2900	240		3815
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4365				4365
12	ST4	8	4355				4355
12	L1	21	950	144			1094
12	L2	21	2550	144			2694
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2250 to 2850	144			Avg. 2694
12	L6	6	Var. 2250 to 2850	144			Avg. 2694
16	L7	14	Var. 4005 to 4305	192			Avg. 4454
16	L8	32	Var. 1780 to 4005	192			Avg. 3085
16	L9	6	1780	192			1972
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2530	240		3010
20	U2	14	240	3640	240		4120
20	U3	20	240	2530	240		3010
20	U4	14	240	3640	240		4120
16	U6	9	192	2892	192		3276
16	U7	10	192	2892	192		3276
12	U8	8	Var. 4005 to 4305	200	550		Avg. 5055
12	U9	20	Var. 1780 to 4005	200	550		Avg. 3643
12	U10	6	1780	200	550		2530
16	U12	10	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	20	1200	400	2940		4540
12	Z1	21	950	866	144		1960
12	S1	21	675	3100	240		4015
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4365				4365
12	ST4	8	4355				4355
12	L1	21	700	144			844
12	L2	21	2800	144			2944
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2500 to 3100	144			Avg. 2944
12	L6	6	Var. 2500 to 3100	144			Avg. 2944
16	L7	8	Var. 4380 to 4305	192			Avg. 4460
16	L8	38	Var. 1780 to 4380	192			Avg. 3272
16	L9	6	1780	192			1972
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2530	240		3010
20	U2	14	240	3640	240		4120
20	U3	20	240	2530	240		3010
20	U4	14	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	11	192	2892	192		3276
12	U8	4	Var. 4380 to 4305	200	550		Avg. 4980
12	U9	24	Var. 1780 to 4380	200	550		Avg. 3830
12	U10	6	1780	200	550		2530
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	21	1200	400	2940		4540
12	Z1	21	700	866	144		1710
12	S1	21	675	3350	240		4265
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110403	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4365				4365
12	ST4	8	4355				4355
12	L1	21	650	144			794
12	L2	21	2850	144			2994
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2550 to 3150	144			Avg. 2994
12	L6	6	Var. 2550 to 3150	144			Avg. 2994
16	L7	8	Var. 4455 to 4305	192			Avg. 4422
16	L8	38	Var. 1780 to 4455	192			Avg. 3310
16	L9	6	1780	192			1972
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2530	240		3010
20	U2	14	240	3640	240		4120
20	U3	20	240	2530	240		3010
20	U4	14	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	12	192	2892	192		3276
12	U8	4	Var. 4455 to 4305	200	550		Avg. 4905
12	U9	24	Var. 1780 to 4455	200	550		Avg. 3868
12	U10	6	1780	200	550		2530
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	22	1200	400	2940		4540
12	Z1	21	650	866	144		1660
12	S1	21	675	3400	240		4315
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4365				4365
12	ST4	8	4355				4355
12	L1	21	600	144			744
12	L2	21	2900	144			3044
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2600 to 3200	144			Avg. 3044
12	L6	6	Var. 2600 to 3200	144			Avg. 3044
16	L7	6	Var. 4530 to 4305	192			Avg. 4272
16	L8	38	Var. 1780 to 4530	192			Avg. 3347
16	L9	6	1780	192			1972
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2530	240		3010
20	U2	14	240	3640	240		4120
20	U3	20	240	2530	240		3010
20	U4	14	240	3640	240		4120
16	U6	6	192	2892	192		3276
16	U7	12	192	2892	192		3276
12	U8	4	Var. 4530 to 4305	200	550		Avg. 4830
12	U9	24	Var. 1780 to 4530	200	550		Avg. 3905
12	U10	6	1780	200	550		2530
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	22	1200	400	2940		4540
12	Z1	21	600	866	144		1610
12	S1	21	675	3450	240		4365
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

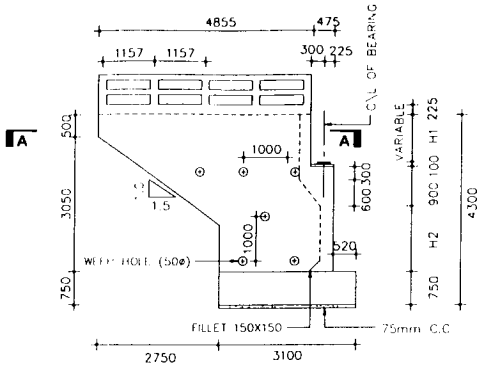
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 3.04m)

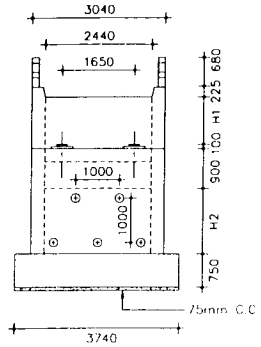
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110404	

Web Copy

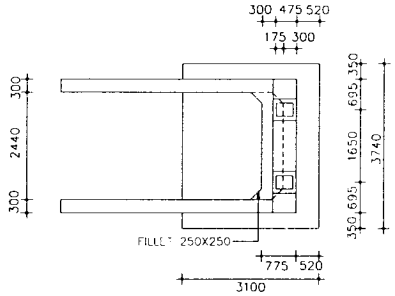
SHEET 1 OF 4	
SPAN RANGE : 1.5m TO 12m	
FOOT WALK : NO	



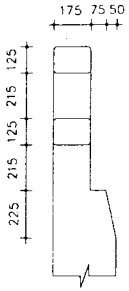
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



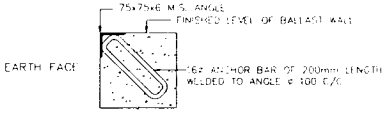
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

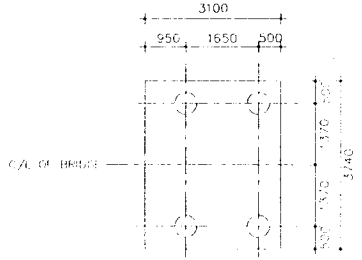
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	1600	250	125
11500	800	1750	244	121
11000	800	1750	240	119
10500	800	1750	236	117
10000	800	1750	232	115
9500	800	1750	230	113
9000	800	1750	228	111
8500	600	1950	222	107
8000	600	1950	220	105
7500	600	1950	218	103
7000	600	1950	216	101
6500	600	1950	214	99
6000	600	1950	212	97
5500	350	2200	216	99
5000	350	2200	212	97
4500	300	2250	206	93
4000	300	2250	202	91
3500	300	2250	200	89
3000	250	2300	196	87
2500	250	2300	194	85
2000	250	2300	192	83
1500	250	2300	190	81

TABLE-2

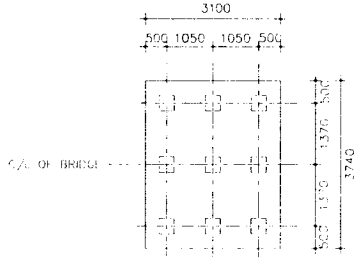
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	350X350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in KN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap. Hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 3000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

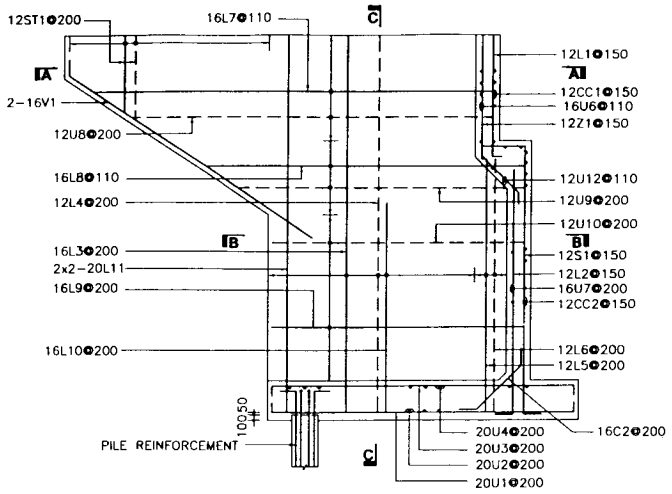
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.3m , DECK WIDTH 3.04m)

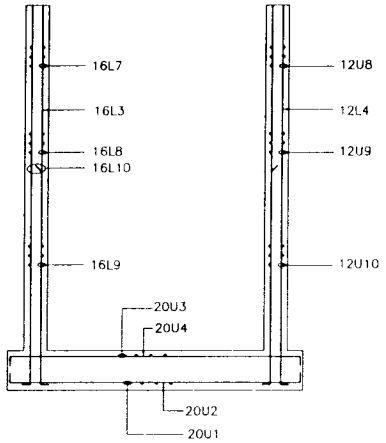
DATE	DRAWN BY
CAD FILE REF : ABUT_H4300.dgn	

Web Copy

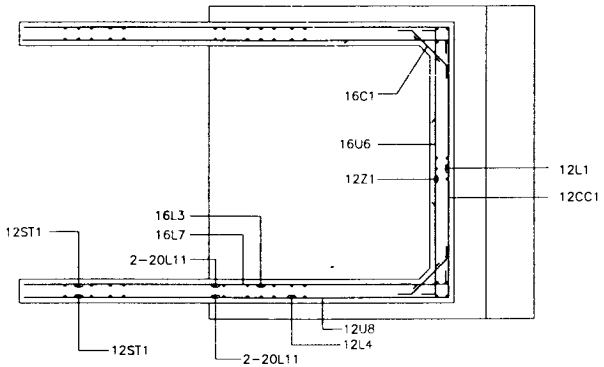
SHEET 2 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



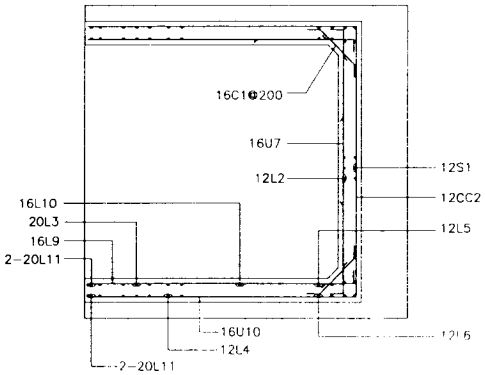
REINFORCEMENT DETAIL



SECTION C-C



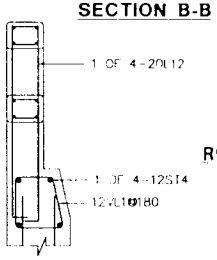
SECTION A-A



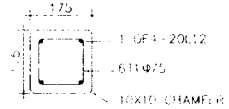
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

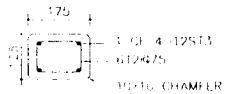
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	4815				4815
12	ST4	8	4805				4805
12	L1	21	1300	144			1444
12	L2	21	3500	144			2644
16	L3	16	4100	192			4292
12	L4	16	4100	144			4244
12	L5	6	Var. 2200 to 2800	144			Avg. 2644
12	L6	6	Var. 2200 to 2800	144			Avg. 2644
16	L7	20	Var. 3930 to 4755	192			Avg. 4617
16	L8	26	Var. 2480 to 3930	192			Avg. 3397
16	L9	12	2480	192			2672
16	L10	16	1777	192			1969
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3000	240		3480
20	U2	16	240	3640	240		4120
20	U3	20	240	3000	240		3480
20	U4	16	240	3640	240		4120
16	U6	13	192	2892	192		3276
16	U7	10	192	2892	192		3276
12	U8	12	Var. 3930 to 4755	200	550		Avg. 5093
12	U9	16	Var. 2480 to 3930	200	550		Avg. 3955
12	U10	12	2480	200	550		3230
16	U12	11	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	19	1200	400	2940		4540
12	Z1	21	1300	866	144		2310
12	S1	21	675	3050	240		3965
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4112			4362
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	250	250	28	1000



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb -25mm, d) Wall-50mm, e) Base -50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 4.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110432	

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FA-19

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	4815				4815
12	ST4	8	4805				4805
12	L1	21	1150	144			1294
12	L2	21	2650	144			2794
16	L3	16	4100	192			4292
12	L4	16	4100	144			4244
12	L5	6	Var. 2350 to 2950	144			Avg. 2794
12	L6	6	Var. 2350 to 2950	144			Avg. 2794
16	L7	18	Var. 4155 to 4755	192			Avg. 4747
16	L8	30	Var. 2480 to 4155	192			Avg. 3510
16	L9	12	2480	192			2672
16	L10	16	1777	192			1969
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3000	240		3480
20	U2	16	240	3640	240		4120
20	U3	20	240	3000	240		3480
20	U4	16	240	3640	240		4120
16	U6	12	192	2892	192		3276
16	U7	11	192	2892	192		3276
12	U8	10	Var. 4155 to 4755	200	550		Avg. 5265
12	U9	18	Var. 2480 to 4155	200	550		Avg. 4068
12	U10	12	2480	200	550		3230
16	U12	11	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	20	1200	400	2940		4540
12	Z1	21	1150	866	144		2160
12	S1	21	675	3200	240		4115
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4112			4362
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	4815				4815
12	ST4	8	4805				4805
12	L1	21	950	144			1094
12	L2	21	2850	144			2994
16	L3	16	4100	192			4292
12	L4	16	4100	144			4244
12	L5	6	Var. 2550 to 3150	144			Avg. 2994
12	L6	6	Var. 2550 to 3150	144			Avg. 2994
16	L7	14	Var. 4455 to 4755	192			Avg. 4904
16	L8	32	Var. 2480 to 4455	192			Avg. 3660
16	L9	12	2480	192			2672
16	L10	16	1777	192			1969
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3000	240		3480
20	U2	16	240	3640	240		4120
20	U3	20	240	3000	240		3480
20	U4	16	240	3640	240		4120
16	U6	10	192	2892	192		3276
16	U7	12	192	2892	192		3276
12	U8	8	Var. 4455 to 4755	200	550		Avg. 5430
12	U9	20	Var. 2480 to 4455	200	550		Avg. 4218
12	U10	12	2480	200	550		3230
16	U12	11	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	22	1200	400	2940		4540
12	Z1	21	950	866	144		1960
12	S1	21	675	3400	240		4315
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4112			4362
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	4815				4815
12	ST4	8	4805				4805
12	L1	21	700	144			844
12	L2	21	3100	144			3244
16	L3	16	4100	192			4292
12	L4	16	4100	144			4244
12	L5	6	Var. 2800 to 3400	144			Avg. 3244
12	L6	6	Var. 2800 to 3400	144			Avg. 3244
16	L7	8	Var. 4830 to 4755	192			Avg. 4910
16	L8	38	Var. 2480 to 4830	192			Avg. 3847
16	L9	12	2480	192			2672
16	L10	16	1777	192			1969
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3000	240		3480
20	U2	16	240	3640	240		4120
20	U3	20	240	3000	240		3480
20	U4	16	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	4	Var. 4830 to 4755	200	550		Avg. 5505
12	U9	22	Var. 2480 to 4830	200	550		Avg. 4405
12	U10	12	2480	200	550		3230
16	U12	11	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	23	1200	400	2940		4540
12	Z1	21	700	866	144		1710
12	S1	21	675	3650	240		4565
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4112			4362
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110433	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	4815				4815
12	ST4	8	4805				4805
12	L1	21	650	144			794
12	L2	21	3150	144			3294
16	L3	16	4100	192			4292
12	L4	16	4100	144			4244
12	L5	6	Var. 2850 to 3450	144			Avg. 3294
12	L6	6	Var. 2850 to 3450	144			Avg. 3294
16	L7	8	Var. 4905 to 4755	192			Avg. 4872
16	L8	38	Var. 2480 to 4905	192			Avg. 3885
16	L9	12	2480	192			2672
16	L10	16	1777	192			1969
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3000	240		3480
20	U2	16	240	3640	240		4120
20	U3	20	240	3000	240		3480
20	U4	16	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	4	Var. 4905 to 4755	200	550		Avg. 5430
12	U9	22	Var. 2480 to 4905	200	550		Avg. 4443
12	U10	12	2480	200	550		3230
16	U12	11	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	24	1200	400	2940		4540
12	Z1	21	650	866	144		1660
12	S1	21	675	3700	240		4615
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4112			4362
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

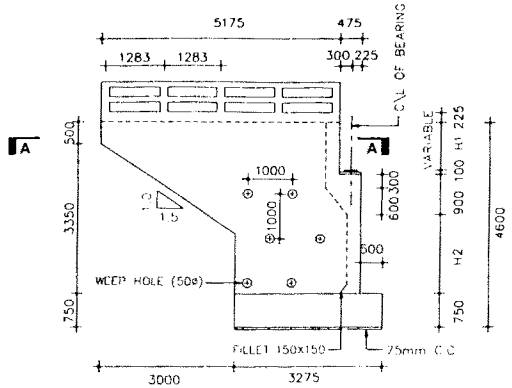
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	4815				4815
12	ST4	8	4805				4805
12	L1	21	600	144			744
12	L2	21	3200	144			3344
16	L3	16	4100	192			4292
12	L4	16	4100	144			4244
12	L5	6	Var. 2900 to 3500	144			Avg. 3344
12	L6	6	Var. 2900 to 3500	144			Avg. 3344
16	L7	6	Var. 4980 to 4755	192			Avg. 4722
16	L8	40	Var. 2480 to 4980	192			Avg. 3922
16	L9	12	2480	192			2672
16	L10	16	1777	192			1969
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3000	240		3480
20	U2	16	240	3640	240		4120
20	U3	20	240	3000	240		3480
20	U4	16	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	4	Var. 4980 to 4755	200	550		Avg. 5393
12	U9	22	Var. 2480 to 4980	200	550		Avg. 4480
12	U10	12	2480	200	550		3230
16	U12	11	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	24	1200	400	2940		4540
12	Z1	21	600	866	144		1610
12	S1	21	675	3750	240		4665
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4112			4362
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

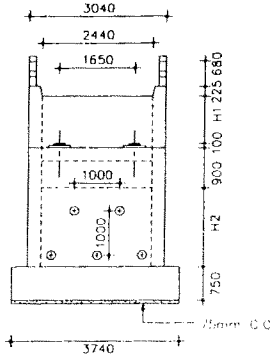
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110434	

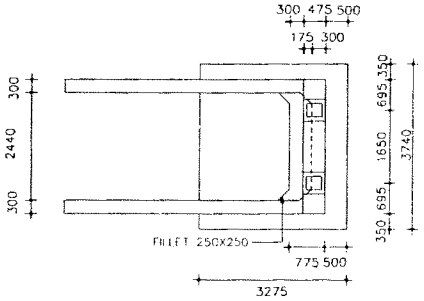
Web Copy



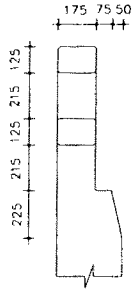
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



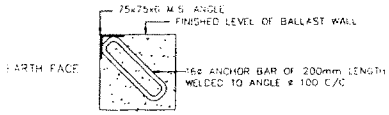
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

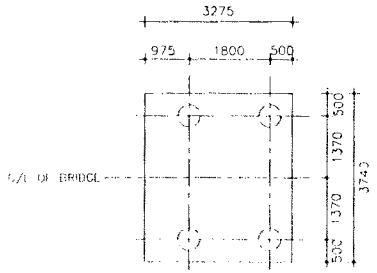
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	1900	295	135
11500	800	2050	289	131
11000	800	2050	285	129
10500	800	2050	281	127
10000	800	2050	277	125
9500	800	2050	275	123
9000	800	2050	273	121
8500	600	2250	267	117
8000	600	2250	265	115
7500	600	2250	263	113
7000	600	2250	261	111
6500	600	2250	259	109
6000	600	2250	257	107
5500	350	2500	261	109
5000	350	2500	257	107
4500	300	2550	251	103
4000	300	2550	247	101
3500	300	2550	245	99
3000	250	2600	241	97
2500	250	2600	239	95
2000	250	2600	237	93
1500	250	2600	235	91

TABLE-2

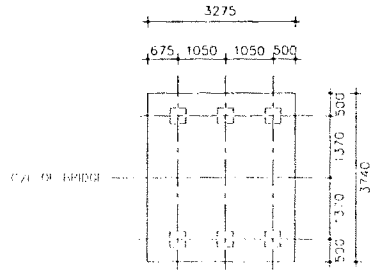
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reactions are in kN.
3) For Slab Culverts, the Step will rest right on the Abutment Cap. hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings. Side retainer shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 4.6m , DECK WIDTH 3.04m)

DATE | ISSUED BY :

CAD FILE REF : ABUT-W1030A1

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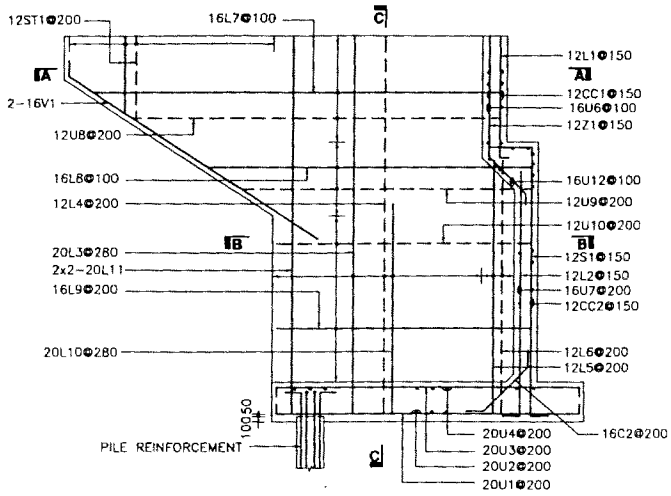
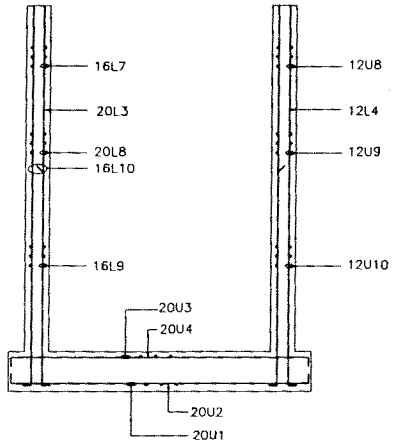
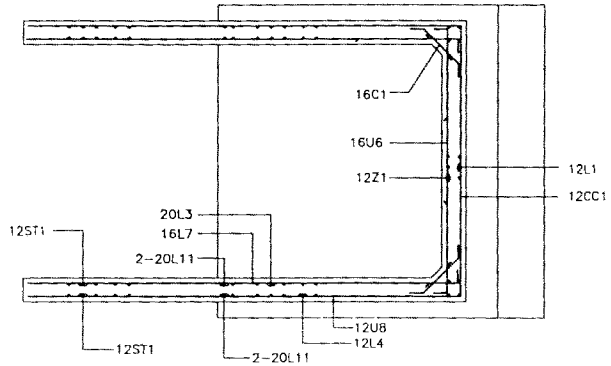
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



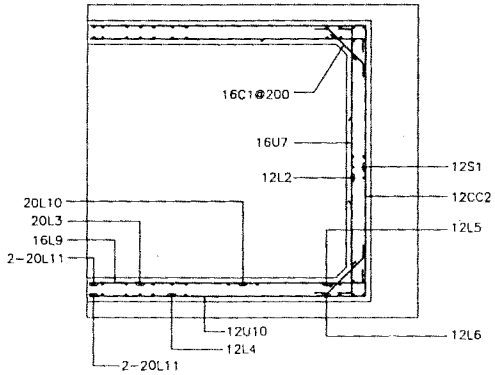
REINFORCEMENT DETAIL



SECTION C-C



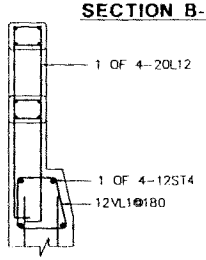
SECTION A-A



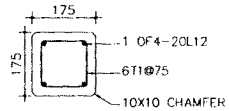
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

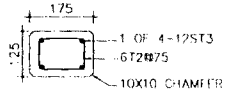
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	21	1300	144			1444
12	L2	21	2800	144			2944
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2500 to 3100	144			Avg. 2944
12	L6	6	Var. 2500 to 3100	144			Avg. 2944
16	L7	22	Var. 4375 to 5200	192			Avg. 5017
16	L8	32	Var. 2675 to 4375	192			Avg. 3717
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3175	240		3655
20	U2	17	240	3640	240		4120
20	U3	20	240	3175	240		3655
20	U4	17	240	3640	240		4120
16	U6	14	192	2892	192		3276
16	U7	11	192	2892	192		3276
12	U8	12	Var. 4375 to 5200	200	550		Avg. 5675
12	U9	18	Var. 2675 to 4375	200	550		Avg. 4275
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	21	1200	400	2940		4540
12	Z1	21	1300	866	144		2310
12	S1	21	675	3350	240		4265
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post- 20mm, c) Curb - 25mm, d) Wall -50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110462	

Web Copy

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	21	1150	144			1294
12	L2	21	2950	144			3094
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2650 to 3250	144			Avg. 3094
12	L6	6	Var. 2650 to 3250	144			Avg. 3094
16	L7	18	Var. 4600 to 5200	192			Avg. 5192
16	L8	34	Var. 2675 to 4600	192			Avg. 3830
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3175	240		3655
20	U2	17	240	3640	240		4120
20	U3	20	240	3175	240		3655
20	U4	17	240	3640	240		4120
16	U6	13	192	2892	192		3276
16	U7	12	192	2892	192		3276
12	U8	10	Var. 4600 to 5200	200	550		Avg. 5830
12	U9	18	Var. 2675 to 4600	200	550		Avg. 4388
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	22	1200	400	2940		4540
12	Z1	21	1150	866	144		2160
12	S1	21	675	3500	240		4415
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	21	950	144			1094
12	L2	21	3150	144			3294
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2850 to 3450	144			Avg. 3294
12	L6	6	Var. 2850 to 3450	144			Avg. 3294
16	L7	14	Var. 4900 to 5200	192			Avg. 5349
16	L8	38	Var. 2675 to 4900	192			Avg. 3980
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3175	240		3655
20	U2	17	240	3640	240		4120
20	U3	20	240	3175	240		3655
20	U4	17	240	3640	240		4120
16	U6	11	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	8	Var. 4900 to 5200	200	550		Avg. 5950
12	U9	20	Var. 2675 to 4900	200	550		Avg. 4538
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	24	1200	400	2940		4540
12	Z1	21	950	866	144		1960
12	S1	21	675	3700	240		4615
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	21	700	144			844
12	L2	21	3400	144			3544
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 3100 to 3700	144			Avg. 3544
12	L6	6	Var. 3100 to 3700	144			Avg. 3544
16	L7	8	Var. 5275 to 5200	192			Avg. 5355
16	L8	44	Var. 2675 to 5275	192			Avg. 4167
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3175	240		3655
20	U2	17	240	3640	240		4120
20	U3	20	240	3175	240		3655
20	U4	17	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	14	192	2892	192		3276
12	U8	4	Var. 5275 to 5200	200	550		Avg. 5875
12	U9	24	Var. 2675 to 5275	200	550		Avg. 4725
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	25	1200	400	2940		4540
12	Z1	21	700	866	144		1710
12	S1	21	675	3950	240		4865
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R011046.5	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	21	650	144			794
12	L2	21	3450	144			3594
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 3150 to 3750	144			Avg. 3594
12	L6	6	Var. 3150 to 3750	144			Avg. 3594
16	L7	8	Var. 5350 to 5200	192			Avg. 5317
16	L8	44	Var. 2675 to 5350	192			Avg. 4205
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3175	240		3655
20	U2	17	240	3640	240		4120
20	U3	20	240	3175	240		3655
20	U4	17	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	15	192	2892	192		3276
12	U8	4	Var. 5350 to 5200	200	550		Avg. 5800
12	U9	24	Var. 2675 to 5350	200	550		Avg. 4763
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	26	1200	400	2940		4540
12	Z1	21	650	866	144		1660
12	S1	21	675	4000	240		4915
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

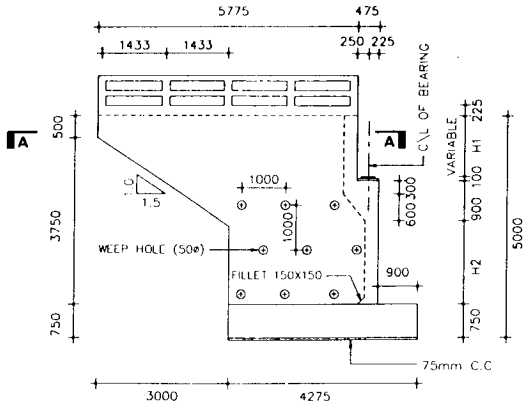
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	21	600	144			744
12	L2	21	3500	144			3644
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 3200 to 3800	144			Avg. 3644
12	L6	6	Var. 3200 to 3800	144			Avg. 3644
16	L7	6	Var. 5425 to 5200	192			Avg. 5167
16	L8	46	Var. 2675 to 5425	192			Avg. 4242
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3175	240		3655
20	U2	17	240	3640	240		4120
20	U3	20	240	3175	240		3655
20	U4	17	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	15	192	2892	192		3276
12	U8	4	Var. 5425 to 5200	200	550		Avg. 5725
12	U9	24	Var. 2675 to 5425	200	550		Avg. 4800
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	26	1200	400	2940		4540
12	Z1	21	600	866	144		1610
12	S1	21	675	4050	240		4965
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

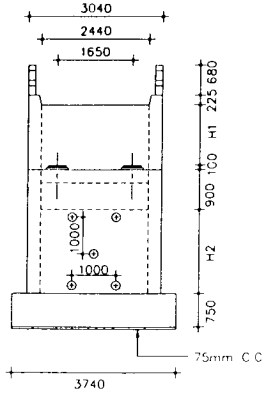
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110464	

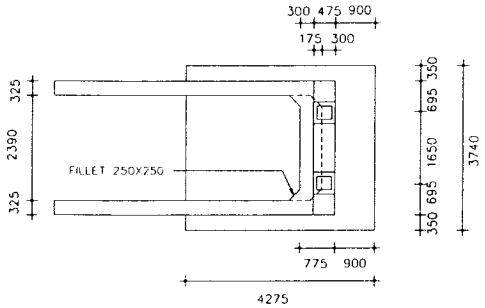
Web Copy



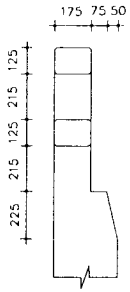
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



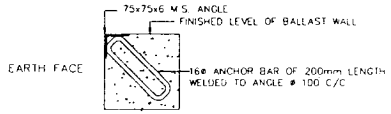
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

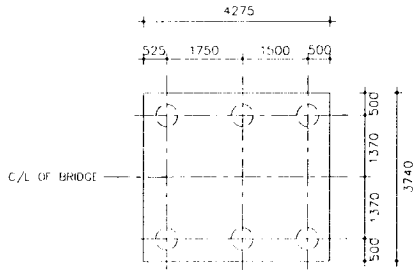
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	2300	245	165
11500	800	2450	241	161
11000	800	2450	239	159
10500	800	2450	237	157
10000	800	2450	235	155
9500	800	2450	233	153
9000	800	2450	231	151
8500	600	2650	227	147
8000	600	2650	225	145
7500	600	2650	223	143
7000	600	2650	221	141
6500	600	2650	219	139
6000	600	2650	217	137
5500	350	2900	219	139
5000	350	2900	217	137
4500	300	2950	213	133
4000	300	2950	211	131
3500	300	2950	209	129
3000	250	3000	205	127
2500	250	3000	203	125
2000	250	3000	201	123
1500	250	3000	199	121

TABLE-2

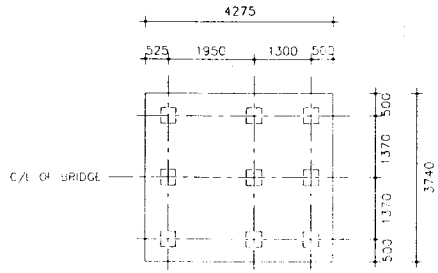
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in KN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

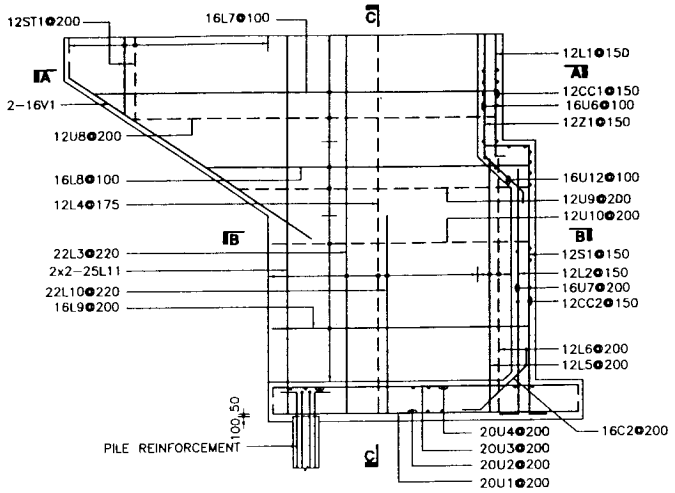
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 5.0m , DECK WIDTH 3.04m)

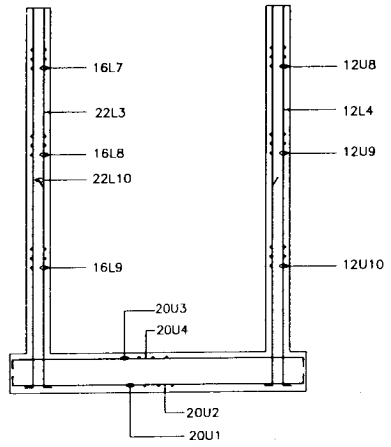
DATE :
ISSUED BY :
CAD FILE REF : ABUTMENT25

Web Copy

SHEET 2 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO



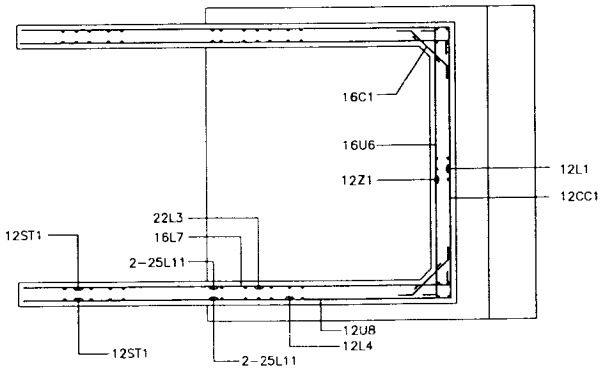
REINFORCEMENT DETAIL



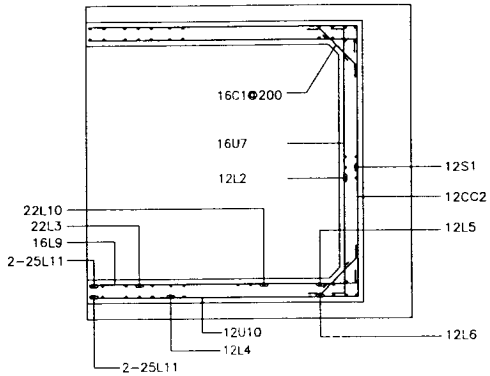
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

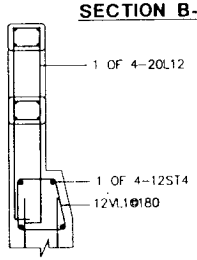
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1300	144			1444
12	L2	21	3200	144			3344
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2900 to 3500	144			Avg. 3344
12	L6	6	Var. 2900 to 3500	144			Avg. 3344
16	L7	22	Var. 4975 to 5800	192			Avg. 5617
16	L8	32	Var. 3275 to 4975	192			Avg. 4317
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	20	240	4175	240		4655
20	U2	22	240	3640	240		4120
20	U3	20	240	4175	240		4655
20	U4	22	240	3640	240		4120
16	U6	14	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	12	Var. 4975 to 5800	225	550		Avg. 6300
12	U9	18	Var. 3275 to 4975	225	550		Avg. 4900
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	9	1250	400	2940		4590
12	CC2	24	1250	400	2940		4590
12	Z1	21	1300	866	144		2310
12	S1	21	675	3750	240		4665
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000



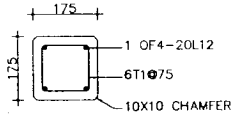
SECTION A-A



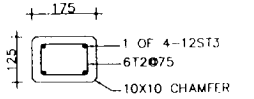
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of **276** MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 5.0m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R0110502

Web Copy

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1150	144			1294
12	L2	21	3350	144			3494
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3050 to 3650	144			Avg. 3494
12	L6	6	Var. 3050 to 3650	144			Avg. 3494
16	L7	18	Var. 5200 to 5800	192			Avg. 5792
16	L8	34	Var. 3275 to 5200	192			Avg. 4430
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	20	240	4175	240		4655
20	U2	22	240	3640	240		4120
20	U3	20	240	4175	240		4655
20	U4	22	240	3640	240		4120
16	U6	13	192	2892	192		3276
16	U7	14	192	2892	192		3276
12	U8	10	Var. 5200 to 5800	225	550		Avg. 6455
12	U9	18	Var. 3275 to 5200	225	550		Avg. 5013
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	8	1250	400	2940		4590
12	CC2	25	1250	400	2940		4590
12	Z1	21	1150	866	144		2160
12	S1	21	675	3900	240		4815
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	950	144			1094
12	L2	21	3550	144			3694
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3250 to 3850	144			Avg. 3694
12	L6	6	Var. 3250 to 3850	144			Avg. 3694
16	L7	14	Var. 5500 to 5800	192			Avg. 5949
16	L8	38	Var. 3275 to 5500	192			Avg. 4580
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	20	240	4175	240		4655
20	U2	22	240	3640	240		4120
20	U3	20	240	4175	240		4655
20	U4	22	240	3640	240		4120
16	U6	11	192	2892	192		3276
16	U7	15	192	2892	192		3276
12	U8	8	Var. 5500 to 5800	225	550		Avg. 6575
12	U9	20	Var. 3275 to 5500	225	550		Avg. 5163
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	7	1250	400	2940		4590
12	CC2	26	1250	400	2940		4590
12	Z1	21	950	866	144		1960
12	S1	21	675	4100	240		5015
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	700	144			844
12	L2	21	3800	144			3944
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3500 to 4100	144			Avg. 3944
12	L6	6	Var. 3500 to 4100	144			Avg. 3944
16	L7	8	Var. 5875 to 5800	192			Avg. 5955
16	L8	44	Var. 3275 to 5875	192			Avg. 4767
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	20	240	4175	240		4655
20	U2	22	240	3640	240		4120
20	U3	20	240	4175	240		4655
20	U4	22	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	16	192	2892	192		3276
12	U8	4	Var. 5875 to 5800	225	550		Avg. 6500
12	U9	24	Var. 3275 to 5875	225	550		Avg. 5350
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	5	1250	400	2940		4590
12	CC2	28	1250	400	2940		4590
12	Z1	21	700	866	144		1710
12	S1	21	575	4350	240		5265
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0110503	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	650	144			794
12	L2	21	3850	144			3994
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3550 to 4150	144			Avg. 3994
12	L6	6	Var. 3550 to 4150	144			Avg. 3994
16	L7	8	Var. 5950 to 5800	192			Avg. 5917
16	L8	44	Var. 3275 to 5950	192			Avg. 4805
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	20	240	4175	240		4655
20	U2	22	240	3640	240		4120
20	U3	20	240	4175	240		4655
20	U4	22	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	17	192	2892	192		3276
12	U8	4	Var. 5950 to 5800	225	550		Avg. 6425
12	U9	24	Var. 3275 to 5950	225	550		Avg. 5388
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	5	1250	400	2940		4590
12	CC2	28	1250	400	2940		4590
12	Z1	21	650	866	144		1660
12	S1	21	675	4400	240		5315
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	600	144			744
12	L2	21	3900	144			4044
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3600 to 4200	144			Avg. 4044
12	L6	6	Var. 3600 to 4200	144			Avg. 4044
16	L7	6	Var. 6025 to 5800	192			Avg. 5767
16	L8	46	Var. 3275 to 6025	192			Avg. 4842
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	20	240	4175	240		4655
20	U2	22	240	3640	240		4120
20	U3	20	240	4175	240		4655
20	U4	22	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	17	192	2892	192		3276
12	U8	4	Var. 6025 to 5800	225	550		Avg. 6350
12	U9	24	Var. 3275 to 6025	225	550		Avg. 5425
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	5	1250	400	2940		4590
12	CC2	29	1250	400	2940		4590
12	Z1	21	600	866	144		1610
12	S1	21	675	4450	240		5365
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

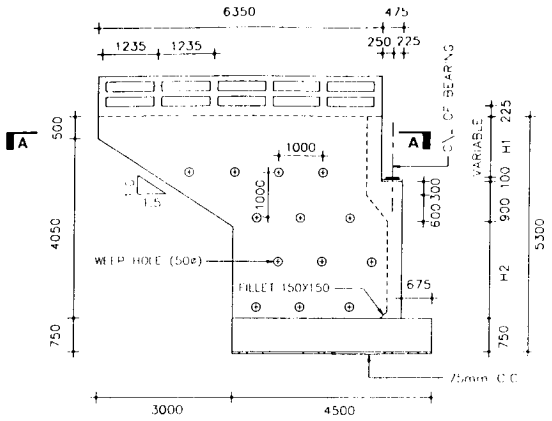
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 5.0m , DECK WIDTH 3.04m)

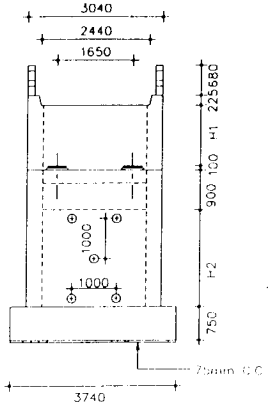
DATE :	ISSUED BY :
CAD DEF REF : ABUT/R0110504	

Web Copy

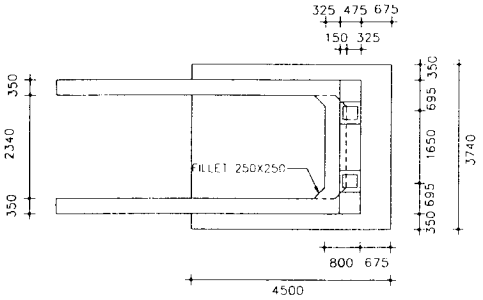
SHEET 1 OF 4	
SPAN RANGE	1.5m TO 12m
SIDE WALK	NO



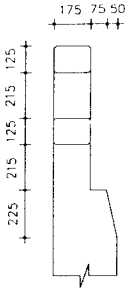
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



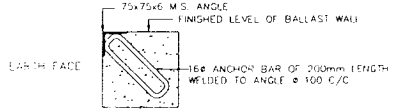
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

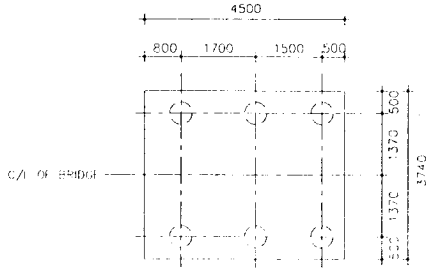
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	2600	275	140
11500	800	2750	271	138
11000	800	2750	269	136
10500	800	2750	267	134
10000	800	2750	265	132
9500	800	2750	263	130
9000	800	2750	261	128
8500	600	2950	257	126
8000	600	2950	255	124
7500	600	2950	253	122
7000	600	2950	251	120
6500	600	2950	249	118
6000	600	2950	247	116
5500	350	3200	249	118
5000	350	3200	247	116
4500	300	3250	243	114
4000	300	3250	241	112
3500	300	3250	239	110
3000	250	3300	235	108
2500	250	3300	233	106
2000	250	3300	231	104
1500	250	3300	229	102

TABLE-2

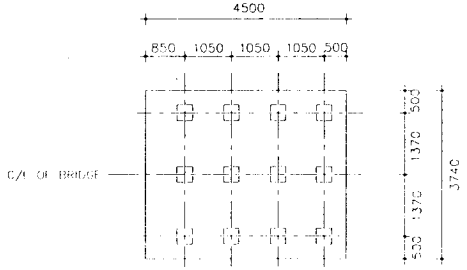
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reactions are in kN.
3) For Test Culverts, the Slab will rest right on the Abutment Cap, hence Bearing / Beam / Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

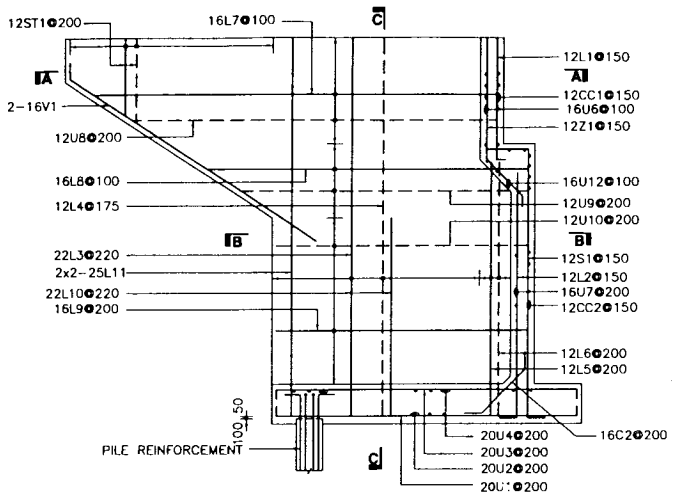
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 5.3m , DECK WIDTH 3.04m)

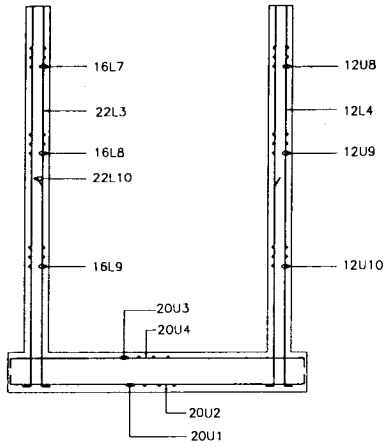
DATE	ISSUED BY
CAD FILE REF.	

Web Copy

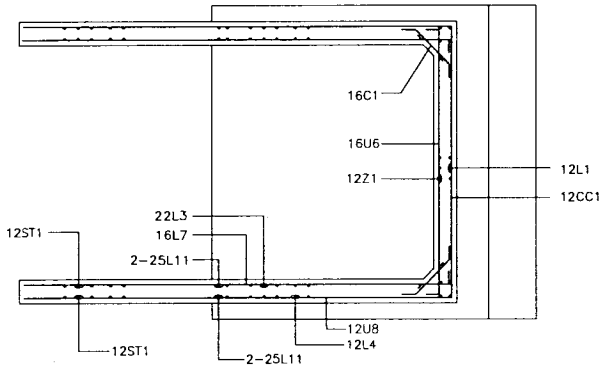
SHEET 2 OF 4	
SPAN RANGE : 1.5m TO 12m	
SIDE WALK : NO	



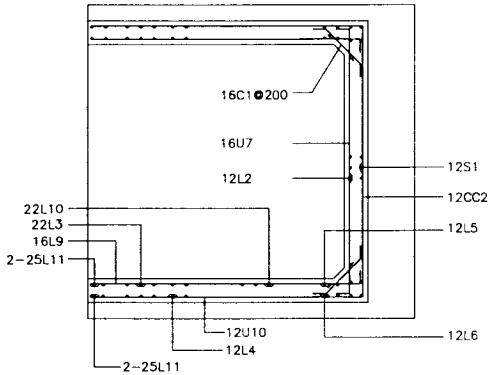
REINFORCEMENT DETAIL



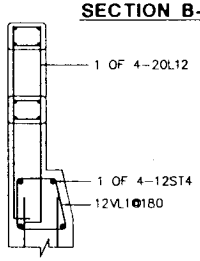
SECTION C-C



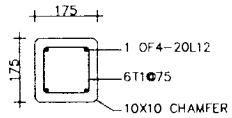
SECTION A-A



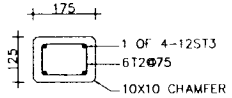
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	1300	144			1444
12	L2	21	3500	144			3644
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3200 to 3800	144			Avg. 3644
12	L6	6	Var. 3200 to 3800	144			Avg. 3644
16	L7	22	Var. 5425 to 6250	192			Avg. 6067
16	L8	32	Var. 3725 to 5425	192			Avg. 4767
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4400	240		4880
20	U2	23	240	3640	240		4120
20	U3	20	240	4400	240		4880
20	U4	23	240	3640	240		4120
16	U6	14	192	2892	192		3276
16	U7	15	192	2892	192		3276
12	U8	12	Var. 5425 to 6250	250	575		Avg. 6800
12	U9	18	Var. 3725 to 5425	250	575		Avg. 5400
12	U10	20	3725	250	600		4575
16	U12	10	192	2940	192		3324
12	CC1	9	1300	450	2940		4690
12	CC2	26	1300	450	2940		4690
12	Z1	21	1300	866	144		2310
12	S1	21	700	4050	240		4990
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structurol grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0110532	

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SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	1150	144			1294
12	L2	21	3650	144			3794
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3350 to 3950	144			Avg. 3794
12	L6	6	Var. 3350 to 3950	144			Avg. 3794
16	L7	18	Var. 5650 to 6250	192			Avg. 6242
16	L8	34	Var. 3725 to 5650	192			Avg. 4880
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4400	240		4880
20	U2	23	240	3640	240		4120
20	U3	20	240	4400	240		4880
20	U4	23	240	3640	240		4120
16	U6	13	192	2892	192		3276
16	U7	16	192	2892	192		3276
12	U8	10	Var. 5650 to 6250	250	575		Avg. 6955
12	U9	18	Var. 3725 to 5650	250	575		Avg. 5513
12	U10	20	3725	250	600		4575
16	U12	10	192	2940	192		3324
12	CC1	8	1300	450	2940		4690
12	CC2	27	1300	450	2940		4690
12	Z1	21	1150	866	144		2160
12	S1	21	700	4200	240		5140
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	950	144			1094
12	L2	21	3850	144			3994
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3550 to 4150	144			Avg. 3994
12	L6	6	Var. 3550 to 4150	144			Avg. 3994
16	L7	14	Var. 5950 to 6250	192			Avg. 6399
16	L8	38	Var. 3725 to 5950	192			Avg. 5030
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4400	240		4880
20	U2	23	240	3640	240		4120
20	U3	20	240	4400	240		4880
20	U4	23	240	3640	240		4120
16	U6	11	192	2892	192		3276
16	U7	17	192	2892	192		3276
12	U8	8	Var. 5950 to 6250	250	575		Avg. 7075
12	U9	20	Var. 3725 to 5950	250	575		Avg. 5663
12	U10	20	3725	250	600		4575
16	U12	10	192	2940	192		3324
12	CC1	7	1300	450	2940		4690
12	CC2	28	1300	450	2940		4690
12	Z1	21	950	866	144		1960
12	S1	21	700	4400	240		5340
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	700	144			844
12	L2	21	4100	144			4244
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3800 to 4400	144			Avg. 4244
12	L6	6	Var. 3800 to 4400	144			Avg. 4244
16	L7	8	Var. 6325 to 6250	192			Avg. 6405
16	L8	44	Var. 3725 to 6325	192			Avg. 5217
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4400	240		4880
20	U2	23	240	3640	240		4120
20	U3	20	240	4400	240		4880
20	U4	23	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	18	192	2892	192		3276
12	U8	4	Var. 6325 to 6250	250	575		Avg. 7000
12	U9	24	Var. 3725 to 6325	250	575		Avg. 5850
12	U10	20	3725	250	600		4575
16	U12	10	192	2940	192		3324
12	CC1	5	1300	450	2940		4690
12	CC2	30	1300	450	2940		4690
12	Z1	21	700	866	144		1710
12	S1	21	700	4650	240		5590
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R011D533	

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SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	650	144			794
12	L2	21	4150	144			4294
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3850 to 4450	144			Avg. 4294
12	L6	6	Var. 3850 to 4450	144			Avg. 4294
16	L7	8	Var. 6400 to 6250	192			Avg. 6367
16	L8	44	Var. 3725 to 6400	192			Avg. 5255
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4400	240		4880
20	U2	23	240	3640	240		4120
20	U3	20	240	4400	240		4880
20	U4	23	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	18	192	2892	192		3276
12	U8	4	Var. 6400 to 6250	250	575		Avg. 6925
12	U9	24	Var. 3725 to 6400	250	575		Avg. 5888
12	U10	20	3725	250	600		4575
16	U12	10	192	2940	192		3324
12	CC1	5	1300	450	2940		4690
12	CC2	30	1300	450	2940		4690
12	Z1	21	650	866	144		1660
12	S1	21	700	4700	240		5640
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

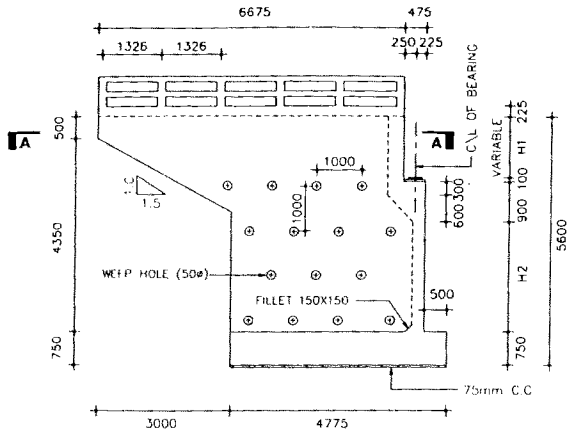
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	600	144			744
12	L2	21	4200	144			4344
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3900 to 4500	144			Avg. 4344
12	L6	6	Var. 3900 to 4500	144			Avg. 4344
16	L7	6	Var. 6475 to 6250	192			Avg. 6217
16	L8	46	Var. 3725 to 6475	192			Avg. 5292
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4400	240		4880
20	U2	23	240	3640	240		4120
20	U3	20	240	4400	240		4880
20	U4	23	240	3640	240		4120
16	U6	7	192	2892	192		3276
16	U7	18	192	2892	192		3276
12	U8	4	Var. 6475 to 6250	250	575		Avg. 6850
12	U9	24	Var. 3725 to 6475	250	575		Avg. 5925
12	U10	20	3725	250	600		4575
16	U12	10	192	2940	192		3324
12	CC1	5	1300	450	2940		4690
12	CC2	31	1300	450	2940		4690
12	Z1	21	600	866	144		1610
12	S1	21	700	4750	240		5690
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

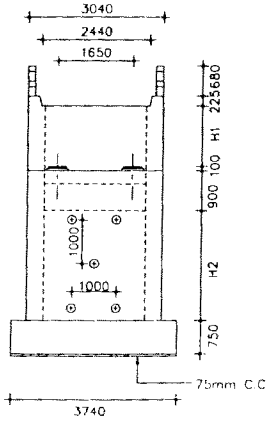
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R01105.54	

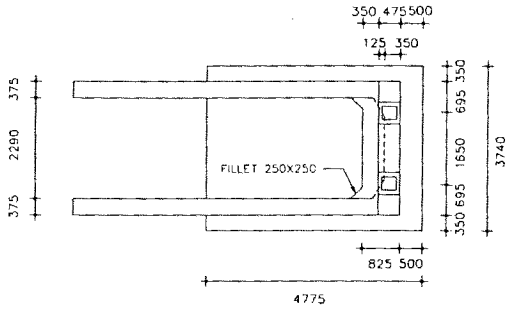
Web Copy



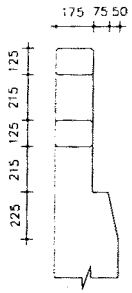
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



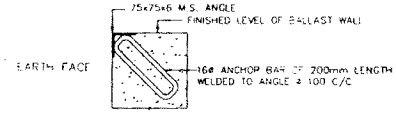
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

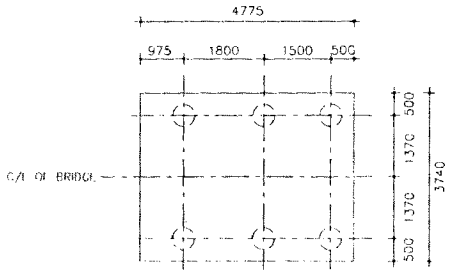
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	2900	310	160
11500	800	3050	306	158
11000	800	3050	304	156
10500	800	3050	302	154
10000	800	3050	300	152
9500	800	3050	298	150
9000	800	3050	296	148
8500	600	3250	292	146
8000	600	3250	290	144
7500	600	3250	288	142
7000	600	3250	286	140
6500	600	3250	284	138
6000	600	3250	282	136
5500	350	3500	284	138
5000	350	3500	282	136
4500	300	3550	278	134
4000	300	3550	276	132
3500	300	3550	274	130
3000	250	3600	270	128
2500	250	3600	268	126
2000	250	3600	266	124
1500	250	3600	264	122

TABLE-2

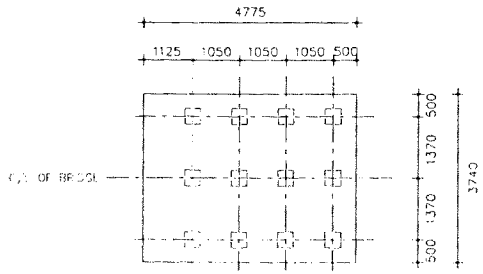
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap. Hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 150mm horizontally and vertically as shown in drawings. Filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.6m , DECK WIDTH 3.04m)

DATE | SIGNED BY

CAD FILE NO: ABUTMENT003

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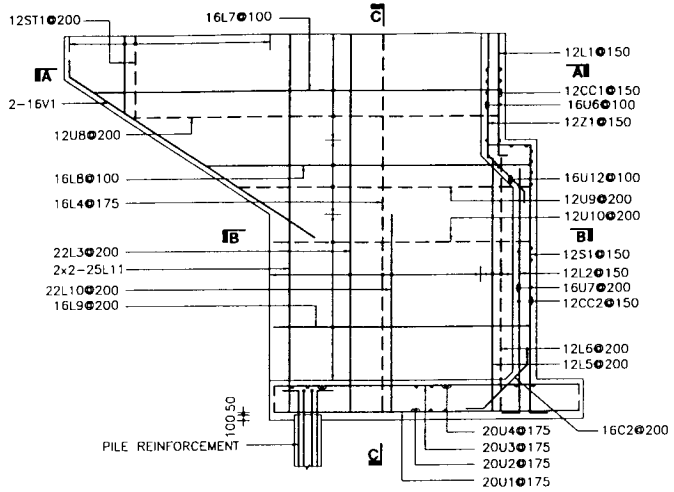
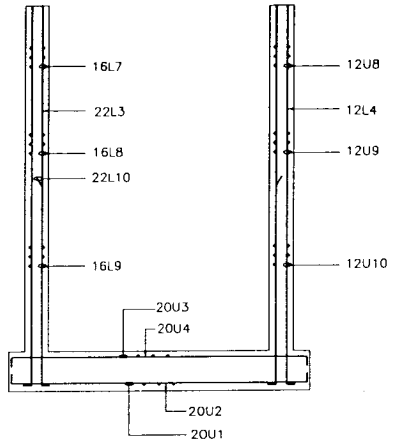
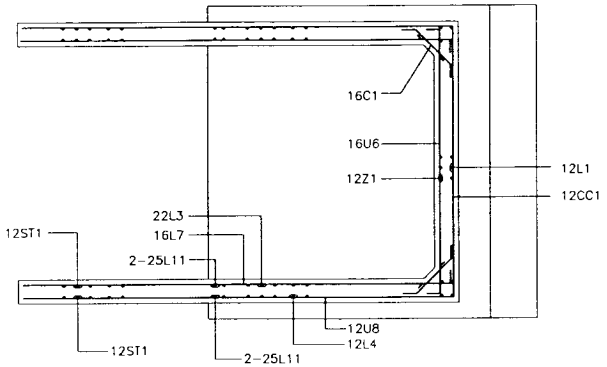
SHEET 2 OF 4	
SPAN RANGE : 1.5m TO 12.0m	
SIDE WALK : NO	



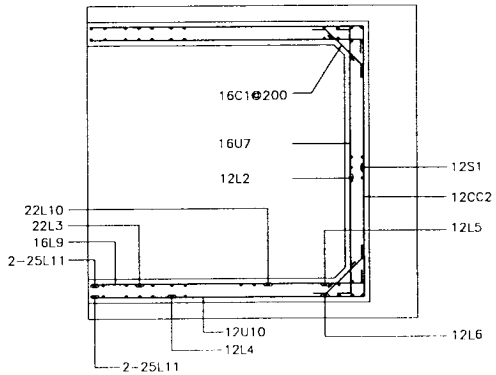
REINFORCEMENT DETAIL



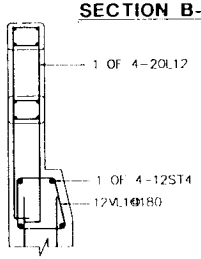
SECTION C-C



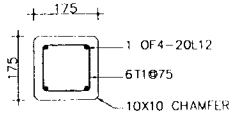
SECTION A-A



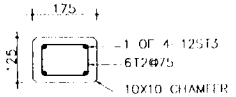
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	21	1300	144			1444
12	L2	21	3800	144			3944
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3500 to 4100	144			Avg. 3944
12	L6	6	Var. 3500 to 4100	144			Avg. 3944
16	L7	22	Var. 5875 to 6700	192			Avg. 6442
16	L8	32	Var. 4175 to 5875	192			Avg. 5217
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4675	240		5155
20	U2	28	240	3640	240		4120
20	U3	22	240	4675	240		5155
20	U4	28	240	3640	240		4120
16	U6	14	192	2884	192		3268
16	U7	16	192	2892	192		3276
12	U8	12	Var. 5875 to 6700	275	600		Avg. 7163
12	U9	18	Var. 4175 to 5875	275	600		Avg. 5900
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	9	1350	500	2940		4790
12	CC2	28	1350	500	2940		4790
12	Z1	21	1300	866	144		2310
12	S1	21	725	4350	240		5315
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	WL1	78	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C.33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 3.04m)

DAR :	ISSUED BY :
CAD FILE REF : ABUT/R0110562	

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SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	21	1150	144			1294
12	L2	21	3950	144			4094
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3650 to 4250	144			Avg. 4094
12	L6	6	Var. 3650 to 4250	144			Avg. 4094
16	L7	18	Var. 6100 to 6700	192			Avg. 6625
16	L8	34	Var. 4175 to 6100	192			Avg. 5330
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4675	240		5155
20	U2	28	240	3640	240		4120
20	U3	22	240	4675	240		5155
20	U4	28	240	3640	240		4120
16	U6	13	192	2884	192		3268
16	U7	17	192	2892	192		3276
12	U8	10	Var. 6100 to 6700	275	600		Avg. 7335
12	U9	18	Var. 4175 to 6100	275	600		Avg. 6013
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	8	1350	500	2940		4790
12	CC2	29	1350	500	2940		4790
12	Z1	21	1150	866	144		2160
12	S1	21	725	4500	240		5465
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	276	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	21	950	144			1094
12	L2	21	4150	144			4294
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3850 to 4450	144			Avg. 4294
12	L6	6	Var. 3850 to 4450	144			Avg. 4294
16	L7	14	Var. 6400 to 6700	192			Avg. 6806
16	L8	38	Var. 4175 to 6400	192			Avg. 5480
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4675	240		5155
20	U2	28	240	3640	240		4120
20	U3	22	240	4675	240		5155
20	U4	28	240	3640	240		4120
16	U6	11	192	2884	192		3268
16	U7	18	192	2892	192		3276
12	U8	8	Var. 6400 to 6700	275	600		Avg. 7500
12	U9	20	Var. 4175 to 6400	275	600		Avg. 6163
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	7	1350	500	2940		4790
12	CC2	30	1350	500	2940		4790
12	Z1	21	950	866	144		1960
12	S1	21	725	4700	240		5665
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	21	700	144			844
12	L2	21	4400	144			4544
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 4100 to 4700	144			Avg. 4544
12	L6	6	Var. 4100 to 4700	144			Avg. 4544
16	L7	8	Var. 6775 to 6700	192			Avg. 6873
16	L8	44	Var. 4175 to 6775	192			Avg. 5667
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4675	240		5155
20	U2	28	240	3640	240		4120
20	U3	22	240	4675	240		5155
20	U4	28	240	3640	240		4120
16	U6	8	192	2884	192		3268
16	U7	19	192	2892	192		3276
12	U8	4	Var. 6775 to 6700	275	600		Avg. 7575
12	U9	24	Var. 4175 to 6775	275	600		Avg. 6350
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	5	1350	500	2940		4790
12	CC2	32	1350	500	2940		4790
12	Z1	21	700	866	144		1710
12	S1	21	725	4950	240		5915
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R0110563

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BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	21	650	144			794
12	L2	21	4450	144			4594
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 4150 to 4750	144			Avg. 4594
12	L6	6	Var. 4150 to 4750	144			Avg. 4594
16	L7	8	Var. 6850 to 6700	192			Avg. 6855
16	L8	44	Var. 4175 to 6850	192			Avg. 5705
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4675	240		5155
20	U2	28	240	3640	240		4120
20	U3	22	240	4675	240		5155
20	U4	28	240	3640	240		4120
16	U6	8	192	2884	192		3268
16	U7	20	192	2892	192		3276
12	U8	4	Var. 6850 to 6700	275	600		Avg. 7500
12	U9	24	Var. 4175 to 6850	275	600		Avg. 6388
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	5	1350	500	2940		4790
12	CC2	32	1350	500	2940		4790
12	Z1	21	650	866	144		1660
12	S1	21	725	5000	240		5965
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	21	600	144			744
12	L2	21	4500	144			4644
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 4200 to 4800	144			Avg. 4644
12	L6	6	Var. 4200 to 4800	144			Avg. 4644
16	L7	6	Var. 6925 to 6700	192			Avg. 6742
16	L8	46	Var. 4175 to 6925	192			Avg. 5742
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4675	240		5155
20	U2	28	240	3640	240		4120
20	U3	22	240	4675	240		5155
20	U4	28	240	3640	240		4120
16	U6	7	192	2884	192		3268
16	U7	20	192	2892	192		3276
12	U8	4	Var. 6925 to 6700	275	600		Avg. 7463
12	U9	24	Var. 4175 to 6925	275	600		Avg. 6425
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	5	1350	500	2940		4790
12	CC2	33	1350	500	2940		4790
12	Z1	21	600	866	144		1610
12	S1	21	725	5050	240		6015
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

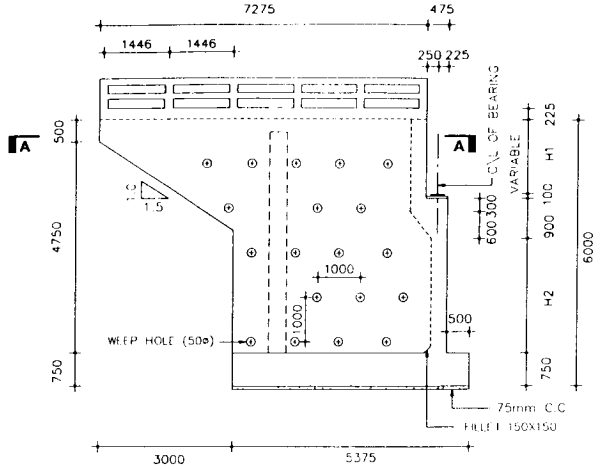
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 3.04m)

DATE :

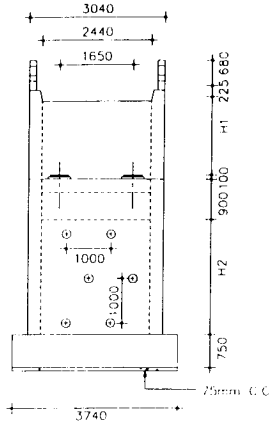
ISSUED BY :

CAD FILE REF : ABUT/R0110564

Web Copy



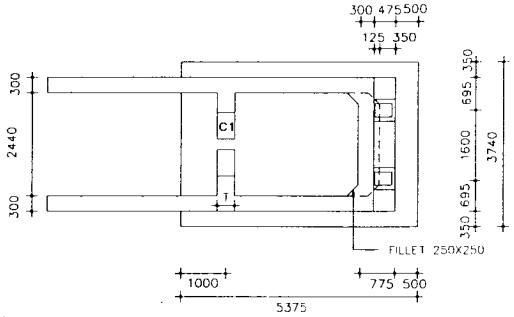
SIDE ELEVATION



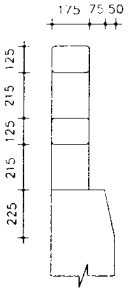
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	3300	365	150
11500	800	3450	361	148
11000	800	3450	359	146
10500	800	3450	357	144
10000	800	3450	355	142
9500	800	3450	353	140
9000	800	3450	351	138
8500	600	3650	347	136
8000	600	3650	345	134
7500	600	3650	343	132
7000	600	3650	341	130
6500	600	3650	339	128
6000	600	3650	337	126
5500	350	3900	339	128
5000	350	3900	337	126
4500	300	3950	333	124
4000	300	3950	331	122
3500	300	3950	329	120
3000	250	4000	325	116
2500	250	4000	323	116
2000	250	4000	321	114
1500	250	4000	319	112



SECTION A-A



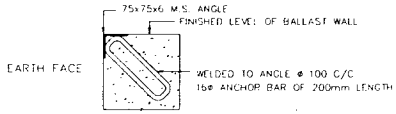
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

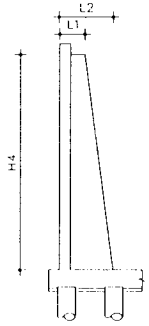
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	30	PRECAST

TABLE-3

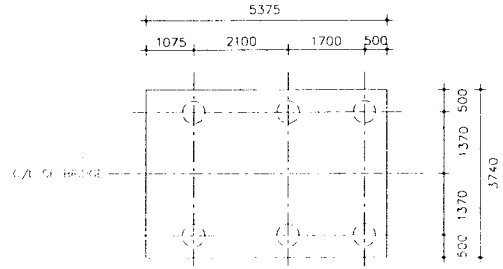
L1	L2	H4	T
500	1400	4950	400



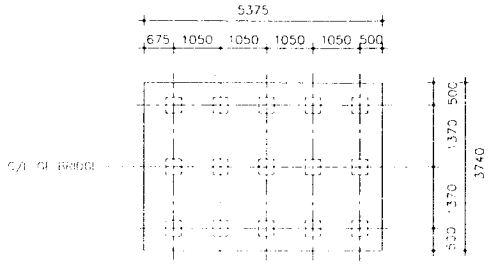
NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment cap. Hence Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

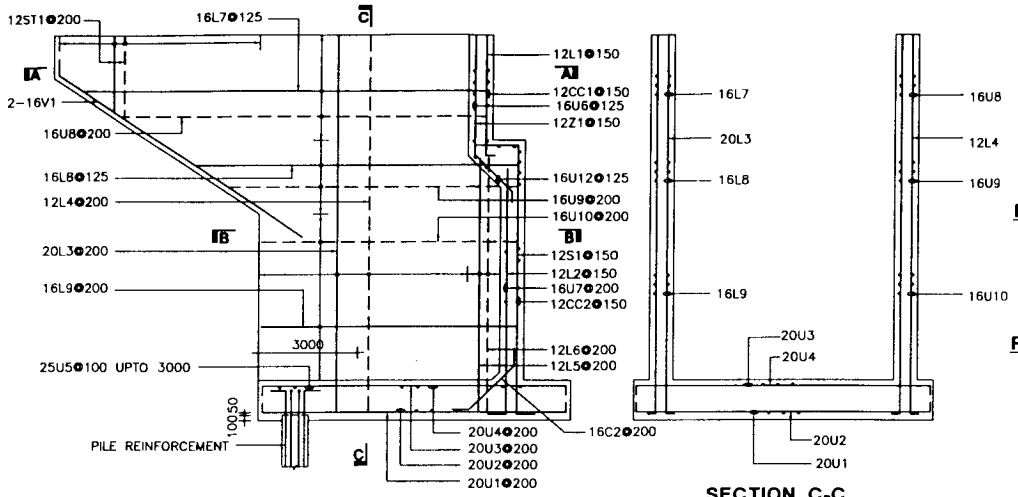
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.0m , DECK WIDTH 3.04m)

DATE
DRAWING NO.
CAD FILE REF. ABUTMENT060

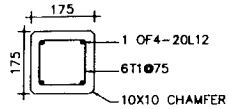
Web Copy

SHEET 2 OF 4	
SPAN RANGE : 1.5m TO 12m	
SIDE WALK: NO	

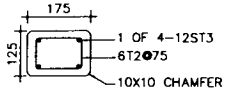


REINFORCEMENT DETAIL

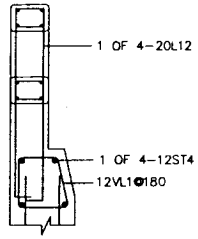
SECTION C-C



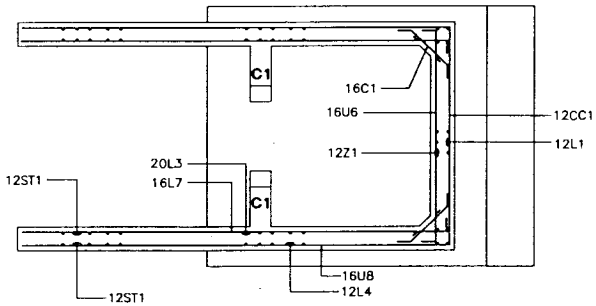
REINF. DETAIL OF POST



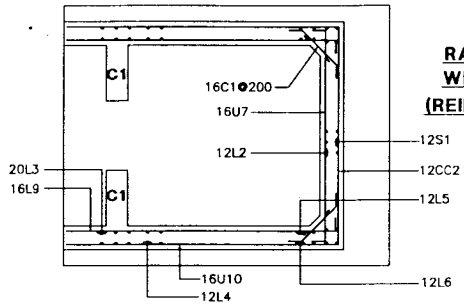
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



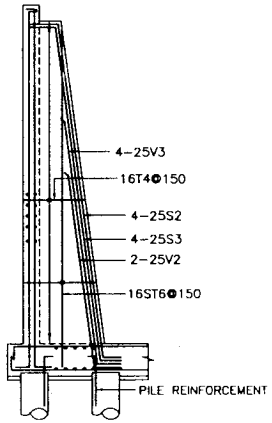
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	1300	144			1444
12	L2	21	4200	144			4344
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3900 to 4500	144			Avg 4344
12	L6	6	Var. 3900 to 4500	144			Avg 4344
16	L7	18	Var. 6475 to 7300	192			Avg 7080
16	L8	26	Var. 4775 to 6475	192			Avg 5817
16	L9	26	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5275	240		5755
20	U2	28	240	3640	240		4120
20	U3	20	240	5275	240		5755
20	U4	12	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	29	192	2884	192		3268
16	U7	18	192	2884	192		3268
16	U8	12	Var. 6475 to 7300	200	550		Avg 7638
16	U9	18	Var. 4775 to 6475	200	600		Avg 6425
16	U10	26	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	31	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	4750	240		5665
16	C1	56	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 896 to 2696	696			Avg 2492
25	S2	8	300	5360	400		6060
25	S3	8	325	5360	375		6060
25	V2	4	375	2786			3161
25	V3	8	350	3534			3884
16	ST6	20	Var. 910 to 5760				Avg 2365



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 6.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110602	

Web Copy

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	1150	144			1294
12	L2	21	4350	144			4494
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4050 to 4650	144			Avg. 4494
12	L6	6	Var. 4050 to 4650	144			Avg. 4494
16	L7	16	Var. 6700 to 7300	192			Avg. 7235
16	L8	28	Var. 4775 to 6700	192			Avg. 5930
16	L9	26	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5275	240		5755
20	U2	28	240	3640	240		4120
20	U3	20	240	5275	240		5755
20	U4	12	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	30	192	2884	192		3268
16	U7	19	192	2884	192		3268
16	U8	10	Var. 6700 to 7300	200	550		Avg. 7810
16	U9	18	Var. 4775 to 6700	200	600		Avg. 6538
16	U10	26	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	32	1200	500	2940		4640
12	Z1	21	1150	836	144		2130
12	S1	21	675	4900	240		5815
16	C1	56	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 896 to 2696	696			Avg. 2492
25	S2	8	300	5360	400		5060
25	S3	8	325	5360	375		6060
25	V2	4	375	2786			3161
25	V3	8	350	3534			3884
16	ST6	20	Var. 910 to 5760				Avg. 2365

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	1150	144			1294
12	L2	21	4350	144			4494
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4050 to 4650	144			Avg. 4494
12	L6	6	Var. 4050 to 4650	144			Avg. 4494
16	L7	16	Var. 6700 to 7300	192			Avg. 7235
16	L8	28	Var. 4775 to 6700	192			Avg. 5930
16	L9	28	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5275	240		5755
20	U2	28	240	3640	240		4120
20	U3	20	240	5275	240		5755
20	U4	12	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	32	192	2884	192		3268
16	U7	20	192	2884	192		3268
16	U8	10	Var. 6700 to 7300	200	550		Avg. 7810
16	U9	18	Var. 4775 to 6700	200	600		Avg. 6538
16	U10	28	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	33	1200	500	2940		4640
12	Z1	21	1150	836	144		2130
12	S1	21	675	4900	240		5815
16	C1	56	320	993	320		1633
16	C2	16	320	1134	320		1774
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 896 to 2696	696			Avg. 2492
25	S2	8	300	5210	400		5910
25	S3	8	325	5210	375		5910
25	V2	4	375	2738			3113
25	V3	8	350	3484			3834
16	ST6	20	Var. 885 to 5760				Avg. 2348

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	1150	144			1294
12	L2	21	4350	144			4494
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4050 to 4650	144			Avg. 4494
12	L6	6	Var. 4050 to 4650	144			Avg. 4494
16	L7	16	Var. 6700 to 7300	192			Avg. 7235
16	L8	28	Var. 4775 to 6700	192			Avg. 5930
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5275	240		5755
20	U2	28	240	3640	240		4120
20	U3	20	240	5275	240		5755
20	U4	12	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	34	192	2884	192		3268
16	U7	21	192	2884	192		3268
16	U8	10	Var. 6700 to 7300	200	550		Avg. 7810
16	U9	18	Var. 4775 to 6700	200	600		Avg. 6538
16	U10	30	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	34	1200	500	2940		4640
12	Z1	21	1150	836	144		2130
12	S1	21	675	4900	240		5815
16	C1	60	320	993	320		1633
16	C2	16	320	781	320		1421
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 896 to 2696	696			Avg. 2492
25	S2	8	300	4960	400		5660
25	S3	8	325	4960	375		5660
25	V2	4	375	2657			3032
25	V3	8	350	3403			3753
16	ST6	20	Var. 843 to 5760				Avg. 2318

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0110603

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	650	144			794
12	L2	21	4850	144			4994
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4550 to 5150	144			Avg. 4994
12	L6	6	Var. 4550 to 5150	144			Avg. 4994
16	L7	6	Var. 7450 to 7300	192			Avg. 7442
16	L8	36	Var. 4775 to 7450	192			Avg. 6305
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5275	240		5755
20	U2	28	240	3640	240		4120
20	U3	20	240	5275	240		5755
20	U4	12	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	38	192	2884	192		3268
16	U7	24	192	2884	192		3268
16	U8	4	Var. 7450 to 7300	200	550		Avg. 7975
16	U9	24	Var. 4775 to 7450	200	600		Avg. 6913
16	U10	30	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	38	1200	500	2940		4640
12	Z1	21	650	836	144		1630
12	S1	21	675	5400	240		6315
16	C1	60	320	993	320		1633
16	C2	16	320	781	320		1421
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 896 to 2696	696			Avg. 2492
25	S2	8	300	4960	400		5660
25	S3	8	325	4960	375		5660
25	V2	4	375	2657			3032
25	V3	8	350	3403			3753
16	ST6	20	Var. 843 to 5760				Avg. 2318

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

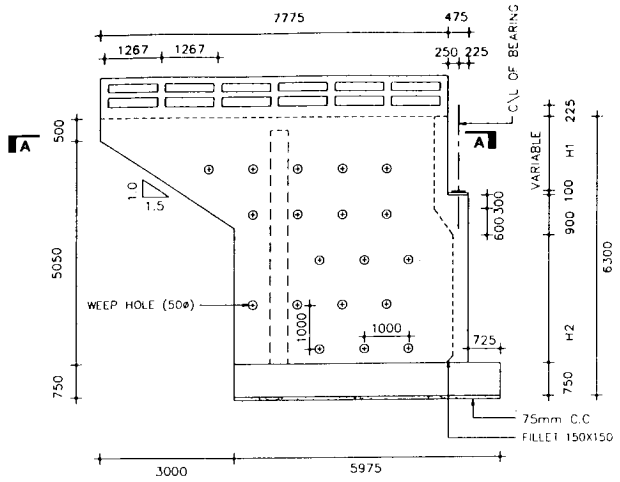
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	600	144			744
12	L2	21	4900	144			5044
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4600 to 5200	144			Avg. 5044
12	L6	6	Var. 4600 to 5200	144			Avg. 5044
16	L7	4	Var. 7525 to 7300	192			Avg. 7417
16	L8	38	Var. 4775 to 7525	192			Avg. 6342
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5275	240		5755
20	U2	28	240	3640	240		4120
20	U3	20	240	5275	240		5755
20	U4	12	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	38	192	2884	192		3268
16	U7	24	192	2884	192		3268
16	U8	4	Var. 7525 to 7300	200	550		Avg. 7938
16	U9	24	Var. 4775 to 7525	200	600		Avg. 6950
16	U10	30	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	38	1200	500	2940		4640
12	Z1	21	600	836	144		1580
12	S1	21	675	5450	240		6365
16	C1	60	320	993	320		1633
16	C2	16	320	781	320		1421
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 896 to 2696	696			Avg. 2492
25	S2	8	300	4960	400		5660
25	S3	8	325	4960	375		5660
25	V2	4	375	2657			3032
25	V3	8	350	3403			3753
16	ST6	20	Var. 843 to 5760				Avg. 2318

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

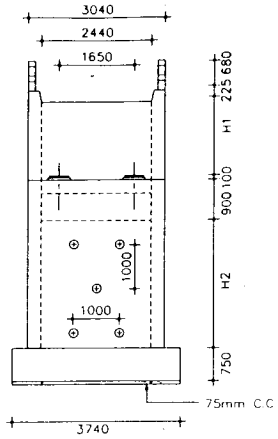
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110604	

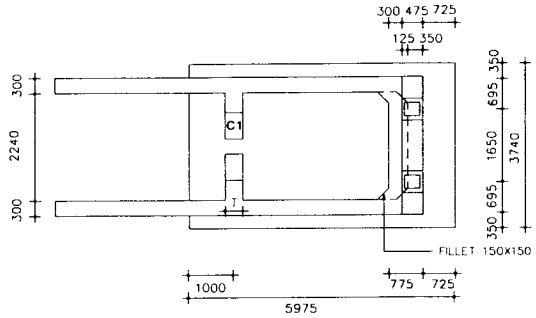
Web Copy



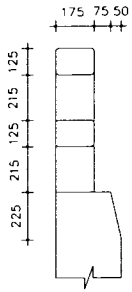
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

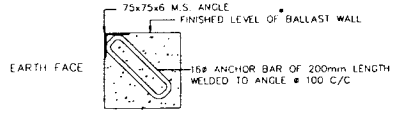
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	3600	305	
11500	800	3750	301	
11000	800	3750	299	
10500	800	3750	297	
10000	800	3750	295	
9500	800	3750	293	
9000	800	3750	291	
8500	600	3950	287	
8000	600	3950	285	
7500	600	3950	283	NOT APPLICABLE
7000	600	3950	281	
6500	600	3950	279	
6000	600	3950	277	
5500	350	4200	279	
5000	350	4200	277	
4500	300	4250	273	
4000	300	4250	271	
3500	300	4250	269	
3000	250	4300	267	
2500	250	4300	265	
2000	250	4300	263	
1500	250	4300	261	

TABLE-2

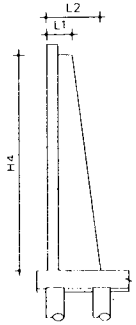
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU

TABLE-3

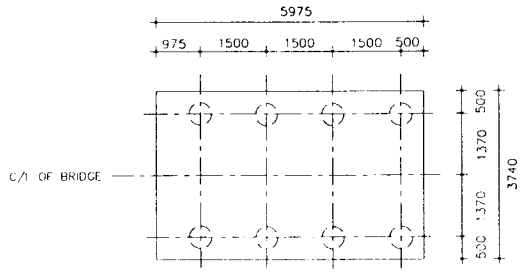
L1	L2	H4	T
725	1400	5250	400



NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

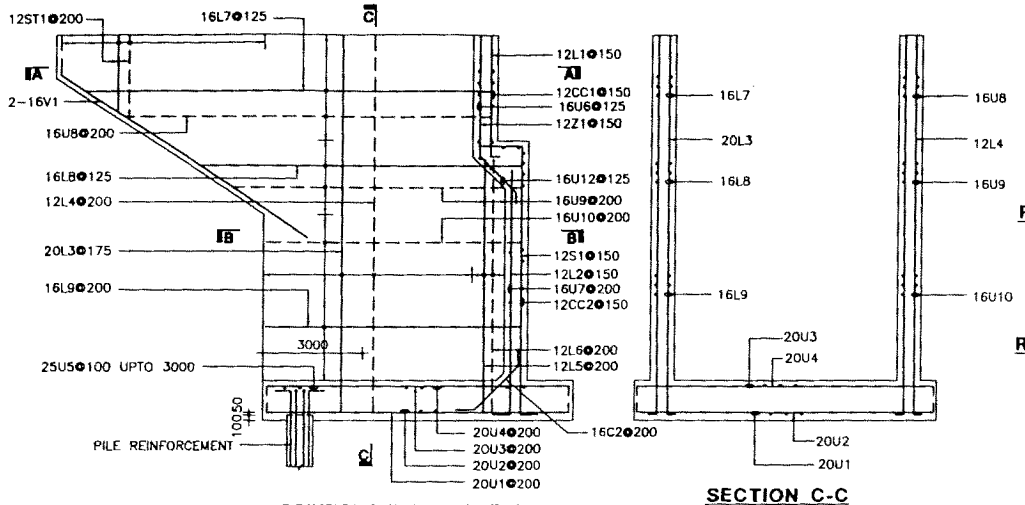
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 6.3m , DECK WIDTH 3.04m)

DATE :
ISSUED BY
CAD FILE REF : ABUTMENT1106.31

Web Copy

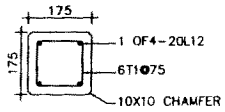
FA-42

SHEET 2 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

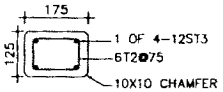


REINFORCEMENT DETAIL

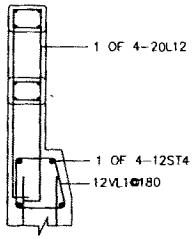
SECTION C-C



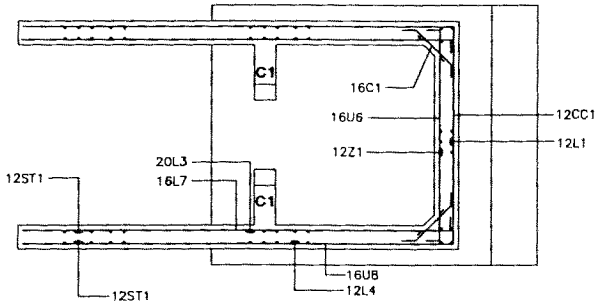
REINF. DETAIL OF POST



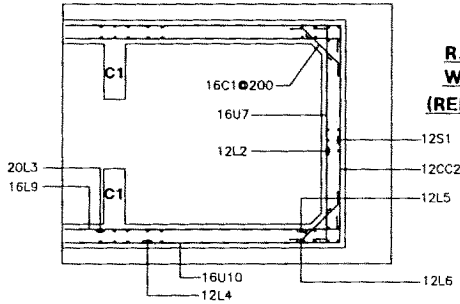
REINF. DETAIL OF RAILING



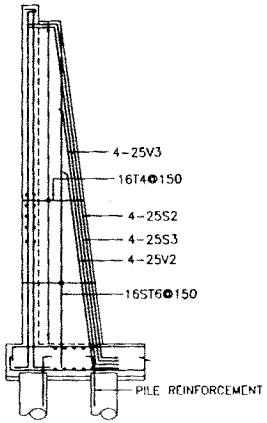
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C1

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	21	1300	144			1444
12	L2	21	4500	144			4644
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4200 to 4800	144			Avg. 4644
12	L6	6	Var. 4200 to 4800	144			Avg. 4644
16	L7	18	Var. 6850 to 7675	192			Avg. 7455
16	L8	26	Var. 5150 to 6850	192			Avg. 6192
16	L9	30	5150	192			5342
20	L12	56	971	120			1091
20	U1	20	240	5875	240		6355
20	U2	31	240	3640	240		4120
20	U3	20	240	5875	240		6355
20	U4	15	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	12	192	2884	192		3268
16	U7	20	192	2884	192		3268
16	U8	12	Var. 6850 to 7675	200	550		Avg. 8013
16	U9	18	Var. 5150 to 6850	200	600		Avg. 6800
16	U10	30	5150	200	550		5900
16	U12	10	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	33	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	5050	240		5965
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1346 to 2696	696			Avg. 2717
25	S2	8	300	5657	625		6582
25	S3	8	325	5657	600		6582
25	V2	8	375	2932			3307
25	V3	8	350	3730			4080
16	ST6	20	Var. 1280 to 6060				Avg. 3192

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001.
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 6.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110632	

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SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	21	1150	144			1294
12	L2	21	4650	144			4794
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4350 to 4950	144			Avg. 4794
12	L6	6	Var. 4350 to 4950	144			Avg. 4794
16	L7	16	Var. 7075 to 7675	192			Avg. 7610
16	L8	28	Var. 5150 to 7075	192			Avg. 6305
16	L9	30	5150	192			5342
20	L12	56	971	120			1091
20	U1	20	240	5875	240		6355
20	U2	31	240	3640	240		4120
20	U3	20	240	5875	240		6355
20	U4	15	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	11	192	2884	192		3268
16	U7	21	192	2884	192		3268
16	U8	10	Var. 7075 to 7675	200	550		Avg. 8185
16	U9	18	Var. 5150 to 7075	200	600		Avg. 6913
16	U10	30	5150	200	550		5900
16	U12	10	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	34	1200	500	2940		4640
12	Z1	21	1150	836	144		2130
12	S1	21	675	5200	240		6115
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1346 to 2696	696			Avg. 2717
25	S2	8	300	5657	625		6582
25	S3	8	325	5657	600		6582
25	V2	8	375	2932			3307
25	V3	8	350	3730			4080
16	ST6	20	Var. 1280 to 6060				Avg. 3192

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	21	950	144			1094
12	L2	21	4850	144			4994
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4550 to 5150	144			Avg. 4994
12	L6	6	Var. 4550 to 5150	144			Avg. 4994
16	L7	12	Var. 7375 to 7675	192			Avg. 7767
16	L8	32	Var. 5150 to 7375	192			Avg. 6455
16	L9	30	5150	192			5342
20	L12	56	971	120			1091
20	U1	20	240	5875	240		6355
20	U2	31	240	3640	240		4120
20	U3	20	240	5875	240		6355
20	U4	15	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	9	192	2884	192		3268
16	U7	22	192	2884	192		3268
16	U8	8	Var. 7375 to 7675	200	550		Avg. 8350
16	U9	20	Var. 5150 to 7375	200	600		Avg. 7063
16	U10	30	5150	200	550		5900
16	U12	10	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	35	1200	500	2940		4640
12	Z1	21	950	836	144		1930
12	S1	21	675	5400	240		6315
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1346 to 2696	696			Avg. 2717
25	S2	8	300	5657	625		6582
25	S3	8	325	5657	600		6582
25	V2	8	375	2932			3307
25	V3	8	350	3730			4080
16	ST6	20	Var. 1280 to 6060				Avg. 3192

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	21	700	144			844
12	L2	21	5100	144			5244
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4800 to 5400	144			Avg. 5244
12	L6	6	Var. 4800 to 5400	144			Avg. 5244
16	L7	6	Var. 7750 to 7675	192			Avg. 7867
16	L8	36	Var. 5150 to 7750	192			Avg. 6642
16	L9	30	5150	192			5342
20	L12	56	971	120			1091
20	U1	20	240	5875	240		6355
20	U2	31	240	3640	240		4120
20	U3	20	240	5875	240		6355
20	U4	15	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	7	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	4	Var. 7750 to 7675	200	550		Avg. 8425
16	U9	24	Var. 5150 to 7750	200	600		Avg. 7250
16	U10	30	5150	200	550		5900
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	37	1200	500	2940		4640
12	Z1	21	700	836	144		1680
12	S1	21	675	5650	240		6565
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1346 to 2696	696			Avg. 2717
25	S2	8	300	5657	625		6582
25	S3	8	325	5657	600		6582
25	V2	8	375	2932			3307
25	V3	8	350	3730			4080
16	ST6	20	Var. 1280 to 6060				Avg. 3192

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110633	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	21	650	144			794
12	L2	21	5150	144			5294
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4850 to 5450	144			Avg. 5294
12	L6	6	Var. 4850 to 5450	144			Avg. 5294
16	L7	6	Var. 7625 to 7675	192			Avg. 7817
16	L8	36	Var. 5150 to 7825	192			Avg. 6680
16	L9	30	5150	192			5342
20	L12	56	971	120			1091
20	U1	20	240	5875	240		6355
20	U2	31	240	3640	240		4120
20	U3	20	240	5875	240		6355
20	U4	15	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	7	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	4	Var. 7825 to 7675	200	550		Avg. 8350
16	U9	24	Var. 5150 to 7825	200	600		Avg. 7288
16	U10	30	5150	200	550		5900
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	37	1200	500	2940		4640
12	Z1	21	650	836	144		1630
12	S1	21	675	5700	240		6615
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	279	1000
16	T4	72	Var. 1346 to 2696	696			Avg. 2717
25	S2	8	300	5657	625		6582
25	S3	8	325	5657	600		6582
25	V2	8	375	2932			3307
25	V3	8	350	1730			1080
16	ST6	20	Var. 1260 to 6960				Avg. 3192

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

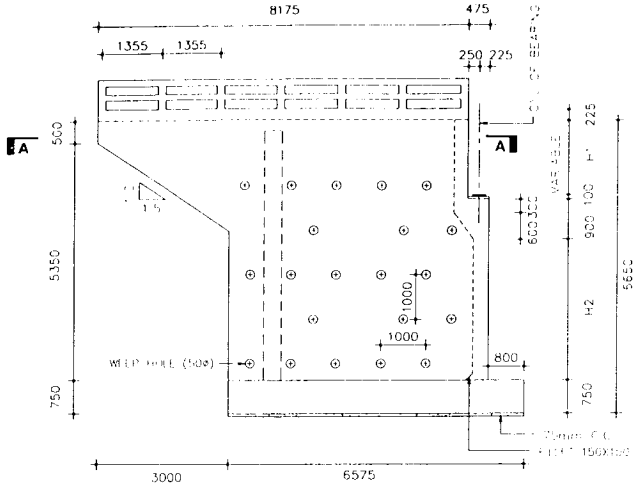
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	21	600	144			744
12	L2	21	5200	144			5344
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4900 to 5500	144			Avg. 5344
12	L6	6	Var. 4900 to 5500	144			Avg. 5344
16	L7	4	Var. 7900 to 7675	192			Avg. 7792
16	L8	38	Var. 5150 to 7900	192			Avg. 6717
16	L9	30	5150	192			5342
20	L12	56	971	120			1091
20	U1	20	240	5875	240		6355
20	U2	31	240	3640	240		4120
20	U3	20	240	5875	240		6355
20	U4	15	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	7	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	4	Var. 7900 to 7675	200	550		Avg. 8313
16	U9	24	Var. 5150 to 7900	200	600		Avg. 7325
16	U10	30	5150	200	550		5900
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	37	1200	500	2940		4640
12	Z1	21	600	836	144		1580
12	S1	21	675	5750	240		6665
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1346 to 2696	696			Avg. 2717
25	S2	8	300	5657	625		6582
25	S3	8	325	5657	600		6582
25	V2	8	375	2932			3307
25	V3	8	350	3730			4080
16	ST6	20	Var. 1260 to 6960				Avg. 3192

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

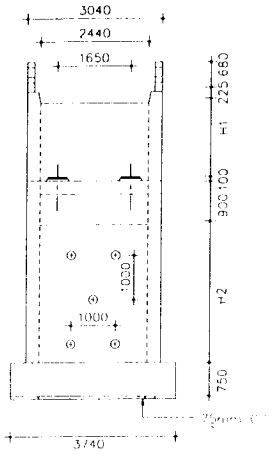
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110634	

Web Copy



SIDE ELEVATION



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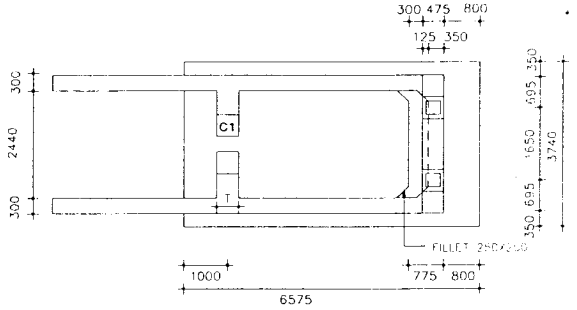
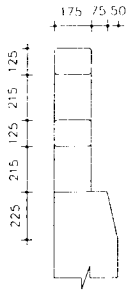


SECTION A-A



GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

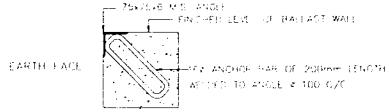
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-A)
12000	950	3950	345	
11500	800	4100	341	
11000	800	4100	339	
10500	800	4100	337	
10000	800	4100	335	
9500	800	4100	333	
9000	800	4100	331	
8500	650	4350	327	
8000	650	4350	325	
7500	600	4300	323	NOT APPLICABLE
7000	600	4300	321	
6500	600	4300	319	
6000	600	4300	317	
5500	350	4550	319	
5000	350	4550	317	
4500	300	4600	315	
4000	300	4600	311	
3500	300	4600	309	
3000	250	4650	307	
2500	250	4650	305	
2000	250	4650	303	
1500	250	4650	301	

TABLE-2

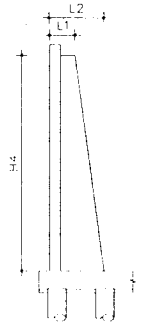
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	300Ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

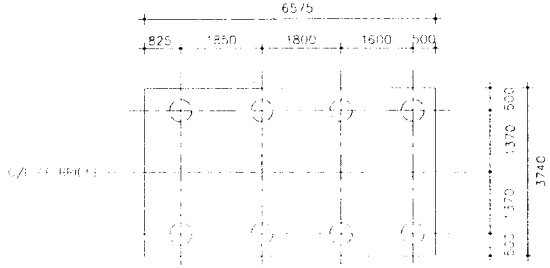
L1	L2	H4	T
800	1400	5550	600



NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimeter unless otherwise specified.

2) Pile reaction are in kN.

3) For Skew Abutment, the Pile will be vertical to the Abutment Cap, Pile Reaction, Bearing Pad will be changed.

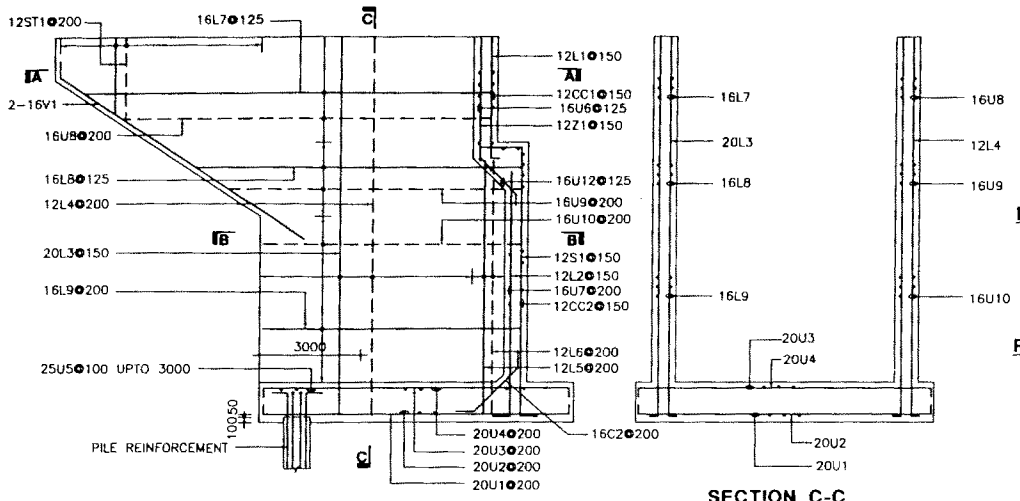
4) Weep hole will be provided at 1m interval horizontally and vertically or shown in drawings, Weep hole will be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.6m , DECK WIDTH 3.04m)

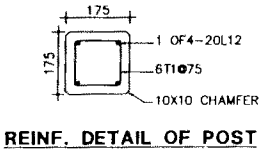
Web Copy

SHEET 2 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

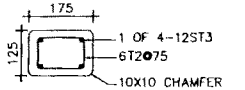


REINFORCEMENT DETAIL

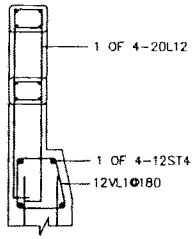
SECTION C-C



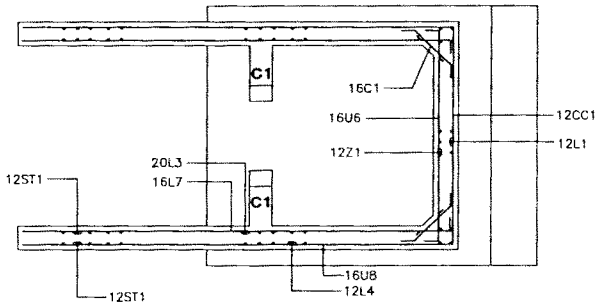
REINF. DETAIL OF POST



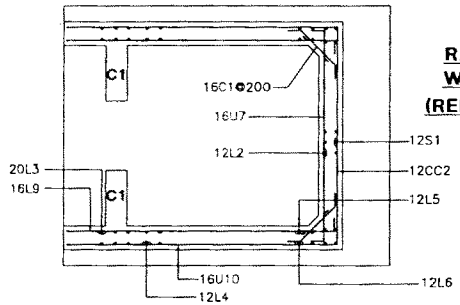
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



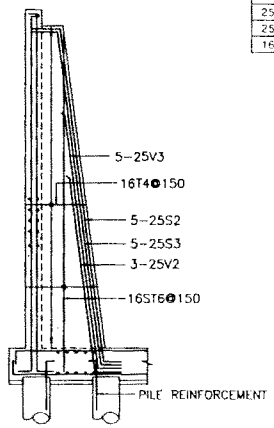
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	1300	144			1444
12	L2	21	4800	144			4944
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4500 to 5100	144			Avg. 4944
12	L6	6	Var. 4500 to 5100	144			Avg. 4944
16	L7	18	Var. 7375 to 8200	192			Avg. 8025
16	L8	26	Var. 5675 to 7375	192			Avg. 6717
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	11	192	2884	192		3268
16	U7	21	192	2884	192		3268
16	U8	12	Var. 7375 to 8200	200	550		Avg. 8675
16	U9	18	Var. 5675 to 7375	200	600		Avg. 7325
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	35	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	5350	240		6265
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	48	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1496 to 2696	896			Avg. 2992
25	S2	10	300	5954	700		6954
25	S3	10	325	5954	675		6954
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1515 to 6360				Avg. 3938



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110662	

Web Copy

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	1150	144			1294
12	L2	21	4950	144			5094
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4650 to 5250	144			Avg. 5094
12	L6	6	Var. 4650 to 5250	144			Avg. 5094
16	L7	16	Var. 7600 to 8200	192			Avg. 8167
16	L8	28	Var. 5675 to 7600	192			Avg. 6830
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	10	192	2884	192		3268
16	U7	22	192	2884	192		3268
16	U8	10	Var. 7600 to 8200	200	550		Avg. 8830
16	U9	18	Var. 5675 to 7600	200	600		Avg. 7438
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	36	1200	500	2940		4640
12	Z1	21	1150	836	144		2130
12	S1	21	675	5500	240		6415
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	48	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1496 to 2696	896			Avg. 2992
25	S2	10	300	5954	700		6954
25	S3	10	325	5954	675		6954
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1515 to 6360				Avg. 3938

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	950	144			1094
12	L2	21	5150	144			5294
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4850 to 5450	144			Avg. 5294
12	L6	6	Var. 4850 to 5450	144			Avg. 5294
16	L7	12	Var. 7900 to 8200	192			Avg. 8342
16	L8	32	Var. 5675 to 7900	192			Avg. 6980
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	9	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	8	Var. 7900 to 8200	200	550		Avg. 8950
16	U9	20	Var. 5675 to 7900	200	600		Avg. 7588
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	37	1200	500	2940		4640
12	Z1	21	950	836	144		1930
12	S1	21	675	5700	240		6615
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	48	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1496 to 2696	896			Avg. 2992
25	S2	10	300	5954	700		6954
25	S3	10	325	5954	675		6954
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1515 to 6360				Avg. 3938

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	700	144			844
12	L2	21	5400	144			5544
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 5100 to 5700	144			Avg. 5544
12	L6	6	Var. 5100 to 5700	144			Avg. 5544
16	L7	6	Var. 8275 to 8200	192			Avg. 8342
16	L8	36	Var. 5675 to 8275	192			Avg. 7167
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	7	192	2884	192		3268
16	U7	24	192	2884	192		3268
16	U8	4	Var. 8275 to 8200	200	550		Avg. 8875
16	U9	24	Var. 5675 to 8275	200	600		Avg. 7775
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	39	1200	500	2940		4640
12	Z1	21	700	836	144		1680
12	S1	21	675	5950	240		6865
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	48	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1496 to 2696	896			Avg. 2992
25	S2	10	300	5954	700		6954
25	S3	10	325	5954	675		6954
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1515 to 6360				Avg. 3938

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110663	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	650	144			794
12	L2	21	5450	144			5594
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 5150 to 5750	144			Avg. 5594
12	L6	6	Var. 5150 to 5750	144			Avg. 5594
16	L7	6	Var. 8350 to 8200	192			Avg. 8292
16	L8	36	Var. 5675 to 8350	192			Avg. 7205
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	6	192	2884	192		3268
16	U7	25	192	2884	192		3268
16	U8	4	Var. 8350 to 8200	200	550		Avg. 8800
16	U9	24	Var. 5675 to 8350	200	600		Avg. 7813
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	39	1200	500	2940		4640
12	Z1	21	650	836	144		1630
12	S1	21	675	6000	240		6915
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	48	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1496 to 2696	896			Avg. 2992
25	S2	10	300	5954	700		6954
25	S3	10	325	5954	675		6954
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1515 to 6360				Avg. 3938

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

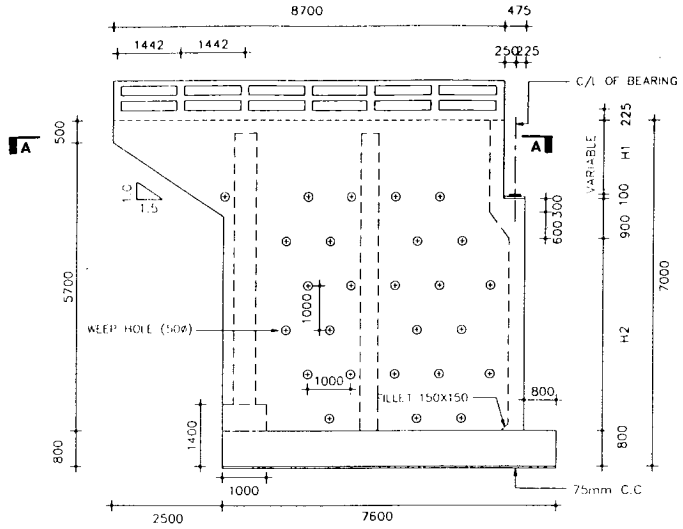
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	600	144			744
12	L2	21	5500	144			5644
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 5200 to 5800	144			Avg. 5644
12	L6	6	Var. 5200 to 5800	144			Avg. 5644
16	L7	4	Var. 8425 to 8200	192			Avg. 8055
16	L8	38	Var. 5675 to 8425	192			Avg. 7242
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	6	192	2884	192		3268
16	U7	25	192	2884	192		3268
16	U8	4	Var. 8425 to 8200	200	550		Avg. 8725
16	U9	24	Var. 5675 to 8425	200	600		Avg. 7850
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	39	1200	500	2940		4640
12	Z1	21	600	836	144		1580
12	S1	21	675	6050	240		6965
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	48	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1496 to 2696	896			Avg. 2992
25	S2	10	300	5954	700		6954
25	S3	10	325	5954	675		6954
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1515 to 6360				Avg. 3938

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

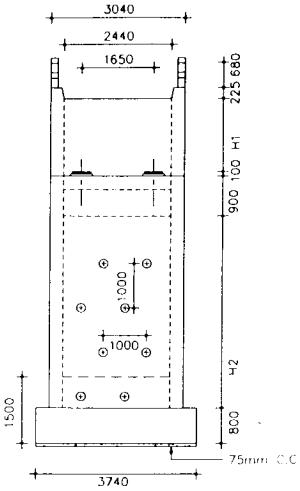
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110664	

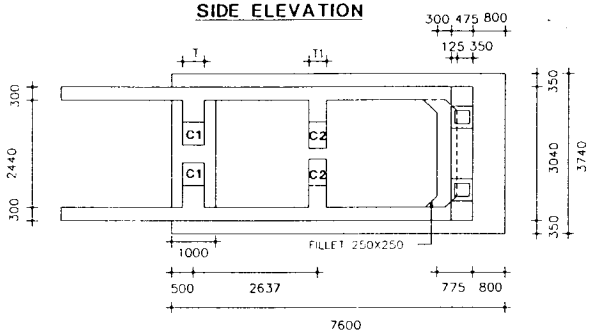
Web Copy



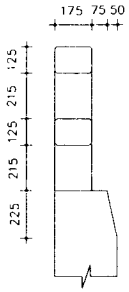
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

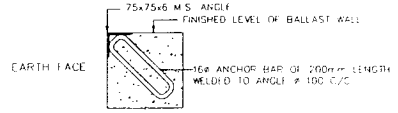
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	4250	340	
11500	800	4400	336	
11000	800	4400	334	
10500	800	4400	332	
10000	800	4400	330	
9500	800	4400	328	
9000	800	4400	326	
8500	600	4600	322	
8000	600	4600	320	
7500	600	4600	318	NOT APPLICABLE
7000	600	4600	316	
6500	600	4600	314	
6000	600	4600	312	
5500	350	4850	314	
5000	350	4850	312	
4500	300	4900	310	
4000	300	4900	308	
3500	300	4900	306	
3000	250	4950	304	
2500	250	4950	302	
2000	250	4950	300	
1500	250	4950	298	

TABLE-2

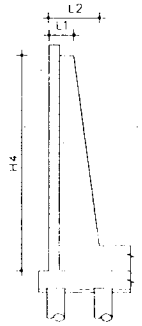
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500Ø	55	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

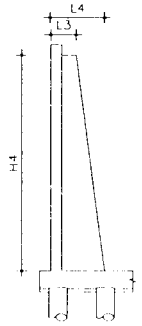
L1	L2	L3	L4	T	T1	H4
700	1320	700	1400	500	400	5900



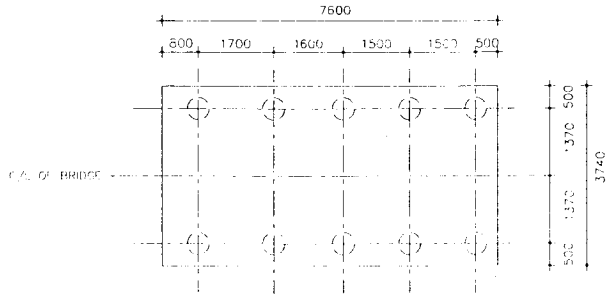
NOSING AT ABUTMENT



COUNTERFORT C1



COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment top, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

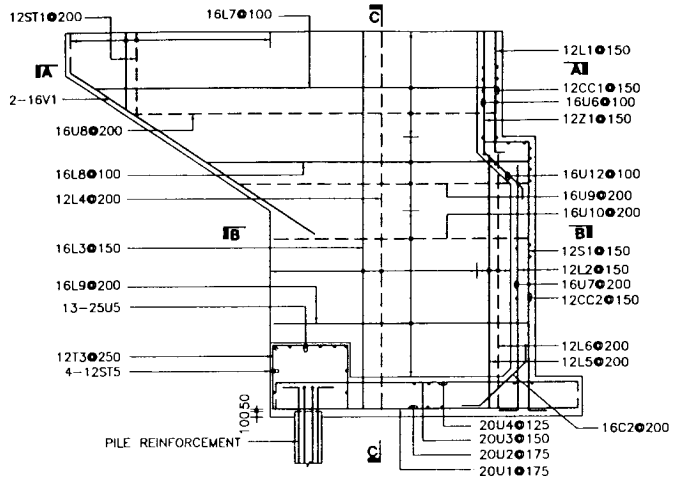
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 7.0m , DECK WIDTH 3.04m)

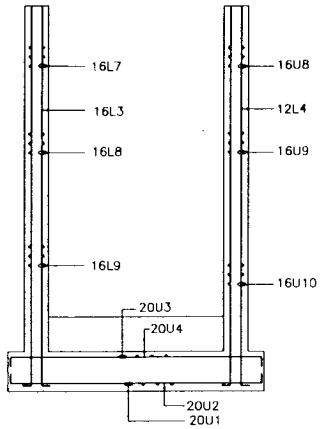
DATE
SCALE: NT
CAD FILE REF : ABUT_7001B700

Web Copy

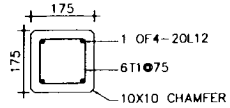
SHEET 2 OF 4	
SPAN RANGE : 1.5m TO 12.0m	
SIDE WALK: NO	



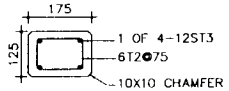
REINFORCEMENT DETAIL



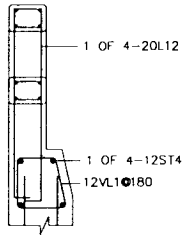
SECTION C-C



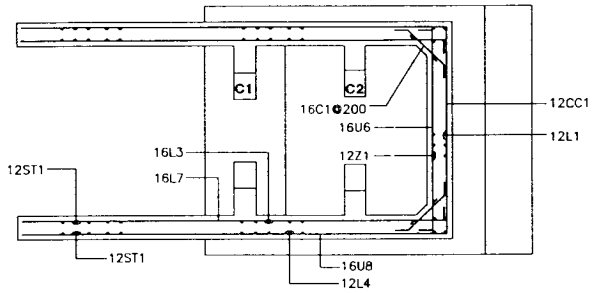
REINF. DETAIL OF POST



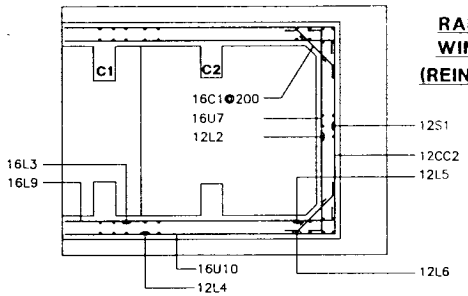
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



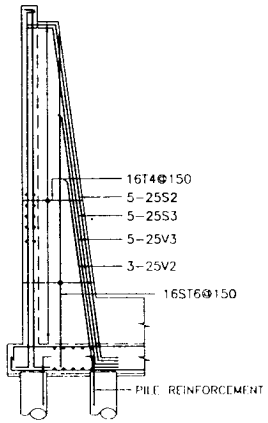
SECTION A-A



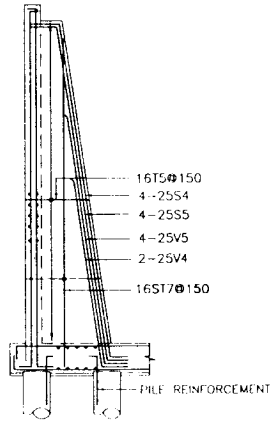
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	1300	144			1444
12	L2	21	5200	144			5344
16	L3	82	6800	192			6992
12	L4	62	6800	144			6944
12	L5	6	Var. 4900 to 5500	144			Avg. 5344
12	L6	6	Var. 4900 to 5500	144			Avg. 5344
16	L7	22	Var. 7900 to 8725	192			Avg. 8467
16	L8	26	Var. 6700 to 7900	192			Avg. 7492
16	L9	40	6700	192			6892
20	L12	56	971	120			1091
20	U1	22	240	7500	240		7980
20	U2	44	240	3640	240		4120
20	U3	26	240	7500	240		7980
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	14	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	12	Var. 7900 to 8725	200	550		Avg. 9063
16	U9	14	Var. 6700 to 7900	200	600		Avg. 8100
16	U10	40	6700	200	550		7450
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	37	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	5750	240		6665
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1872	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6343	600		7243
25	S3	10	325	6343	575		7243
25	V2	6	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1384 to 6760				Avg. 3535



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb- 25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110702	

Web Copy

SHEET 3 OF 4

SPAN RANGE : 1.5m TO 12.0m

SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	1150	144			1294
12	L2	21	5350	144			5494
16	L3	82	6800	192			6992
12	L4	62	6800	144			6944
12	L5	6	Var. 5050 to 5650	144			Avg. 5494
12	L6	6	Var. 5050 to 5650	144			Avg. 5494
16	L7	18	Var. 8125 to 8725	192			Avg. 8650
16	L8	28	Var. 6700 to 8125	192			Avg. 7605
16	L9	40	6700	192			6892
20	L12	56	971	120			1091
20	U1	22	240	7500	240		7980
20	U2	44	240	3640	240		4120
20	U3	26	240	7500	240		7980
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	13	192	2884	192		3268
16	U7	24	192	2884	192		3268
16	U8	10	Var. 8125 to 8725	200	550		Avg. 9235
16	U9	16	Var. 6700 to 8125	200	600		Avg. 8213
16	U10	40	6700	200	550		7450
16	U12	12	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	38	1200	500	2940		4640
12	Z1	21	1150	836	144		2130
12	S1	21	675	5900	240		6815
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1872	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6343	600		7243
25	S3	10	325	6343	575		7243
25	V2	6	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1384 to 6760				Avg. 3535

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	950	144			1094
12	L2	21	5550	144			5694
16	L3	82	6800	192			6992
12	L4	62	6800	144			6944
12	L5	6	Var. 5250 to 5850	144			Avg. 5694
12	L6	6	Var. 5250 to 5850	144			Avg. 5694
16	L7	14	Var. 8425 to 8725	192			Avg. 8831
16	L8	32	Var. 6700 to 8425	192			Avg. 7755
16	L9	40	6700	192			6892
20	L12	56	971	120			1091
20	U1	22	240	7500	240		7980
20	U2	44	240	3640	240		4120
20	U3	26	240	7500	240		7980
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	11	192	2884	192		3268
16	U7	25	192	2884	192		3268
16	U8	8	Var. 8425 to 8725	200	550		Avg. 9400
16	U9	18	Var. 6700 to 8425	200	600		Avg. 8363
16	U10	40	6700	200	550		7450
16	U12	12	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	39	1200	500	2940		4640
12	Z1	21	950	836	144		1930
12	S1	21	675	6100	240		7015
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1872	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6343	600		7243
25	S3	10	325	6343	575		7243
25	V2	6	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1384 to 6760				Avg. 3535

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	700	144			844
12	L2	21	5800	144			5944
16	L3	82	6800	192			6992
12	L4	62	6800	144			6944
12	L5	6	Var. 5500 to 6100	144			Avg. 5944
12	L6	6	Var. 5500 to 6100	144			Avg. 5944
16	L7	8	Var. 8800 to 8725	192			Avg. 8898
16	L8	38	Var. 6700 to 8800	192			Avg. 7942
16	L9	40	6700	192			6892
20	L12	56	971	120			1091
20	U1	22	240	7500	240		7980
20	U2	44	240	3640	240		4120
20	U3	26	240	7500	240		7980
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	8	192	2884	192		3268
16	U7	26	192	2884	192		3268
16	U8	4	Var. 8800 to 8725	200	550		Avg. 9475
16	U9	20	Var. 6700 to 8800	200	600		Avg. 8550
16	U10	40	6700	200	550		7450
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	41	1200	500	2940		4640
12	Z1	21	700	836	144		1680
12	S1	21	675	6350	240		7265
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1872	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6343	600		7243
25	S3	10	325	6343	575		7243
25	V2	6	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1384 to 6760				Avg. 3535

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 3.04m)

DATE :

ISSUED BY :

CAD FILE REF : ABUT\R0110703

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	650	144			794
12	L2	21	5850	144			5994
16	L3	82	6800	192			6992
12	L4	62	6800	144			6944
12	L5	6	Var. 5550 to 6150	144			Avg. 5994
12	L6	6	Var. 5550 to 6150	144			Avg. 5994
16	L7	8	Var. 8875 to 8725	192			Avg. 8880
16	L8	38	Var. 6700 to 8875	192			Avg. 7980
16	L9	40	6700	192			6892
20	L12	56	971	120			1091
20	U1	22	240	7500	240		7980
20	U2	44	240	3640	240		4120
20	U3	26	240	7500	240		7980
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	8	192	2884	192		3268
16	U7	26	192	2884	192		3268
16	U8	4	Var. 8875 to 8725	200	550		Avg. 9400
16	U9	20	Var. 6700 to 8875	200	600		Avg. 8588
16	U10	40	6700	200	550		7450
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	41	1200	500	2940		4640
12	Z1	21	650	836	144		1630
12	S1	21	675	6400	240		7315
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1872	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6343	600		7243
25	S3	10	325	6343	575		7243
25	V2	6	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1384 to 6760				Avg. 3535

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	600	144			744
12	L2	21	5900	144			6044
16	L3	82	6800	192			6992
12	L4	62	6800	144			6944
12	L5	6	Var. 5600 to 6200	144			Avg. 6044
12	L6	6	Var. 5600 to 6200	144			Avg. 6044
16	L7	6	Var. 8950 to 8725	192			Avg. 8767
16	L8	40	Var. 6700 to 8950	192			Avg. 8017
16	L9	40	6700	192			6892
20	L12	56	971	120			1091
20	U1	22	240	7500	240		7980
20	U2	44	240	3640	240		4120
20	U3	26	240	7500	240		7980
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	7	192	2884	192		3268
16	U7	27	192	2884	192		3268
16	U8	4	Var. 8950 to 8725	200	550		Avg. 9363
16	U9	22	Var. 6700 to 8950	200	600		Avg. 8625
16	U10	40	6700	200	550		7450
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	42	1200	500	2940		4640
12	Z1	21	600	836	144		1580
12	S1	21	675	6450	240		7365
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1672	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6343	600		7243
25	S3	10	325	6343	575		7243
25	V2	6	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1384 to 6760				Avg. 3535

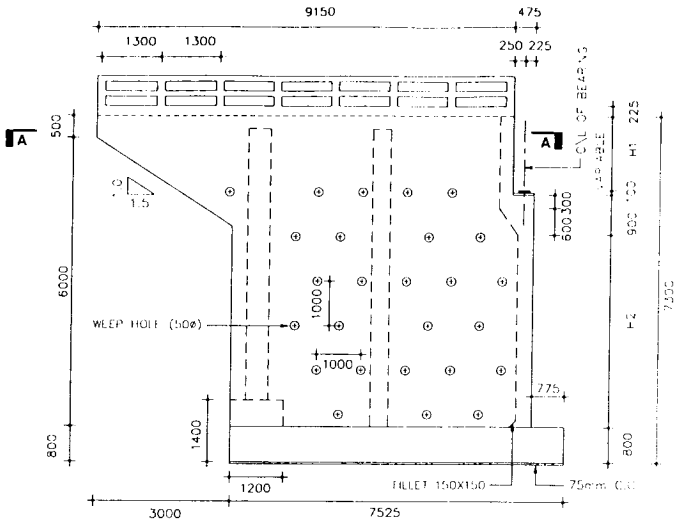
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 3.04m)

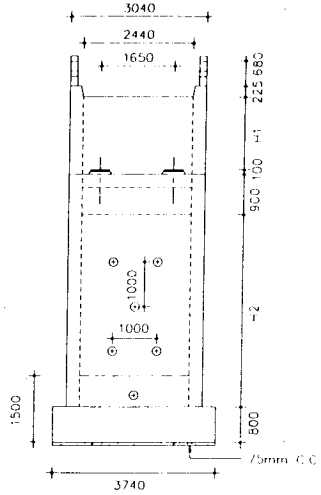
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0110704

Web Copy

SHEET 1 OF 4	
SPAN RANGE	1.5m TO 12.0m
SIDE WALK	NO



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

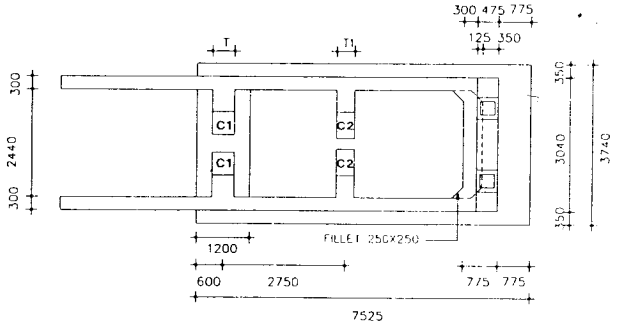
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	4550	340	
11500	800	4700	336	
11000	800	4700	334	
10500	800	4700	332	
10000	800	4700	330	
9500	800	4700	328	
9000	800	4700	326	
8500	600	4900	322	
8000	600	4900	320	
7500	600	4900	318	
7000	600	4900	316	NOT APPLICABLE
6500	600	4900	314	
6000	600	4900	312	
5500	350	5150	314	
5000	350	5150	312	
4500	300	5200	310	
4000	300	5200	308	
3500	300	5200	306	
3000	250	5250	304	
2500	250	5250	302	
2000	250	5250	300	
1500	250	5250	298	

TABLE-2

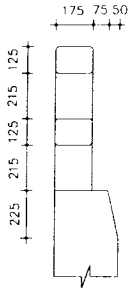
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

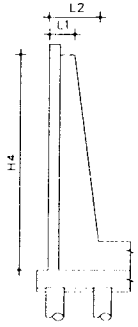
L1	L2	L3	L4	T	T1	H4
750	1320	700	1400	500	400	6200



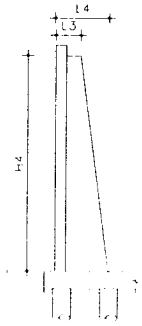
SECTION A-A



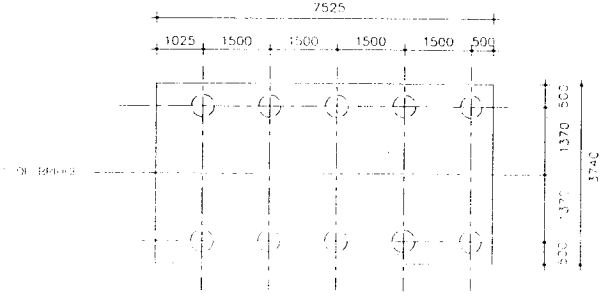
GENERAL ARRANGEMENT OF RAILING ON WING WALL



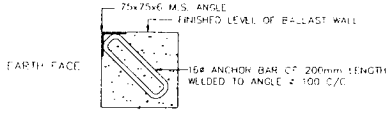
COUNTERFORT C1



COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A



NOSING AT ABUTMENT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reactions are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 3000mm horizontally and vertically as shown in drawing, filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

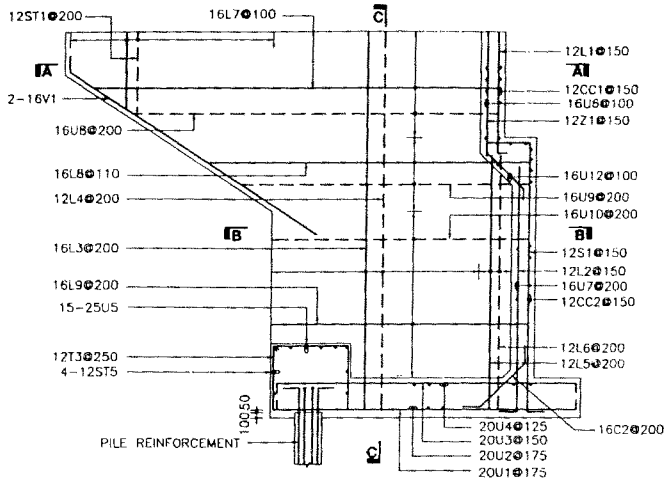
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.3m , DECK WIDTH 3.04m)

DATE	DRAWN BY
CAD FILE REF. ABUT\e-7307.0	

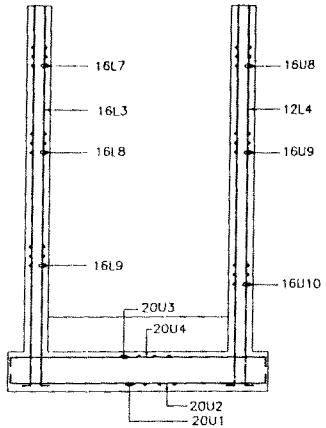
Web Copy

FA-54

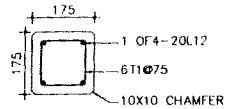
SHEET 2 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



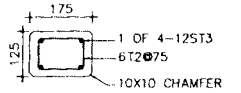
REINFORCEMENT DETAIL



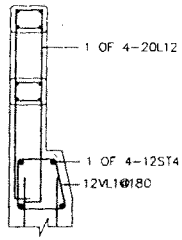
SECTION C-C



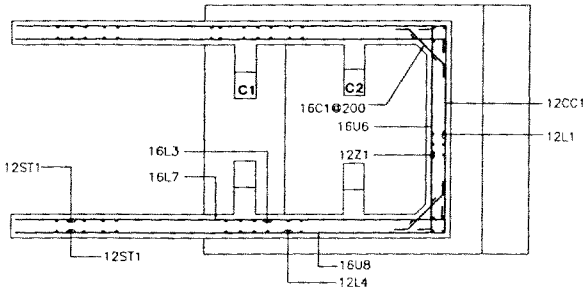
REINF. DETAIL OF POST



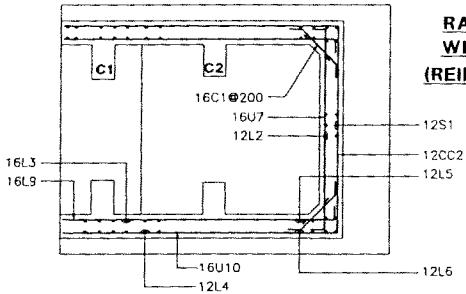
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



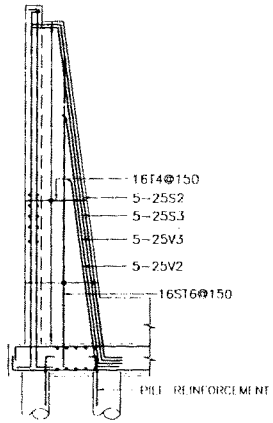
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

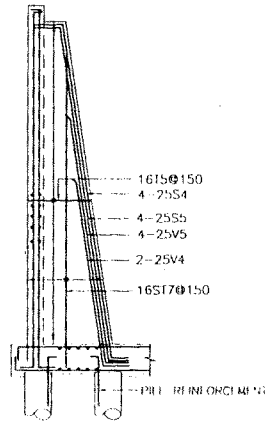
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	1300	144			1444
12	L2	21	5500	144			5644
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5200 to 5800	144			Avg. 5644
12	L6	6	Var. 5200 to 5800	144			Avg. 5644
16	L7	22	Var. 8350 to 9175	192			Avg. 8917
16	L8	30	Var. 6650 to 8350	192			Avg. 7692
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7425	240		7905
20	U2	44	240	3640	240		4120
20	U3	26	240	7425	240		7905
20	U4	51	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	14	192	2884	192		3268
16	U7	25	192	2884	192		3268
16	U8	12	Var. 8350 to 9175	200	550		Avg. 9513
16	U9	18	Var. 6650 to 8350	200	600		Avg. 8300
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	39	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	6050	240		6965
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6641	600		7541
25	S3	10	325	6641	575		7541
25	V2	10	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Raft-70mm, b) Post-70mm, c) Curb-75mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File: ABUT\S0000001



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110732	

Web Copy

SHEET 3 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	1150	144			1294
12	L2	21	5650	144			5794
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5350 to 5950	144			Avg. 5794
12	L6	6	Var. 5350 to 5950	144			Avg. 5794
16	L7	18	Var. 8575 to 9175	192			Avg. 9100
16	L8	32	Var. 6650 to 8575	192			Avg. 7805
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7425	240		7905
20	U2	44	240	3640	240		4120
20	U3	26	240	7425	240		7905
20	U4	51	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	13	192	2884	192		3268
16	U7	25	192	2884	192		3268
16	U8	10	Var. 8575 to 9175	200	550		Avg. 9685
16	U9	18	Var. 6650 to 8575	200	600		Avg. 8413
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	40	1200	500	2940		4640
12	Z1	21	1150	836	144		2130
12	S1	21	675	6200	240		7115
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6641	600		7541
25	S3	10	325	6641	575		7541
25	V2	10	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	950	144			1094
12	L2	21	5850	144			5994
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5550 to 6150	144			Avg. 5994
12	L6	6	Var. 5550 to 6150	144			Avg. 5994
16	L7	14	Var. 8875 to 9175	192			Avg. 9281
16	L8	36	Var. 6650 to 8875	192			Avg. 7955
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7425	240		7905
20	U2	44	240	3640	240		4120
20	U3	26	240	7425	240		7905
20	U4	51	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	11	192	2884	192		3268
16	U7	26	192	2884	192		3268
16	U8	8	Var. 8875 to 9175	200	550		Avg. 9850
16	U9	20	Var. 6650 to 8875	200	600		Avg. 8563
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	41	1200	500	2940		4640
12	Z1	21	950	836	144		1930
12	S1	21	675	6400	240		7315
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	275	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6641	600		7541
25	S3	10	325	6641	575		7541
25	V2	10	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	700	144			844
12	L2	21	6100	144			6244
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5800 to 6400	144			Avg. 6244
12	L6	6	Var. 5800 to 6400	144			Avg. 6244
16	L7	8	Var. 9250 to 9175	192			Avg. 9348
16	L8	40	Var. 6650 to 9250	192			Avg. 8142
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7425	240		7905
20	U2	44	240	3640	240		4120
20	U3	26	240	7425	240		7905
20	U4	51	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	8	192	2884	192		3268
16	U7	28	192	2884	192		3268
16	U8	4	Var. 9250 to 9175	200	550		Avg. 9925
16	U9	24	Var. 6650 to 9250	200	600		Avg. 8750
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	43	1200	500	2940		4640
12	Z1	21	700	836	144		1680
12	S1	21	675	6650	240		7565
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6641	600		7541
25	S3	10	325	6641	575		7541
25	V2	10	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R01107.33	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	650	144			794
12	L2	21	6150	144			6294
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5850 to 6450	144			Avg. 6294
12	L6	6	Var. 5850 to 6450	144			Avg. 6294
16	L7	8	Var. 9325 to 9175	192			Avg. 9330
16	L8	42	Var. 6650 to 9325	192			Avg. 8180
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7425	240		7905
20	U2	44	240	3640	240		4120
20	U3	26	240	7425	240		7905
20	U4	51	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	8	192	2884	192		3268
16	U7	28	192	2884	192		3268
16	U8	4	Var. 9325 to 9175	200	550		Avg. 9850
16	U9	24	Var. 6650 to 9325	200	600		Avg. 8788
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	43	1200	500	2940		4640
12	Z1	21	650	836	144		1630
12	S1	21	675	6700	240		7615
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6641	600		7541
25	S3	10	325	6641	575		7541
25	V2	10	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	600	144			744
12	L2	21	6200	144			6344
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5900 to 6500	144			Avg. 6344
12	L6	6	Var. 5900 to 6500	144			Avg. 6344
16	L7	6	Var. 9400 to 9175	192			Avg. 9217
16	L8	42	Var. 6650 to 9400	192			Avg. 8217
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7425	240		7905
20	U2	44	240	3640	240		4120
20	U3	26	240	7425	240		7905
20	U4	51	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	7	192	2884	192		3268
16	U7	28	192	2884	192		3268
16	U8	4	Var. 9400 to 9175	200	550		Avg. 9813
16	U9	24	Var. 6650 to 9400	200	600		Avg. 8825
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	44	1200	500	2940		4640
12	Z1	21	600	836	144		1580
12	S1	21	675	6750	240		7665
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6641	600		7541
25	S3	10	325	6641	575		7541
25	V2	10	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693

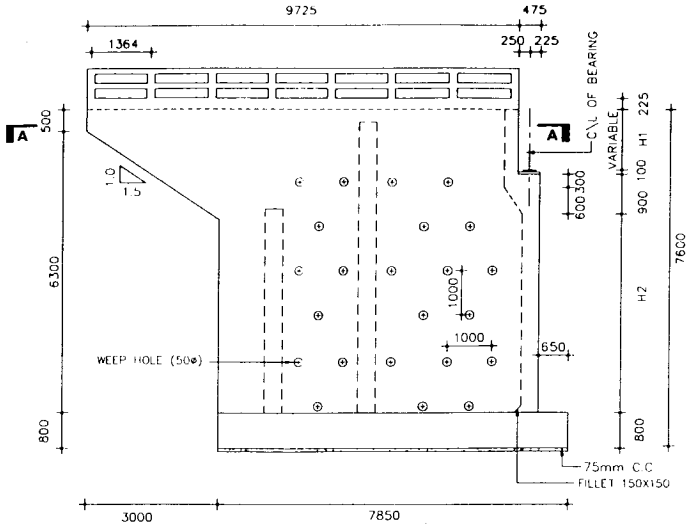
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 3.04m)

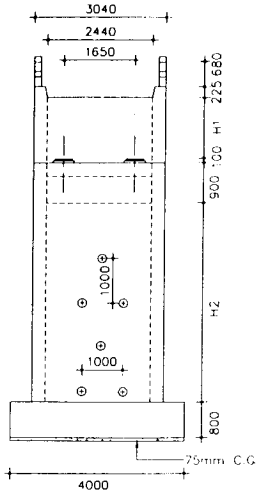
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R01107.54

Web Copy

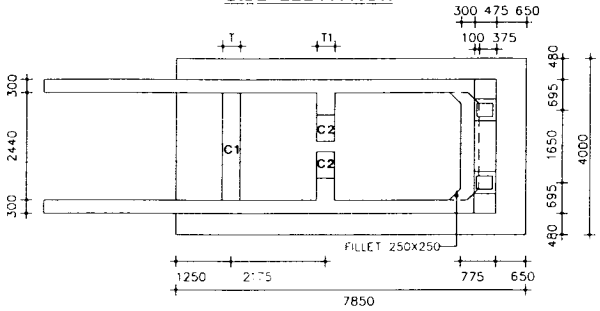
SHEET 1 OF 4
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



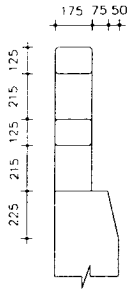
SIDE ELEVATION



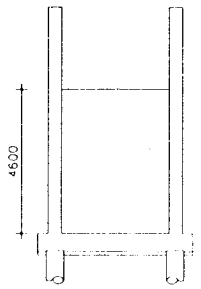
FRONT ELEVATION



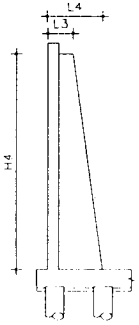
SECTION A-A



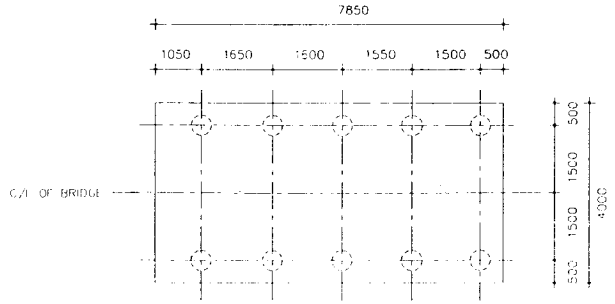
GENERAL ARRANGEMENT
OF RAILING ON WING WALL



COUNTERFORT C1



COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

TABLE-1

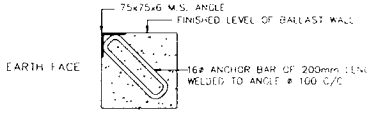
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	4850	335	NOT APPLICABLE
11500	800	5000	333	
11000	800	5000	331	
10500	800	5000	329	
10000	800	5000	327	
9500	800	5000	325	
9000	800	5000	323	
8500	600	5200	321	
8000	600	5200	319	
7500	600	5200	317	
7000	600	5200	315	
6500	600	5200	313	
6000	600	5200	311	
5500	350	5450	313	
5000	350	5450	311	
4500	300	5500	309	
4000	300	5500	307	
3500	300	5500	305	
3000	250	5500	303	
2500	250	5500	301	
2000	250	5500	299	
1500	250	5500	297	

TABLE-2

FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

L3	L4	H4	T	T1
700	1400	6500	400	400



NOSING AT ABUTMENT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 7.6m , DECK WIDTH 3.04m)

DATE :
ISSUED BY
CAD FILE REF : ABUT-7600(7)

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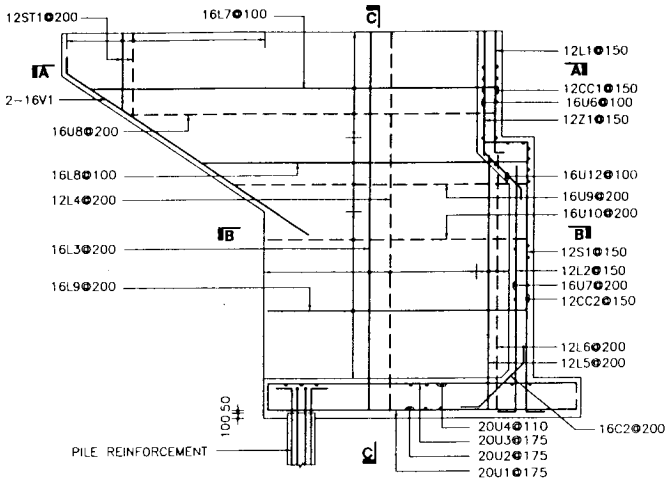
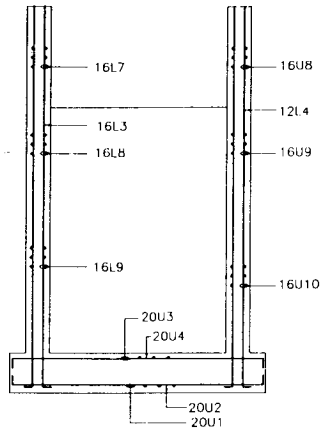
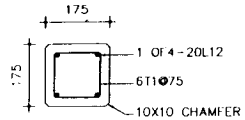
SHEET 2 OF 4
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO



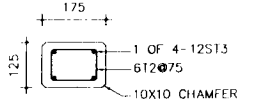
REINFORCEMENT DETAIL



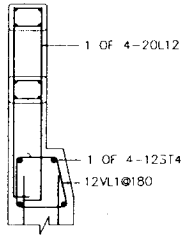
SECTION C-C



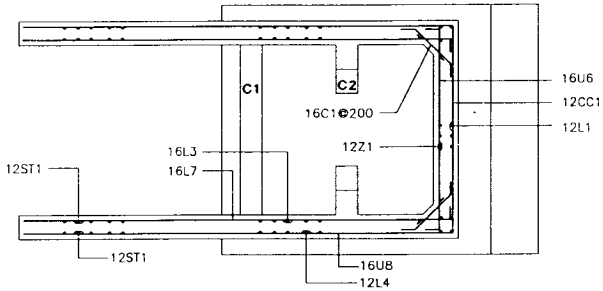
REINF. DETAIL OF POST



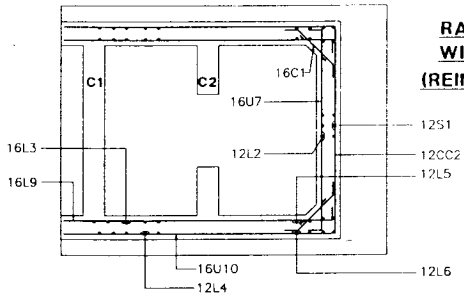
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



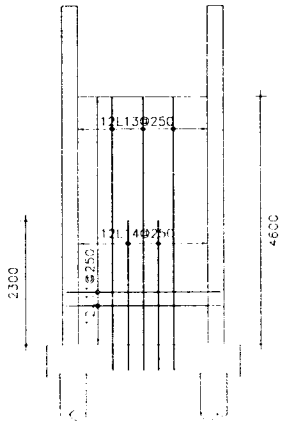
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

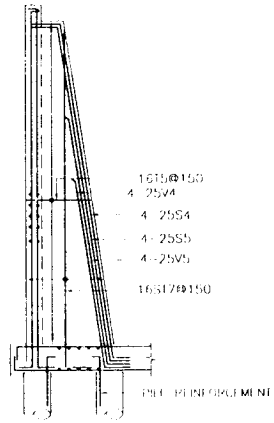
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	1300	144			1444
12	L2	21	5800	144			5944
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5500 to 6100	144			Avg. 5944
12	L6	4	Var. 5500 to 6100	144			Avg. 5944
16	L7	22	Var. 8800 to 9625	192			Avg. 9367
16	L8	32	Var. 7100 to 8800	192			Avg. 8142
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7750	240		8230
20	U2	46	240	3640	240		4120
20	U3	22	240	7750	240		8230
20	U4	72	240	3640	240		4120
16	U6	14	192	2884	192		3268
16	U7	26	192	2884	192		3268
16	U8	12	Var. 8800 to 9625	200	550		Avg. 9963
16	U9	18	Var. 7100 to 8800	200	625		Avg. 8775
16	U10	42	7100	200	-550		7850
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	41	1200	550	2940		4690
12	Z1	21	1300	822	144		2266
12	S1	21	675	6350	240		7265
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1513 to 7360				Avg. 4112

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001



COUNTERFORT C1



COUNTERFORT C2

REINFORCEMENT DETAILS OF COUNTERFORT

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF. : ABUT\R0110762	

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SHEET 3 OF 4
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	1150	144			1294
12	L2	21	5950	144			6094
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5650 to 6250	144			Avg. 6094
12	L6	4	Var. 5650 to 6250	144			Avg. 6094
16	L7	18	Var. 9025 to 9625	192			Avg. 9550
16	L8	34	Var. 7100 to 9025	192			Avg. 8255
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7750	240		8230
20	U2	46	240	3640	240		4120
20	U3	22	240	7750	240		8230
20	U4	72	240	3640	240		4120
16	U6	13	192	2884	192		3268
16	U7	27	192	2884	192		3268
16	U8	10	Var. 9025 to 9625	200	550		Avg. 10135
16	U9	18	Var. 7100 to 9025	200	625		Avg. 8888
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	42	1200	550	2940		4690
12	Z1	21	1150	822	144		2116
12	S1	21	675	6500	240		7415
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1513 to 7360				Avg. 4112

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	950	144			1094
12	L2	21	6150	144			6294
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5850 to 6450	144			Avg. 6294
12	L6	4	Var. 5850 to 6450	144			Avg. 6294
16	L7	14	Var. 9325 to 9625	192			Avg. 9731
16	L8	38	Var. 7100 to 9325	192			Avg. 8405
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7750	240		8230
20	U2	46	240	3640	240		4120
20	U3	22	240	7750	240		8230
20	U4	72	240	3640	240		4120
16	U6	11	192	2884	192		3268
16	U7	28	192	2884	192		3268
16	U8	8	Var. 9325 to 9625	200	550		Avg. 10300
16	U9	20	Var. 7100 to 9325	200	625		Avg. 9038
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	43	1200	550	2940		4690
12	Z1	21	950	822	144		1916
12	S1	21	675	6700	240		7615
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1513 to 7360				Avg. 4112

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	700	144			844
12	L2	21	6400	144			6544
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 6100 to 6700	144			Avg. 6544
12	L6	4	Var. 6100 to 6700	144			Avg. 6544
16	L7	8	Var. 9700 to 9625	192			Avg. 9798
16	L8	44	Var. 7100 to 9700	192			Avg. 8592
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7750	240		8230
20	U2	46	240	3640	240		4120
20	U3	22	240	7750	240		8230
20	U4	72	240	3640	240		4120
16	U6	8	192	2884	192		3268
16	U7	29	192	2884	192		3268
16	U8	4	Var. 9700 to 9625	200	550		Avg. 10375
16	U9	24	Var. 7100 to 9700	200	625		Avg. 9225
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	45	1200	550	2940		4690
12	Z1	21	700	822	144		1666
12	S1	21	675	6950	240		7865
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1513 to 7360				Avg. 4112

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110763	

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	650	144			794
12	L2	21	6450	144			6594
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 6150 to 6750	144			Avg. 6594
12	L6	4	Var. 6150 to 6750	144			Avg. 6594
16	L7	8	Var. 9775 to 9625	192			Avg. 9780
16	L8	44	Var. 7100 to 9775	192			Avg. 8630
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7750	240		8230
20	U2	46	240	3640	240		4120
20	U3	22	240	7750	240		8230
20	U4	72	240	3640	240		4120
16	U6	8	192	2884	192		3268
16	U7	29	192	2884	192		3268
16	U8	4	Var. 9775 to 9625	200	550		Avg. 10300
16	U9	24	Var. 7100 to 9775	200	625		Avg. 9263
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	45	1200	550	2940		4690
12	Z1	21	650	822	144		1616
12	S1	21	675	7000	240		7915
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1513 to 7360				Avg. 4112

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	600	144			744
12	L2	21	6500	144			6644
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 6200 to 6800	144			Avg. 6644
12	L6	4	Var. 6200 to 6800	144			Avg. 6644
16	L7	6	Var. 9850 to 9625	192			Avg. 9667
16	L8	46	Var. 7100 to 9850	192			Avg. 8667
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7750	240		8230
20	U2	46	240	3640	240		4120
20	U3	22	240	7750	240		8230
20	U4	72	240	3640	240		4120
16	U6	7	192	2884	192		3268
16	U7	30	192	2884	192		3268
16	U8	4	Var. 9850 to 9625	200	550		Avg. 10263
16	U9	24	Var. 7100 to 9850	200	625		Avg. 9300
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	46	1200	550	2940		4690
12	Z1	21	600	822	144		1566
12	S1	21	675	7050	240		7965
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1513 to 7360				Avg. 4112

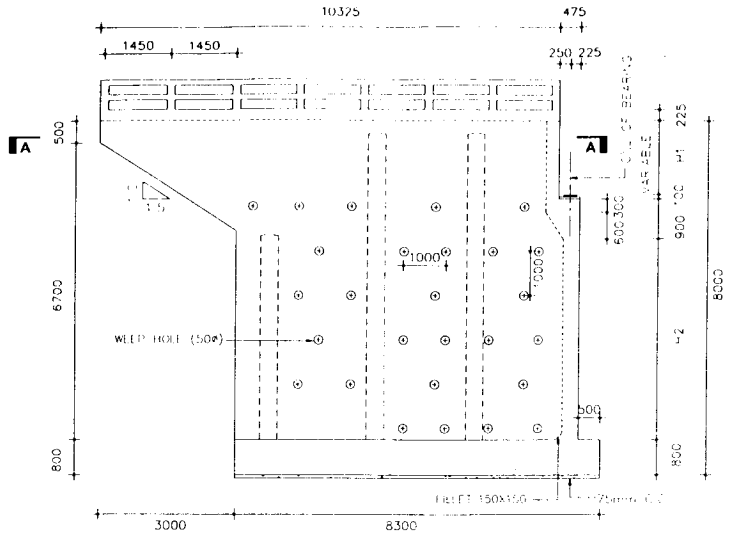
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 3.04m)

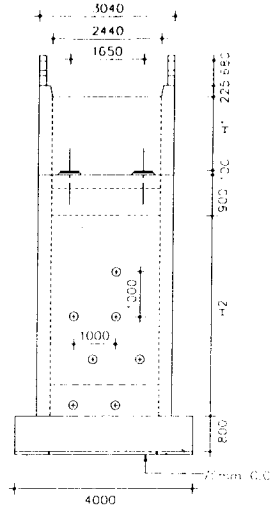
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0110764	

Web Copy

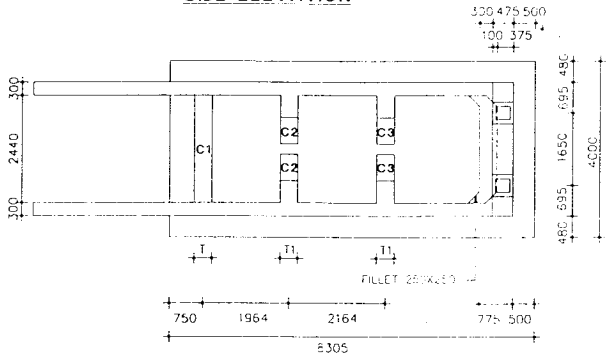
SHEET 1 OF 4
SPAN RANGE 1.5m to 12.0m
SIDEWALK NO



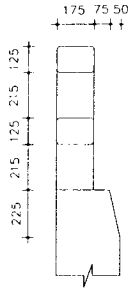
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

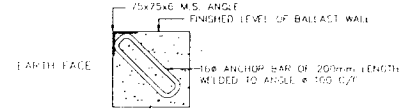
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	950	5250	349	
11500	800	5400	343	
11000	800	5400	341	
10500	800	5400	339	
10000	800	5400	337	
9500	800	5400	335	
9000	800	5400	333	
8500	600	5600	331	
8000	600	5600	329	
7500	600	5600	327	
7000	600	5600	325	NOT APPLICABLE
6500	600	5600	323	
6000	600	5600	321	
5500	350	5850	323	
5000	350	5850	321	
4500	300	5900	319	
4000	300	5900	317	
3500	300	5900	315	
3000	250	5950	313	
2500	250	5950	311	
2000	250	5950	309	
1500	250	5950	307	

TABLE-2

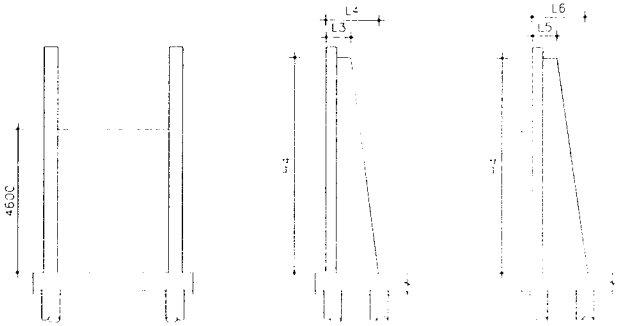
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

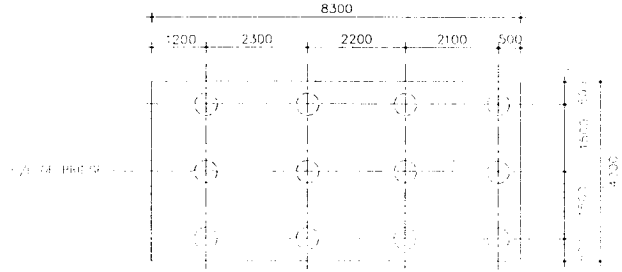
L3	L4	L5	L6	H4	T	T1
700	1400	700	1400	5900	400	400



NOSING AT ABUTMENT



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reactions are in KN.
3) For Twin Culverts, the R.C.C. will rest right on the Abutment Cap, hence neither bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as per drawings, filter material shall be provided as per specification.

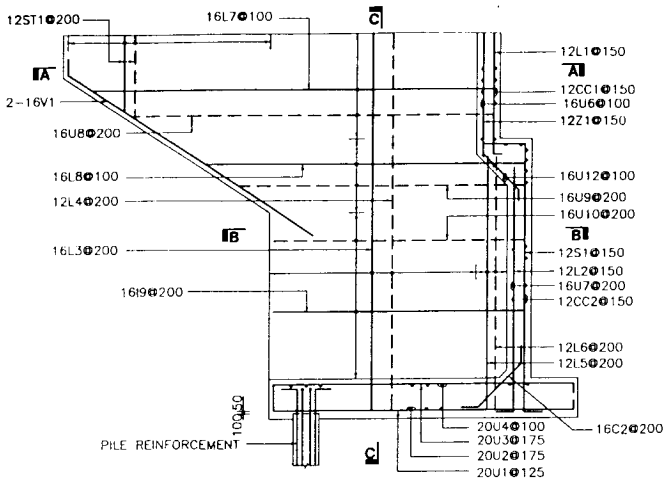
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 8.0m , DECK WIDTH 3.04m)

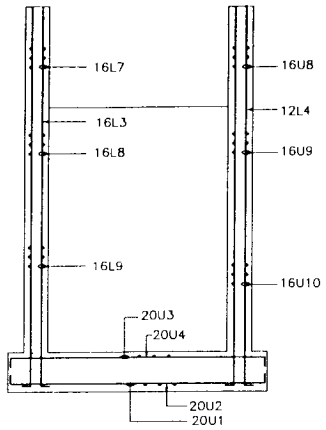
SCALE
DRAWING NO

Web Copy

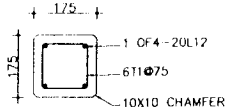
SHEET 2 OF 4
SPAN RANGE : 1.5m to 12m
SIDE WALK. NO



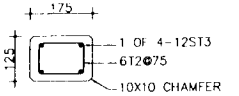
REINFORCEMENT DETAIL



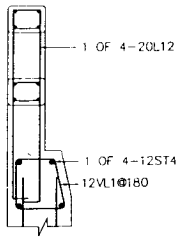
SECTION C-C



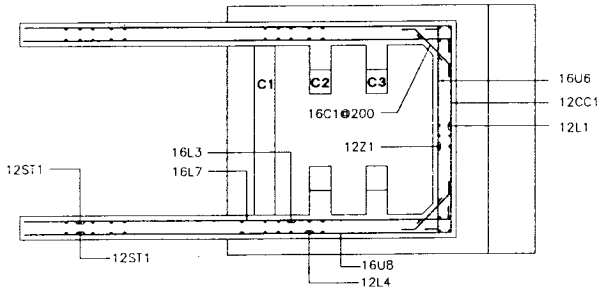
REINF. DETAIL OF POST



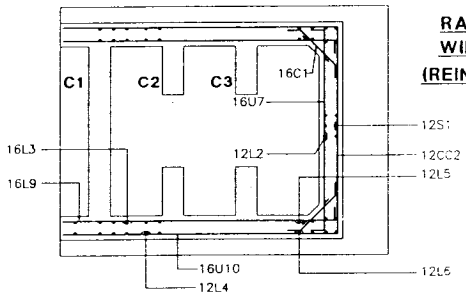
REINF. DETAIL OF RAILING



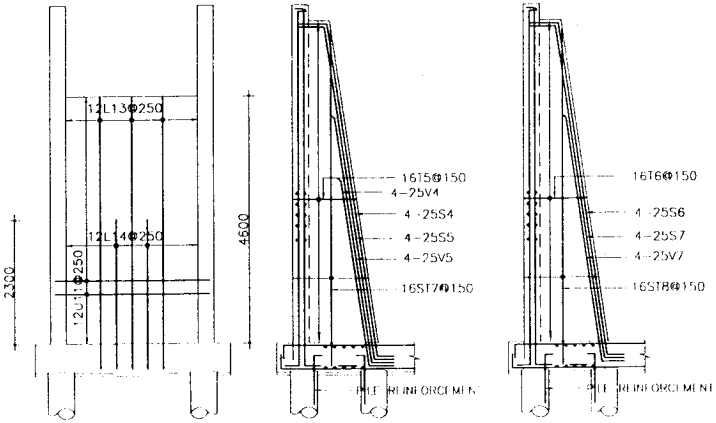
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3

REINFORCEMENT DETAILS OF COUNTERFORT

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10285				10285
12	ST4	8	10275				10275
12	L1	21	1300	144			1444
12	L2	21	6200	144			6344
12	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	4	Var. 5900 to 6500	144			Avg. 6344
12	L6	4	Var. 5900 to 6500	144			Avg. 6344
16	L7	22	Var. 9400 to 10225	192			Avg. 10042
16	L8	32	Var. 7700 to 9400	192			Avg. 8742
16	L9	46	7700	192			7892
20	L12	64	971	120			1091
20	U1	64	240	8200	240		8680
20	U2	22	240	3640	240		4120
20	U3	48	240	8200	240		8680
20	U4	38	240	3640	240		4120
16	U6	14	192	2884	192		3268
16	U7	28	192	2884	192		3268
16	U8	12	Var. 9400 to 10225	200	550		Avg. 10700
16	U9	18	Var. 7700 to 9400	200	625		Avg. 9375
16	U10	46	7700	200	550		8450
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	44	1200	550	2940		4690
12	Z1	21	1300	822	144		2266
12	S1	21	675	6750	240		7665
16	C1	74	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	118	272	200	250	378	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2096	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3755			4130
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4832			5182
16	ST8	20	Var. 1600 to 7768				Avg. 3967

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276MPa.
6) Clear cover for : a) Rail-20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Std File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\P0110802

Web Copy

SHEET 3 OF 4
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 800)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10285				10285
12	ST4	8	10275				10275
12	L1	21	1150	144			1294
12	L2	21	6350	144			6494
16	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	4	Var. 6050 to 6650	144			Avg. 6494
12	L6	4	Var. 6050 to 6650	144			Avg. 6494
16	L7	18	Var. 9625 to 10225	192			Avg. 10217
16	L8	34	Var. 7700 to 9625	192			Avg. 8855
16	L9	46	7700	192			7892
20	L12	64	971	120			1091
20	U1	64	240	8200	240		8680
20	U2	22	240	3640	240		4120
20	U3	48	240	8200	240		8680
20	U4	38	240	3640	240		4120
16	U6	13	192	2884	192		3268
16	U7	29	192	2884	192		3268
16	U8	10	Var. 9625 to 10225	200	550		Avg. 10855
16	U9	18	Var. 7700 to 9625	200	625		Avg. 9488
16	U10	46	7700	200	550		8450
16	U12	12	192	2940	192		3324
12	CC1	8	1200	400	2940		4540
12	CC2	45	1200	550	2940		4690
12	Z1	21	1150	822	144		2116
12	S1	21	675	6900	240		7815
16	C1	74	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	118	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3755			4130
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4832			5182
16	ST8	20	Var. 1600 to 7768				Avg. 4067

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 600)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10285				10285
12	ST4	8	10275				10275
12	L1	21	950	144			1094
12	L2	21	6550	144			6694
16	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	4	Var. 6250 to 6850	144			Avg. 6694
12	L6	4	Var. 6250 to 6850	144			Avg. 6694
16	L7	14	Var. 9925 to 10225	192			Avg. 10374
16	L8	38	Var. 7700 to 9925	192			Avg. 9005
16	L9	46	7700	192			7892
20	L12	64	971	120			1091
20	U1	64	240	8200	240		8680
20	U2	22	240	3640	240		4120
20	U3	48	240	8200	240		8680
20	U4	38	240	3640	240		4120
16	U6	11	192	2884	192		3268
16	U7	30	192	2884	192		3268
16	U8	8	Var. 9925 to 10225	200	550		Avg. 10975
16	U9	20	Var. 7700 to 9925	200	625		Avg. 9638
16	U10	46	7700	200	550		8450
16	U12	12	192	2940	192		3324
12	CC1	7	1200	400	2940		4540
12	CC2	46	1200	550	2940		4690
12	Z1	21	950	822	144		1916
12	S1	21	675	7100	240		8015
16	C1	74	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	118	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3755			4130
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4832			5182
16	ST8	20	Var. 1600 to 7768				Avg. 4067

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10285				10285
12	ST4	8	10275				10275
12	L1	21	700	144			844
12	L2	21	6800	144			6944
16	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	4	Var. 6500 to 7100	144			Avg. 6944
12	L6	4	Var. 6500 to 7100	144			Avg. 6944
16	L7	8	Var. 10300 to 10225	192			Avg. 10380
16	L8	44	Var. 7700 to 10300	192			Avg. 9192
16	L9	46	7700	192			7892
20	L12	64	971	120			1091
20	U1	64	240	8200	240		8680
20	U2	22	240	3640	240		4120
20	U3	48	240	8200	240		8680
20	U4	38	240	3640	240		4120
16	U6	8	192	2884	192		3268
16	U7	31	192	2884	192		3268
16	U8	4	Var. 10300 to 10225	200	550		Avg. 10900
16	U9	24	Var. 7700 to 10300	200	625		Avg. 9825
16	U10	46	7700	200	550		8450
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	48	1200	550	2940		4690
12	Z1	21	700	822	144		1666
12	S1	21	675	7350	240		8265
16	C1	74	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	118	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3755			4130
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4832			5182
16	ST8	20	Var. 1600 to 7768				Avg. 4067

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 3.04m)

DATE :

DESIGNED BY :

CAD FILE REF : ABUT\R0110803

Web Copy

SHEET 4 OF 4
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 300)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10285				10285
12	ST4	8	10275				10275
12	L1	21	650	144			794
12	L2	21	6850	144			6994
16	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	4	Var. 6550 to 7150	144			Avg. 6994
12	L6	4	Var. 6550 to 7150	144			Avg. 6994
16	L7	8	Var. 10375 to 10225	192			Avg. 10342
16	L8	44	Var. 7700 to 10375	192			Avg. 9230
16	L9	46	7700	192			7892
20	L12	64	971	120			1091
20	U1	64	240	8200	240		8680
20	U2	22	240	3640	240		4120
20	U3	48	240	8200	240		8680
20	U4	38	240	3640	240		4120
16	U6	8	192	2884	192		3268
16	U7	31	192	2884	192		3268
16	U8	4	Var. 10375 to 10225	200	550		Avg. 10825
16	U9	24	Var. 7700 to 10375	200	625		Avg. 9863
16	U10	46	7700	200	550		8450
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	48	1200	550	2940		4690
12	Z1	21	650	822	144		1616
12	S1	21	675	7400	240		8315
16	C1	74	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	118	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3755			4130
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4832			5182
16	ST8	20	Var. 1600 to 7768				Avg. 4067

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10285				10285
12	ST4	8	10275				10275
12	L1	21	600	144			744
12	L2	21	6900	144			7044
16	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	4	Var. 6600 to 7200	144			Avg. 7044
12	L6	4	Var. 6600 to 7200	144			Avg. 7044
16	L7	6	Var. 10450 to 10225	192			Avg. 10192
16	L8	46	Var. 7700 to 10450	192			Avg. 9267
16	L9	46	7700	192			7892
20	L12	64	971	120			1091
20	U1	64	240	8200	240		8680
20	U2	22	240	3640	240		4120
20	U3	48	240	8200	240		8680
20	U4	38	240	3640	240		4120
16	U6	7	192	2884	192		3268
16	U7	32	192	2884	192		3268
16	U8	4	Var. 10450 to 10225	200	550		Avg. 10750
16	U9	24	Var. 7700 to 10450	200	625		Avg. 9900
16	U10	46	7700	200	550		8450
16	U12	12	192	2940	192		3324
12	CC1	5	1200	400	2940		4540
12	CC2	48	1200	550	2940		4690
12	Z1	21	600	822	144		1566
12	S1	21	675	7450	240		8365
16	C1	74	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	118	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3755			4130
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4832			5182
16	ST8	20	Var. 1600 to 7768				Avg. 4067

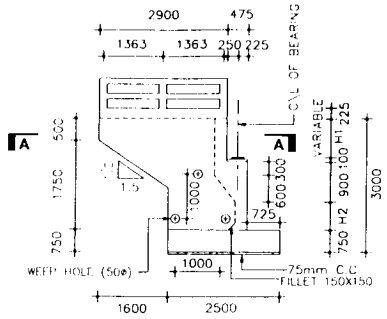
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 3.04m)

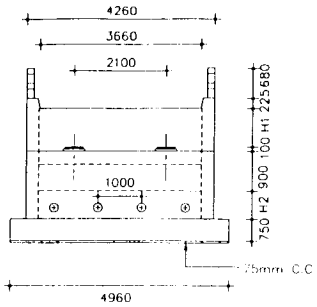
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0110804

Web Copy

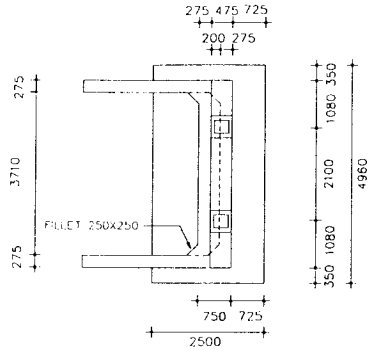
SHEET 1 OF 5	
SPAN RANGE	1.5m TO 12m
SIDE WALK	NO



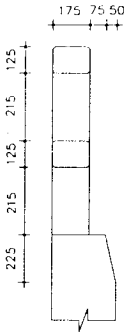
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



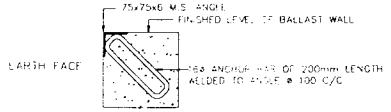
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

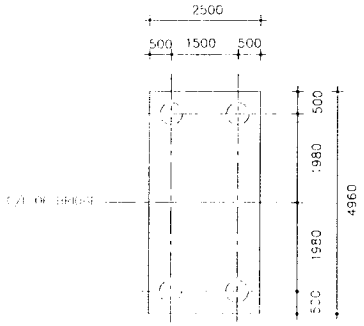
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	250	250	170
11500	1000	250	246	166
11000	1000	250	242	162
10500	1000	250	238	158
10000	1000	250	234	154
9500	900	350	228	150
9000	900	350	224	148
8500	900	350	220	146
8000	900	350	216	144
7500	750	500	210	140
7000	750	500	206	138
6500	750	500	202	136
6000	750	500	198	134
5500	400	850	204	138
5000	400	850	200	134
4500	350	900	192	128
4000	350	900	188	124
3500	325	925	182	120
3000	325	925	178	118
2500	275	975	172	114
2000	250	1000	168	110
1500	250	1000	164	108

TABLE-2

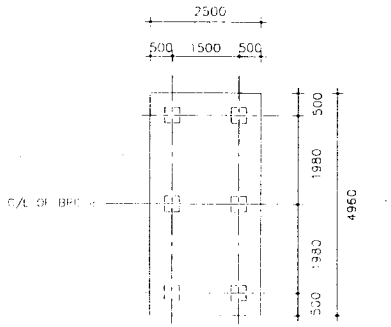
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	40	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.

2) Pile reaction are in T/N.

3) For Box Culverts, the Slab we rest right on the Abutment Cap. Hence Bearing Bearing Pad will not be required.

4) Weep hole shall be provided at 1.95mm horizontally and vertically as shown in drawings. filter material shall be provided as per specification.

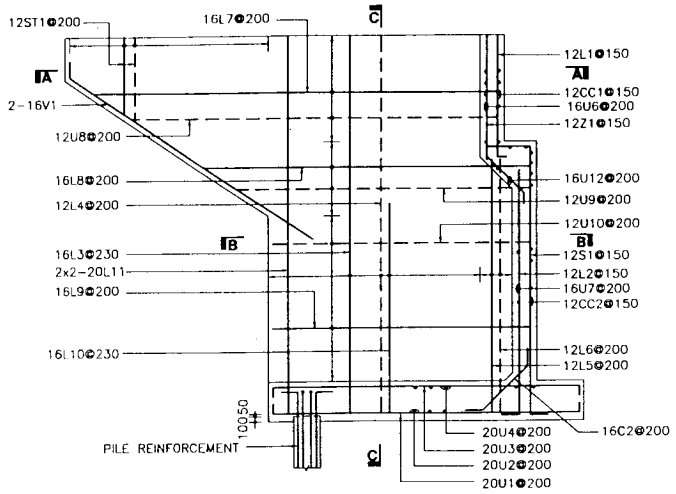
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.0m , DECK WIDTH 4.26m)

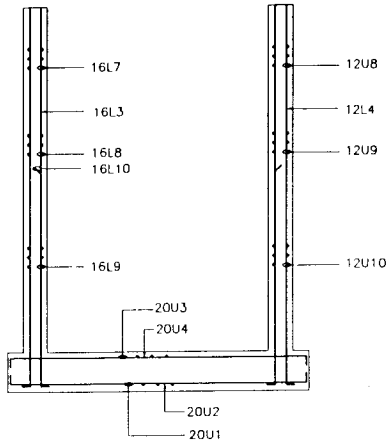
DAB	PAPER SIZE :
CAD FILE NO : ABUTMENT03.dgn	

Web Copy

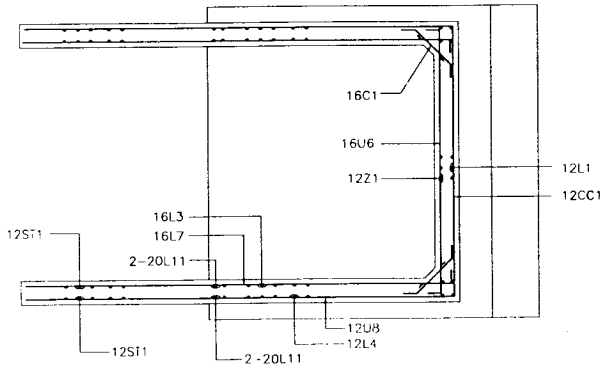
SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



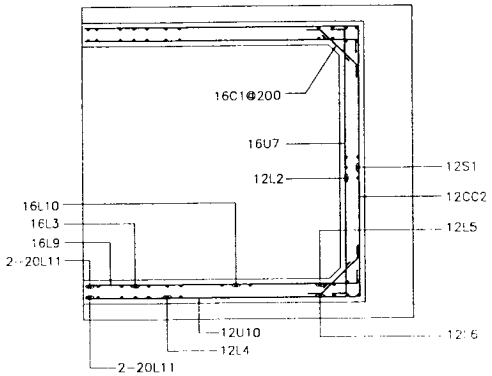
REINFORCEMENT DETAIL



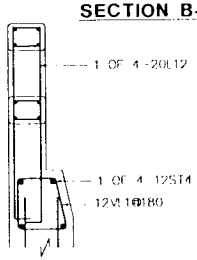
SECTION C-C



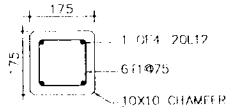
SECTION A-A



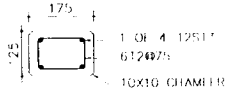
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	1350	144			1494
12	L2	29	1150	144			1294
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 850 to 1450	144			Avg. 1294
12	L6	6	Var. 850 to 1450	144			Avg. 1294
16	L7	12	Var. 1900 to 2800	192			Avg. 2692
16	L8	8	Var. 1675 to 1900	192			Avg. 1990
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2400	240		2880
20	U2	13	240	4860	240		5340
20	U3	26	240	2400	240		2880
20	U4	13	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	3	192	4112	192		4496
12	U8	12	Var. 1900 to 2800	175	525		Avg. 3200
12	U9	8	Var. 1675 to 1900	175	525		Avg. 2488
12	U10	6	1675	175	525		2375
16	U12	6	192	4160	192		4544
12	CC1	10	1150	350	4160		5660
12	CC2	10	1150	350	4160		5660
12	Z1	29	1350	866	144		2360
12	S1	29	650	1700	240		2590
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 75mm.
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File: ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 4.26m)

DATE	ISSUED BY :
CAD FILE REF. : ABUT\R0210.302	

Web Copy

SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	1250	144			1394
12	L2	29	1250	144			1394
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 950 to 1550	144			Avg. 1394
12	L6	6	Var. 950 to 1550	144			Avg. 1394
16	L7	12	Var. 2050 to 2800	192			Avg. 2742
16	L8	8	Var. 1675 to 2050	192			Avg. 2055
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2400	240		2880
20	U2	13	240	4860	240		5340
20	U3	26	240	2400	240		2880
20	U4	13	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	4	192	4112	192		4496
12	U8	12	Var. 2050 to 2800	175	525		Avg. 3250
12	U9	8	Var. 1675 to 2050	175	525		Avg. 2563
12	U10	6	1675	175	525		2375
16	U12	6	192	4160	192		4544
12	CC1	9	1150	350	4160		5660
12	CC2	11	1150	350	4160		5660
12	Z1	29	1250	866	144		2260
12	S1	29	650	1800	240		2690
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	1100	144			1244
12	L2	29	1400	144			1544
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1100 to 1700	144			Avg. 1544
12	L6	6	Var. 1100 to 1700	144			Avg. 1544
16	L7	10	Var. 2275 to 2800	192			Avg. 2887
16	L8	10	Var. 1675 to 2275	192			Avg. 2167
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2400	240		2880
20	U2	13	240	4860	240		5340
20	U3	26	240	2400	240		2880
20	U4	13	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	4	192	4112	192		4496
12	U8	10	Var. 2275 to 2800	175	525		Avg. 3395
12	U9	10	Var. 1675 to 2275	175	525		Avg. 2675
12	U10	6	1675	175	525		2375
16	U12	6	192	4160	192		4544
12	CC1	8	1150	350	4160		5660
12	CC2	12	1150	350	4160		5660
12	Z1	29	1100	866	144		2110
12	S1	29	650	1950	240		2840
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	750	144			804
12	L2	29	1750	144			1894
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1450 to 2050	144			Avg. 1894
12	L6	6	Var. 1450 to 2050	144			Avg. 1894
16	L7	6	Var. 2800 to 2800	192			Avg. 2992
16	L8	14	Var. 1675 to 2800	192			Avg. 2430
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2400	240		2880
20	U2	13	240	4860	240		5340
20	U3	26	240	2400	240		2880
20	U4	13	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	6	192	4112	192		4496
12	U8	6	Var. 2800 to 2800	175	525		Avg. 3500
12	U9	14	Var. 1675 to 2800	175	525		Avg. 2938
12	U10	6	1675	175	525		2375
16	U12	6	192	4160	192		4544
12	CC1	6	1150	350	4160		5660
12	CC2	14	1150	350	4160		5660
12	Z1	29	750	866	144		1760
12	S1	29	650	2300	240		3190
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210303	

Web Copy

SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	700	144			844
12	L2	29	1800	144			1944
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1500 to 2100	144			Avg. 1944
12	L6	6	Var. 1500 to 2100	144			Avg. 1944
16	L7	4	Var. 2875 to 2800	192			Avg. 2917
16	L8	14	Var. 1675 to 2875	192			Avg. 2467
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2400	240		2880
20	U2	13	240	4860	240		5340
20	U3	26	240	2400	240		2880
20	U4	13	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	6	192	4112	192		4496
12	U8	4	Var. 2875 to 2800	175	525		Avg. 3425
12	U9	14	Var. 1675 to 2875	175	525		Avg. 2975
12	U10	6	1675	175	525		2375
16	U12	6	192	4160	192		4544
12	CC1	5	1150	350	4160		5660
12	CC2	15	1150	350	4160		5660
12	Z1	29	700	866	144		1710
12	S1	29	650	2350	240		3240
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	675	144			819
12	L2	29	1825	144			1969
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1525 to 2125	144			Avg. 1969
12	L6	6	Var. 1525 to 2125	144			Avg. 1969
16	L7	4	Var. 2913 to 2800	192			Avg. 2879
16	L8	14	Var. 1675 to 2913	192			Avg. 2486
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2400	240		2880
20	U2	13	240	4860	240		5340
20	U3	26	240	2400	240		2880
20	U4	13	240	4860	240		5340
16	U6	4	192	4112	192		4496
16	U7	7	192	4112	192		4496
12	U8	4	Var. 2913 to 2800	175	525		Avg. 3387
12	U9	14	Var. 1675 to 2913	175	525		Avg. 2994
12	U10	6	1675	175	525		2375
16	U12	6	192	4160	192		4544
12	CC1	5	1150	350	4160		5660
12	CC2	15	1150	350	4160		5660
12	Z1	29	675	866	144		1685
12	S1	29	650	2375	240		3265
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210.504	

Web Copy

SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	625	144			769
12	L2	29	1875	144			2019
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1575 to 2175	144			Avg. 2019
12	L6	6	Var. 1575 to 2175	144			Avg. 2019
16	L7	4	Var. 2988 to 2800	192			Avg. 2804
16	L8	14	Var. 1675 to 2988	192			Avg. 2524
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2400	240		2880
20	U2	13	240	4860	240		5340
20	U3	26	240	2400	240		2880
20	U4	13	240	4860	240		5340
16	U6	4	192	4112	192		4496
16	U7	7	192	4112	192		4496
12	U8	4	Var. 2988 to 2800	175	525		Avg. 3312
12	U9	14	Var. 1675 to 2988	175	525		Avg. 3032
12	U10	6	1675	175	525		2375
16	U12	6	192	4160	192		4544
12	CC1	5	1150	350	4160		5660
12	CC2	15	1150	350	4160		5660
12	Z1	29	625	866	144		1635
12	S1	29	650	2425	240		3315
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	600	144			744
12	L2	29	1900	144			2044
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1600 to 2200	144			Avg. 2044
12	L6	6	Var. 1600 to 2200	144			Avg. 2044
16	L7	4	Var. 3025 to 2800	192			Avg. 2767
16	L8	16	Var. 1675 to 3025	192			Avg. 2542
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2400	240		2880
20	U2	13	240	4860	240		5340
20	U3	26	240	2400	240		2880
20	U4	13	240	4860	240		5340
16	U6	4	192	4112	192		4496
16	U7	7	192	4112	192		4496
12	U8	4	Var. 3025 to 2800	175	525		Avg. 3275
12	U9	16	Var. 1675 to 3025	175	525		Avg. 3050
12	U10	6	1675	175	525		2375
16	U12	6	192	4160	192		4544
12	CC1	5	1150	350	4160		5660
12	CC2	15	1150	350	4160		5660
12	Z1	29	600	866	144		1610
12	S1	29	650	2450	240		3340
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

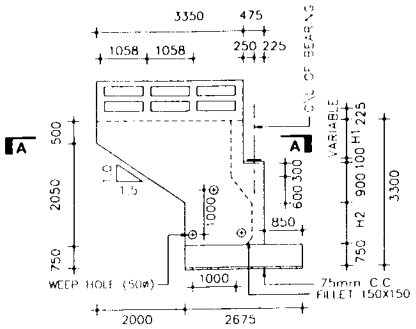
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 4.26m)

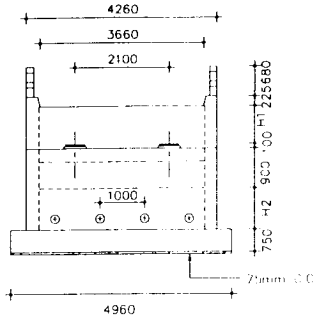
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210305	

Web Copy

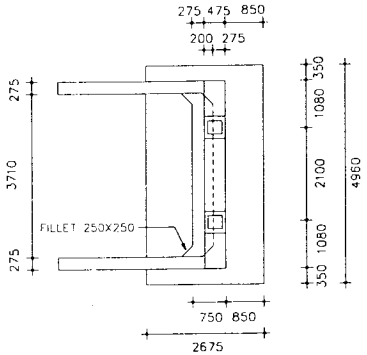
SHEET 1 OF 5	
SPAN RANGE	1.5m TO 12m
SIDE WALK	NO



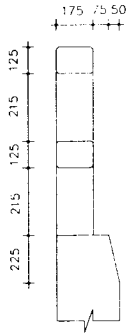
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



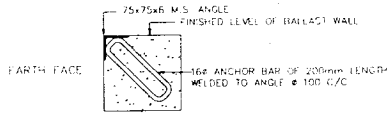
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

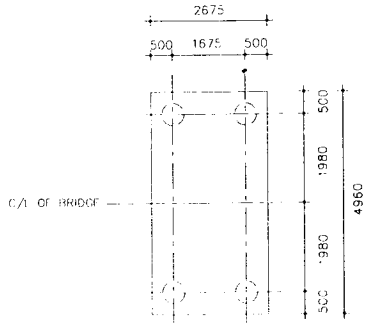
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	550	270	180
11500	1000	550	266	176
11000	1000	550	262	172
10500	1000	550	258	168
10000	1000	550	254	164
9500	900	650	248	160
9000	900	650	244	158
8500	900	650	240	156
8000	900	650	236	154
7500	750	800	230	150
7000	750	800	226	148
6500	750	800	222	146
6000	750	800	218	144
5500	400	1150	224	148
5000	400	1150	220	144
4500	350	1200	212	138
4000	350	1200	208	134
3500	325	1225	202	130
3000	325	1225	198	126
2500	275	1275	192	124
2000	250	1300	188	120
1500	250	1300	184	118

TABLE-2

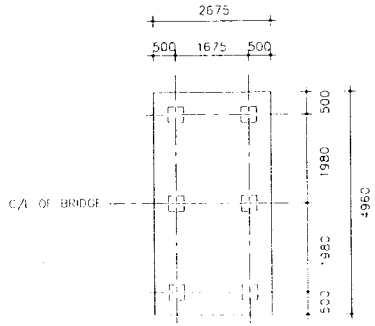
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap (neither Bearing/ Bearing Pad will not be required.)
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.3m , DECK WIDTH 4.26m)

DATE	CHECKED BY
CAD FILE REF.	ABUTBRDZ3M

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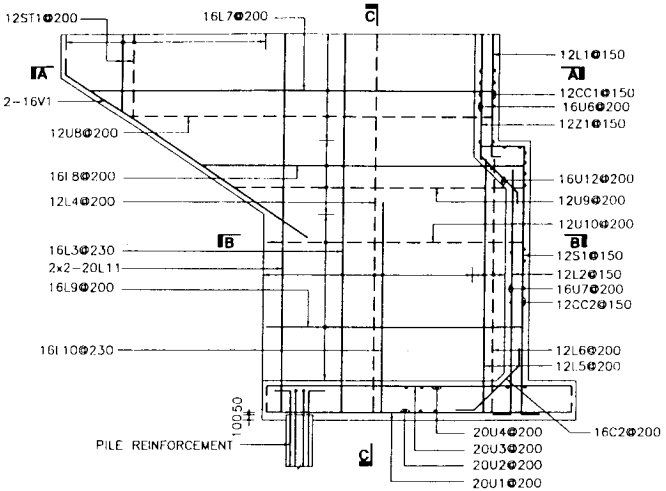
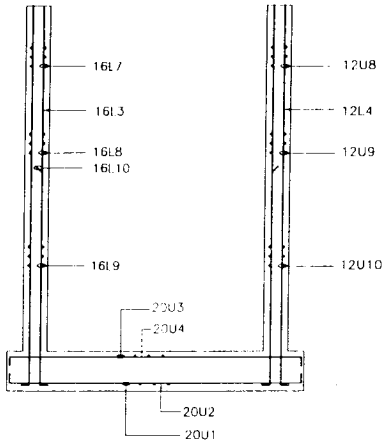
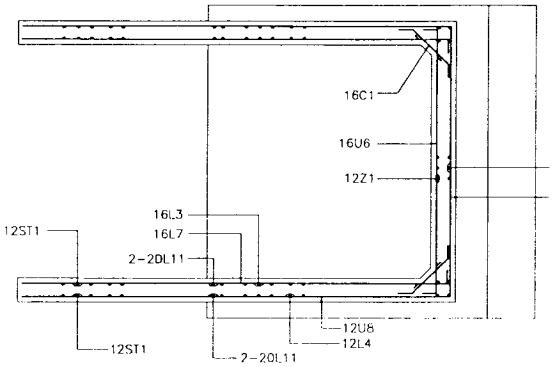
SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



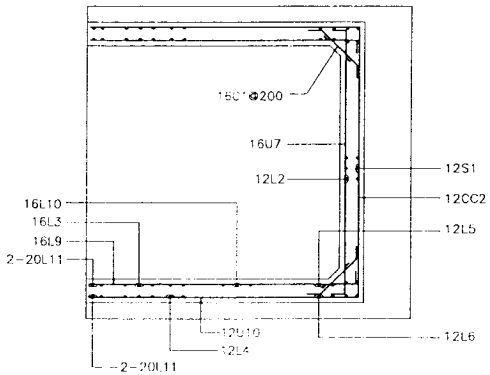
REINFORCEMENT DETAIL



SECTION C-C



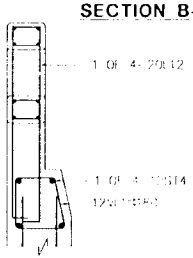
SECTION A-A



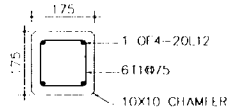
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

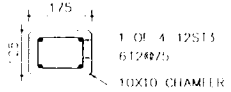
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	29	1350	144			1494
12	L2	29	1450	144			1594
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1150 to 1750	144			Avg. 1594
12	L6	6	Var. 1150 to 1750	144			Avg. 1594
16	L7	12	Var. 2350 to 3250	192			Avg. 3142
16	L8	10	Var. 1725 to 2350	192			Avg. 2230
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	5	192	4112	192		4496
12	U8	12	Var. 2350 to 3250	175	525		Avg. 3650
12	U9	10	Var. 1725 to 2350	175	525		Avg. 2738
12	U10	6	1725	175	525		2425
16	U12	6	192	4160	192		4544
12	CC1	10	1150	350	4160		5660
12	CC2	12	1150	350	4160		5660
12	Z1	29	1350	866	144		2360
12	S1	29	650	2000	240		2890
16	C1	28	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm.
7) For pile reinforcement see dwg no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF. : ABUT\R0210522	

Web Copy

SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	29	1250	144			1394
12	L2	29	1550	144			1694
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1250 to 1850	144			Avg. 1694
12	L6	6	Var. 1250 to 1850	144			Avg. 1694
16	L7	12	Var. 2500 to 3250	192			Avg. 3192
16	L8	12	Var. 1725 to 2500	192			Avg. 2305
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	5	192	4112	192		4496
12	U8	12	Var. 2500 to 3250	175	525		Avg. 3700
12	U9	12	Var. 1725 to 2500	175	525		Avg. 2813
12	U10	6	1725	175	525		2425
16	U12	6	192	4160	192		4544
12	CC1	9	1150	350	4160		5660
12	CC2	13	1150	350	4160		5660
12	Z1	29	1250	866	144		2260
12	S1	29	650	2100	240		2990
16	C1	28	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	29	1100	144			1244
12	L2	29	1700	144			1844
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1400 to 2000	144			Avg. 1844
12	L6	6	Var. 1400 to 2000	144			Avg. 1844
16	L7	10	Var. 2725 to 3250	192			Avg. 3337
16	L8	12	Var. 1725 to 2725	192			Avg. 2417
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	6	192	4112	192		4496
12	U8	10	Var. 2725 to 3250	175	525		Avg. 3845
12	U9	12	Var. 1725 to 2725	175	525		Avg. 2925
12	U10	6	1725	175	525		2425
16	U12	6	192	4160	192		4544
12	CC1	8	1150	350	4160		5660
12	CC2	14	1150	350	4160		5660
12	Z1	29	1100	866	144		2110
12	S1	29	650	2250	240		3140
16	C1	28	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	29	750	144			894
12	L2	29	2050	144			2194
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1750 to 2350	144			Avg. 2194
12	L6	6	Var. 1750 to 2350	144			Avg. 2194
16	L7	6	Var. 3250 to 3250	192			Avg. 3442
16	L8	16	Var. 1725 to 3250	192			Avg. 2680
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	8	192	4112	192		4496
12	U8	6	Var. 3250 to 3250	175	525		Avg. 3950
12	U9	16	Var. 1725 to 3250	175	525		Avg. 3188
12	U10	6	1725	175	525		2425
16	U12	6	192	4160	192		4544
12	CC1	6	1150	350	4160		5660
12	CC2	16	1150	350	4160		5660
12	Z1	29	750	866	144		1760
12	S1	29	650	2600	240		3490
16	C1	28	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : A-BUT\R0210.333

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SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	29	700	144			844
12	L2	29	2100	144			2244
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1800 to 2400	144			Avg. 2244
12	L6	6	Var. 1800 to 2400	144			Avg. 2244
16	L7	4	Var. 3325 to 3250	192			Avg. 3367
16	L8	16	Var. 1725 to 3325	192			Avg. 2717
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	8	192	4112	192		4496
12	U8	4	Var. 3325 to 3250	175	525		Avg. 3875
12	U9	16	Var. 1725 to 3325	175	525		Avg. 3225
12	U10	6	1725	175	525		2425
16	U12	6	192	4160	192		4544
12	CC1	5	1150	350	4160		5660
12	CC2	17	1150	350	4160		5660
12	Z1	29	700	866	144		1710
12	S1	29	650	2650	240		3540
16	C1	28	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	29	675	144			819
12	L2	29	2125	144			2269
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1825 to 2425	144			Avg. 2269
12	L6	6	Var. 1825 to 2425	144			Avg. 2269
16	L7	4	Var. 3363 to 3250	192			Avg. 3329
16	L8	18	Var. 1725 to 3363	192			Avg. 2736
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	8	192	4112	192		4496
12	U8	4	Var. 3363 to 3250	175	525		Avg. 3837
12	U9	18	Var. 1725 to 3363	175	525		Avg. 3244
12	U10	6	1725	175	525		2425
16	U12	6	192	4160	192		4544
12	CC1	5	1150	350	4160		5660
12	CC2	17	1150	350	4160		5660
12	Z1	29	675	866	144		1685
12	S1	29	650	2675	240		3565
16	C1	28	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210534	

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SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	29	625	144			769
12	L2	29	2175	144			2319
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1875 to 2475	144			Avg. 2319
12	L6	6	Var. 1875 to 2475	144			Avg. 2319
16	L7	4	Var. 3438 to 3250	192			Avg. 3254
16	L8	18	Var. 1725 to 3438	192			Avg. 2774
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	8	192	4112	192		4496
12	U8	4	Var. 3438 to 3250	175	525		Avg. 3762
12	U9	18	Var. 1725 to 3438	175	525		Avg. 3282
12	U10	6	1725	175	525		2425
16	U12	6	192	4160	192		4544
12	CC1	5	1150	350	4160		5660
12	CC2	17	1150	350	4160		5660
12	Z1	29	625	866	144		1635
12	S1	29	650	2725	240		3615
16	C1	28	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

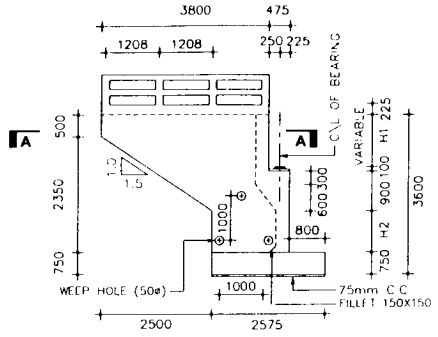
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	29	600	144			744
12	L2	29	2200	144			2344
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1900 to 2500	144			Avg. 2344
12	L6	6	Var. 1900 to 2500	144			Avg. 2344
16	L7	4	Var. 3475 to 3250	192			Avg. 3217
16	L8	18	Var. 1725 to 3475	192			Avg. 2792
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U5	4	192	4112	192		4496
16	U7	8	192	4112	192		4496
12	U8	4	Var. 3475 to 3250	175	525		Avg. 3725
12	U9	18	Var. 1725 to 3475	175	525		Avg. 3300
12	U10	6	1725	175	525		2425
16	U12	6	192	4160	192		4544
12	CC1	5	1150	350	4160		5660
12	CC2	17	1150	350	4160		5660
12	Z1	29	600	866	144		1610
12	S1	29	650	2750	240		3640
16	C1	28	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

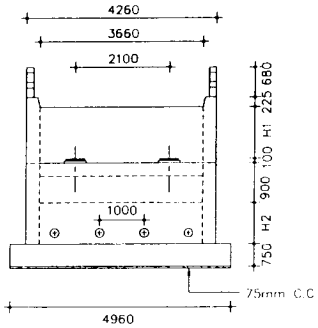
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0210.3.55

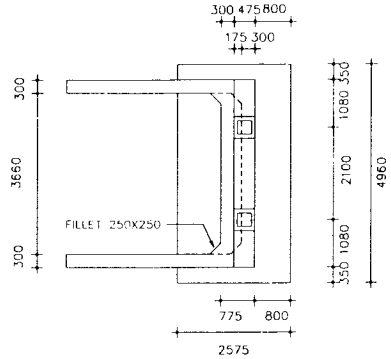
Web Copy



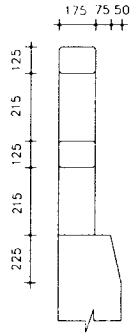
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



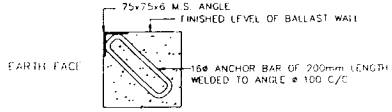
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

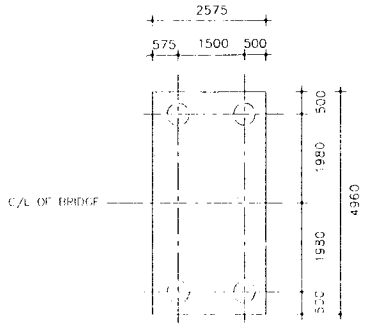
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	850	280	140
11500	1000	850	276	138
11000	1000	850	272	136
10500	1000	850	268	134
10000	1000	850	264	132
9500	900	950	258	128
9000	900	950	254	126
8500	900	950	250	124
8000	900	950	246	122
7500	750	1100	240	118
7000	750	1100	236	116
6500	750	1100	232	114
6000	750	1100	228	112
5500	400	1450	234	116
5000	400	1450	230	114
4500	350	1500	222	110
4000	350	1500	218	108
3500	325	1525	212	104
3000	325	1525	208	102
2500	275	1575	202	98
2000	250	1600	198	96
1500	250	1600	194	94

TABLE-2

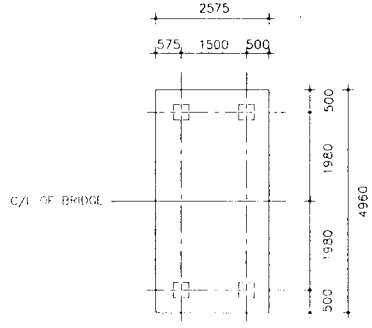
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.6m , DECK WIDTH 4.26m)

DATE
DRAWN BY :
CAD FILE REF : ABUT\R0216.dgn

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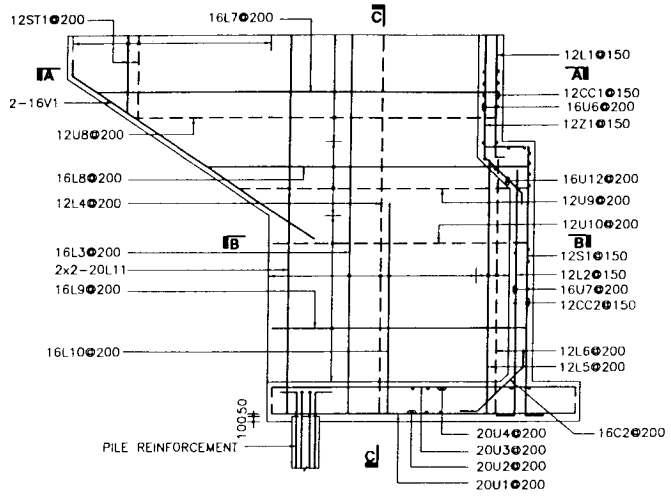
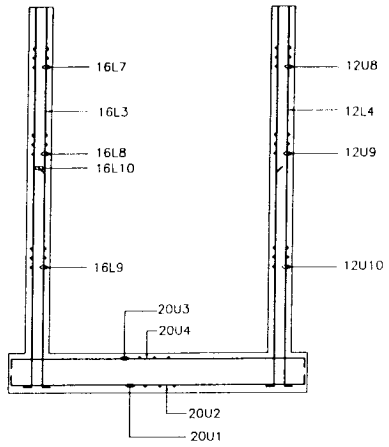
SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



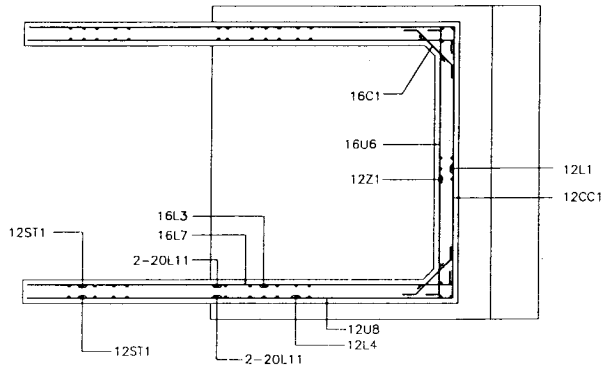
REINFORCEMENT DETAIL



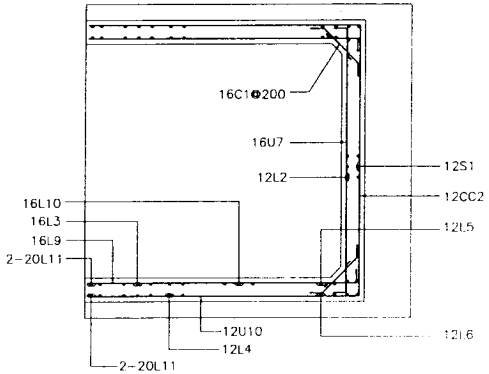
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

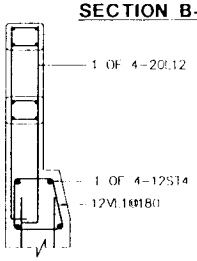
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	29	1350	144			1494
12	L2	29	1750	144			1894
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1450 to 2050	144			Avg. 1804
12	L6	6	Var. 1450 to 2050	144			Avg. 1894
16	L7	12	Var. 2800 to 3700	192			Avg. 3592
16	L8	14	Var. 1675 to 2800	192			Avg. 2430
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	26	240	2475	240		2955
20	U2	14	240	4860	240		5340
20	U3	26	240	2475	240		2955
20	U4	14	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	6	192	4112	192		4496
12	U8	12	Var. 2800 to 3700	200	550		Avg. 4150
12	U9	14	Var. 1675 to 2800	200	550		Avg. 2988
12	U10	6	1675	200	550		2425
16	U12	7	192	4160	192		4544
12	CC1	10	1200	400	4160		5760
12	CC2	14	1200	400	4160		5760
12	Z1	29	1350	866	144		2360
12	S1	29	675	2300	240		3215
16	C1	32	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000



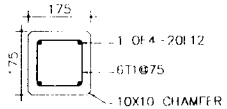
SECTION A-A



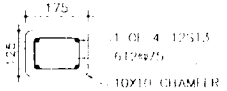
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail - 20mm, b) Post - 20mm, c) Curb - 25mm, d) Wall - 50mm, e) Base - 50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210362	

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SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	29	1250	144			1394
12	L2	29	1850	144			1994
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1550 to 2150	144			Avg. 1994
12	L6	6	Var. 1550 to 2150	144			Avg. 1994
16	L7	12	Var. 2950 to 3700	192			Avg. 3642
16	L8	14	Var. 1675 to 2950	192			Avg. 2505
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	26	240	2475	240		2955
20	U2	14	240	4860	240		5340
20	U3	26	240	2475	240		2955
20	U4	14	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	7	192	4112	192		4496
12	U8	12	Var. 2950 to 3700	200	550		Avg. 4200
12	U9	14	Var. 1675 to 2950	200	550		Avg. 3063
12	U10	6	1675	200	550		2425
16	U12	7	192	4160	192		4544
12	CC1	9	1200	400	4160		5760
12	CC2	15	1200	400	4160		5760
12	Z1	29	1250	866	144		2260
12	S1	29	675	2400	240		3315
16	C1	32	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	29	1100	144			1244
12	L2	29	2000	144			2144
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1700 to 2300	144			Avg. 2144
12	L6	6	Var. 1700 to 2300	144			Avg. 2144
16	L7	10	Var. 3175 to 3700	192			Avg. 3787
16	L8	16	Var. 1675 to 3175	192			Avg. 2617
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	26	240	2475	240		2955
20	U2	14	240	4860	240		5340
20	U3	26	240	2475	240		2955
20	U4	14	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	7	192	4112	192		4496
12	U8	10	Var. 3175 to 3700	200	550		Avg. 4345
12	U9	16	Var. 1675 to 3175	200	550		Avg. 3175
12	U10	6	1675	200	550		2425
16	U12	7	192	4160	192		4544
12	CC1	8	1200	400	4160		5760
12	CC2	16	1200	400	4160		5760
12	Z1	29	1100	866	144		2110
12	S1	29	675	2550	240		3465
16	C1	32	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	29	750	144			894
12	L2	29	2350	144			2494
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 2050 to 2650	144			Avg. 2494
12	L6	6	Var. 2050 to 2650	144			Avg. 2494
16	L7	6	Var. 3700 to 3700	192			Avg. 3892
16	L8	20	Var. 1675 to 3700	192			Avg. 2680
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	26	240	2475	240		2955
20	U2	14	240	4860	240		5340
20	U3	26	240	2475	240		2955
20	U4	14	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	9	192	4112	192		4496
12	U8	6	Var. 3700 to 3700	200	550		Avg. 4450
12	U9	20	Var. 1675 to 3700	200	550		Avg. 3438
12	U10	6	1675	200	550		2425
16	U12	7	192	4160	192		4544
12	CC1	6	1200	400	4160		5760
12	CC2	18	1200	400	4160		5760
12	Z1	29	750	866	144		1760
12	S1	29	675	2900	240		3815
16	C1	32	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0210.36.3

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BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	29	700	144			844
12	L2	29	2400	144			2544
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 2100 to 2700	144			Avg. 2544
12	L6	6	Var. 2100 to 2700	144			Avg. 2544
16	L7	4	Var. 3775 to 3700	192			Avg. 3817
16	L8	20	Var. 1675 to 3775	192			Avg. 2917
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	26	240	2475	240		2955
20	U2	14	240	4860	240		5340
20	U3	26	240	2475	240		2955
20	U4	14	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	9	192	4112	192		4496
12	U8	4	Var. 3775 to 3700	200	550		Avg. 4375
12	U9	20	Var. 1675 to 3775	200	550		Avg. 3475
12	U10	6	1675	200	550		2425
16	U12	7	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	19	1200	400	4160		5760
12	Z1	29	700	866	144		1710
12	S1	29	675	2950	240		3865
16	C1	32	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	29	675	144			819
12	L2	29	2425	144			2569
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 2125 to 2725	144			Avg. 2569
12	L6	6	Var. 2125 to 2725	144			Avg. 2569
16	L7	4	Var. 3813 to 3700	192			Avg. 3779
16	L8	20	Var. 1675 to 3813	192			Avg. 2936
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	26	240	2475	240		2955
20	U2	14	240	4860	240		5340
20	U3	26	240	2475	240		2955
20	U4	14	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	10	192	4112	192		4496
12	U8	4	Var. 3813 to 3700	200	550		Avg. 4337
12	U9	20	Var. 1675 to 3813	200	550		Avg. 3494
12	U10	6	1675	200	550		2425
16	U12	7	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	19	1200	400	4160		5760
12	Z1	29	675	866	144		1685
12	S1	29	675	2975	240		3890
16	C1	32	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0210.S64

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SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	29	625	144			769
12	L2	29	2475	144			2619
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 2175 to 2775	144			Avg. 2619
12	L6	6	Var. 2175 to 2775	144			Avg. 2619
16	L7	4	Var. 3888 to 3700	192			Avg. 3704
16	L8	20	Var. 1675 to 3888	192			Avg. 2974
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	26	240	2475	240		2955
20	U2	14	240	4860	240		5340
20	U3	26	240	2475	240		2955
20	U4	14	240	4860	240		5340
16	U6	5	192	4112	192		4496
16	U7	10	192	4112	192		4496
12	U8	4	Var. 3888 to 3700	200	550		Avg. 4262
12	U9	20	Var. 1675 to 3888	200	550		Avg. 3532
12	U10	6	1675	200	550		2425
16	U12	7	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	19	1200	400	4160		5760
12	Z1	29	625	866	144		1635
12	S1	29	675	3025	240		3940
16	C1	32	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

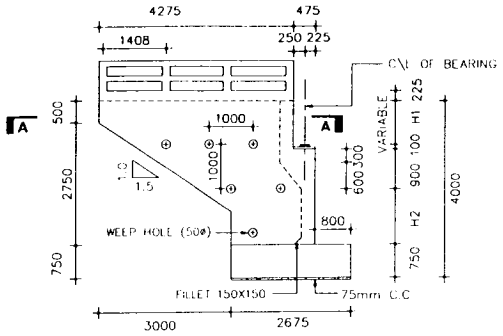
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	29	600	144			744
12	L2	29	2500	144			2644
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 2200 to 2800	144			Avg. 2644
12	L6	6	Var. 2200 to 2800	144			Avg. 2644
16	L7	4	Var. 3925 to 3700	192			Avg. 3667
16	L8	22	Var. 1675 to 3925	192			Avg. 2992
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	26	240	2475	240		2955
20	U2	14	240	4860	240		5340
20	U3	26	240	2475	240		2955
20	U4	14	240	4860	240		5340
16	U6	4	192	4112	192		4496
16	U7	10	192	4112	192		4496
12	U8	4	Var. 3925 to 3700	200	550		Avg. 4225
12	U9	22	Var. 1675 to 3925	200	550		Avg. 3550
12	U10	6	1675	200	550		2425
16	U12	7	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	19	1200	400	4160		5760
12	Z1	29	600	866	144		1610
12	S1	29	675	3050	240		3965
16	C1	32	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

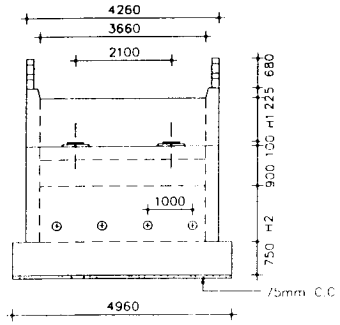
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210.565	

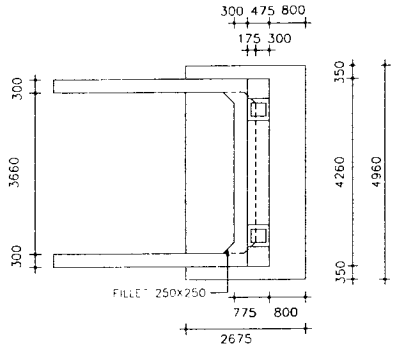
Web Copy



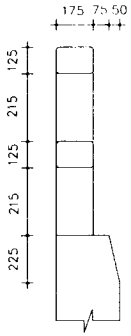
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



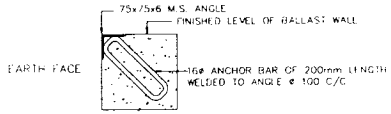
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

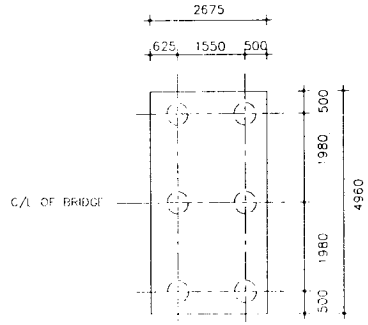
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	1250	205	160
11500	1000	1250	201	158
11000	1000	1250	197	156
10500	1000	1250	193	154
10000	1000	1250	189	152
9500	900	1350	185	148
9000	900	1350	183	146
8500	900	1350	181	144
8000	900	1350	179	142
7500	750	1500	175	138
7000	750	1500	173	136
6500	750	1500	171	134
6000	750	1500	169	132
5500	400	1850	173	136
5000	400	1850	169	134
4500	350	1900	163	130
4000	350	1900	159	128
3500	325	1925	155	126
3000	325	1925	153	124
2500	275	1975	149	120
2000	250	2000	145	118
1500	250	2000	144	116

TABLE-2

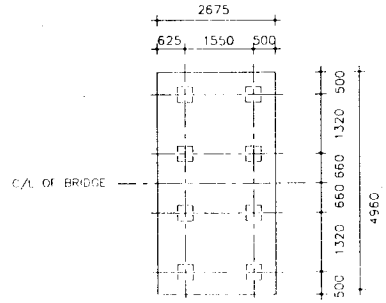
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	45	CASTINSITU
TYPE - B	350x350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawing, filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.0m , DECK WIDTH 4.26m)

DATE | DRAWN BY :
CAD FILE REF : ZHUL/BC/210401

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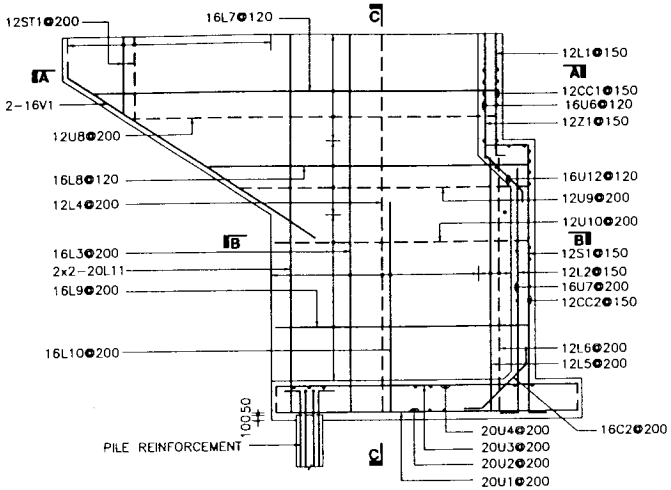
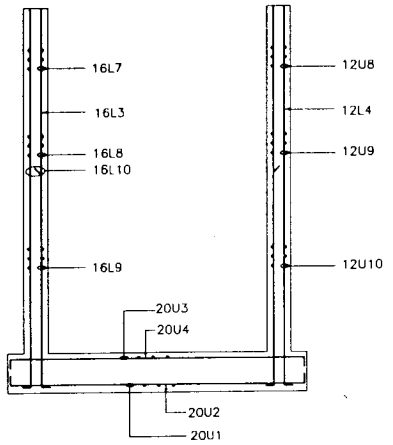
FA-81

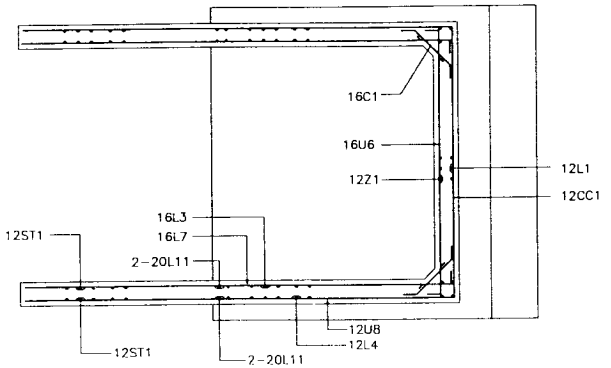
SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



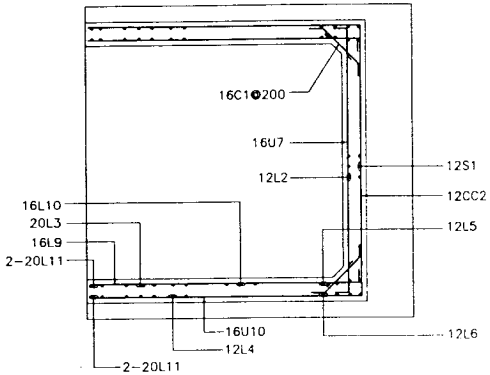
REINFORCEMENT DETAIL



SECTION C-C



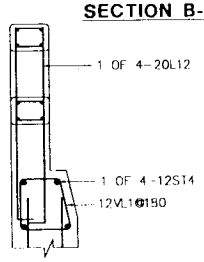
SECTION A-A



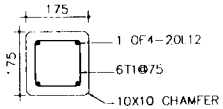
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

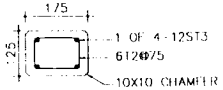
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	29	1350	144			1494
12	L2	29	2150	144			2294
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1850 to 2450	144			Avg. 2294
12	L6	6	Var. 1850 to 2450	144			Avg. 2294
16	L7	20	Var. 3400 to 4300	192			Avg. 4132
16	L8	26	Var. 1775 to 3400	192			Avg. 2780
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	13	192	4112	192		4496
16	U7	8	192	4112	192		4496
12	U8	12	Var. 3400 to 4300	200	550		Avg. 4750
12	U9	16	Var. 1775 to 3400	200	550		Avg. 3338
12	U10	6	1775	200	550		2525
16	U12	10	192	4160	192		4544
12	CC1	10	1200	400	4160		5760
12	CC2	17	1200	400	4160		5760
12	Z1	29	1350	866	144		2360
12	S1	29	675	2700	240		3615
16	C1	36	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail- 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm.
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0210402

Web Copy

SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	29	1250	144			1394
12	L2	29	2250	144			2394
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1950 to 2550	144			Avg. 2394
12	L6	6	Var. 1950 to 2550	144			Avg. 2394
16	L7	20	Var. 3550 to 4300	192			Avg. 4192
16	L8	28	Var. 1775 to 3550	192			Avg. 2855
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	12	192	4112	192		4496
16	U7	9	192	4112	192		4496
12	U8	12	Var. 3550 to 4300	200	550		Avg. 4800
12	U9	18	Var. 1775 to 3550	200	550		Avg. 3413
12	U10	6	1775	200	550		2525
16	U12	10	192	4160	192		4544
12	CC1	9	1200	400	4160		5760
12	CC2	18	1200	400	4160		5760
12	Z1	29	1250	866	144		2260
12	S1	29	675	2800	240		3715
16	C1	36	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	29	1100	144			1244
12	L2	29	2400	144			2544
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2100 to 2700	144			Avg. 2544
12	L6	6	Var. 2100 to 2700	144			Avg. 2544
16	L7	16	Var. 3775 to 4300	192			Avg. 4361
16	L8	30	Var. 1775 to 3775	192			Avg. 2967
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	11	192	4112	192		4496
16	U7	9	192	4112	192		4496
12	U8	10	Var. 3775 to 4300	200	550		Avg. 4945
12	U9	20	Var. 1775 to 3775	200	550		Avg. 3525
12	U10	6	1775	200	550		2525
16	U12	10	192	4160	192		4544
12	CC1	8	1200	400	4160		5760
12	CC2	19	1200	400	4160		5760
12	Z1	29	1100	866	144		2110
12	S1	29	675	2950	240		3865
16	C1	36	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	29	750	144			894
12	L2	29	2750	144			2894
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2450 to 3050	144			Avg. 2894
12	L6	6	Var. 2450 to 3050	144			Avg. 2894
16	L7	10	Var. 4300 to 4300	192			Avg. 4492
16	L8	36	Var. 1775 to 4300	192			Avg. 3230
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	11	192	4112	192		4496
12	U8	6	Var. 4300 to 4300	200	550		Avg. 5050
12	U9	22	Var. 1775 to 4300	200	550		Avg. 3788
12	U10	6	1775	200	550		2525
16	U12	10	192	4160	192		4544
12	CC1	6	1200	400	4160		5760
12	CC2	21	1200	400	4160		5760
12	Z1	29	750	866	144		1760
12	S1	29	675	3300	240		4215
16	C1	36	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R021040.3	

Web Copy

SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	29	700	144			844
12	L2	29	2800	144			2944
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2500 to 3100	144			Avg. 2944
12	L6	6	Var. 2500 to 3100	144			Avg. 2944
16	L7	8	Var. 4375 to 4300	192			Avg. 4455
16	L8	38	Var. 1775 to 4375	192			Avg. 3267
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	11	192	4112	192		4496
12	U8	4	Var. 4375 to 4300	200	550		Avg. 4975
12	U9	24	Var. 1775 to 4375	200	550		Avg. 3825
12	U10	6	1775	200	550		2525
16	U12	10	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	21	1200	400	4160		5760
12	Z1	29	700	866	144		1710
12	S1	29	675	3350	240		4265
16	C1	36	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	29	675	144			819
12	L2	29	2825	144			2969
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2525 to 3125	144			Avg. 2969
12	L6	6	Var. 2525 to 3125	144			Avg. 2969
16	L7	8	Var. 4413 to 4300	192			Avg. 4436
16	L8	38	Var. 1775 to 4413	192			Avg. 3286
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	12	192	4112	192		4496
12	U8	4	Var. 4413 to 4300	200	550		Avg. 4937
12	U9	24	Var. 1775 to 4413	200	550		Avg. 3844
12	U10	6	1775	200	550		2525
16	U12	10	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	21	1200	400	4160		5760
12	Z1	29	675	866	144		1685
12	S1	29	675	3375	240		4290
16	C1	36	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210404	

Web Copy

FA-84

SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	29	625	144			769
12	L2	29	2875	144			3019
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2575 to 3175	144			Avg. 3019
12	L6	6	Var. 2575 to 3175	144			Avg. 3019
16	L7	6	Var. 4488 to 4300	192			Avg. 4304
16	L8	38	Var. 1775 to 4488	192			Avg. 3324
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	12	192	4112	192		4496
12	U8	4	Var. 4488 to 4300	200	550		Avg. 4862
12	U9	24	Var. 1775 to 4488	200	550		Avg. 3882
12	U10	6	1775	200	550		2525
16	U12	10	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	22	1200	400	4160		5760
12	Z1	29	625	866	144		1635
12	S1	29	675	3425	240		4340
16	C1	36	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	29	600	144			744
12	L2	29	2900	144			3044
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2600 to 3200	144			Avg. 3044
12	L6	6	Var. 2600 to 3200	144			Avg. 3044
16	L7	6	Var. 4525 to 4300	192			Avg. 4267
16	L8	38	Var. 1775 to 4525	192			Avg. 3342
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	6	192	4112	192		4496
16	U7	12	192	4112	192		4496
12	U8	4	Var. 4525 to 4300	200	550		Avg. 4825
12	U9	24	Var. 1775 to 4525	200	550		Avg. 3900
12	U10	6	1775	200	550		2525
16	U12	10	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	22	1200	400	4160		5760
12	Z1	29	600	866	144		1610
12	S1	29	675	3450	240		4365
16	C1	36	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

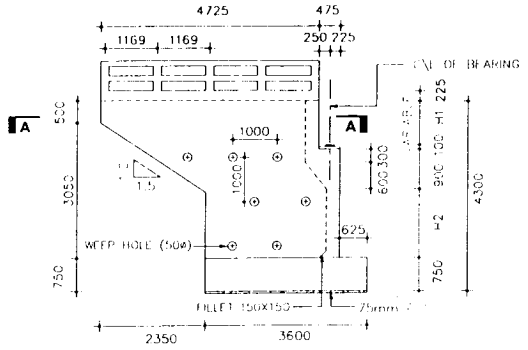
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 4.26m)

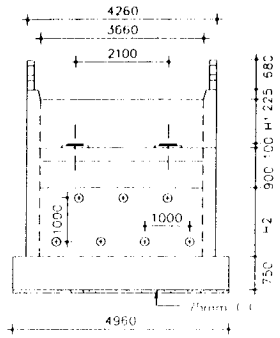
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0210405

Web Copy

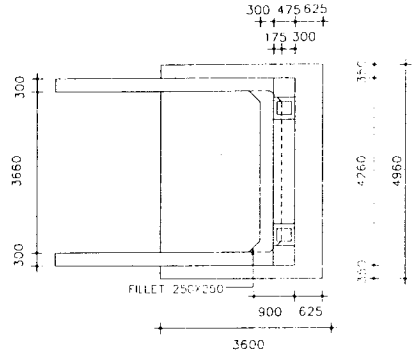
SHEET 1 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK : NO



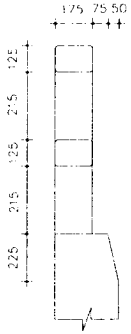
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



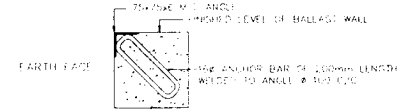
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

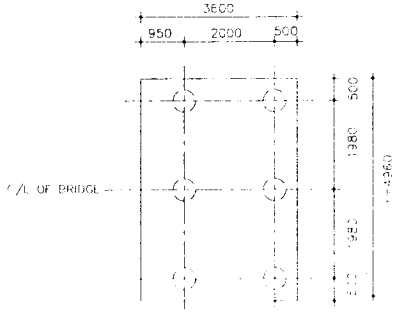
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	1550	240	145
11500	1000	1500	236	143
11000	1000	1550	232	141
10500	1000	1550	228	139
10000	1000	1550	224	137
9500	900	1650	220	135
9000	900	1650	218	133
8500	900	1650	216	131
8000	900	1650	214	129
7500	750	1800	210	127
7000	750	1800	208	125
6500	750	1800	206	123
6000	750	1800	204	121
5500	400	2350	205	123
5000	400	2350	204	121
4500	350	2200	198	117
4000	350	2200	194	115
3500	325	2225	190	113
3000	325	2225	188	111
2500	275	2275	184	109
2000	250	2300	180	107
1500	250	2300	178	105

TABLE-2

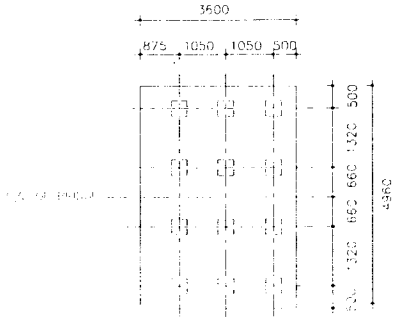
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CASTINSITU
TYPE - B	350x350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Skew Culverts, the Skew will start right on the Abutment Cap, hence Bearing/Railing Leg will not be required.
4) Weep hole shall be provided at 10 nos horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

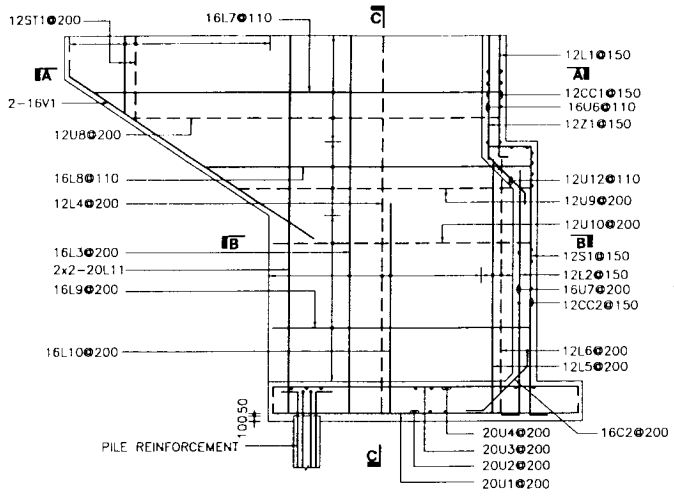
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.3m , DECK WIDTH 4.26m)

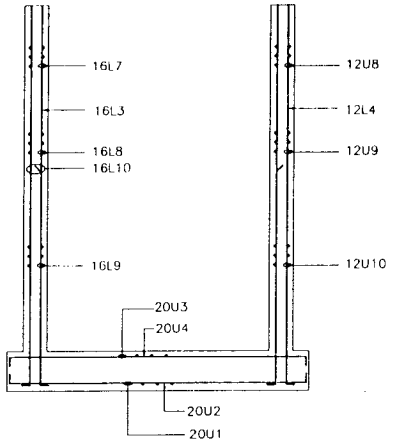
DRAWN BY :
DESIGNED BY :
CAD FILE No. : AB01/600/3543

Web Copy

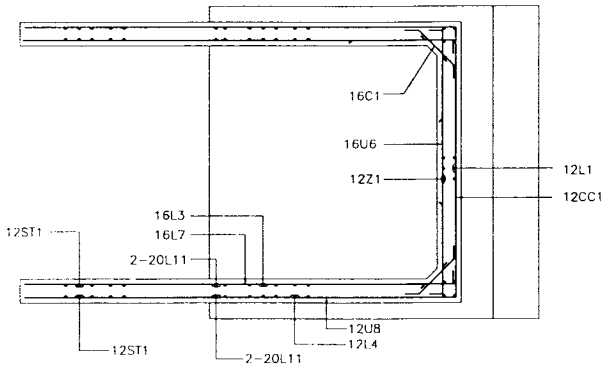
SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



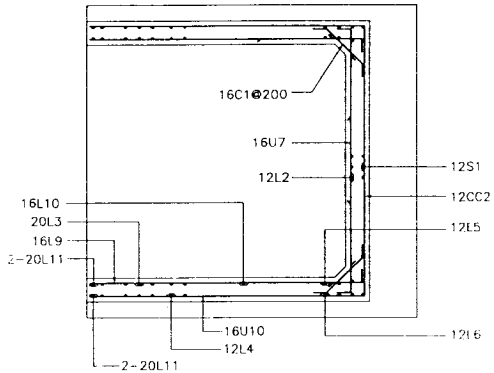
REINFORCEMENT DETAIL



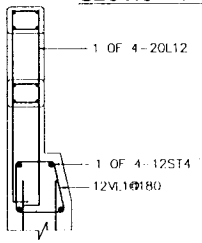
SECTION C-C



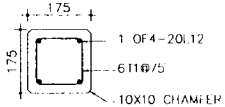
SECTION A-A



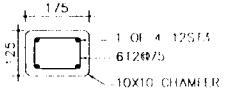
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1967				Avg. 1184
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	1350	144			1494
12	L2	29	2450	144			2594
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2150 to 2750	144			Avg. 2594
12	L6	6	Var. 2150 to 2750	144			Avg. 2594
16	L7	22	Var. 3850 to 4750	192			Avg. 4533
16	L8	20	Var. 2875 to 3850	192			Avg. 3555
16	L9	14	2875	192			3067
16	L10	18	2044	192			2236
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3500	240		3980
20	U2	14	240	4860	240		5340
20	U3	26	240	3500	240		3980
20	U4	18	240	4860	240		5340
16	U6	14	192	4112	192		4496
16	U7	10	192	4112	192		4496
12	U8	12	Var. 3850 to 4750	200	550		Avg. 5200
12	U9	12	Var. 2875 to 3850	200	550		Avg. 4113
12	U10	14	2875	200	550		3625
16	U12	17	192	4160	192		4544
12	CC1	16	1200	400	4160		5760
12	CC2	16	1200	400	4160		5760
12	Z1	28	1350	866	144		2360
12	S1	29	675	3000	240		3915
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3631			3881
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm.
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R02104.52

Web Copy

SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1967				Avg. 1184
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	1250	144			1394
12	L2	29	2550	144			2694
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2250 to 2850	144			Avg. 2694
12	L6	6	Var. 2250 to 2850	144			Avg. 2694
16	L7	20	Var. 4000 to 4750	192			Avg. 4642
16	L8	22	Var. 2875 to 4000	192			Avg. 3630
16	L9	14	2875	192			3067
16	L10	18	2044	192			2236
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3500	240		3980
20	U2	19	240	4860	240		5340
20	U3	26	240	3500	240		3980
20	U4	19	240	4860	240		5340
16	U6	13	192	4112	192		4496
16	U7	10	192	4112	192		4496
12	U8	12	Var. 4000 to 4750	200	550		Avg. 5250
12	U9	14	Var. 2875 to 4000	200	550		Avg. 4188
12	U10	14	2875	200	550		3625
16	U12	11	192	4160	192		4544
12	CC1	9	1200	400	4160		5760
12	CC2	20	1200	400	4160		5760
12	Z1	29	1250	866	144		2260
12	S1	29	675	3100	240		4015
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3631			3881
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1967				Avg. 1184
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	1100	144			1244
12	L2	29	2700	144			2844
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2400 to 3000	144			Avg. 2844
12	L6	6	Var. 2400 to 3000	144			Avg. 2844
16	L7	18	Var. 4225 to 4750	192			Avg. 4767
16	L8	26	Var. 2875 to 4225	192			Avg. 3742
16	L9	14	2875	192			3067
16	L10	18	2044	192			2236
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3500	240		3980
20	U2	19	240	4860	240		5340
20	U3	26	240	3500	240		3980
20	U4	19	240	4860	240		5340
16	U6	11	192	4112	192		4496
16	U7	11	192	4112	192		4496
12	U8	10	Var. 4225 to 4750	200	550		Avg. 5395
12	U9	16	Var. 2875 to 4225	200	550		Avg. 4300
12	U10	14	2875	200	550		3625
16	U12	11	192	4160	192		4544
12	CC1	8	1200	400	4160		5760
12	CC2	21	1200	400	4160		5760
12	Z1	29	1100	866	144		2110
12	S1	29	675	3250	240		4165
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3631			3881
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1967				Avg. 1184
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	750	144			894
12	L2	29	3050	144			3194
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2750 to 3350	144			Avg. 3194
12	L6	6	Var. 2750 to 3350	144			Avg. 3194
16	L7	10	Var. 4750 to 4750	192			Avg. 4942
16	L8	32	Var. 2875 to 4750	192			Avg. 4005
16	L9	14	2875	192			3067
16	L10	18	2044	192			2236
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3500	240		3980
20	U2	19	240	4860	240		5340
20	U3	26	240	3500	240		3980
20	U4	19	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	13	192	4112	192		4496
12	U8	6	Var. 4750 to 4750	200	550		Avg. 5500
12	U9	18	Var. 2875 to 4750	200	550		Avg. 4563
12	U10	14	2875	200	550		3625
16	U12	11	192	4160	192		4544
12	CC1	6	1200	400	4160		5760
12	CC2	23	1200	400	4160		5760
12	Z1	29	750	866	144		1760
12	S1	29	675	3600	240		4515
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3631			3881
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R02104.33

Web Copy

SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1967				Avg. 1184
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	700	144			844
12	L2	29	3100	144			3244
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2800 to 3400	144			Avg. 3244
12	L6	6	Var. 2800 to 3400	144			Avg. 3244
16	L7	8	Var. 4825 to 4750	192			Avg. 4905
16	L8	32	Var. 2875 to 4825	192			Avg. 4042
16	L9	14	2875	192			3067
16	L10	18	2044	192			2236
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3500	240		3980
20	U2	19	240	4860	240		5340
20	U3	26	240	3500	240		3980
20	U4	19	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	13	192	4112	192		4496
12	U8	4	Var. 4825 to 4750	200	550		Avg. 5425
12	U9	20	Var. 2875 to 4825	200	550		Avg. 4600
12	U10	14	2875	200	550		3625
16	U12	11	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	23	1200	400	4160		5760
12	Z1	29	700	866	144		1710
12	S1	29	675	3650	240		4565
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3631			3881
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1967				Avg. 1184
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	675	144			819
12	L2	29	3125	144			3269
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2825 to 3425	144			Avg. 3269
12	L6	6	Var. 2825 to 3425	144			Avg. 3269
16	L7	8	Var. 4863 to 4750	192			Avg. 4886
16	L8	32	Var. 2875 to 4863	192			Avg. 4061
16	L9	14	2875	192			3067
16	L10	18	2044	192			2236
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3500	240		3980
20	U2	19	240	4860	240		5340
20	U3	26	240	3500	240		3980
20	U4	19	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	13	192	4112	192		4496
12	U8	4	Var. 4863 to 4750	200	550		Avg. 5387
12	U9	20	Var. 2875 to 4863	200	550		Avg. 4619
12	U10	14	2875	200	550		3625
16	U12	11	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	23	1200	400	4160		5760
12	Z1	29	675	866	144		1685
12	S1	29	675	3675	240		4590
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3631			3881
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210434	

Web Copy

SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1967				Avg. 1184
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	625	144			769
12	L2	29	3175	144			3319
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2875 to 3475	144			Avg. 3319
12	L6	6	Var. 2875 to 3475	144			Avg. 3319
16	L7	6	Var. 4938 to 4750	192			Avg. 4754
16	L8	34	Var. 2875 to 4938	192			Avg. 4099
16	L9	14	2875	192			3067
16	L10	18	2044	192			2236
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3500	240		3980
20	U2	19	240	4860	240		5340
20	U3	26	240	3500	240		3980
20	U4	19	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	13	192	4112	192		4496
12	U8	4	Var. 4938 to 4750	200	550		Avg. 5312
12	U9	20	Var. 2875 to 4938	200	550		Avg. 4657
12	U10	14	2875	200	550		3625
16	U12	11	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	24	1200	400	4160		5760
12	Z1	29	625	866	144		1635
12	S1	29	675	3725	240		4640
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3631			3881
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1967				Avg. 1184
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	600	144			744
12	L2	29	3200	144			3344
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2900 to 3500	144			Avg. 3344
12	L6	6	Var. 2900 to 3500	144			Avg. 3344
16	L7	6	Var. 4975 to 4750	192			Avg. 4717
16	L8	34	Var. 2875 to 4975	192			Avg. 4117
16	L9	14	2875	192			3067
16	L10	18	2044	192			2236
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3500	240		3980
20	U2	19	240	4860	240		5340
20	U3	26	240	3500	240		3980
20	U4	19	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	13	192	4112	192		4496
12	U8	4	Var. 4975 to 4750	200	550		Avg. 5275
12	U9	20	Var. 2875 to 4975	200	550		Avg. 4675
12	U10	14	2875	200	550		3625
16	U12	11	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	24	1200	400	4160		5760
12	Z1	29	600	866	144		1610
12	S1	29	675	3750	240		4665
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3631			3881
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

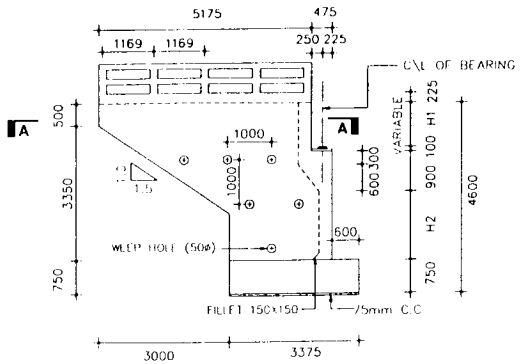
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 4.3m , DECK WIDTH 4.26m)

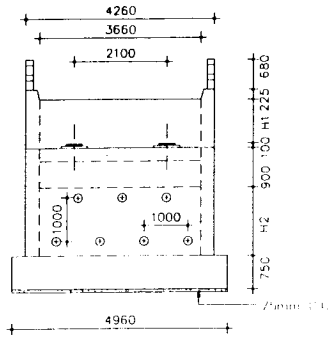
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210435	

Web Copy

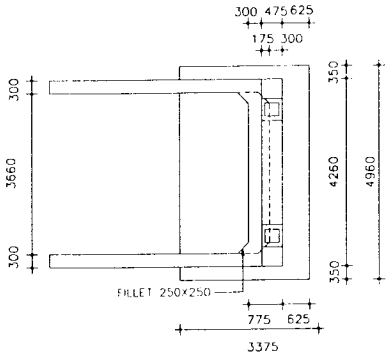
SHEET 1 OF 5	
SPAN RANGE : 1.5m TO 12.0m	
SIDE WALK NO	



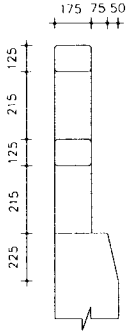
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



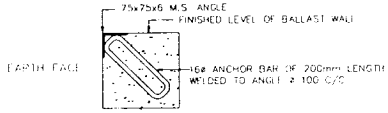
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

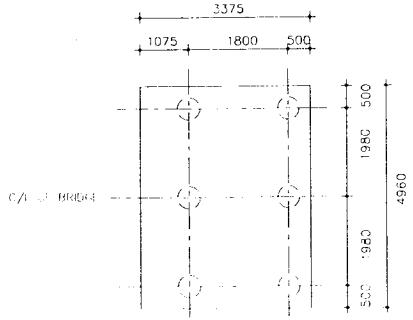
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	1850	280	145
11500	1000	1850	276	143
11000	1000	1850	272	141
10500	1000	1850	268	139
10000	1000	1850	264	137
9500	900	1950	260	135
9000	900	1950	258	133
8500	900	1950	256	131
8000	900	1950	254	129
7500	750	2100	250	127
7000	750	2100	248	125
6500	750	2100	246	123
6000	750	2100	244	121
5500	400	2450	248	125
5000	400	2450	244	121
4500	350	2500	238	117
4000	350	2500	234	115
3500	325	2525	230	113
3000	325	2525	228	111
2500	275	2575	224	109
2000	250	2600	220	107
1500	250	2600	218	105

TABLE-2

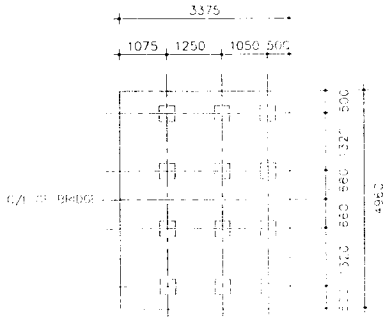
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	45	CASTINSITU
TYPE - B	350x350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) All reactions are in kN.
3) For Pile Capping, the Slab and Shear Key of the Abutment has been cast and bearing has not been placed.
4) Weep hole shall be provided at 3000mm horizontally and vertically as per drawing. Filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.6m , DECK WIDTH 4.26m)

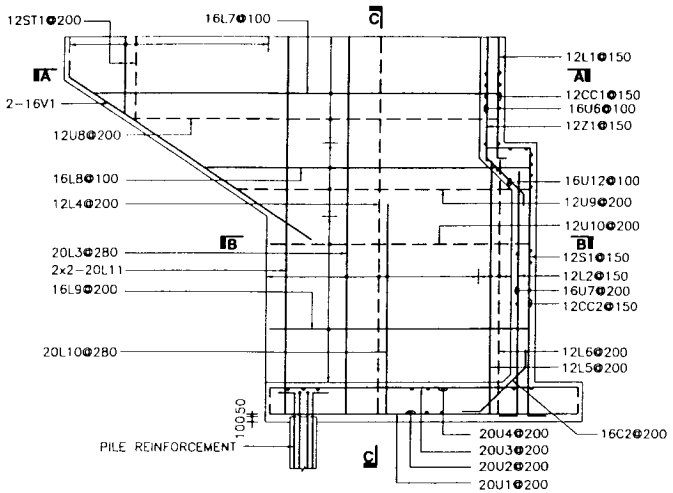
DAS

CAD FILE NO. : SHEET NO. 1

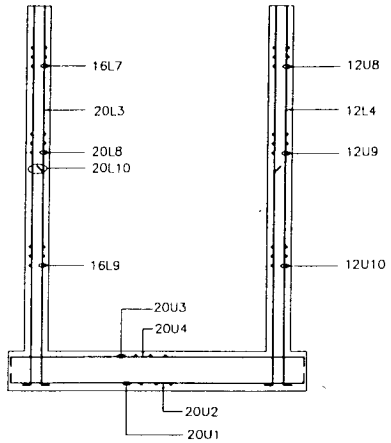
Web Copy

FA-91

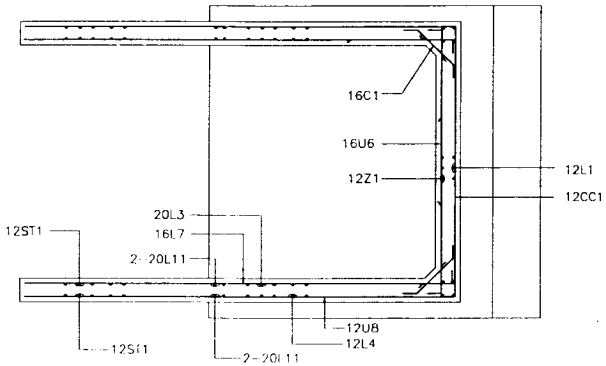
SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



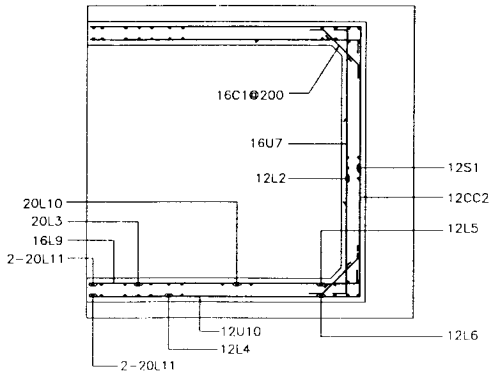
REINFORCEMENT DETAIL



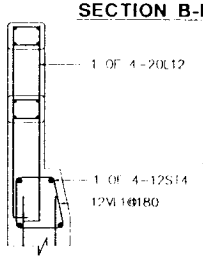
SECTION C-C



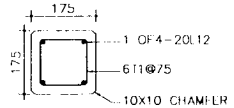
SECTION A-A



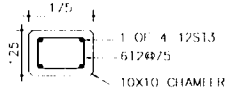
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	1350	144			1494
12	L2	29	2750	144			2894
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2450 to 3050	144			Avg. 2894
12	L6	6	Var. 2450 to 3050	144			Avg. 2894
16	L7	22	Var. 4300 to 5200	192			Avg. 4983
16	L8	30	Var. 2675 to 4300	192			Avg. 3680
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3275	240		3755
20	U2	18	240	4860	240		5340
20	U3	26	240	3275	240		3755
20	U4	18	240	4860	240		5340
16	U6	15	192	4112	192		4496
16	U7	11	192	4112	192		4496
12	U8	12	Var. 4300 to 5200	200	550		Avg. 5650
12	U9	16	Var. 2675 to 4300	200	550		Avg. 4238
12	U10	12	2675	200	550		3425
16	U12	12	192	4160	192		4544
12	CC1	10	1200	400	4160		5760
12	CC2	21	1200	400	4160		5760
12	Z1	29	1350	866	144		2360
12	S1	29	675	3300	240		4215
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	62	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm
7) For pile reinforcement see dwg no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210462	

Web Copy

SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	1250	144			1394
12	L2	29	2850	144			2994
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2550 to 3150	144			Avg. 2994
12	L6	6	Var. 2550 to 3150	144			Avg. 2994
16	L7	20	Var. 4450 to 5200	192			Avg. 5092
16	L8	32	Var. 2675 to 4450	192			Avg. 3755
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3275	240		3755
20	U2	18	240	4860	240		5340
20	U3	26	240	3275	240		3755
20	U4	18	240	4860	240		5340
16	U6	14	192	4112	192		4496
16	U7	12	192	4112	192		4496
12	U8	12	Var. 4450 to 5200	200	550		Avg. 5700
12	U9	18	Var. 2675 to 4450	200	550		Avg. 4313
12	U10	12	2675	200	550		3425
16	U12	12	192	4160	192		4544
12	CC1	9	1200	400	4160		5760
12	CC2	22	1200	400	4160		5760
12	Z1	29	1250	866	144		2260
12	S1	29	675	3400	240		4315
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	1100	144			1244
12	L2	29	3000	144			3144
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2700 to 3300	144			Avg. 3144
12	L6	6	Var. 2700 to 3300	144			Avg. 3144
16	L7	18	Var. 4675 to 5200	192			Avg. 5217
16	L8	36	Var. 2675 to 4675	192			Avg. 3867
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3275	240		3755
20	U2	18	240	4860	240		5340
20	U3	26	240	3275	240		3755
20	U4	18	240	4860	240		5340
16	U6	12	192	4112	192		4496
16	U7	12	192	4112	192		4496
12	U8	10	Var. 4675 to 5200	200	550		Avg. 5845
12	U9	20	Var. 2675 to 4675	200	550		Avg. 4425
12	U10	12	2675	200	550		3425
16	U12	12	192	4160	192		4544
12	CC1	8	1200	400	4160		5760
12	CC2	23	1200	400	4160		5760
12	Z1	29	1100	866	144		2110
12	S1	29	675	3550	240		4465
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	750	144			894
12	L2	29	3350	144			3494
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 3050 to 3650	144			Avg. 3494
12	L6	6	Var. 3050 to 3650	144			Avg. 3494
16	L7	10	Var. 5200 to 5200	192			Avg. 5392
16	L8	42	Var. 2675 to 5200	192			Avg. 4130
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3275	240		3755
20	U2	18	240	4860	240		5340
20	U3	26	240	3275	240		3755
20	U4	18	240	4860	240		5340
16	U6	9	192	4112	192		4496
16	U7	14	192	4112	192		4496
12	U8	6	Var. 5200 to 5200	200	550		Avg. 5950
12	U9	22	Var. 2675 to 5200	200	550		Avg. 4688
12	U10	12	2675	200	550		3425
16	U12	12	192	4160	192		4544
12	CC1	6	1200	400	4160		5760
12	CC2	25	1200	400	4160		5760
12	Z1	29	750	866	144		1760
12	S1	29	675	3900	240		4815
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	62	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210463	

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SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	700	144			844
12	L2	29	3400	144			3544
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 3100 to 3700	144			Avg. 3544
12	L6	6	Var. 3100 to 3700	144			Avg. 3544
16	L7	8	Var. 5275 to 5200	192			Avg. 5355
16	L8	44	Var. 2675 to 5275	192			Avg. 4167
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3275	240		3755
20	U2	18	240	4860	240		5340
20	U3	26	240	3275	240		3755
20	U4	18	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	14	192	4112	192		4496
12	U8	4	Var. 5275 to 5200	200	550		Avg. 5875
12	U9	24	Var. 2675 to 5275	200	550		Avg. 4725
12	U10	12	2675	200	550		3425
16	U12	12	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	25	1200	400	4160		5760
12	Z1	29	700	866	144		1710
12	S1	29	675	3950	240		4865
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	675	144			819
12	L2	29	3425	144			3569
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 3125 to 3725	144			Avg. 3569
12	L6	6	Var. 3125 to 3725	144			Avg. 3569
16	L7	8	Var. 5313 to 5200	192			Avg. 5336
16	L8	44	Var. 2675 to 5313	192			Avg. 4186
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3275	240		3755
20	U2	18	240	4860	240		5340
20	U3	26	240	3275	240		3755
20	U4	18	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	15	192	4112	192		4496
12	U8	4	Var. 5313 to 5200	200	550		Avg. 5837
12	U9	24	Var. 2675 to 5313	200	550		Avg. 4744
12	U10	12	2675	200	550		3425
16	U12	12	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	25	1200	400	4160		5760
12	Z1	29	675	866	144		1685
12	S1	29	675	3975	240		4890
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	62	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 4.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210464	

Web Copy

SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	625	144			769
12	L2	29	3475	144			3619
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 3175 to 3775	144			Avg. 3619
12	L6	6	Var. 3175 to 3775	144			Avg. 3619
16	L7	6	Var. 5388 to 5200	192			Avg. 5204
16	L8	46	Var. 2675 to 5388	192			Avg. 4224
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3275	240		3755
20	U2	18	240	4860	240		5340
20	U3	26	240	3275	240		3755
20	U4	18	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	15	192	4112	192		4496
12	U8	4	Var. 5388 to 5200	200	550		Avg. 5762
12	U9	24	Var. 2675 to 5388	200	550		Avg. 4782
12	U10	12	2675	200	550		3425
16	U12	12	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	26	1200	400	4160		5760
12	Z1	29	625	866	144		1635
12	S1	29	675	4025	240		4940
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

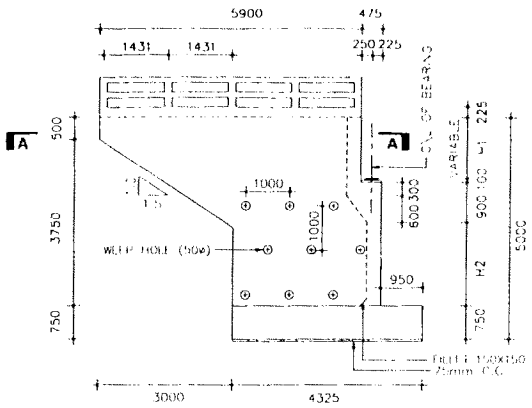
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	600	144			744
12	L2	29	3500	144			3644
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 3200 to 3800	144			Avg. 3644
12	L6	6	Var. 3200 to 3800	144			Avg. 3644
16	L7	6	Var. 5425 to 5200	192			Avg. 5167
16	L8	46	Var. 2675 to 5425	192			Avg. 4242
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3275	240		3755
20	U2	18	240	4860	240		5340
20	U3	26	240	3275	240		3755
20	U4	18	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	15	192	4112	192		4496
12	U8	4	Var. 5425 to 5200	200	550		Avg. 5725
12	U9	24	Var. 2675 to 5425	200	550		Avg. 4800
12	U10	12	2675	200	550		3425
16	U12	12	192	4160	192		4544
12	CC1	5	1200	400	4160		5760
12	CC2	26	1200	400	4160		5760
12	Z1	29	600	866	144		1610
12	S1	29	675	4050	240		4965
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	62	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

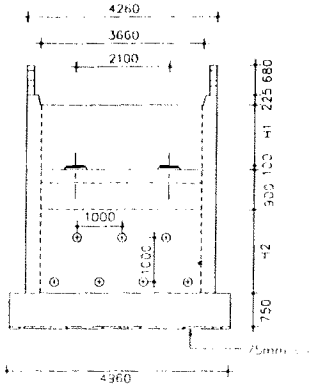
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R021046S

Web Copy



SIDE ELEVATION



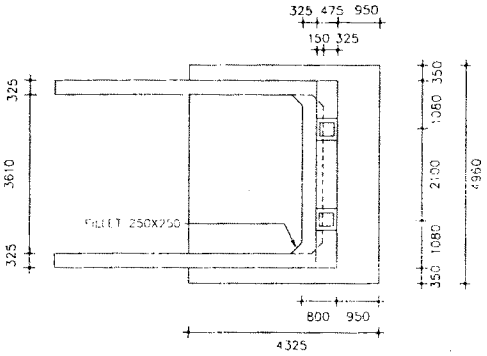
FRONT ELEVATION

TABLE-1

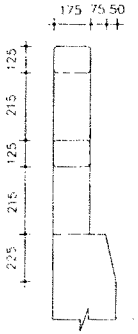
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	2250	230	135
11500	1000	2250	228	133
11000	1000	2250	226	131
10500	1000	2250	224	129
10000	1000	2250	222	127
9500	900	2350	218	125
9000	900	2350	216	123
8500	900	2350	214	121
8000	900	2350	212	119
7500	750	2500	208	117
7000	750	2500	206	115
6500	750	2500	204	113
6000	750	2500	202	111
5500	400	2850	200	113
5000	400	2850	204	111
4500	350	2900	200	109
4000	350	2900	198	107
3500	325	2925	196	105
3000	325	2925	194	103
2500	275	2975	190	101
2000	250	3000	188	99
1500	250	3000	186	97

TABLE-2

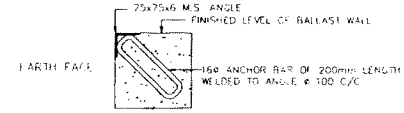
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	30	PRECAST



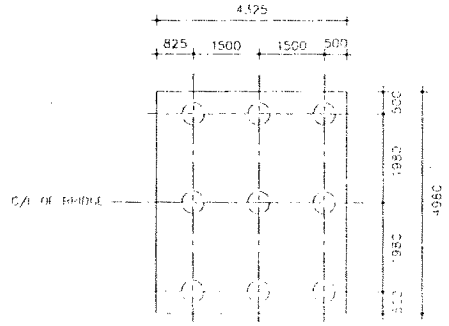
SECTION A-A



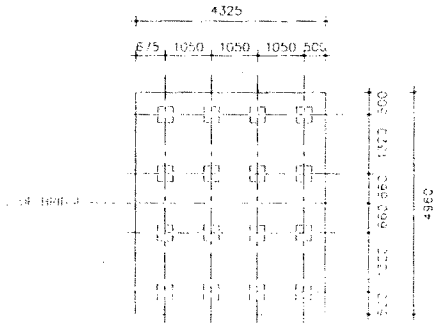
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing, Bearing Pad will not be required.
4) Weep hole shall be provided at 1500mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

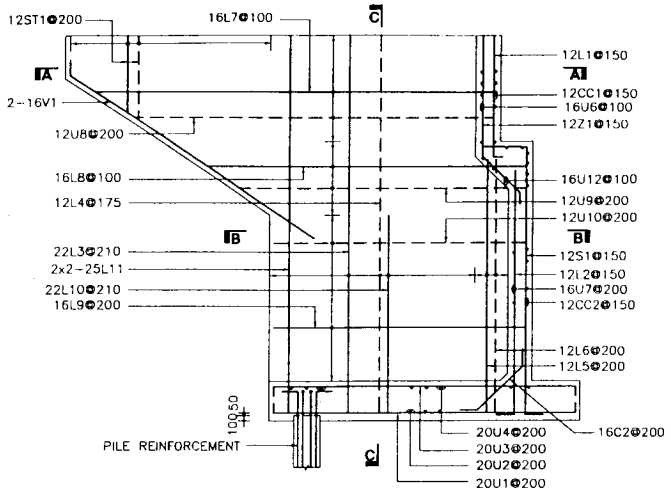
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.0m , DECK WIDTH 4.26m)

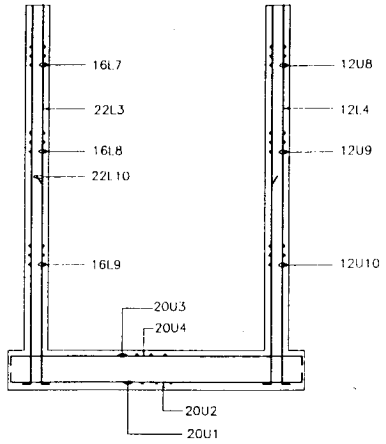
DATE
CAD FILE REF ABUT_R0210500
SCALE: 1:

Web Copy

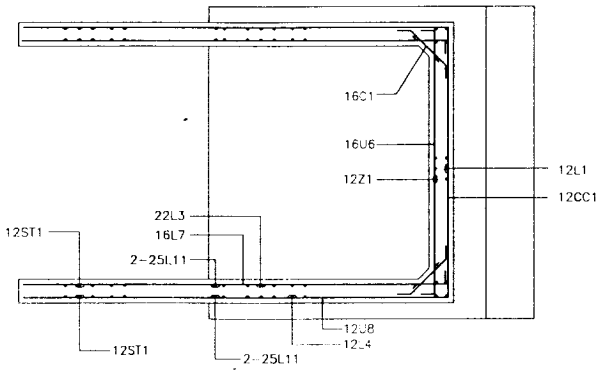
SHEET 2 OF 5	
SPAN RANGE	1.5m TO 12m
SIDE WALK	NO



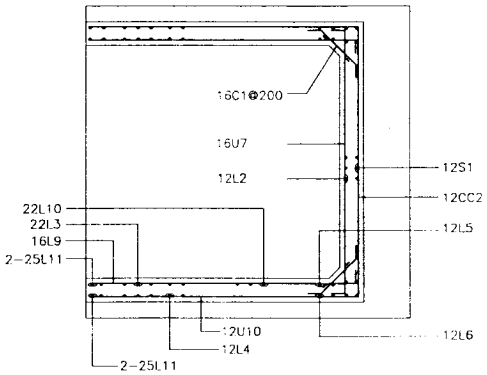
REINFORCEMENT DETAIL



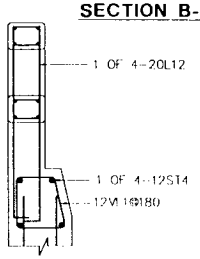
SECTION C-C



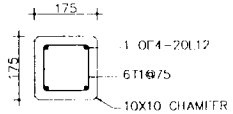
SECTION A-A



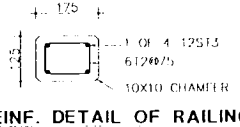
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	29	1350	144			1494
12	L2	29	3150	144			3294
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2850 to 3450	144			Avg. 3294
12	L6	6	Var. 2850 to 3450	144			Avg. 3294
16	L7	22	Var. 4900 to 5800	192			Avg. 5583
16	L8	30	Var. 3275 to 4900	192			Avg. 4280
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	26	240	4225	240		4705
20	U2	23	240	4860	240		5340
20	U3	26	240	4225	240		4705
20	U4	23	240	4860	240		5340
16	U6	15	192	4112	192		4496
16	U7	13	192	4112	192		4496
12	U8	12	Var. 4900 to 5800	225	575		Avg. 5300
12	U9	16	Var. 3275 to 4900	225	575		Avg. 4888
12	U10	16	3275	225	575		4075
16	U12	12	192	4160	192		4544
12	CC1	10	1250	450	4160		5860
12	CC2	24	1250	450	4160		5860
12	Z1	29	1350	866	144		2360
12	S1	29	700	3700	240		4640
16	C1	46	320	993	320		1633
16	C2	22	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post 20mm, c) Curb 25mm, d) Wall- 50mm, e) Base 50mm
7) For Pile reinforcement see dwg. no. ABUT/R0002001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY
CAD FILE REF. : ABUT/R0210502	

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SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	29	1250	144			1394
12	L2	29	3250	144			3394
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2950 to 3550	144			Avg. 3394
12	L6	6	Var. 2950 to 3550	144			Avg. 3394
16	L7	20	Var. 5050 to 5800	192			Avg. 5692
16	L8	32	Var. 3275 to 5050	192			Avg. 4355
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	26	240	4225	240		4705
20	U2	23	240	4860	240		5340
20	U3	26	240	4225	240		4705
20	U4	23	240	4860	240		5340
16	U6	14	192	4112	192		4496
16	U7	14	192	4112	192		4496
12	U8	12	Var. 5050 to 5800	225	575		Avg. 6350
12	U9	18	Var. 3275 to 5050	225	575		Avg. 4963
12	U10	16	3275	225	575		4075
16	U12	12	192	4160	192		4544
12	CC1	9	1250	450	4160		5860
12	CC2	24	1250	450	4160		5860
12	Z1	29	1250	866	144		2260
12	S1	29	700	3800	240		4740
16	C1	46	320	993	320		1633
16	C2	22	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	29	1100	144			1244
12	L2	29	3400	144			3544
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3100 to 3700	144			Avg. 3544
12	L6	6	Var. 3100 to 3700	144			Avg. 3544
16	L7	18	Var. 5275 to 5800	192			Avg. 5817
16	L8	36	Var. 3275 to 5275	192			Avg. 4467
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	26	240	4225	240		4705
20	U2	23	240	4860	240		5340
20	U3	26	240	4225	240		4705
20	U4	23	240	4860	240		5340
16	U6	12	192	4112	192		4496
16	U7	14	192	4112	192		4496
12	U8	10	Var. 5275 to 5800	225	575		Avg. 6495
12	U9	20	Var. 3275 to 5275	225	575		Avg. 5075
12	U10	16	3275	225	575		4075
16	U12	12	192	4160	192		4544
12	CC1	8	1250	450	4160		5860
12	CC2	25	1250	450	4160		5860
12	Z1	29	1100	866	144		2110
12	S1	29	700	3950	240		4890
16	C1	46	320	993	320		1633
16	C2	22	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	29	750	144			894
12	L2	29	3750	144			3894
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3450 to 4050	144			Avg. 3894
12	L6	6	Var. 3450 to 4050	144			Avg. 3894
16	L7	10	Var. 5800 to 5800	192			Avg. 5992
16	L8	42	Var. 3275 to 5800	192			Avg. 4730
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	26	240	4225	240		4705
20	U2	23	240	4860	240		5340
20	U3	26	240	4225	240		4705
20	U4	23	240	4860	240		5340
16	U6	9	192	4112	192		4496
16	U7	16	192	4112	192		4496
12	U8	6	Var. 5800 to 5800	225	575		Avg. 6600
12	U9	22	Var. 3275 to 5800	225	575		Avg. 5338
12	U10	16	3275	225	575		4075
16	U12	12	192	4160	192		4544
12	CC1	6	1250	450	4160		5860
12	CC2	28	1250	450	4160		5860
12	Z1	29	750	866	144		1760
12	S1	29	700	4300	240		5240
16	C1	46	320	993	320		1633
16	C2	22	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF. : ABUT/R0210503	

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BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	29	700	144			844
12	L2	29	3800	144			3944
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3500 to 4100	144			Avg. 3944
12	L6	6	Var. 3500 to 4100	144			Avg. 3944
16	L7	8	Var. 5875 to 5800	192			Avg. 5955
16	L8	44	Var. 3275 to 5875	192			Avg. 4767
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	26	240	4225	240		4705
20	U2	23	240	4860	240		5340
20	U3	26	240	4225	240		4705
20	U4	23	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	16	192	4112	192		4496
12	U8	4	Var. 5875 to 5800	225	575		Avg. 6525
12	U9	24	Var. 3275 to 5875	225	575		Avg. 5375
12	U10	16	3275	225	575		4075
16	U12	12	192	4160	192		4544
12	CC1	5	1250	450	4160		5860
12	CC2	28	1250	450	4160		5860
12	Z1	29	700	866	144		1710
12	S1	29	700	4350	240		5290
16	C1	46	320	993	320		1633
16	C2	22	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	29	675	144			819
12	L2	29	3825	144			3969
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3525 to 4125	144			Avg. 3969
12	L6	6	Var. 3525 to 4125	144			Avg. 3969
16	L7	8	Var. 5913 to 5800	192			Avg. 5936
16	L8	44	Var. 3275 to 5913	192			Avg. 4786
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	26	240	4225	240		4705
20	U2	23	240	4860	240		5340
20	U3	26	240	4225	240		4705
20	U4	23	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	17	192	4112	192		4496
12	U8	4	Var. 5913 to 5800	225	575		Avg. 6487
12	U9	24	Var. 3275 to 5913	225	575		Avg. 5394
12	U10	16	3275	225	575		4075
16	U12	12	192	4160	192		4544
12	CC1	5	1250	450	4160		5860
12	CC2	28	1250	450	4160		5860
12	Z1	29	675	866	144		1685
12	S1	29	700	4375	240		5315
16	C1	46	320	993	320		1633
16	C2	22	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 4.26m)

DATE | DRAWING NO.

CAD FILE REF : ABUT/P007-04

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SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	29	625	144			769
12	L2	29	3875	144			4019
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3575 to 4175	144			Avg. 4019
12	L6	6	Var. 3575 to 4175	144			Avg. 4019
16	L7	6	Var. 5988 to 5800	192			Avg. 5804
16	L8	46	Var. 3275 to 5988	192			Avg. 4824
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	26	240	4225	240		4705
20	U2	23	240	4860	240		5340
20	U3	26	240	4225	240		4705
20	U4	23	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	17	192	4112	192		4496
12	U8	4	Var. 5988 to 5800	225	575		Avg. 6412
12	U9	24	Var. 3275 to 5988	225	575		Avg. 5432
12	U10	16	3275	225	575		4075
16	U12	12	192	4160	192		4544
12	CC1	5	1250	450	4160		5860
12	CC2	28	1250	450	4160		5860
12	Z1	29	625	866	144		1635
12	S1	29	700	4425	240		5365
16	C1	46	320	993	320		1633
16	C2	22	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	29	600	144			744
12	L2	29	3900	144			4044
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3600 to 4200	144			Avg. 4044
12	L6	6	Var. 3600 to 4200	144			Avg. 4044
16	L7	6	Var. 6025 to 5800	192			Avg. 5767
16	L8	46	Var. 3275 to 6025	192			Avg. 4842
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	971	120			1091
20	U1	26	240	4225	240		4705
20	U2	23	240	4860	240		5340
20	U3	26	240	4225	240		4705
20	U4	23	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	17	192	4112	192		4496
12	U8	4	Var. 6025 to 5800	225	575		Avg. 6375
12	U9	24	Var. 3275 to 6025	225	575		Avg. 5450
12	U10	16	3275	225	575		4075
16	U12	12	192	4160	192		4544
12	CC1	5	1250	450	4160		5860
12	CC2	29	1250	450	4160		5860
12	Z1	29	600	866	144		1610
12	S1	29	700	4450	240		5390
16	C1	46	320	993	320		1633
16	C2	22	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0210505	

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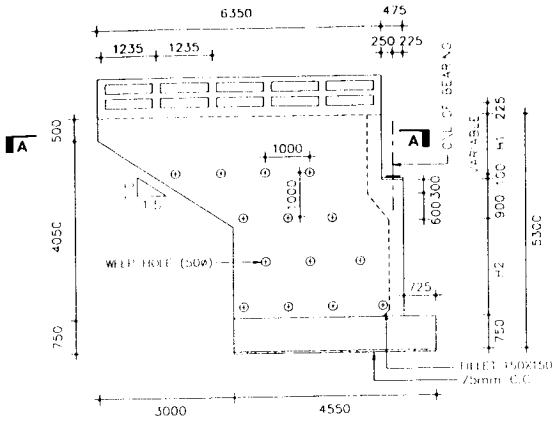
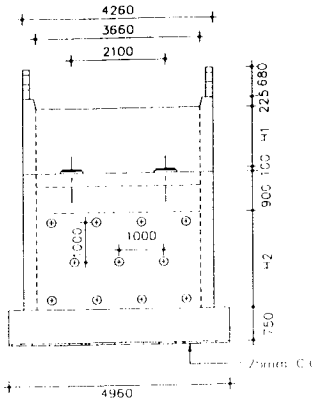
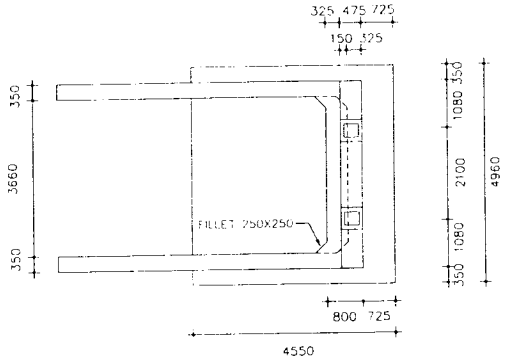


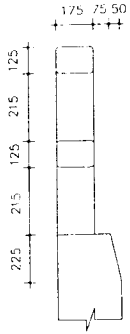
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT
OF RAILING ON WING WALL

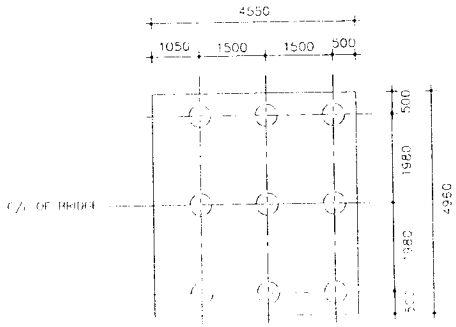
TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	[illegible]	[illegible]	265	[illegible]
11500	[illegible]	[illegible]	263	145
11000	[illegible]	[illegible]	261	146
10500	[illegible]	[illegible]	259	144
10000	[illegible]	[illegible]	257	142
9500	[illegible]	[illegible]	253	140
9000	[illegible]	[illegible]	251	138
8500	[illegible]	[illegible]	249	137
8000	[illegible]	[illegible]	247	134
7500	[illegible]	[illegible]	245	[illegible]
7000	[illegible]	[illegible]	241	[illegible]
6500	[illegible]	[illegible]	239	[illegible]
6000	[illegible]	[illegible]	237	[illegible]
5500	[illegible]	[illegible]	241	[illegible]
5000	[illegible]	[illegible]	239	[illegible]
4500	[illegible]	[illegible]	235	[illegible]
4000	[illegible]	[illegible]	233	[illegible]
3500	[illegible]	[illegible]	231	[illegible]
3000	[illegible]	[illegible]	229	[illegible]
2500	[illegible]	[illegible]	225	[illegible]
2000	[illegible]	[illegible]	223	[illegible]
1500	[illegible]	[illegible]	221	[illegible]

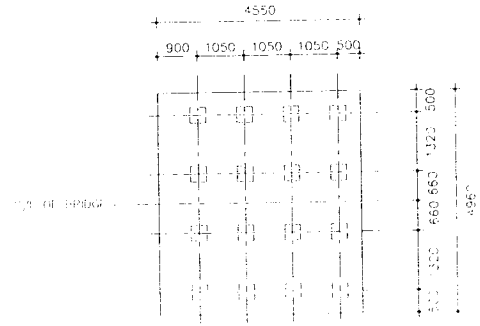
TABLE-2

FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	[illegible]	[illegible]	CAST IN SITU
TYPE - B	[illegible]	28	PRECAST

NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE B

NOTES

1) [illegible]
2) [illegible]
3) [illegible]
4) [illegible]

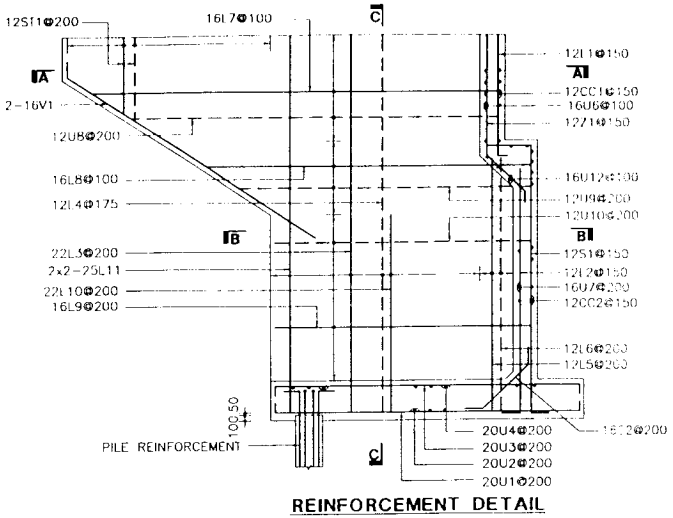
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 5.3m , DECK WIDTH 4.26m)

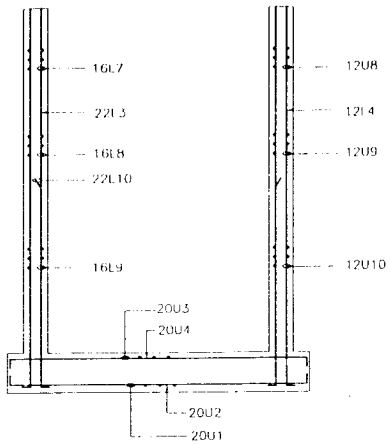
Web Copy

SPAN RANGE : 1.5m TO 12m

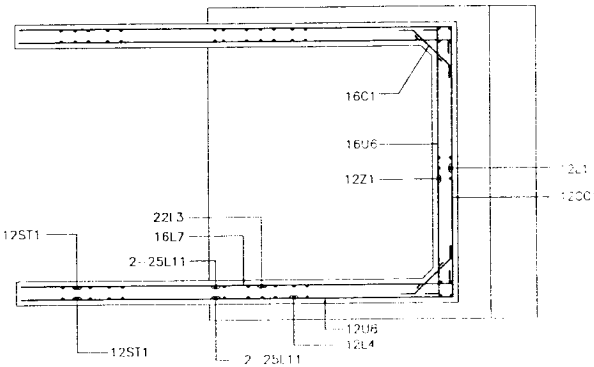
SIDE WALK : NO



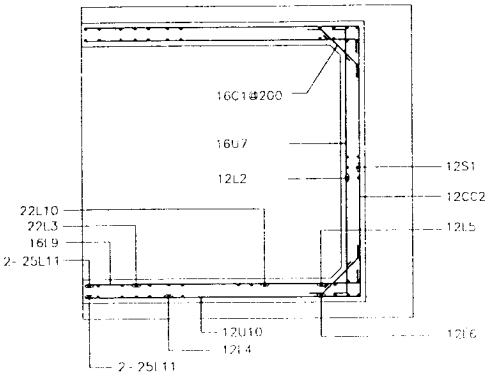
REINFORCEMENT DETAIL



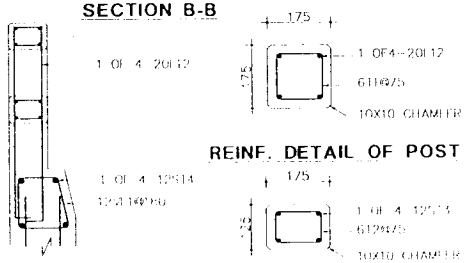
SECTION C-C



SECTION A-A



SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)

REINF. DETAIL OF POST

REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	29	1350	144			1494
12	L2	29	3450	144			3594
22	L3	28	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3150 to 3750	144			Avg. 3594
12	L6	6	Var. 3150 to 3750	144			Avg. 3594
16	L7	22	Var. 5350 to 6250	192			Avg. 6033
16	L8	30	Var. 3725 to 5350	192			Avg. 4730
16	L9	20	3725	192			3917
22	L10	28	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	26	240	4450	240		4930
20	U2	24	240	4860	240		5340
20	U3	26	240	4450	240		4930
20	U4	24	240	4860	240		5340
16	U6	15	192	4112	192		4496
16	U7	15	192	4112	192		4496
12	U8	12	Var. 5350 to 6250	250	575		Avg. 6775
12	U9	16	Var. 3725 to 5350	250	575		Avg. 5363
12	U10	20	3725	250	600		4575
16	U12	12	192	4160	192		4544
12	CC1	10	1300	450	4160		5910
12	CC2	26	1300	450	4160		5910
12	Z1	29	1350	866	144		2360
12	S1	29	700	4000	240		4940
16	C1	48	320	1028	320		1668
16	C2	22	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone [illegible]
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) [illegible]
7) For Pile reinforcement see dwg no. ABUT/S/0000002
8) This drawing is to be read in conjunction with Shape Codes, Cad File: ABUT/S/[illegible]

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 4.26m)

DATE :

ISSUED BY :

CAD FILE REF : ABUT/R02105.52

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FA-102

SHEET 5 OF 5
SPAN RANGE 7.9m TO 12m
SIDE WALK NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	29	1250	144			1394
12	L2	29	3550	144			3694
22	L3	28	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3250 to 3850	144			Avg. 3694
12	L6	6	Var. 3250 to 3850	144			Avg. 3694
16	L7	20	Var. 5500 to 6250	192			Avg. 6142
16	L8	32	Var. 3725 to 5500	192			Avg. 4805
16	L9	20	3725	192			3917
22	L10	28	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	26	240	4450	240		4930
20	U2	24	240	4860	240		5340
20	U3	26	240	4450	240		4930
20	U4	24	240	4860	240		5340
16	U6	14	192	4112	192		4496
16	U7	15	192	4112	192		4496
12	U8	12	Var. 5500 to 6250	250	575		Avg. 6825
12	U9	18	Var. 3725 to 5500	250	575		Avg. 5438
12	U10	20	3725	250	600		4575
16	U12	12	192	4160	192		4544
12	CC1	9	1300	450	4160		5910
12	CC2	26	1300	450	4160		5910
12	Z1	29	1250	866	144		2260
12	S1	29	700	4100	240		5040
16	C1	48	320	1028	320		1668
16	C2	22	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1090

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	29	1100	144			1244
12	L2	29	3700	144			3844
22	L3	28	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3400 to 4000	144			Avg. 3844
12	L6	6	Var. 3400 to 4000	144			Avg. 3844
16	L7	18	Var. 5725 to 6250	192			Avg. 6267
16	L8	36	Var. 3725 to 5725	192			Avg. 4917
16	L9	20	3725	192			3917
22	L10	28	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	26	240	4450	240		4930
20	U2	24	240	4860	240		5340
20	U3	26	240	4150	240		4630
20	U4	24	240	4860	240		5340
16	U6	12	192	4112	192		4496
16	U7	16	192	4112	192		4496
12	U8	10	Var. 5725 to 6250	250	575		Avg. 6975
12	U9	20	Var. 3725 to 5725	250	575		Avg. 5550
12	U10	20	3725	250	600		4575
16	U12	12	192	4160	192		4544
12	CC1	8	1300	450	4160		5910
12	CC2	27	1300	450	4160		5910
12	Z1	29	1100	866	144		2110
12	S1	29	700	4250	240		5190
16	C1	48	320	1028	320		1668
16	C2	22	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1090

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	29	750	144			894
12	L2	29	4050	144			4194
22	L3	28	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3750 to 4350	144			Avg. 4194
12	L6	6	Var. 3750 to 4350	144			Avg. 4194
16	L7	10	Var. 6250 to 6250	192			Avg. 6442
16	L8	42	Var. 3725 to 6250	192			Avg. 5180
16	L9	20	3725	192			3917
22	L10	28	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	26	240	4450	240		4930
20	U2	24	240	4860	240		5340
20	U3	26	240	4450	240		4930
20	U4	24	240	4860	240		5340
16	U6	14	192	4112	192		4496
16	U7	18	192	4112	192		4496
12	U8	6	Var. 6250 to 6250	250	575		Avg. 7075
12	U9	22	Var. 3725 to 6250	250	575		Avg. 5613
12	U10	20	3725	250	600		4575
16	U12	12	192	4160	192		4544
12	CC1	6	1300	450	4160		5910
12	CC2	30	1300	450	4160		5910
12	Z1	29	750	866	144		1760
12	S1	29	700	4600	240		5540
16	C1	48	320	1028	320		1668
16	C2	22	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1090

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 4.26m)

DATE
CAD FILE NO.

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SHEET 4 OF 5	
SPAN RANGE	1.5m TO 12m
SIDE WALK	NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	29	700	144			844
12	L2	29	4100	144			4244
22	L3	28	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3800 to 4400	144			Avg. 4244
12	L6	6	Var. 3800 to 4400	144			Avg. 4244
16	L7	8	Var. 6325 to 6250	192			Avg. 6195
16	L8	44	Var. 3725 to 6325	192			Avg. 5217
16	L9	20	3725	192			3917
22	L10	28	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	26	240	4450	240		4930
20	U2	24	240	4860	240		5340
20	U3	26	240	4450	240		4930
20	U4	24	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	18	192	4112	192		4496
12	U8	4	Var. 6325 to 6250	250	575		Avg. 7699
12	U9	24	Var. 3725 to 6325	250	575		Avg. 5850
12	U10	20	3725	250	600		4575
16	U12	12	192	4160	192		4544
12	CC1	5	1300	450	4160		5910
12	CC2	30	1300	450	4160		5910
12	Z1	29	700	866	144		1710
12	S1	29	700	4650	240		5590
16	C1	48	320	1028	320		1668
16	C2	22	320	1311	320		1951
16	V1	4	250	4600			4850
6	F1	120	306	306			612
6	T2	320	206	306			512
12	V1.1	74	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	29	675	144			819
12	L2	29	4125	144			4269
22	L3	28	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3825 to 4425	144			Avg. 4269
12	L6	6	Var. 3825 to 4425	144			Avg. 4269
16	L7	8	Var. 6363 to 6250	192			Avg. 6386
16	L8	44	Var. 3725 to 6363	192			Avg. 5236
16	L9	20	3725	192			3917
22	L10	28	2610	264			2874
25	L11	8	5100	300			5400
25	L12	48	971	120			1091
20	U1	26	240	4450	240		4930
20	U2	24	240	4860	240		5340
20	U3	26	240	4450	240		4930
20	U4	24	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	18	192	4112	192		4496
12	U8	4	Var. 6363 to 6250	250	575		Avg. 6962
12	U9	24	Var. 3725 to 6363	250	575		Avg. 5869
12	U10	20	3725	250	600		4575
16	U12	12	192	4160	192		4544
12	CC1	5	1300	450	4160		5910
12	CC2	30	1300	450	4160		5910
12	Z1	29	675	866	144		1685
12	S1	29	700	4675	240		5615
16	C1	48	320	1028	320		1668
16	C2	22	320	1311	320		1951
16	V1	4	250	4600			4850
6	F1	120	306	306			612
6	T2	320	206	306			512
12	V1.1	74	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 4.26m)

DATE :	CHECKED BY
CAD FILE REF. : ABUT/R0210/54	

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BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	29	625	144			769
12	L2	29	4175	144			4319
22	L3	28	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3875 to 4475	144			Avg. 4319
12	L6	6	Var. 3875 to 4475	144			Avg. 4319
16	L7	6	Var. 6438 to 6250	192			Avg. 6254
16	L8	46	Var. 3725 to 6438	192			Avg. 5274
16	L9	20	3725	192			3917
22	L10	28	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	26	240	4450	240		4930
20	U2	24	240	4860	240		5340
20	U3	26	240	4450	240		4930
20	U4	24	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	18	192	4112	192		4496
12	U8	4	Var. 6438 to 6250	250	575		Avg. 6887
12	U9	24	Var. 3725 to 6438	250	575		Avg. 5907
12	U10	20	3725	250	600		4575
16	U12	12	192	4160	192		4544
12	CC1	5	1300	450	4160		5910
12	CC2	30	1300	450	4160		5910
12	Z1	29	625	866	144		1635
12	S1	29	700	4725	240		5665
16	C1	48	320	1028	320		1668
16	C2	22	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1099

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	29	600	144			744
12	L2	29	4200	144			4344
22	L3	28	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3900 to 4500	144			Avg. 4344
12	L6	6	Var. 3900 to 4500	144			Avg. 4344
16	L7	6	Var. 6475 to 6250	192			Avg. 6217
16	L8	46	Var. 3725 to 6475	192			Avg. 5292
16	L9	20	3725	192			3917
22	L10	28	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	26	240	4450	240		4930
20	U2	24	240	4860	240		5340
20	U3	26	240	4450	240		4930
20	U4	24	240	4860	240		5340
16	U6	7	192	4112	192		4496
16	U7	18	192	4112	192		4496
12	U8	4	Var. 6475 to 6250	250	575		Avg. 6850
12	U9	24	Var. 3725 to 6475	250	575		Avg. 5925
12	U10	20	3725	250	600		4575
16	U12	12	192	4160	192		4544
12	CC1	5	1300	450	4160		5910
12	CC2	31	1300	450	4160		5910
12	Z1	29	600	866	144		1610
12	S1	29	700	4750	240		5690
16	C1	48	320	1028	320		1668
16	C2	22	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1099

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 4.26m)

DATE :
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CAD FILE REF : ABUT/R0210535

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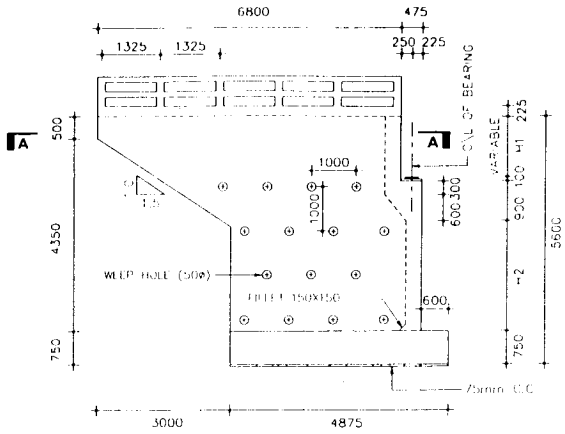
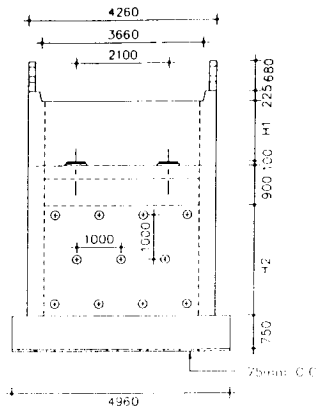
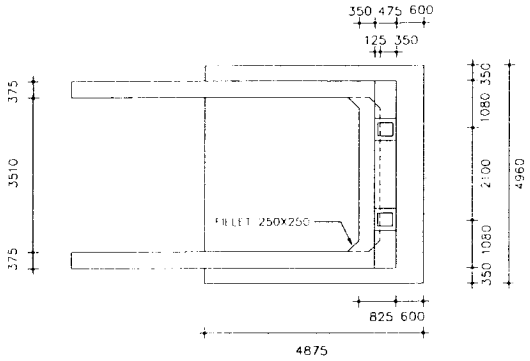


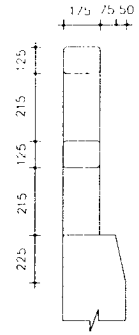
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



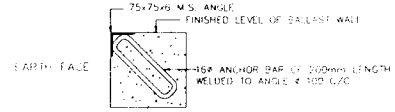
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

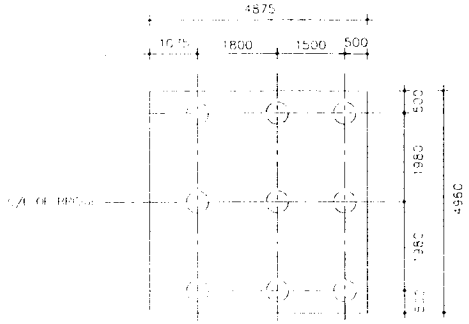
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	2850	295	169
11500	1000	2850	293	164
11000	1000	2850	291	161
10500	1000	2850	289	159
10000	1000	2850	287	157
9500	900	2950	285	155
9000	900	2950	281	153
8500	900	2950	279	151
8000	900	2950	277	149
7500	750	3100	275	147
7000	750	3100	271	145
6500	750	3100	269	143
6000	750	3100	267	141
5500	400	3450	271	143
5000	400	3450	269	141
4500	350	3500	265	139
4000	350	3500	263	137
3500	325	3525	261	135
3000	325	3525	259	133
2500	275	3575	255	131
2000	250	3600	253	129
1500	250	3600	251	127

TABLE-2

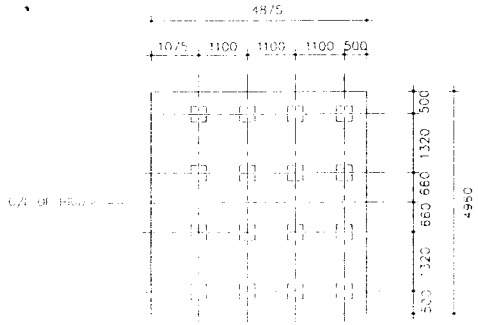
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500Ø	60	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) For reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at minimum horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

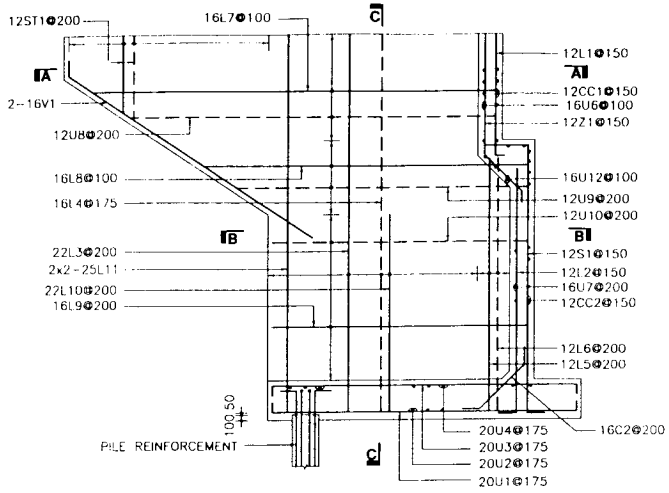
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.6m , DECK WIDTH 4.26m)

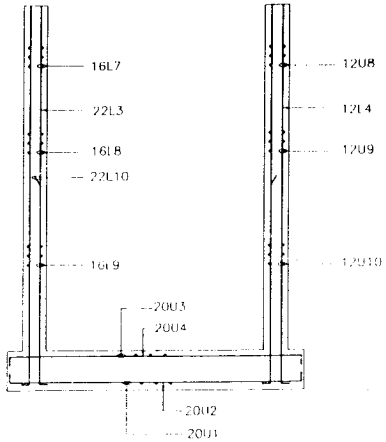
DATE
DRAWING NO

Web Copy

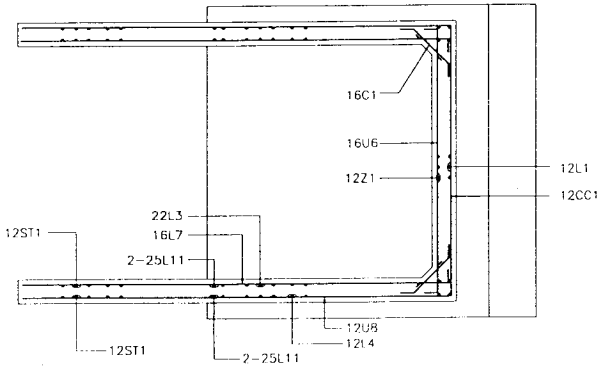
SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK : NO



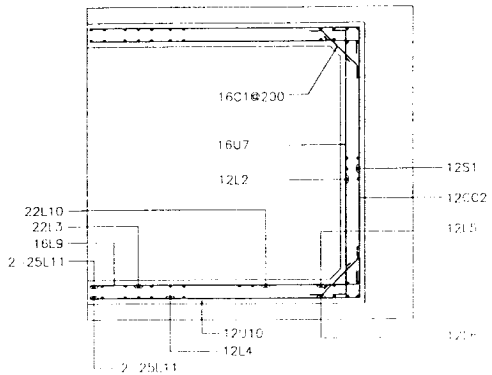
REINFORCEMENT DETAIL



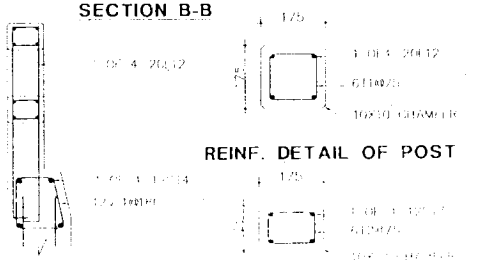
SECTION C-C



SECTION A-A



SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)

REINF. DETAIL OF POST

REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1380
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	20	1350	144			1494
12	L2	24	3750	144			3894
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3450 to 4050	144			Avg. 3894
12	L6	6	Var. 3450 to 4050	144			Avg. 3894
16	L7	22	Var. 5800 to 6700	192			Avg. 6483
16	L8	30	Var. 4175 to 5800	192			Avg. 5180
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5406	300			5700
20	L12	18	971	120			1091
20	U1	26	240	4775	240		5255
20	U2	29	240	4860	240		5340
20	U3	29	240	4775	240		5255
20	U4	29	240	4860	240		5340
16	U6	15	192	4104	192		4488
16	U7	15	192	4112	192		4496
12	U8	12	Var. 5800 to 6700	275	600		Avg. 7275
12	U9	16	Var. 4175 to 5800	275	600		Avg. 5863
12	U10	22	4175	275	625		5075
16	U12	12	192	4160	192		4544
12	CC1	13	1350	500	4160		6010
12	CC2	28	1350	500	4160		6010
12	Z1	26	1350	865	144		2360
12	S1	29	725	4300	240		5265
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	8	250	4650			4906
6	T1	120	306	306			612
6	T2	140	206	306			512
12	VL1	78	272	200	250	278	1960

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm
7) For pile reinforcement see dwg no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S000000.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 4.26m)

DATE	DRAWN BY
CAD FILE NO. ABUT\R0000002	

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SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	29	1250	144			1994
12	L2	29	3850	144			3994
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3550 to 4150	144			Avg. 3994
12	L6	6	Var. 3550 to 4150	144			Avg. 3994
16	L7	20	Var. 5950 to 6700	192			Avg. 6592
16	L8	32	Var. 4175 to 5950	192			Avg. 5255
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	4775	240		5255
20	U2	29	240	4860	240		5340
20	U3	29	240	4775	240		5255
20	U4	29	240	4860	240		5340
16	U6	14	192	4104	192		4488
16	U7	17	192	4112	192		4496
12	U8	12	Var. 5950 to 6700	275	600		Avg. 7325
12	U9	16	Var. 4175 to 5950	275	600		Avg. 5938
12	U10	22	4175	275	625		5075
16	U12	12	192	4160	192		4544
12	CC1	9	1350	500	4160		6010
12	CC2	28	1350	500	4160		6010
12	Z1	29	1250	866	144		2260
12	S1	29	725	4490	240		5365
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	29	1100	144			1244
12	L2	29	4000	144			4144
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3700 to 4300	144			Avg. 4144
12	L6	6	Var. 3700 to 4300	144			Avg. 4144
16	L7	18	Var. 6175 to 6700	192			Avg. 6717
16	L8	36	Var. 4175 to 6175	192			Avg. 5367
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	4775	240		5255
20	U2	29	240	4860	240		5340
20	U3	29	240	4775	240		5255
20	U4	29	240	4860	240		5340
16	U6	12	192	4104	192		4488
16	U7	17	192	4112	192		4496
12	U8	10	Var. 6175 to 6700	275	600		Avg. 7470
12	U9	20	Var. 4175 to 6175	275	600		Avg. 6050
12	U10	22	4175	275	625		5075
16	U12	12	192	4160	192		4544
12	CC1	8	1350	500	4160		6010
12	CC2	29	1350	500	4160		6010
12	Z1	29	1100	866	144		2110
12	S1	29	725	4550	240		5515
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	29	750	144			894
12	L2	29	4350	144			4494
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 4050 to 4650	144			Avg. 4394
12	L6	6	Var. 4050 to 4650	144			Avg. 4394
16	L7	10	Var. 6700 to 6700	192			Avg. 6892
16	L8	42	Var. 4175 to 6700	192			Avg. 5030
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	4775	240		5255
20	U2	29	240	4860	240		5340
20	U3	29	240	4775	240		5255
20	U4	29	240	4860	240		5340
16	U6	9	192	4104	192		4488
16	U7	19	192	4112	192		4496
12	U8	6	Var. 6700 to 6700	275	600		Avg. 7575
12	U9	22	Var. 4175 to 6700	275	600		Avg. 6313
12	U10	22	4175	275	625		5075
16	U12	12	192	4160	192		4544
12	CC1	6	1350	500	4160		6010
12	CC2	32	1350	500	4160		6010
12	Z1	29	750	866	144		1760
12	S1	29	725	4900	240		5865
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 4.26m)

DATE

CHECKED BY :

CAD FILE REF : ABUT/PD210063

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SHEET 4 OF 5	
SPAN RANGE : 1.5m TO 12.0m	
SIDE WALK : NO	

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	29	700	144			844
12	L2	29	4400	144			4544
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 4100 to 4700	144			Avg. 4544
12	L6	6	Var. 4100 to 4700	144			Avg. 4544
16	L7	8	Var. 6775 to 6700	192			Avg. 6855
16	L8	44	Var. 4175 to 6775	192			Avg. 5667
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	4775	240		5255
20	U2	29	240	4860	240		5340
20	U3	29	240	4775	240		5255
20	U4	29	240	4860	240		5340
16	U6	8	192	4104	192		4488
16	U7	19	192	4112	192		4496
12	U8	4	Var. 6775 to 6700	275	600		Avg. 7500
12	U9	24	Var. 4175 to 6775	275	600		Avg. 6350
12	U10	22	4175	275	625		5075
16	U12	12	192	4160	192		4544
12	CC1	5	1350	500	4160		6010
12	CC2	32	1350	500	4160		6010
12	Z1	29	700	866	144		1710
12	S1	29	725	4950	240		5915
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	29	675	144			819
12	L2	29	4425	144			4569
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 4125 to 4725	144			Avg. 4569
12	L6	6	Var. 4125 to 4725	144			Avg. 4569
16	L7	8	Var. 6813 to 6700	192			Avg. 6836
16	L8	44	Var. 4175 to 6813	192			Avg. 5686
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	4775	240		5255
20	U2	29	240	4860	240		5340
20	U3	29	240	4775	240		5255
20	U4	29	240	4860	240		5340
16	U6	8	192	4104	192		4488
16	U7	20	192	4112	192		4496
12	U8	4	Var. 6813 to 6700	275	600		Avg. 7462
12	U9	24	Var. 4175 to 6813	275	600		Avg. 6369
12	U10	22	4175	275	625		5075
16	U12	12	192	4160	192		4544
12	CC1	5	1350	500	4160		6010
12	CC2	32	1350	500	4160		6010
12	Z1	29	675	866	144		1685
12	S1	29	725	4975	240		5940
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 4.26m)

DRG.	CHKD BY :
CAD FILE NO. : ABUT/RD210564	

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SHEET 5 OF 5	
SPAN RANGE :	1.5m TO 12.0m
SIDE WALK :	NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	29	625	144			769
12	L2	29	4475	144			4619
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 4175 to 4775	144			Avg. 4619
12	L6	6	Var. 4175 to 4775	144			Avg. 4619
16	L7	6	Var. 6888 to 6700	192			Avg. 6704
16	L8	46	Var. 4175 to 6888	192			Avg. 5724
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	4775	240		5255
20	U2	29	240	4860	240		5340
20	U3	29	240	4775	240		5255
20	U4	29	240	4860	240		5340
16	U6	8	192	4104	192		4488
16	U7	20	192	4112	192		4496
12	U8	4	Var. 6888 to 6700	275	600		Avg. 7387
12	U9	24	Var. 4175 to 6888	275	600		Avg. 6407
12	U10	22	4175	275	625		5075
16	U12	12	192	4160	192		4544
12	CC1	5	1350	500	4160		6010
12	CC2	32	1350	500	4160		6010
12	Z1	29	625	866	144		1635
12	S1	29	725	5025	240		5990
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	29	600	144			744
12	L2	29	4500	144			4644
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 4200 to 4800	144			Avg. 4644
12	L6	6	Var. 4200 to 4800	144			Avg. 4644
16	L7	6	Var. 6925 to 6700	192			Avg. 6667
16	L8	46	Var. 4175 to 6925	192			Avg. 5742
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	4775	240		5255
20	U2	29	240	4860	240		5340
20	U3	29	240	4775	240		5255
20	U4	29	240	4860	240		5340
16	U6	7	192	4104	192		4488
16	U7	20	192	4112	192		4496
12	U8	4	Var. 6925 to 6700	275	600		Avg. 7350
12	U9	24	Var. 4175 to 6925	275	600		Avg. 6425
12	U10	22	4175	275	625		5075
16	U12	12	192	4160	192		4544
12	CC1	5	1350	500	4160		6010
12	CC2	33	1350	500	4160		6010
12	Z1	29	600	866	144		1610
12	S1	29	725	5050	240		6015
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0210565	

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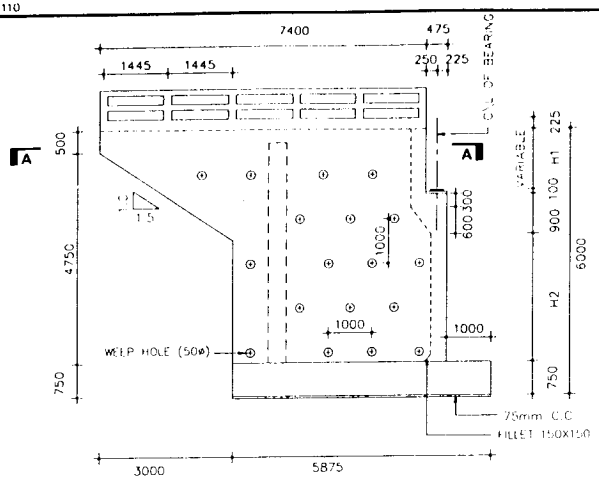
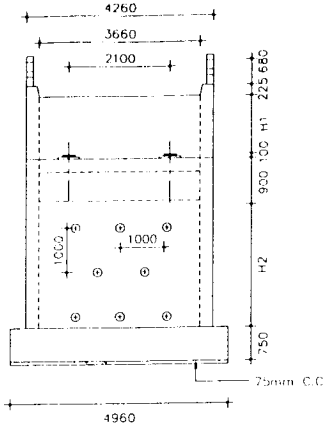
FA-110

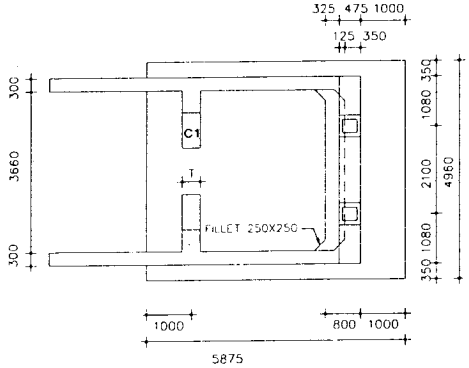
SHEET 1 OF 5
SPAN RANGE 1.5m to 12.0m
SIDEWALK NO



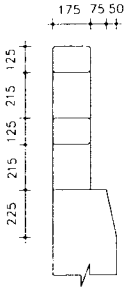
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

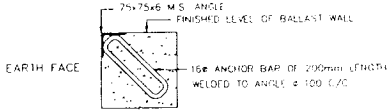
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	3250	265	16
11500	1000	3250	263	15
11000	1000	3250	261	15
10500	1000	3250	259	15
10000	1000	3250	257	15
9500	900	3350	256	15
9000	900	3350	253	14
8500	900	3350	251	14
8000	900	3350	249	14
7500	750	3500	247	14
7000	750	3500	245	14
6500	750	3500	243	13
6000	750	3500	241	13
5500	400	3850	243	13
5000	400	3850	241	13
4500	350	3900	237	13
4000	350	3900	235	12
3500	325	3925	233	12
3000	325	3925	231	12
2500	275	3975	229	12
2000	250	4000	227	12
1500	250	4000	225	12

TABLE-2

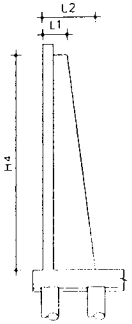
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	50	CAST IN SITU
TYPE – B	350X350	30	PRECAST

TABLE-3

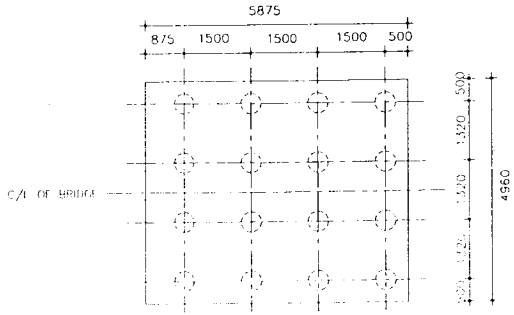
L1	L2	H4	T
1000	1600	4950	400



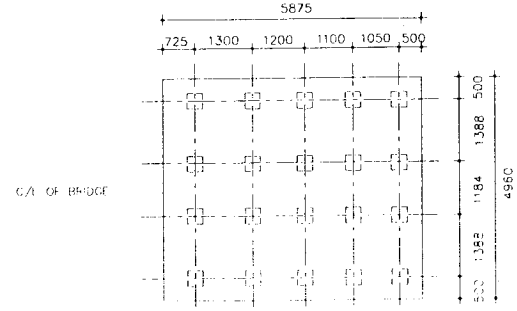
NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing/Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings. filter material shall be provided as per specification.

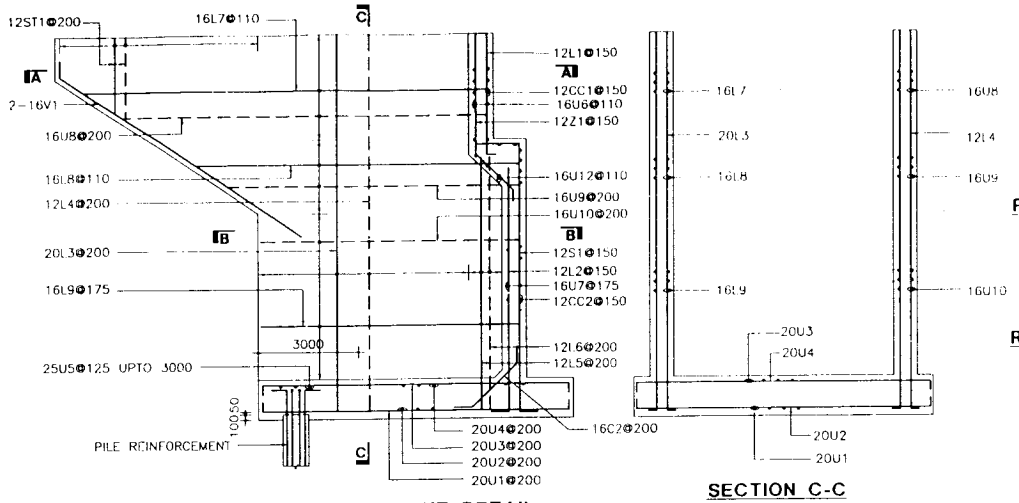
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 6.0m , DECK WIDTH 4.26m)

DATE | DRAWN BY
DRG. NO. | APPROVED BY

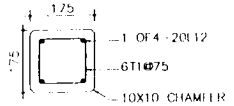
Web Copy

SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

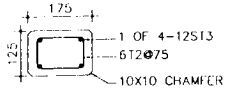


REINFORCEMENT DETAIL

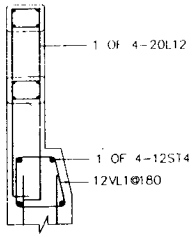
SECTION C-C



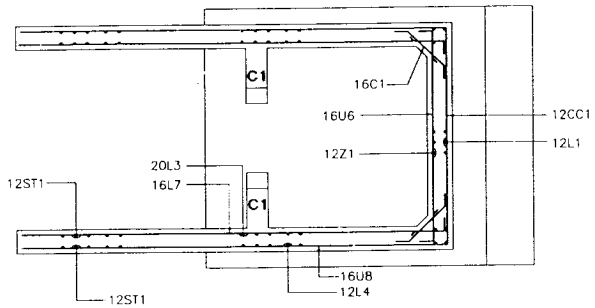
REINF. DETAIL OF POST



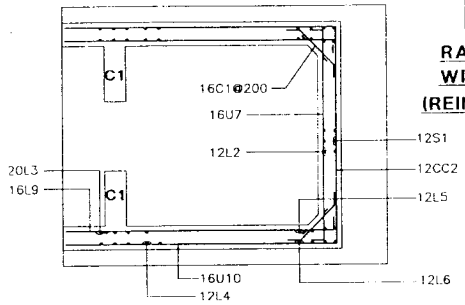
REINF. DETAIL OF RAILING



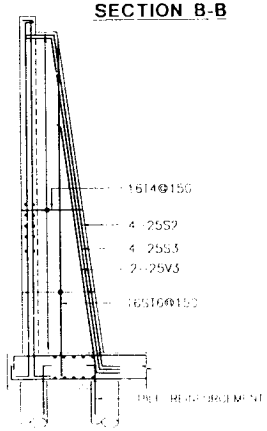
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C1

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	1350	144			1494
12	L2	29	4150	144			4294
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3850 to 4450	144			Avg. 4294
12	L6	6	Var. 3850 to 4450	144			Avg. 4294
16	L7	22	Var. 6400 to 7300	192			Avg. 7083
16	L8	28	Var. 4775 to 6400	192			Avg. 5780
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5775	240		6255
20	U2	30	240	4860	240		5340
20	U3	26	240	5775	240		6255
20	U4	14	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	21	192	4104	192		4488
16	U8	12	Var. 6400 to 7300	200	575		Avg. 7775
16	U9	16	Var. 4775 to 6400	200	600		Avg. 6388
16	U10	26	4775	200	550		5525
16	U12	13	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	30	1200	500	4160		5860
12	Z1	29	1350	850	144		2344
12	S1	29	700	4700	240		5640
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	V1.1	86	272	200	250	278	1000
16	T4	68	Var. 1896 to 3096	696			Avg. 3192
25	S2	8	300	5410	900		6610
25	S3	8	325	5410	875		6610
25	V3	4	350	3534			3884
16	ST6	22	Var. 1365 to 5760				Avg. 3762

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail 25mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm.
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 4.26m)

DAE :	DRAWN BY :
CAD FILE REF : ABUT\D0000002	

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FA-112

SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	1250	144			1394
12	L2	29	4250	144			4394
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3950 to 4550	144			Avg. 4394
12	L6	6	Var. 3950 to 4550	144			Avg. 4394
16	L7	20	Var. 6550 to 7300	192			Avg. 7192
16	L8	30	Var. 4775 to 6550	192			Avg. 5855
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5775	240		6255
20	U2	30	240	4860	240		5340
20	U3	26	240	5775	240		6255
20	U4	14	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	13	192	4104	192		4488
16	U7	21	192	4104	192		4488
16	U8	12	Var. 6550 to 7300	200	575		Avg. 7825
16	U9	18	Var. 4775 to 6550	200	600		Avg. 6463
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	9	1200	450	4160		5810
12	CC2	31	1200	500	4160		5860
12	Z1	29	1250	850	144		2244
12	S1	29	700	4800	240		5740
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1896 to 3096	696			Avg. 3192
25	S2	8	300	5410	900		6610
25	S3	8	325	5410	875		6610
25	V3	4	350	3534			3884
16	ST6	22	Var. 1365 to 5760				Avg. 3762

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	1100	144			1244
12	L2	29	4400	144			4544
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4100 to 4700	144			Avg. 4544
12	L6	6	Var. 4100 to 4700	144			Avg. 4544
16	L7	18	Var. 6775 to 7300	192			Avg. 7317
16	L8	32	Var. 4775 to 6775	192			Avg. 5967
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5775	240		6255
20	U2	30	240	4860	240		5340
20	U3	26	240	5775	240		6255
20	U4	14	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	11	192	4104	192		4488
16	U7	22	192	4104	192		4488
16	U8	10	Var. 6775 to 7300	200	575		Avg. 7970
16	U9	20	Var. 4775 to 6775	200	600		Avg. 6575
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	8	1200	450	4160		5810
12	CC2	32	1200	500	4160		5860
12	Z1	29	1100	850	144		2094
12	S1	29	700	4950	240		5890
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1896 to 3096	696			Avg. 3192
25	S2	8	300	5410	900		6610
25	S3	8	325	5410	875		6610
25	V3	4	350	3534			3884
16	ST6	22	Var. 1365 to 5760				Avg. 3762

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	750	144			894
12	L2	29	4750	144			4894
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4450 to 5050	144			Avg. 4894
12	L6	6	Var. 4450 to 5050	144			Avg. 4894
16	L7	10	Var. 7300 to 7300	192			Avg. 7492
16	L8	40	Var. 4775 to 7300	192			Avg. 6230
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5775	240		6255
20	U2	30	240	4860	240		5340
20	U3	26	240	5775	240		6255
20	U4	14	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	24	192	4104	192		4488
16	U8	6	Var. 7300 to 7300	200	575		Avg. 8075
16	U9	22	Var. 4775 to 7300	200	600		Avg. 6838
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	6	1200	450	4160		5810
12	CC2	34	1200	500	4160		5860
12	Z1	29	750	850	144		1744
12	S1	29	700	5300	240		6240
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1896 to 3096	696			Avg. 3192
25	S2	8	300	5410	900		6610
25	S3	8	325	5410	875		6610
25	V3	4	350	3534			3884
16	ST6	22	Var. 1365 to 5760				Avg. 3762

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210603	

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SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	700	144			844
12	L2	29	4800	144			4944
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4500 to 5100	144			Avg. 4944
12	L6	6	Var. 4500 to 5100	144			Avg. 4944
16	L7	8	Var. 7375 to 7300	192			Avg. 7455
16	L8	40	Var. 4775 to 7375	192			Avg. 6267
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5775	240		6255
20	U2	30	240	4860	240		5340
20	U3	26	240	5775	240		6255
20	U4	14	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	24	192	4104	192		4488
16	U8	4	Var. 7375 to 7300	200	575		Avg. 8000
16	U9	24	Var. 4775 to 7375	200	600		Avg. 6875
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	35	1200	500	4160		5860
12	Z1	29	700	850	144		1694
12	S1	29	700	5350	240		6290
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1896 to 3096	696			Avg. 3192
25	S2	8	300	5410	900		6610
25	S3	8	325	5410	875		6610
25	V3	4	350	3534			3884
16	ST6	22	Var. 1365 to 5760				Avg. 3762

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	675	144			819
12	L2	29	4825	144			4969
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4525 to 5125	144			Avg. 4969
12	L6	6	Var. 4525 to 5125	144			Avg. 4969
16	L7	8	Var. 7413 to 7300	192			Avg. 7436
16	L8	40	Var. 4775 to 7413	192			Avg. 6286
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5775	240		6255
20	U2	30	240	4860	240		5340
20	U3	26	240	5775	240		6255
20	U4	14	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	25	192	4104	192		4488
16	U8	4	Var. 7413 to 7300	200	575		Avg. 7962
16	U9	24	Var. 4775 to 7413	200	600		Avg. 6894
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	35	1200	500	4160		5860
12	Z1	29	675	850	144		1669
12	S1	29	700	5375	240		6315
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1896 to 3096	696			Avg. 3192
25	S2	8	300	5410	900		6610
25	S3	8	325	5410	875		6610
25	V3	4	350	3534			3884
16	ST6	22	Var. 1365 to 5760				Avg. 3762

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210604	

Web Copy

FA-114

SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	625	144			769
12	L2	29	4875	144			5019
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4575 to 5175	144			Avg. 5019
12	L6	6	Var. 4575 to 5175	144			Avg. 5019
16	L7	6	Var. 7488 to 7300	192			Avg. 7304
16	L8	42	Var. 4775 to 7488	192			Avg. 6324
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5775	240		6255
20	U2	30	240	4860	240		5340
20	U3	26	240	5775	240		6255
20	U4	14	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	25	192	4104	192		4488
16	U8	4	Var. 7488 to 7300	200	575		Avg. 7887
16	U9	24	Var. 4775 to 7488	200	600		Avg. 6932
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	35	1200	500	4160		5860
12	Z1	29	625	850	144		1619
12	S1	29	700	5425	240		6365
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1896 to 3096	696			Avg. 3192
25	S2	8	300	5410	900		6610
25	S3	8	325	5410	875		6610
25	V3	4	350	3534			3884
16	ST6	22	Var. 1365 to 5760				Avg. 3762

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	600	144			744
12	L2	29	4900	144			5044
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 4600 to 5200	144			Avg. 5044
12	L6	6	Var. 4600 to 5200	144			Avg. 5044
16	L7	6	Var. 7525 to 7300	192			Avg. 7267
16	L8	42	Var. 4775 to 7525	192			Avg. 6342
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5775	240		6255
20	U2	30	240	4860	240		5340
20	U3	26	240	5775	240		6255
20	U4	14	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	25	192	4104	192		4488
16	U8	4	Var. 7525 to 7300	200	575		Avg. 7850
16	U9	24	Var. 4775 to 7525	200	600		Avg. 6950
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	35	1200	500	4160		5860
12	Z1	29	600	850	144		1594
12	S1	29	700	5450	240		6390
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1896 to 3096	696			Avg. 3192
25	S2	8	300	5410	900		6610
25	S3	8	325	5410	875		6610
25	V3	4	350	3534			3884
16	ST6	22	Var. 1365 to 5760				Avg. 3762

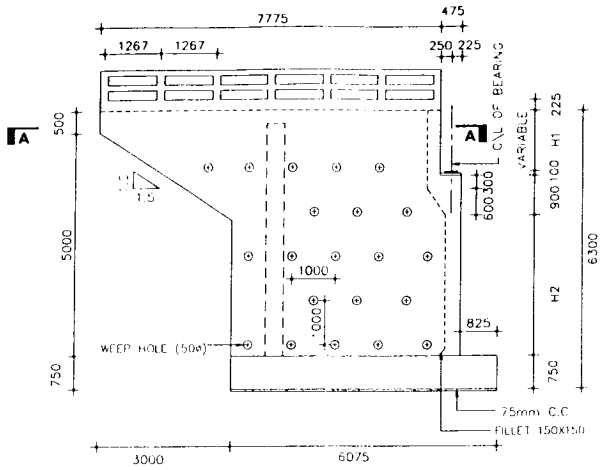
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 4.26m)

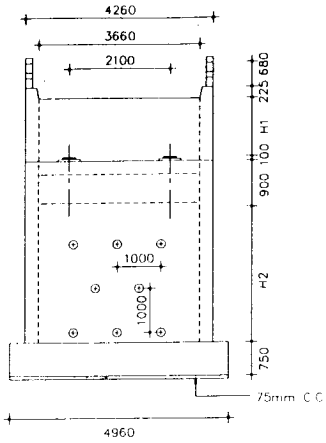
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0210605

Web Copy

SHEET 1 OF 5
SPAN RANGE : 1.5m to 12.0m
SIDEWALK : NO



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

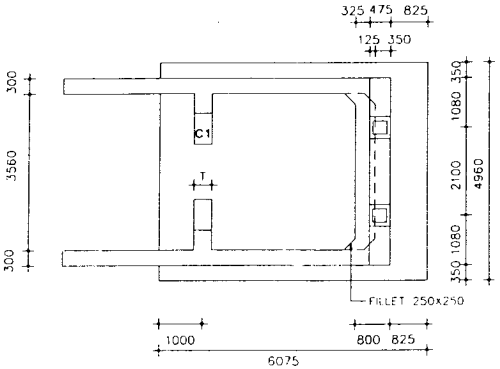
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	3550	290	
11500	1000	3550	288	
11000	1000	3550	286	
10500	1000	3550	284	
10000	1000	3550	282	
9500	900	3650	280	
9000	900	3650	278	
8500	900	3650	276	
8000	900	3650	274	
7500	750	3800	272	
7000	750	3800	270	NOT APPLICABLE
6500	750	3800	268	
6000	750	3800	266	
5500	400	4150	268	
5000	400	4150	266	
4500	350	4200	262	
4000	350	4200	260	
3500	325	4225	258	
3000	325	4225	256	
2500	275	4275	254	
2000	250	4300	252	
1500	250	4300	250	

TABLE-2

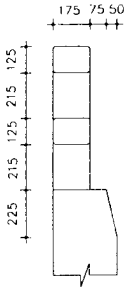
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	350X350	30	PRECAST

TABLE-3

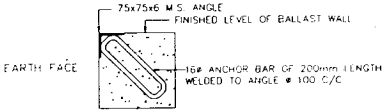
L1	L2	H4	T
825	1600	5250	400



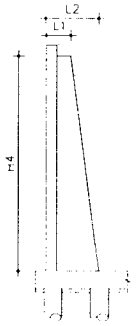
SECTION A-A



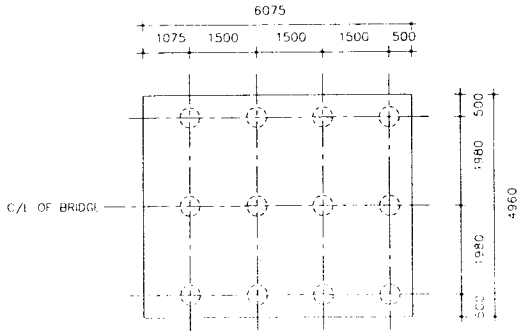
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Bearing Pad will not be required.
4) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 6.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY
DRG. NO ABUT\RD2\0630

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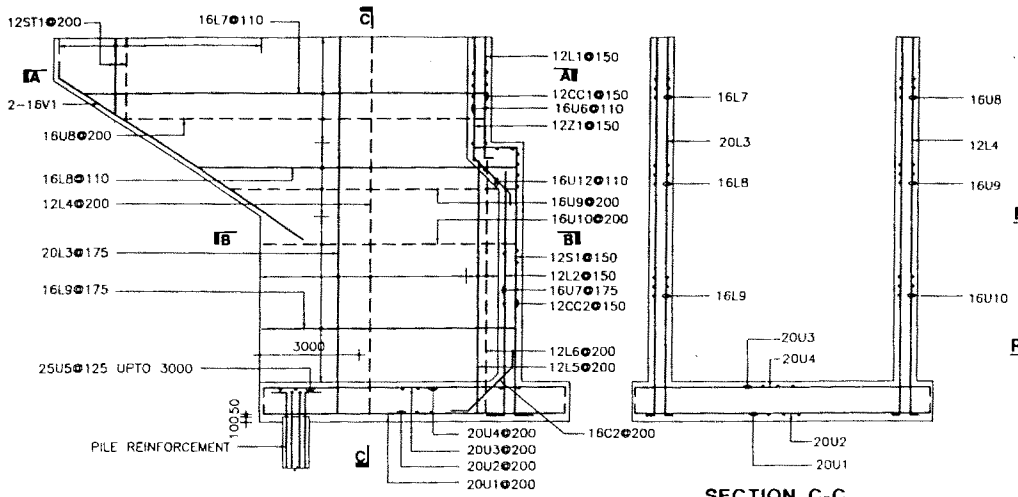
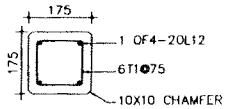
FA-116

SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

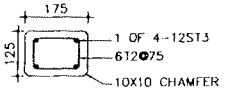


REINFORCEMENT DETAIL

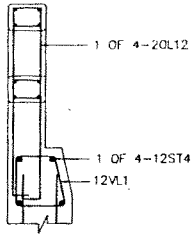
SECTION C-C



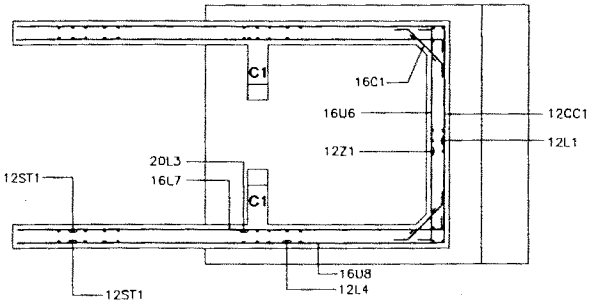
REINF. DETAIL OF POST



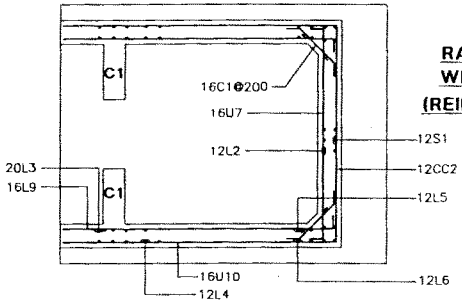
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



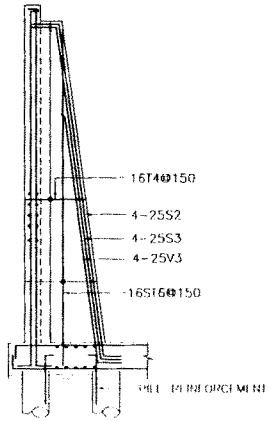
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	29	1350	144			1494
12	L2	29	4450	144			4594
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4150 to 4750	144			Avg. 4594
12	L6	6	Var. 4150 to 4750	144			Avg. 4594
16	L7	22	Var. 6775 to 7675	192			Avg. 7458
16	L8	28	Var. 5150 to 6775	192			Avg. 6155
16	L9	34	5150	192			5342
20	L12	56	971	120			1091
20	U1	26	240	5975	240		6455
20	U2	31	240	4860	240		5340
20	U3	26	240	5975	240		6455
20	U4	15	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	22	192	4104	192		4488
16	U8	12	Var. 6775 to 7675	200	575		Avg. 8150
16	U9	16	Var. 5150 to 6775	200	600		Avg. 6763
16	U10	30	5150	200	550		5900
16	U12	11	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	32	1200	500	4160		5860
12	Z1	29	1350	850	144		2344
12	S1	29	700	5000	240		5940
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1546 to 3096	696			Avg. 3017
25	S2	8	300	5707	725		6732
25	S3	8	325	5707	700		6732
25	V3	8	350	3730			4080
16	ST6	22	Var. 1115 to 6060				Avg. 3363



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail- 20mm, b) Post- 20mm, c) Curb- 25mm, d) Wall- 50mm, e) Base- 50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R07106.52	

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SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	29	1250	144			1394
12	L2	29	4550	144			4694
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4250 to 4850	144			Avg. 4694
12	L6	6	Var. 4250 to 4850	144			Avg. 4694
16	L7	20	Var. 6925 to 7675	192			Avg. 7567
16	L8	30	Var. 5150 to 6925	192			Avg. 6239
16	L9	34	5150	192			5342
20	L12	56	971	120			1091
20	U1	26	240	5975	240		6455
20	U2	31	240	4860	240		5340
20	U3	26	240	5975	240		6455
20	U4	15	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	13	192	4104	192		4488
16	U7	23	192	4104	192		4488
16	U8	12	Var. 6925 to 7675	200	575		Avg. 8200
16	U9	18	Var. 5150 to 6925	200	600		Avg. 6838
16	U10	30	5150	200	550		5900
16	U12	11	192	4160	192		4544
12	CC1	9	1200	450	4160		5810
12	CC2	33	1200	500	4160		5860
12	Z1	29	1250	850	144		2244
12	S1	29	700	5100	240		6040
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1546 to 3096	696			Avg. 3017
25	S2	8	300	5707	725		6732
25	S3	8	325	5707	700		6732
25	V3	8	350	3730			4080
16	ST6	22	Var. 1115 to 6060				Avg. 3363

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	29	1100	144			1244
12	L2	29	4700	144			4844
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4400 to 5000	144			Avg. 4844
12	L6	6	Var. 4400 to 5000	144			Avg. 4844
16	L7	18	Var. 7150 to 7675	192			Avg. 7692
16	L8	32	Var. 5150 to 7150	192			Avg. 6342
16	L9	34	5150	192			5342
20	L12	56	971	120			1091
20	U1	26	240	5975	240		6455
20	U2	31	240	4860	240		5340
20	U3	26	240	5975	240		6455
20	U4	15	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	11	192	4104	192		4488
16	U7	24	192	4104	192		4488
16	U8	10	Var. 7150 to 7675	200	575		Avg. 8345
16	U9	20	Var. 5150 to 7150	200	600		Avg. 6950
16	U10	30	5150	200	550		5900
16	U12	11	192	4160	192		4544
12	CC1	8	1200	450	4160		5810
12	CC2	34	1200	500	4160		5860
12	Z1	29	1100	850	144		2094
12	S1	29	700	5250	240		6190
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1546 to 3096	696			Avg. 3017
25	S2	8	300	5707	725		6732
25	S3	8	325	5707	700		6732
25	V3	8	350	3730			4080
16	ST6	22	Var. 1115 to 6060				Avg. 3363

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	29	750	144			894
12	L2	29	5050	144			5194
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4750 to 5350	144			Avg. 5194
12	L6	6	Var. 4750 to 5350	144			Avg. 5194
16	L7	10	Var. 7675 to 7675	192			Avg. 7867
16	L8	40	Var. 5150 to 7675	192			Avg. 6605
16	L9	34	5150	192			5342
20	L12	56	971	120			1091
20	U1	26	240	5975	240		6455
20	U2	31	240	4860	240		5340
20	U3	26	240	5975	240		6455
20	U4	15	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	26	192	4104	192		4488
16	U8	6	Var. 7675 to 7675	200	575		Avg. 8450
16	U9	22	Var. 5150 to 7675	200	600		Avg. 7213
16	U10	30	5150	200	550		5900
16	U12	11	192	4160	192		4544
12	CC1	6	1200	450	4160		5810
12	CC2	36	1200	500	4160		5860
12	Z1	29	750	850	144		1744
12	S1	29	700	5600	240		6540
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1546 to 3096	696			Avg. 3017
25	S2	8	300	5707	725		6732
25	S3	8	325	5707	700		6732
25	V3	8	350	3730			4080
16	ST6	22	Var. 1115 to 6060				Avg. 3363

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 4.26m)

DATE :

DRAWN BY :

CAD FILE REF : ABUTMENT02196.54

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SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	29	700	144			844
12	L2	29	5100	144			5244
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4800 to 5400	144			Avg. 5244
12	L6	6	Var. 4800 to 5400	144			Avg. 5244
16	L7	8	Var. 7750 to 7675	192			Avg. 7830
16	L8	40	Var. 5150 to 7750	192			Avg. 6642
16	L9	34	5150	192			5342
20	L12	56	971	120			1091
20	U1	26	240	5975	240		6455
20	U2	31	240	4860	240		5340
20	U3	26	240	5975	240		6455
20	U4	15	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	26	192	4104	192		4488
16	U8	4	Var. 7750 to 7675	200	575		Avg. 8375
16	U9	24	Var. 5150 to 7750	200	600		Avg. 7250
16	U10	30	5150	200	550		5900
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	37	1200	500	4160		5860
12	Z1	29	700	850	144		1694
12	S1	29	700	5650	240		6590
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1546 to 3096	696			Avg. 3017
25	S2	8	300	5707	725		6732
25	S3	8	325	5707	700		6732
25	V3	8	350	3730			4080
16	ST6	22	Var. 1115 to 6060				Avg. 3363

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	29	675	144			819
12	L2	29	5125	144			5269
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4825 to 5425	144			Avg. 5269
12	L6	6	Var. 4825 to 5425	144			Avg. 5269
16	L7	8	Var. 7788 to 7675	192			Avg. 7811
16	L8	40	Var. 5150 to 7788	192			Avg. 6661
16	L9	34	5150	192			5342
20	L12	56	971	120			1091
20	U1	26	240	5975	240		6455
20	U2	31	240	4860	240		5340
20	U3	26	240	5975	240		6455
20	U4	15	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	26	192	4104	192		4488
16	U8	4	Var. 7788 to 7675	200	575		Avg. 8337
16	U9	24	Var. 5150 to 7788	200	600		Avg. 7269
16	U10	30	5150	200	550		5900
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	37	1200	500	4160		5860
12	Z1	29	675	850	144		1669
12	S1	29	700	5675	240		6615
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1546 to 3096	696			Avg. 3017
25	S2	8	300	5707	725		6732
25	S3	8	325	5707	700		6732
25	V3	8	350	3730			4080
16	ST6	22	Var. 1115 to 6060				Avg. 3363

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R02106.34

Web Copy

SHEET 5 OF 5
SPAN RANGE : 4.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	29	625	144			769
12	L2	29	5175	144			5319
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4875 to 5475	144			Avg. 5319
12	L6	6	Var. 4875 to 5475	144			Avg. 5319
16	L7	6	Var. 7863 to 7675	192			Avg. 7679
16	L8	42	Var. 5150 to 7863	192			Avg. 6699
16	L9	34	5150	192			5342
20	L12	56	971	120			1091
20	U1	26	240	5975	240		6455
20	U2	31	240	4860	240		5340
20	U3	26	240	5975	240		6455
20	U4	15	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	27	192	4104	192		4488
16	U8	4	Var. 7863 to 7675	200	575		Avg. 8262
16	U9	24	Var. 5150 to 7863	200	600		Avg. 7307
16	U10	30	5150	200	550		5900
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	37	1200	500	4160		5860
12	Z1	29	625	850	144		1619
12	S1	29	700	5725	240		6665
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1546 to 3096	696			Avg. 3017
25	S2	8	300	5707	725		6732
25	S3	8	325	5707	700		6732
25	V3	8	350	3730			4080
16	ST6	22	Var. 1115 to 6060				Avg. 3363

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7735				7735
12	ST4	8	7725				7725
12	L1	29	600	144			744
12	L2	29	5200	144			5344
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4900 to 5500	144			Avg. 5344
12	L6	6	Var. 4900 to 5500	144			Avg. 5344
16	L7	6	Var. 7900 to 7675	192			Avg. 7642
16	L8	42	Var. 5150 to 7900	192			Avg. 6717
16	L9	34	5150	192			5342
20	L12	56	971	120			1091
20	U1	26	240	5975	240		6455
20	U2	31	240	4860	240		5340
20	U3	26	240	5975	240		6455
20	U4	15	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	27	192	4104	192		4488
16	U8	4	Var. 7900 to 7675	200	575		Avg. 8225
16	U9	24	Var. 5150 to 7900	200	600		Avg. 7325
16	U10	30	5150	200	550		5900
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	37	1200	500	4160		5860
12	Z1	29	600	850	144		1594
12	S1	29	700	5750	240		6690
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1546 to 3096	696			Avg. 3017
25	S2	8	300	5707	725		6732
25	S3	8	325	5707	700		6732
25	V3	8	350	3730			4080
16	ST6	22	Var. 1115 to 6060				Avg. 3363

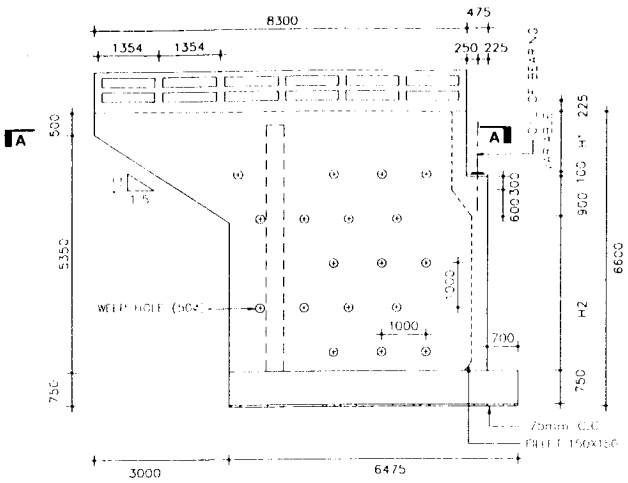
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 4.26m)

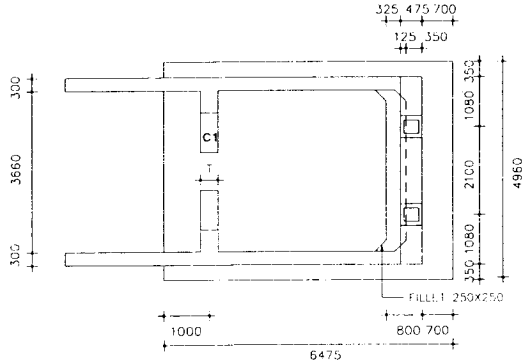
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R02106.35	

Web Copy

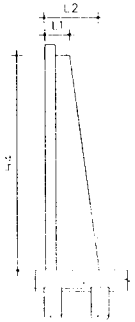
FA-120



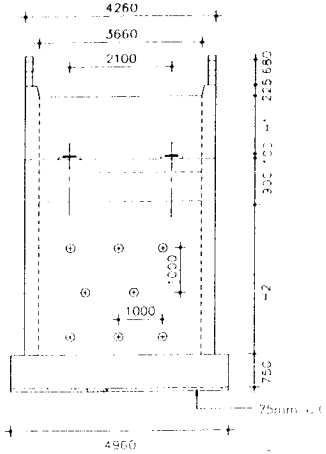
SIDE ELEVATION



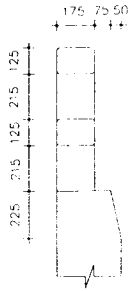
SECTION A-A



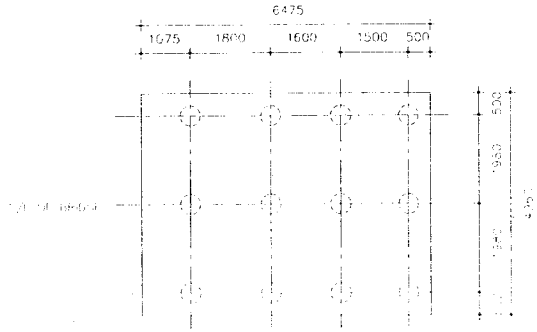
COUNTERFORT C1



FRONT ELEVATION



GENERAL ARRANGEMENT OF RAILING ON WING WALL



LAYOUT PLAN OF FOUNDATION TYPE - A

TABLE-1

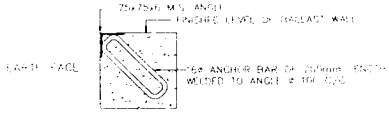
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	5400	3950	525	
11500	5000	3950	523	
11000	5000	3950	521	
10500	5000	3950	519	
10000	5000	3950	517	
9500	5000	3950	515	
9000	5000	3950	513	
8500	5000	3950	511	
8000	5000	3950	509	SAME APPLICABLE
7500	4750	4100	507	
7000	4750	4100	505	
6500	4750	4100	503	
6000	4750	4100	501	
5500	4750	4100	505	
5000	4750	4100	501	
4500	4750	4100	297	
4000	4750	4100	295	
3500	4750	4100	293	
3000	4750	4100	291	
2500	4750	4100	289	
2000	4750	4100	287	
1500	4750	4100	285	

TABLE-2

FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	300ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

L1	L2	H4	T
700	1750	5250	400



NOSING AT ABUTMENT

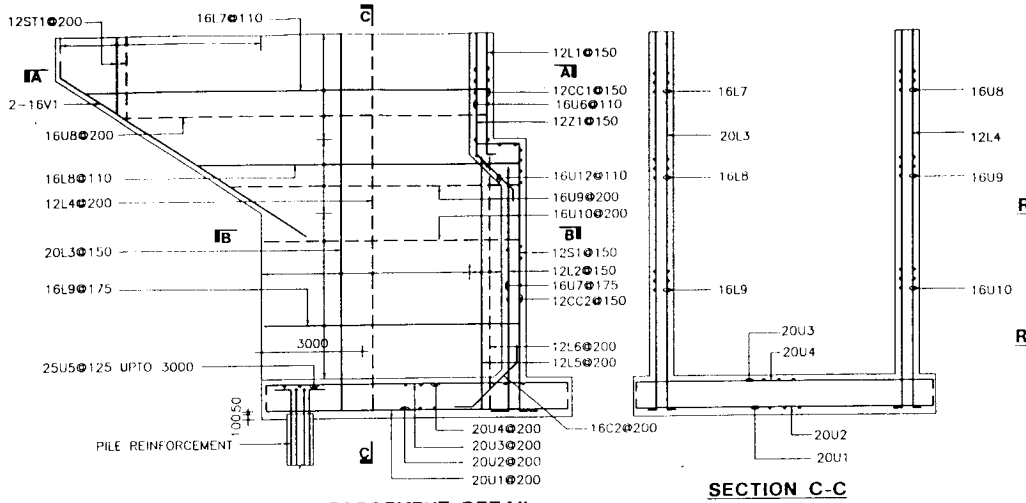
NOTES

1. All dimensions are in millimeter unless otherwise specified.
2. For reinforcement see BD.
3. Top of wall over the Abutment (Left and right side of Bearing Seat) shall not be required.
4. Weep hole @ 1000 mm horizontally and vertically or shown in drawing. The material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

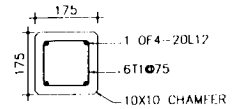
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 6.6m , DECK WIDTH 4.26m)

Web Copy

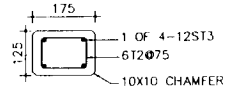


REINFORCEMENT DETAIL

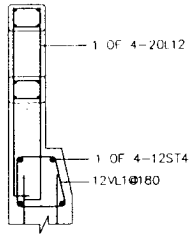
SECTION C-C



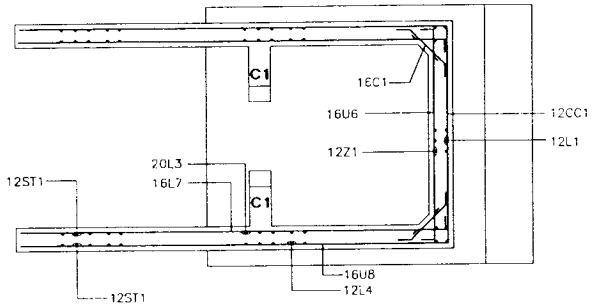
REINF. DETAIL OF POST



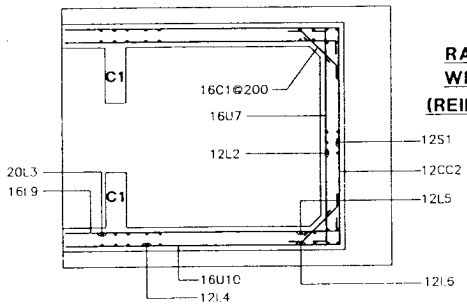
REINF. DETAIL OF RAILING



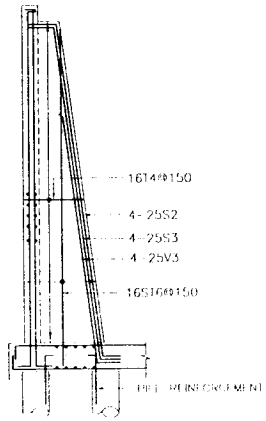
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C1

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	1350	144			1494
12	L2	29	4750	144			4894
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4450 to 5050	144			Avg. 4894
12	L6	6	Var. 4450 to 5050	144			Avg. 4894
16	L7	22	Var. 7300 to 8200	192			Avg. 7983
16	L8	28	Var. 5675 to 7300	192			Avg. 6686
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6375	240		6855
20	U2	33	240	4860	240		5340
20	U3	26	240	6375	240		6855
20	U4	17	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	24	192	4104	192		4488
16	U8	12	Var. 7300 to 8200	200	575		Avg. 8675
16	U9	16	Var. 5675 to 7300	200	600		Avg. 7288
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	34	1200	500	4160		5860
12	Z1	29	1350	850	144		2344
12	S1	29	700	5300	240		6240
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm.
7) For pile reinforcement see dwg. no. ABUT\R006-001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0210662

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FA-122

SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	1250	144			1394
12	L2	29	4850	144			4994
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4550 to 5150	144			Avg. 4994
12	L6	6	Var. 4550 to 5150	144			Avg. 4994
16	L7	20	Var. 7450 to 8200	192			Avg. 8092
16	L8	30	Var. 5675 to 7450	192			Avg. 6755
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6375	240		6855
20	U2	33	240	4860	240		5340
20	U3	26	240	6375	240		6855
20	U4	17	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	13	192	4104	192		4488
16	U7	25	192	4104	192		4488
16	U8	12	Var. 7450 to 8200	200	575		Avg. 8725
16	U9	18	Var. 5675 to 7450	200	600		Avg. 7363
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	9	1200	450	4160		5810
12	CC2	35	1200	500	4160		5860
12	Z1	29	1250	850	144		2244
12	S1	29	700	5400	240		6340
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	1100	144			1244
12	L2	29	5000	144			5144
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4700 to 5300	144			Avg. 5144
12	L6	6	Var. 4700 to 5300	144			Avg. 5144
16	L7	18	Var. 7675 to 8200	192			Avg. 8217
16	L8	32	Var. 5675 to 7675	192			Avg. 6867
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6375	240		6855
20	U2	33	240	4860	240		5340
20	U3	26	240	6375	240		6855
20	U4	17	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	11	192	4104	192		4488
16	U7	26	192	4104	192		4488
16	U8	10	Var. 7675 to 8200	200	575		Avg. 8870
16	U9	20	Var. 5675 to 7675	200	600		Avg. 7475
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	8	1200	450	4160		5810
12	CC2	36	1200	500	4160		5860
12	Z1	29	1100	850	144		2094
12	S1	29	700	5550	240		6490
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	750	144			894
12	L2	29	5350	144			5494
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 5050 to 5650	144			Avg. 5494
12	L6	6	Var. 5050 to 5650	144			Avg. 5494
16	L7	10	Var. 8200 to 8200	192			Avg. 8392
16	L8	40	Var. 5675 to 8200	192			Avg. 7130
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6375	240		6855
20	U2	33	240	4860	240		5340
20	U3	26	240	6375	240		6855
20	U4	17	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	28	192	4104	192		4488
16	U8	6	Var. 8200 to 8200	200	575		Avg. 8975
16	U9	22	Var. 5675 to 8200	200	600		Avg. 7738
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	6	1200	450	4160		5810
12	CC2	38	1200	500	4160		5860
12	Z1	29	750	850	144		1744
12	S1	29	700	5900	240		6840
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 4.26m)

DATE :

ISSUED BY :

CAD FILE REF : AHUT\R0210663

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FA-123

SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	700	144			844
12	L2	29	5400	144			5544
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 5100 to 5700	144			Avg. 5544
12	L6	6	Var. 5100 to 5700	144			Avg. 5544
16	L7	8	Var. 8275 to 8200	192			Avg. 8355
16	L8	40	Var. 5675 to 8275	192			Avg. 7167
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6375	240		6855
20	U2	33	240	4860	240		5340
20	U3	26	240	6375	240		6855
20	U4	17	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	28	192	4104	192		4488
16	U8	4	Var. 8275 to 8200	200	575		Avg. 8900
16	U9	24	Var. 5675 to 8275	200	600		Avg. 7775
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	39	1200	500	4160		5860
12	Z1	29	700	850	144		1694
12	S1	29	700	5950	240		6890
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	675	144			819
12	L2	29	5425	144			5569
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 5125 to 5725	144			Avg. 5569
12	L6	6	Var. 5125 to 5725	144			Avg. 5569
16	L7	8	Var. 8313 to 8200	192			Avg. 8336
16	L8	40	Var. 5675 to 8313	192			Avg. 7186
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6375	240		6855
20	U2	33	240	4860	240		5340
20	U3	26	240	6375	240		6855
20	U4	17	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	28	192	4104	192		4488
16	U8	4	Var. 8313 to 8200	200	575		Avg. 8862
16	U9	24	Var. 5675 to 8313	200	600		Avg. 7794
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	39	1200	500	4160		5860
12	Z1	29	675	850	144		1669
12	S1	29	700	5975	240		6915
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210664	

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BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	625	144			769
12	L2	29	5475	144			5619
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 5175 to 5775	144			Avg. 5619
12	L6	6	Var. 5175 to 5775	144			Avg. 5619
16	L7	6	Var. 8388 to 8200	192			Avg. 8204
16	L8	42	Var. 5675 to 8388	192			Avg. 7224
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6375	240		6855
20	U2	33	240	4860	240		5340
20	U3	26	240	6375	240		6855
20	U4	17	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	28	192	4104	192		4488
16	U8	4	Var. 8388 to 8200	200	575		Avg. 8787
16	U9	24	Var. 5675 to 8388	200	600		Avg. 7832
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	39	1200	500	4160		5860
12	Z1	29	625	850	144		1619
12	S1	29	700	6025	240		6965
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	600	144			744
12	L2	29	5500	144			5644
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 5200 to 5800	144			Avg. 5644
12	L6	6	Var. 5200 to 5800	144			Avg. 5644
16	L7	6	Var. 8425 to 8290	192			Avg. 8167
16	L8	42	Var. 5675 to 8425	192			Avg. 7242
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6375	240		6855
20	U2	33	240	4860	240		5340
20	U3	26	240	6375	240		6855
20	U4	17	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	28	192	4104	192		4488
16	U8	4	Var. 8425 to 8200	200	575		Avg. 8750
16	U9	24	Var. 5675 to 8425	200	600		Avg. 7850
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	39	1200	500	4160		5860
12	Z1	29	600	850	144		1594
12	S1	29	700	6050	240		6990
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

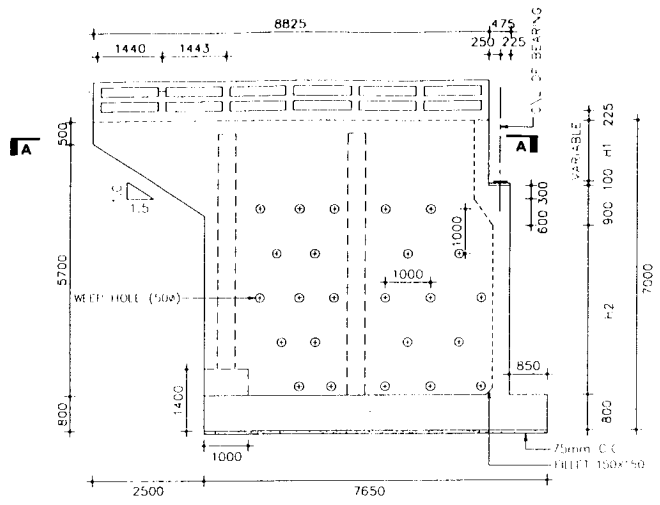
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 4.26m)

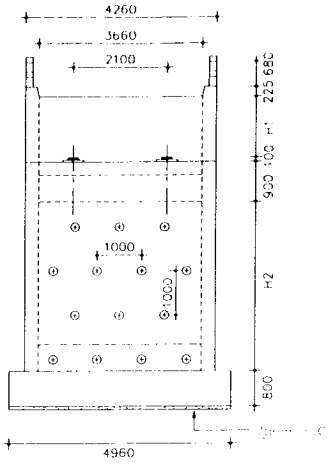
DAR | DRAWN BY :

CAD FILE REF : ABUT\6600660

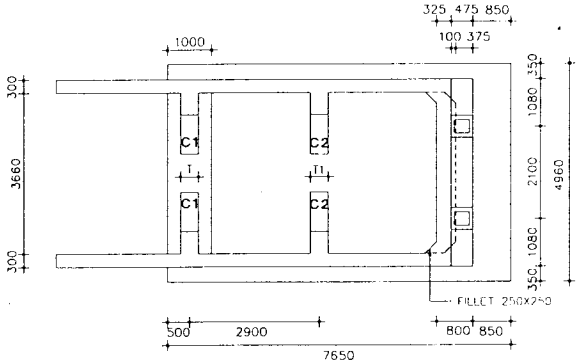
Web Copy



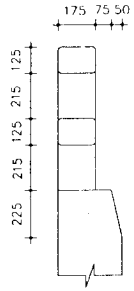
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

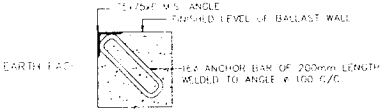
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	100	4200	315	
11500	100	4200	313	
11000	100	4200	311	
10500	100	4200	309	
10000	100	4200	307	
9500	900	4500	305	
9000	900	4500	303	
8500	900	4500	301	
8000	900	4500	299	
7500	750	4350	297	
7000	750	4350	295	NOT APPLICABLE
6500	750	4350	293	
6000	750	4350	291	
5500	400	4800	293	
5000	400	4800	291	
4500	350	4750	289	
4000	350	4750	287	
3500	325	4675	285	
3000	325	4675	283	
2500	275	4625	281	
2000	250	4600	279	
1500	250	4600	277	

TABLE-2

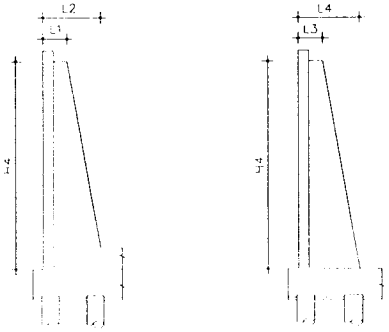
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500Ø	55	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

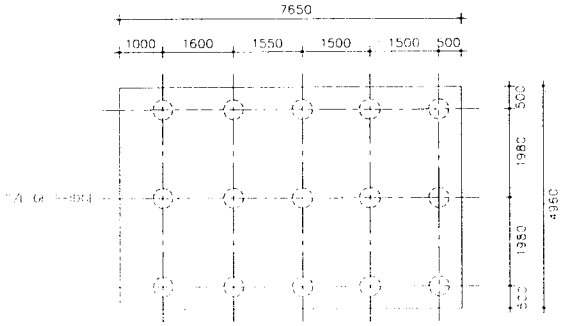
L1	L2	L3	L4	T	T1	H4
700	1600	775	1750	400	400	5900



NOSING AT ABUTMENT



COUNTERFORT C1 COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimeter unless otherwise specified.
2) [illegible] reaction are in kN.
3) For box culverts, the Slab will rest right on the Abutment Cap, hence Bearing [illegible] will not be required.
4) Weep hole shall be provided @ 1m c/c horizontally and vertically as shown in drawings. Filter media shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 7.0m , DECK WIDTH 4.26m)

DRAWN BY
CHECKED BY

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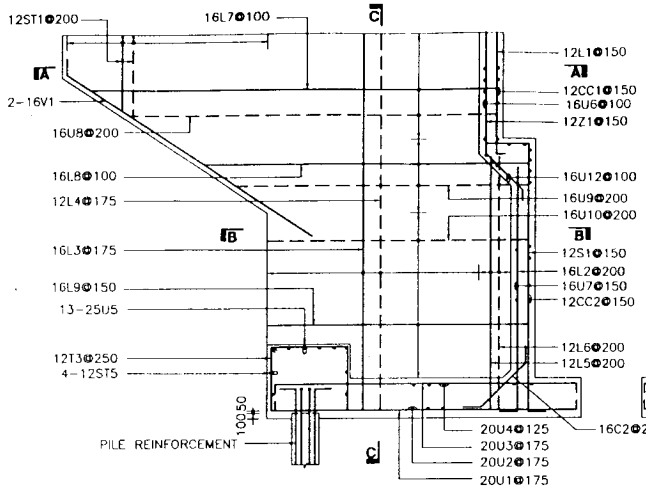
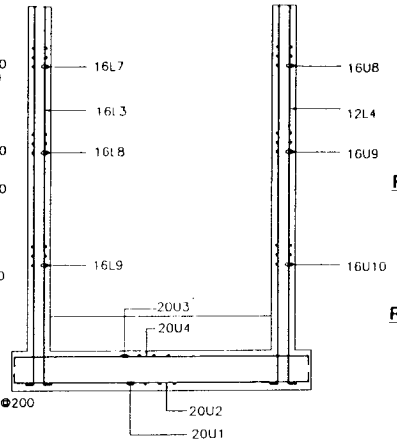
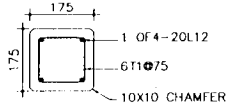
SHEET 2 OF 5	
SPAN RANGE : 1.5m TO 12.0m	
SIDE WALK: NO	



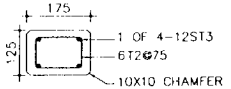
REINFORCEMENT DETAIL



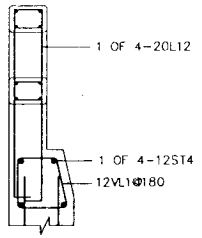
SECTION C-C



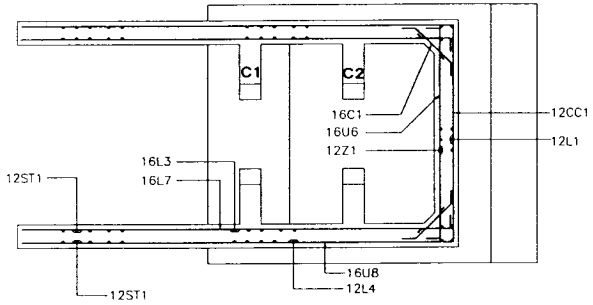
REINF. DETAIL OF POST



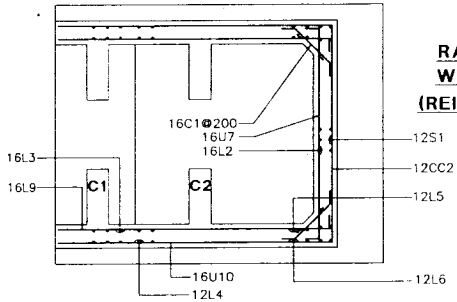
REINF. DETAIL OF RAILING



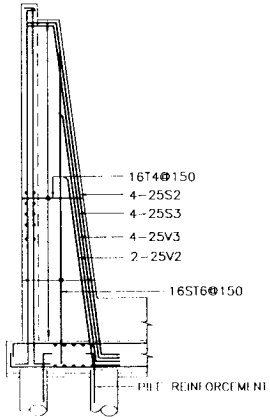
RAILING ON WING WALL (REINF. DETAIL)



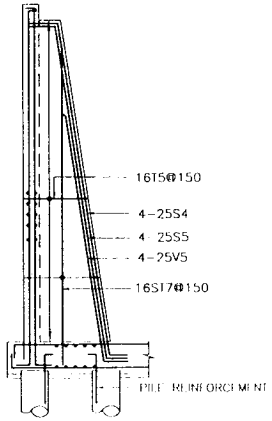
SECTION A-A



SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	1350	144			1494
16	L2	22	5150	192			5342
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 4850 to 5450	144			Avg. 5294
12	L6	6	Var. 4850 to 5450	144			Avg. 5294
16	L7	22	Var. 7825 to 8725	192			Avg. 8508
16	L8	24	Var. 6700 to 7825	192			Avg. 7455
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7550	240		8030
20	U2	45	240	4860	240		5340
20	U3	29	240	7550	240		8030
20	U4	54	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	30	192	4104	192		4488
16	U8	12	Var. 7825 to 8725	200	575		Avg. 9200
16	U9	14	Var. 6700 to 7825	200	625		Avg. 8088
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	37	1200	550	4160		5910
12	Z1	29	1350	836	144		2330
12	S1	29	700	5700	240		6640
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail -20mm, b) Post- 20mm, c) Curb -25mm, d) Wall -50mm, e) Base -50mm
7) For pile reinforcement see dwg no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File: ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0210702	

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SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	1250	144			1394
16	L2	22	5250	192			5442
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 4950 to 5550	144			Avg. 5394
12	L6	6	Var. 4950 to 5550	144			Avg. 5394
16	L7	20	Var. 7975 to 8725	192			Avg. 8617
16	L8	26	Var. 6700 to 7975	192			Avg. 7530
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7550	240		8030
20	U2	45	240	4860	240		5340
20	U3	29	240	7550	240		8030
20	U4	54	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	31	192	4104	192		4488
16	U8	12	Var. 7975 to 8725	200	575		Avg. 9250
16	U9	14	Var. 6700 to 7975	200	625		Avg. 8163
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	9	1200	450	4160		5810
12	CC2	37	1200	550	4160		5910
12	Z1	29	1250	836	144		2230
12	S1	29	700	5800	240		6740
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	1100	144			1244
16	L2	22	5400	192			5592
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 5100 to 5700	144			Avg. 5544
12	L6	6	Var. 5100 to 5700	144			Avg. 5544
16	L7	18	Var. 8200 to 8725	192			Avg. 8742
16	L8	30	Var. 6700 to 8200	192			Avg. 7642
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7550	240		8030
20	U2	45	240	4860	240		5340
20	U3	29	240	7550	240		8030
20	U4	54	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	12	192	4104	192		4488
16	U7	32	192	4104	192		4488
16	U8	10	Var. 8200 to 8725	200	575		Avg. 9395
16	U9	16	Var. 6700 to 8200	200	625		Avg. 8275
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	8	1200	450	4160		5810
12	CC2	38	1200	550	4160		5910
12	Z1	29	1100	836	144		2080
12	S1	29	700	5950	240		6890
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	750	144			894
16	L2	22	5750	192			5942
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 5450 to 6050	144			Avg. 5894
12	L6	6	Var. 5450 to 6050	144			Avg. 5894
16	L7	10	Var. 8725 to 8725	192			Avg. 8917
16	L8	36	Var. 6700 to 8725	192			Avg. 7905
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7550	240		8030
20	U2	45	240	4860	240		5340
20	U3	29	240	7550	240		8030
20	U4	54	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	9	192	4104	192		4488
16	U7	34	192	4104	192		4488
16	U8	6	Var. 8725 to 8725	200	575		Avg. 9500
16	U9	20	Var. 6700 to 8725	200	625		Avg. 8538
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	6	1200	450	4160		5810
12	CC2	41	1200	550	4160		5910
12	Z1	29	750	836	144		1730
12	S1	29	700	6300	240		7240
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 4.26m)

DAR :	ISSUED BY :
CAD FILE REF : ABUT/R0210/03	

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SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	700	144			844
16	L2	22	5800	192			5992
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 5500 to 6100	144			Avg. 5944
12	L6	6	Var. 5500 to 6100	144			Avg. 5944
16	L7	8	Var. 8800 to 8725	192			Avg. 8880
16	L8	38	Var. 6700 to 8800	192			Avg. 7942
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7550	240		8030
20	U2	45	240	4860	240		5340
20	U3	29	240	7550	240		8030
20	U4	54	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	35	192	4104	192		4488
16	U8	4	Var. 8800 to 8725	200	575		Avg. 9425
16	U9	20	Var. 6700 to 8800	200	625		Avg. 8575
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	41	1200	550	4160		5910
12	Z1	29	700	836	144		1680
12	S1	29	700	6350	240		7290
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	675	144			819
16	L2	22	5825	192			6017
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 5525 to 6125	144			Avg. 5969
12	L6	6	Var. 5525 to 6125	144			Avg. 5969
16	L7	8	Var. 8838 to 8725	192			Avg. 8861
16	L8	38	Var. 6700 to 8838	192			Avg. 7961
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7550	240		8030
20	U2	45	240	4860	240		5340
20	U3	29	240	7550	240		8030
20	U4	54	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	35	192	4104	192		4488
16	U8	4	Var. 8838 to 8725	200	575		Avg. 9387
16	U9	20	Var. 6700 to 8838	200	625		Avg. 8594
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	41	1200	550	4160		5910
12	Z1	29	675	836	144		1655
12	S1	29	700	6375	240		7315
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0210704	

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SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	625	144			769
16	L2	22	5875	192			6067
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 5575 to 6175	144			Avg. 6019
12	L6	6	Var. 5575 to 6175	144			Avg. 6019
16	L7	6	Var. 8913 to 8725	192			Avg. 8729
16	L8	38	Var. 6700 to 8913	192			Avg. 7999
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7550	240		8030
20	U2	45	240	4860	240		5340
20	U3	29	240	7550	240		8030
20	U4	54	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	35	192	4104	192		4488
16	U8	4	Var. 8913 to 8725	200	575		Avg. 9312
16	U9	20	Var. 6700 to 8913	200	625		Avg. 8632
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	41	1200	550	4160		5910
12	Z1	29	625	836	144		1605
12	S1	29	700	6425	240		7365
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	600	144			744
16	L2	22	5900	192			6092
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 5600 to 6200	144			Avg. 6044
12	L6	6	Var. 5600 to 6200	144			Avg. 6044
16	L7	6	Var. 8950 to 8725	192			Avg. 8692
16	L8	40	Var. 6700 to 8950	192			Avg. 8017
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7550	240		8030
20	U2	45	240	4860	240		5340
20	U3	29	240	7550	240		8030
20	U4	54	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	35	192	4104	192		4488
16	U8	4	Var. 8950 to 8725	200	575		Avg. 9275
16	U9	22	Var. 6700 to 8950	200	625		Avg. 8650
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	42	1200	550	4160		5910
12	Z1	29	600	836	144		1580
12	S1	29	700	6450	240		7390
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
12	W1	2	325	535	329		1189
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

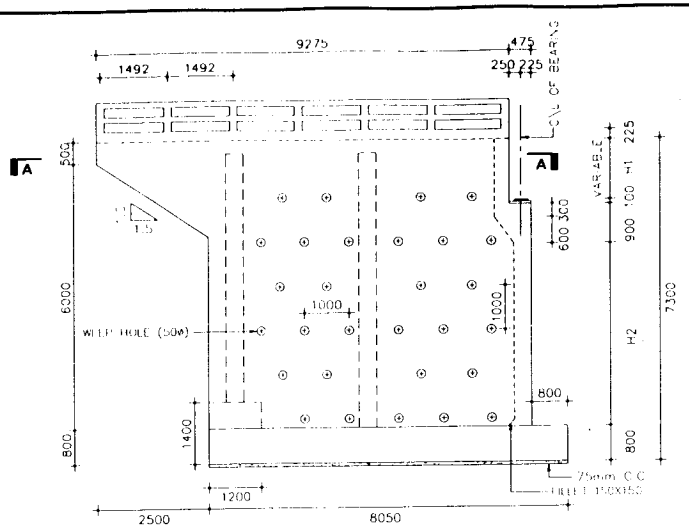
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 4.26m)

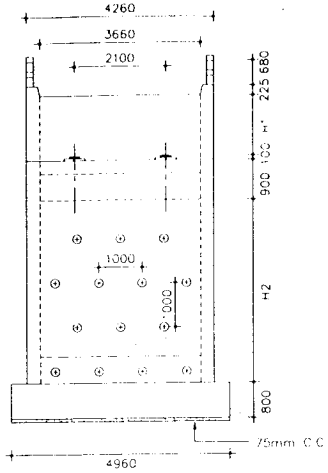
DATE :
ISSUED BY :
CAD FILE REF : ABUT/R0210705

Web Copy

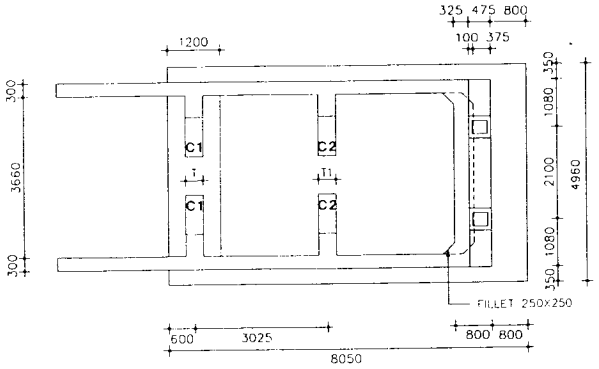
SHEET 1 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO



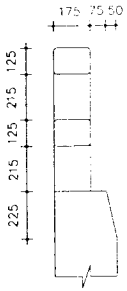
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

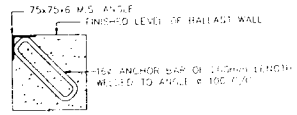
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	4500	340	
11500	1000	4500	338	
11000	1000	4500	336	
10500	1000	4500	334	
10000	1000	4500	332	
9500	900	4600	330	
9000	900	4600	328	
8500	900	4600	326	
8000	900	4600	324	
7500	750	4750	322	
7000	750	4750	320	NOT APPLICABLE
6500	750	4750	318	
6000	750	4750	316	
5500	400	5100	314	
5000	400	5100	312	
4500	350	5150	310	
4000	350	5150	308	
3500	325	5175	306	
3000	325	5175	304	
2500	275	5225	302	
2000	250	5250	300	
1500	250	5250	298	

TABLE-2

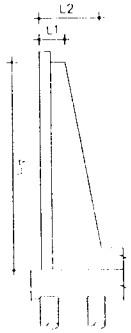
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500Ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

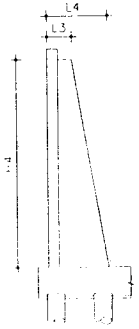
L1	L2	L3	L4	T	T1	H4
200	1695	700	1700	400	400	6200



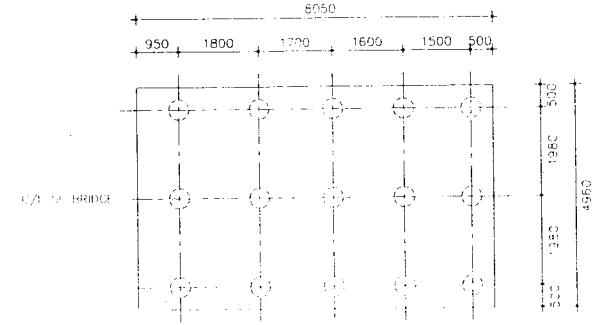
NOSING AT ABUTMENT



COUNTERFORT C1



COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) The reaction are in kN.
3) For Type-B Abutments, the Slab will rest over the Abutment Cap. Hence Bearing Seating Pad will not be required.
4) Weep hole shall be provided at 3000mm c/c horizontally and vertically as shown in drawing. Filter material is to be provided at the back of wall.

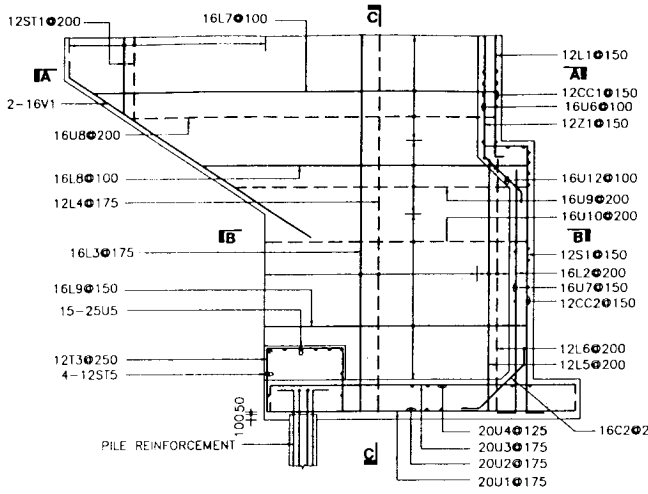
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 7.3m , DECK WIDTH 4.26m)

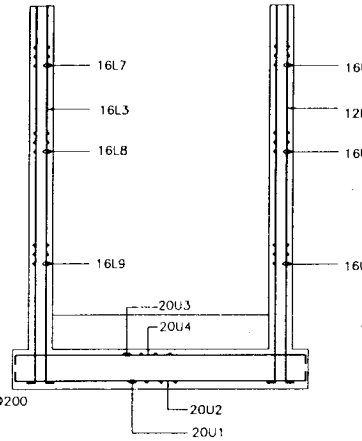
DATE :

Web Copy
FA-131

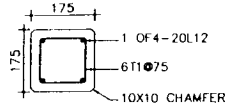
SHEET 2 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO



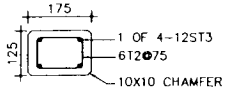
REINFORCEMENT DETAIL



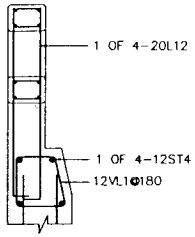
SECTION C-C



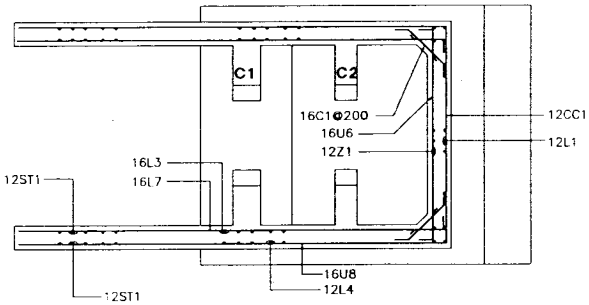
REINF. DETAIL OF POST



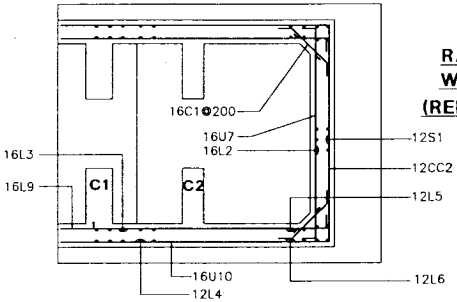
REINF. DETAIL OF RAILING



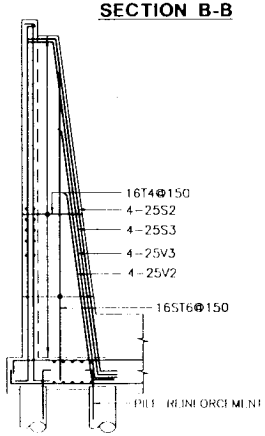
RAILING ON WING WALL (REINF. DETAIL)



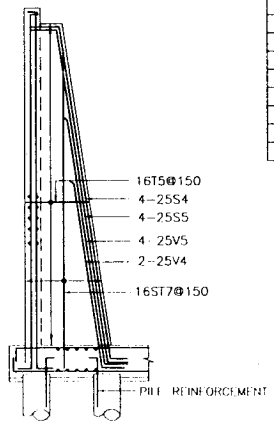
SECTION A-A



SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	1350	144			1494
16	L2	22	5450	192			5642
16	L3	74	7100	192			7292
12	L4	74	7100	144			7244
12	L5	6	Var. 5150 to 5750	144			Avg. 5594
12	L6	6	Var. 5150 to 5750	144			Avg. 5594
16	L7	22	Var. 8275 to 9175	192			Avg. 8958
16	L8	24	Var. 7150 to 8275	192			Avg. 7905
16	L9	56	7150	192			7342
20	L12	56	971	120			1091
20	U1	29	240	7950	240		8430
20	U2	47	240	4860	240		5340
20	U3	29	240	7950	240		8430
20	U4	55	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	32	192	4104	192		4488
16	U8	12	Var. 8275 to 9175	200	575		Avg. 9650
16	U9	14	Var. 7150 to 8275	200	625		Avg. 8538
16	U10	42	7150	200	550		7900
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	39	1200	550	4160		5910
12	Z1	29	1350	836	144		2330
12	S1	29	700	6000	240		6940
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4374			4624
6	T1	140	306	306			612
6	T2	456	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail- 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF. : ABUT/R0210732	

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SHEET 3 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	1250	144			1394
16	L2	22	5550	192			5742
16	L3	74	7100	192			7292
12	L4	74	7100	144			7244
12	L5	6	Var. 5250 to 5850	144			Avg. 5694
12	L6	6	Var. 5250 to 5850	144			Avg. 5694
16	L7	20	Var. 8425 to 9175	192			Avg. 9067
16	L8	26	Var. 7150 to 8425	192			Avg. 7980
16	L9	56	7150	192			7342
20	L12	56	971	120			1091
20	U1	29	240	7950	240		8430
20	U2	47	240	4860	240		5340
20	U3	29	240	7950	240		8430
20	U4	55	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	33	192	4104	192		4488
16	U8	12	Var. 8425 to 9175	200	575		Avg. 9700
16	U9	14	Var. 7150 to 8425	200	625		Avg. 8613
16	U10	42	7150	200	550		7900
16	U12	12	192	4160	192		4544
12	CC1	9	1200	450	4160		5810
12	CC2	39	1200	550	4160		5910
12	Z1	29	1250	836	144		2230
12	S1	29	700	6100	240		7040
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4374			4624
6	T1	140	306	306			612
6	T2	456	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	1100	144			1244
16	L2	22	5700	192			5892
16	L3	74	7100	192			7292
12	L4	74	7100	144			7244
12	L5	6	Var. 5400 to 6000	144			Avg. 5844
12	L6	6	Var. 5400 to 6000	144			Avg. 5844
16	L7	18	Var. 8650 to 9175	192			Avg. 9192
16	L8	30	Var. 7150 to 8650	192			Avg. 8092
16	L9	56	7150	192			7342
20	Lt2	56	971	120			1091
20	U1	29	240	7950	240		8430
20	U2	47	240	4860	240		5340
20	U3	29	240	7950	240		8430
20	U4	55	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	12	192	4104	192		4488
16	U7	34	192	4104	192		4488
16	U8	10	Var. 8650 to 9175	200	575		Avg. 9845
16	U9	16	Var. 7150 to 8650	200	625		Avg. 8725
16	U10	42	7150	200	550		7900
16	U12	12	192	4160	192		4544
12	CC1	8	1200	450	4160		5810
12	CC2	40	1200	550	4160		5910
12	Z1	29	1100	836	144		2080
12	S1	29	700	6250	240		7190
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4374			4624
6	T1	140	306	306			612
6	T2	456	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	750	144			894
16	L2	22	6050	192			6242
16	L3	74	7100	192			7292
12	L4	74	7100	144			7244
12	L5	6	Var. 5750 to 6350	144			Avg. 6194
12	L6	6	Var. 5750 to 6350	144			Avg. 6194
16	L7	10	Var. 9175 to 9175	192			Avg. 9367
16	L8	36	Var. 7150 to 9175	192			Avg. 8355
16	L9	56	7150	192			7342
20	L12	56	971	120			1091
20	U1	29	240	7950	240		8430
20	U2	47	240	4860	240		5340
20	U3	29	240	7950	240		8430
20	U4	55	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	9	192	4104	192		4488
16	U7	36	192	4104	192		4488
16	U8	6	Var. 9175 to 9175	200	575		Avg. 9950
16	U9	20	Var. 7150 to 9175	200	625		Avg. 8988
16	U10	42	7150	200	550		7900
16	U12	12	192	4160	192		4544
12	CC1	6	1200	450	4160		5810
12	CC2	43	1200	550	4160		5910
12	Z1	29	750	836	144		1730
12	S1	29	700	6600	240		7540
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4374			4624
6	T1	140	306	306			612
6	T2	456	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0210733	

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SHEET 4 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	700	144			844
16	L2	22	6100	192			6292
16	L3	74	7100	192			7292
12	L4	74	7100	144			7244
12	L5	6	Var. 5800 to 6400	144			Avg. 6244
12	L6	6	Var. 5800 to 6400	144			Avg. 6244
16	L7	8	Var. 9250 to 9175	192			Avg. 9330
16	L8	38	Var. 7150 to 9250	192			Avg. 8392
16	L9	56	7150	192			7342
20	L12	56	971	120			1091
20	U1	29	240	7950	240		8430
20	U2	47	240	4860	240		5340
20	U3	29	240	7950	240		8430
20	U4	55	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	37	192	4104	192		4488
16	U8	4	Var. 9250 to 9175	200	575		Avg. 9875
16	U9	20	Var. 7150 to 9250	200	625		Avg. 9025
16	U10	42	7150	200	550		7900
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	43	1200	550	4160		5910
12	Z1	29	700	836	144		1680
12	S1	29	700	6650	240		7590
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4374			4624
6	T1	140	306	306			612
6	T2	456	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	675	144			819
16	L2	22	6125	192			6317
16	L3	74	7100	192			7292
12	L4	74	7100	144			7244
12	L5	6	Var. 5825 to 6425	144			Avg. 6269
12	L6	6	Var. 5825 to 6425	144			Avg. 6269
16	L7	8	Var. 9288 to 9175	192			Avg. 9311
16	L8	38	Var. 7150 to 9288	192			Avg. 8411
16	L9	56	7150	192			7342
20	L12	56	971	120			1091
20	U1	29	240	7950	240		8430
20	U2	47	240	4860	240		5340
20	U3	29	240	7950	240		8430
20	U4	55	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	37	192	4104	192		4488
16	U8	4	Var. 9288 to 9175	200	575		Avg. 9837
16	U9	20	Var. 7150 to 9288	200	625		Avg. 9044
16	U10	42	7150	200	550		7900
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	43	1200	550	4160		5910
12	Z1	29	675	836	144		1655
12	S1	29	700	6675	240		7615
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4374			4624
6	T1	140	306	306			612
6	T2	456	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R0210754

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FA-134

SHEET 5 OF 5
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	625	144			769
16	L2	22	6175	192			6367
16	L3	74	7100	192			7292
12	L4	74	7100	144			7244
12	L5	6	Var. 5875 to 6475	144			Avg. 6319
12	L6	6	Var. 5875 to 6475	144			Avg. 6319
16	L7	6	Var. 9363 to 9175	192			Avg. 9179
16	L8	38	Var. 7150 to 9363	192			Avg. 8449
16	L9	56	7150	192			7342
20	L12	56	971	120			1091
20	U1	29	240	7950	240		8430
20	U2	47	240	4860	240		5340
20	U3	29	240	7950	240		8430
20	U4	55	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	37	192	4104	192		4488
16	U8	4	Var. 9363 to 9175	200	575		Avg. 9762
16	U9	20	Var. 7150 to 9363	200	625		Avg. 9082
16	U10	42	7150	200	550		7900
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	43	1200	550	4160		5910
12	Z1	29	625	836	144		1605
12	S1	29	700	6725	240		7665
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4374			4624
6	T1	140	306	306			612
6	T2	456	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	600	144			744
16	L2	22	6200	192			6392
16	L3	74	7100	192			7292
12	L4	74	7100	144			7244
12	L5	6	Var. 5900 to 6500	144			Avg. 6344
12	L6	6	Var. 5900 to 6500	144			Avg. 6344
16	L7	6	Var. 9400 to 9175	192			Avg. 9142
16	L8	40	Var. 7150 to 9400	192			Avg. 8467
16	L9	56	7150	192			7342
20	L12	56	971	120			1091
20	U1	29	240	7950	240		8430
20	U2	47	240	4860	240		5340
20	U3	29	240	7950	240		8430
20	U4	55	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	37	192	4104	192		4488
16	U8	4	Var. 9400 to 9175	200	575		Avg. 9725
16	U9	22	Var. 7150 to 9400	200	625		Avg. 9100
16	U10	42	7150	200	550		7900
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	44	1200	550	4160		5910
12	Z1	29	600	836	144		1580
12	S1	29	700	6750	240		7690
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4374			4624
6	T1	140	306	306			612
6	T2	456	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

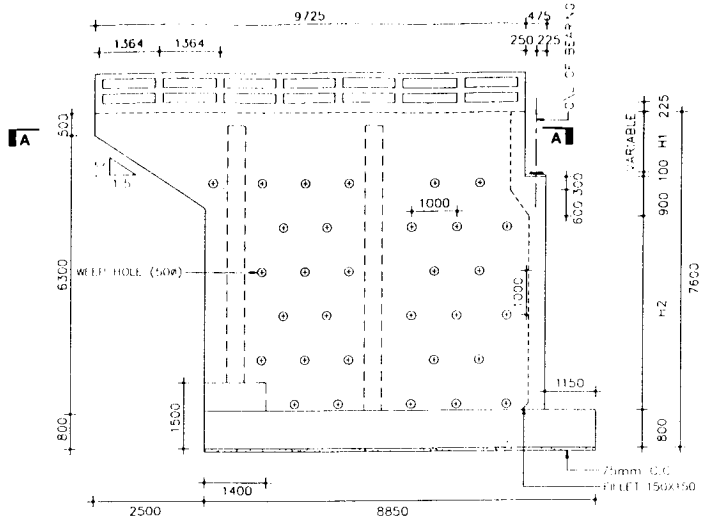
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 4.26m)

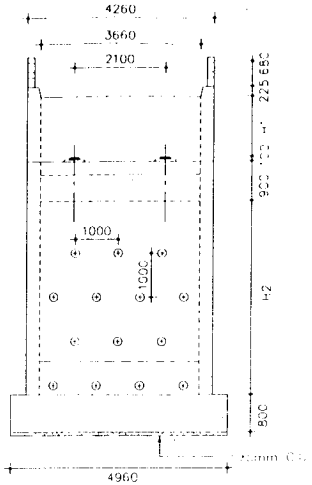
DATE :
ISSUED BY :
CAD FILE REF : ABUT/R02107.55

Web Copy

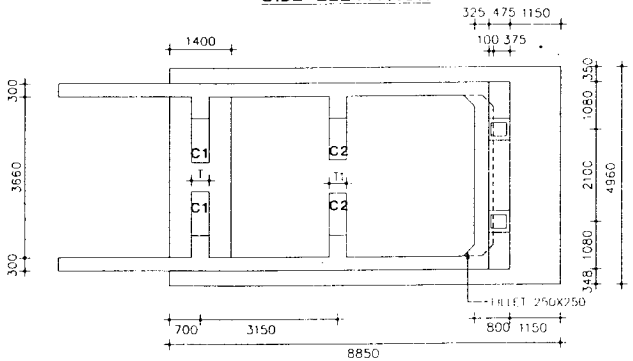
SHEET NO. 5
SPAN RANGE : 11m TO 12m
SIDE WALK : NO



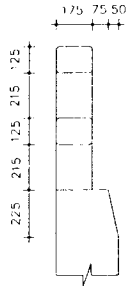
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

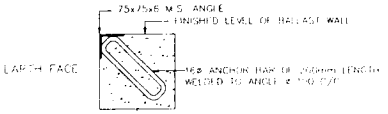
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	4800	355	
11500	1000	4800	353	
11000	1000	4800	351	
10500	1000	4800	349	
10000	1000	4800	347	
9500	900	4900	345	
9000	900	4900	343	
8500	900	4900	341	
8000	900	4900	299	
7500	750	5050	247	
7000	750	5050	245	NOT APPLICABLE
6500	750	5050	243	
6000	750	5050	241	
5500	400	5400	293	
5000	400	5400	291	
4500	350	5450	289	
4000	350	5450	287	
3500	325	5475	285	
3000	325	5475	283	
2500	275	5525	281	
2000	250	5550	279	
1500	250	5550	277	

TABLE-2

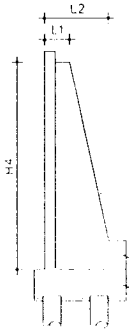
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500Ø	55	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

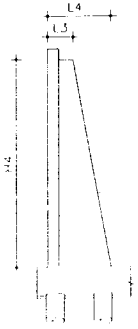
L1	L2	L3	L4	T	T1	H4
700	1710	700	1750	400	400	6500



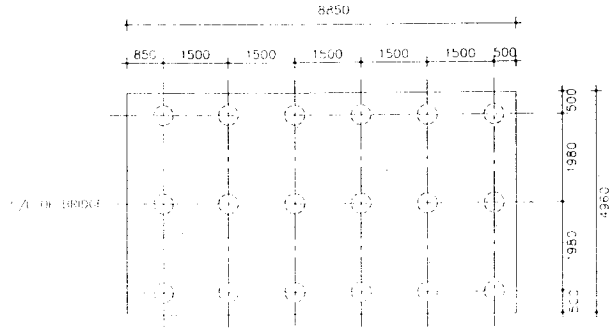
NOSING AT ABUTMENT



COUNTERFORT C1



COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in KN.
3) For Slab Culverts, the Slab will rest right on the Abutment & hence Bearing/Bearing Pad will not be required.
4) Weep hole shall be provided at 1800mm horizontally and vertically or as shown in drawings. filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 7.6m , DECK WIDTH 4.26m)

DATE
CHECKED BY
CALCULATED BY

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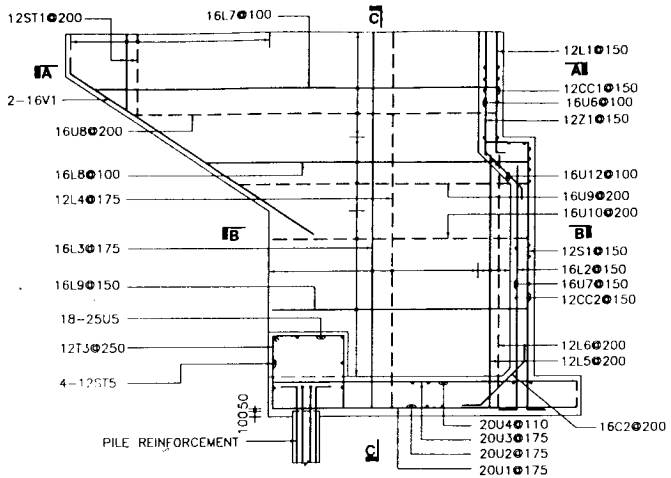
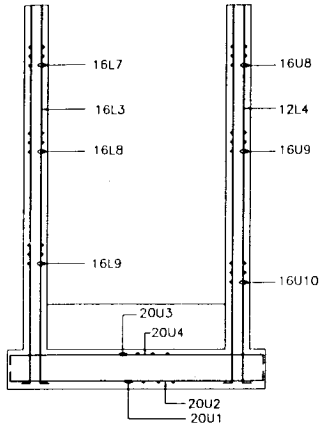
FA-136

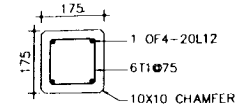
SHEET 2 OF 5
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO



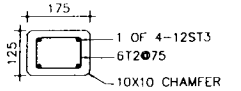
REINFORCEMENT DETAIL



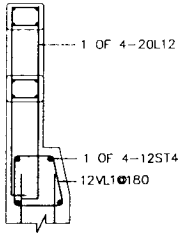
SECTION C-C



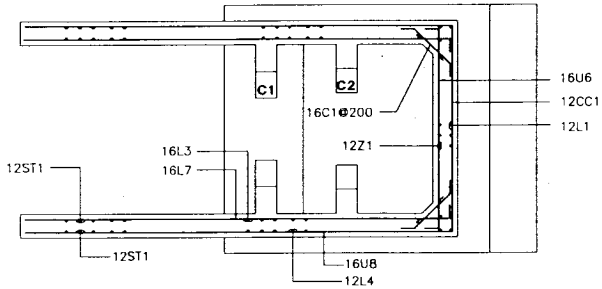
REINF. DETAIL OF POST



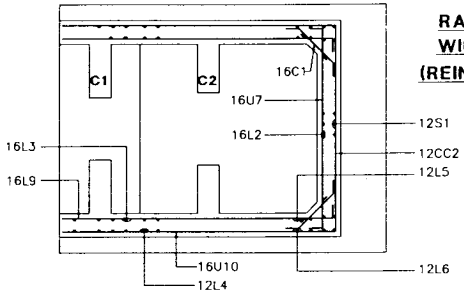
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



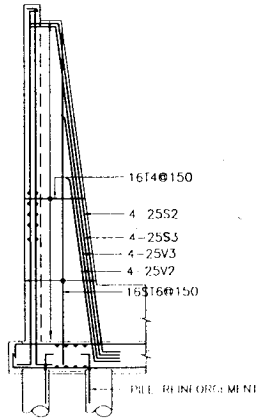
SECTION A-A



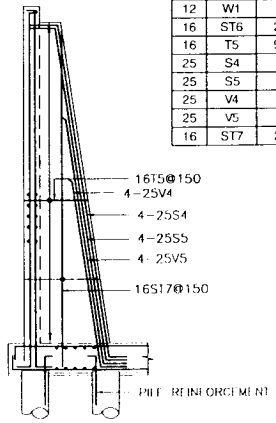
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	29	1350	144			1494
16	L2	29	5750	192			5942
16	L3	80	7400	192			7592
12	L4	80	7400	144			7544
12	L5	6	Var. 5450 to 6050	144			Avg. 5894
12	L6	6	Var. 5450 to 6050	144			Avg. 5894
16	L7	22	Var. 8725 to 9625	192			Avg. 9408
16	L8	24	Var. 7600 to 8725	192			Avg. 8355
16	L9	60	7600	192			7792
20	L12	64	971	120			1091
20	U1	29	240	8750	240		9230
20	U2	51	240	4860	240		5340
20	U3	29	240	8750	240		9230
20	U4	68	240	4860	240		5340
25	U5	18	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	34	192	4104	192		4488
16	U8	12	Var. 8725 to 9625	200	575		Avg. 10100
16	U9	14	Var. 7600 to 8725	200	625		Avg. 8988
16	U10	46	7600	200	550		8350
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	41	1200	550	4160		5910
12	Z1	29	1350	836	144		2330
12	S1	29	700	6300	240		7240
16	C1	70	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4430			4680
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	T3	16	2672	2672			5344
12	ST5	4	4160				4160
16	T4	90	Var. 1296 to 3316	696			Avg. 3002
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1051 to 7364				Avg. 3155
16	T5	90	Var. 1296 to 3396	696			Avg. 3042
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	24	Var. 1009 to 7360				Avg. 3126



COUNTERFORT C1



COUNTERFORT C2

REINFORCEMENT DETAILS OF COUNTERFORT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall-50mm, e) Base 50mm
7) For pile reinforcement see dwg. no. ABUT\R0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210762	

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FA-137

SHEET 3 OF 5
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	29	1250	144			1394
16	L2	29	5850	192			6042
16	L3	80	7400	192			7592
12	L4	80	7400	144			7544
12	L5	6	Var. 5550 to 6150	144			Avg. 5994
12	L6	6	Var. 5550 to 6150	144			Avg. 5994
16	L7	20	Var. 8875 to 9625	192			Avg. 9517
16	L8	26	Var. 7600 to 8875	192			Avg. 8430
16	L9	60	7600	192			7792
20	L12	64	971	120			1091
20	U1	29	240	8750	240		9230
20	U2	51	240	4860	240		5340
20	U3	29	240	8750	240		9230
20	U4	68	240	4860	240		5340
25	U5	18	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	35	192	4104	192		4488
16	U8	12	Var. 8875 to 9625	200	575		Avg. 10150
16	U9	14	Var. 7600 to 8875	200	625		Avg. 9063
16	U10	46	7600	200	550		8350
16	U12	12	192	4160	192		4544
12	CC1	9	1200	450	4160		5810
12	CC2	41	1200	550	4160		5910
12	Z1	29	1250	836	144		2230
12	S1	29	700	6400	240		7340
16	C1	70	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4430			4680
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	T3	16	2672	2672			5344
12	ST5	4	4160				4160
16	T4	90	Var. 1296 to 3316	696			Avg. 3002
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1051 to 7364				Avg. 3155
16	T5	90	Var. 1296 to 3396	696			Avg. 3042
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	24	Var 1009 to 7360				Avg. 3126

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	29	1100	144			1244
16	L2	29	6000	192			6192
16	L3	80	7400	192			7592
12	L4	80	7400	144			7544
12	L5	6	Var. 5700 to 6300	144			Avg. 6144
12	L6	6	Var. 5700 to 6300	144			Avg. 6144
16	L7	18	Var. 9100 to 9625	192			Avg. 9642
16	L8	30	Var. 7600 to 9100	192			Avg. 8542
16	L9	60	7600	192			7792
20	L12	64	971	120			1091
20	U1	29	240	8750	240		9230
20	U2	51	240	4860	240		5340
20	U3	29	240	8750	240		9230
20	U4	68	240	4860	240		5340
25	U5	18	300	4860	300		5460
16	U6	12	192	4104	192		4488
16	U7	36	192	4104	192		4488
16	U8	10	Var. 9100 to 9625	200	575		Avg. 10295
16	U9	16	Var. 7600 to 9100	200	625		Avg. 9175
16	U10	46	7600	200	550		8350
16	U12	12	192	4160	192		4544
12	CC1	8	1200	450	4160		5810
12	CC2	42	1200	550	4160		5910
12	Z1	29	1100	836	144		2080
12	S1	29	700	6550	240		7490
16	C1	70	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4430			4680
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	T3	16	2672	2672			5344
12	ST5	4	4160				4160
16	T4	90	Var. 1296 to 3316	696			Avg. 3002
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1051 to 7364				Avg. 3155
16	T5	90	Var. 1296 to 3396	696			Avg. 3042
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	24	Var 1009 to 7360				Avg. 3126

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	29	750	144			894
16	L2	29	6350	192			6542
16	L3	80	7400	192			7592
12	L4	80	7400	144			7544
12	L5	6	Var. 6050 to 6650	144			Avg. 6494
12	L6	6	Var. 6050 to 6650	144			Avg. 6494
16	L7	10	Var. 9625 to 9625	192			Avg. 9817
16	L8	36	Var. 7600 to 9625	192			Avg. 8805
16	L9	60	7600	192			7792
20	L12	64	971	120			1091
20	U1	29	240	8750	240		9230
20	U2	51	240	4860	240		5340
20	U3	29	240	8750	240		9230
20	U4	68	240	4860	240		5340
25	U5	18	300	4860	300		5460
16	U6	9	192	4104	192		4488
16	U7	38	192	4104	192		4488
16	U8	6	Var. 9625 to 9625	200	575		Avg. 10400
16	U9	20	Var. 7600 to 9625	200	625		Avg. 9438
16	U10	46	7600	200	550		8350
16	U12	12	192	4160	192		4544
12	CC1	6	1200	450	4160		5810
12	CC2	45	1200	550	4160		5910
12	Z1	29	750	836	144		1730
12	S1	29	700	6900	240		7840
16	C1	70	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4430			4680
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	T3	16	2672	2672			5344
12	ST5	4	4160				4160
16	T4	90	Var. 1296 to 3316	696			Avg. 3002
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1051 to 7364				Avg. 3155
16	T5	90	Var. 1296 to 3396	696			Avg. 3042
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	24	Var. 1009 to 7360				Avg. 3126

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210763	

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SHEET 4 OF 5
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	29	700	144			844
16	L2	29	6400	192			6592
16	L3	80	7400	192			7592
12	L4	80	7400	144			7544
12	L5	6	Var. 6100 to 6700	144			Avg. 6544
12	L6	6	Var. 6100 to 6700	144			Avg. 6544
16	L7	8	Var. 9700 to 9625	192			Avg. 9780
16	L8	38	Var. 7600 to 9700	192			Avg. 8842
16	L9	60	7600	192			7792
20	L12	64	971	120			1091
20	U1	29	240	8750	240		9230
20	U2	51	240	4860	240		5340
20	U3	29	240	8750	240		9230
20	U4	68	240	4860	240		5340
25	U5	18	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	39	192	4104	192		4488
16	U8	4	Var. 9700 to 9625	200	575		Avg. 10325
16	U9	20	Var. 7600 to 9700	200	625		Avg. 9475
16	U10	46	7600	200	550		8350
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	45	1200	550	4160		5910
12	Z1	29	700	836	144		1680
12	S1	29	700	6950	240		7890
16	C1	70	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4430			4680
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	T3	16	2672	2672			5344
12	ST5	4	4160				4160
16	T4	90	Var. 1296 to 3316	696			Avg. 3002
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1051 to 7364				Avg. 3155
16	T5	90	Var. 1296 to 3396	696			Avg. 3042
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	24	Var. 1009 to 7360				Avg. 3126

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	29	675	144			819
16	L2	29	6425	192			6617
16	L3	80	7400	192			7592
12	L4	80	7400	144			7544
12	L5	6	Var. 6125 to 6725	144			Avg. 6569
12	L6	6	Var. 6125 to 6725	144			Avg. 6569
16	L7	8	Var. 9738 to 9625	192			Avg. 9761
16	L8	38	Var. 7600 to 9738	192			Avg. 8861
16	L9	60	7600	192			7792
20	L12	64	971	120			1091
20	U1	29	240	8750	240		9230
20	U2	51	240	4860	240		5340
20	U3	29	240	8750	240		9230
20	U4	68	240	4860	240		5340
25	U5	18	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	39	192	4104	192		4488
16	U8	4	Var. 9738 to 9625	200	575		Avg. 10287
16	U9	20	Var. 7600 to 9738	200	625		Avg. 9494
16	U10	46	7600	200	550		8350
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	45	1200	550	4160		5910
12	Z1	29	675	836	144		1655
12	S1	29	700	6975	240		7915
16	C1	70	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4430			4680
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	T3	16	2672	2672			5344
12	ST5	4	4160				4160
16	T4	90	Var. 1296 to 3316	696			Avg. 3002
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST6	24	Var 1051 to 7364				Avg. 3155
16	T5	90	Var. 1296 to 3396	696			Avg. 3042
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	24	Var. 1009 to 7360				Avg. 3126

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210764	

Web Copy

SHEET 5 OF 5
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	29	625	144			769
16	L2	29	6475	192			6667
16	L3	80	7400	192			7592
12	L4	80	7400	144			7544
12	L5	6	Var. 6175 to 6775	144			Avg. 6619
12	L6	6	Var. 6175 to 6775	144			Avg. 6619
16	L7	6	Var. 9813 to 9625	192			Avg. 9629
16	L8	38	Var. 7600 to 9813	192			Avg. 8899
16	L9	60	7600	192			7792
20	L12	64	971	120			1091
20	U1	29	240	8750	240		9230
20	U2	51	240	4860	240		5340
20	U3	29	240	8750	240		9230
20	U4	68	240	4860	240		5340
25	U5	18	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	39	192	4104	192		4488
16	U8	4	Var. 9813 to 9625	200	575		Avg. 10212
16	U9	20	Var. 7600 to 9813	200	625		Avg. 9532
16	U10	46	7600	200	550		8350
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	45	1200	550	4160		5910
12	Z1	29	625	836	144		1605
12	S1	29	700	7025	240		7965
16	C1	70	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4430			4680
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	T3	16	2672	2672			5344
12	ST5	4	4160				4160
16	T4	90	Var. 1296 to 3316	696			Avg. 3002
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1051 to 7364				Avg. 3155
16	T5	90	Var. 1296 to 3396	696			Avg. 3042
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	24	Var. 1009 to 7360				Avg. 3126

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	29	600	144			744
16	L2	29	6500	192			6692
16	L3	80	7400	192			7592
12	L4	80	7400	144			7544
12	L5	6	Var. 6200 to 6800	144			Avg. 6644
12	L6	6	Var. 6200 to 6800	144			Avg. 6644
16	L7	6	Var. 9850 to 9625	192			Avg. 9592
16	L8	40	Var. 7600 to 9850	192			Avg. 8917
16	L9	60	7600	192			7792
20	L12	64	971	120			1091
20	U1	29	240	8750	240		9230
20	U2	51	240	4860	240		5340
20	U3	29	240	8750	240		9230
20	U4	68	240	4860	240		5340
25	U5	18	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	39	192	4104	192		4488
16	U8	4	Var. 9850 to 9625	200	575		Avg. 10175
16	U9	22	Var. 7600 to 9850	200	625		Avg. 9550
16	U10	46	7600	200	550		8350
16	U12	12	192	4160	192		4544
12	CC1	5	1200	450	4160		5810
12	CC2	46	1200	550	4160		5910
12	Z1	29	600	836	144		1580
12	S1	29	700	7050	240		7990
16	C1	70	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4430			4680
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	T3	16	2672	2672			5344
12	ST5	4	4160				4160
16	T4	90	Var. 1296 to 3316	696			Avg. 3002
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3559			3934
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1051 to 7364				Avg. 3155
16	T5	90	Var. 1296 to 3396	696			Avg. 3042
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	24	Var. 1009 to 7360				Avg. 3126

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210765	

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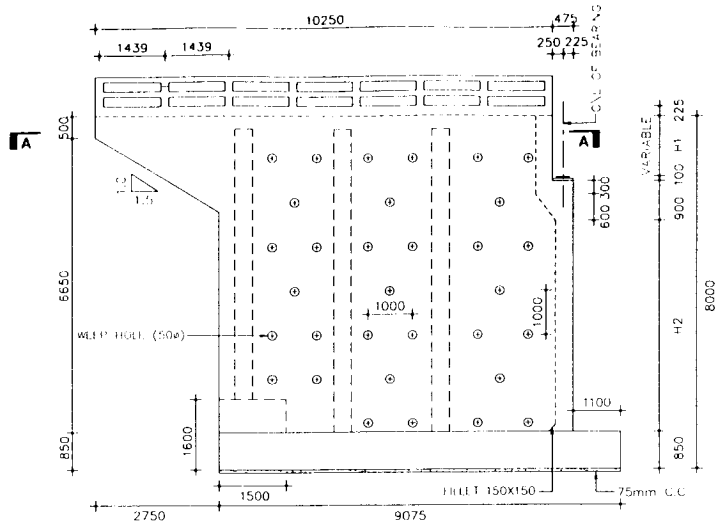
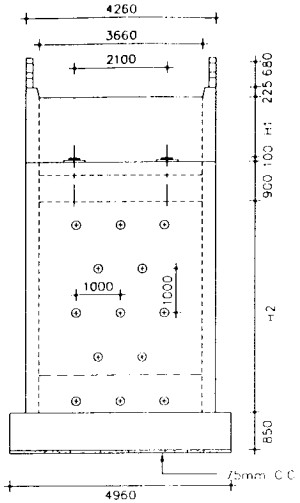
FA-140

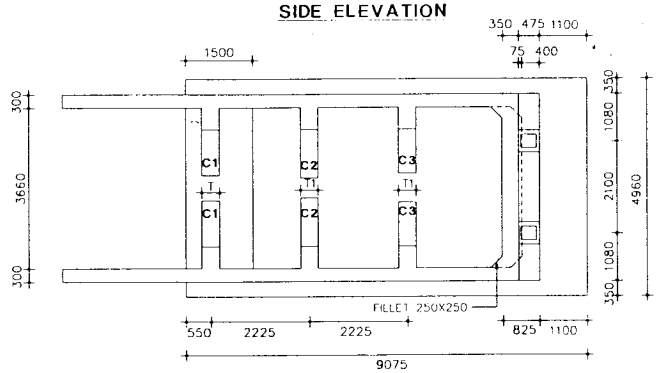
SHEET 1 OF 5
SPAN RANGE : 1.5m TO 12m
SIDE WALK : NO



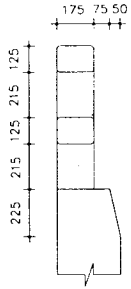
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

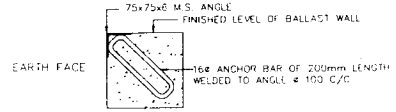
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	5150	340	
11500	1000	5150	338	
11000	1000	5150	336	
10500	1000	5150	334	
10000	1000	5150	332	
9500	900	5250	330	
9000	900	5250	328	
8500	900	5250	326	
8000	900	5250	324	
7500	750	5400	322	
7000	750	5400	320	
6500	750	5400	318	NOT APPLICABLE
6000	750	5400	316	
5500	400	5750	318	
5000	400	5750	316	
4500	350	5800	314	
4000	350	5800	312	
3500	325	5825	310	
3000	325	5825	308	
2500	275	5875	306	
2000	250	5900	304	
1500	250	5900	302	

TABLE-2

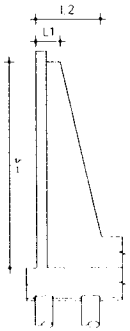
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

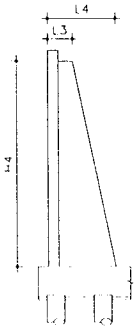
L1	L2	L3	L4	L5	L6	T	T1	H4
700	1849	700	1900	700	1800	400	400	6850



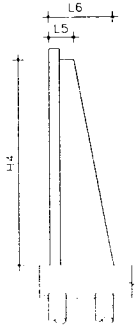
NOSING AT ABUTMENT



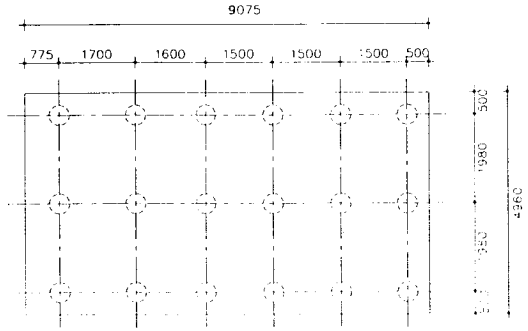
COUNTERFORT C1



COUNTERFORT C2



COUNTERFORT C3



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) For Slab Culverts, the Slab will rest right on the Abutment Cap, hence Bearing Hearing Pad will not be required.
4) Weep hole shall be provided at 3000mm horizontally and vertically as shown in drawings. filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 8.0m , DECK WIDTH 4.26m)

DATE | DRAWN BY
CHECKED BY | APPROVED BY

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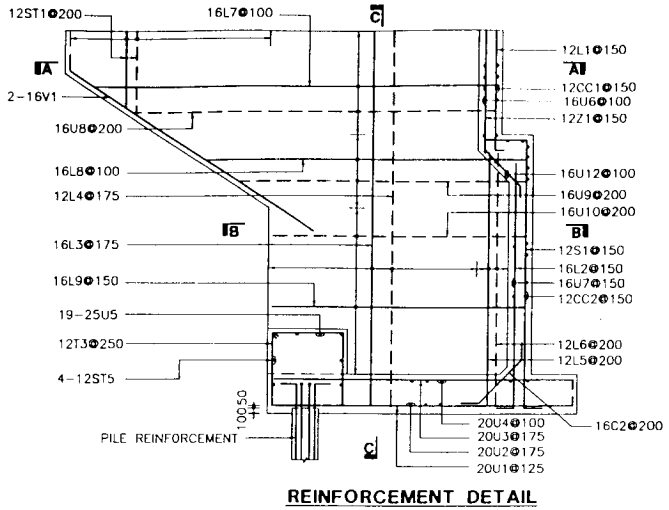
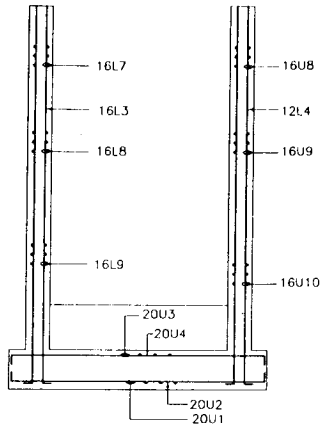
FA 141

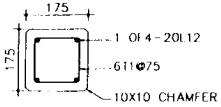
SHEET 2 OF 5
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO



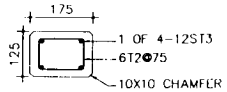
REINFORCEMENT DETAIL



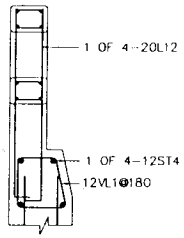
SECTION C-C



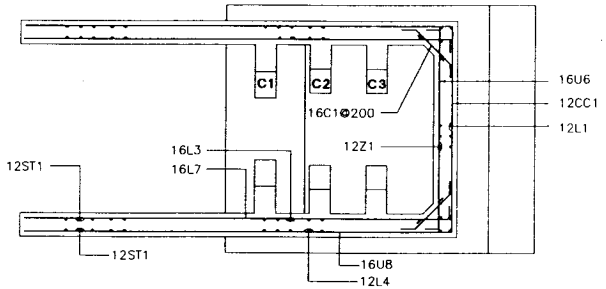
REINF. DETAIL OF POST



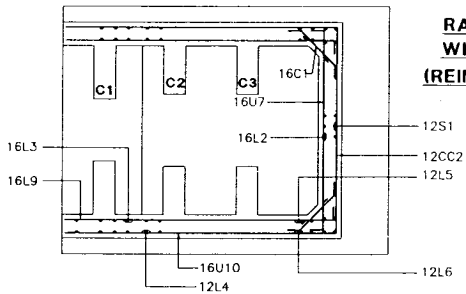
REINF. DETAIL OF RAILING



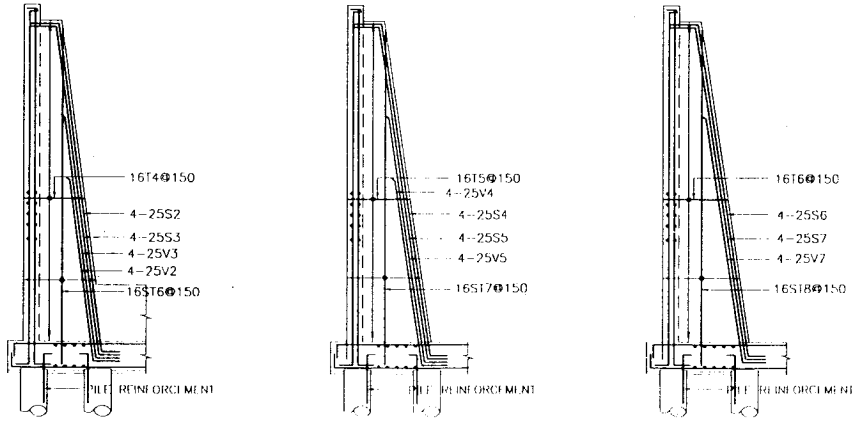
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3

REINFORCEMENT DETAILS OF COUNTERFORT

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	1350	144			1494
16	L2	29	6150	192			6342
16	L3	82	7800	192			7992
12	L4	82	7800	144			7944
12	L5	6	Var. 5850 to 6450	144			Avg. 6294
12	L6	6	Var. 5850 to 6450	144			Avg. 6294
16	L7	22	Var. 9250 to 10150	192			Avg. 9933
16	L8	28	Var. 7875 to 9250	192			Avg. 8755
16	L9	64	7875	192			8067
20	L12	64	971	120			1091
20	U1	40	240	8975	240		9455
20	U2	53	240	4860	240		5340
20	U3	29	240	8975	240		9455
20	U4	76	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	37	192	4104	192		4488
16	U8	12	Var. 9250 to 10150	200	600		Avg. 10650
16	U9	16	Var. 7875 to 9250	200	650		Avg. 9413
16	U10	48	7875	200	550		8625
16	U12	12	192	4160	192		4544
12	CC1	10	1200	500	4160		5860
12	CC2	43	1200	600	4160		5960
12	Z1	29	1350	836	144		2330
12	S1	29	725	6700	240		7665
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	4806			5056
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
12	W1	2	325	535	329		1189
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	26	Var. 1018 to 7768				Avg. 3268

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276MPa
6) Clear cover for : a) Soil 20mm, b) Pest 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF. : ABUT\R0210802	

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SHEET 3 OF 8
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	1250	144			1394
16	L2	29	6250	192			6442
16	L3	82	7800	192			7992
Y2	L4	82	7800	144			7944
12	L5	6	Var. 5950 to 6550	144			Avg. 6394
12	L6	6	Var. 5950 to 6550	144			Avg. 6394
16	L7	20	Var. 9400 to 10150	192			Avg. 10042
16	L8	30	Var. 7875 to 9400	192			Avg. 8830
16	L9	64	7875	192			8067
20	L12	64	971	120			1091
20	U1	40	240	8975	240		9455
20	U2	53	240	4860	240		5340
20	U3	29	240	8975	240		9455
20	U4	76	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	37	192	4104	192		4488
16	U8	12	Var. 9400 to 10150	200	600		Avg. 10700
16	U9	16	Var. 7875 to 9400	200	650		Avg. 9488
16	U10	48	7875	200	550		8625
16	U12	12	192	4160	192		4544
12	CC1	9	1200	500	4160		5860
12	CC2	44	1200	600	4160		5960
12	Z1	29	1250	836	144		2230
12	S1	29	725	6800	240		7765
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	4806			5056
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
12	W1	2	325	535	329		1189
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	26	Var. 1018 to 7768				Avg. 3268

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	1100	144			1244
16	L2	29	6400	192			6592
16	L3	82	7800	192			7992
12	L4	82	7800	144			7944
12	L5	6	Var. 6100 to 6700	144			Avg. 6544
12	L6	6	Var. 6100 to 6700	144			Avg. 6544
16	L7	18	Var. 9625 to 10150	192			Avg. 10167
16	L8	32	Var. 7875 to 9625	192			Avg. 8942
16	L9	64	7875	192			8067
20	L12	64	971	120			1091
20	U1	40	240	8975	240		9455
20	U2	53	240	4860	240		5340
20	U3	29	240	8975	240		9455
20	U4	76	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	12	192	4104	192		4488
16	U7	38	192	4104	192		4488
16	U8	10	Var. 9625 to 10150	200	600		Avg. 10845
16	U9	18	Var. 7875 to 9625	200	650		Avg. 9600
16	U10	48	7875	200	550		8625
16	U12	12	192	4160	192		4544
12	CC1	8	1200	500	4160		5860
12	CC2	45	1200	600	4160		5960
12	Z1	29	1100	836	144		2080
12	S1	29	725	8950	240		7915
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	4806			5056
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
12	W1	2	325	535	329		1189
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	26	Var. 1018 to 7768				Avg. 3268

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 400)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	750	144			894
16	L2	29	6750	192			6942
16	L3	82	7800	192			7992
12	L4	82	7800	144			7944
12	L5	6	Var. 6450 to 7050	144			Avg. 6894
12	L6	6	Var. 6450 to 7050	144			Avg. 6894
16	L7	10	Var. 10150 to 10150	192			Avg. 10342
16	L8	40	Var. 7875 to 10150	192			Avg. 9205
16	L9	64	7875	192			8067
20	L12	64	971	120			1091
20	U1	40	240	8975	240		9455
20	U2	53	240	4860	240		5340
20	U3	29	240	8975	240		9455
20	U4	76	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	9	192	4104	192		4488
16	U7	41	192	4104	192		4488
16	U8	6	Var. 10150 to 10150	200	600		Avg. 10950
16	U9	22	Var. 7875 to 10150	200	650		Avg. 9863
16	U10	48	7875	200	550		8625
16	U12	12	192	4160	192		4544
12	CC1	6	1200	500	4160		5860
12	CC2	47	1200	600	4160		5960
12	Z1	29	750	836	144		1730
12	S1	29	725	7300	240		8265
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	4806			5056
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
12	W1	2	325	535	329		1189
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	26	Var. 1018 to 7768				Avg. 3268

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210803	

Web Copy

SHEET 4 OF 5
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	700	144			844
16	L2	29	6800	192			6992
16	L3	82	7800	192			7992
12	L4	82	7800	144			7944
12	L5	6	Var. 6500 to 7100	144			Avg. 6944
12	L6	6	Var. 6500 to 7100	144			Avg. 6944
16	L7	8	Var. 10225 to 10150	192			Avg. 10305
16	L8	40	Var. 7875 to 10225	192			Avg. 9242
16	L9	64	7875	192			8067
20	L12	64	971	120			1091
20	U1	40	240	8975	240		9455
20	U2	53	240	4860	240		5340
20	U3	29	240	8975	240		9455
20	U4	76	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	41	192	4104	192		4488
16	U8	4	Var. 10225 to 10150	200	600		Avg. 10875
16	U9	22	Var. 7875 to 10225	200	650		Avg. 9900
16	U10	48	7875	200	550		8625
16	U12	12	192	4160	192		4544
12	CC1	5	1200	500	4160		5860
12	CC2	47	1200	600	4160		5960
12	Z1	29	700	836	144		1680
12	S1	29	725	7350	240		8315
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	4806			5056
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
12	W1	2	325	535	329		1189
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	26	Var. 1018 to 7768				Avg. 3268

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 325)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	675	144			819
16	L2	29	6825	192			7017
16	L3	82	7800	192			7992
12	L4	82	7800	144			7944
12	L5	6	Var. 6525 to 7125	144			Avg. 6969
12	L6	6	Var. 6525 to 7125	144			Avg. 6969
16	L7	8	Var. 10263 to 10150	192			Avg. 10286
16	L8	42	Var. 7875 to 10263	192			Avg. 9261
16	L9	64	7875	192			8067
20	L12	64	971	120			1091
20	U1	40	240	8975	240		9455
20	U2	53	240	4860	240		5340
20	U3	29	240	8975	240		9455
20	U4	76	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	41	192	4104	192		4488
16	U8	4	Var. 10263 to 10150	200	600		Avg. 10837
16	U9	22	Var. 7875 to 10263	200	650		Avg. 9919
16	U10	48	7875	200	550		8625
16	U12	12	192	4160	192		4544
12	CC1	5	1200	500	4160		5860
12	CC2	47	1200	600	4160		5960
12	Z1	29	675	836	144		1655
12	S1	29	725	7375	240		8340
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	4806			5056
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
12	W1	2	325	535	329		1189
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	26	Var. 1018 to 7768				Avg. 3268

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABU1\R0210804	

Web Copy

FA-144

SHEET 5 OF 5
SPAN RANGE : 1.5m to 12m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 275)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	625	144			769
16	L2	29	6875	192			7067
16	L3	82	7800	192			7992
12	L4	82	7800	144			7944
12	L5	6	Var. 6575 to 7175	144			Avg. 7019
12	L6	6	Var. 6575 to 7175	144			Avg. 7019
16	L7	6	Var. 10338 to 10150	192			Avg. 10154
16	L8	42	Var. 7875 to 10338	192			Avg. 9299
16	L9	64	7875	192			8067
20	L12	64	971	120			1091
20	U1	40	240	8975	240		9455
20	U2	53	240	4860	240		5340
20	U3	29	240	8975	240		9455
20	U4	76	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	8	192	4104	192		4488
16	U7	42	192	4104	192		4488
16	U8	4	Var. 10338 to 10150	200	600		Avg. 10762
16	U9	22	Var. 7875 to 10338	200	650		Avg. 9957
16	U10	48	7875	200	550		8625
16	U12	12	192	4160	492		4544
12	CC1	5	1200	500	4160		5860
12	CC2	48	1200	600	4160		5960
12	Z1	29	625	836	144		1605
12	S1	29	725	7425	240		8390
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	4806			5056
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
12	W1	2	325	535	329		1189
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	26	Var. 1018 to 7768				Avg. 3268

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 250)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	600	144			744
16	L2	29	6900	192			7092
16	L3	82	7800	192			7992
12	L4	82	7800	144			7944
12	L5	6	Var. 6600 to 7200	144			Avg. 7044
12	L6	6	Var. 6600 to 7200	144			Avg. 7044
16	L7	6	Var. 10375 to 10150	192			Avg. 10117
16	L8	42	Var. 7875 to 10375	192			Avg. 9317
16	L9	64	7875	192			8067
20	L12	64	971	120			1091
20	U1	40	240	8975	240		9455
20	U2	53	240	4860	240		5340
20	U3	29	240	8975	240		9455
20	U4	76	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	7	192	4104	192		4488
16	U7	42	192	4104	192		4488
16	U8	4	Var. 10375 to 10150	200	600		Avg. 10725
16	U9	22	Var. 7875 to 10375	200	650		Avg. 9975
16	U10	48	7875	200	550		8625
16	U12	12	192	4160	192		4544
12	CC1	5	1200	500	4160		5860
12	CC2	48	1200	600	4160		5960
12	Z1	29	600	836	144		1580
12	S1	29	725	7450	240		8415
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	4806			5056
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
12	W1	2	325	535	329		1189
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	26	Var. 1018 to 7768				Avg. 3268

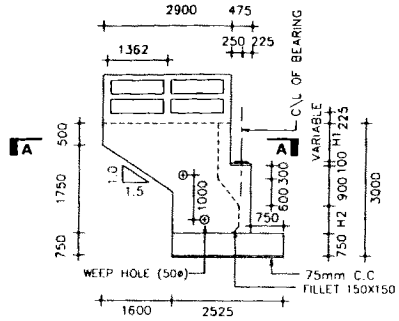
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 4.26m)

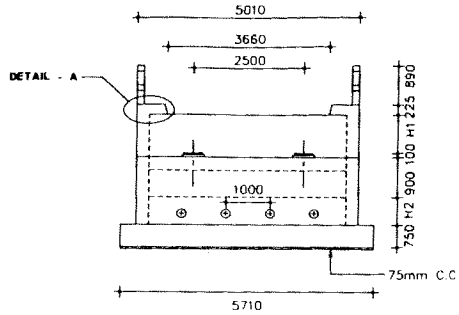
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0210805	

Web Copy

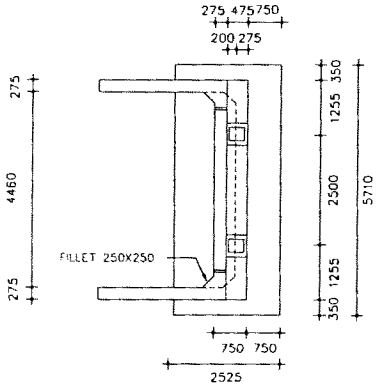
SHEET 1 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES



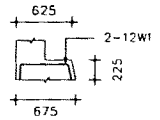
SIDE ELEVATION



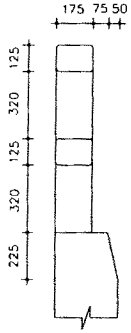
FRONT ELEVATION



SECTION A-A



REINF. DETAIL 'A'



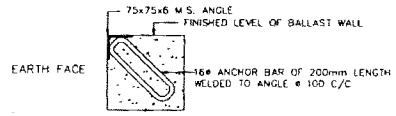
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

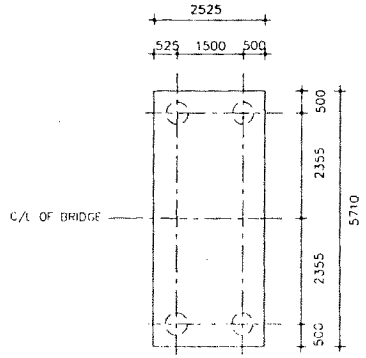
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	250	320	165
11500	1000	250	316	163
11000	1000	250	312	161
10500	1000	250	308	159
10000	1000	250	304	157
9500	900	350	298	153
9000	900	350	294	151
8500	900	350	290	149
8000	900	350	286	147
7500	750	500	280	143
7000	750	500	276	141
6500	750	500	272	139
6000	750	500	268	137
5500	400	850	262	133
5000	400	850	258	131
4500	350	900	250	127
4000	350	900	246	125
3500	325	925	240	121
3000	325	925	236	119
2500	275	975	230	115
2000	250	1000	226	113
1500	250	1000	222	111

TABLE-2

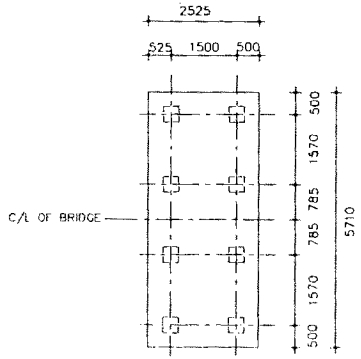
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

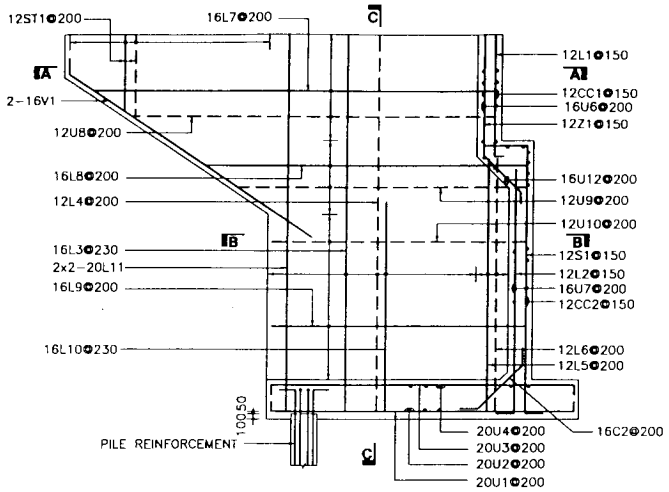
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 3.0m , DECK WIDTH 5.01m)

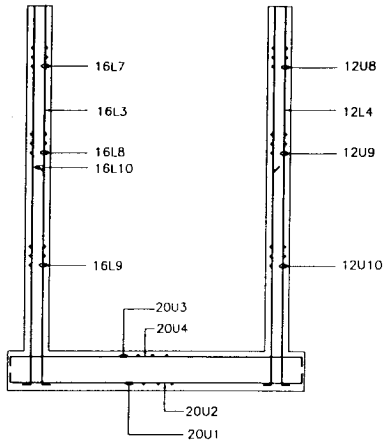
DATE :
ISSUED BY
CAD FILE REF : ABUT\R1210.301

Web Copy

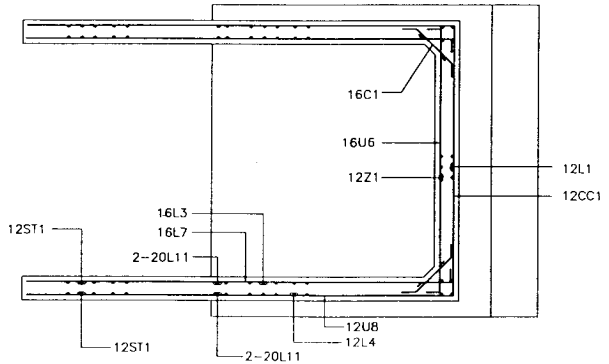
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES



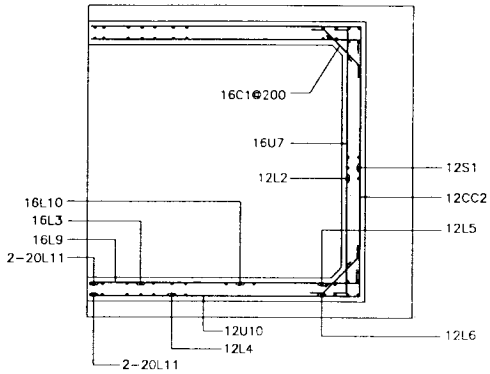
REINFORCEMENT DETAIL



SECTION C-C



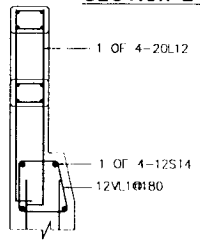
SECTION A-A



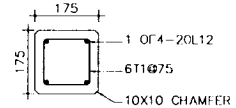
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

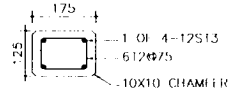
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	34	1350	144			1494
12	L2	34	1150	144			1294
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 850 to 1450	144			Avg. 1294
12	L6	6	Var. 850 to 1450	144			Avg. 1294
16	L7	12	Var. 1900 to 2800	192			Avg. 2692
16	L8	8	Var. 1675 to 1900	192			Avg. 1980
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	3	192	4862	192		5246
12	U8	12	Var. 1900 to 2800	175	525		Avg. 3200
12	U9	8	Var. 1675 to 1900	175	525		Avg. 2488
12	U10	6	1675	175	525		2375
16	U12	6	192	4910	192		5294
12	CC1	10	1150	350	4910		6410
12	CC2	10	1150	350	4910		6410
12	Z1	34	1350	866	144		2360
12	S1	34	650	1700	240		2590
16	C1	26	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	72	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000
12	w1	4	200	575	206		981



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C.33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post- 20mm, c) Curb- 25mm, d) Wall-50mm, e) Base- 50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cod File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210.302	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	34	1250	144			1394
12	L2	34	1250	144			1394
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 950 to 1550	144			Avg. 1394
12	L6	6	Var. 950 to 1550	144			Avg. 1394
16	L7	12	Var. 2050 to 2800	192			Avg. 2742
16	L8	8	Var. 1675 to 2050	192			Avg. 2055
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	4	192	4862	192		5246
12	U8	12	Var. 2050 to 2800	175	525		Avg. 3250
12	U9	8	Var. 1675 to 2050	175	525		Avg. 2563
12	U10	6	1675	175	525		2375
16	U12	6	192	4910	192		5294
12	CC1	9	1150	350	4910		6410
12	CC2	11	1150	350	4910		6410
12	Z1	34	1250	866	144		2260
12	S1	34	650	1800	240		2690
16	C1	26	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	72	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1467				Avg. 934
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	34	1100	144			1244
12	L2	34	1400	144			1544
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 1100 to 1700	144			Avg. 1544
12	L6	6	Var. 1100 to 1700	144			Avg. 1544
16	L7	10	Var. 2275 to 2800	192			Avg. 2887
16	L8	10	Var. 1675 to 2275	192			Avg. 2167
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	2800	240			3040
20	L12	24	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	7	192	4862	192		5246
16	U7	4	192	4862	192		5246
12	U8	10	Var. 2275 to 2800	175	525		Avg. 3395
12	U9	10	Var. 1675 to 2275	175	525		Avg. 2675
12	U10	6	1675	175	525		2375
16	U12	6	192	4910	192		5294
12	CC1	8	1150	350	4910		6410
12	CC2	12	1150	350	4910		6410
12	Z1	34	1100	866	144		2110
12	S1	34	650	1950	240		2840
16	C1	26	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	2486			2736
6	T1	72	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

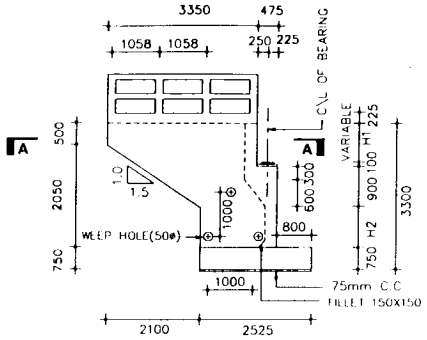
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210303	

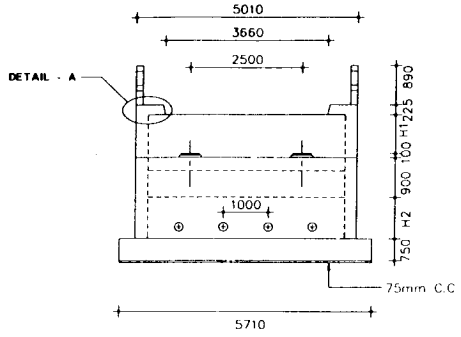
Web Copy

FA-148

SHEET 1 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES



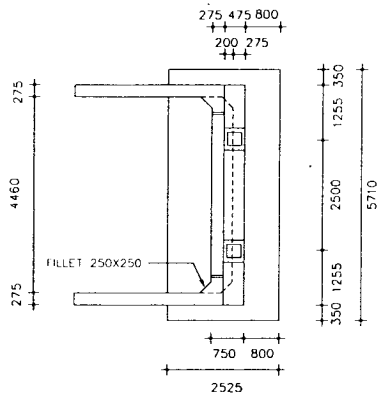
SIDE ELEVATION



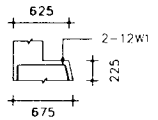
FRONT ELEVATION

TABLE-1

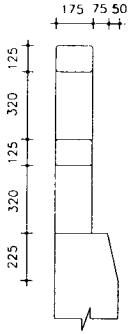
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	550	305	155
11500	1000	550	301	153
11000	1000	550	297	151
10500	1000	550	293	149
10000	1000	550	289	147
9500	900	650	283	143
9000	900	650	279	141
8500	900	650	275	139
8000	900	650	271	137
7500	750	800	265	133
7000	750	800	261	131
6500	750	800	257	129
6000	750	800	253	127
5500	400	1150	247	123
5000	400	1150	243	121
4500	350	1200	235	117
4000	350	1200	231	115
3500	325	1225	225	111
3000	325	1225	221	109
2500	275	1275	215	105
2000	250	1300	211	103
1500	250	1300	207	101



SECTION A-A



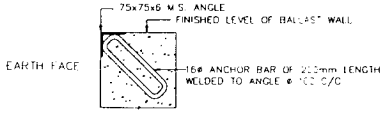
REINF. DETAIL 'A'



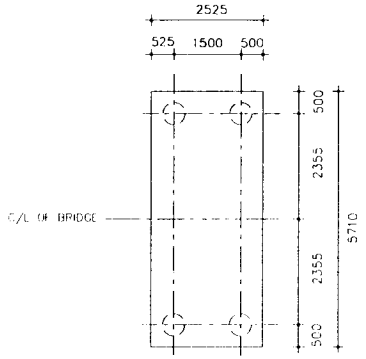
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

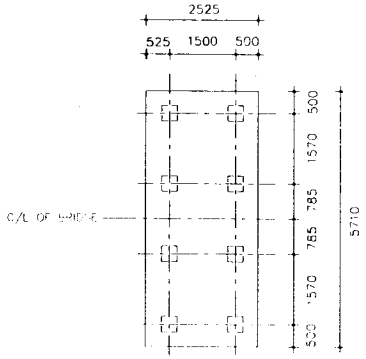
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

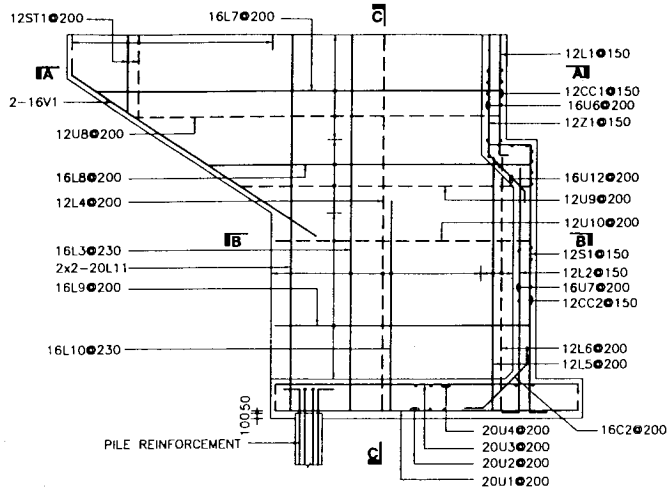
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.3m , DECK WIDTH 5.01m)

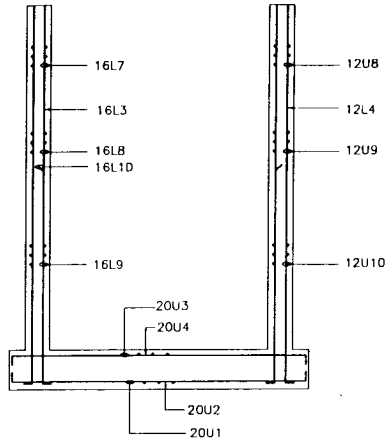
DATE | DRAWN BY

CAD FILE NO. : [illegible]

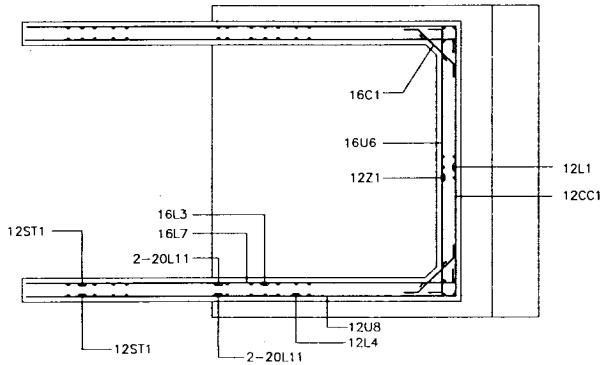
Web Copy
FA-149



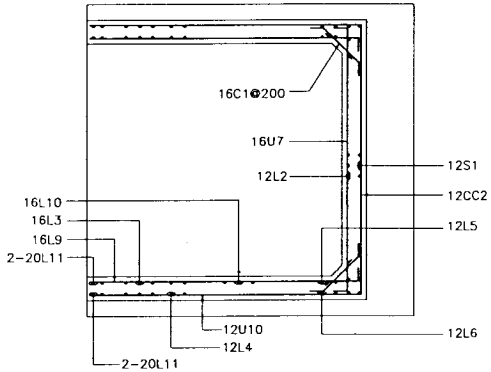
REINFORCEMENT DETAIL



SECTION C-C



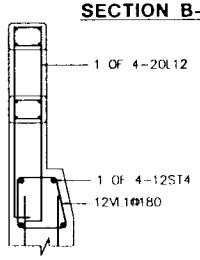
SECTION A-A



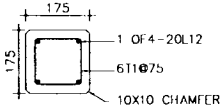
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

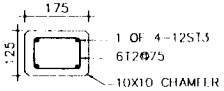
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	34	1350	144			1494
12	L2	34	1450	144			1594
16	L3	6	3100	192			3292
12	L4	6	3100	144			3244
12	L5	6	Var. 1150 to 1750	144			Avg. 1594
12	L6	6	Var. 1150 to 1750	144			Avg. 1594
16	L7	12	Var. 2350 to 3250	192			Avg. 3142
16	L8	10	Var. 1625 to 2350	192			Avg. 2180
16	L9	6	1625	192			1817
16	L10	6	1210	192			1402
20	L11	8	3100	240			3340
20	L12	32	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	5	192	4862	192		5246
12	U8	12	Var. 2350 to 3250	175	525		Avg. 3650
12	U9	10	Var. 1625 to 2350	175	525		Avg. 2688
12	U10	6	1625	175	525		2325
16	U12	6	192	4910	192		5294
12	CC1	10	1150	350	4910		6410
12	CC2	12	1150	350	4910		6410
12	Z1	34	1350	866	144		2360
12	S1	34	650	2000	240		2890
16	C1	28	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	3143			3393
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000
12	w1	4	200	575	206		981



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb 25mm, d) Wall-50mm, e) Base 50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 3.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210332	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	34	1250	144			1394
12	L2	34	1550	144			1694
16	L3	6	3100	192			3292
12	L4	6	3100	144			3244
12	L5	6	Var. 1250 to 1850	144			Avg. 1694
12	L6	6	Var. 1250 to 1850	144			Avg. 1694
16	L7	12	Var. 2500 to 3250	192			Avg. 3192
16	L8	12	Var. 1625 to 2500	192			Avg. 2255
16	L9	6	1625	192			1817
16	L10	6	1210	192			1402
20	L11	8	3100	240			3340
20	L12	32	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	5	192	4862	192		5246
12	U8	12	Var. 2500 to 3250	175	525		Avg. 3700
12	U9	12	Var. 1625 to 2500	175	525		Avg. 2763
12	U10	6	1625	175	525		2325
16	U12	6	192	4910	192		5294
12	CC1	9	1150	350	4910		6410
12	CC2	13	1150	350	4910		6410
12	Z1	34	1250	866	144		2260
12	S1	34	650	2100	240		2990
16	C1	28	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	3143			3393
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

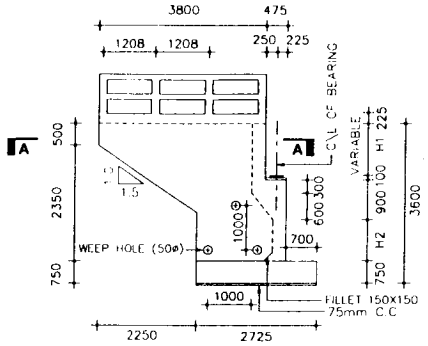
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	34	1100	144			1244
12	L2	34	1700	144			1844
16	L3	6	3100	192			3292
12	L4	6	3100	144			3244
12	L5	6	Var. 1400 to 2000	144			Avg. 1844
12	L6	6	Var. 1400 to 2000	144			Avg. 1844
16	L7	10	Var. 2725 to 3250	192			Avg. 3337
16	L8	14	Var. 1625 to 2725	192			Avg. 2367
16	L9	6	1625	192			1817
16	L10	6	1210	192			1402
20	L11	8	3100	240			3340
20	L12	32	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	7	192	4862	192		5246
16	U7	6	192	4862	192		5246
12	U8	10	Var. 2725 to 3250	175	525		Avg. 3845
12	U9	14	Var. 1625 to 2725	175	525		Avg. 2875
12	U10	6	1625	175	525		2325
16	U12	6	192	4910	192		5294
12	CC1	8	1150	350	4910		6410
12	CC2	14	1150	350	4910		6410
12	Z1	34	1100	866	144		2110
12	S1	34	650	2250	240		3140
16	C1	28	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	3143			3393
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

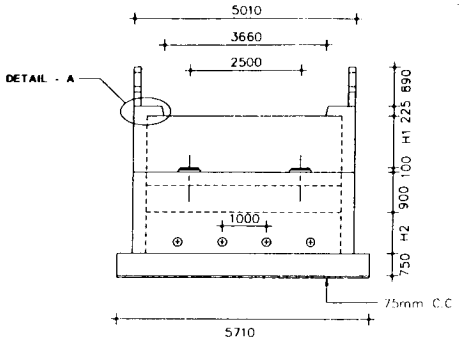
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210333	

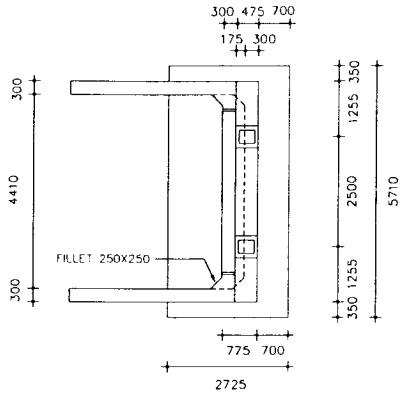
Web Copy



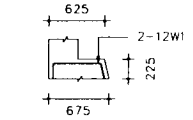
SIDE ELEVATION



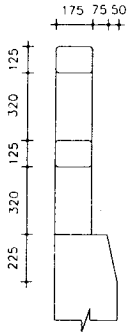
FRONT ELEVATION



SECTION A-A



REINF. DETAIL 'A'



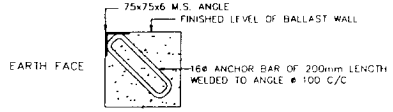
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

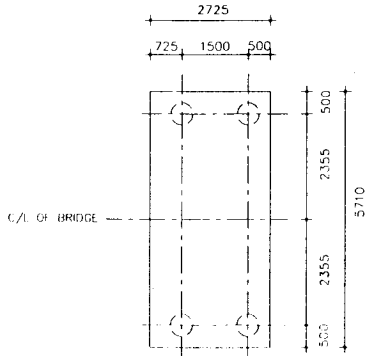
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	850	345	175
11500	1000	850	341	173
11000	1000	850	337	171
10500	1000	850	333	169
10000	1000	850	329	167
9500	900	950	223	165
9000	900	950	219	161
8500	900	950	215	159
8000	900	950	211	157
7500	750	1100	205	153
7000	750	1100	201	151
6500	750	1100	197	149
6000	750	1100	193	147
5500	400	1450	187	143
5000	400	1450	183	141
4500	350	1500	175	137
4000	350	1500	171	135
3500	325	1525	165	131
3000	325	1525	161	129
2500	275	1575	155	125
2000	250	1600	151	123
1500	250	1600	147	121

TABLE-2

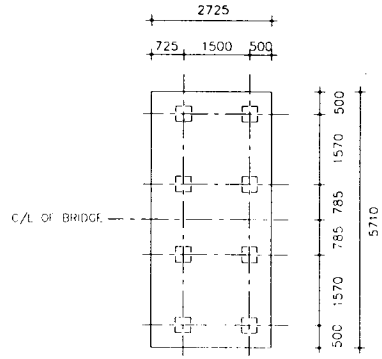
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	50	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

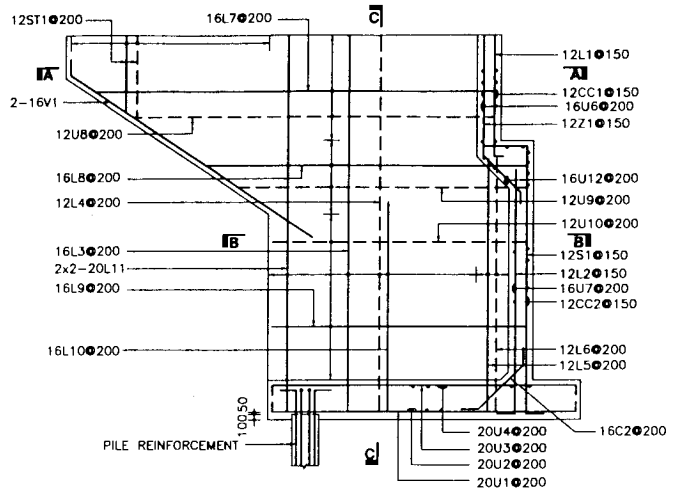
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 3.6m , DECK WIDTH 5.01m)

DATE :
PROJECTED BY :
CAD FILE REF : ABUT\R1210361

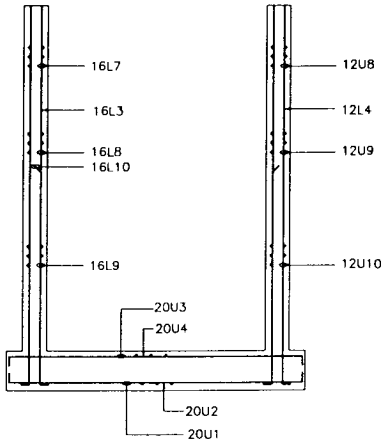
Web Copy

FA-152

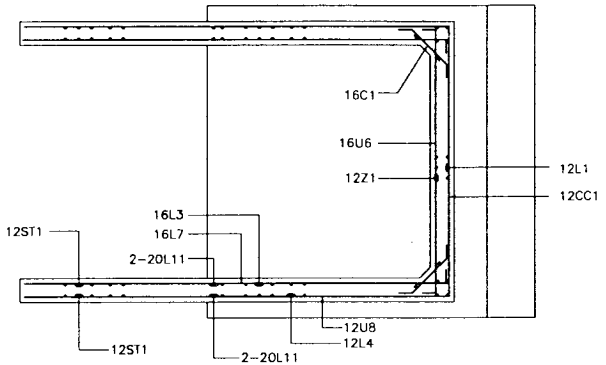
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES



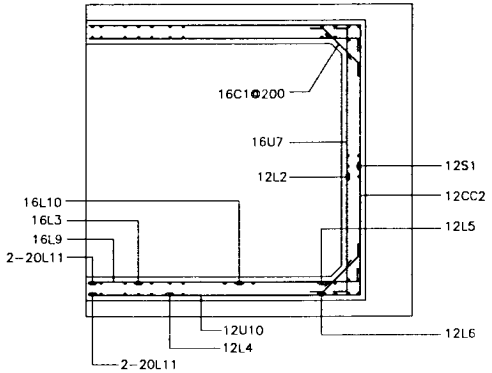
REINFORCEMENT DETAIL



SECTION C-C



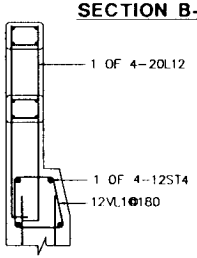
SECTION A-A



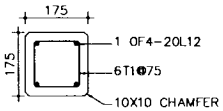
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

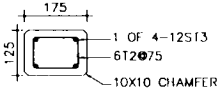
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1900				Avg. 1150
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	34	1350	144			1494
12	L2	34	1750	144			1894
16	L3	10	3400	192			3592
12	L4	10	3400	144			3544
12	L5	6	Var. 1450 to 2050	144			Avg. 1894
12	L6	6	Var. 1450 to 2050	144			Avg. 1894
16	L7	12	Var. 2800 to 3700	192			Avg. 3592
16	L8	12	Var. 1925 to 2800	192			Avg. 2555
16	L9	8	1925	192			2117
16	L10	10	1410	192			1602
20	L11	8	3400	240			3640
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	6	192	4862	192		5246
12	U8	12	Var. 2800 to 3700	200	550		Avg. 4150
12	U9	12	Var. 1925 to 2800	200	550		Avg. 3113
12	U10	8	1925	200	550		2675
16	U12	7	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	14	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	2300	240		3215
16	C1	32	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3380			3630
6	T1	96	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000
12	w1	4	200	575	206		981



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 3.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210362	

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FA-153

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1900				Avg. 1150
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	34	1250	144			1394
12	L2	34	1850	144			1994
16	L3	10	3400	192			3592
12	L4	10	3400	144			3544
12	L5	6	Var. 1550 to 2150	144			Avg. 1994
12	L6	6	Var. 1550 to 2150	144			Avg. 1994
16	L7	12	Var. 2950 to 3700	192			Avg. 3642
16	L8	12	Var. 1925 to 2950	192			Avg. 2630
16	L9	8	1925	192			2117
16	L10	10	1410	192			1602
20	L11	8	3400	240			3640
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	7	192	4862	192		5246
12	U8	12	Var. 2950 to 3700	200	550		Avg. 4200
12	U9	12	Var. 1925 to 2950	200	550		Avg. 3188
12	U10	8	1925	200	550		2675
16	U12	7	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	15	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	2400	240		3315
16	C1	32	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3380			3630
6	T1	96	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	48	Var. 400 to 1900				Avg. 1150
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	34	1100	144			1244
12	L2	34	2000	144			2144
16	L3	10	3400	192			3592
12	L4	10	3400	144			3544
12	L5	6	Var. 1700 to 2300	144			Avg. 2144
12	L6	6	Var. 1700 to 2300	144			Avg. 2144
16	L7	10	Var. 3175 to 3700	192			Avg. 3787
16	L8	14	Var. 1925 to 3175	192			Avg. 2742
16	L9	8	1925	192			2117
16	L10	10	1410	192			1602
20	L11	8	3400	240			3640
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	7	192	4862	192		5246
16	U7	7	192	4862	192		5246
12	U8	10	Var. 3175 to 3700	200	550		Avg. 4345
12	U9	14	Var. 1925 to 3175	200	550		Avg. 3300
12	U10	8	1925	200	550		2675
16	U12	7	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	16	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	2550	240		3465
16	C1	32	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3380			3630
6	T1	96	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

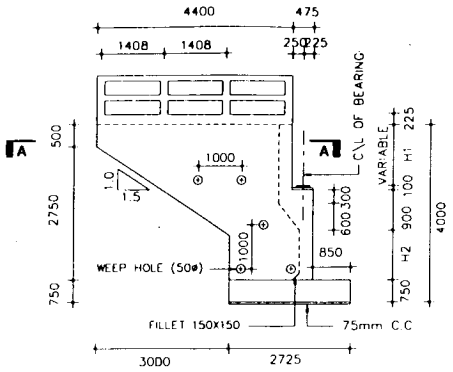
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210363	

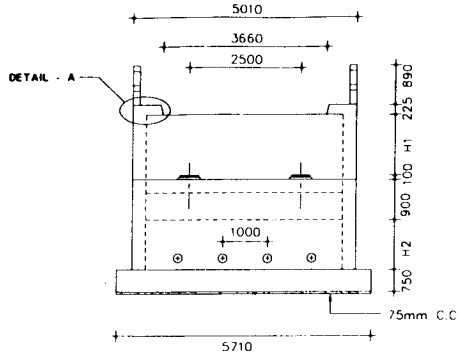
Web Copy

FA-154

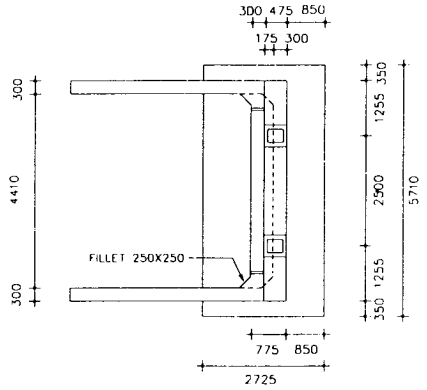
SHEET 1 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES



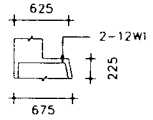
SIDE ELEVATION



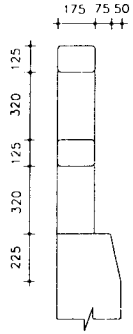
FRONT ELEVATION



SECTION A-A



REINF. DETAIL 'A'



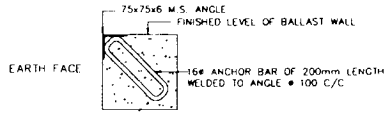
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

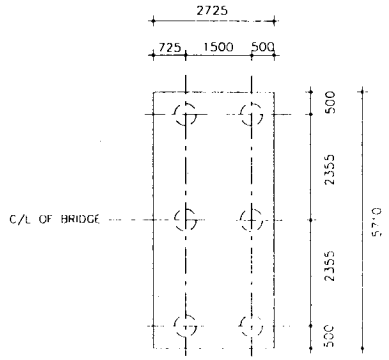
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	1250	240	145
11500	1000	1250	236	143
11000	1000	1250	232	141
10500	1000	1250	228	139
10000	1000	1250	224	137
9500	900	1350	220	133
9000	900	1350	216	131
8500	900	1350	212	129
8000	900	1350	208	127
7500	750	1500	204	123
7000	750	1500	200	121
6500	750	1500	196	119
6000	750	1500	192	117
5500	400	1850	188	115
5000	400	1850	184	113
4500	350	1900	178	109
4000	350	1900	174	107
3500	325	1925	170	105
3000	325	1925	168	103
2500	275	1975	164	101
2000	250	2000	160	99
1500	250	2000	158	97

TABLE-2

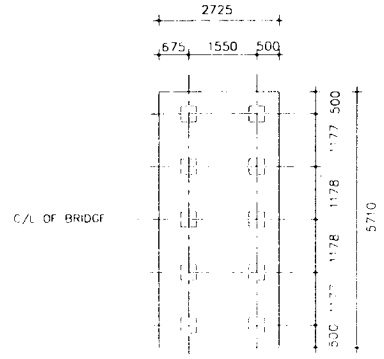
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings. Later metric shall be provided as per specification.

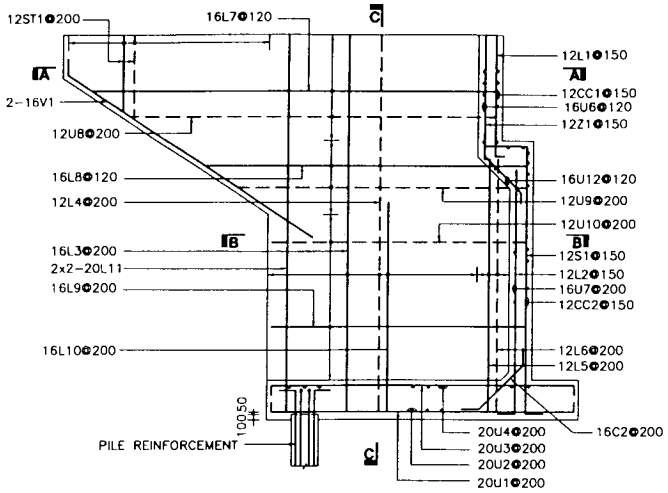
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.0m , DECK WIDTH 5.01m)

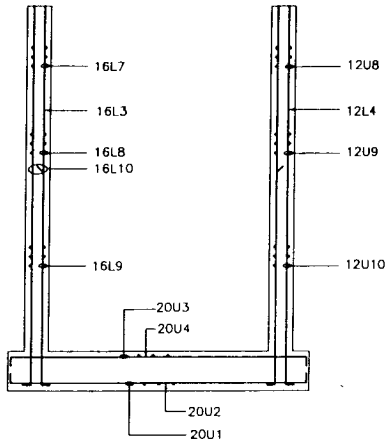
DATE
ISSUED BY
CAD FILE REF ABUT\R1210401

Web Copy
FA-155

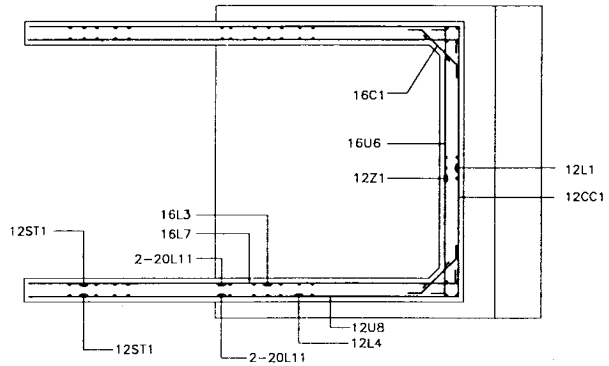
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES



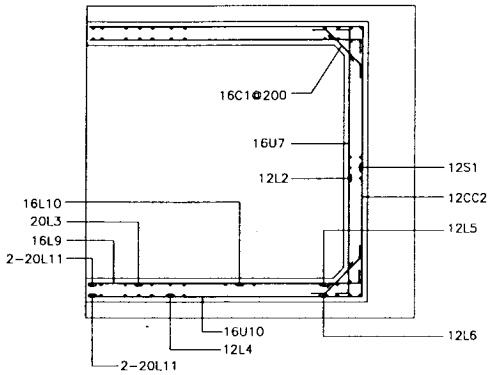
REINFORCEMENT DETAIL



SECTION C-C



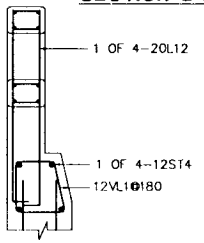
SECTION A-A



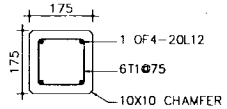
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

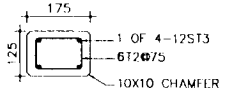
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1350	144			1494
12	L2	34	2150	144			2294
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1850 to 2450	144			Avg. 2294
12	L6	6	Var. 1850 to 2450	144			Avg. 2294
16	L7	20	Var. 3400 to 4300	192			Avg. 4132
16	L8	26	Var. 1775 to 3400	192			Avg. 2780
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	13	192	4862	192		5246
16	U7	8	192	4862	192		5246
12	U8	12	Var. 3400 to 4300	200	550		Avg. 4750
12	U9	16	Var. 1775 to 3400	200	550		Avg. 3338
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	17	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	2700	240		3615
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000
12	w1	4	200	575	206		981



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail -20mm, b) Post-20mm, c) Curb-25mm, d) Wall -50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210402	

Web Copy

FA-156

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1250	144			1394
12	L2	34	2250	144			2394
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1950 to 2550	144			Avg. 2394
12	L6	6	Var. 1950 to 2550	144			Avg. 2394
16	L7	20	Var. 3550 to 4300	192			Avg. 4192
16	L8	28	Var. 1775 to 3550	192			Avg. 2855
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	12	192	4862	192		5246
16	U7	9	192	4862	192		5246
12	U8	12	Var. 3550 to 4300	200	550		Avg. 4800
12	U9	18	Var. 1775 to 3550	200	550		Avg. 3413
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	18	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	2800	240		3715
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1100	144			1244
12	L2	34	2400	144			2544
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 2100 to 2700	144			Avg. 2544
12	L6	6	Var. 2100 to 2700	144			Avg. 2544
16	L7	16	Var. 3775 to 4300	192			Avg. 4361
16	L8	30	Var. 1775 to 3775	192			Avg. 2967
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	11	192	4862	192		5246
16	U7	9	192	4862	192		5246
12	U8	10	Var. 3775 to 4300	200	550		Avg. 4945
12	U9	20	Var. 1775 to 3775	200	550		Avg. 3525
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	19	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	2950	240		3865
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000
12	w1	4	200	575	206		981

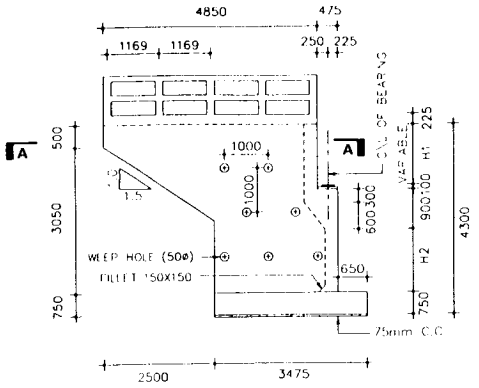
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 5.01m)

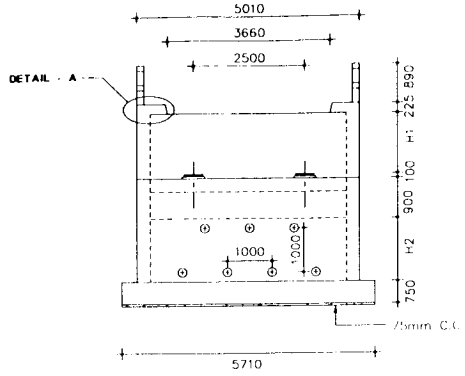
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1210403

Web Copy

SHEET 1 OF 3	
SPAN RANGE	1.5m TO 12m
SIDE WALK	YES



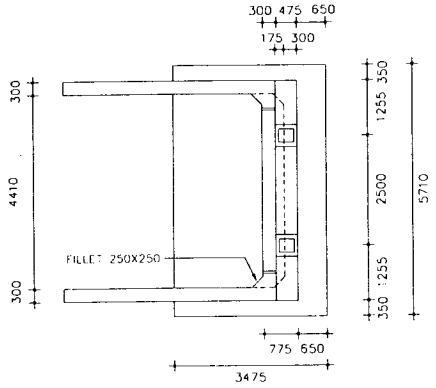
SIDE ELEVATION



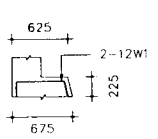
FRONT ELEVATION

TABLE-1

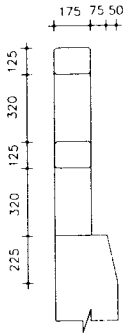
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	1550	280	160
11500	1000	1550	276	158
11000	1000	1550	272	156
10500	1000	1550	268	154
10000	1000	1550	264	152
9500	900	1650	260	150
9000	900	1650	256	148
8500	900	1650	252	146
8000	900	1650	248	144
7500	750	1800	244	142
7000	750	1800	240	140
6500	750	1800	236	138
6000	750	1800	232	136
5500	400	2150	228	134
5000	400	2150	224	132
4500	350	2200	218	128
4000	350	2200	214	126
3500	325	2225	210	124
3000	325	2225	208	122
2500	275	2275	204	120
2000	250	2300	200	118
1500	250	2300	198	116



SECTION A-A



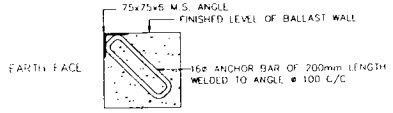
REINF. DETAIL 'A'



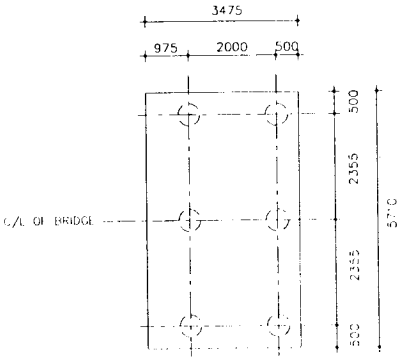
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

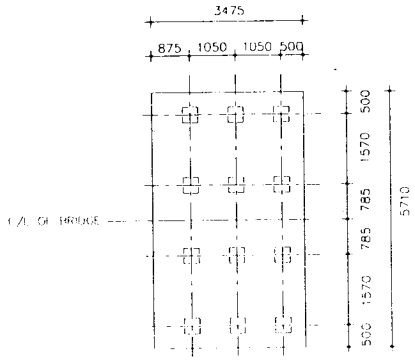
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in KN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

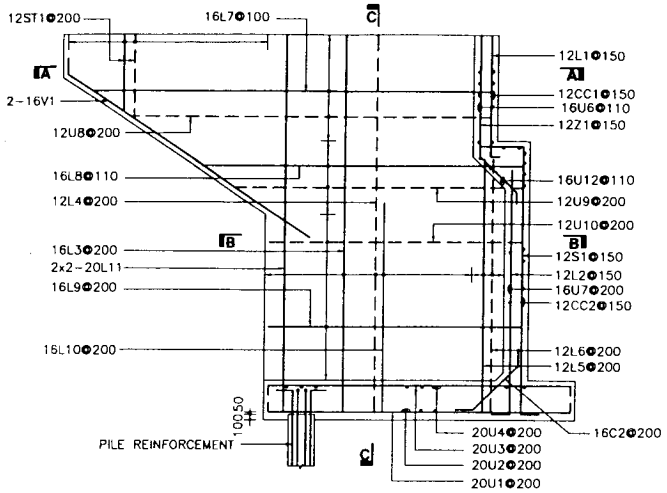
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.3m , DECK WIDTH 5.01m)

DATE	DRAWN BY
CAD FILE REF ABUTMENT1010431	

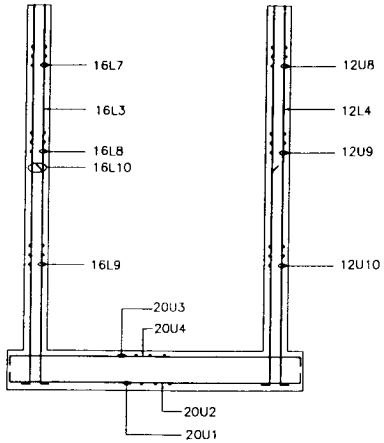
Web Copy

FA-158

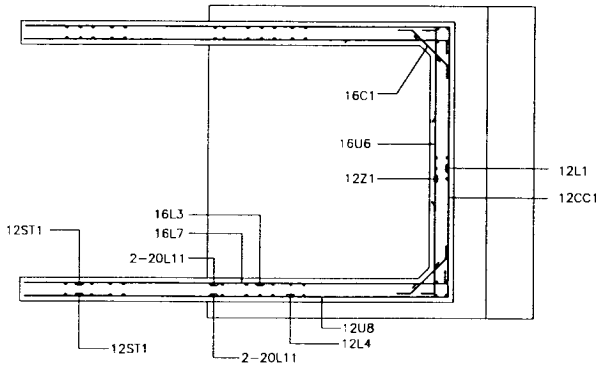
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES



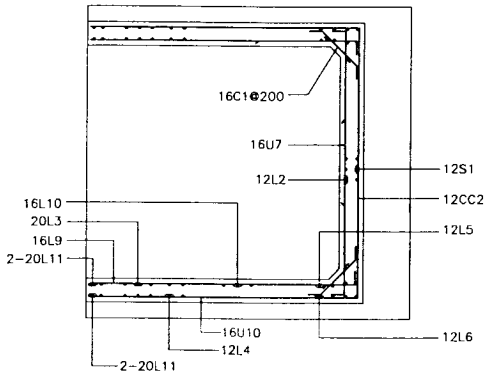
REINFORCEMENT DETAIL



SECTION C-C



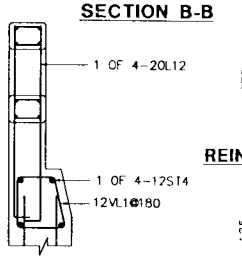
SECTION A-A



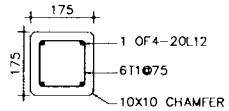
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

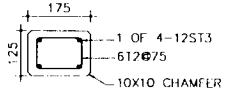
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	34	1350	144			1494
12	L2	34	2450	144			2594
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2150 to 2750	144			Avg. 2594
12	L6	6	Var. 2150 to 2750	144			Avg. 2594
16	L7	22	Var. 3850 to 4750	192			Avg. 4533
16	L8	22	Var. 2725 to 3850	192			Avg. 3480
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	1181	120			1301
20	U1	30	240	3375	240		3855
20	U2	18	240	5610	240		6090
20	U3	30	240	3375	240		3855
20	U4	18	240	5610	240		6090
16	U6	14	192	4862	192		5246
16	U7	10	192	4862	192		5246
12	U8	12	Var. 3850 to 4750	200	550		Avg. 5200
12	U9	14	Var. 2725 to 3850	200	550		Avg. 4038
12	U10	12	2725	200	550		3475
16	U12	11	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	19	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	3000	240		3915
16	C1	38	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	120	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000
12	w1	4	200	575	206		981



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb -25mm, d) Wall-50mm, e) Base -50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210432	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	34	1250	144			1394
12	L2	34	2550	144			2694
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2250 to 2850	144			Avg. 2694
12	L6	6	Var. 2250 to 2850	144			Avg. 2694
16	L7	20	Var. 4000 to 4750	192			Avg. 4642
16	L8	24	Var. 2725 to 4000	192			Avg. 3555
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	1181	120			1301
20	U1	30	240	3375	240		3855
20	U2	18	240	5610	240		6090
20	U3	30	240	3375	240		3855
20	U4	18	240	5610	240		6090
16	U6	13	192	4862	192		5246
16	U7	10	192	4862	192		5246
12	U8	12	Var. 4000 to 4750	200	550		Avg. 5250
12	U9	14	Var. 2725 to 4000	200	550		Avg. 4113
12	U10	12	2725	200	550		3475
16	U12	11	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	20	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	3100	240		4015
16	C1	38	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	120	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	34	1100	144			1244
12	L2	34	2700	144			2844
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2400 to 3000	144			Avg. 2844
12	L6	6	Var. 2400 to 3000	144			Avg. 2844
16	L7	18	Var. 4225 to 4750	192			Avg. 4767
16	L8	26	Var. 2725 to 4225	192			Avg. 3667
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	1181	120			1301
20	U1	30	240	3375	240		3855
20	U2	18	240	5610	240		6090
20	U3	30	240	3375	240		3855
20	U4	18	240	5610	240		6090
16	U6	11	192	4862	192		5246
16	U7	11	192	4862	192		5246
12	U8	10	Var. 4225 to 4750	200	550		Avg. 5395
12	U9	16	Var. 2725 to 4225	200	550		Avg. 4225
12	U10	12	2725	200	550		3475
16	U12	11	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	21	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	3250	240		4165
16	C1	38	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	120	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

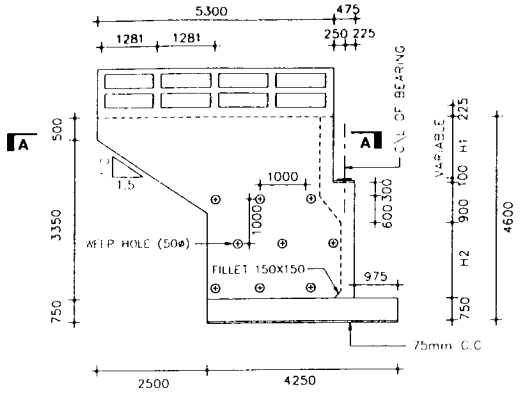
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUTMR121043.3	

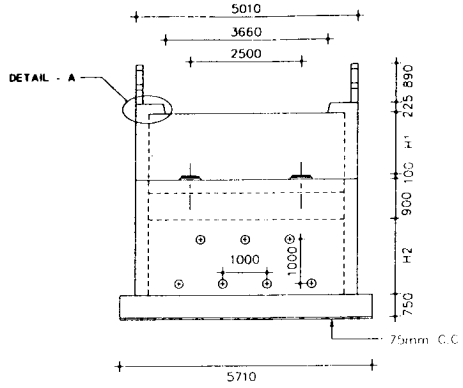
Web Copy

FA-160

SHEET 1 OF 5
SPAN RANGE : 11m TO 12m
SIDE WALK : YES



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	1850	250	155
11500	1000	1850	248	153
11000	1000	1850	246	151
10500	1000	1850	244	149
10000	1000	1850	242	147
9500	900	1950	238	145
9000	900	1950	236	143
8500	900	1950	234	141
8000	900	1950	232	139
7500	750	2100	228	137
7000	750	2100	226	135
6500	750	2100	224	133
6000	750	2100	222	131
5500	400	2450	218	129
5000	400	2450	216	127
4500	350	2500	212	125
4000	350	2500	210	123
3500	325	2525	208	121
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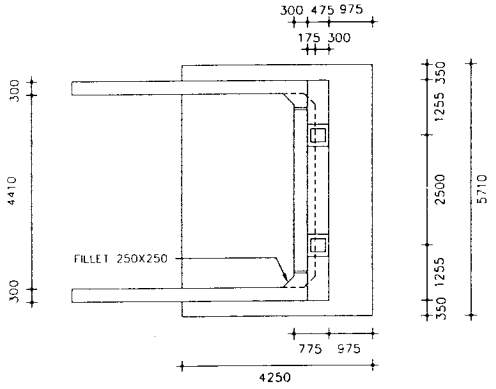
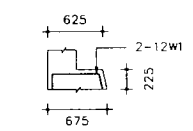
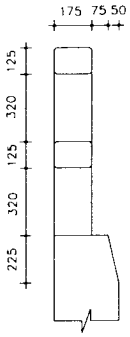
2000	250	2600	200	115
1500	250	2600	198	113



SECTION A-A



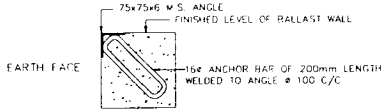
REINF. DETAIL 'A'



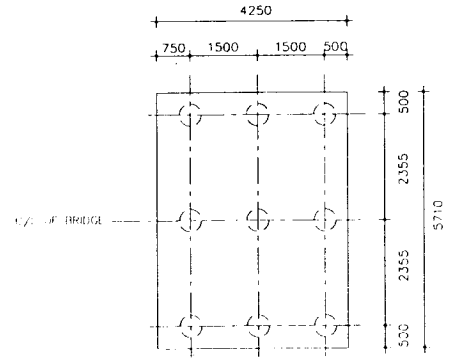
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

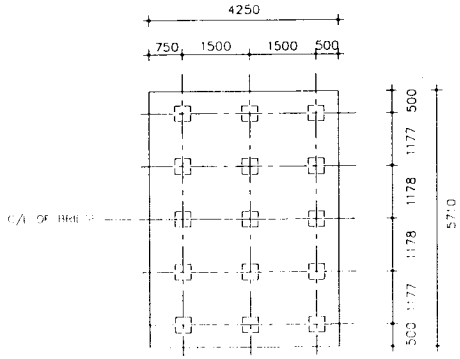
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horozontally and vertically as shown in drawings. filter material shall be provided as per specification.

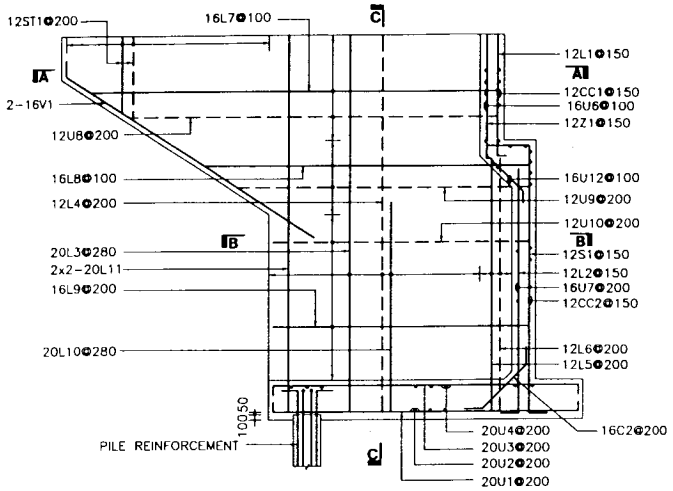
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 4.6m , DECK WIDTH 5.01m)

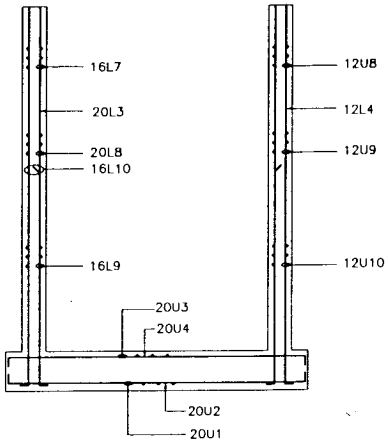
DATE
CAD FILE NO: AH11GR12104A1
DRAWN BY :

Web Copy

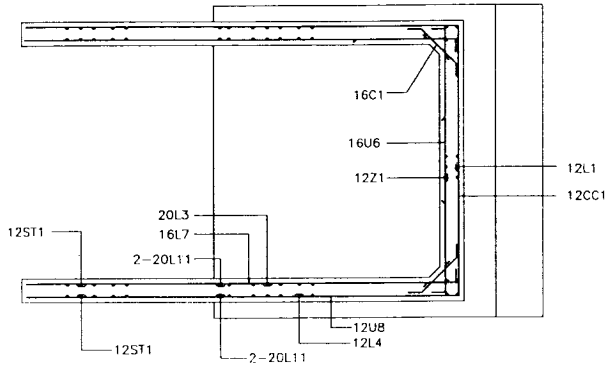
SHEET 2 OF 3	
SPAN RANGE : 1.5m TO 12.0m	
SIDE WALK: YES	



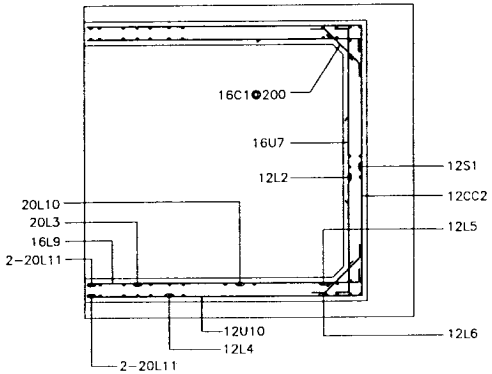
REINFORCEMENT DETAIL



SECTION C-C



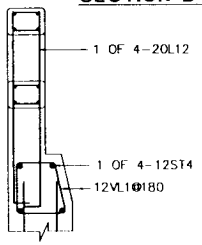
SECTION A-A



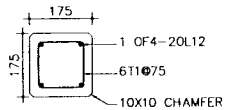
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

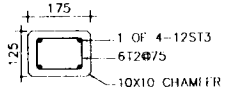
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	34	1350	144			1494
12	L2	34	2750	144			2894
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2450 to 3050	144			Avg. 2894
12	L6	6	Var. 2450 to 3050	144			Avg. 2894
16	L7	22	Var. 4300 to 5200	192			Avg. 4983
16	L8	24	Var. 3175 to 4300	192			Avg. 3930
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	1181	120			1301
20	U1	30	240	4150	240		4630
20	U2	22	240	5610	240		6090
20	U3	30	240	4150	240		4630
20	U4	22	240	5610	240		6090
16	U6	15	192	4862	192		5246
16	U7	11	192	4862	192		5246
12	U8	12	Var. 4300 to 5200	200	550		Avg. 5650
12	U9	14	Var. 3175 to 4300	200	550		Avg. 4488
12	U10	16	3175	200	550		3925
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	21	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	3300	240		4215
16	C1	42	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	120	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000
12	w1	4	200	575	206		981



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb 25mm, d) Wall-50mm, e) Base 50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210462	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	34	1250	144			1394
12	L2	34	2850	144			2994
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2550 to 3150	144			Avg. 2994
12	L6	6	Var. 2550 to 3150	144			Avg. 2994
16	L7	20	Var. 4450 to 5200	192			Avg. 5092
16	L8	26	Var. 3175 to 4450	192			Avg. 4005
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	1181	120			1301
20	U1	30	240	4150	240		4630
20	U2	22	240	5610	240		6090
20	U3	30	240	4150	240		4630
20	U4	22	240	5610	240		6090
16	U6	14	192	4862	192		5246
16	U7	12	192	4862	192		5246
12	U8	12	Var. 4450 to 5200	200	550		Avg. 5700
12	U9	14	Var. 3175 to 4450	200	550		Avg. 4563
12	U10	16	3175	200	550		3925
16	U12	12	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	22	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	3400	240		4315
16	C1	42	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	120	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	34	1100	144			1244
12	L2	34	3000	144			3144
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2700 to 3300	144			Avg. 3144
12	L6	6	Var. 2700 to 3300	144			Avg. 3144
16	L7	18	Var. 4675 to 5200	192			Avg. 5217
16	L8	30	Var. 3175 to 4675	192			Avg. 4117
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	1181	120			1301
20	U1	30	240	4150	240		4630
20	U2	22	240	5610	240		6090
20	U3	30	240	4150	240		4630
20	U4	22	240	5610	240		6090
16	U6	12	192	4862	192		5246
16	U7	12	192	4862	192		5246
12	U8	10	Var. 4675 to 5200	200	550		Avg. 5845
12	U9	16	Var. 3175 to 4675	200	550		Avg. 4675
12	U10	16	3175	200	550		3925
16	U12	12	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	23	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	3550	240		4465
16	C1	42	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	120	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000
12	w1	4	200	575	206		981

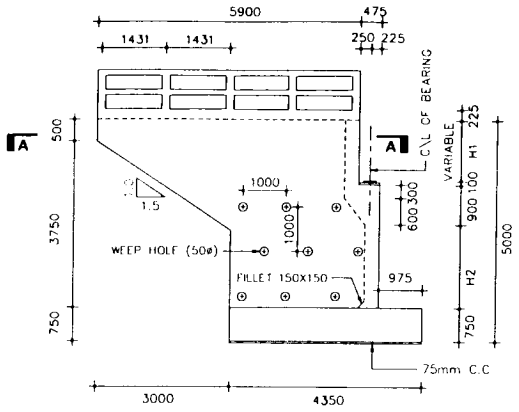
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 5.01m)

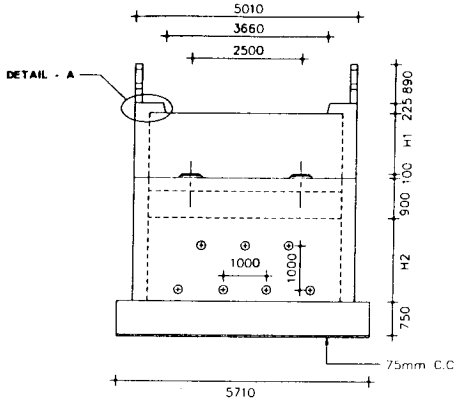
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R121046.3	

Web Copy

SHEET 1 OF 3	
SPAN RANGE : 1.5m TO 12m	
SIDE WALK YES	



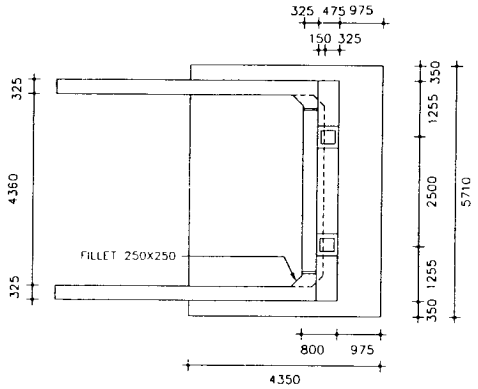
SIDE ELEVATION



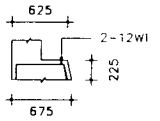
FRONT ELEVATION

TABLE-1

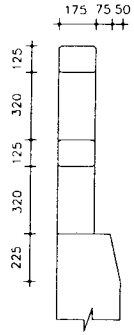
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	2250	270	155
11500	1000	2250	268	153
11000	1000	2250	266	151
10500	1000	2250	264	149
10000	1000	2250	262	147
9500	900	2350	258	145
9000	900	2350	256	143
8500	900	2350	254	141
8000	900	2350	252	139
7500	750	2500	248	137
7000	750	2500	246	135
6500	750	2500	244	133
6000	750	2500	242	131
5500	400	2850	238	129
5000	400	2850	236	127
4500	350	2900	232	125
4000	350	2900	230	123
3500	325	2925	228	121
3000	325	2925	226	119
2500	275	2975	222	117
2000	250	3000	220	115
1500	250	3000	218	113



SECTION A-A



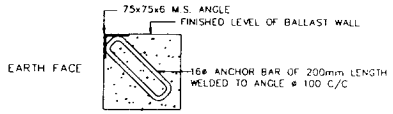
REINF. DETAIL 'A'



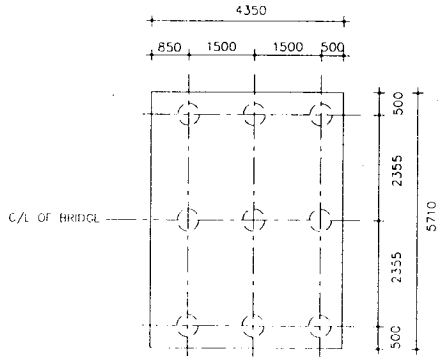
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

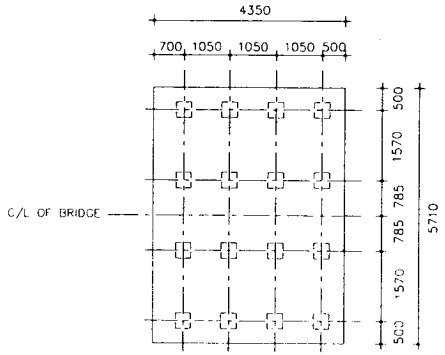
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metariol shall be provided as per specification

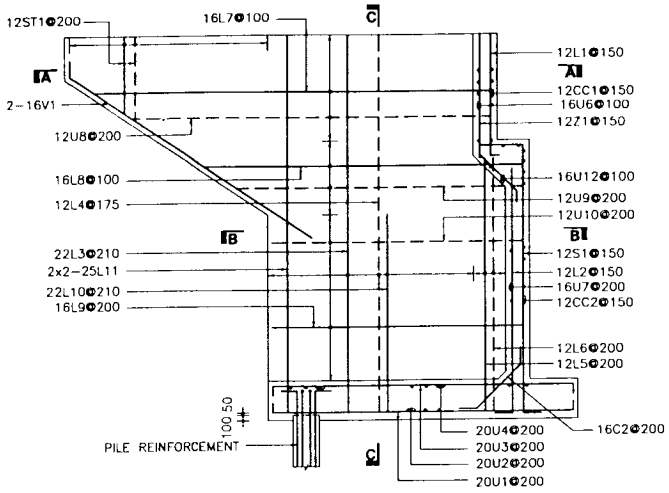
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 5.0m , DECK WIDTH 5.01m)

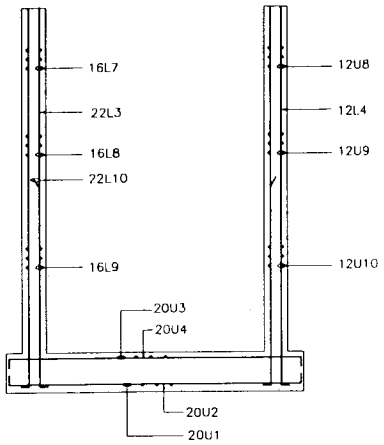
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R140501

Web Copy

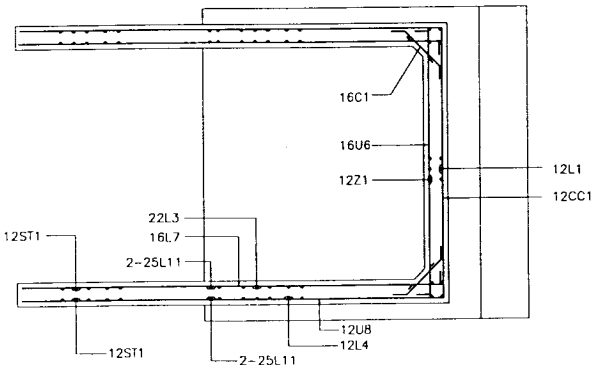
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES



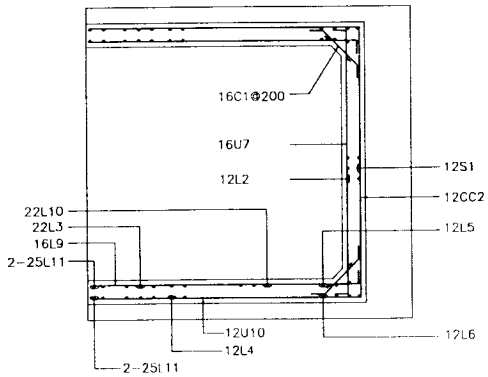
REINFORCEMENT DETAIL



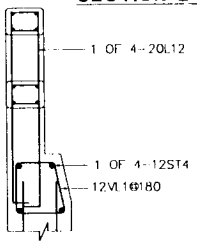
SECTION C-C



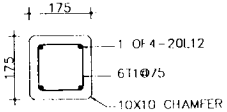
SECTION A-A



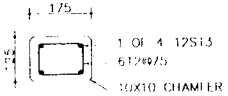
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	34	1350	144			1494
12	L2	34	3150	144			3294
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2850 to 3450	144			Avg. 3294
12	L6	6	Var. 2850 to 3450	144			Avg. 3294
16	L7	22	Var. 4900 to 5800	192			Avg. 5583
16	L8	30	Var. 3275 to 4900	192			Avg. 4280
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1181	120			1301
20	U1	30	240	4250	240		4730
20	U2	23	240	5610	240		6090
20	U3	30	240	4250	240		4730
20	U4	23	240	5610	240		6090
16	U6	15	192	4862	192		5246
16	U7	13	192	4862	192		5246
12	U8	12	Var. 4900 to 5800	225	575		Avg. 6300
12	U9	16	Var. 3275 to 4900	225	575		Avg. 4888
12	U10	16	3275	225	575		4075
16	U12	12	192	4910	192		5294
12	CC1	10	1250	450	4910		6610
12	CC2	24	1250	450	4910		6610
12	Z1	34	1350	866	144		2360
12	S1	34	700	3700	240		4640
16	C1	46	320	993	320		1633
16	C2	26	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	120	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R1210502

Web Copy
FA-165

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	34	1250	144			1394
12	L2	34	3250	144			3394
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2950 to 3550	144			Avg. 3394
12	L6	6	Var. 2950 to 3550	144			Avg. 3394
16	L7	20	Var. 5050 to 5800	192			Avg. 5692
16	L8	32	Var. 3275 to 5050	192			Avg. 4355
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1181	120			1301
20	U1	30	240	4250	240		4730
20	U2	23	240	5610	240		6090
20	U3	30	240	4250	240		4730
20	U4	23	240	5610	240		6090
16	U6	14	192	4862	192		5246
16	U7	14	192	4862	192		5246
12	U8	12	Var. 5050 to 5800	225	575		Avg. 6350
12	U9	18	Var. 3275 to 5050	225	575		Avg. 4963
12	U10	16	3275	225	575		4075
16	U12	12	192	4910	192		5294
12	CC1	9	1250	450	4910		6610
12	CC2	24	1250	450	4910		6610
12	Z1	34	1250	866	144		2260
12	S1	34	700	3800	240		4740
16	C1	46	320	993	320		1633
16	C2	26	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	120	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	34	1100	144			1244
12	L2	34	3400	144			3544
22	L3	22	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 3100 to 3700	144			Avg. 3544
12	L6	6	Var. 3100 to 3700	144			Avg. 3544
16	L7	18	Var. 5275 to 5800	192			Avg. 5817
16	L8	36	Var. 3275 to 5275	192			Avg. 4467
16	L9	16	3275	192			3467
22	L10	22	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1181	120			1301
20	U1	30	240	4250	240		4730
20	U2	23	240	5610	240		6090
20	U3	30	240	4250	240		4730
20	U4	23	240	5610	240		6090
16	U6	12	192	4862	192		5246
16	U7	14	192	4862	192		5246
12	U8	10	Var. 5275 to 5800	225	575		Avg. 6495
12	U9	20	Var. 3275 to 5275	225	575		Avg. 5075
12	U10	16	3275	225	575		4075
16	U12	12	192	4910	192		5294
12	CC1	8	1250	450	4910		6610
12	CC2	25	1250	450	4910		6610
12	Z1	34	1100	866	144		2110
12	S1	34	700	3950	240		4890
16	C1	46	320	993	320		1633
16	C2	26	320	1311	320		1951
16	V1	4	250	4544			4794
6	T1	120	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

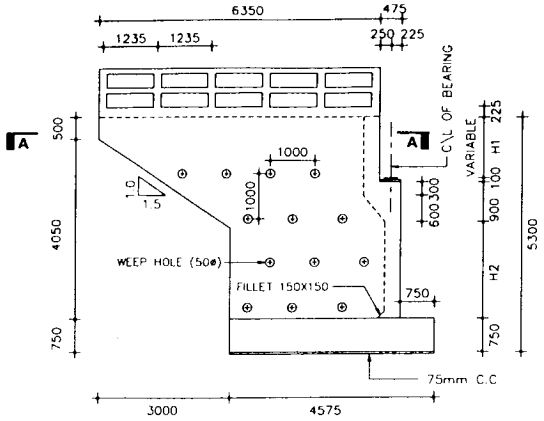
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1210503	

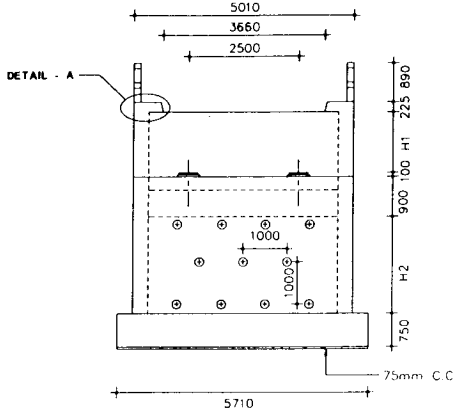
Web Copy

FA-166

SHEET 1 OF 3	
SPAN RANGE	1.5m TO 12m
SIDE WALK	YES



SIDE ELEVATION



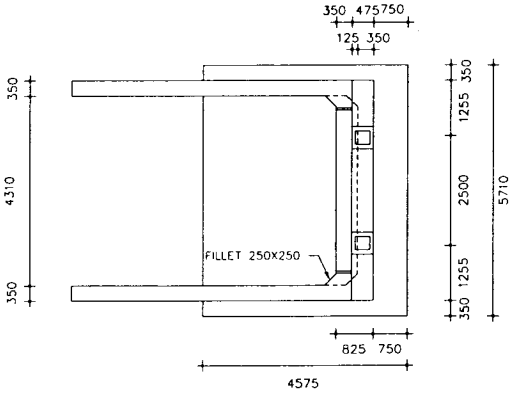
FRONT ELEVATION

TABLE-1

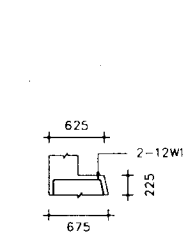
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	2550	305	140
11500	1000	2550	303	138
11000	1000	2550	301	136
10500	1000	2550	299	134
10000	1000	2550	297	132
9500	900	2650	293	130
9000	900	2650	291	128
8500	900	2650	289	126
8000	900	2650	287	124
7500	750	2800	285	122
7000	750	2800	281	120
6500	750	2800	279	118
6000	750	2800	277	116
5500	400	3150	273	114
5000	400	3150	271	112
4500	350	3200	267	110
4000	350	3200	265	108
3500	325	3225	263	106
3000	325	3225	261	104
2500	275	3275	257	102
2000	250	3300	255	100
1500	250	3300	253	98

TABLE-2

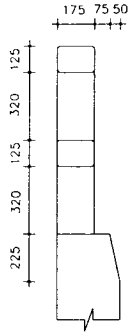
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	30	PRECAST



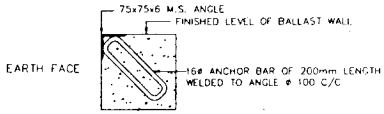
SECTION A-A



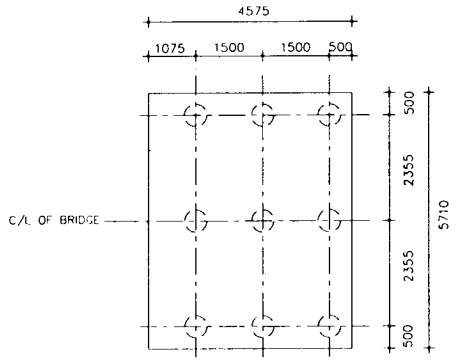
REINF. DETAIL 'A'



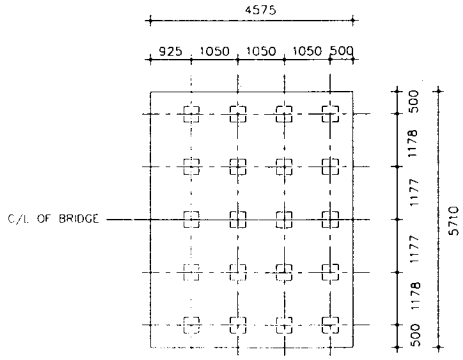
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

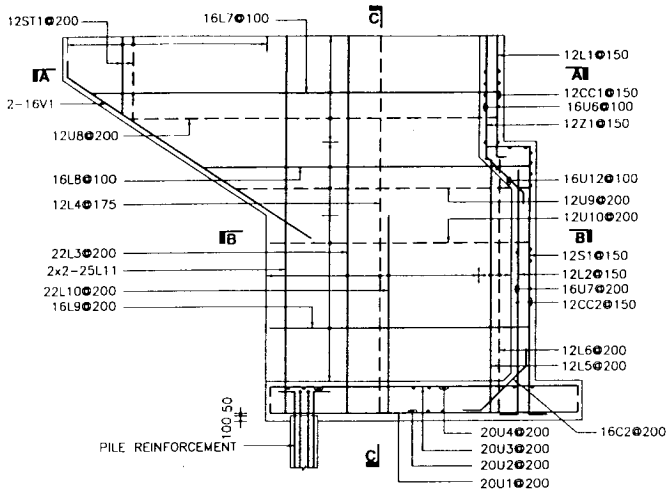
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 5.3m , DECK WIDTH 5.01m)

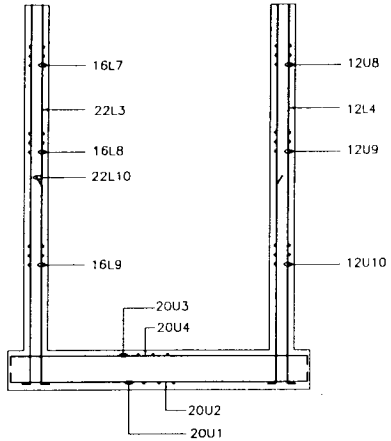
DATE	ISSUED BY
CAD FILE REF. ARMT\M1210531	

Web Copy

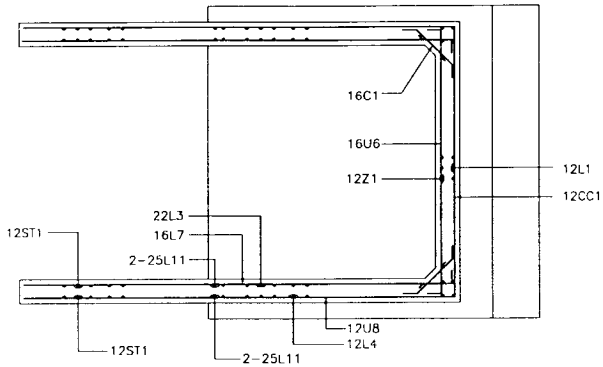
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES



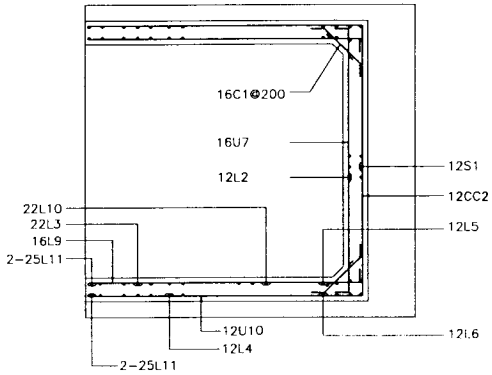
REINFORCEMENT DETAIL



SECTION C-C



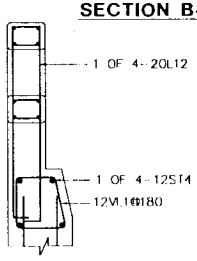
SECTION A-A



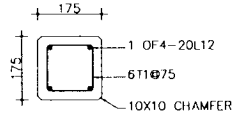
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

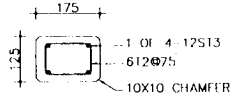
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	34	1350	144			1494
12	L2	34	3450	144			3594
22	L3	26	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3150 to 3750	144			Avg. 3594
12	L6	6	Var. 3150 to 3750	144			Avg. 3594
16	L7	22	Var. 5350 to 6250	192			Avg. 6033
16	L8	30	Var. 3725 to 5350	192			Avg. 4730
16	L9	20	3725	192			3917
22	L10	26	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	1181	120			1301
20	U1	30	240	4475	240		4955
20	U2	24	240	5610	240		6090
20	U3	30	240	4475	240		4955
20	U4	24	240	5610	240		6090
16	U6	15	192	4862	192		5246
16	U7	15	192	4862	192		5246
12	U8	12	Var. 5350 to 6250	250	600		Avg. 6800
12	U9	16	Var. 3725 to 5350	250	600		Avg. 5388
12	U10	20	3725	250	600		4575
16	U12	12	192	4910	192		5294
12	CC1	10	1300	500	4910		6710
12	CC2	26	1300	500	4910		6710
12	Z1	34	1350	866	144		2360
12	S1	34	725	4000	240		4965
16	C1	48	320	1063	320		1703
16	C2	26	320	1346	320		1986
16	V1	4	250	4600			4850
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000
12	w1	4	200	575	206		981



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of **276** MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm.
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1210532	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	34	1250	144			1394
12	L2	34	3550	144			3694
22	L3	26	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3250 to 3850	144			Avg. 3694
12	L6	6	Var. 3250 to 3850	144			Avg. 3694
16	L7	20	Var. 5500 to 6250	192			Avg. 6142
16	L8	32	Var. 3725 to 5500	192			Avg. 4805
16	L9	20	3725	192			3917
22	L10	26	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	1181	120			1301
20	U1	30	240	4475	240		4955
20	U2	24	240	5610	240		6090
20	U3	30	240	4475	240		4955
20	U4	24	240	5610	240		6090
16	U6	14	192	4862	192		5246
16	U7	15	192	4862	192		5246
12	U8	12	Var. 5500 to 6250	250	600		Avg. 6850
12	U9	18	Var. 3725 to 5500	250	600		Avg. 5463
12	U10	20	3725	250	600		4575
16	U12	12	192	4910	192		5294
12	CC1	9	1300	500	4910		6710
12	CC2	26	1300	500	4910		6710
12	Z1	34	1250	866	144		2260
12	S1	34	725	4100	240		5065
16	C1	48	320	1063	320		1703
16	C2	26	320	1346	320		1986
16	V1	4	250	4600			4850
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	34	1100	144			1244
12	L2	34	3700	144			3844
22	L3	26	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3400 to 4000	144			Avg. 3844
12	L6	6	Var. 3400 to 4000	144			Avg. 3844
16	L7	18	Var. 5725 to 6250	192			Avg. 6267
16	L8	36	Var. 3725 to 5725	192			Avg. 4917
16	L9	20	3725	192			3917
22	L10	26	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	1181	120			1301
20	U1	30	240	4475	240		4955
20	U2	24	240	5610	240		6090
20	U3	30	240	4475	240		4955
20	U4	24	240	5610	240		6090
16	U6	12	192	4862	192		5246
16	U7	16	192	4862	192		5246
12	U8	10	Var. 5725 to 6250	250	600		Avg. 6995
12	U9	20	Var. 3725 to 5725	250	600		Avg. 5575
12	U10	20	3725	250	600		4575
16	U12	12	192	4910	192		5294
12	CC1	8	1300	500	4910		6710
12	CC2	27	1300	500	4910		6710
12	Z1	34	1100	866	144		2110
12	S1	34	725	4250	240		5215
16	C1	48	320	1063	320		1703
16	C2	26	320	1346	320		1986
16	V1	4	250	4600			4850
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

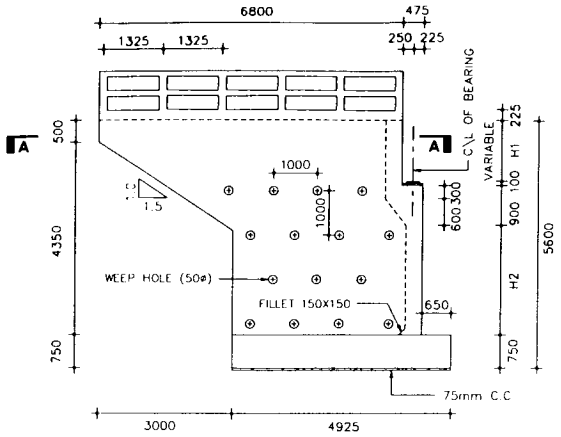
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1210533	

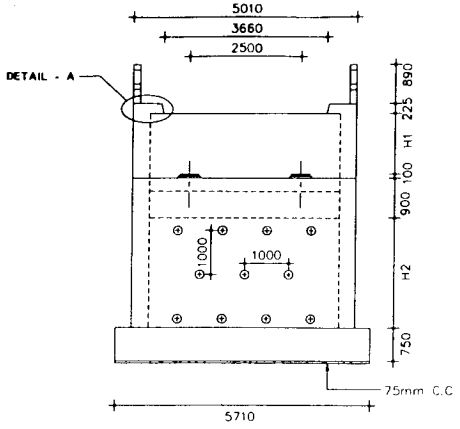
Web Copy

FA-169

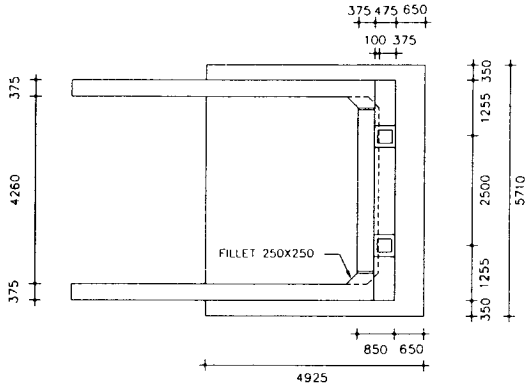
SHEET 1 OF 3	
SPAN RANGE	1.5m TO 12m
SIDE WALK	YES



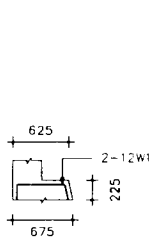
SIDE ELEVATION



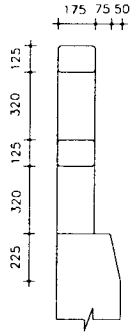
FRONT ELEVATION



SECTION A-A



REINF. DETAIL 'A'



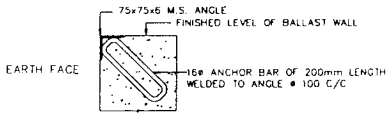
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

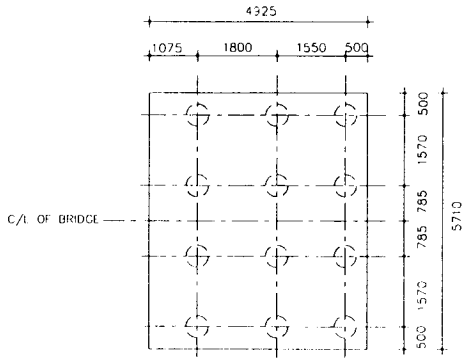
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	2850	260	160
11500	1000	2850	258	158
11000	1000	2850	256	156
10500	1000	2850	254	154
10000	1000	2850	252	152
9500	900	2950	250	150
9000	900	2950	248	148
8500	900	2950	246	146
8000	900	2950	244	144
7500	750	3100	242	142
7000	750	3100	240	140
6500	750	3100	238	138
6000	750	3100	236	136
5500	400	3450	234	134
5000	400	3450	232	132
4500	350	3500	228	130
4000	350	3500	226	128
3500	325	3525	224	126
3000	325	3525	222	124
2500	275	3575	220	122
2000	250	3600	218	120
1500	250	3600	216	118

TABLE-2

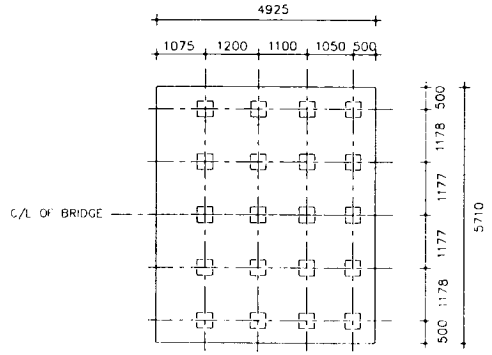
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 5.6m , DECK WIDTH 5.01m)

DATE	ISSUED BY
CAD FILE REF : ABUT\R1210561	

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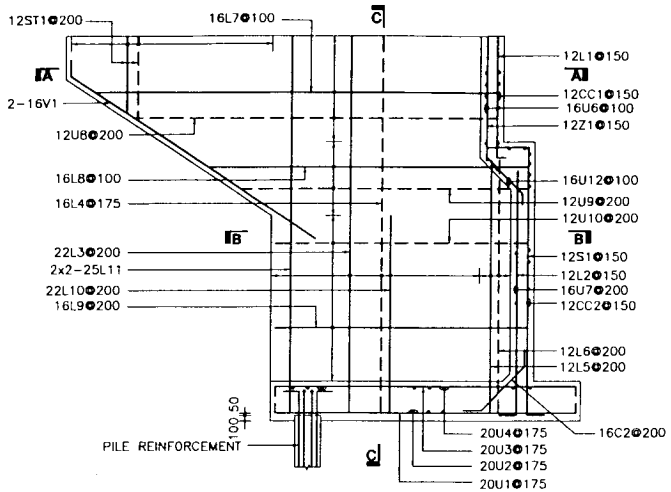
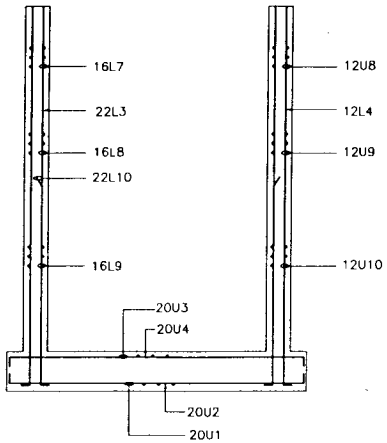
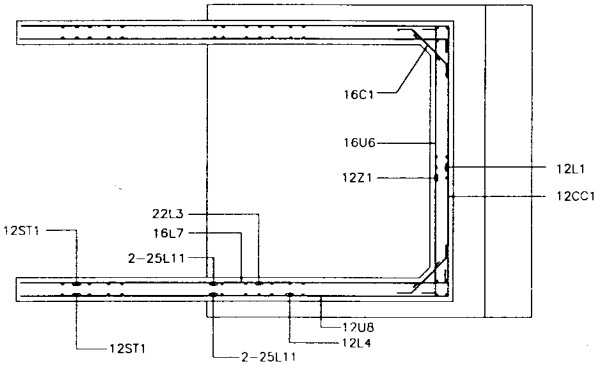
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES



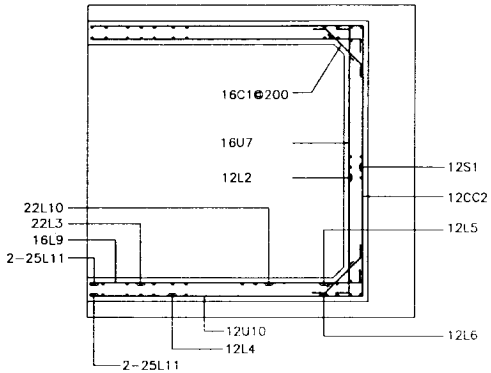
REINFORCEMENT DETAIL



SECTION C-C



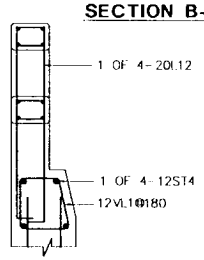
SECTION A-A



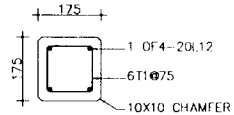
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

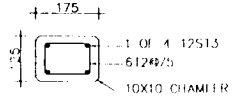
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	34	1350	144			1494
12	L2	34	3750	144			3894
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3450 to 4050	144			Avg. 3894
12	L6	6	Var. 3450 to 4050	144			Avg. 3894
16	L7	22	Var. 5800 to 6700	192			Avg. 6483
16	L8	30	Var. 4175 to 5800	192			Avg. 5180
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	1181	120			1301
20	U1	34	240	4825	240		5305
20	U2	29	240	5610	240		6090
20	U3	34	240	4825	240		5305
20	U4	29	240	5610	240		6090
16	U6	15	192	4854	192		5238
16	U7	16	192	4862	192		5246
12	U8	12	Var. 5800 to 6700	275	625		Avg. 7300
12	U9	16	Var. 4175 to 5800	275	625		Avg. 5888
12	U10	22	4175	275	625		5075
16	U12	12	192	4910	192		5294
12	CC1	10	1350	550	4910		6810
12	CC2	28	1350	550	4910		6810
12	Z1	34	1350	866	144		2360
12	S1	34	750	4300	240		5290
16	C1	52	320	1134	320		1774
16	C2	26	320	1382	320		2022
16	V1	4	250	4656			4906
6	T1	144	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000
12	w1	4	200	575	206		981



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb 25mm, d) Wall 50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1210562	

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FA-171

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK : YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	34	1250	144			1394
12	L2	34	3850	144			3994
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3550 to 4150	144			Avg. 3994
12	L6	6	Var. 3550 to 4150	144			Avg. 3994
16	L7	20	Var. 5950 to 6700	192			Avg. 6592
16	L8	32	Var. 4175 to 5950	192			Avg. 5255
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	1181	120			1301
20	U1	34	240	4825	240		5305
20	U2	29	240	5610	240		6090
20	U3	34	240	4825	240		5305
20	U4	29	240	5610	240		6090
16	U6	14	192	4854	192		5238
16	U7	17	192	4862	192		5246
12	U8	12	Var. 5950 to 6700	275	625		Avg. 7350
12	U9	18	Var. 4175 to 5950	275	625		Avg. 5963
12	U10	22	4175	275	625		5075
16	U12	12	192	4910	192		5294
12	CC1	9	1350	550	4910		6810
12	CC2	28	1350	550	4910		6810
12	Z1	34	1250	866	144		2260
12	S1	34	750	4400	240		5390
16	C1	52	320	1134	320		1774
16	C2	26	320	1382	320		2022
16	V1	4	250	4656			4906
6	T1	144	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	34	1100	144			1244
12	L2	34	4000	144			4144
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3700 to 4300	144			Avg. 4144
12	L6	6	Var. 3700 to 4300	144			Avg. 4144
16	L7	18	Var. 6175 to 6700	192			Avg. 6717
16	L8	36	Var. 4175 to 6175	192			Avg. 5367
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	1181	120			1301
20	U1	34	240	4825	240		5305
20	U2	29	240	5610	240		6090
20	U3	34	240	4825	240		5305
20	U4	29	240	5610	240		6090
16	U6	12	192	4854	192		5238
16	U7	17	192	4862	192		5246
12	U8	10	Var. 6175 to 6700	275	625		Avg. 7495
12	U9	20	Var. 4175 to 6175	275	625		Avg. 6075
12	U10	22	4175	275	625		5075
16	U12	12	192	4910	192		5294
12	CC1	8	1350	550	4910		6810
12	CC2	29	1350	550	4910		6810
12	Z1	34	1100	866	144		2110
12	S1	34	750	4550	240		5540
16	C1	52	320	1134	320		1774
16	C2	26	320	1382	320		2022
16	V1	4	250	4656			4906
6	T1	144	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

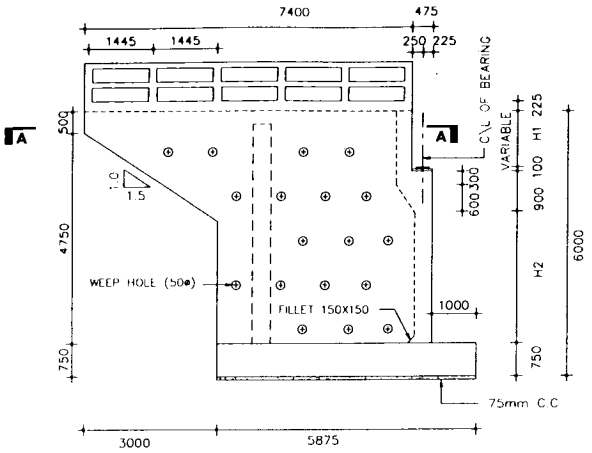
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210563	

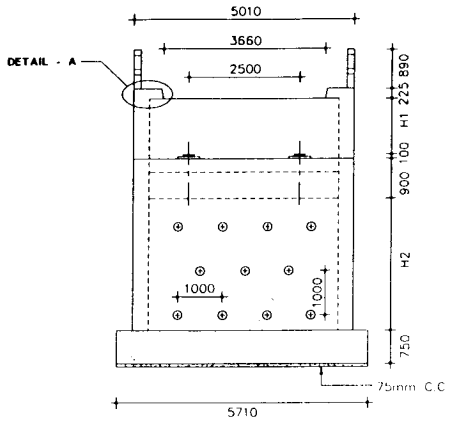
Web Copy

FA-172

SHEET 1 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK : YES



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

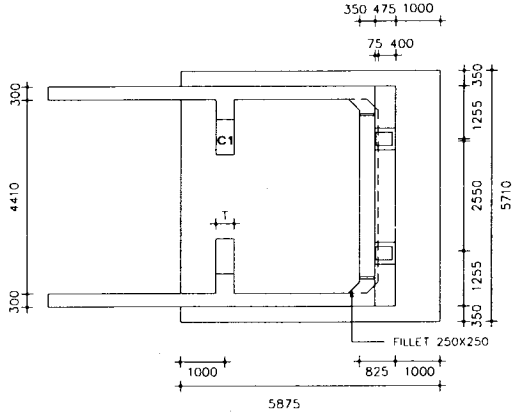
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	3250	305	185
11500	1000	3250	303	183
11000	1000	3250	301	181
10500	1000	3250	299	179
10000	1000	3250	297	177
9500	900	3350	295	175
9000	900	3350	293	173
9500	900	3350	291	171
8000	900	3350	289	169
7500	750	3500	287	167
7000	750	3500	285	165
6500	750	3500	283	163
6000	750	3500	281	161
5500	400	3850	279	159
5000	400	3850	277	157
4500	350	3900	273	155
4000	350	3900	271	153
3500	325	3925	269	151
3000	325	3925	267	149
2500	275	3975	265	147
2000	250	4000	263	145
1500	250	4000	351	143

TABLE-2

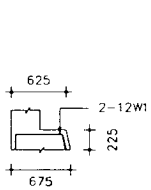
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500 ø	60	CAST IN SITU
TYPE – B	350X350	30	PRECAST

TABLE-3

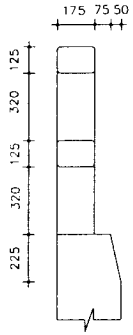
L1	L2	H4	T
700	1600	4950	400



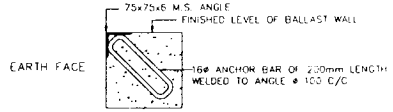
SECTION A-A



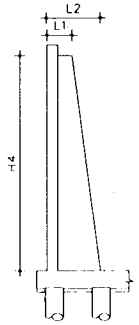
REINF. DETAIL 'A'



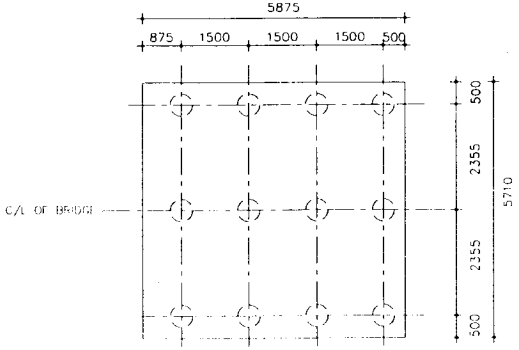
GENERAL ARRANGEMENT OF RAILING ON WING WALL



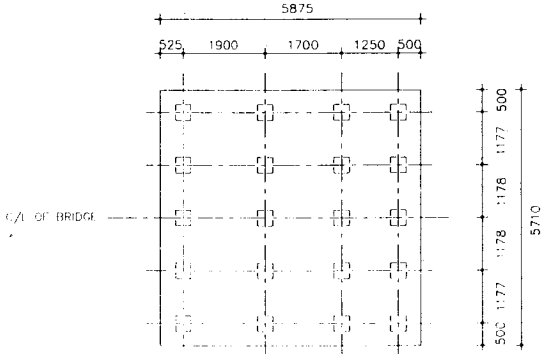
NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm c/c horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

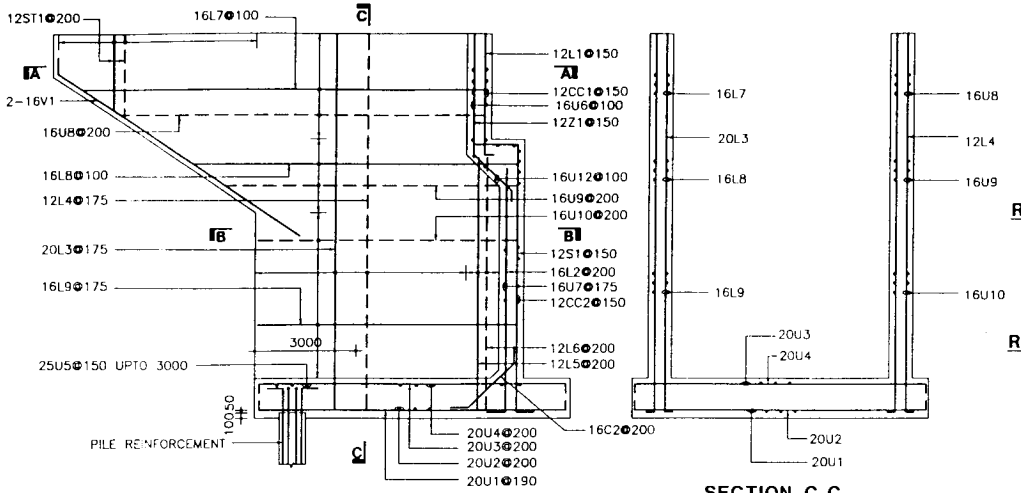
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.0m , DECK WIDTH 5.01m)

DATE
DRAWN BY
CAD FILE REF : ABUT/R12/500

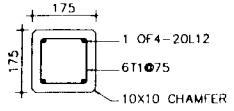
Web Copy
FA-173

SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK: YES

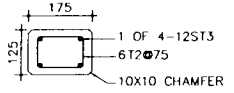


REINFORCEMENT DETAIL

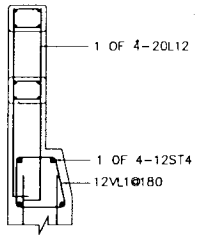
SECTION C-C



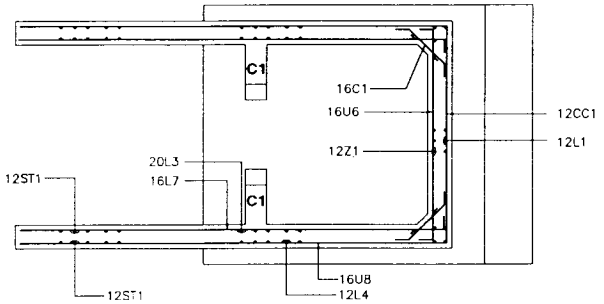
REINF. DETAIL OF POST



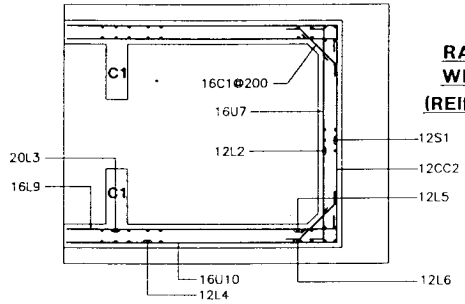
REINF. DETAIL OF RAILING



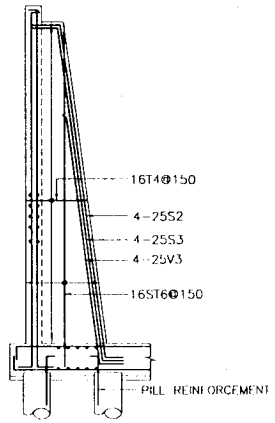
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C1

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	34	1350	144			1494
12	L2	26	4150	144			4294
20	L3	46	5800	240			6040
12	L4	46	5800	144			5944
12	L5	6	Var. 3850 to 4450	144			Avg. 4294
12	L6	6	Var. 3850 to 4450	144			Avg. 4294
16	L7	22	Var. 6400 to 7300	192			Avg. 7083
16	L8	30	Var. 4775 to 6400	192			Avg. 5780
16	L9	30	4775	192			4967
20	L12	48	1181	120			1301
20	U1	31	240	5775	240		6255
20	U2	30	240	5610	240		6090
20	U3	30	240	5775	240		6255
20	U4	14	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	21	192	4854	192		5238
16	U8	12	Var. 6400 to 7300	200	600		Avg. 7800
16	U9	16	Var. 4775 to 6400	200	650		Avg. 6438
16	U10	26	4775	200	550		5525
16	U12	12	192	4910	192		5294
12	CC1	10	1200	500	4910		6610
12	CC2	30	1200	600	4910		6710
12	Z1	34	1350	836	144		2330
12	S1	34	725	4700	240		5665
16	C1	56	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	144	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2852
25	S2	8	300	5095	600		5995
25	S3	8	325	5096	575		5996
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail- 20mm, b) Post-20mm, c) Curb-25mm, d) Wall 50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1210607

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FA-174

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	34	1250	144			1394
12	L2	26	4250	144			4394
20	L3	46	5800	240			6040
12	L4	46	5800	144			5944
12	L5	6	Var. 3950 to 4550	144			Avg. 4394
12	L6	6	Var. 3950 to 4550	144			Avg. 4394
16	L7	20	Var. 6550 to 7300	192			Avg. 7192
16	L8	32	Var. 4775 to 6550	192			Avg. 5855
16	L9	30	4775	192			4967
20	L12	48	1181	120			1301
20	U1	31	240	5775	240		6255
20	U2	30	240	5610	240		6090
20	U3	30	240	5775	240		6255
20	U4	14	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	14	192	4854	192		5238
16	U7	21	192	4854	192		5238
16	U8	12	Var. 6550 to 7300	200	600		Avg. 7850
16	U9	18	Var. 4775 to 6550	200	650		Avg. 6513
16	U10	26	4775	200	550		5525
16	U12	12	192	4910	192		5294
12	CC1	9	1200	500	4910		6610
12	CC2	31	1200	600	4910		6710
12	Z1	34	1250	836	144		2230
12	S1	34	725	4800	240		5765
16	C1	56	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	144	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5095	600		5995
25	S3	8	325	5096	575		5996
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674
12	w1	4	200	575	206		981
12	W1	2	325	535	329		1189

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	34	1100	144			1244
12	L2	26	4400	144			4544
20	L3	46	5800	240			6040
12	L4	46	5800	144			5944
12	L5	6	Var. 4100 to 4700	144			Avg. 4544
12	L6	6	Var. 4100 to 4700	144			Avg. 4544
16	L7	18	Var. 6775 to 7300	192			Avg. 7317
16	L8	36	Var. 4775 to 6775	192			Avg. 5967
16	L9	30	4775	192			4967
20	L12	48	1181	120			1301
20	U1	31	240	5775	240		6255
20	U2	30	240	5610	240		6090
20	U3	30	240	5775	240		6255
20	U4	14	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	12	192	4854	192		5238
16	U7	22	192	4854	192		5238
16	U8	10	Var. 6775 to 7300	200	600		Avg. 7995
16	U9	20	Var. 4775 to 6775	200	650		Avg. 6625
16	U10	26	4775	200	550		5525
16	U12	12	192	4910	192		5294
12	CC1	8	1200	500	4910		6610
12	CC2	32	1200	600	4910		6710
12	Z1	34	1100	836	144		2080
12	S1	34	725	4950	240		5915
16	C1	56	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	144	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5095	600		5995
25	S3	8	325	5096	575		5996
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674
12	w1	4	200	575	206		981
12	W1	2	325	535	329		1189

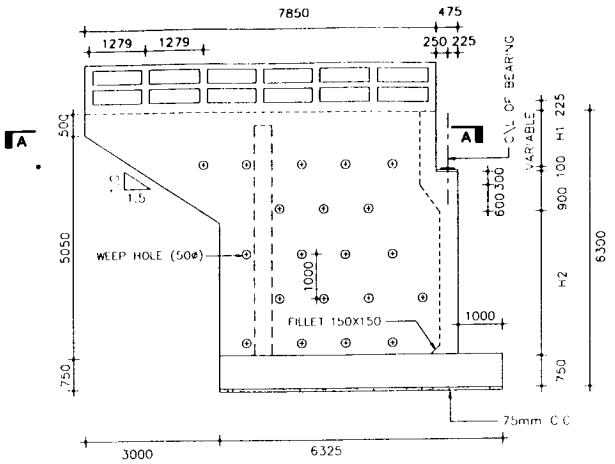
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 5.01m)

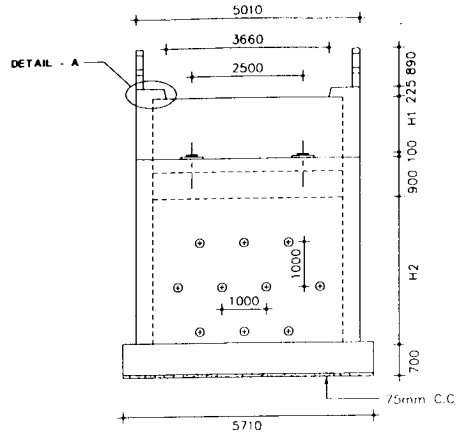
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210603	

LA Web Copy

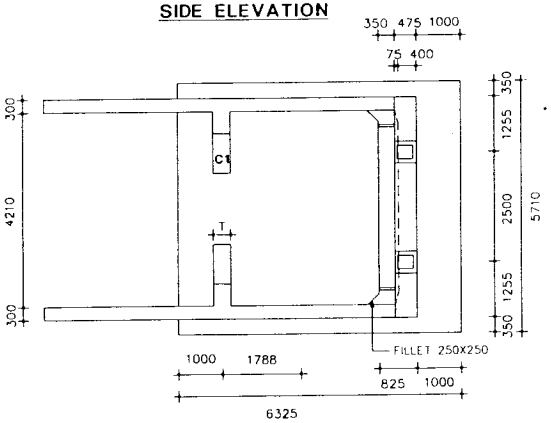
SHEET 1 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK : YES



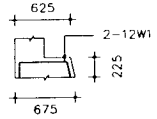
SIDE ELEVATION



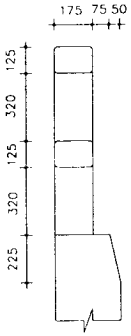
FRONT ELEVATION



SECTION A-A



REINF. DETAIL 'A'



GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

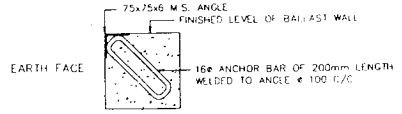
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	3550	260	
11500	1000	3550	258	
11000	1000	3550	256	
10500	1000	3550	254	
10000	1000	3550	252	
9500	900	3650	250	
9000	900	3650	248	
8500	900	3650	246	
8000	900	3650	244	
7500	750	3800	242	
7000	750	3800	240	
6500	750	3800	238	
6000	750	3800	236	
5500	400	4150	234	
5000	400	4150	232	
4500	350	4200	230	
4000	350	4200	228	
3500	325	4225	226	
3000	325	4225	224	
2500	275	4275	222	
2000	250	4300	220	
1500	250	4300	218	

TABLE-2

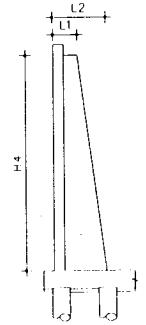
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	350x350	30	PRECAST

TABLE-3

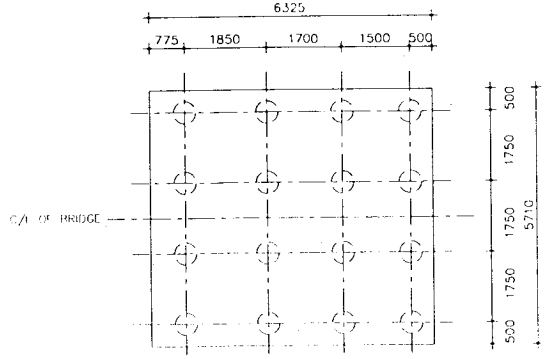
L1	L2	H4	T
1000	1700	5250	400



NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

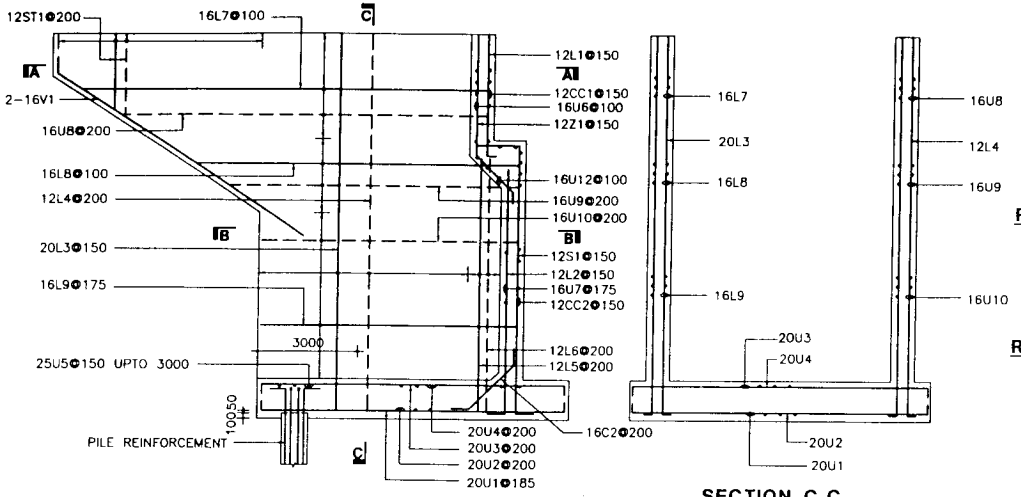
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.3m , DECK WIDTH 5.01m)

DATE
ISSUED BY
CAD FILE REF : ABUTXP1210M1

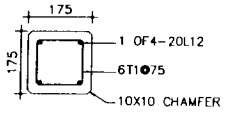
Web Copy

SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK: YES

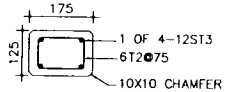


REINFORCEMENT DETAIL

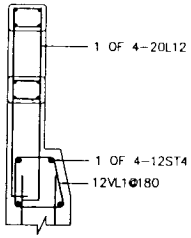
SECTION C-C



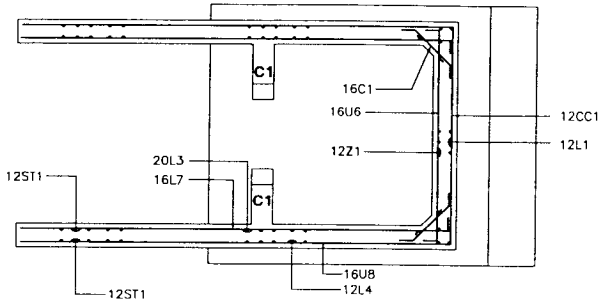
REINF. DETAIL OF POST



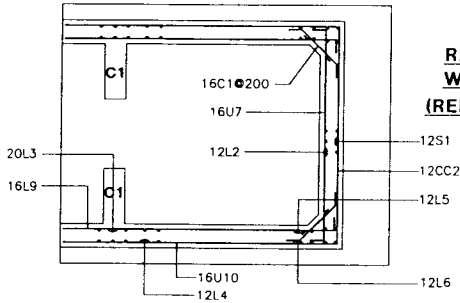
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



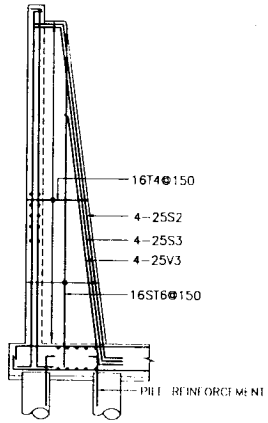
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	34	1350	144			1494
12	L2	34	4450	144			4594
20	L3	60	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4150 to 4750	144			Avg. 4594
12	L6	6	Var. 4150 to 4750	144			Avg. 4594
16	L7	22	Var. 6850 to 7750	192			Avg. 7533
16	L8	30	Var. 5225 to 6850	192			Avg. 6230
16	L9	34	5225	192			5417
20	L12	56	1181	120			1301
20	U1	32	240	6225	240		6705
20	U2	33	240	5610	240		6090
20	U3	30	240	6225	240		6705
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	22	192	4854	192		5238
16	U8	12	Var. 6850 to 7750	200	600		Avg. 8250
16	U9	16	Var. 5225 to 6850	200	650		Avg. 6888
16	U10	30	5225	200	550		5975
16	U12	12	192	4910	192		5294
12	CC1	10	1200	500	4910		6610
12	CC2	32	1200	600	4910		6710
12	Z1	34	1350	836	144		2330
12	S1	34	725	5000	240		5965
16	C1	58	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4787			5037
6	T1	168	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1896 to 3296	696			Avg. 3292
25	S2	8	300	5707	900		6907
25	S3	8	325	5707	875		6907
25	V3	8	350	3730			4080
16	ST6	24	Var. 1234 to 6060				Avg. 3647
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001



REINFORCEMENT DETAIL OF COUNTERFORT C1

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R12106.32	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	34	1250	144			1394
12	L2	34	4550	144			4694
20	L3	60	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4250 to 4850	144			Avg. 4694
12	L6	6	Var. 4250 to 4850	144			Avg. 4694
16	L7	20	Var. 7000 to 7750	192			Avg. 7642
16	L8	32	Var. 5225 to 7000	192			Avg. 6305
16	L9	34	5225	192			5417
20	L12	56	1181	120			1301
20	U1	32	240	6225	240		6705
20	U2	33	240	5610	240		6090
20	U3	30	240	6225	240		6705
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	14	192	4854	192		5238
16	U7	23	192	4854	192		5238
16	U8	12	Var. 7000 to 7750	200	600		Avg. 8300
16	U9	18	Var. 5225 to 7000	200	650		Avg. 6963
16	U10	30	5225	200	550		5975
16	U12	12	192	4910	192		5294
12	CC1	9	1200	500	4910		6610
12	CC2	33	1200	600	4910		6710
12	Z1	34	1250	836	144		2230
12	S1	34	725	5100	240		6065
16	C1	58	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4787			5037
6	T1	168	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1896 to 3296	696			Avg. 3292
25	S2	8	300	5707	900		6907
25	S3	8	325	5707	875		6907
25	V3	8	350	3730			4080
16	ST6	24	Var. 1234 to 6060				Avg. 3647
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	34	1100	144			1244
12	L2	34	4700	144			4844
20	L3	60	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4400 to 5000	144			Avg. 4844
12	L6	6	Var. 4400 to 5000	144			Avg. 4844
16	L7	18	Var. 7225 to 7750	192			Avg. 7767
16	L8	36	Var. 5225 to 7225	192			Avg. 6417
16	L9	34	5225	192			5417
20	L12	56	1181	120			1301
20	U1	32	240	6225	240		6705
20	U2	33	240	5610	240		6090
20	U3	30	240	6225	240		6705
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	12	192	4854	192		5238
16	U7	24	192	4854	192		5238
16	U8	10	Var. 7225 to 7750	200	600		Avg. 8445
16	U9	20	Var. 5225 to 7225	200	650		Avg. 7075
16	U10	30	5225	200	550		5975
16	U12	12	192	4910	192		5294
12	CC1	8	1200	500	4910		6610
12	CC2	34	1200	600	4910		6710
12	Z1	34	1100	836	144		2080
12	S1	34	725	5250	240		6215
16	C1	58	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4787			5037
6	T1	168	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1896 to 3296	696			Avg. 3292
25	S2	8	300	5707	900		6907
25	S3	8	325	5707	875		6907
25	V3	8	350	3730			4080
16	ST6	24	Var. 1234 to 6060				Avg. 3647
12	w1	4	200	575	206		981

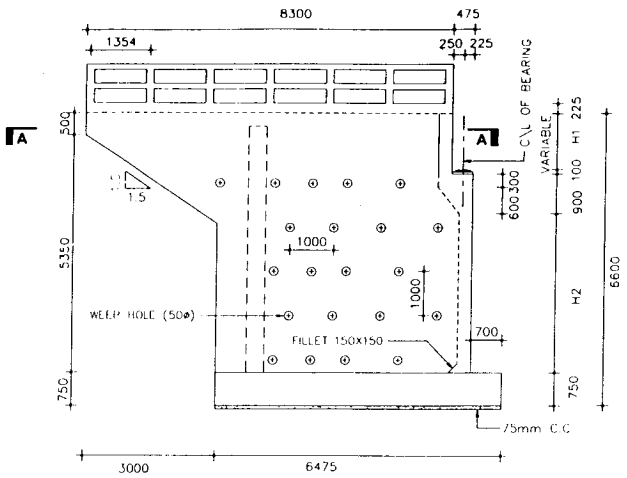
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 5.01m)

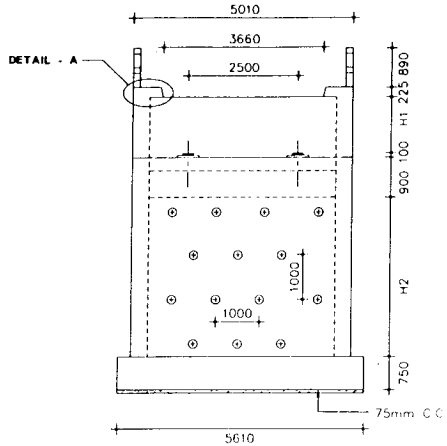
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210633	

Web Copy

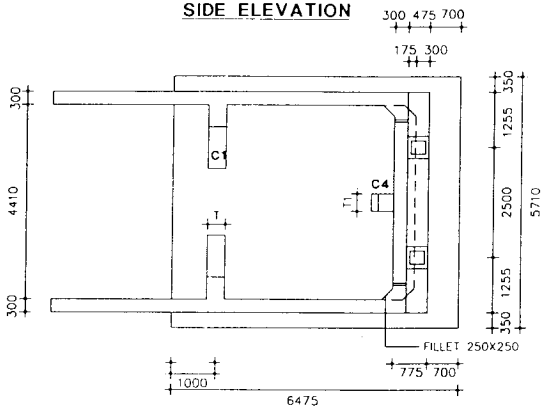
SHEET 1 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK : YES



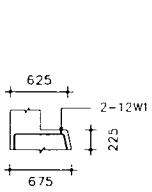
SIDE ELEVATION



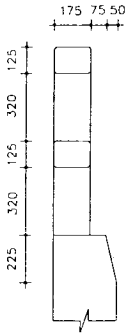
FRONT ELEVATION



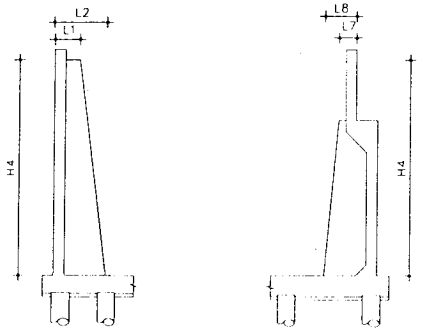
SECTION A-A



REINF. DETAIL 'A'

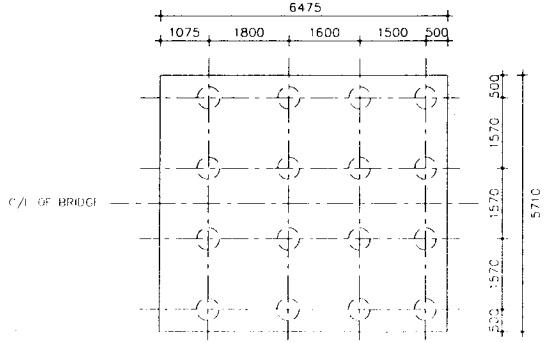


GENERAL ARRANGEMENT OF RAILING ON WING WALL



COUNTERFORT C1

COUNTERFORT C4



LAYOUT PLAN OF FOUNDATION TYPE - A

TABLE-1

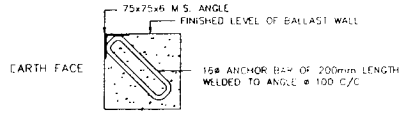
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	3850	285	
11500	1000	3850	283	
11000	1000	3850	281	
10500	1000	3850	279	
10000	1000	3850	277	
9500	900	3950	275	
9000	900	3950	273	
8500	900	3950	271	
8000	900	3950	269	
7500	750	4100	267	NOT APPLICABLE
7000	750	4100	265	
6500	750	4100	263	
6000	750	4100	261	
5500	400	4450	259	
5000	400	4450	257	
4500	350	4550	255	
4000	350	4550	253	
3500	325	4525	251	
3000	325	4525	249	
2500	275	4575	247	
2000	250	4600	245	
1500	250	4600	243	

TABLE-2

FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	INSITU
TYPE - B	NOT APPLICABLE		

TABLE-3

L1	L2	H4	T	L7	L8	T1
700	1700	5550	400	650	800	400



NOSING AT ABUTMENT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.6m , DECK WIDTH 5.01m)

DATE :
CHECKED BY
CAD FILE REF : ABUT_R1210661

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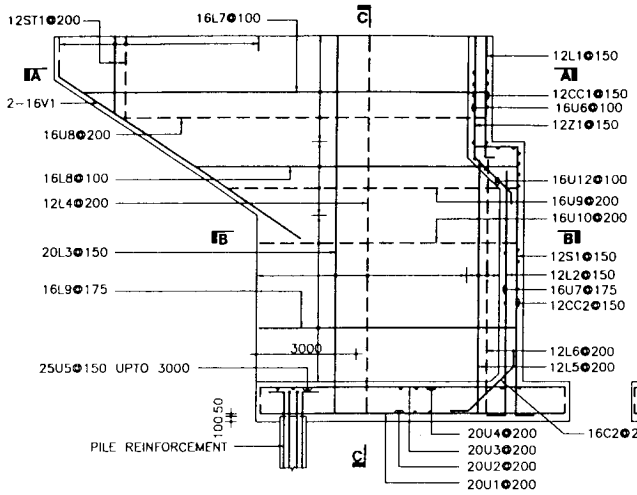
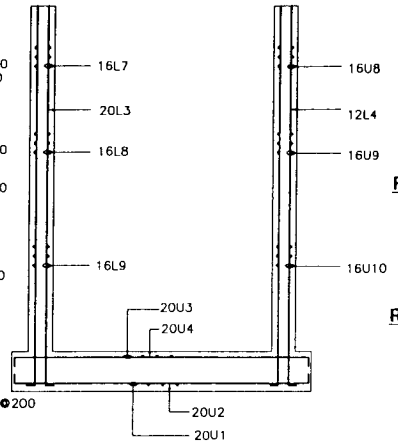
FA-179

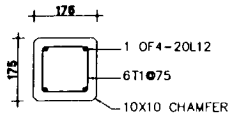
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12m
SIDE WALK: YES



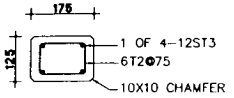
REINFORCEMENT DETAIL



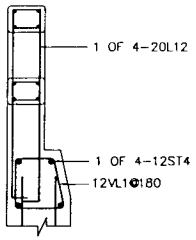
SECTION C-C



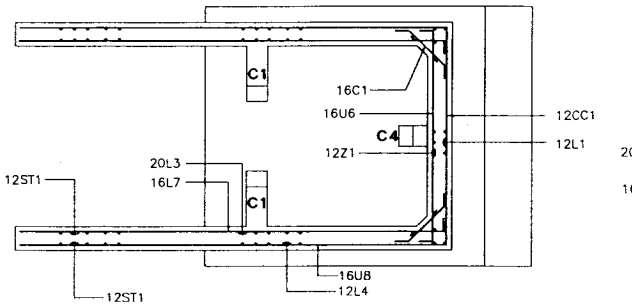
REINF. DETAIL OF POST



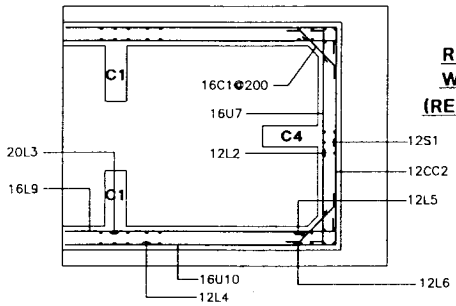
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



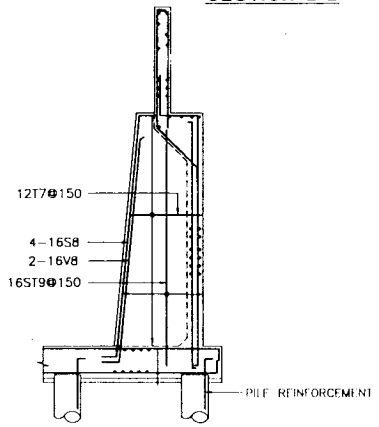
SECTION A-A



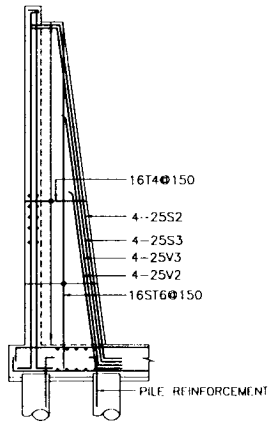
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	34	1350	144			1494
12	L2	34	4750	144			4894
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4450 to 5050	144			Avg. 4894
12	L6	6	Var. 4450 to 5050	144			Avg. 4894
16	L7	22	Var. 7300 to 8200	192			Avg. 7983
16	L8	30	Var. 5675 to 7300	192			Avg. 6680
16	L9	38	5675	192			5867
20	L12	56	1181	120			1301
20	U1	30	240	6375	240		6855
20	U2	33	240	5610	240		6090
20	U3	30	240	6375	240		6855
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	24	192	4854	192		5238
16	U8	12	Var. 7300 to 8200	200	550		Avg. 8650
16	U9	16	Var. 5675 to 7300	200	550		Avg. 7238
16	U10	32	5675	200	550		6425
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	34	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	5300	240		6215
16	C1	62	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4844			5094
6	T1	168	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	76	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	5954	600		6854
25	S3	8	325	5954	575		6854
25	V2	8	375	3078			3453
25	V3	8	350	3927			4277
16	ST6	24	Var. 1025 to 6360				Avg. 2803
12	W1	2	325	535	329		1189
16	S8	8	192	5222	350		5764
16	V8	4	217	4277			4494
16	ST9	9	Var. 1055 to 4509				Avg. 3358
12	w1	4	200	575	206		981



REINFORCEMENT DETAIL OF COUNTERFORT C4



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21**MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail- 20mm, b) Past- 20mm, c) Curb- 25mm, d) Wall -50mm, e) Base- 50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210662	

Web Copy

SHEET 3 OF 3
SPAN RANGE :1.5m TO 12m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	34	1250	144			1394
12	L2	34	4850	144			4994
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4550 to 5150	144			Avg. 4994
12	L6	6	Var. 4550 to 5150	144			Avg. 4994
16	L7	20	Var. 7450 to 8200	192			Avg. 8092
16	L8	32	Var. 5675 to 7450	192			Avg. 6755
16	L9	38	5675	192			5867
20	L12	56	1181	120			1301
20	U1	30	240	6375	240		6855
20	U2	33	240	5610	240		6090
20	U3	30	240	6375	240		6855
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	14	192	4854	192		5238
16	U7	25	192	4854	192		5238
16	U8	12	Var. 7450 to 8200	200	550		Avg. 8700
16	U9	18	Var. 5675 to 7450	200	550		Avg. 7313
16	U10	32	5675	200	550		6425
16	U12	12	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	35	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	5400	240		6315
16	C1	62	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4844			5094
6	T1	168	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	76	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	5954	600		6854
25	S3	8	325	5954	575		6854
25	V2	8	375	3078			3453
25	V3	8	350	3927			4277
16	ST6	24	Var. 1025 to 6360				Avg. 2803
12	W1	2	325	535	329		1189
16	S8	8	192	5222	350		5764
16	V8	4	217	4277			4494
16	ST9	9	Var. 1055 to 4509				Avg. 3358
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	34	1100	144			1244
12	L2	34	5000	144			5144
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4700 to 5300	144			Avg. 5144
12	L6	6	Var. 4700 to 5300	144			Avg. 5144
16	L7	18	Var. 7675 to 8200	192			Avg. 8217
16	L8	36	Var. 5675 to 7675	192			Avg. 6867
16	L9	38	5675	192			5867
20	L12	56	1181	120			1301
20	U1	30	240	6375	240		6855
20	U2	33	240	5610	240		6090
20	U3	30	240	6375	240		6855
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	12	192	4854	192		5238
16	U7	26	192	4854	192		5238
16	U8	10	Var. 7675 to 8200	200	550		Avg. 8845
16	U9	20	Var. 5675 to 7675	200	550		Avg. 7425
16	U10	32	5675	200	550		6425
16	U12	12	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	36	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	5550	240		6465
16	C1	62	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4844			5094
6	T1	168	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	76	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	5954	600		6854
25	S3	8	325	5954	575		6854
25	V2	8	375	3078			3453
25	V3	8	350	3927			4277
16	ST6	24	Var. 1025 to 6360				Avg. 2803
12	W1	2	325	535	329		1189
16	S8	8	192	5222	350		5764
16	V8	4	217	4277			4494
16	ST9	9	Var. 1055 to 4509				Avg. 3358
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210663	

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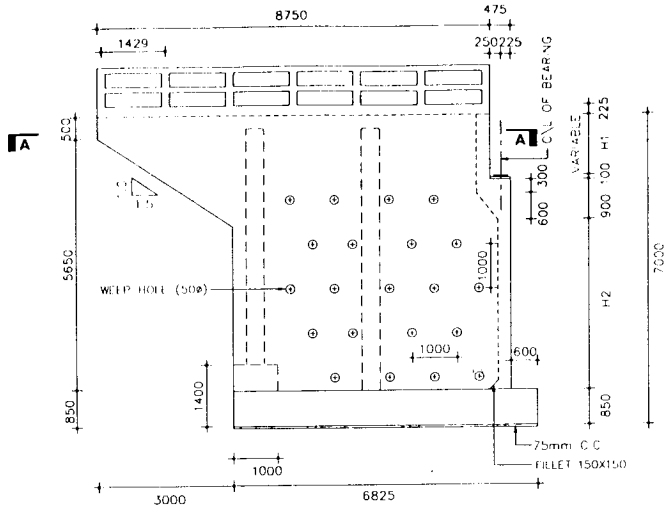
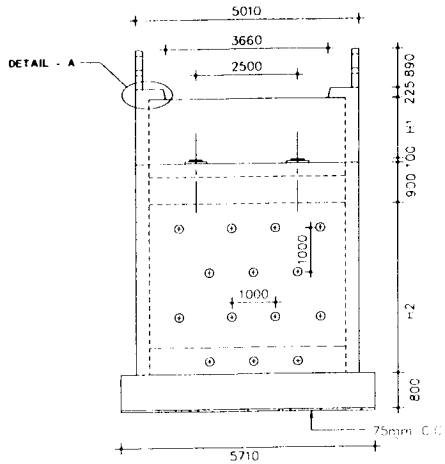
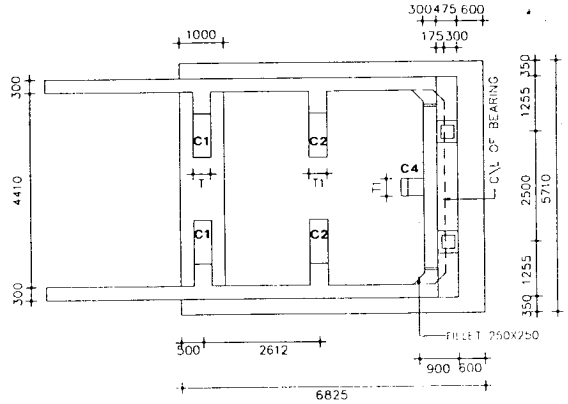


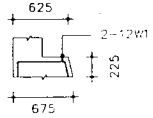
SIDE ELEVATION



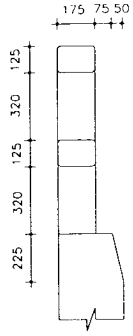
FRONT ELEVATION



SECTION A-A



REINF. DETAIL 'A'



GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

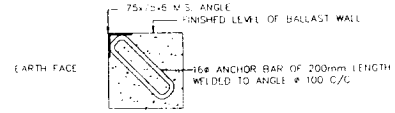
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	4150	320	NOT APPLICABLE
11500	1000	4150	318	
11000	1000	4150	316	
10500	1000	4150	314	
10000	1000	4150	312	
9500	900	4250	310	
9000	900	4250	308	
8500	900	4250	306	
8000	900	4250	304	
7500	750	4400	302	
7000	750	4400	300	
6500	750	4400	298	
6000	750	4400	296	
5500	400	4750	294	
5000	400	4750	292	
4500	350	4800	290	
4000	350	4800	288	
3500	325	4825	286	
3000	325	4825	284	
2500	275	4825	282	
2000	250	4900	280	
1500	250	4900	278	

TABLE-2

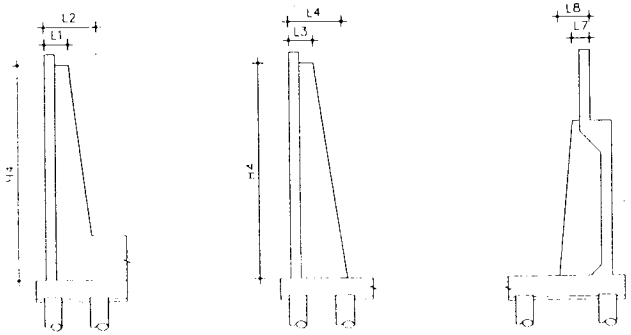
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

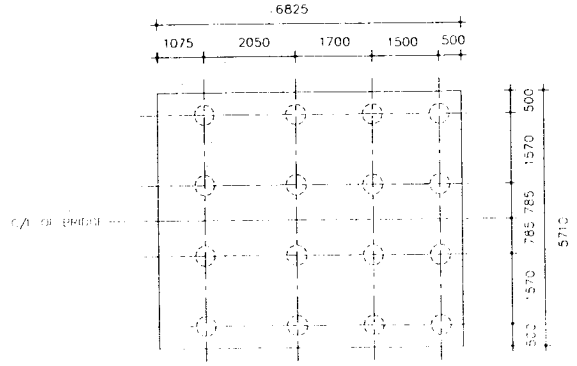
L1	L2	L3	L4	L7	L8	H4	T	T1
700	1790	700	1500	650	800	5850	400	400



NOSING AT ABUTMENT



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C4



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in t/t.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter materials shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.0m , DECK WIDTH 5.01m)

DRAWN BY
CAD FILE REF. A1B1/R1210701

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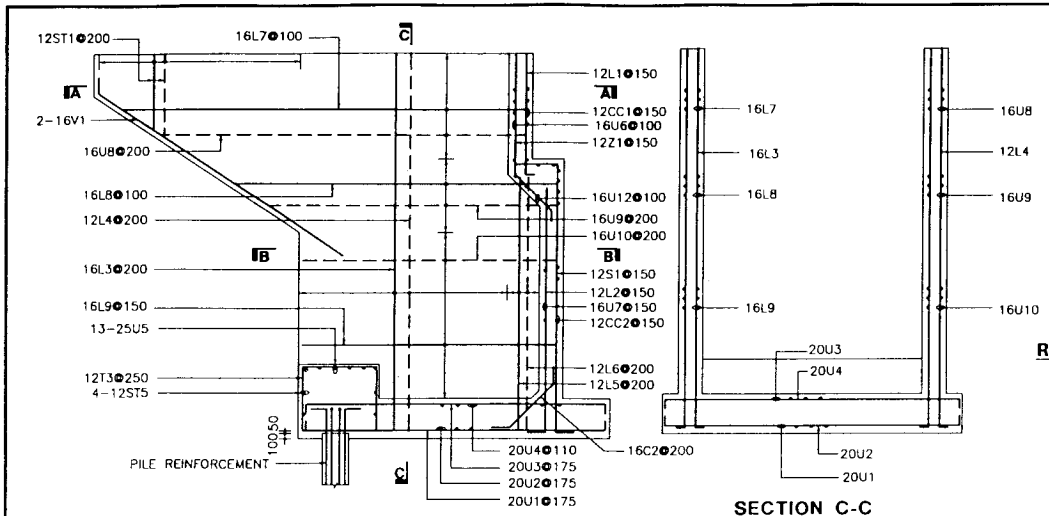
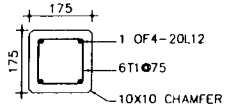
FA-182

SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES

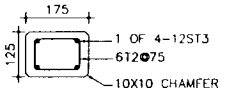


REINFORCEMENT DETAIL

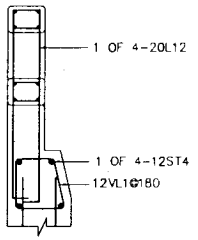
SECTION C-C



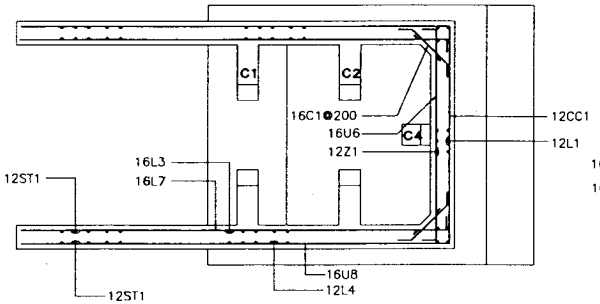
REINF. DETAIL OF POST



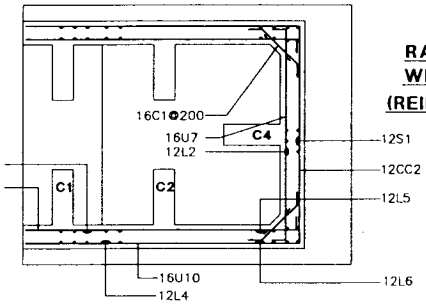
REINF. DETAIL OF RAILING



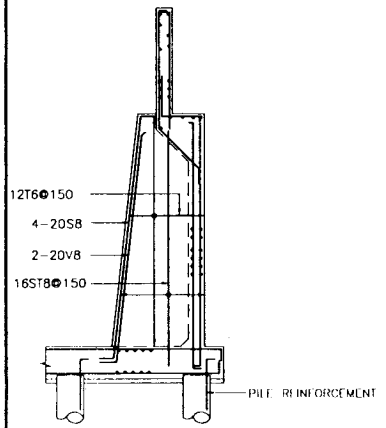
RAILING ON WING WALL (REINF. DETAIL)



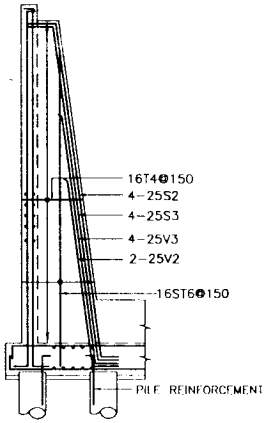
SECTION A-A



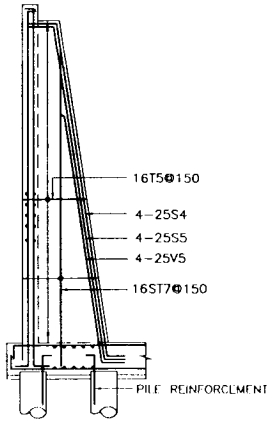
SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C4



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8710				8710
12	ST4	8	8700				8700
12	L1	34	1350	144			1494
12	L2	34	5150	144			5294
16	L3	56	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4850 to 5450	144			Avg. 5294
12	L6	6	Var. 4850 to 5450	144			Avg. 5294
16	L7	22	Var. 7750 to 8650	192			Avg. 8433
16	L8	30	Var. 6125 to 7750	192			Avg. 7130
16	L9	48	6125	192			6317
20	L12	56	1181	120			1301
20	U1	34	240	6725	240		7205
20	U2	40	240	5610	240		6090
20	U3	34	240	6725	240		7205
20	U4	54	240	5610	240		6090
25	U5	13	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	30	192	4854	192		5238
16	U8	12	Var. 7750 to 8650	200	550		Avg. 9100
16	U9	16	Var. 6125 to 7750	200	550		Avg. 7688
16	U10	36	6125	200	550		6875
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	36	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	5700	240		6615
16	C1	64	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	168	306	306			612
6	T2	432	206	306			512
12	VL1	100	272	200	250	278	1000
12	T3	19	1872	2472			4344
12	ST5	4	4910				4910
16	T4	80	Var. 1296 to 3476	696			Avg. 3082
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3257			3632
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1458 to 6760				Avg. 3225
16	T5	80	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6022	600		6922
25	S5	8	325	6022	575		6922
25	V5	8	350	4157			4507
16	ST7	26	Var. 1458 to 6760				Avg. 3225
12	T6	35	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5622	350		6212
20	V8	4	265	4611			4876
16	ST9	9	Var. 1088 to 4826				Avg. 3580
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail 20mm, b) Post-20mm, c) Curb-25mm, d) Wall 50mm, e) Base-50mm.
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R1210702

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8710				8710
12	ST4	8	8700				8700
12	L1	34	1250	144			1394
12	L2	34	5250	144			5394
16	L3	56	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4950 to 5550	144			Avg. 5394
12	L6	6	Var. 4950 to 5550	144			Avg. 5394
16	L7	20	Var. 7900 to 8650	192			Avg. 8542
16	L8	32	Var. 6125 to 7900	192			Avg. 7205
16	L9	48	6125	192			6317
20	L12	56	1181	120			1301
20	U1	34	240	6725	240		7205
20	U2	40	240	5610	240		6090
20	U3	34	240	6725	240		7205
20	U4	54	240	5610	240		6090
25	U5	13	300	5610	300		6210
16	U6	14	192	4854	192		5238
16	U7	31	192	4854	192		5238
16	U8	12	Var. 7900 to 8650	200	550		Avg. 9150
16	U9	18	Var. 6125 to 7900	200	550		Avg. 7763
16	U10	36	6125	200	550		6875
16	U12	12	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	37	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	5800	240		6715
16	C1	64	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	168	306	306			612
6	T2	432	206	306			512
12	VL1	100	272	200	250	278	1000
12	T3	19	1872	2472			4344
12	ST5	4	4910				4910
16	T4	80	Var. 1296 to 3476	696			Avg. 3082
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3257			3632
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1458 to 6760				Avg. 3225
16	T5	80	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6022	600		6922
25	S5	8	325	6022	575		6922
25	V5	8	350	4157			4507
16	ST7	26	Var. 1458 to 6760				Avg. 3225
12	T6	35	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5622	350		6212
20	V8	4	265	4611			4876
16	ST9	9	Var. 1088 to 4826				Avg. 3580
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8710				8710
12	ST4	8	8700				8700
12	L1	34	1100	144			1244
12	L2	34	5400	144			5544
16	L3	56	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 5100 to 5700	144			Avg. 5544
12	L6	6	Var. 5100 to 5700	144			Avg. 5544
16	L7	18	Var. 8125 to 8650	192			Avg. 8667
16	L8	36	Var. 6125 to 8125	192			Avg. 7317
16	L9	48	6125	192			6317
20	L12	56	1181	120			1301
20	U1	34	240	6725	240		7205
20	U2	40	240	5610	240		6090
20	U3	34	240	6725	240		7205
20	U4	54	240	5610	240		6090
25	U5	13	300	5610	300		6210
16	U6	12	192	4854	192		5238
16	U7	32	192	4854	192		5238
16	U8	10	Var. 8125 to 8650	200	550		Avg. 9295
16	U9	20	Var. 6125 to 8125	200	550		Avg. 7875
16	U10	36	6125	200	550		6875
16	U12	12	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	38	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	5950	240		6865
16	C1	64	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	168	306	306			612
6	T2	432	206	306			512
12	VL1	100	272	200	250	278	1000
12	T3	19	1872	2472			4344
12	ST5	4	4910				4910
16	T4	80	Var. 1296 to 3476	696			Avg. 3082
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3257			3632
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1458 to 6760				Avg. 3225
16	T5	80	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6022	600		6922
25	S5	8	325	6022	575		6922
25	V5	8	350	4157			4507
16	ST7	26	Var. 1458 to 6760				Avg. 3225
12	T6	35	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5622	350		6212
20	V8	4	265	4611			4876
16	ST9	9	Var. 1088 to 4826				Avg. 3580
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1210703	

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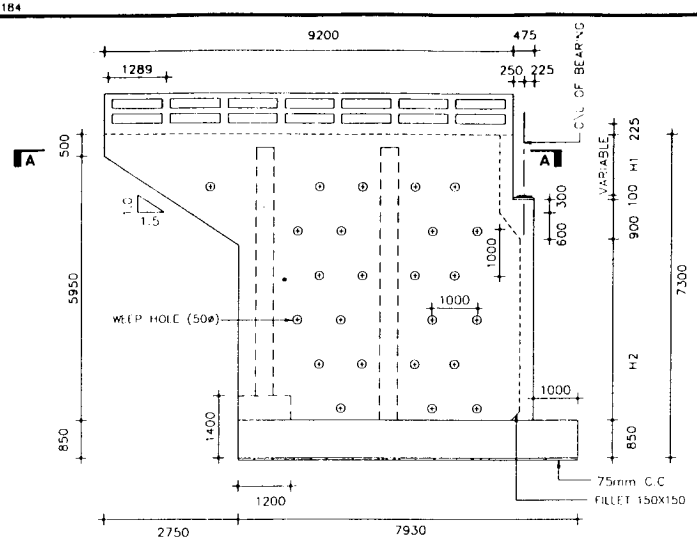
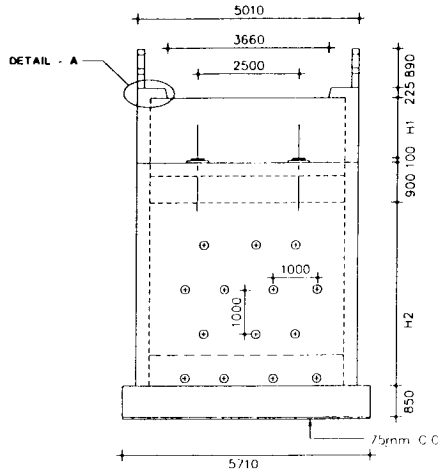
FA-184

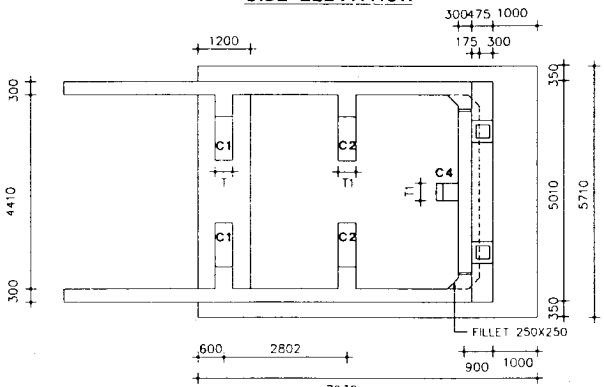
SHEET 1 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK : YES



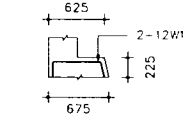
SIDE ELEVATION



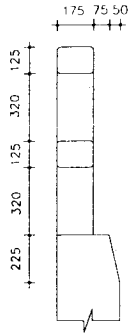
FRONT ELEVATION



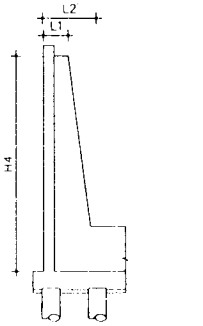
SECTION A-A

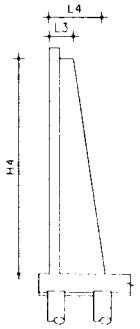


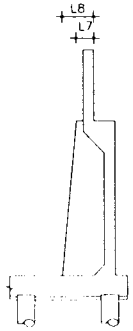
REINF. DETAIL 'A'



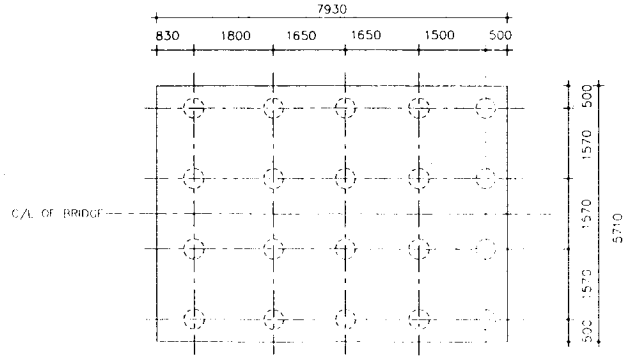
GENERAL ARRANGEMENT OF RAILING ON WING WALL







COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C4



LAYOUT PLAN OF FOUNDATION TYPE - A

TABLE-1

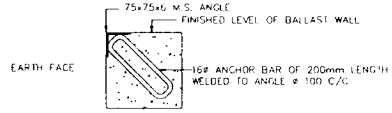
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	4450	295	
11500	1000	4450	293	
11000	1000	4450	291	
10500	1000	4450	289	
10000	1000	4450	287	
9500	900	4550	285	
9000	900	4550	283	
8500	900	4550	281	
8000	900	4550	279	
7500	750	4700	277	NOT APPLICABLE
7000	750	4700	275	
6500	750	4700	273	
6000	750	4700	271	
5500	400	5050	269	
5000	400	5050	267	
4500	350	5100	265	
4000	350	5100	263	
3500	325	5125	261	
3000	325	5125	259	
2500	275	5175	257	
2000	250	5200	255	
1500	250	5200	253	

TABLE-2

FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

L1	L2	L3	L4	L7	L8	H4	T	T1
700	1795	700	1800	650	800	6150	400	400



NOSING AT ABUTMENT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 3000c.m horizontally and vertically as shown in drawings. filter material shall be provided as per specification.

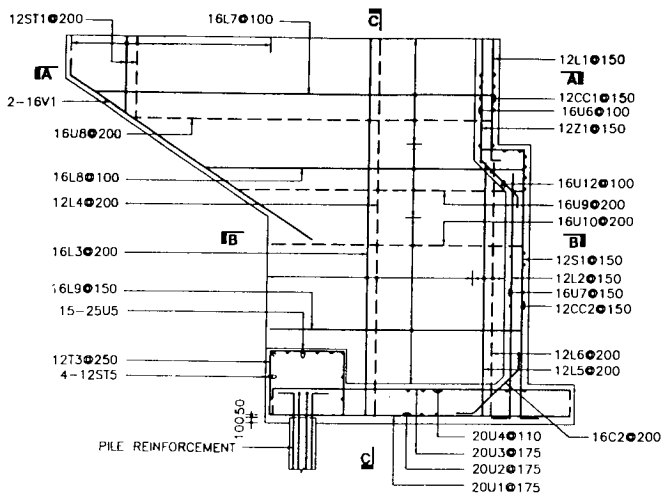
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 7.3m , DECK WIDTH 5.01m)

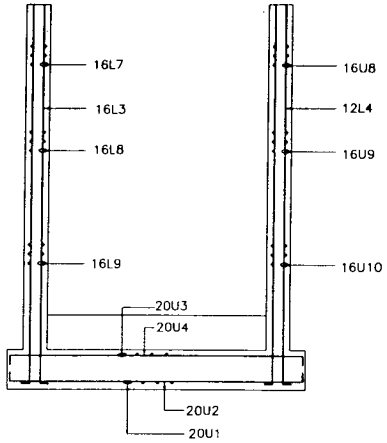
DATE :
CHECKED BY
CAD FILE REF : ABUT/R1/10/13

Web Copy

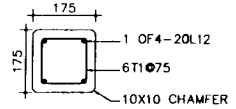
SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES



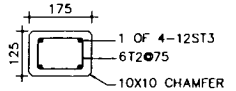
REINFORCEMENT DETAIL



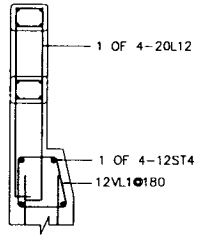
SECTION C-C



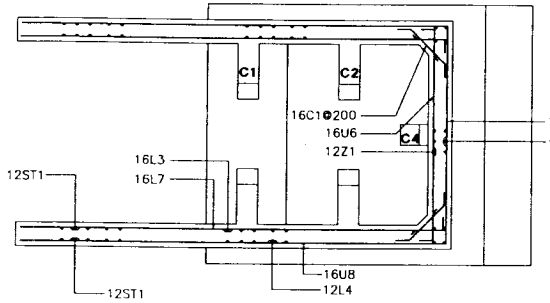
REINF. DETAIL OF POST



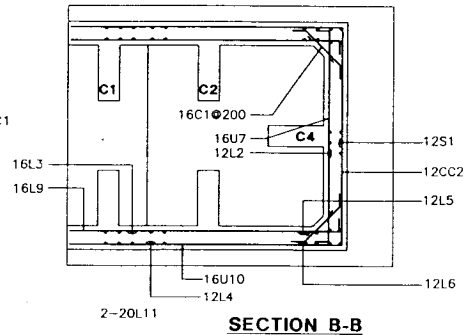
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



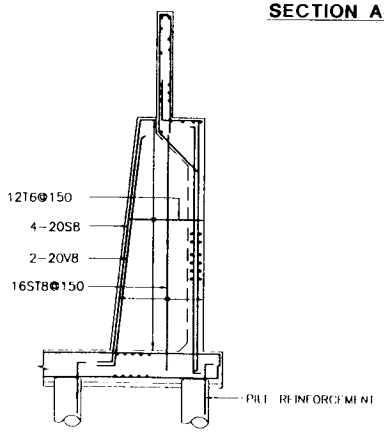
SECTION A-A



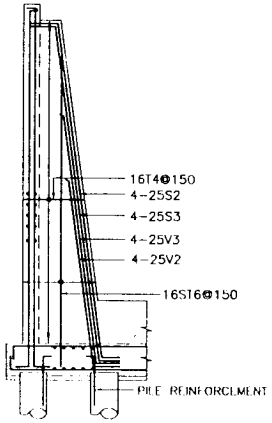
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

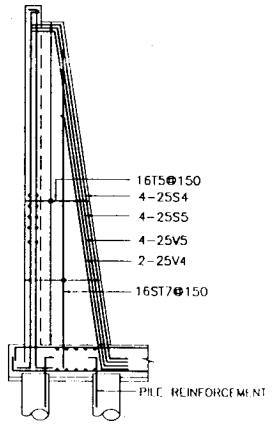
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	9165				9165
12	ST4	8	9155				9155
12	L1	34	1350	144			1494
12	L2	34	5450	144			5594
16	L3	62	7100	192			7292
12	L4	62	7100	144			7244
12	L5	6	Var. 5150 to 5750	144			Avg. 5594
12	L6	6	Var. 5150 to 5750	144			Avg. 5594
16	L7	22	Var. 8205 to 9105	192			Avg. 8888
16	L8	28	Var. 6830 to 8205	192			Avg. 7710
16	L9	54	6830	192			7022
20	L12	64	1181	120			1301
20	U1	34	240	7830	240		8310
20	U2	46	240	5610	240		6090
20	U3	34	240	7830	240		8310
20	U4	62	240	5610	240		6090
25	U5	15	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	32	192	4854	192		5238
16	U8	12	Var. 8205 to 9105	200	550		Avg. 9555
16	U9	16	Var. 6830 to 8205	200	550		Avg. 8268
16	U10	40	6830	200	550		7580
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	38	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	6000	240		6915
16	C1	68	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4674			4924
6	T1	192	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	19	2272	2472			4744
12	ST5	4	4910				4910
16	T4	84	Var. 1296 to 3486	696			Avg. 3087
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3404			3779
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1496 to 7060				Avg. 3350
16	T5	84	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3404			3779
25	V5	8	350	4354			4704
16	ST7	26	Var. 1496 to 7060				Avg. 3350
12	T7	37	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5922	350		6512
20	V8	4	265	4910			5175
16	ST9	9	Var. 1386 to 5126				Avg. 3879
12	w1	4	200	575	206		981



REINFORCEMENT DETAIL OF COUNTERFORT C4



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb: 25mm, d) Wall 50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad file ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1210732	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	9165				9165
12	ST4	8	9155				9155
12	L1	34	1250	144			1394
12	L2	34	5550	144			5694
16	L3	62	7100	192			7292
12	L4	62	7100	144			7244
12	L5	6	Var. 5250 to 5850	144			Avg. 5694
12	L6	6	Var. 5250 to 5850	144			Avg. 5694
16	L7	20	Var. 8355 to 9105	192			Avg. 8997
16	L8	30	Var. 6830 to 8355	192			Avg. 7785
16	L9	54	6830	192			7022
20	L12	64	1181	120			1301
20	U1	34	240	7830	240		8310
20	U2	46	240	5610	240		6090
20	U3	34	240	7830	240		8310
20	U4	62	240	5610	240		6090
25	U5	15	300	5610	300		6210
16	U6	14	192	4854	192		5238
16	U7	33	192	4854	192		5238
16	U8	12	Var. 8355 to 9105	200	550		Avg. 9605
16	U9	16	Var. 6830 to 8355	200	550		Avg. 8343
16	U10	40	6830	200	550		7580
16	U12	12	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	39	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	6100	240		7015
16	C1	68	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4674			4924
6	T1	192	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	19	2272	2472			4744
12	ST5	4	4910				4910
16	T4	84	Var. 1296 to 3486	696			Avg. 3087
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3404			3779
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1496 to 7060				Avg. 3350
16	T5	84	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3404			3779
25	V5	8	350	4354			4704
16	ST7	26	Var. 1496 to 7060				Avg. 3350
12	T7	37	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5922	350		6512
20	V8	4	265	4910			5175
16	ST9	9	Var. 1386 to 5126				Avg. 3879
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	9165				9165
12	ST4	8	9155				9155
12	L1	34	1100	144			1244
12	L2	34	5700	144			5844
16	L3	62	7100	192			7292
12	L4	62	7100	144			7244
12	L5	6	Var. 5400 to 6000	144			Avg. 5844
12	L6	6	Var. 5400 to 6000	144			Avg. 5844
16	L7	18	Var. 8580 to 9105	192			Avg. 9122
16	L8	32	Var. 6830 to 8580	192			Avg. 7897
16	L9	54	6830	192			7022
20	L12	64	1181	120			1301
20	U1	34	240	7830	240		8310
20	U2	46	240	5610	240		6090
20	U3	34	240	7830	240		8310
20	U4	62	240	5610	240		6090
25	U5	15	300	5610	300		6210
16	U6	12	192	4854	192		5238
16	U7	34	192	4854	192		5238
16	U8	10	Var. 8580 to 9105	200	550		Avg. 9750
16	U9	18	Var. 6830 to 8580	200	550		Avg. 8455
16	U10	40	6830	200	550		7580
16	U12	12	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	40	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	6250	240		7165
16	C1	68	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4674			4924
6	T1	192	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	19	2272	2472			4744
12	ST5	4	4910				4910
16	T4	84	Var. 1296 to 3486	696			Avg. 3087
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3404			3779
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1496 to 7060				Avg. 3350
16	T5	84	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3404			3779
25	V5	8	350	4354			4704
16	ST7	26	Var. 1496 to 7060				Avg. 3350
12	T7	37	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5922	350		6512
20	V8	4	265	4910			5175
16	ST9	9	Var. 1386 to 5126				Avg. 3879
12	w1	4	200	575	206		981

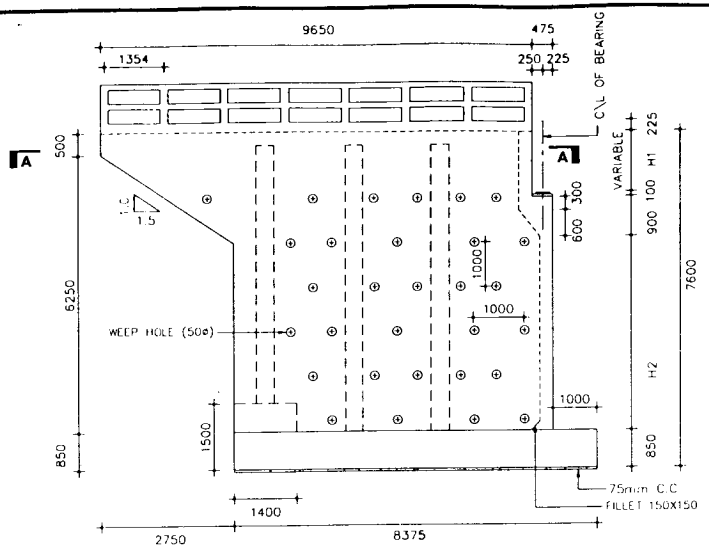
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 5.01m)

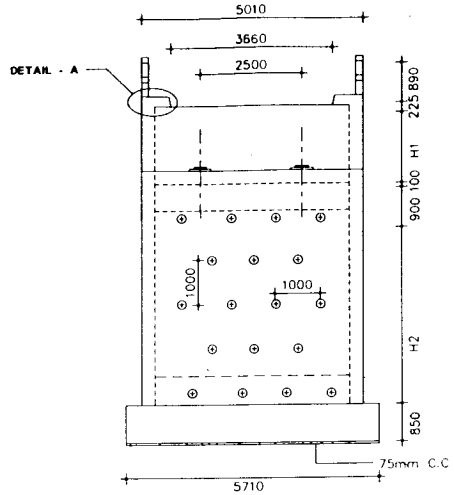
DATE :
ISSUED BY :
CAD FILE REF : ABU1/R1210733

Web Copy

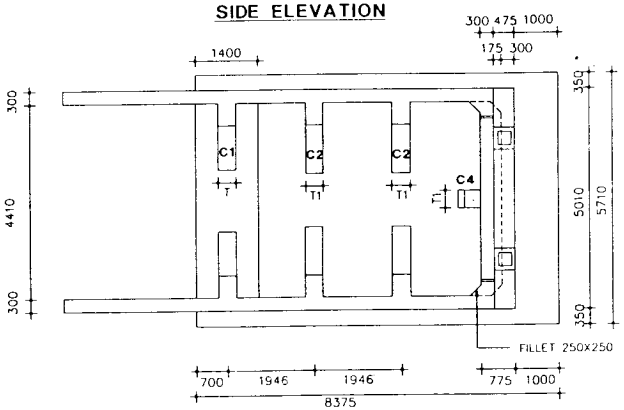
SHEET 1 OF 3	
SPAN RANGE : 1.5m TO 12.0m	
SIDE WALK: YES	



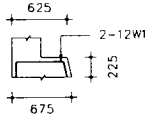
SIDE ELEVATION



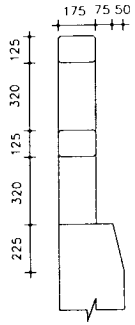
FRONT ELEVATION



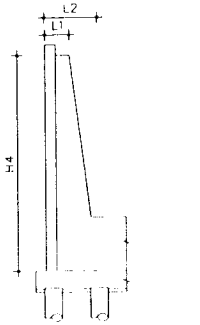
SECTION A-A



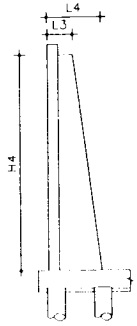
REINF. DETAIL 'A'



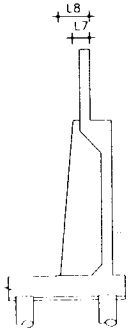
GENERAL ARRANGEMENT OF RAILING ON WING WALL



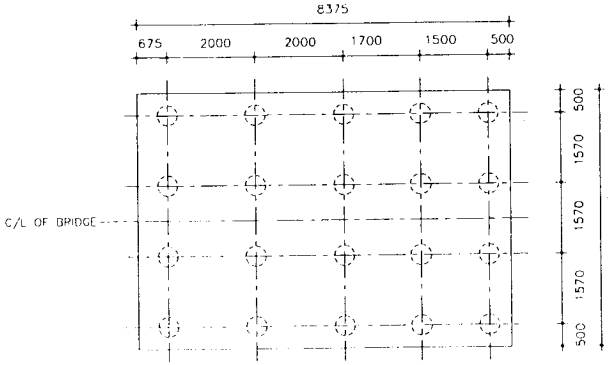
COUNTERFORT C1



COUNTERFORT C2



COUNTERFORT C4



LAYOUT PLAN OF FOUNDATION TYPE - A

TABLE-1

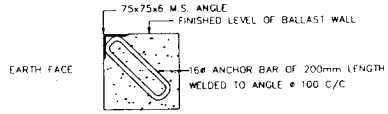
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	4750	320	NOT APPLICABLE
11500	1000	4750	318	
11000	1000	4750	316	
10500	1000	4750	314	
10000	1000	4750	312	
9500	900	4850	310	
9000	900	4850	308	
8500	900	4850	306	
8000	900	4850	304	
7500	750	5000	302	
7000	750	5000	298	
6500	750	5000	296	
6000	750	5000	294	
5500	400	5350	292	
5000	400	5350	290	
4500	350	5400	288	
4000	350	5400	286	
3500	325	5425	284	
3000	325	5425	282	
2500	275	5475	290	
2000	250	5500	290	
1500	250	5500	278	

TABLE-2

FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

L1	L2	L3	L4	L7	L8	H4	T	T1
700	1805	700	1900	650	800	6450	400	400



NOSING AT ABUTMENT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.6m , DECK WIDTH 5.01m)

DATE	ISSUED BY
CAD FILE REF ABUT/R1210/61	

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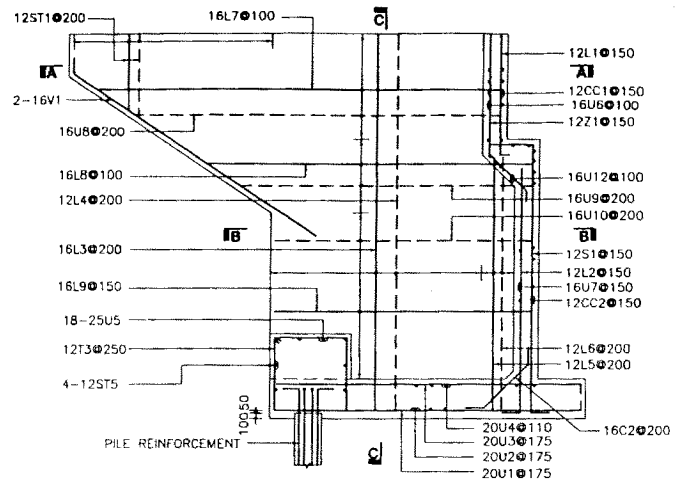
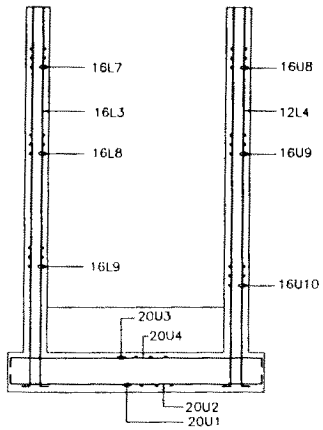
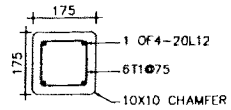


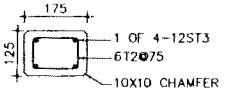
REINFORCEMENT DETAIL



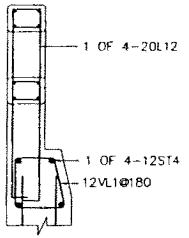
SECTION C-C



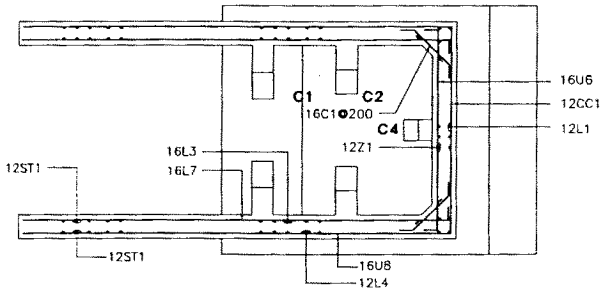
REINF. DETAIL OF POST



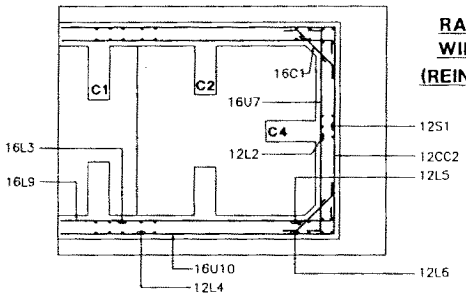
REINF. DETAIL OF RAILING



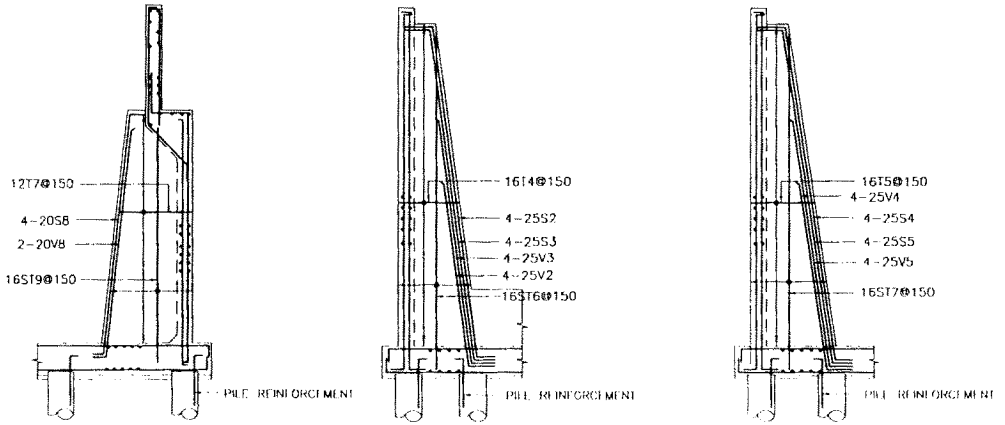
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



COUNTERFORT C4 COUNTERFORT C1 COUNTERFORT C2

REINFORCEMENT DETAILS OF COUNTERFORT

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	9610				9610
12	ST4	8	9600				9600
12	L1	34	1350	144			1494
12	L2	34	5750	144			5894
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	6	Var. 5450 to 6050	144			Avg. 5894
12	L6	6	Var. 5450 to 6050	144			Avg. 5894
16	L7	22	Var. 8650 to 9550	192			Avg. 9333
16	L8	28	Var. 7275 to 8650	192			Avg. 8155
16	L9	58	7275	192			7467
20	L12	64	1181	120			1301
20	U1	34	240	8275	240		8755
20	U2	49	240	5610	240		6090
20	U3	34	240	8275	240		8755
20	U4	64	240	5610	240		6090
25	U5	18	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	34	192	4854	192		5238
16	U8	12	Var. 8650 to 9550	200	550		Avg. 10000
16	U9	16	Var. 7275 to 8650	200	550		Avg. 8713
16	U10	44	7275	200	550		8025
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	40	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	6300	240		7215
16	C1	70	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	192	306	306			612
6	T2	476	206	306			512
12	VL1	110	272	200	250	278	1000
12	T3	19	2672	2672			5344
12	ST5	4	4910				4910
16	T4	88	Var. 1296 to 3506	696			Avg. 3097
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3551			3926
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1529 to 7364				Avg. 3474
16	T5	88	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3551			3926
25	V5	8	350	4552			4902
16	ST7	26	Var. 1529 to 7360				Avg. 3323
12	T7	39	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	6222	350		6812
20	V8	4	265	5210			5475
16	ST9	9	Var. 1160 to 5426				Avg. 4004
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code: Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1210762

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SHEET 3 OF 3
SPAN RANGE : 1.5m to 12m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	9610				9610
12	ST4	8	9600				9600
12	L1	34	1250	144			1394
12	L2	34	5850	144			5994
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	6	Var. 5550 to 6150	144			Avg. 5994
12	L6	6	Var. 5550 to 6150	144			Avg. 5994
16	L7	20	Var. 8800 to 9550	192			Avg. 9442
16	L8	30	Var. 7275 to 8800	192			Avg. 8230
16	L9	58	7275	192			7467
20	L12	64	1181	120			1301
20	U1	34	240	8275	240		8755
20	U2	49	240	5610	240		6090
20	U3	34	240	8275	240		8755
20	U4	64	240	5610	240		6090
25	U5	18	300	5610	300		6210
16	U6	14	192	4854	192		5238
16	U7	35	192	4854	192		5238
16	U8	12	Var. 8800 to 9550	200	550		Avg. 10050
16	U9	16	Var. 7275 to 8800	200	550		Avg. 8788
16	U10	44	7275	200	550		8025
16	U12	12	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	41	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	6400	240		7315
16	C1	70	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	192	306	306			612
6	T2	476	206	306			512
12	VL1	110	272	200	250	278	1000
12	T3	19	2672	2672			5344
12	ST5	4	4910				4910
16	T4	88	Var. 1296 to 3506	696			Avg. 3097
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3551			3926
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1529 to 7364				Avg. 3474
16	T5	88	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3551			3926
25	V5	8	350	4552			4902
16	ST7	26	Var. 1529 to 7360				Avg. 3323
12	T7	39	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	6222	350		6812
20	V8	4	265	5210			5475
16	ST9	9	Var. 1160 to 5426				Avg. 4004
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	9610				9610
12	ST4	8	9600				9600
12	L1	34	1100	144			1244
12	L2	34	6000	144			6144
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	6	Var. 5700 to 6300	144			Avg. 6144
12	L6	6	Var. 5700 to 6300	144			Avg. 6144
16	L7	18	Var. 9025 to 9550	192			Avg. 9567
16	L8	32	Var. 7275 to 9025	192			Avg. 8342
16	L9	58	7275	192			7467
20	L12	64	1181	120			1301
20	U1	34	240	8275	240		8755
20	U2	49	240	5610	240		6090
20	U3	34	240	8275	240		8755
20	U4	64	240	5610	240		6090
25	U5	18	300	5610	300		6210
16	U6	12	192	4854	192		5238
16	U7	36	192	4854	192		5238
16	U8	10	Var. 9025 to 9550	200	550		Avg. 10195
16	U9	18	Var. 7275 to 9025	200	550		Avg. 8900
16	U10	44	7275	200	550		8025
16	U12	12	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	42	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	6550	240		7465
16	C1	70	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	192	306	306			612
6	T2	476	206	306			512
12	VL1	110	272	200	250	278	1000
12	T3	19	2672	2672			5344
12	ST5	4	4910				4910
16	T4	88	Var. 1296 to 3506	696			Avg. 3097
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3551			3926
12	W1	2	325	535	329		1189
16	ST6	24	Var. 1529 to 7364				Avg. 3474
16	T5	88	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3551			3926
25	V5	8	350	4552			4902
16	ST7	26	Var. 1529 to 7360				Avg. 3323
12	T7	39	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	6222	350		6812
20	V8	4	265	5210			5475
16	ST9	9	Var. 1160 to 5426				Avg. 4004
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

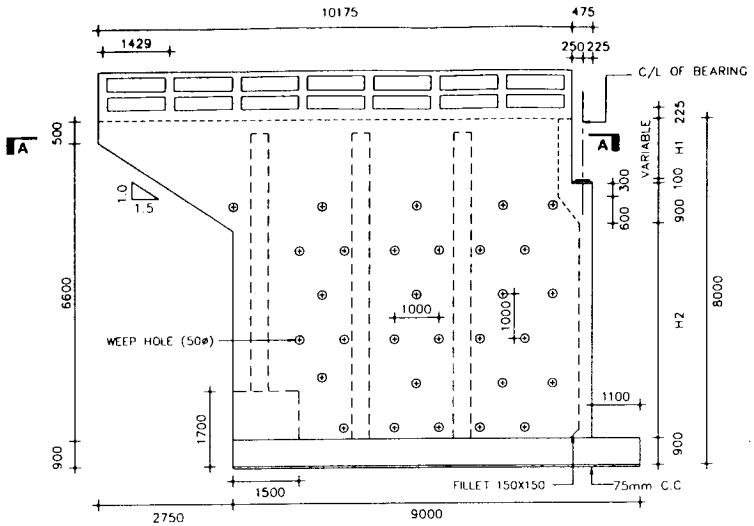
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210763	

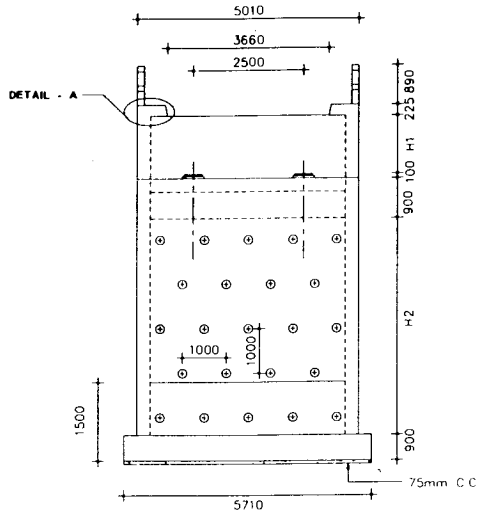
Web Copy

FA-190

SHEET 1 OF 5
SPAN RANGE : 1.5m TO 12.5m
SIDE WALK : YES



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

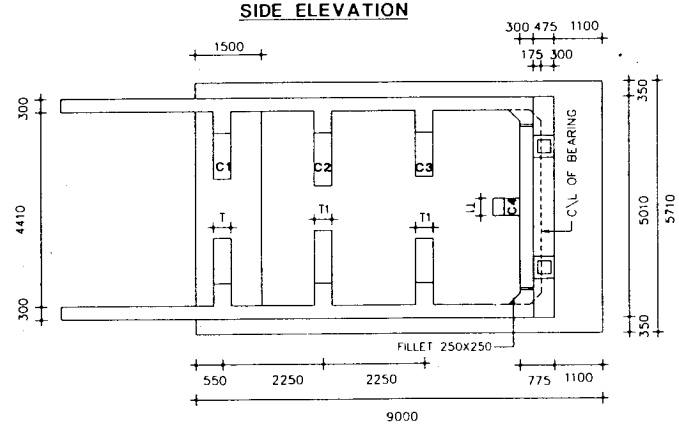
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
12000	1000	5100	300	NOT APPLICABLE
11500	1000	5100	298	
11000	1000	5100	296	
10500	1000	5100	294	
10000	1000	5100	292	
9500	900	5200	290	
9000	900	5200	288	
8500	900	5200	286	
8000	900	5200	284	
7500	750	5350	282	
7000	750	5350	280	
6500	750	5350	278	
6000	750	5350	276	
5500	400	5700	274	
5000	400	5700	272	
4500	350	5750	270	
4000	350	5775	268	
3500	325	5775	266	
3000	325	5825	264	
2500	275	5825	262	
2000	250	5850	260	
1500	250	5850	258	

TABLE-2

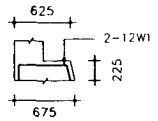
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	600ø	55	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

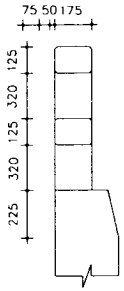
L1	L2	L3	L4	L5	L6	L7	L8	T	t1	H4
700	1830	700	2000	700	1800	650	900	400	400	6800



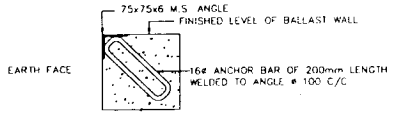
SECTION A-A



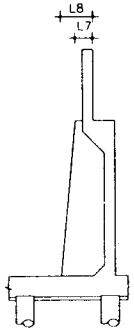
REINF. DETAIL 'A'



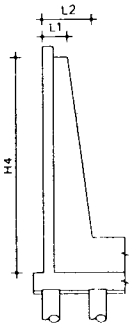
GENERAL ARRANGEMENT OF RAILING ON WING WALL



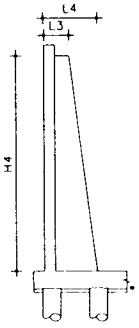
NOSING AT ABUTMENT



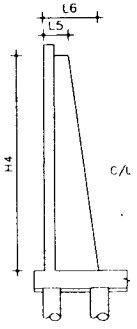
COUNTERFORT C4



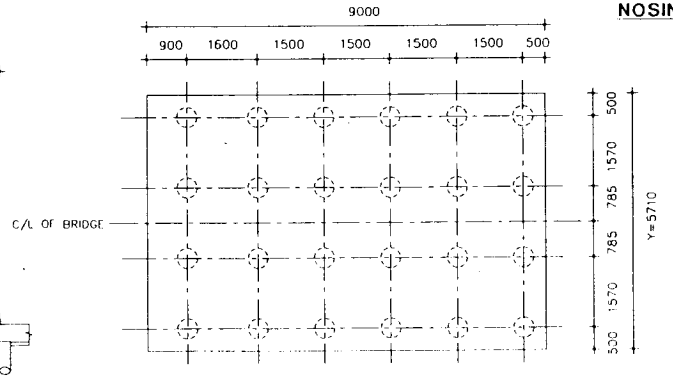
COUNTERFORT C1



COUNTERFORT C2



COUNTERFORT C3



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 8.0m, DECK WIDTH 5.01m)

DATE :
ISSUED BY :
DRG NO : ABUT\R1210801

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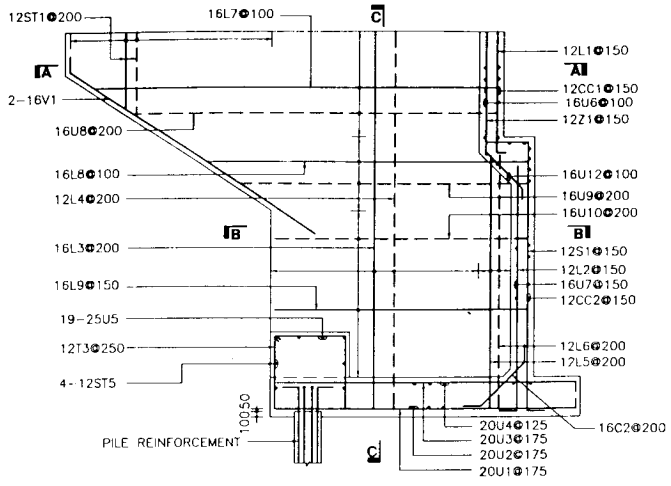
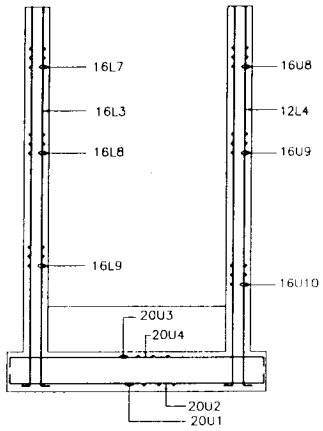
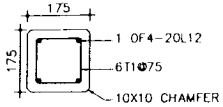
SHEET 2 OF 3
SPAN RANGE : 1.5m to 12m
SIDE WALK: YES



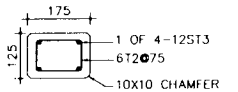
REINFORCEMENT DETAIL



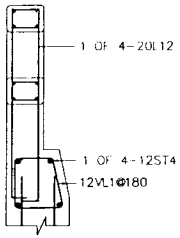
SECTION C-C



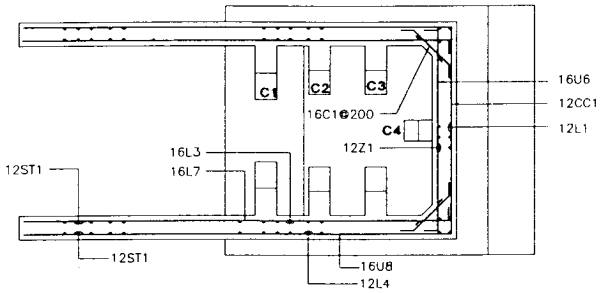
REINF. DETAIL OF POST



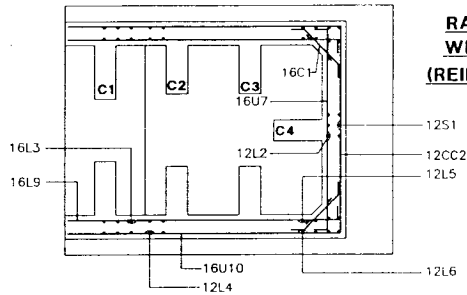
REINF. DETAIL OF RAILING



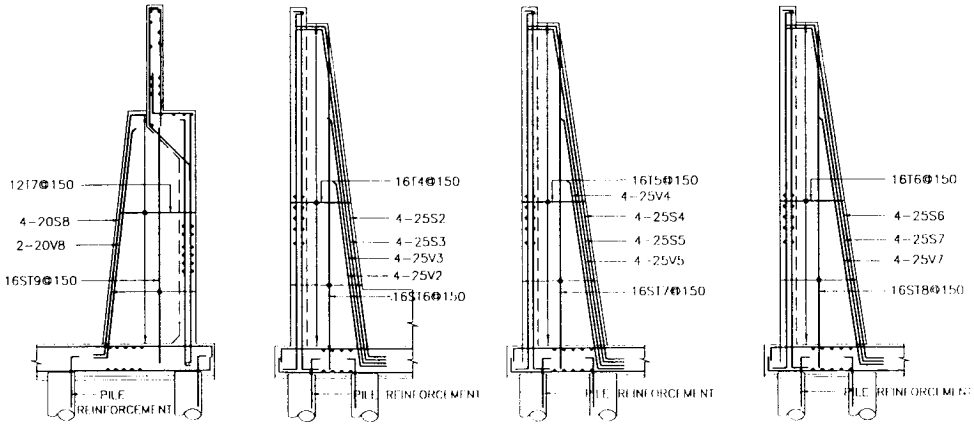
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



COUNTERFORT C4 COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3

REINFORCEMENT DETAILS OF COUNTERFORT

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10135				10135
12	ST4	8	10125				10125
12	L1	34	1350	144			1494
12	L2	34	6150	144			6294
16	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	6	Var. 5850 to 6450	144			Avg. 6294
12	L6	6	Var. 5850 to 6450	144			Avg. 6294
16	L7	22	Var. 9175 to 10075	192			Avg. 9858
16	L8	28	Var. 7800 to 9175	192			Avg. 8660
16	L9	62	7800	192			7992
20	L12	64	1181	120			1401
20	U1	34	240	8900	240		9380
20	U2	52	240	5610	240		6090
20	U3	34	240	8900	240		9380
20	U4	61	240	5610	240		6090
25	U5	19	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	36	192	4854	192		5238
16	U8	12	Var. 9175 to 10075	200	550		Avg. 10525
16	U9	16	Var. 7800 to 9175	200	550		Avg. 9238
16	U10	46	7800	200	550		8550
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	43	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	6700	240		7615
16	C1	74	320	922	320		1562
16	C2	26	320	1488	320		2128
16	V1	4	250	4806			5056
6	T1	192	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	19	2872	3072			5944
12	ST5	4	4910				4910
16	T4	94	Var. 1296 to 3556	696			Avg. 3122
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3739			4114
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1606 to 7760				Avg. 3500
16	T5	94	Var. 1296 to 3896	696			Avg. 3292
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3739			4114
25	V5	8	350	4799			5149
16	ST7	28	Var. 1606 to 7760				Avg. 3850
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4799			5149
16	ST8	26	Var. 1606 to 7760				Avg. 3657
12	T7	41	Var. 2122 to 2622	672			Avg. 3044
20	S8	8	240	6625	350		7215
20	V8	4	265	5580			5845
16	ST9	10	Var. 1500 to 5778				Avg. 3730
12	w1	4	200	575	206		381

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276**MPa
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1210802

Web Copy

SHEET 3 OF 3
SPAN RANGE : 1.5m to 12m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 900)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10135				10135
12	ST4	8	10125				10125
12	L1	34	1250	144			1394
12	L2	34	6250	144			6394
16	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	6	Var. 5950 to 6550	144			Avg. 6394
12	L6	6	Var. 5950 to 6550	144			Avg. 6394
16	L7	20	Var. 9325 to 10075	192			Avg. 9967
16	L8	30	Var. 7800 to 9325	192			Avg. 8755
16	L9	62	7800	192			7992
20	L12	64	1181	120			1301
20	U1	34	240	8900	240		9380
20	U2	52	240	5610	240		6090
20	U3	34	240	8900	240		9380
20	U4	61	240	5610	240		6090
25	U5	19	300	5610	300		6210
16	U6	14	192	4854	192		5238
16	U7	37	192	4854	192		5238
16	U8	12	Var. 9325 to 10075	200	550		Avg. 10575
16	U9	16	Var. 7800 to 9325	200	550		Avg. 9313
16	U10	46	7800	200	550		8550
16	U12	12	192	4910	192		5294
12	CC1	9	1200	400	4910		6510
12	CC2	43	1200	400	4910		6510
12	Z1	34	1250	866	144		2260
12	S1	34	675	6800	240		7715
16	C1	74	320	922	320		1562
16	C2	26	320	1488	320		2128
16	V1	4	250	4806			5056
6	T1	192	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	19	2872	3072			5944
12	ST5	4	4910				4910
16	T4	94	Var. 1296 to 3556	696			Avg. 3122
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3739			4114
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1606 to 7760				Avg. 3500
16	T5	94	Var. 1296 to 3896	696			Avg. 3292
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3739			4114
25	V5	8	350	4799			5149
16	ST7	28	Var. 1606 to 7760				Avg. 7850
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4799			5149
16	ST8	26	Var. 1606 to 7760				Avg. 3657
12	T7	41	Var. 2122 to 2622	672			Avg. 3044
20	S8	8	240	6625	350		7215
20	V8	4	265	5580			5845
16	ST9	10	Var. 1500 to 5778				Avg. 3730
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 750)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	56	Var. 400 to 2234				Avg. 1317
12	ST3	16	10135				10135
12	ST4	8	10125				10125
12	L1	34	1100	144			1244
12	L2	34	6400	144			6544
16	L3	72	7800	192			7992
12	L4	72	7800	144			7944
12	L5	6	Var. 6100 to 6700	144			Avg. 6544
12	L6	6	Var. 6100 to 6700	144			Avg. 6544
16	L7	18	Var. 9550 to 10075	192			Avg. 10092
16	L8	32	Var. 7800 to 9550	192			Avg. 8867
16	L9	62	7800	192			7992
20	L12	64	1181	120			1301
20	U1	34	240	8900	240		9380
20	U2	52	240	5610	240		6090
20	U3	34	240	8900	240		9380
20	U4	61	240	5610	240		6090
25	U5	19	300	5610	300		6210
16	U6	12	192	4854	192		5238
16	U7	38	192	4854	192		5238
16	U8	10	Var. 9550 to 10075	200	550		Avg. 10720
16	U9	18	Var. 7800 to 9550	200	550		Avg. 9425
16	U10	46	7800	200	550		8550
16	U12	12	192	4910	192		5294
12	CC1	8	1200	400	4910		6510
12	CC2	44	1200	400	4910		6510
12	Z1	34	1100	866	144		2110
12	S1	34	675	6950	240		7865
16	C1	74	320	922	320		1562
16	C2	26	320	1488	320		2128
16	V1	4	250	4806			5056
6	T1	192	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	19	2872	3072			5944
12	ST5	4	4910				4910
16	T4	94	Var. 1296 to 3556	696			Avg. 3122
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3739			4114
12	W1	2	325	535	329		1189
16	ST6	26	Var. 1606 to 7760				Avg. 3500
16	T5	94	Var. 1296 to 3896	696			Avg. 3292
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3739			4114
25	V5	8	350	4799			5149
16	ST7	28	Var. 1606 to 7760				Avg. 7850
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4799			5149
16	ST8	26	Var. 1606 to 7760				Avg. 3657
12	T7	41	Var. 2122 to 2622	672			Avg. 3044
20	S8	8	240	6625	350		7215
20	V8	4	265	5580			5845
16	ST9	10	Var. 1500 to 5778				Avg. 3730
12	w1	4	200	575	206		981

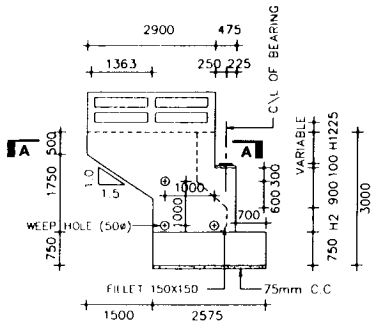
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 5.01m)

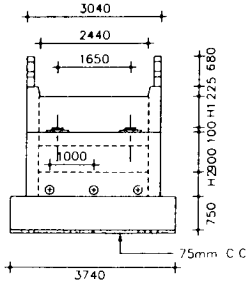
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1210803	

Web Copy

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



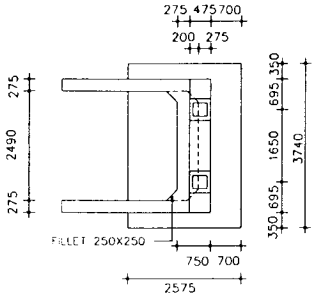
SIDE ELEVATION



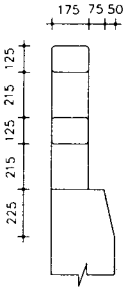
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
18000	1200	50	211	211
17500	1200	50	207	207
17000	1200	50	203	203
16500	1200	50	199	199
16000	1200	50	195	195
15500	1200	50	191	191
15000	950	300	179	179
14500	950	300	175	175
14000	950	300	171	171
13500	950	300	167	167
13000	950	300	163	163
12500	950	300	159	159



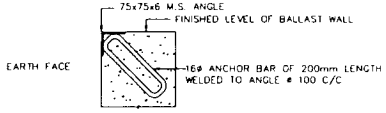
SECTION A-A



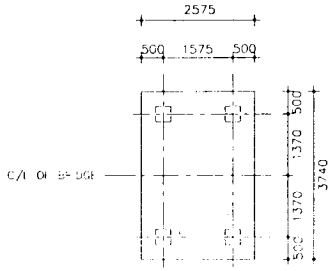
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-2

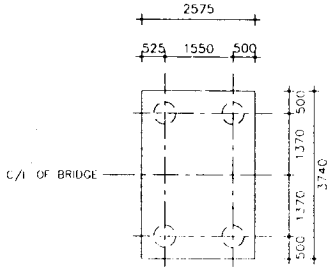
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	25	CAST IN SITU
TYPE – B	350X350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - B



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

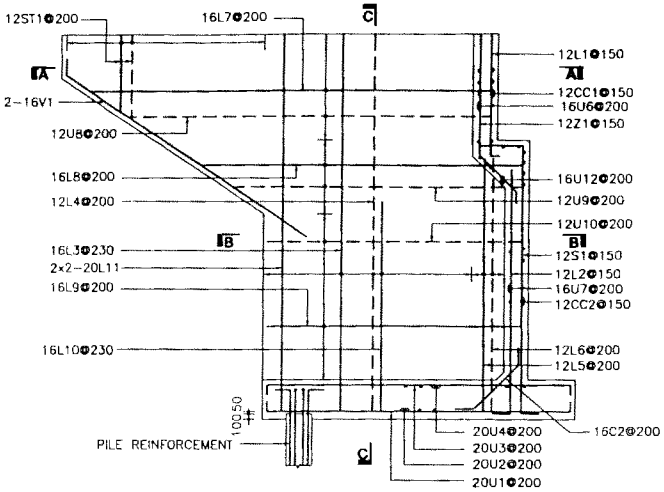
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R012030	

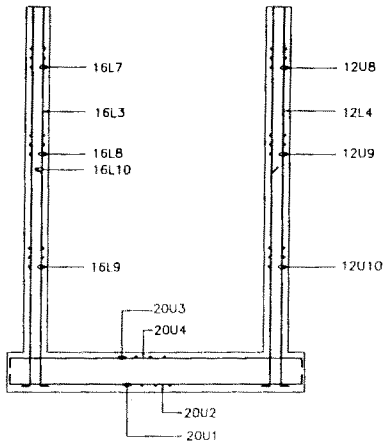
Web Copy

FA-194

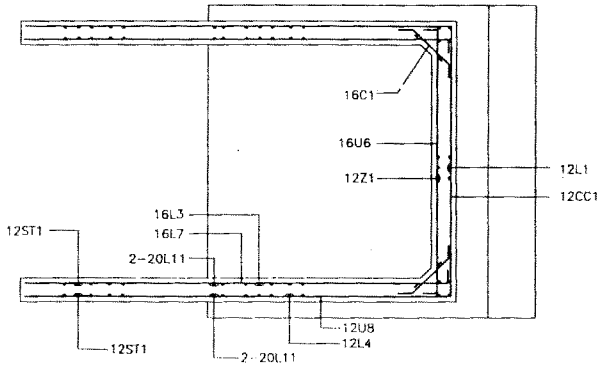
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.0m



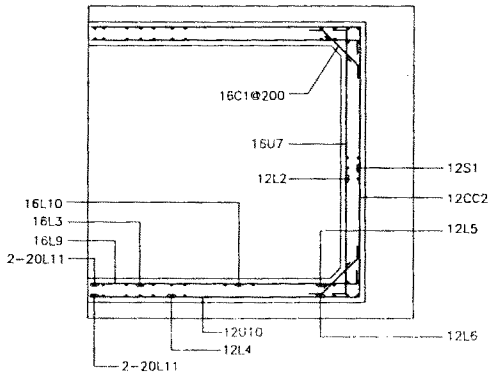
REINFORCEMENT DETAIL



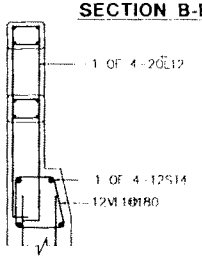
SECTION C-C



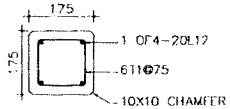
SECTION A-A



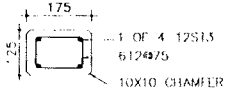
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1200)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	21	1550	144			1694
12	L2	21	950	144			1094
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 650 to 1250	144			Avg. 1094
12	L6	6	Var. 650 to 1250	144			Avg. 1094
16	L7	14	Var. 1600 to 2800	192			Avg. 2478
16	L8	4	Var. 1775 to 1600	192			Avg. 1880
16	L9	6	1775	192			1967
16	L10	6	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	20	240	2475	240		2955
20	U2	14	240	3640	240		4120
20	U3	20	240	2475	240		2955
20	U4	14	240	3640	240		4120
16	U6	9	192	2892	192		3276
16	U7	2	192	2892	192		3276
12	U8	14	Var. 1600 to 2800	175	525		Avg. 2986
12	U9	4	Var. 1775 to 1600	175	525		Avg. 2388
12	U10	6	1775	175	525		2475
16	U12	6	192	2940	192		3324
12	CC1	11	1150	350	2940		4440
12	CC2	9	1150	350	2940		4440
12	Z1	21	1550	866	144		2560
12	S1	21	650	1500	240		2390
16	C1	26	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail 20mm, b) Post 20mm, c) Curb 25mm, d) Wall 50mm, e) Base 50mm.
7) For pile reinforcement see dwg no. ABUT\P00000001.
8) This drawing is to be read in conjunction with Shape Code, Cad File ABUT\S0000001.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\RD120302

Web Copy

FA-195

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	21	1300	144			1444
12	L2	21	1200	144			1344
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 900 to 1500	144			Avg. 1344
12	L6	6	Var. 900 to 1500	144			Avg. 1344
16	L7	12	Var. 1975 to 2800	192			Avg. 2717
16	L8	8	Var. 1775 to 1975	192			Avg. 2067
16	L9	6	1775	192			1967
16	L10	6	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	20	240	2475	240		2955
20	U2	14	240	3640	240		4120
20	U3	20	240	2475	240		2955
20	U4	14	240	3640	240		4120
16	U5	8	192	2892	192		3276
16	U7	3	192	2892	192		3276
12	U8	12	Var. 1975 to 2800	175	525		Avg. 3225
12	U9	8	Var. 1775 to 1975	175	525		Avg. 2575
12	U10	6	1775	175	525		2475
16	U12	6	192	2940	192		3324
12	CC1	9	1150	350	2940		4440
12	CC2	11	1150	350	2940		4440
12	Z1	21	1300	866	144		2310
12	S1	21	650	1750	240		2640
16	C1	26	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

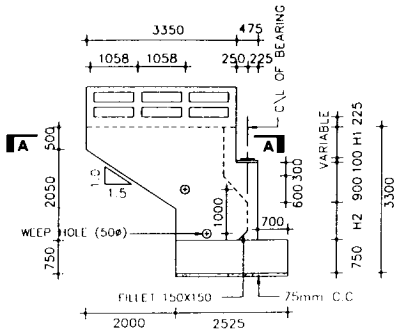
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120303

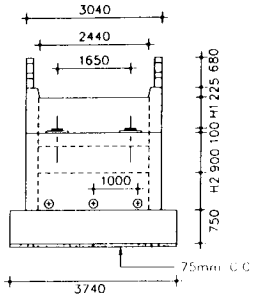
Web Copy

FA-196

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	200	240	240
19500	1350	200	234	234
19000	1350	200	230	230
18500	1350	200	226	226
18000	1200	350	216	216
17500	1200	350	212	212
17000	1200	350	208	208
16500	1200	350	204	204
16000	1200	350	200	200
15500	1200	350	196	196
15000	950	600	184	184
14500	950	600	180	180
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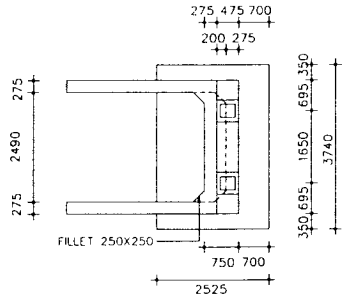
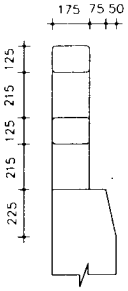
13000	950	600	168	168
12500	950	600	164	164



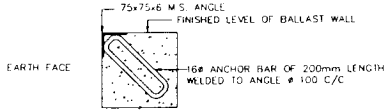
SECTION A-A



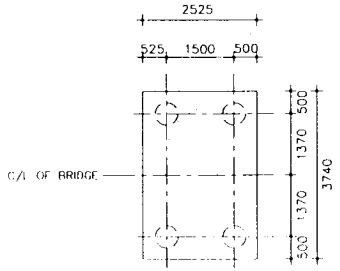
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-2

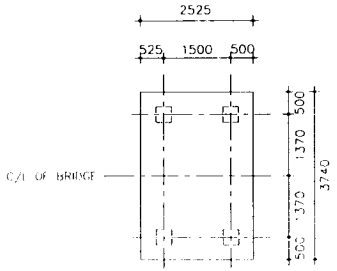
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	35	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

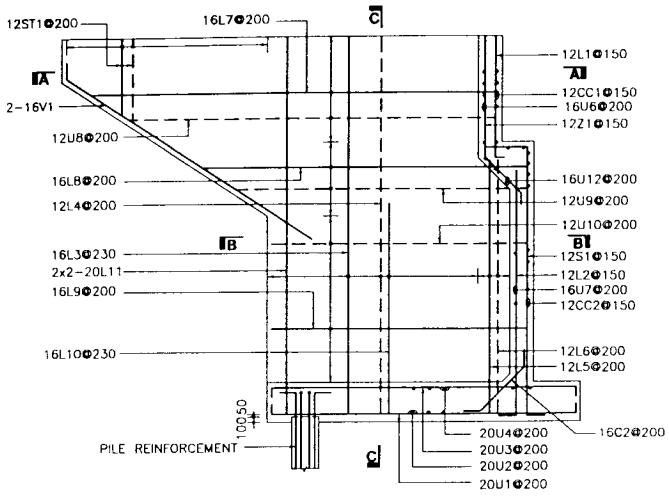
1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

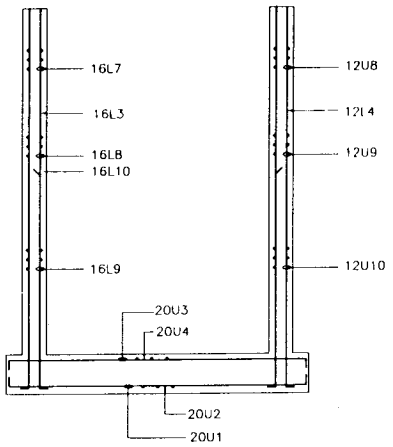
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 3.3m , DECK WIDTH 3.04m)

DATE
CHECKED BY
CAD FILE REF : ARCH\RD12\0331

Web Copy



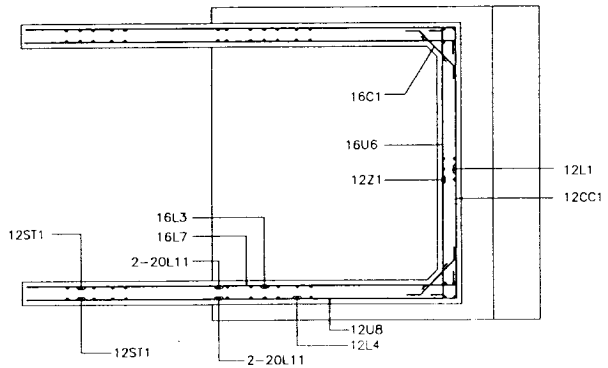
REINFORCEMENT DETAIL



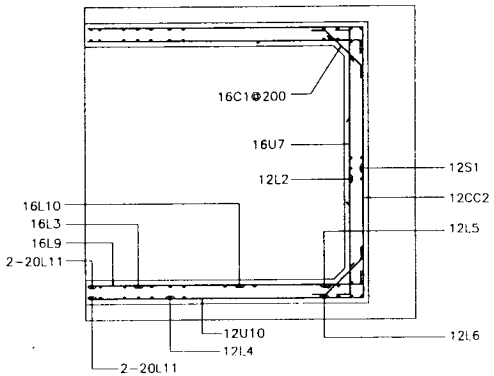
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

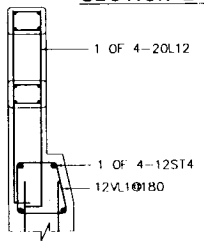
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	21	1700	144			1844
12	L2	21	1100	144			1244
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 800 to 1400	144			Avg. 1244
12	L6	6	Var. 800 to 1400	144			Avg. 1244
16	L7	16	Var. 1825 to 3250	192			Avg. 2730
16	L8	6	Var. 1725 to 1825	192			Avg. 1967
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	20	240	2425	240		2905
20	U2	14	240	3640	240		4120
20	U3	20	240	2425	240		2905
20	U4	14	240	3640	240		4120
16	U6	10	192	2892	192		3276
16	U7	3	192	2892	192		3276
12	U8	16	Var. 1825 to 3250	175	525		Avg. 3238
12	U9	6	Var. 1725 to 1825	175	525		Avg. 2475
12	U10	6	1725	175	525		2425
16	U12	6	192	2940	192		3324
12	CC1	12	1150	350	2940		4440
12	CC2	10	1150	350	2940		4440
12	Z1	21	1700	866	144		2710
12	S1	21	650	1650	240		2540
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000



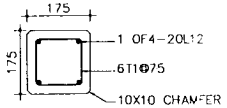
SECTION A-A



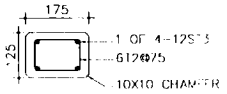
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail 20mm, b) Post- 20mm, c) Curb 25mm, d) Wall 50mm, e) Base-75mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120332

Web Copy

FA-198

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	21	1550	144			1694
12	L2	21	1250	144			1394
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 950 to 1550	144			Avg. 1394
12	L6	6	Var. 950 to 1550	144			Avg. 1394
16	L7	14	Var. 2050 to 3250	192			Avg. 2928
16	L8	8	Var. 1725 to 2050	192			Avg. 2080
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	20	240	2425	240		2905
20	U2	14	240	3640	240		4120
20	U3	20	240	2425	240		2905
20	U4	14	240	3640	240		4120
16	U6	9	192	2892	192		3276
16	U7	4	192	2892	192		3276
12	U8	14	Var. 2050 to 3250	175	525		Avg. 3436
12	U9	8	Var. 1725 to 2050	175	525		Avg. 2588
12	U10	6	1725	175	525		2425
16	U12	6	192	2940	192		3324
12	CC1	11	1150	350	2940		4440
12	CC2	11	1150	350	2940		4440
12	Z1	21	1550	866	144		2560
12	S1	21	650	1800	240		2690
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =950)

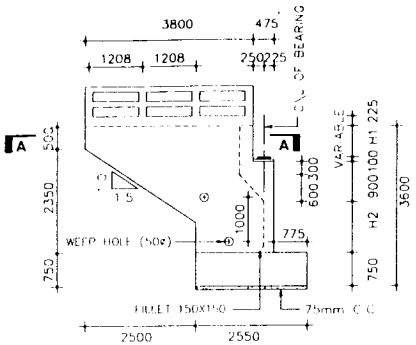
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	40	Var. 400 to 1734				Avg. 1067
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	21	1300	144			1444
12	L2	21	1500	144			1644
16	L3	6	3100	192			3292
12	L4	8	3100	144			3244
12	L5	6	Var. 1200 to 1800	144			Avg. 1644
12	L6	6	Var. 1200 to 1800	144			Avg. 1644
16	L7	12	Var. 2425 to 3250	192			Avg. 3167
16	L8	10	Var. 1725 to 2425	192			Avg. 2267
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	3100	240			3340
20	L12	32	971	120			1091
20	U1	20	240	2425	240		2905
20	U2	14	240	3640	240		4120
20	U3	20	240	2425	240		2905
20	U4	14	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	5	192	2892	192		3276
12	U8	12	Var. 2425 to 3250	175	525		Avg. 3675
12	U9	10	Var. 1725 to 2425	175	525		Avg. 2775
12	U10	6	1725	175	525		2425
16	U12	6	192	2940	192		3324
12	CC1	9	1150	350	2940		4440
12	CC2	13	1150	350	2940		4440
12	Z1	21	1300	866	144		2310
12	S1	21	650	2050	240		2940
16	C1	28	320	851	320		1491
16	C2	16	320	1240	320		1880
16	V1	4	250	3023			3273
6	T1	80	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

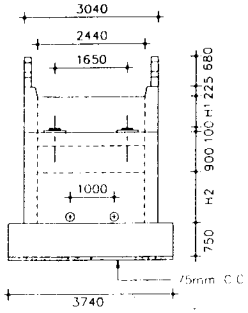
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120333	

Web Copy



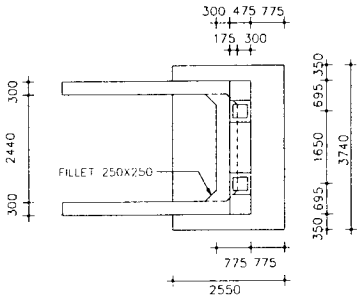
SIDE ELEVATION



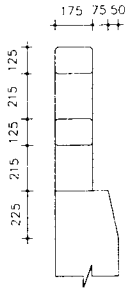
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	500	245	165
19500	1350	500	239	161
19000	1350	500	235	159
18500	1350	500	231	157
18000	1200	650	221	151
17500	1200	650	217	149
17000	1200	650	213	147
16500	1200	650	209	145
16000	1200	650	205	143
15500	1200	650	201	141
15000	950	900	189	133
14500	950	900	185	131
14000	950	900	181	129
13500	950	900	177	127
13000	950	900	173	125
12500	950	900	169	123



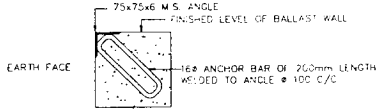
SECTION A-A



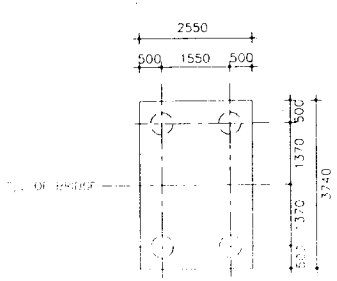
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-2

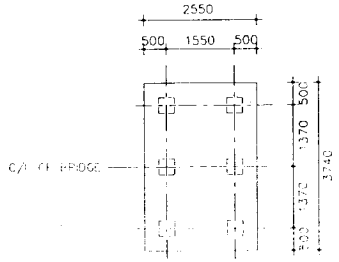
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	40	CAST IN SITU
TYPE – B	350X350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings. filter material shall be provided as per specification

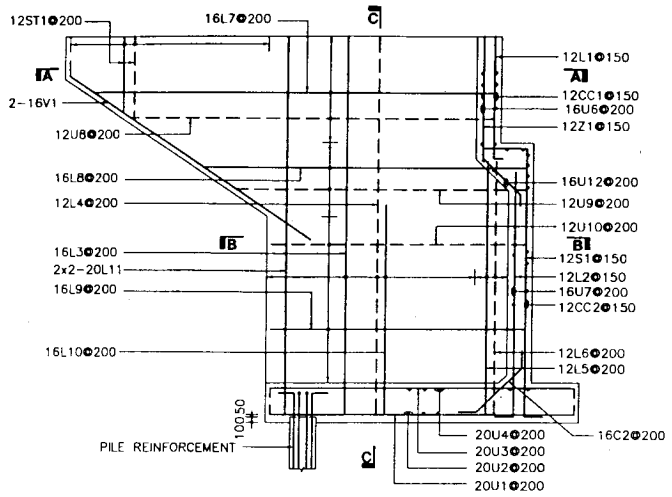
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 3.6m , DECK WIDTH 3.04m)

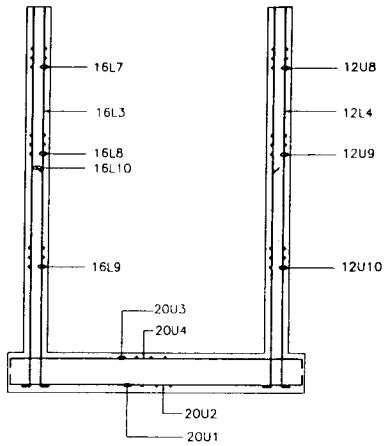
DATE
CHECKED BY
CAD FILE REF : ABUT-W012036J

Web Copy

SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: NO



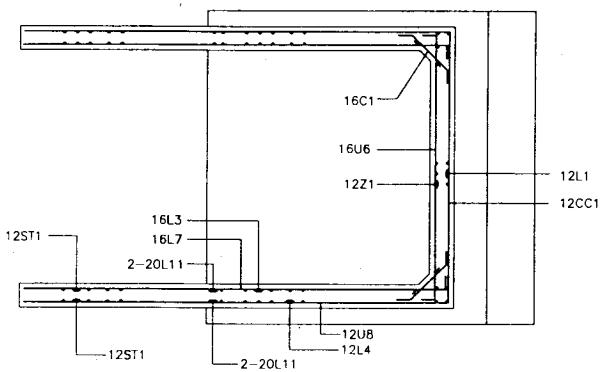
REINFORCEMENT DETAIL



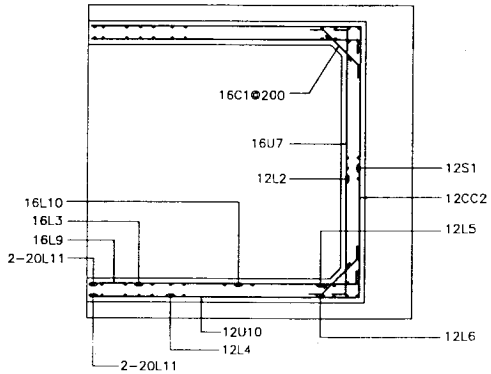
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

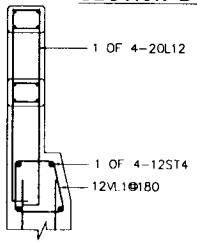
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1700	144			1844
12	L2	21	1400	144			1544
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1100 to 1700	144			Avg. 1544
12	L6	6	Var. 1100 to 1700	144			Avg. 1544
16	L7	16	Var. 2275 to 3700	192			Avg. 3180
16	L8	10	Var. 1675 to 2275	192			Avg. 2167
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2450	240		2930
20	U2	14	240	3640	240		4120
20	U3	20	240	2450	240		2930
20	U4	14	240	3640	240		4120
16	U6	10	192	2892	192		3276
16	U7	4	192	2892	192		3276
12	U8	16	Var. 2275 to 3700	200	550		Avg. 3738
12	U9	10	Var. 1675 to 2275	200	550		Avg. 2725
12	U10	6	1675	200	550		2425
16	U12	7	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	12	1200	400	2940		4540
12	Z1	21	1700	866	144		2710
12	S1	21	675	1950	240		2865
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000



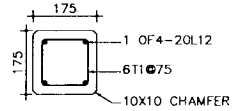
SECTION A-A



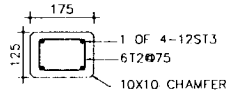
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120362

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1550	144			1694
12	L2	21	1550	144			1694
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1250 to 1850	144			Avg. 1694
12	L6	6	Var. 1250 to 1850	144			Avg. 1694
16	L7	14	Var. 2500 to 3700	192			Avg. 3378
16	L8	12	Var. 1675 to 2500	192			Avg. 2280
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2450	240		2930
20	U2	14	240	3640	240		4120
20	U3	20	240	2450	240		2930
20	U4	14	240	3640	240		4120
16	U6	9	192	2892	192		3276
16	U7	5	192	2892	192		3276
12	U8	14	Var. 2500 to 3700	200	550		Avg. 3936
12	U9	12	Var. 1675 to 2500	200	550		Avg. 2838
12	U10	6	1675	200	550		2425
16	U12	7	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	13	1200	400	2940		4540
12	Z1	21	1550	866	144		2560
12	S1	21	675	2100	240		3015
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1300	144			1444
12	L2	21	1800	144			1944
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1500 to 2100	144			Avg. 1944
12	L6	6	Var. 1500 to 2100	144			Avg. 1944
16	L7	12	Var. 2875 to 3700	192			Avg. 3617
16	L8	14	Var. 1675 to 2875	192			Avg. 2467
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2450	240		2930
20	U2	14	240	3640	240		4120
20	U3	20	240	2450	240		2930
20	U4	14	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	6	192	2892	192		3276
12	U8	12	Var. 2875 to 3700	200	550		Avg. 4175
12	U9	14	Var. 1675 to 2875	200	550		Avg. 3025
12	U10	6	1675	200	550		2425
16	U12	7	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	15	1200	400	2940		4540
12	Z1	21	1300	866	144		2310
12	S1	21	675	2350	240		3265
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

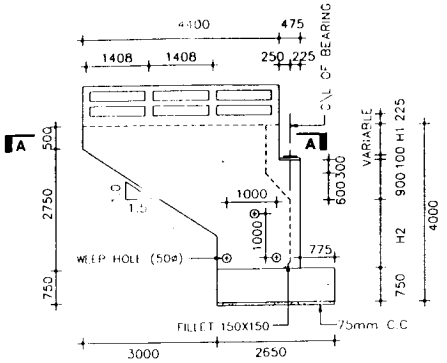
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 3.04m)

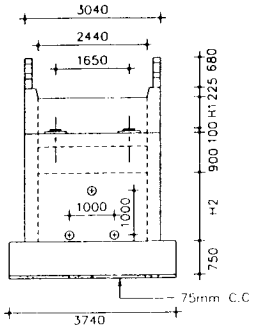
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120363	

Web Copy

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



SIDE ELEVATION



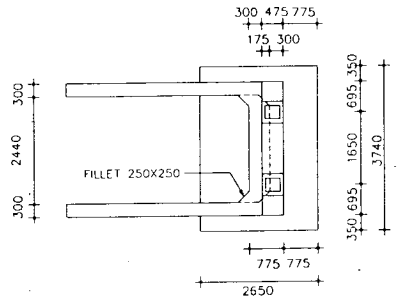
FRONT ELEVATION

TABLE-1

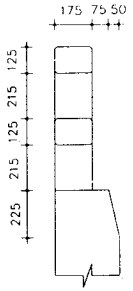
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	900	265	180
19500	1350	900	259	176
19000	1350	900	255	174
18500	1350	900	251	172
18000	1200	1050	241	166
17500	1200	1050	237	164
17000	1200	1050	233	162
16500	1200	1050	229	160
16000	1200	1050	225	158
15500	1200	1050	221	156
15000	950	1300	209	148
14500	950	1300	205	146
14000	950	1300	201	144
13500	950	1300	197	142
13000	950	1300	193	140
12500	950	1300	189	138

TABLE-2

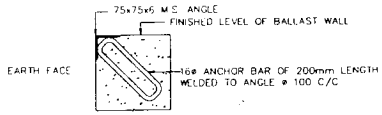
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	45	CAST IN SITU
TYPE – B	350X350	30	PRECAST



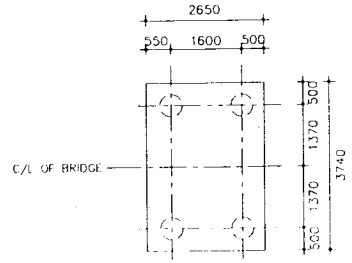
SECTION A-A



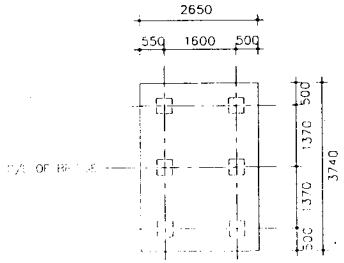
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

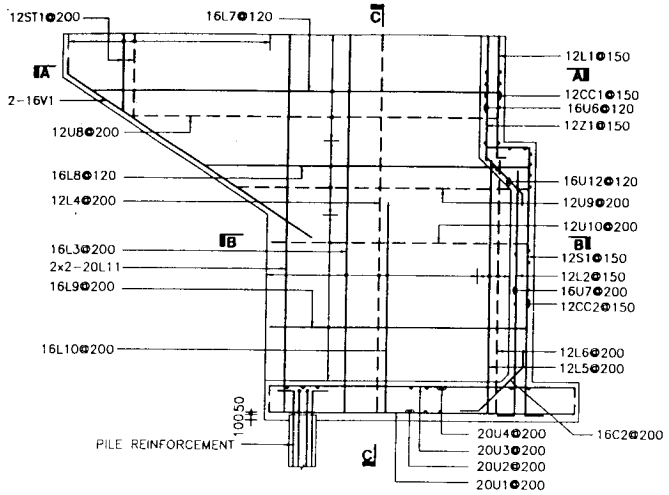
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.0m , DECK WIDTH 3.04m)

DATE
ISSUED BY :
CAD FILE REF : AR-DR020401

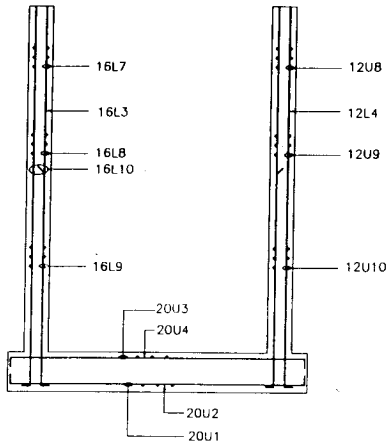
Web Copy

FA-203

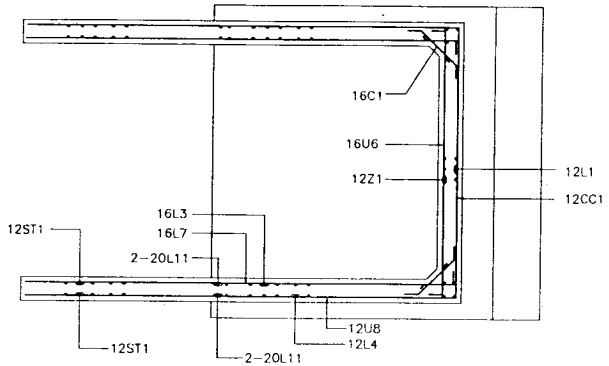
SHEET 2 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: NO



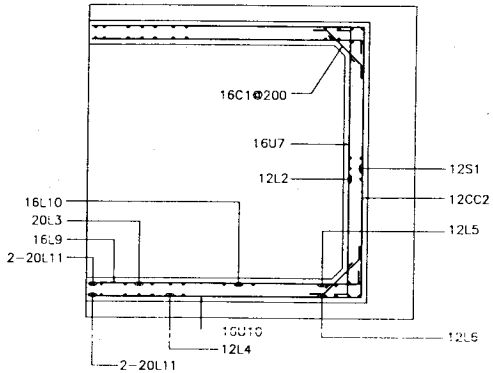
REINFORCEMENT DETAIL



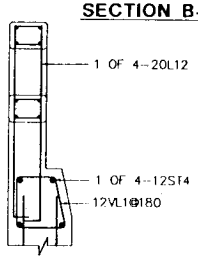
SECTION C-C



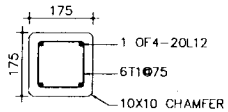
SECTION A-A



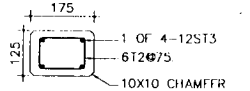
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	21	1700	144			1844
12	L2	21	1800	144			1944
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1500 to 2100	144			Avg. 1944
12	L6	6	Var. 1500 to 2100	144			Avg. 1944
16	L7	26	Var. 2875 to 4300	192			Avg. 3725
16	L8	20	Var. 1775 to 2875	192			Avg. 2517
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2550	240		3030
20	U2	14	240	3640	240		4120
20	U3	20	240	2550	240		3030
20	U4	14	240	3640	240		4120
16	U6	16	192	2892	192		3276
16	U7	6	192	2892	192		3276
12	U8	16	Var. 2875 to 4300	200	550		Avg. 4338
12	U9	14	Var. 1775 to 2875	200	550		Avg. 3075
12	U10	6	1775	200	550		2525
16	U12	10	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	15	1200	400	2940		4540
12	Z1	21	1700	866	144		2710
12	S1	21	675	2350	240		3265
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base -50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120402

Web Copy

FAI –204

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	21	1550	144			1694
12	L2	21	1950	144			2094
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1650 to 2250	144			Avg. 2094
12	L6	6	Var. 1650 to 2250	144			Avg. 2094
16	L7	24	Var. 3100 to 4300	192			Avg. 3892
16	L8	22	Var. 1775 to 3100	192			Avg. 2630
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2550	240		3030
20	U2	14	240	3640	240		4120
20	U3	20	240	2550	240		3030
20	U4	14	240	3640	240		4120
16	U6	14	192	2892	192		3276
16	U7	7	192	2892	192		3276
12	U8	14	Var. 3100 to 4300	200	550		Avg. 4536
12	U9	14	Var. 1775 to 3100	200	550		Avg. 3188
12	U10	6	1775	200	550		2525
16	U12	10	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	16	1200	400	2940		4540
12	Z1	21	1550	866	144		2560
12	S1	21	675	2500	240		3415
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	21	1300	144			1444
12	L2	21	2200	144			2344
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1900 to 2500	144			Avg. 2344
12	L6	6	Var. 1900 to 2500	144			Avg. 2344
16	L7	20	Var. 3475 to 4300	192			Avg. 4162
16	L8	28	Var. 1775 to 3475	192			Avg. 2817
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	971	120			1091
20	U1	20	240	2550	240		3030
20	U2	14	240	3640	240		4120
20	U3	20	240	2550	240		3030
20	U4	14	240	3640	240		4120
16	U6	12	192	2892	192		3276
16	U7	8	192	2892	192		3276
12	U8	12	Var. 3475 to 4300	200	550		Avg. 4775
12	U9	18	Var. 1775 to 3475	200	550		Avg. 3375
12	U10	6	1775	200	550		2525
16	U12	10	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	17	1200	400	2940		4540
12	Z1	21	1300	866	144		2310
12	S1	21	675	2750	240		3665
16	C1	36	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

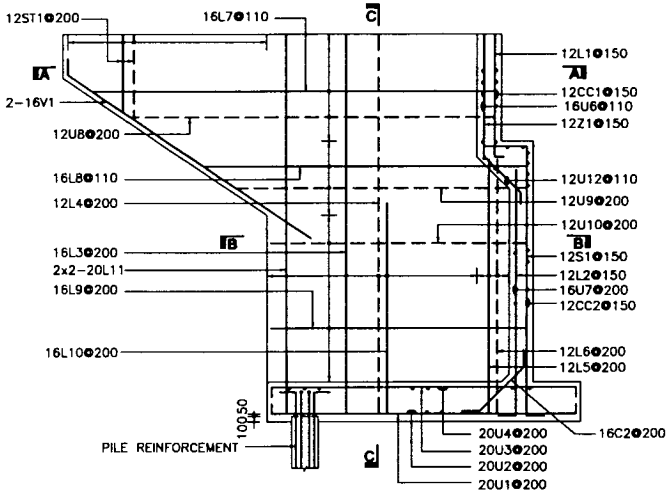
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120403	

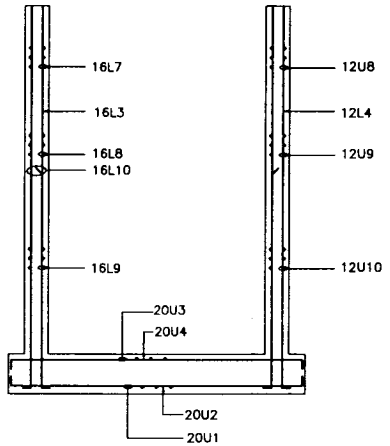
Web Copy

FA-206

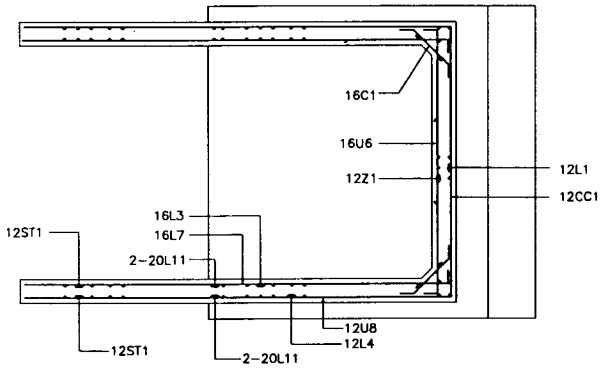
SHEET 2 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: NO



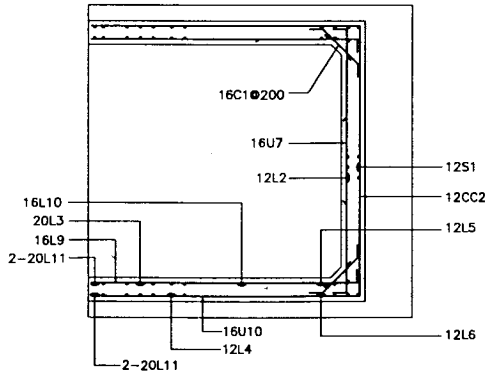
REINFORCEMENT DETAIL



SECTION C-C



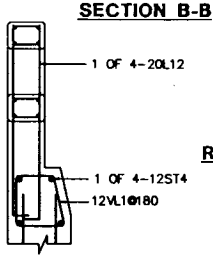
SECTION A-A



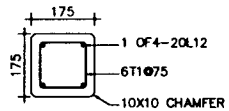
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

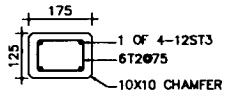
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	21	1700	144			1844
12	L2	21	2100	144			2244
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 1800 to 2400	144			Avg. 2244
12	L6	6	Var. 1800 to 2400	144			Avg. 2244
16	L7	28	Var. 3325 to 4750	192			Avg. 4128
16	L8	16	Var. 2725 to 3325	192			Avg. 3217
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3325	240		3805
20	U2	18	240	3640	240		4120
20	U3	20	240	3325	240		3805
20	U4	18	240	3640	240		4120
16	U6	17	192	2892	192		3276
16	U7	8	192	2892	192		3276
12	U8	16	Var. 3325 to 4750	200	550		Avg. 4788
12	U9	10	Var. 2725 to 3325	200	550		Avg. 3775
12	U10	12	2725	200	550		3475
16	U12	11	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	17	1200	400	2940		4540
12	Z1	21	1700	866	144		2710
12	S1	21	675	2650	240		3565
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

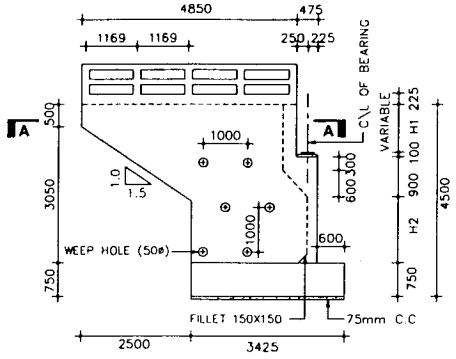
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 3.04m)

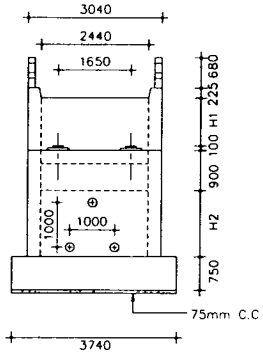
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120432

Web Copy

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



SIDE ELEVATION



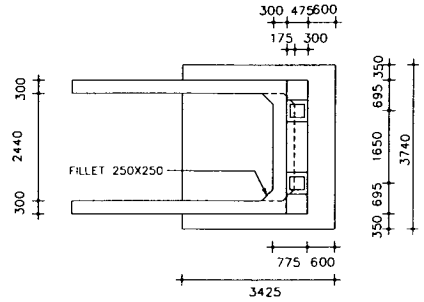
FRONT ELEVATION

TABLE-1

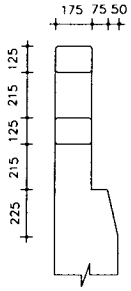
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	1450	335	150
19500	1350	1450	329	146
19000	1350	1450	225	144
18500	1350	1450	221	142
18000	1200	1600	211	138
17500	1200	1600	207	136
17000	1200	1600	203	134
16500	1200	1600	199	132
16000	1200	1600	195	130
15500	1200	1600	191	128
15000	950	1850	179	122
14500	950	1850	175	120
14000	950	1850	171	118
13500	950	1850	167	116
13000	950	1850	163	114
12500	950	1850	159	112

TABLE-2

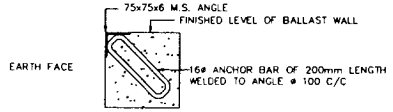
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	350x350	25	PRECAST



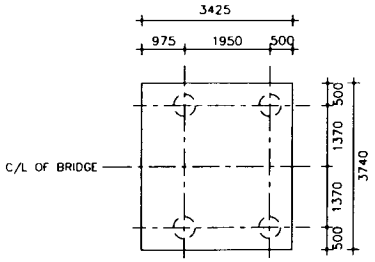
SECTION A-A



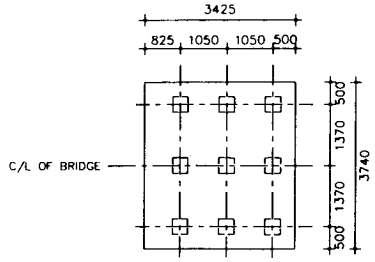
GENERAL ARRANGEMENT
OF RAILING ON WING WALL



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metariol shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 4.3m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120431

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1200)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	21	1550	144			1694
12	L2	21	2250	144			2394
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 1950 to 2550	144			Avg. 2394
12	L6	6	Var. 1950 to 2550	144			Avg. 2394
16	L7	26	Var. 3550 to 4750	192			Avg. 4296
16	L8	18	Var. 2725 to 3550	192			Avg. 3330
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3325	240		3805
20	U2	18	240	3640	240		4120
20	U3	20	240	3325	240		3805
20	U4	18	240	3640	240		4120
16	U6	16	192	2892	192		3276
16	U7	9	192	2892	192		3276
12	U8	14	Var. 3550 to 4750	200	550		Avg. 4986
12	U9	12	Var. 2725 to 3550	200	550		Avg. 3888
12	U10	12	2725	200	550		3475
16	U12	11	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	18	1200	400	2940		4540
12	Z1	21	1550	866	144		2560
12	S1	21	675	2800	240		3715
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	21	1300	144			1444
12	L2	21	2500	144			2644
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2200 to 2800	144			Avg. 2644
12	L6	6	Var. 2200 to 2800	144			Avg. 2644
16	L7	20	Var. 3925 to 4750	192			Avg. 4612
16	L8	24	Var. 2725 to 3925	192			Avg. 3517
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	20	240	3325	240		3805
20	U2	18	240	3640	240		4120
20	U3	20	240	3325	240		3805
20	U4	18	240	3640	240		4120
16	U6	13	192	2892	192		3276
16	U7	10	192	2892	192		3276
12	U8	12	Var. 3925 to 4750	200	550		Avg. 5225
12	U9	14	Var. 2725 to 3925	200	550		Avg. 4075
12	U10	12	2725	200	550		3475
16	U12	11	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	19	1200	400	2940		4540
12	Z1	21	1300	866	144		2310
12	S1	21	675	3050	240		3965
16	C1	38	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

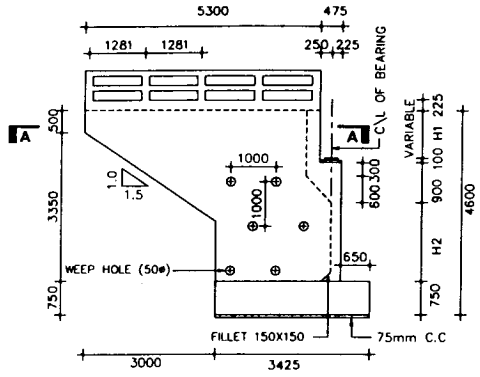
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120433	

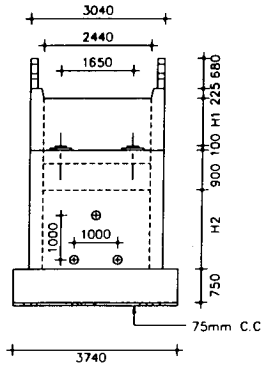
Web Copy

FA-208

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



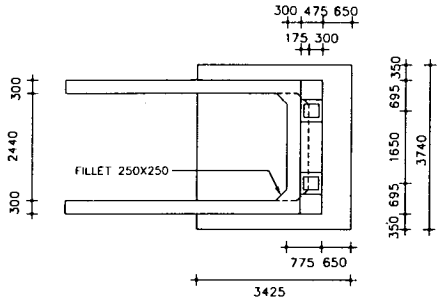
SIDE ELEVATION



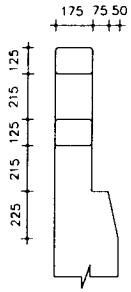
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	1500	345	155
19500	1350	1500	339	151
19000	1350	1500	335	149
18500	1350	1500	331	147
18000	1200	1650	321	143
17500	1200	1650	317	141
17000	1200	1650	313	139
16500	1200	1650	309	137
16000	1200	1650	305	135
15500	1200	1650	301	133
15000	950	1900	289	127
14500	950	1900	285	125
14000	950	1900	281	123
13500	950	1900	277	121
13000	950	1900	273	119
12500	950	1900	269	117



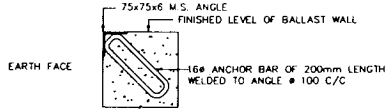
SECTION A-A



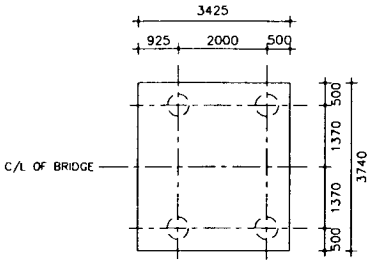
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-2

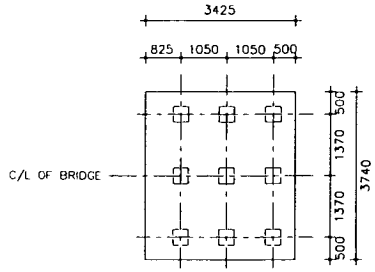
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	350x350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 4.6m , DECK WIDTH 3.04m)

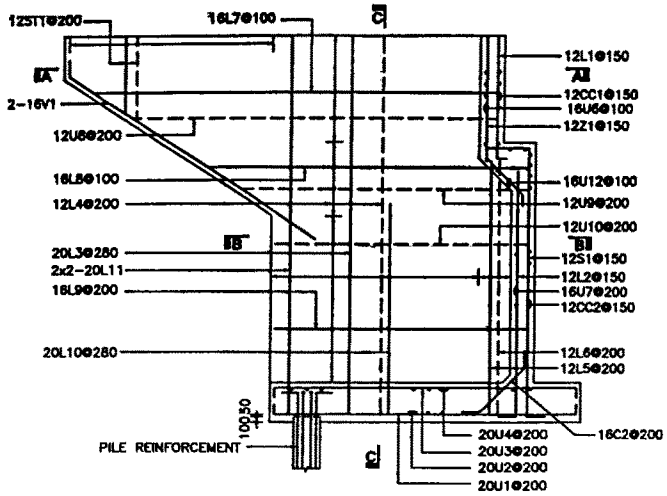
DATE :

ISSUED BY :

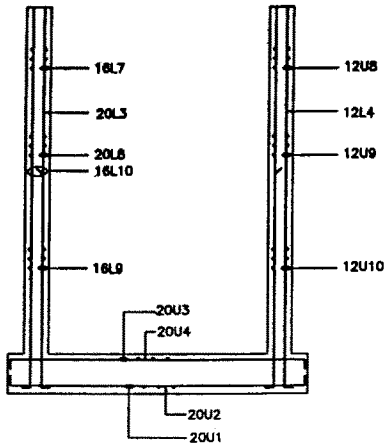
CAD FILE REF : ABUT\R0120461

Web Copy

SHEET 2 OF 3	
SPAN RANGE :12.5m TO 20.0m	
SIDE WALK: NO	



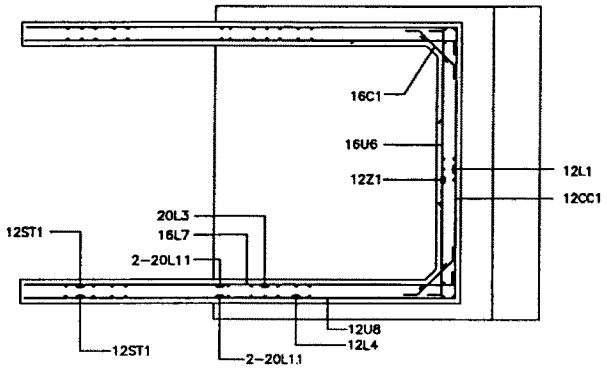
REINFORCEMENT DETAIL



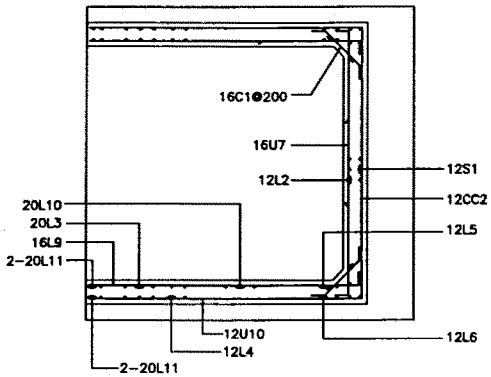
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

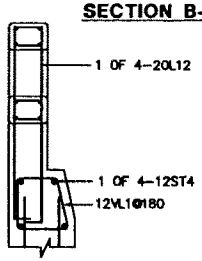
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	80	Var. 400 to 2400				Avg. 1400
12	ST3	16	5280				5280
12	ST4	8	5250				5250
12	L1	21	1700	144			1844
12	L2	21	2400	144			2544
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2100 to 2700	144			Avg. 2544
12	L6	6	Var. 2100 to 2700	144			Avg. 2544
16	L7	30	Var. 3775 to 5200	192			Avg. 4537
16	L8	24	Var. 2675 to 3775	192			Avg. 3417
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3325	240		3805
20	U2	18	240	3640	240		4120
20	U3	20	240	3325	240		3805
20	U4	18	240	3640	240		4120
16	U6	18	192	2892	192		3276
16	U7	9	192	2892	192		3276
12	U8	16	Var. 3775 to 5200	200	550		Avg. 5238
12	U9	14	Var. 2675 to 3775	200	550		Avg. 3975
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	19	1200	400	2940		4540
12	Z1	21	1700	866	144		2710
12	S1	21	675	2950	240		3865
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	308	308			612
6	T2	256	208	308			512
12	VL1	62	272	200	250	278	1000



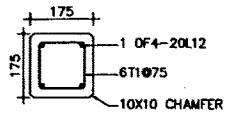
SECTION A-A



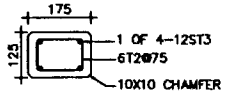
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120462	

Web Copy

FA-210

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5280				5280
12	ST4	8	5250				5250
12	L1	21	1550	144			1694
12	L2	21	2550	144			2694
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2250 to 2850	144			Avg. 2694
12	L6	6	Var. 2250 to 2850	144			Avg. 2694
16	L7	26	Var. 4000 to 5200	192			Avg. 4746
16	L8	26	Var. 2675 to 4000	192			Avg. 3530
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3325	240		3805
20	U2	18	240	3640	240		4120
20	U3	20	240	3325	240		3805
20	U4	18	240	3640	240		4120
16	U6	17	192	2892	192		3276
16	U7	10	192	2892	192		3276
12	U8	14	Var. 4000 to 5200	200	550		Avg. 5436
12	U9	14	Var. 2675 to 4000	200	550		Avg. 4088
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	20	1200	400	2940		4540
12	Z1	21	1550	866	144		2560
12	S1	21	675	3100	240		4015
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5280				5280
12	ST4	8	5250				5250
12	L1	21	1300	144			1444
12	L2	21	2800	144			2944
20	L3	12	4400	240			4640
12	L4	16	4400	144			4544
12	L5	6	Var. 2500 to 3100	144			Avg. 2944
12	L6	6	Var. 2500 to 3100	144			Avg. 2944
16	L7	22	Var. 4375 to 5200	192			Avg. 5017
16	L8	32	Var. 2675 to 4375	192			Avg. 3717
16	L9	12	2675	192			2867
20	L10	12	1910	240			2150
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	20	240	3325	240		3805
20	U2	18	240	3640	240		4120
20	U3	20	240	3325	240		3805
20	U4	18	240	3640	240		4120
16	U6	14	192	2892	192		3276
16	U7	11	192	2892	192		3276
12	U8	12	Var. 4375 to 5200	200	550		Avg. 5675
12	U9	18	Var. 2675 to 4375	200	550		Avg. 4275
12	U10	12	2675	200	550		3425
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	21	1200	400	2940		4540
12	Z1	21	1300	866	144		2310
12	S1	21	675	3350	240		4265
16	C1	42	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	4469			4719
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

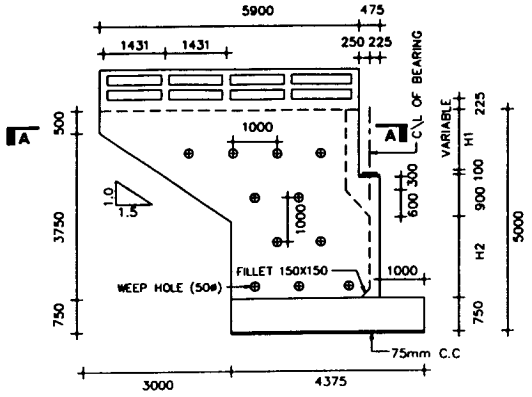
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120463

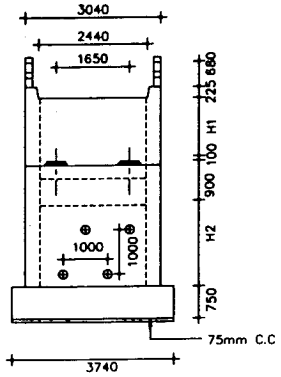
Web Copy

FA-211

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



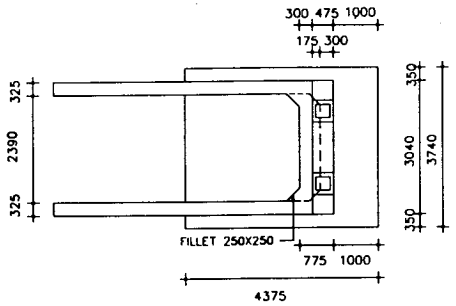
SIDE ELEVATION



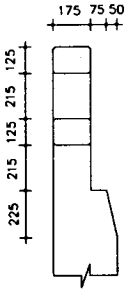
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	1900	280	190
19500	1350	1900	276	186
19000	1350	1900	274	184
18500	1350	1900	272	182
18000	1200	2050	266	178
17500	1200	2050	264	176
17000	1200	2050	262	174
16500	1200	2050	260	172
16000	1200	2050	258	170
15500	1200	2050	256	168
15000	950	2300	248	162
14500	950	2300	246	160
14000	950	2300	244	158
13500	950	2300	242	156
13000	950	2300	240	154
12500	950	2300	238	152



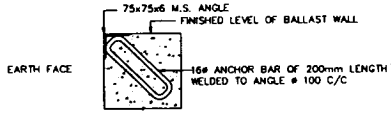
SECTION A-A



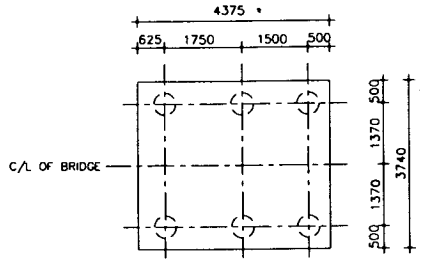
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

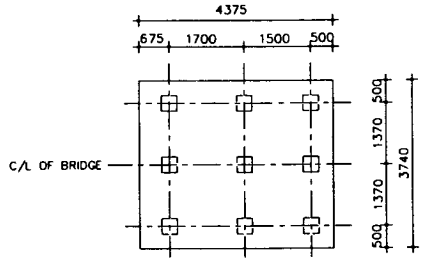
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	50	CAST IN SITU
TYPE – B	350x350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

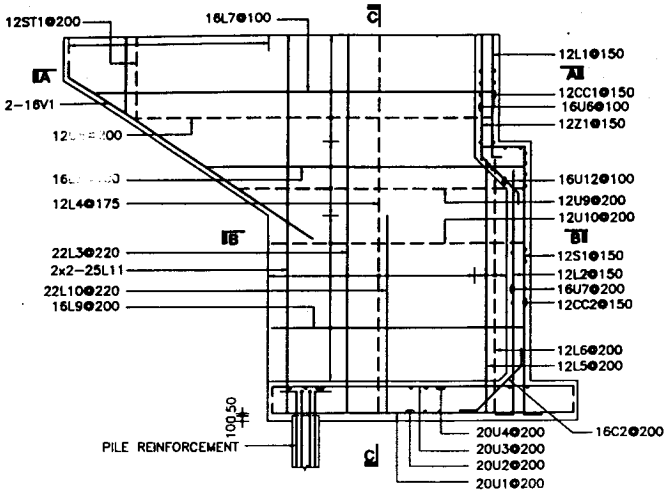
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 5.0m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120501

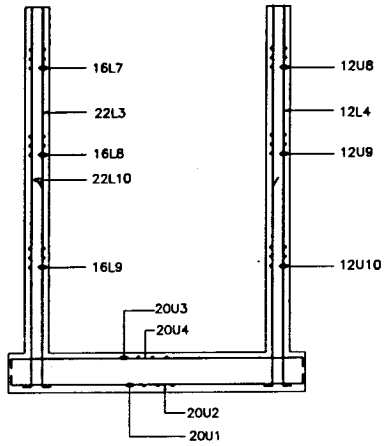
Web Copy

FA-212

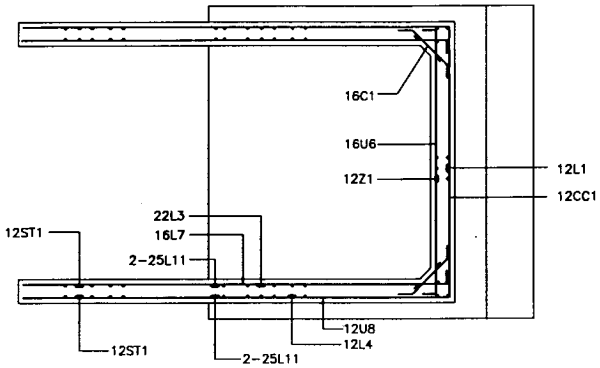
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



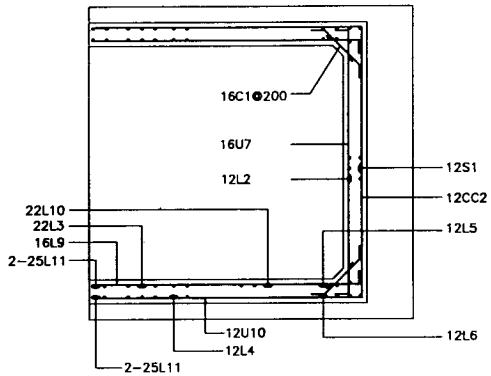
REINFORCEMENT DETAIL



SECTION C-C



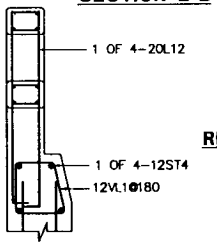
SECTION A-A



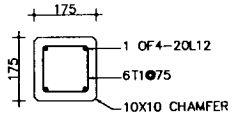
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

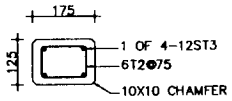
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1700	144			1844
12	L2	21	2800	144			2944
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2500 to 3100	144			Avg. 2944
12	L6	6	Var. 2500 to 3100	144			Avg. 2944
16	L7	30	Var. 4375 to 5800	192			Avg. 5137
16	L8	24	Var. 3275 to 4375	192			Avg. 4017
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1185	120			1305
20	U1	20	240	4275	240		4755
20	U2	23	240	3640	240		4120
20	U3	20	240	4275	240		4755
20	U4	23	240	3640	240		4120
16	U6	18	192	2892	192		3276
16	U7	11	192	2892	192		3276
12	U8	16	Var. 4375 to 5800	225	550		Avg. 5863
12	U9	14	Var. 3275 to 4375	225	550		Avg. 4600
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	12	1250	400	2940		4590
12	CC2	21	1250	400	2940		4590
12	Z1	21	1700	866	144		2710
12	S1	21	675	3350	240		4265
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0120502	

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BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1550	144			1694
12	L2	21	2950	144			3094
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2650 to 3250	144			Avg. 3094
12	L6	6	Var. 2650 to 3250	144			Avg. 3094
16	L7	26	Var. 4600 to 5800	192			Avg. 5346
16	L8	26	Var. 3275 to 4600	192			Avg. 4130
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1185	120			1305
20	U1	20	240	4275	240		4755
20	U2	23	240	3640	240		4120
20	U3	20	240	4275	240		4755
20	U4	23	240	3640	240		4120
16	U6	17	192	2892	192		3276
16	U7	12	192	2892	192		3276
12	U8	14	Var. 4600 to 5800	225	550		Avg. 6061
12	U9	14	Var. 3275 to 4600	225	550		Avg. 4713
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	11	1250	400	2940		4590
12	CC2	22	1250	400	2940		4590
12	Z1	21	1550	866	144		2560
12	S1	21	675	3500	240		4415
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1300	144			1444
12	L2	21	3200	144			3344
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2900 to 3500	144			Avg. 3344
12	L6	6	Var. 2900 to 3500	144			Avg. 3344
16	L7	22	Var. 4975 to 5800	192			Avg. 5617
16	L8	32	Var. 3275 to 4975	192			Avg. 4317
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1185	120			1305
20	U1	20	240	4275	240		4755
20	U2	23	240	3640	240		4120
20	U3	20	240	4275	240		4755
20	U4	23	240	3640	240		4120
16	U6	14	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	12	Var. 4975 to 5800	225	550		Avg. 6300
12	U9	18	Var. 3275 to 4975	225	550		Avg. 4900
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	9	1250	400	2940		4590
12	CC2	24	1250	400	2940		4590
12	Z1	21	1300	866	144		2310
12	S1	21	675	3750	240		4665
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 3.04m)

DATE :

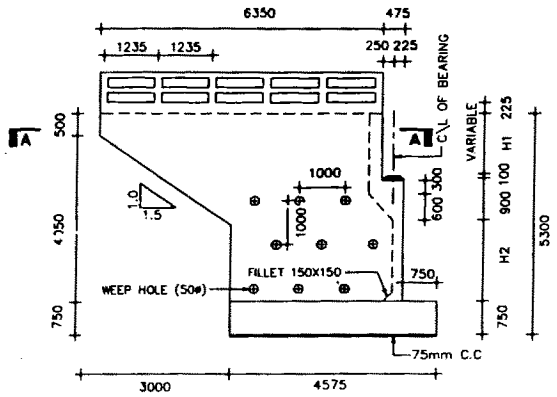
ISSUED BY :

CAD FILE REF : ABUT/R0120503

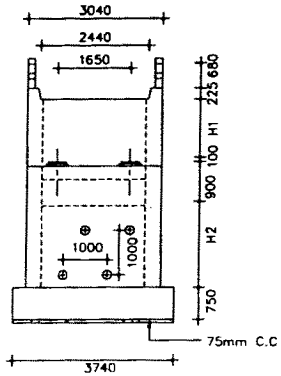
Web Copy

FA-214

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



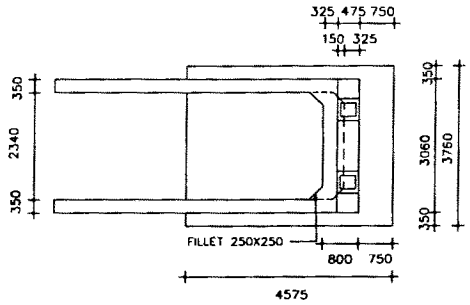
SIDE ELEVATION



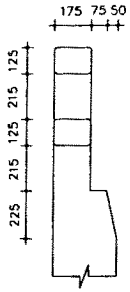
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	2200	310	155
19500	1350	2200	306	153
19000	1350	2200	304	151
18500	1350	2200	302	149
18000	1200	2350	296	145
17500	1200	2350	294	143
17000	1200	2350	292	141
16500	1200	2350	290	139
16000	1200	2350	288	137
15500	1200	2350	286	135
15000	950	2600	278	131
14500	950	2600	276	129
14000	950	2600	274	127
13500	950	2600	272	125
13000	950	2600	270	123
12500	950	2600	268	121



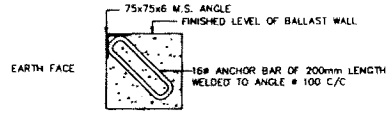
SECTION A-A



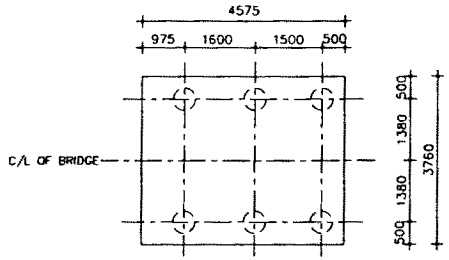
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

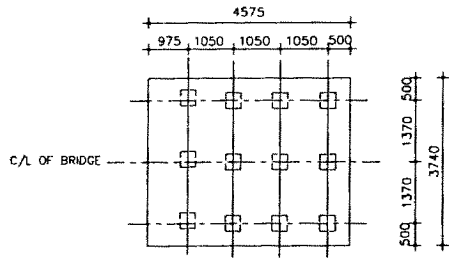
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	350x350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horozontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

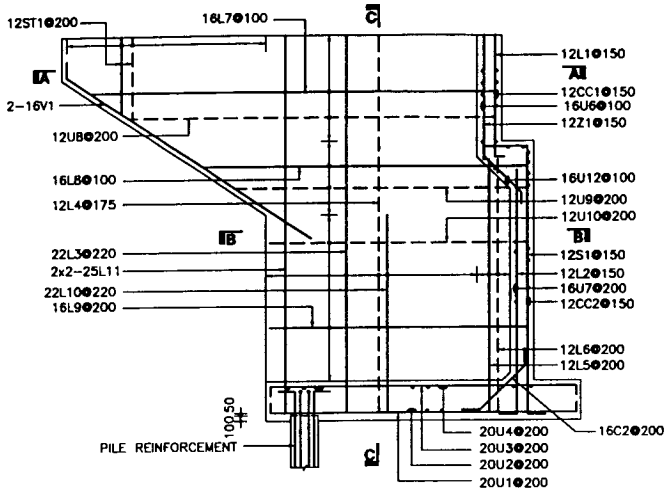
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.3m , DECK WIDTH 3.04m)

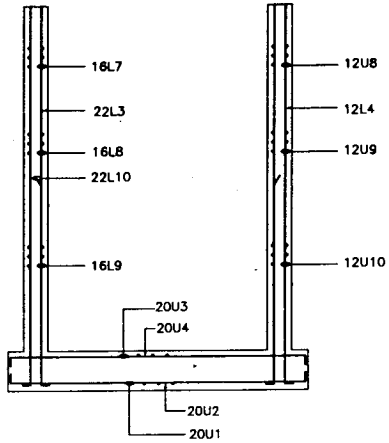
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120531

Web Copy

SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



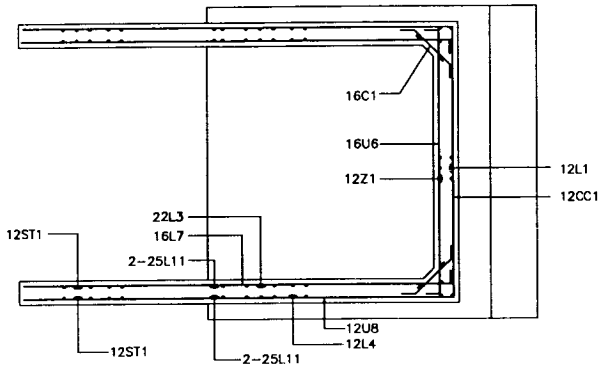
REINFORCEMENT DETAIL



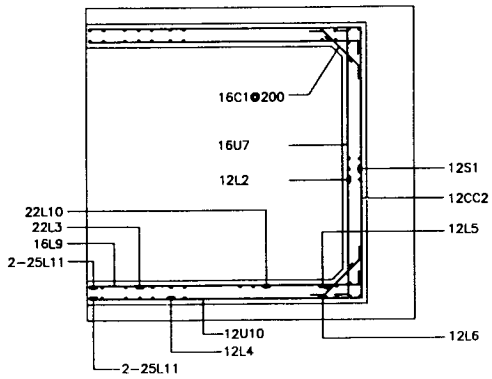
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

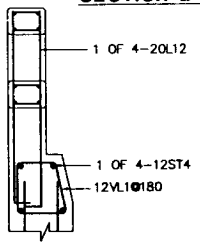
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	1700	144			1844
12	L2	21	3100	144			3244
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 2800 to 3400	144			Avg. 3244
12	L6	6	Var. 2800 to 3400	144			Avg. 3244
16	L7	30	Var. 4825 to 6250	192			Avg. 5587
16	L8	24	Var. 3725 to 4825	192			Avg. 4467
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4475	240		4955
20	U2	24	240	3640	240		4120
20	U3	20	240	4475	240		4955
20	U4	24	240	3640	240		4120
16	U6	18	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	16	Var. 4825 to 6250	250	575		Avg. 6363
12	U9	14	Var. 3725 to 4825	250	575		Avg. 5100
12	U10	20	3725	250	600		4575
16	U12	12	192	2940	192		3324
12	CC1	12	1300	450	2940		4690
12	CC2	23	1300	450	2940		4690
12	Z1	21	1700	866	144		2710
12	S1	21	700	3650	240		4590
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000



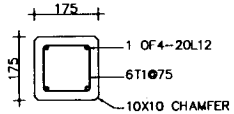
SECTION A-A



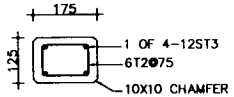
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Cleor cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cod File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 5.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0120532	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	1550	144			1694
12	L2	21	3250	144			3394
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 2850 to 3550	144			Avg. 3394
12	L6	6	Var. 2950 to 3550	144			Avg. 3394
16	L7	26	Var. 5050 to 6250	192			Avg. 5796
16	L8	26	Var. 3725 to 5050	192			Avg. 4580
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4475	240		4955
20	U2	24	240	3640	240		4120
20	U3	20	240	4475	240		4955
20	U4	24	240	3640	240		4120
16	U6	17	192	2892	192		3276
16	U7	14	192	2892	192		3276
12	U8	14	Var. 5050 to 6250	250	575		Avg. 6561
12	U9	14	Var. 3725 to 5050	250	575		Avg. 5213
12	U10	20	3725	250	600		4575
16	U12	12	192	2940	192		3324
12	CC1	11	1300	450	2940		4690
12	CC2	24	1300	450	2940		4690
12	Z1	21	1550	866	144		2560
12	S1	21	700	3800	240		4740
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =950)

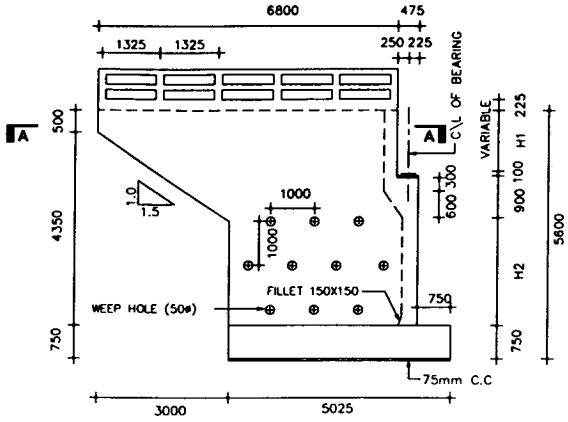
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	21	1300	144			1444
12	L2	21	3500	144			3644
22	L3	24	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3200 to 3800	144			Avg. 3644
12	L6	6	Var. 3200 to 3800	144			Avg. 3644
16	L7	22	Var. 5425 to 6250	192			Avg. 6067
16	L8	32	Var. 3725 to 5425	192			Avg. 4767
16	L9	20	3725	192			3917
22	L10	24	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	971	120			1091
20	U1	20	240	4475	240		4955
20	U2	24	240	3640	240		4120
20	U3	20	240	4475	240		4955
20	U4	24	240	3640	240		4120
16	U6	14	192	2892	192		3276
16	U7	15	192	2892	192		3276
12	U8	12	Var. 5425 to 6250	250	575		Avg. 6800
12	U9	18	Var. 3725 to 5425	250	575		Avg. 5400
12	U10	20	3725	250	600		4575
16	U12	12	192	2940	192		3324
12	CC1	9	1300	450	2940		4690
12	CC2	26	1300	450	2940		4690
12	Z1	21	1300	866	144		2310
12	S1	21	700	4050	240		4990
16	C1	48	320	1028	320		1668
16	C2	16	320	1311	320		1951
16	V1	4	250	4600			4850
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

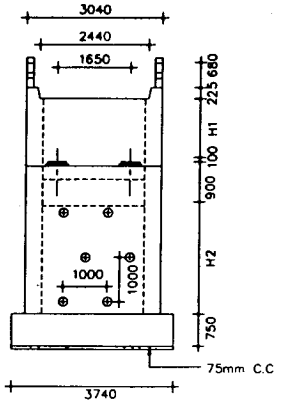
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0120533	

Web Copy



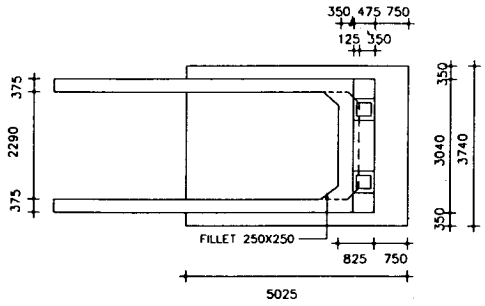
SIDE ELEVATION



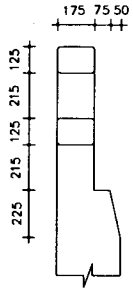
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	2500	345	175
19500	1350	2500	341	173
19000	1350	2500	339	171
18500	1350	2500	337	169
18000	1200	2650	331	165
17500	1200	2650	329	163
17000	1200	2650	327	161
16500	1200	2650	325	159
16000	1200	2650	323	157
15500	1200	2650	321	155
15000	950	2900	313	151
14500	950	2900	311	149
14000	950	2900	309	147
13500	950	2900	307	145
13000	950	2900	305	143
12500	950	2900	303	141



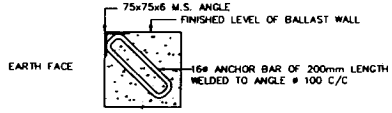
SECTION A-A



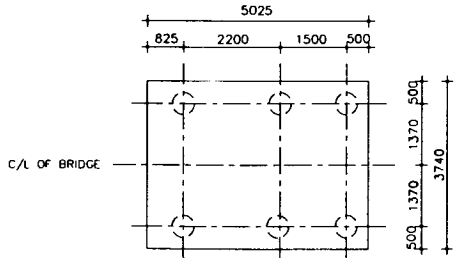
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

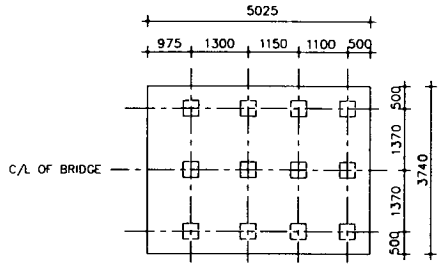
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	INSITU
TYPE – B	350x350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horozontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

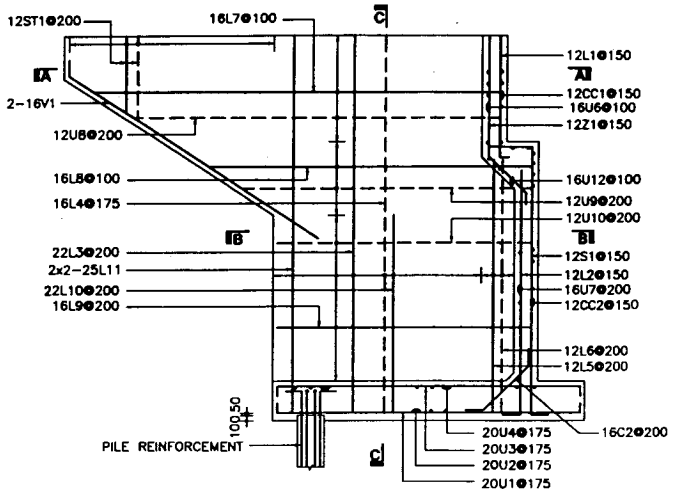
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.6m , DECK WIDTH 3.04m)

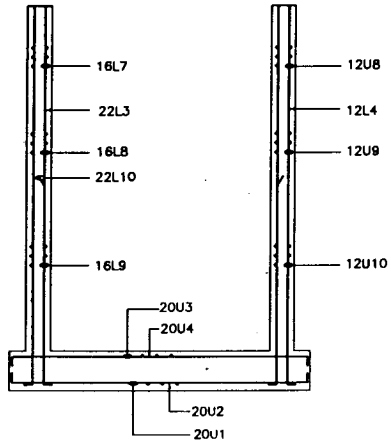
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120561

Web Copy

SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



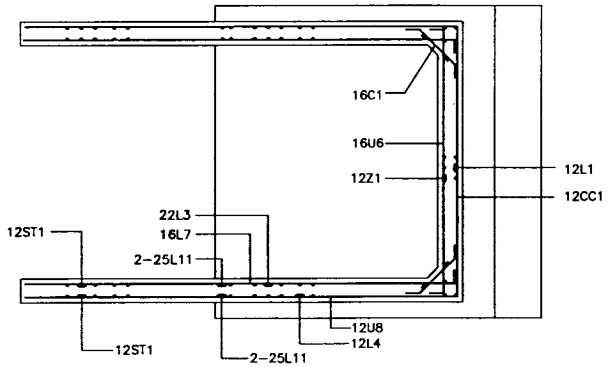
REINFORCEMENT DETAIL



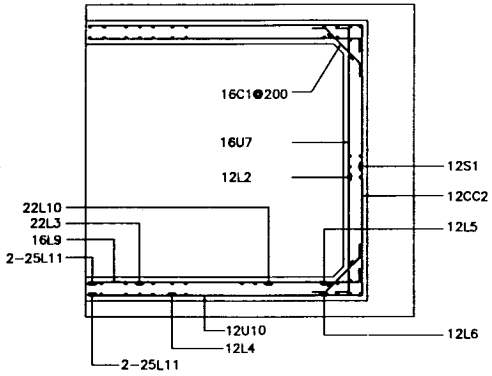
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

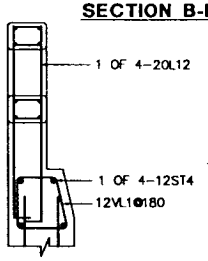
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6760				6760
12	ST4	8	6750				6750
12	L1	21	1700	144			1844
12	L2	21	3400	144			3544
22	L3	32	5400	264			5664
16	L4	36	5400	192			5592
12	L5	6	Var. 3100 to 3700	144			Avg. 3544
12	L6	6	Var. 3100 to 3700	144			Avg. 3544
16	L7	30	Var. 5275 to 6700	192			Avg. 6037
16	L8	24	Var. 4175 to 5275	192			Avg. 4917
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4925	240		5405
20	U2	30	240	3640	240		4120
20	U3	22	240	4925	240		5405
20	U4	30	240	3640	240		4120
16	U6	18	192	2884	192		3268
16	U7	14	192	2892	192		3276
12	U8	16	Var. 5275 to 6700	275	600		Avg. 6863
12	U9	14	Var. 4175 to 5275	275	600		Avg. 5600
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	12	1350	500	2940		4790
12	CC2	25	1350	500	2940		4790
12	Z1	21	1700	866	144		2710
12	S1	21	725	3950	240		4915
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000



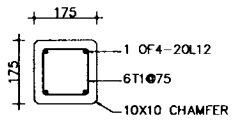
SECTION A-A



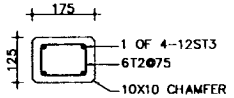
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0120562	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1200)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6780				6780
12	ST4	8	6750				6750
12	L1	21	1550	144			1694
12	L2	21	3550	144			3694
22	L3	32	5400	264			5864
16	L4	36	5400	192			5592
12	L5	6	Var. 3250 to 3850	144			Avg. 3694
12	L6	6	Var. 3250 to 3850	144			Avg. 3694
16	L7	26	Var. 5500 to 6700	192			Avg. 6246
16	L8	26	Var. 4175 to 5500	192			Avg. 5030
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4925	240		5405
20	U2	30	240	3640	240		4120
20	U3	22	240	4925	240		5405
20	U4	30	240	3640	240		4120
16	U6	17	192	2884	192		3268
16	U7	15	192	2892	192		3276
12	U8	14	Var. 5500 to 6700	275	600		Avg. 7061
12	U9	14	Var. 4175 to 5500	275	600		Avg. 5713
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	11	1350	500	2940		4790
12	CC2	26	1350	500	2940		4790
12	Z1	21	1550	866	144		2560
12	S1	21	725	4100	240		5065
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6780				6780
12	ST4	8	6750				6750
12	L1	21	1300	144			1444
12	L2	21	3800	144			3944
22	L3	32	5400	264			5864
16	L4	36	5400	192			5592
12	L5	6	Var. 3500 to 4100	144			Avg. 3944
12	L6	6	Var. 3500 to 4100	144			Avg. 3944
16	L7	22	Var. 5875 to 6700	192			Avg. 6517
16	L8	32	Var. 4175 to 5875	192			Avg. 5217
16	L9	22	4175	192			4367
22	L10	32	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	22	240	4925	240		5405
20	U2	30	240	3640	240		4120
20	U3	22	240	4925	240		5405
20	U4	30	240	3640	240		4120
16	U6	14	192	2884	192		3268
16	U7	16	192	2892	192		3276
12	U8	12	Var. 5875 to 6700	275	600		Avg. 7300
12	U9	18	Var. 4175 to 5875	275	600		Avg. 5900
12	U10	22	4175	275	625		5075
16	U12	12	192	2940	192		3324
12	CC1	9	1350	500	2940		4790
12	CC2	28	1350	500	2940		4790
12	Z1	21	1300	866	144		2310
12	S1	21	725	4350	240		5315
16	C1	52	320	1099	320		1739
16	C2	16	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	340	206	306			512
12	VL1	78	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

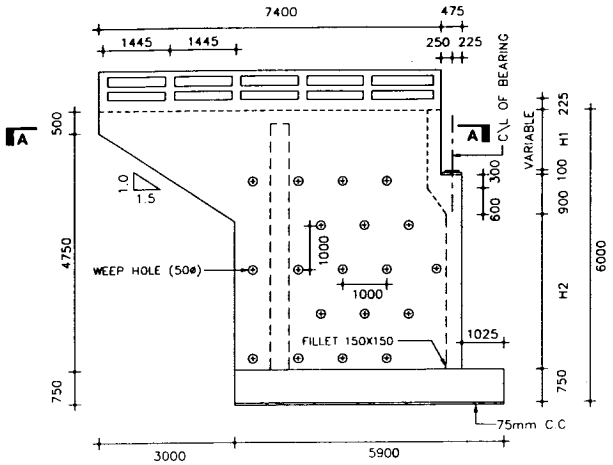
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0120563	

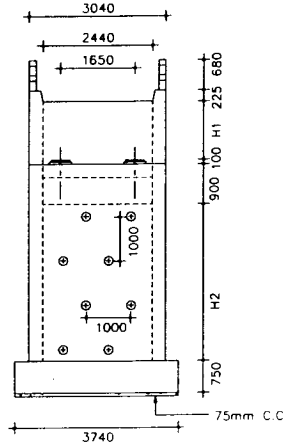
Web Copy

FA-220

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

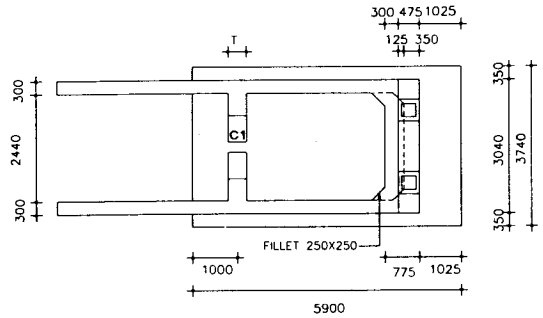
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	2900	305	165
19500	1350	2900	301	163
19000	1350	2900	299	161
18500	1350	2900	297	159
18000	1200	3050	291	155
17500	1200	3050	289	153
17000	1200	3050	287	151
16500	1200	3050	285	149
16000	1200	3050	283	147
15500	1200	3050	281	145
15000	950	3300	275	141
14500	950	3300	273	139
14000	950	3300	271	137
13500	950	3300	269	135
13000	950	3300	267	133
12500	950	3300	265	131

TABLE-2

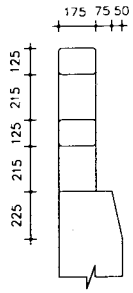
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	350x350	30	PRECAST

TABLE-3

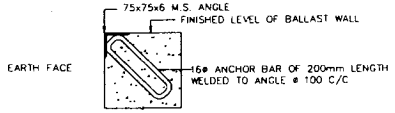
L1	L2	T	H4
700	1400	400	4950



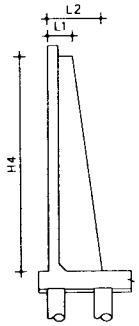
SECTION A-A



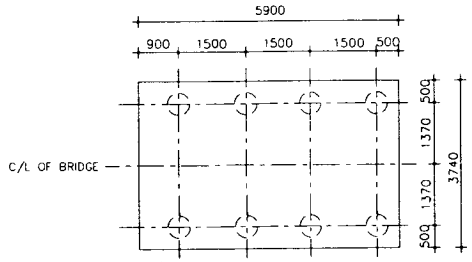
GENERAL ARRANGEMENT OF RAILING ON WING WALL



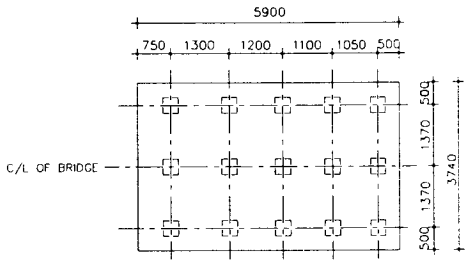
NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification

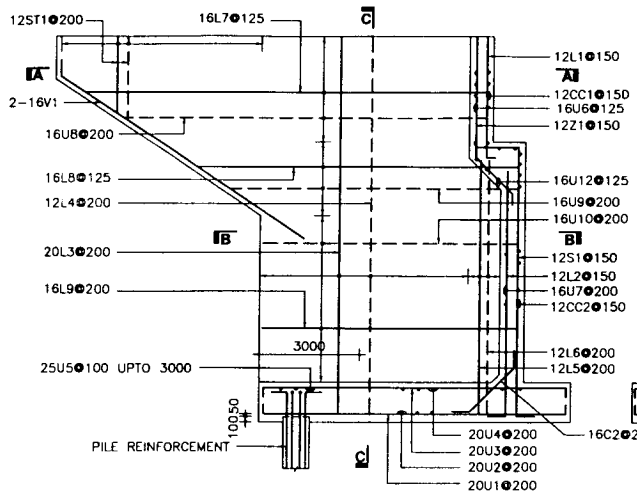
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.0m , DECK WIDTH 3.04m)

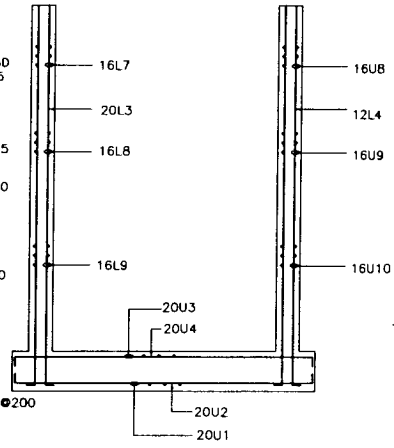
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120601

Web Copy
FA-221

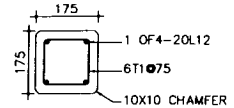
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO



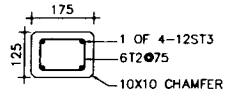
REINFORCEMENT DETAIL



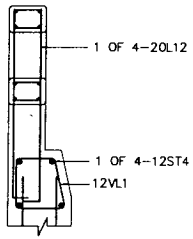
SECTION C-C



REINF. DETAIL OF POST



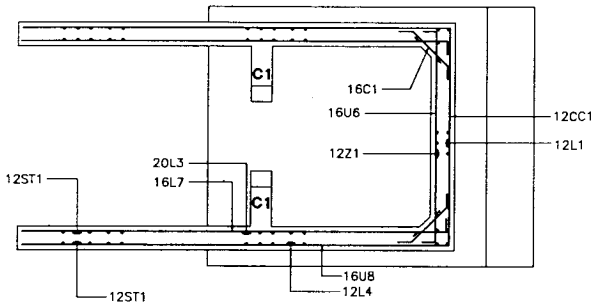
REINF. DETAIL OF RAILING



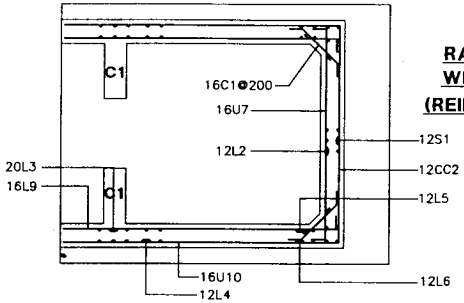
RAILING ON WING WALL (REINF. DETAIL)

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

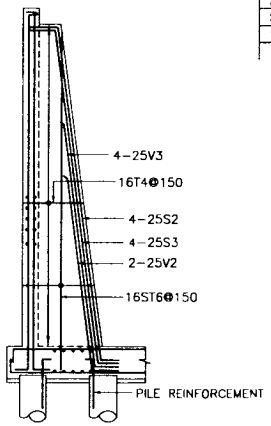
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	1700	144			1844
12	L2	21	3800	144			3944
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3500 to 4100	144			Avg. 3944
12	L6	6	Var. 3500 to 4100	144			Avg. 3944
16	L7	24	Var. 5875 to 7300	192			Avg. 6661
16	L8	20	Var. 4775 to 5875	192			Avg. 5517
16	L9	26	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5800	240		6280
20	U2	30	240	3640	240		4120
20	U3	20	240	5800	240		6280
20	U4	14	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	15	192	2884	192		3268
16	U7	16	192	2884	192		3268
16	U8	16	Var. 5875 to 7300	200	550		Avg. 7338
16	U9	14	Var. 4775 to 5875	200	600		Avg. 6125
16	U10	26	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	28	1200	500	2940		4640
12	Z1	21	1700	836	144		2680
12	S1	21	675	4350	240		5265
16	C1	56	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 2696	696			Avg. 2692
25	S2	8	300	5360	600		6260
25	S3	8	325	5360	575		6260
25	V2	4	375	2859			3234
25	V3	8	350	3632			3982
16	ST6	20	Var. 1170 to 5760				Avg. 3006



SECTION A-A



SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276**MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120602	

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SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1200)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	1550	144			1694
12	L2	21	3950	144			4094
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3650 to 4250	144			Avg. 4094
12	L6	6	Var. 3650 to 4250	144			Avg. 4094
16	L7	22	Var. 6100 to 7300	192			Avg. 6837
16	L8	22	Var. 4775 to 6100	192			Avg. 5630
16	L9	26	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5800	240		6280
20	U2	30	240	3640	240		4120
20	U3	20	240	5800	240		6280
20	U4	14	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	14	192	2884	192		3268
16	U7	17	192	2884	192		3268
16	U8	14	Var. 6100 to 7300	200	550		Avg. 7536
16	U9	14	Var. 4775 to 6100	200	600		Avg. 6238
16	U10	26	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	29	1200	500	2940		4640
12	Z1	21	1550	836	144		2530
12	S1	21	675	4500	240		5415
16	C1	56	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 2696	696			Avg. 2692
25	S2	8	300	5360	600		6260
25	S3	8	325	5360	575		6260
25	V2	4	375	2859			3234
25	V3	8	350	3632			3982
16	ST6	20	Var. 1170 to 5760				Avg. 3006

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	21	1300	144			1444
12	L2	21	4200	144			4344
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3900 to 4500	144			Avg. 4344
12	L6	6	Var. 3900 to 4500	144			Avg. 4344
16	L7	18	Var. 6475 to 7300	192			Avg. 7125
16	L8	26	Var. 4775 to 6475	192			Avg. 5817
16	L9	26	4775	192			4967
20	L12	48	971	120			1091
20	U1	20	240	5800	240		6280
20	U2	30	240	3640	240		4120
20	U3	20	240	5800	240		6280
20	U4	14	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	12	192	2884	192		3268
16	U7	18	192	2884	192		3268
16	U8	12	Var. 6475 to 7300	200	550		Avg. 7775
16	U9	18	Var. 4775 to 6475	200	600		Avg. 6425
16	U10	26	4775	200	550		5525
16	U12	10	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	31	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	4750	240		5665
16	C1	56	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 2696	696			Avg. 2692
25	S2	8	300	5360	600		6260
25	S3	8	325	5360	575		6260
25	V2	4	375	2859			3234
25	V3	8	350	3632			3982
16	ST6	20	Var. 1170 to 5760				Avg. 3006

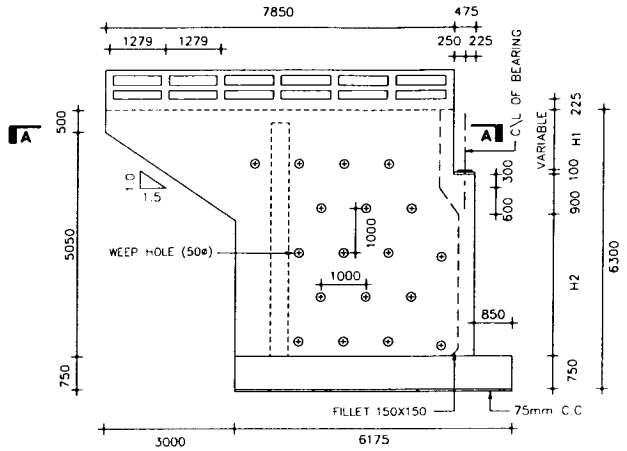
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 3.04m)

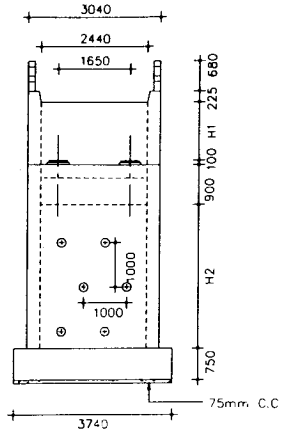
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R012060.3

Web Copy

SHEET 1 OF 3	
SPAN RANGE : 12.5m TO 20m	
SIDE WALK : NO	



SIDE ELEVATION



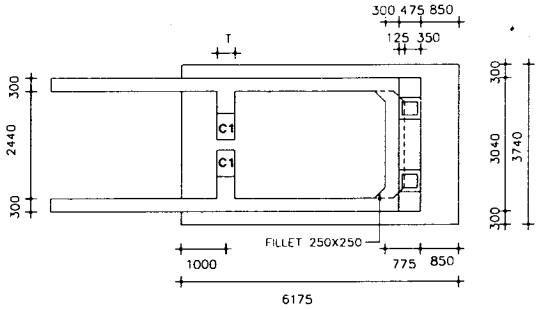
FRONT ELEVATION

TABLE-1

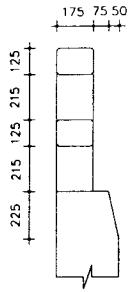
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	3200	335	NOT APPLICABLE
19500	1350	3200	331	
19000	1350	3200	329	
18500	1350	3200	327	
18000	1200	3350	321	
17500	1200	3350	319	
17000	1200	3350	317	
16500	1200	3350	315	
16000	1200	3350	313	
15500	1200	3350	311	
15000	950	3600	305	
14500	950	3600	303	
14000	950	3600	301	
13500	950	3600	299	
13000	950	3600	297	
12500	950	3600	295	

TABLE-2

FOUNDATION TYPE	L1	H3	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	850	750	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE				



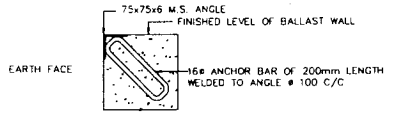
SECTION A-A



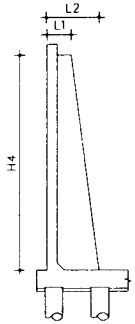
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-3

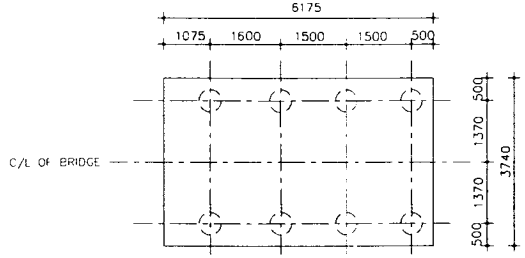
L1	L2	T	H4
700	1400	400	5250



NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 6.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY
CAD FILE REF : ABUT\R0120631	

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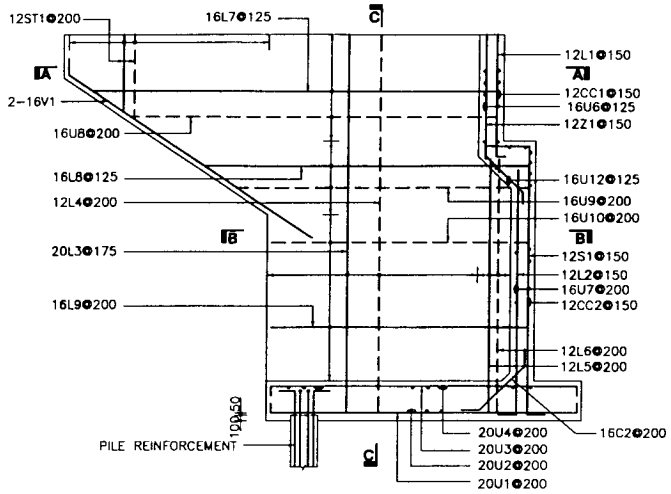
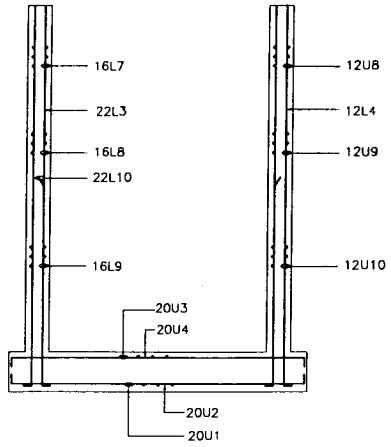
FA-224

SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



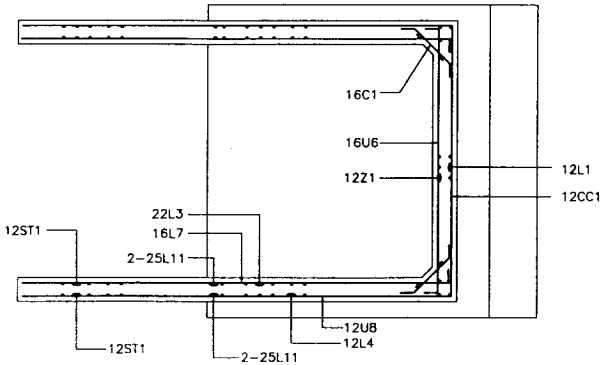
REINFORCEMENT DETAIL



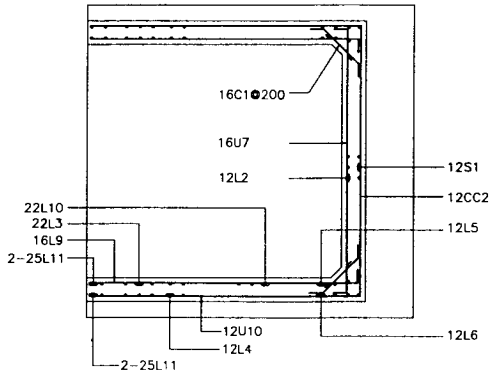
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

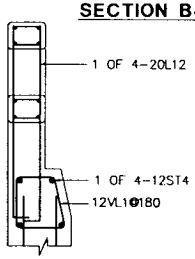
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	21	1700	144			1844
12	L2	21	4100	144			4244
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 3800 to 4400	144			Avg. 4244
12	L6	6	Var. 3800 to 4400	144			Avg. 4244
16	L7	24	Var. 6325 to 7750	192			Avg. 7111
16	L8	20	Var. 5225 to 6325	192			Avg. 5967
16	L9	30	5225	192			5417
20	L12	56	971	120			1091
20	U1	20	240	6075	240		6555
20	U2	32	240	3640	240		4120
20	U3	20	240	6075	240		6555
20	U4	16	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	15	192	2884	192		3268
16	U7	18	192	2884	192		3268
16	U8	16	Var. 6325 to 7750	200	550		Avg. 7788
16	U9	14	Var. 5225 to 6325	200	600		Avg. 6575
16	U10	30	5225	200	550		5975
16	U12	10	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	30	1200	500	2940		4640
12	Z1	21	1700	836	144		2680
12	S1	21	675	4650	240		5565
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1296 to 2696	696			Avg. 2692
25	S2	8	300	5657	600		6557
25	S3	8	325	5657	575		6557
25	V2	8	375	2932			3307
25	V3	8	350	3730			4080
16	ST6	20	Var. 1234 to 5060				Avg. 3165



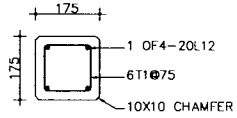
SECTION A-A



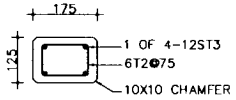
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming AS
. hall be 21MPa.

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6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drowing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0120632	

Web Copy
FA-225

SPAN RANGE : 12.5m TO 20m

SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1200)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	21	1550	144			1694
12	L2	21	4250	144			4394
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 3950 to 4550	144			Avg. 4394
12	L6	6	Var. 3950 to 4550	144			Avg. 4394
16	L7	22	Var. 6550 to 7750	192			Avg. 7287
16	L8	22	Var. 5225 to 6550	192			Avg. 6080
16	L9	30	5225	192			5417
20	L12	56	971	120			1091
20	U1	20	240	6075	240		6555
20	U2	32	240	3640	240		4120
20	U3	20	240	6075	240		6555
20	U4	16	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	14	192	2884	192		3268
16	U7	19	192	2884	192		3268
16	U8	14	Var. 6550 to 7750	200	550		Avg. 7986
16	U9	14	Var. 5225 to 6550	200	600		Avg. 6688
16	U10	30	5225	200	550		5975
16	U12	10	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	31	1200	500	2940		4640
12	Z1	21	1550	836	144		2530
12	S1	21	675	4800	240		5715
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1296 to 2696	696			Avg. 2692
25	S2	8	300	5657	600		6557
25	S3	8	325	5657	575		6557
25	V2	8	375	2932			3307
25	V3	8	350	3730			4080
16	ST6	20	Var. 1234 to 6060				Avg. 3165

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	21	1300	144			1444
12	L2	21	4500	144			4644
20	L3	52	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4200 to 4800	144			Avg. 4644
12	L6	6	Var. 4200 to 4800	144			Avg. 4644
16	L7	18	Var. 6925 to 7750	192			Avg. 7575
16	L8	26	Var. 5225 to 6925	192			Avg. 6267
16	L9	30	5225	192			5417
20	L12	56	971	120			1091
20	U1	20	240	6075	240		6555
20	U2	32	240	3640	240		4120
20	U3	20	240	6075	240		6555
20	U4	16	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	12	192	2884	192		3268
16	U7	20	192	2884	192		3268
16	U8	12	Var. 6925 to 7750	200	550		Avg. 8225
16	U9	18	Var. 5225 to 6925	200	600		Avg. 6875
16	U10	30	5225	200	550		5975
16	U12	10	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	33	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	5050	240		5965
16	C1	58	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1296 to 2696	696			Avg. 2692
25	S2	8	300	5657	600		6557
25	S3	8	325	5657	575		6557
25	V2	8	375	2932			3307
25	V3	8	350	3730			4080
16	ST6	20	Var. 1234 to 6060				Avg. 3165

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 3.04m)

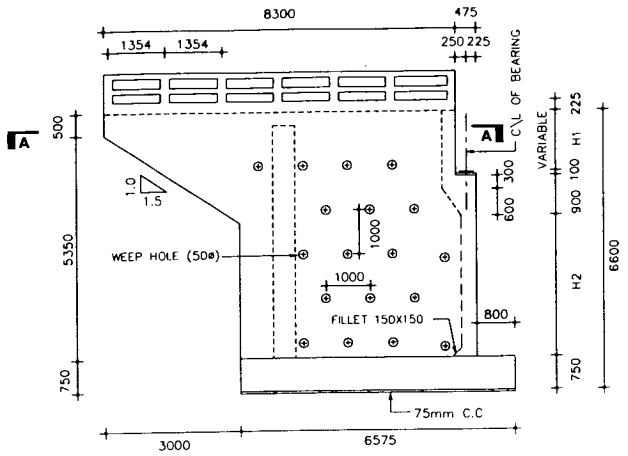
DATE :

ISSUED BY :

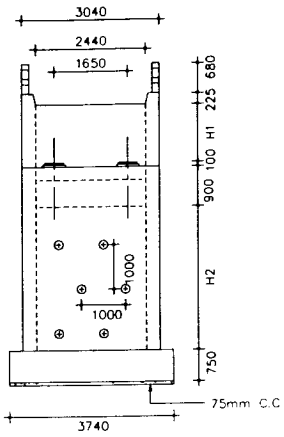
CAD FILE REF : ABUT\R0120633

Web Copy

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

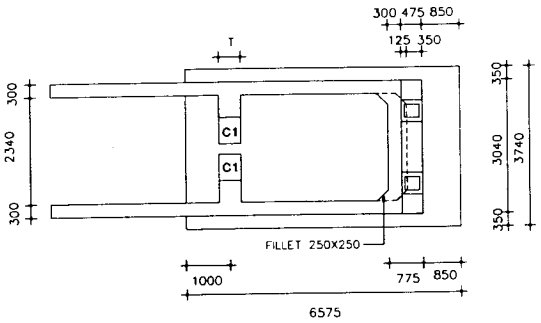
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	3500	365	NOT APPLICABLE
19500	1350	3500	361	
19000	1350	3500	359	
18500	1350	3500	357	
18000	1200	3650	351	
17500	1200	3650	349	
17000	1200	3650	347	
16500	1200	3650	345	
16000	1200	3650	343	
15500	1200	3650	341	
15000	950	3900	335	
14500	950	3900	333	
14000	950	3900	331	
13500	950	3900	329	
13000	950	3900	327	
12500	950	3900	325	

TABLE-2

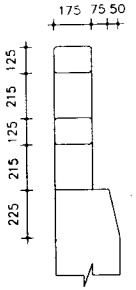
FOUNDATION TYPE	L1	H3	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	800	750	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE				

TABLE-3

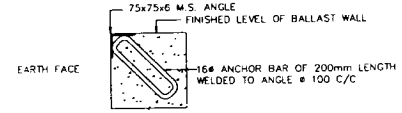
L1	L2	T	H4
700	1400	500	5550



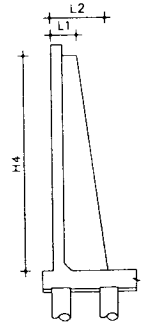
SECTION A-A



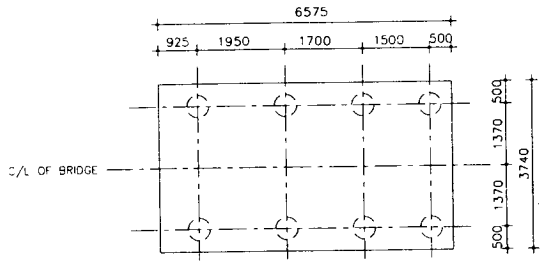
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

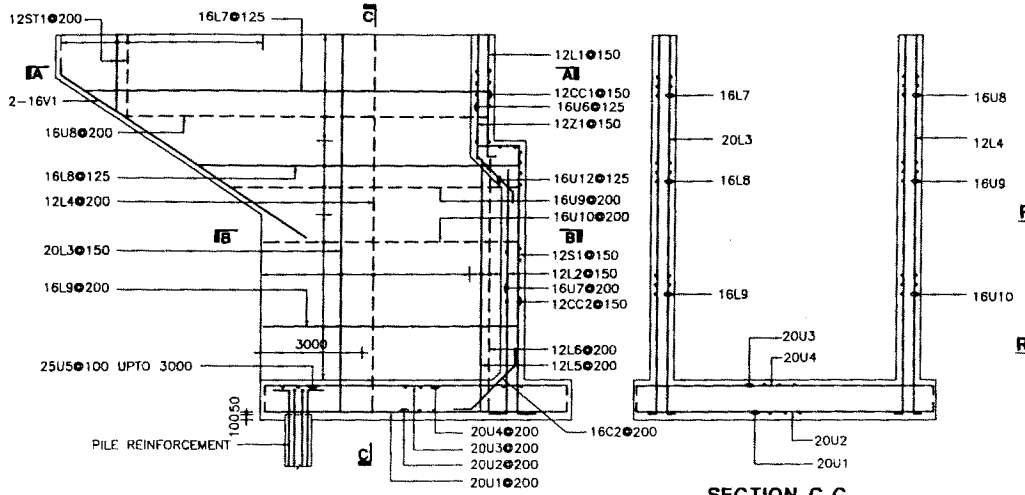
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 6.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120661	

Web Copy

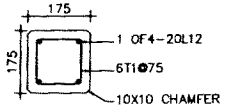
FA -227

SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

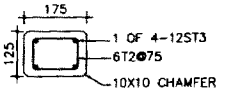


REINFORCEMENT DETAIL

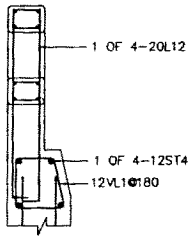
SECTION C-C



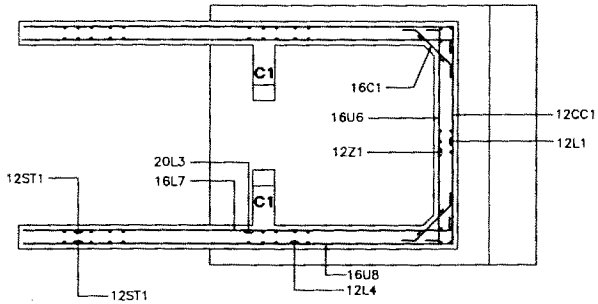
REINF. DETAIL OF POST



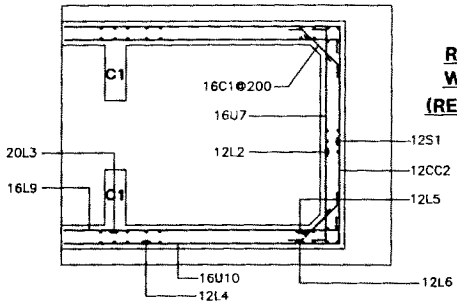
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



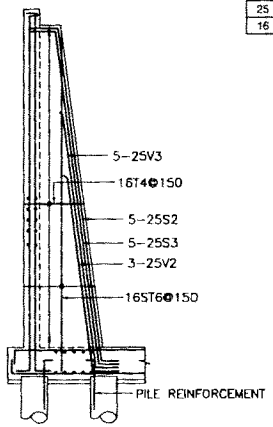
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	1700	144			1844
12	L2	21	4400	144			4544
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4100 to 4700	144			Avg. 4544
12	L6	6	Var. 4100 to 4700	144			Avg. 4544
16	L7	24	Var. 6775 to 8200	192			Avg. 7561
16	L8	20	Var. 5675 to 6775	192			Avg. 6417
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	15	192	2884	192		3268
16	U7	19	192	2884	192		3268
16	U8	16	Var. 6775 to 8200	200	550		Avg. 8238
16	U9	14	Var. 5675 to 6775	200	600		Avg. 7025
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	32	1200	500	2940		4640
12	Z1	21	1700	836	144		2680
12	S1	21	675	4950	240		5865
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 2696	896			Avg. 2892
25	S2	10	300	5954	600		6854
25	S3	10	325	5954	575		6854
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1299 to 6360				Avg. 3323



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structurol grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 6.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120662	

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FA-228

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1200)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	1550	144			1694
12	L2	21	4550	144			4694
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4250 to 4850	144			Avg. 4694
12	L6	6	Var. 4250 to 4850	144			Avg. 4694
16	L7	22	Var. 7000 to 8200	192			Avg. 7737
16	L8	22	Var. 5675 to 7000	192			Avg. 6530
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	14	192	2884	192		3268
16	U7	20	192	2884	192		3268
16	U8	14	Var. 7000 to 8200	200	550		Avg. 8436
16	U9	14	Var. 5675 to 7000	200	600		Avg. 7138
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	33	1200	500	2940		4640
12	Z1	21	1550	836	144		2530
12	S1	21	675	5100	240		6015
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 2696	896			Avg. 2892
25	S2	10	300	5954	600		6854
25	S3	10	325	5954	575		6854
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1299 to 6360				Avg. 3323

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	1300	144			1444
12	L2	21	4800	144			4944
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4500 to 5100	144			Avg. 4944
12	L6	6	Var. 4500 to 5100	144			Avg. 4944
16	L7	18	Var. 7375 to 8200	192			Avg. 8025
16	L8	26	Var. 5675 to 7375	192			Avg. 6717
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	12	192	2884	192		3268
16	U7	21	192	2884	192		3268
16	U8	12	Var. 7375 to 8200	200	550		Avg. 8675
16	U9	18	Var. 5675 to 7375	200	600		Avg. 7325
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	35	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	5350	240		6265
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 2696	896			Avg. 2892
25	S2	10	300	5954	600		6854
25	S3	10	325	5954	575		6854
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1299 to 6360				Avg. 3323

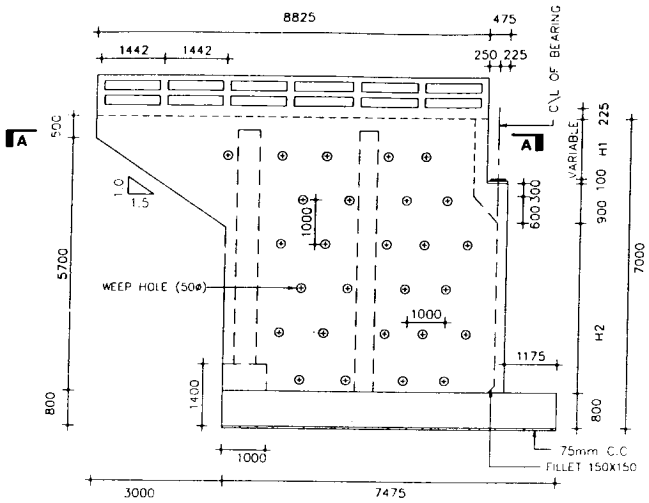
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 3.04m)

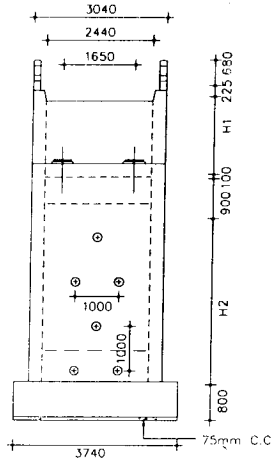
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120663

Web Copy

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: NO



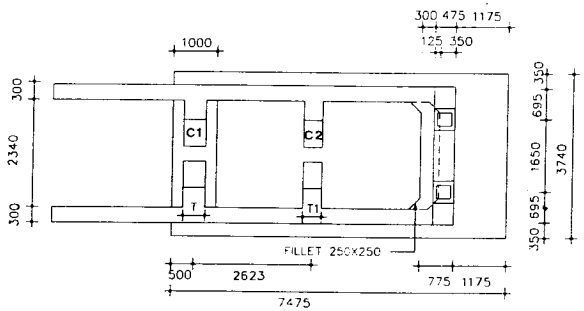
SIDE ELEVATION



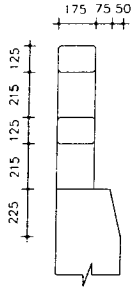
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	3850	335	NOT APPLICABLE
19500	1350	3850	333	
19000	1350	3850	331	
18500	1350	3850	329	
18000	1200	4000	327	
17500	1200	4000	325	
17000	1200	4000	323	
16500	1200	4000	321	
16000	1200	4000	317	
15500	1200	4000	315	
15000	950	4250	309	
14500	950	4250	307	
14000	950	4250	305	
13500	950	4250	303	
13000	950	4250	301	
12500	950	4250	299	



SECTION A-A



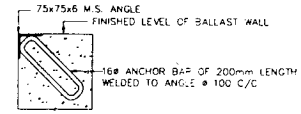
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

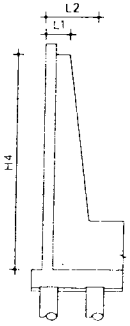
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

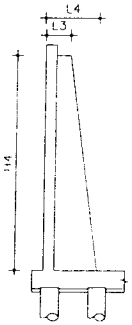
L1	L2	L3	L4	H4	T	T1
700	1320	700	1400	5900	500	400



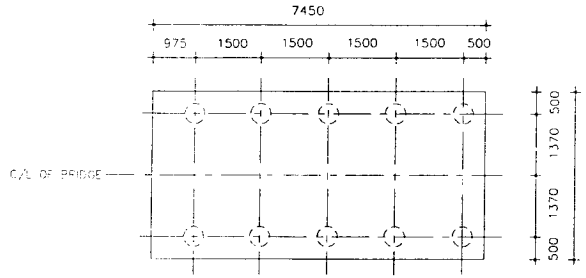
NOSING AT ABUTMENT



COUNTERFORT C1



COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings. filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 7.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY
CAD FILE REF : ABUT_R012070:	

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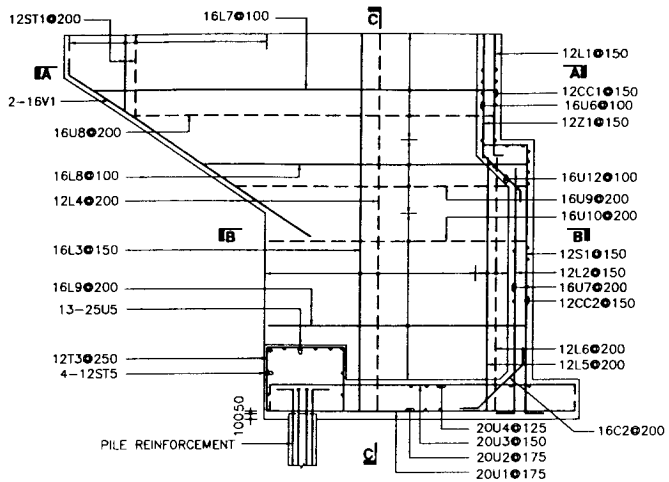
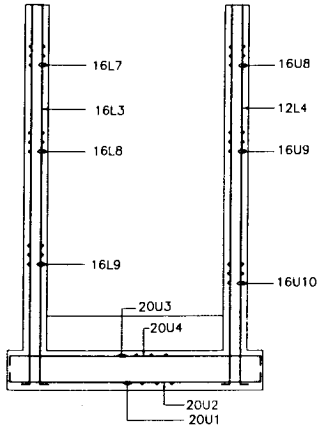
FA-230

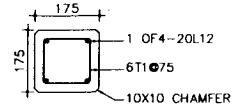
SHEET 2 OF 3
SPAN RANGE: 12.5m TO 20.0m
SIDE WALK: NO



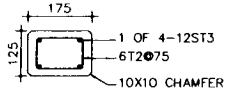
REINFORCEMENT DETAIL



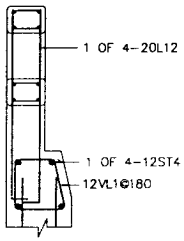
SECTION C-C



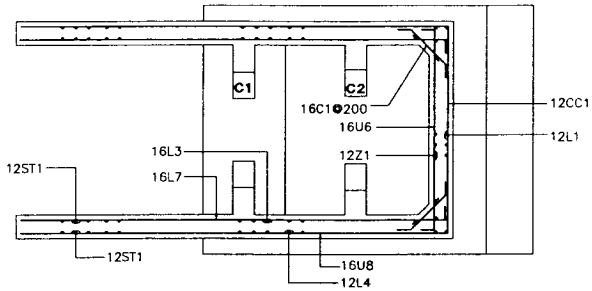
REINF. DETAIL OF POST



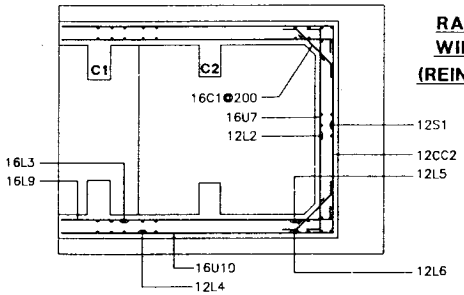
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



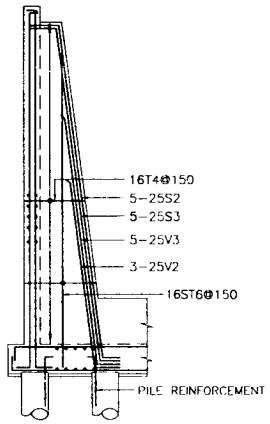
SECTION A-A



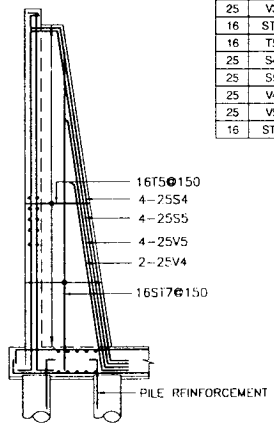
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	1700	144			1844
12	L2	21	4800	144			4944
16	L3	74	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4500 to 5100	144			Avg. 4944
12	L6	6	Var. 4500 to 5100	144			Avg. 4944
16	L7	30	Var. 7300 to 8725	192			Avg. 8062
16	L8	24	Var. 6200 to 7300	192			Avg. 6942
16	L9	36	6200	192			6392
20	L12	56	971	120			1091
20	U1	22	240	7375	240		7855
20	U2	44	240	3640	240		4120
20	U3	26	240	7375	240		7855
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	18	192	2884	192		3268
16	U7	21	192	2884	192		3268
16	U8	16	Var. 7300 to 8725	200	550		Avg. 8763
16	U9	14	Var. 6200 to 7300	200	600		Avg. 7550
16	U10	36	6200	200	550		6950
16	U12	12	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	34	1200	500	2940		4640
12	Z1	21	1700	636	144		2680
12	S1	21	675	5350	240		6265
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1672	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6352	600		7252
25	S3	10	325	6352	575		7252
25	V2	6	375	3265			3640
25	V3	10	350	4173			4523
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1364 to 6760				Avg. 3535



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120702	

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SHEET 3 OF 3
SPAN RANGE: 12.5m TO 20.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	1550	144			1694
12	L2	21	4950	144			5094
16	L3	74	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4650 to 5250	144			Avg. 5094
12	L6	6	Var. 4650 to 5250	144			Avg. 5094
16	L7	26	Var. 7525 to 8725	192			Avg. 8271
16	L8	26	Var. 6200 to 7525	192			Avg. 7055
16	L9	36	6200	192			6392
20	L12	56	971	120			1091
20	U1	22	240	7375	240		7855
20	U2	44	240	3640	240		4120
20	U3	26	240	7375	240		7855
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	17	192	2884	192		3268
16	U7	22	192	2884	192		3268
16	U8	14	Var. 7525 to 8725	200	550		Avg. 8961
16	U9	14	Var. 6200 to 7525	200	600		Avg. 7663
16	U10	36	6200	200	550		6950
16	U12	12	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	35	1200	500	2940		4640
12	Z1	21	1550	836	144		2530
12	S1	21	675	5500	240		6415
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1872	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6352	600		7252
25	S3	10	325	6352	575		7252
25	V2	6	375	3265			3640
25	V3	10	350	4173			4523
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1384 to 6760				Avg. 3535

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	21	1300	144			1444
12	L2	21	5200	144			5344
16	L3	74	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4900 to 5500	144			Avg. 5344
12	L6	6	Var. 4900 to 5500	144			Avg. 5344
16	L7	22	Var. 7900 to 8725	192			Avg. 8542
16	L8	32	Var. 6200 to 7900	192			Avg. 7242
16	L9	36	6200	192			6392
20	L12	56	971	120			1091
20	U1	22	240	7375	240		7855
20	U2	44	240	3640	240		4120
20	U3	26	240	7375	240		7855
20	U4	52	240	3640	240		4120
25	U5	13	300	3640	300		4240
16	U6	14	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	12	Var. 7900 to 8725	200	550		Avg. 9200
16	U9	18	Var. 6200 to 7900	200	600		Avg. 7850
16	U10	36	6200	200	550		6950
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	37	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	5750	240		6665
16	C1	64	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	11	1872	2472			4344
12	ST5	4	2940				2940
16	T4	82	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6352	600		7252
25	S3	10	325	6352	575		7252
25	V2	6	375	3265			3640
25	V3	10	350	4173			4523
16	ST6	20	Var. 1566 to 6760				Avg. 3874
16	T5	82	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6352	600		7252
25	S5	8	325	6352	575		7252
25	V4	4	375	3265			3640
25	V5	8	350	4173			4523
16	ST7	20	Var. 1384 to 6760				Avg. 3535

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

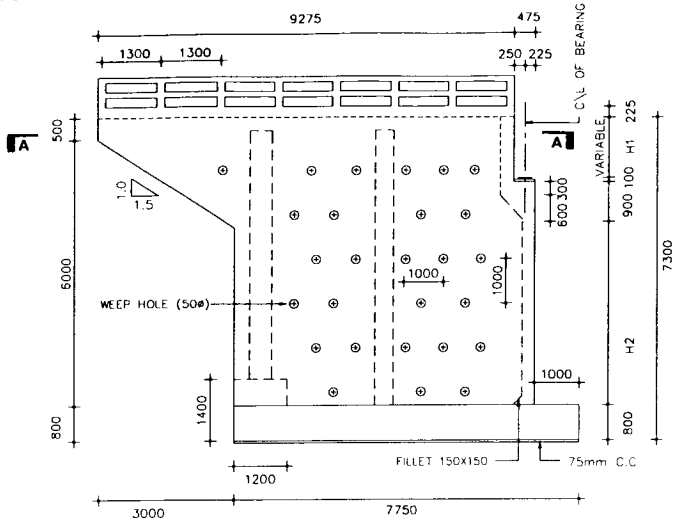
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120703	

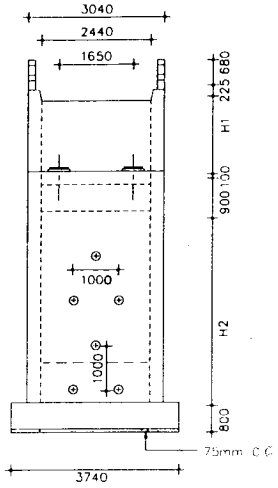
Web Copy

FA-232

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: NO



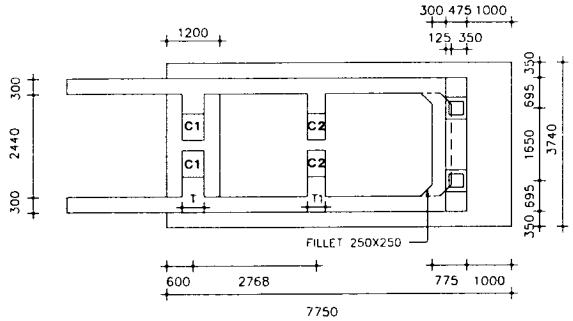
SIDE ELEVATION



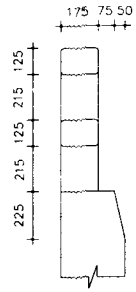
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	4150	360	NOT APPLICABLE
19500	1350	4150	358	
19000	1350	4150	356	
18500	1350	4150	354	
18000	1200	4300	350	
17500	1200	4300	348	
17000	1200	4300	346	
16500	1200	4300	344	
16000	1200	4300	342	
15500	1200	4300	340	
15000	950	4350	334	
14500	950	4550	332	
14000	950	4550	330	
13500	950	4550	328	
13000	950	4550	326	
12500	950	4550	324	



SECTION A-A



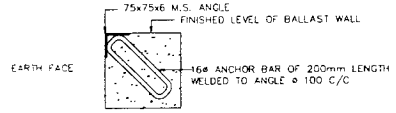
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

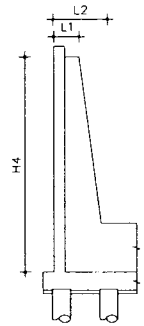
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

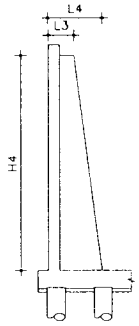
L1	L2	L3	L4	H4	T	T1
700	1320	700	1400	5200	500	400



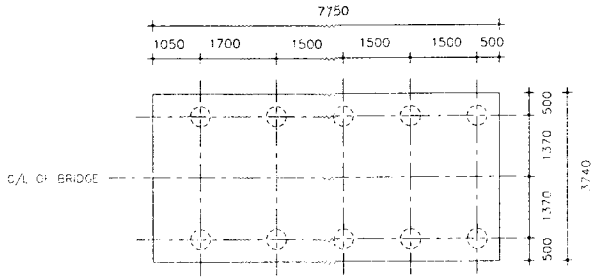
NOSING AT ABUTMENT



COUNTERFORT C1



COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings, filter material shall be provided as per specification

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.3m , DECK WIDTH 3.04m)

DATE :
ISSUED BY
CAD FILE REF : ABUT\R0120.31

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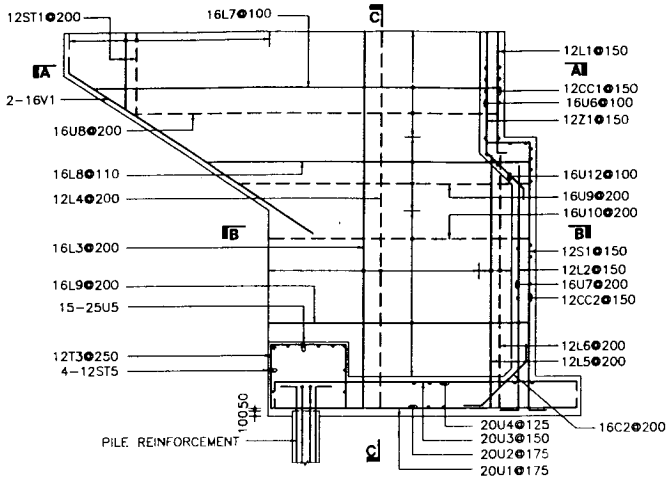
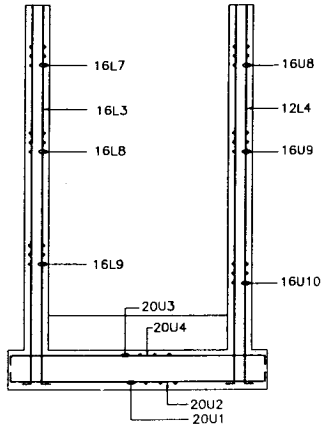
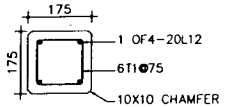
SHEET 2 OF 3	
SPAN RANGE : 12.5m TO 20.0m	
SIDE WALK: NO	



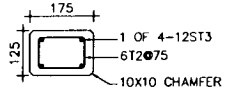
REINFORCEMENT DETAIL



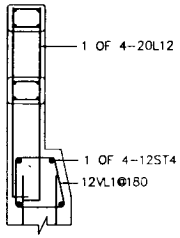
SECTION C-C



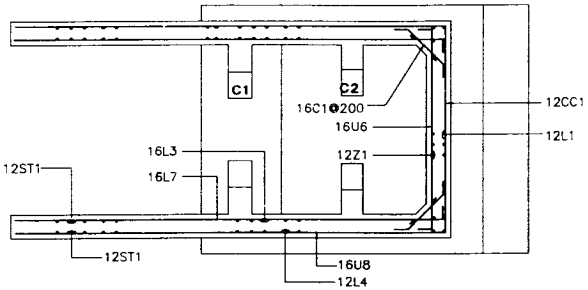
REINF. DETAIL OF POST



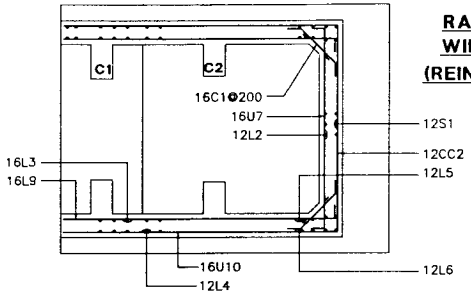
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



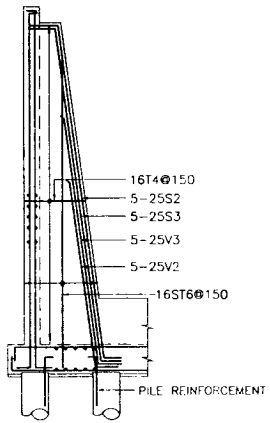
SECTION A-A



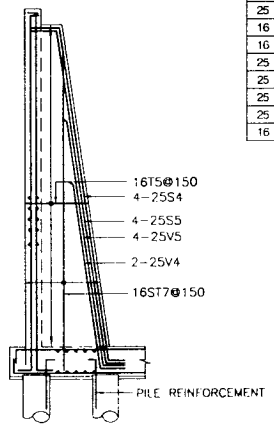
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	1700	144			1844
12	L2	21	5100	144			5244
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 4800 to 5400	144			Avg. 5244
12	L6	6	Var. 4800 to 5400	144			Avg. 5244
16	L7	30	Var. 7750 to 9175	192			Avg. 8512
16	L8	22	Var. 6650 to 7750	192			Avg. 7392
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7650	240		8130
20	U2	45	240	3640	240		4120
20	U3	26	240	7650	240		8130
20	U4	53	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	18	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	16	Var. 7750 to 9175	200	550		Avg. 9213
16	U9	14	Var. 6650 to 7750	200	600		Avg. 8000
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	36	1200	500	2940		4640
12	Z1	21	1700	836	144		2680
12	S1	21	675	5650	240		6565
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6650	600		7550
25	S3	10	325	6650	575		7550
25	V2	10	375	3412			3787
25	V3	10	350	4371			4721
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm.
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120732	

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FA-234

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	1550	144			1694
12	L2	21	5250	144			5394
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 4950 to 5550	144			Avg. 5394
12	L6	6	Var. 4950 to 5550	144			Avg. 5394
16	L7	26	Var. 7975 to 9175	192			Avg. 8721
16	L8	24	Var. 6650 to 7975	192			Avg. 7505
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7650	240		8130
20	U2	45	240	3640	240		4120
20	U3	26	240	7650	240		8130
20	U4	53	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	17	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	14	Var. 7975 to 9175	200	550		Avg. 9411
16	U9	14	Var. 6650 to 7975	200	600		Avg. 8113
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	37	1200	500	2940		4640
12	Z1	21	1550	836	144		2530
12	S1	21	675	5800	240		6715
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6650	600		7550
25	S3	10	325	6650	575		7550
25	V2	10	375	3412			3787
25	V3	10	350	4371			4721
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	21	1300	144			1444
12	L2	21	5500	144			5644
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5200 to 5800	144			Avg. 5644
12	L6	6	Var. 5200 to 5800	144			Avg. 5644
16	L7	22	Var. 8350 to 9175	192			Avg. 8992
16	L8	30	Var. 6650 to 8350	192			Avg. 7692
16	L9	38	6650	192			6842
20	L12	64	971	120			1091
20	U1	22	240	7650	240		8130
20	U2	45	240	3640	240		4120
20	U3	26	240	7650	240		8130
20	U4	53	240	3640	240		4120
25	U5	15	300	3640	300		4240
16	U6	14	192	2884	192		3268
16	U7	25	192	2884	192		3268
16	U8	12	Var. 8350 to 9175	200	550		Avg. 9650
16	U9	18	Var. 6650 to 8350	200	600		Avg. 8300
16	U10	38	6650	200	550		7400
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	39	1200	500	2940		4640
12	Z1	21	1300	836	144		2280
12	S1	21	675	6050	240		6965
16	C1	68	320	993	320		1633
16	C2	16	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	11	2272	2472			4744
12	ST5	4	2940				2940
16	T4	86	Var. 1296 to 2536	896			Avg. 2812
25	S2	10	300	6650	600		7550
25	S3	10	325	6650	575		7550
25	V2	10	375	3412			3787
25	V3	10	350	4371			4721
16	ST6	20	Var. 1638 to 7060				Avg. 4048
16	T5	86	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	20	Var. 1449 to 7060				Avg. 3693

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 3.04m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0120733

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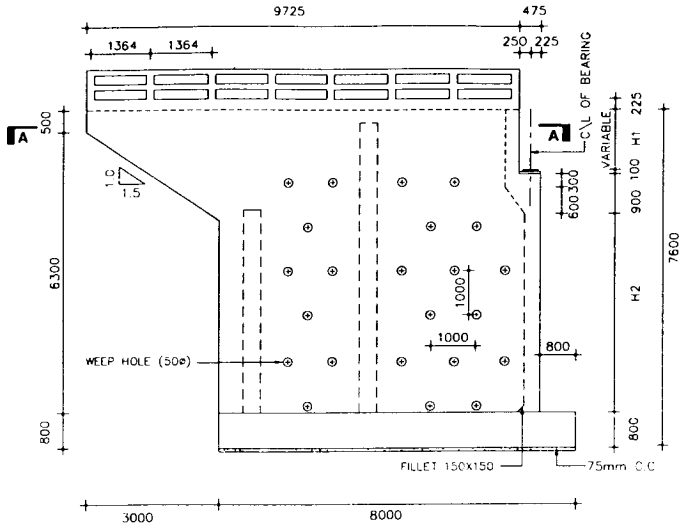
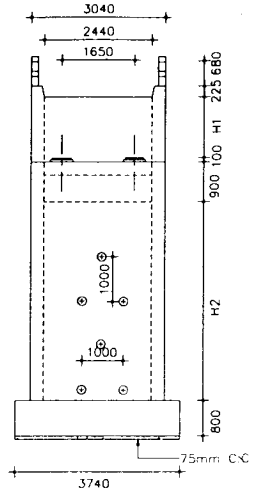
SHEET 1 OF 3	
SPAN RANGE : 12.5m TO 20.0m	
SIDE WALK: NO	



SIDE ELEVATION



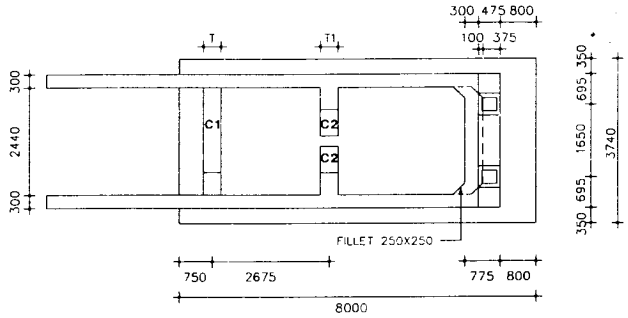
FRONT ELEVATION

TABLE-1

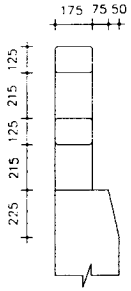
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	4450	395	NOT APPLICABLE
19500	1350	4450	393	
19000	1350	4450	391	
18500	1350	4450	389	
18000	1200	4600	385	
17500	1200	4600	383	
17000	1200	4600	381	
16500	1200	4600	379	
16000	1200	4600	377	
15500	1200	4600	375	
15000	950	4850	369	
14500	950	4850	367	
14000	950	4850	365	
13500	950	4850	363	
13000	950	4850	361	
12500	950	4850	359	

TABLE-2

FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		



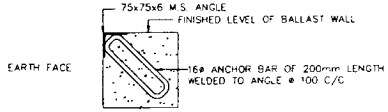
SECTION A-A



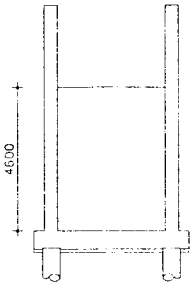
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-3

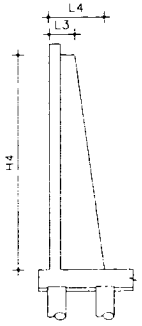
L3	L4	H4	T	T1
700	1400	6500	400	400



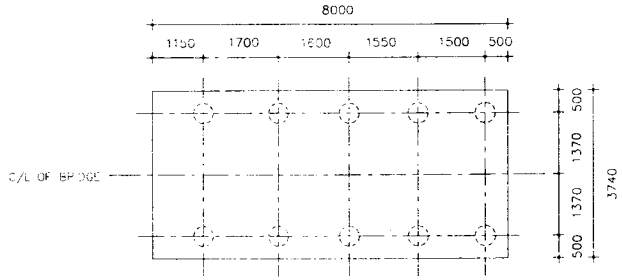
NOSING AT ABUTMENT



COUNTERFORT C1



COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

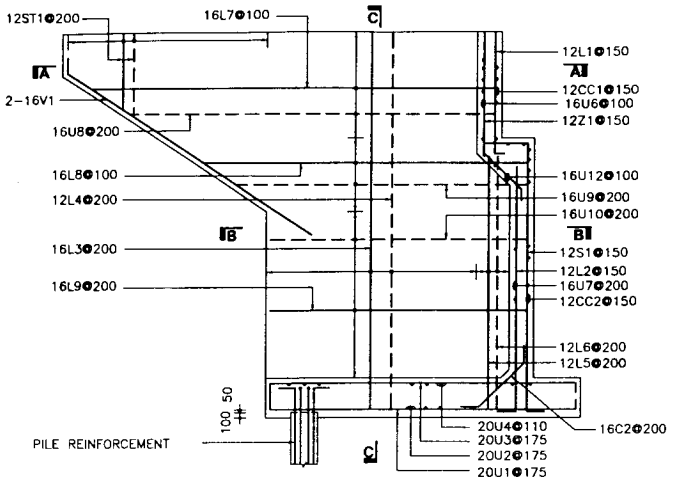
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.6m , DECK WIDTH 3.04m)

DATE	ISSUED BY
CAD FILE REF ABUTMR0120761	

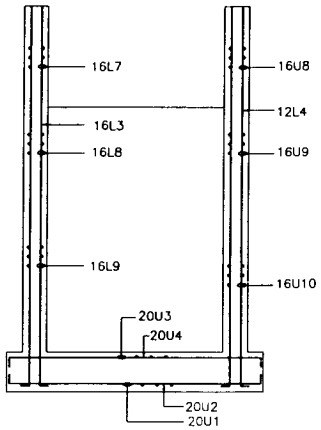
Web Copy

FA-236

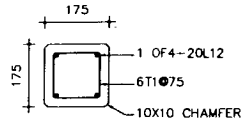
SHEET 2 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: NO



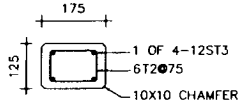
REINFORCEMENT DETAIL



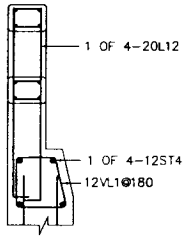
SECTION C-C



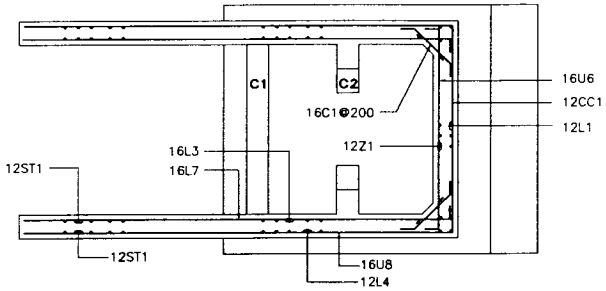
REINF. DETAIL OF POST



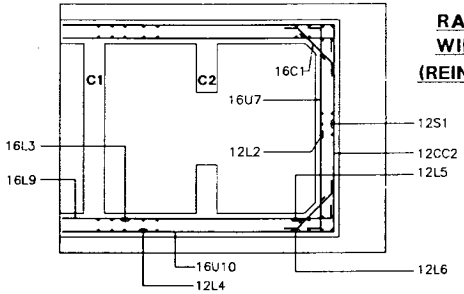
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



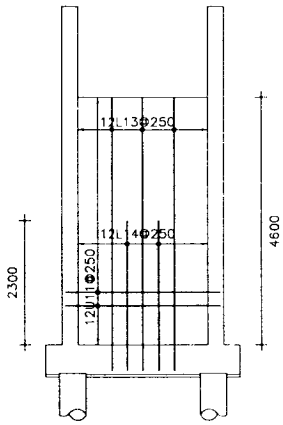
SECTION A-A



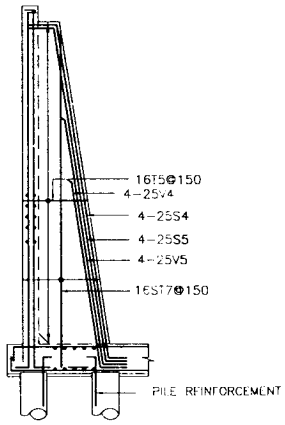
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9686				9686
12	ST4	8	9675				9675
12	L1	21	1700	144			1844
12	L2	21	5400	144			5544
16	L3	86	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5100 to 5700	144			Avg. 5644
12	L6	4	Var. 5100 to 5700	144			Avg. 5644
16	L7	30	Var. 8200 to 9625	192			Avg. 8962
16	L8	24	Var. 7100 to 8200	192			Avg. 7842
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7900	240		8380
20	U2	47	240	3640	240		4120
20	U3	22	240	7900	240		8380
20	U4	73	240	3640	240		4120
16	U5	18	192	2884	192		3268
16	U7	24	192	2884	192		3268
16	U8	16	Var. 8200 to 9625	200	550		Avg. 9663
16	U9	14	Var. 7100 to 8200	200	625		Avg. 8475
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	38	1200	550	2940		4690
12	Z1	21	1700	822	144		2666
12	S1	21	675	5950	240		6865
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3658			3904
12	W1	2	325	535	329		1189
16	ST7	20	Var. 1513 to 7360				Avg. 3952



COUNTERFORT C1



COUNTERFORT C2

REINFORCEMENT DETAILS OF COUNTERFORT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276**MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120762	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1200)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9575				9575
12	L1	21	1550	144			1694
12	L2	21	5550	144			5694
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5250 to 5850	144			Avg. 5694
12	L6	4	Var. 5250 to 5850	144			Avg. 5694
16	L7	26	Var. 8425 to 9625	192			Avg. 9171
16	L8	26	Var. 7100 to 8425	192			Avg. 7955
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7900	240		8380
20	U2	47	240	3640	240		4120
20	U3	22	240	7900	240		8380
20	U4	73	240	3640	240		4120
16	U6	17	192	2884	192		3268
16	U7	25	192	2884	192		3268
16	U8	14	Var. 8425 to 9625	200	550		Avg. 9951
16	U9	14	Var. 7100 to 8425	200	625		Avg. 8588
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	39	1200	550	2940		4690
12	Z1	21	1550	822	144		2516
12	S1	21	675	6100	240		7015
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3659			3934
25	V5	8	350	4568			4918

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9575				9575
12	L1	21	1300	144			1444
12	L2	21	5800	144			5944
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5500 to 6100	144			Avg. 5944
12	L6	4	Var. 5500 to 6100	144			Avg. 5944
16	L7	22	Var. 8800 to 9625	192			Avg. 9442
16	L8	32	Var. 7100 to 8800	192			Avg. 8142
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7900	240		8380
20	U2	47	240	3640	240		4120
20	U3	22	240	7900	240		8380
20	U4	73	240	3640	240		4120
16	U6	14	192	2884	192		3268
16	U7	26	192	2884	192		3268
16	U8	12	Var. 8800 to 9625	200	550		Avg. 10100
16	U9	18	Var. 7100 to 8800	200	625		Avg. 8775
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	41	1200	550	2940		4690
12	Z1	21	1300	822	144		2266
12	S1	21	675	6360	240		7275
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3659			3934
25	V5	8	350	4568			4918

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

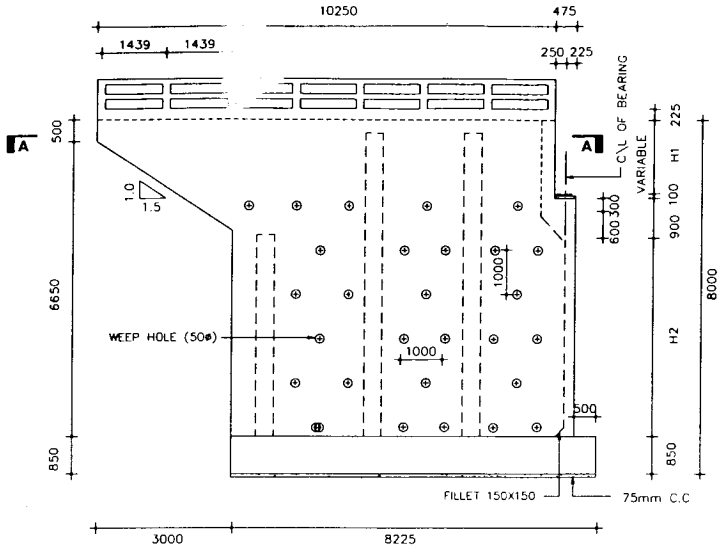
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120763	

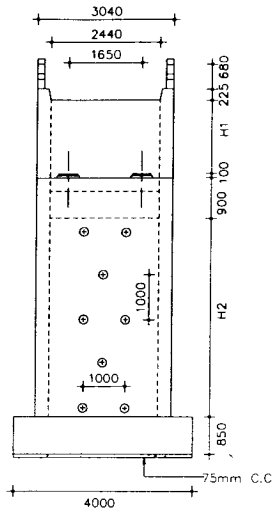
Web Copy

FA-238

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

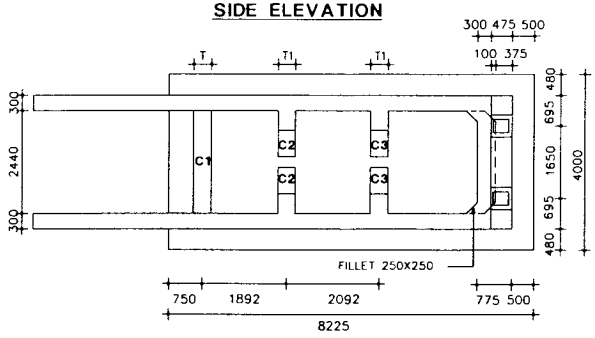
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1350	4800	365	NOT APPLICABLE
19500	1350	4800	363	
19000	1350	4800	361	
18500	1350	4800	359	
18000	1200	4950	355	
17500	1200	4950	353	
17000	1200	4950	351	
16500	1200	4950	349	
16000	1200	4950	347	
15500	1200	4950	345	
15000	950	5200	341	
14500	950	5200	339	
14000	950	5200	337	
13500	950	5200	335	
13000	950	5200	333	
12500	950	5200	331	

TABLE-2

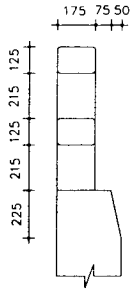
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

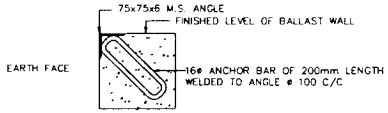
L3	L4	L5	L6	H4	T	T1
700	1400	700	1400	6850	400	400



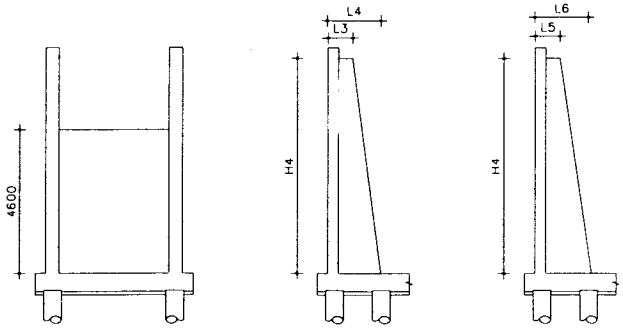
SECTION A-A



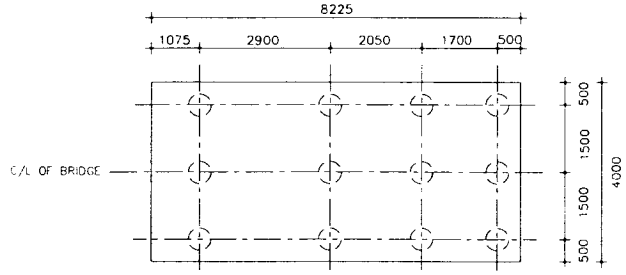
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

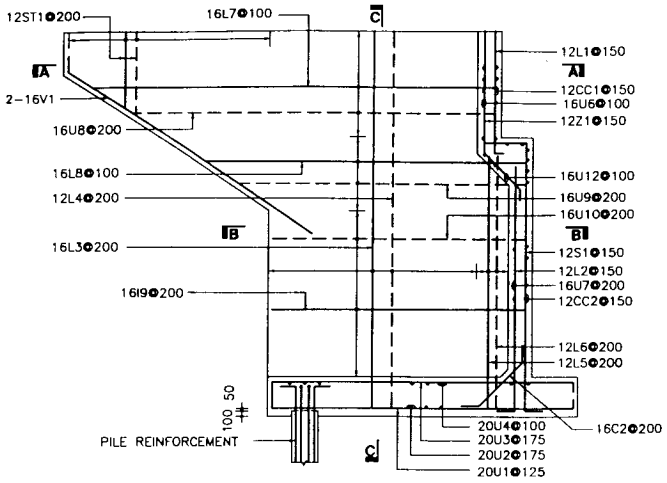
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 8.0m , DECK WIDTH 3.04m)

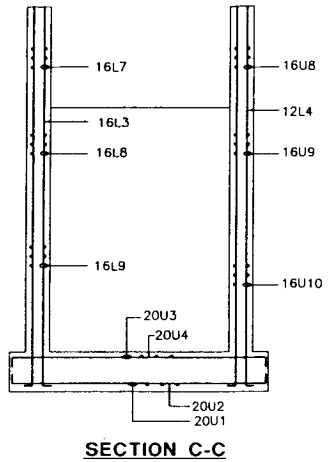
DATE :
ISSUED BY :
CAD FILE REF : ABUT/R0120801

Web Copy

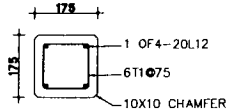
SHEET 2 OF 3	
SPAN RANGE : 12.5m to 20m	
SIDE WALK: NO	



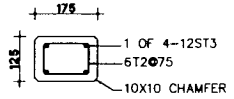
REINFORCEMENT DETAIL



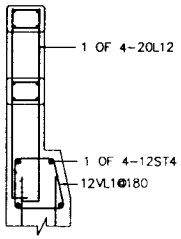
SECTION C-C



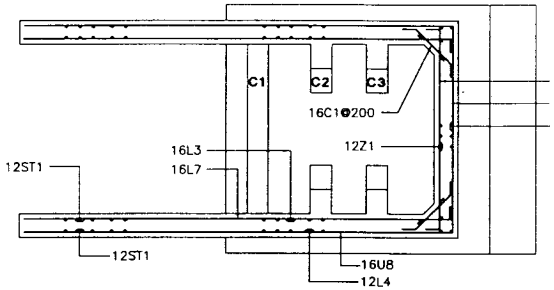
REINF. DETAIL OF POST



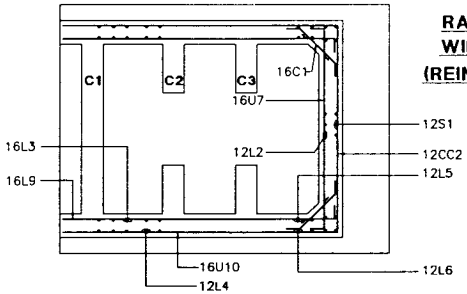
REINF. DETAIL OF RAILING



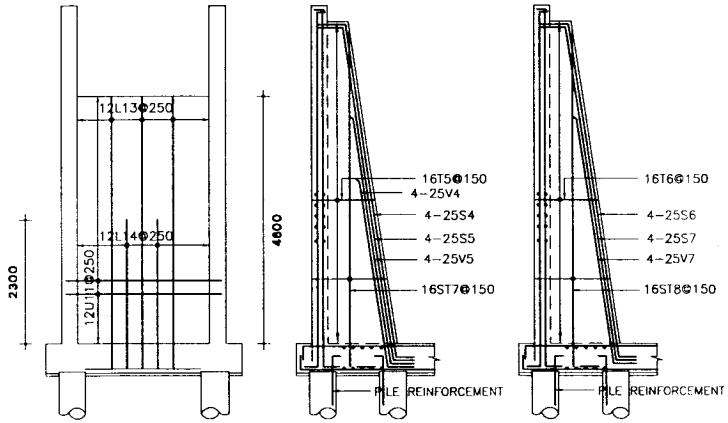
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3

REINFORCEMENT DETAILS OF COUNTERFORT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276**MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	21	1700	144			1844
12	L2	21	5800	144			5944
16	L3	70	7800	192			7992
12	L4	70	7800	144			7944
12	L5	4	Var. 5500 to 6100	144			Avg. 5944
12	L6	4	Var. 5500 to 6100	144			Avg. 5944
16	L7	30	Var. 8725 to 10150	192			Avg. 9487
16	L8	24	Var. 7625 to 8725	192			Avg. 8367
16	L9	46	7625	192			7817
20	L12	64	971	120			1091
20	U1	31	240	8125	240		8605
20	U2	48	240	3640	240		4120
20	U3	22	240	8125	240		8605
20	U4	83	240	3640	240		4120
16	U6	18	192	2884	192		3268
16	U7	26	192	2884	192		3268
16	U8	16	Var. 8725 to 10150	200	550		Avg. 10188
16	U9	14	Var. 7625 to 8725	200	625		Avg. 9000
16	U10	46	7625	200	550		8375
16	U12	12	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	41	1200	550	2940		4690
12	Z1	21	1700	822	144		2666
12	S1	21	675	6350	240		7265
16	C1	74	320	1028	320		1668
16	C2	16	320	1523	320		2163
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	L13	11	5210	144			5354
12	L14	11	2910	144			3054
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4815			5165
16	ST8	20	Var. 1600 to 7768				Avg. 4067

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 8.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0120802	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1200)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	21	1550	144			1694
12	L2	21	5950	144			6094
16	L3	70	7800	192			7992
12	L4	70	7800	144			7944
12	L5	4	Var. 5650 to 6250	144			Avg. 6094
12	L6	4	Var. 5650 to 6250	144			Avg. 6094
16	L7	26	Var. 8950 to 10150	192			Avg. 9696
16	L8	26	Var. 7625 to 8950	192			Avg. 8480
16	L9	46	7625	192			7817
20	L12	64	971	120			1091
20	U1	31	240	8125	240		8605
20	U2	48	240	3640	240		4120
20	U3	22	240	8125	240		8605
20	U4	83	240	3640	240		4120
16	U6	17	192	2884	192		3268
16	U7	27	192	2884	192		3268
16	U8	14	Var. 8950 to 10150	200	550		Avg. 10386
16	U9	14	Var. 7625 to 8950	200	625		Avg. 9113
16	U10	46	7625	200	550		8375
16	U12	12	192	2940	192		3324
12	CC1	11	1200	400	2940		4540
12	CC2	42	1200	550	2940		4690
12	Z1	21	1550	822	144		2516
12	S1	21	675	6500	240		7415
16	C1	74	320	1028	320		1668
16	C2	16	320	1523	320		2163
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	L13	11	5210	144			5354
12	L14	11	2910	144			3054
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4815			5165
16	ST8	20	Var. 1600 to 7768				Avg. 4067

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 950)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	21	1300	144			1444
12	L2	21	6200	144			6344
16	L3	70	7800	192			7992
12	L4	70	7800	144			7944
12	L5	4	Var. 5900 to 6500	144			Avg. 6344
12	L6	4	Var. 5900 to 6500	144			Avg. 6344
16	L7	22	Var. 9325 to 10150	192			Avg. 9967
16	L8	32	Var. 7625 to 9325	192			Avg. 8667
16	L9	46	7625	192			7817
20	L12	64	971	120			1091
20	U1	31	240	8125	240		8605
20	U2	48	240	3640	240		4120
20	U3	22	240	8125	240		8605
20	U4	83	240	3640	240		4120
16	U6	14	192	2884	192		3268
16	U7	28	192	2884	192		3268
16	U8	12	Var. 9325 to 10150	200	550		Avg. 10625
16	U9	18	Var. 7625 to 9325	200	625		Avg. 9300
16	U10	46	7625	200	550		8375
16	U12	12	192	2940	192		3324
12	CC1	9	1200	400	2940		4540
12	CC2	43	1200	550	2940		4690
12	Z1	21	1300	822	144		2266
12	S1	21	675	6750	240		7665
16	C1	74	320	1028	320		1668
16	C2	16	320	1523	320		2163
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	L13	11	5210	144			5354
12	L14	11	2910	144			3054
12	U11	20	300	2940	300		3540
16	T5	94	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	20	Var. 1599 to 7760				Avg. 6772
16	T6	94	Var. 1296 to 2696	696			Avg. 2692
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V5	8	350	4815			5165
16	ST8	20	Var. 1600 to 7768				Avg. 4067

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 3.04m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\RD12D803	

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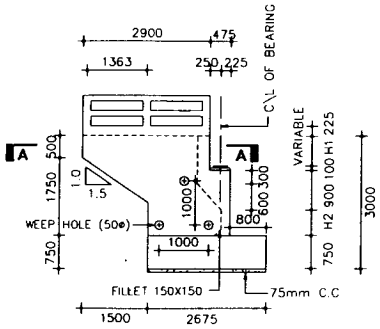
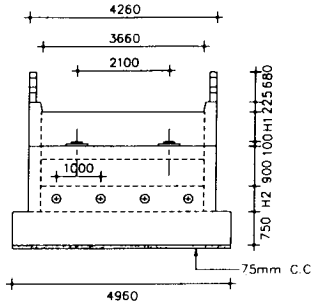
FA-241

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



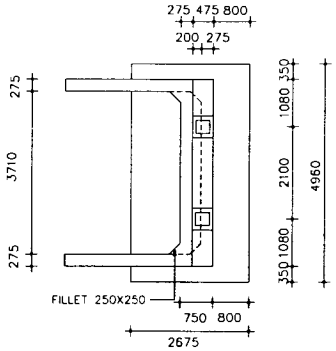
SIDE ELEVATION



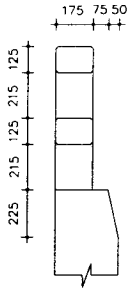
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
15000	1100	150	277	175
14500	1100	150	273	171
14000	1100	150	269	167
13500	1100	150	265	163
13000	1100	150	261	159
12500	1000	250	253	153



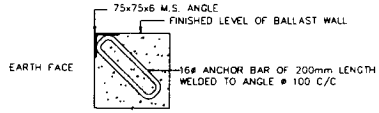
SECTION A-A



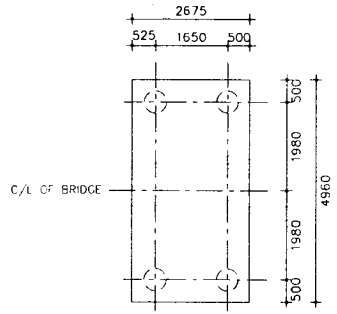
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-2

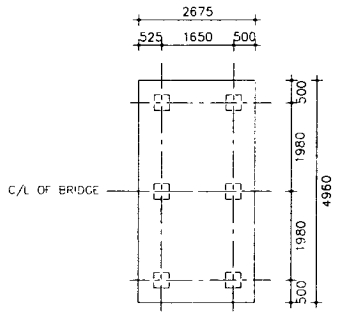
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	40	CAST IN SITU
TYPE – B	350x350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

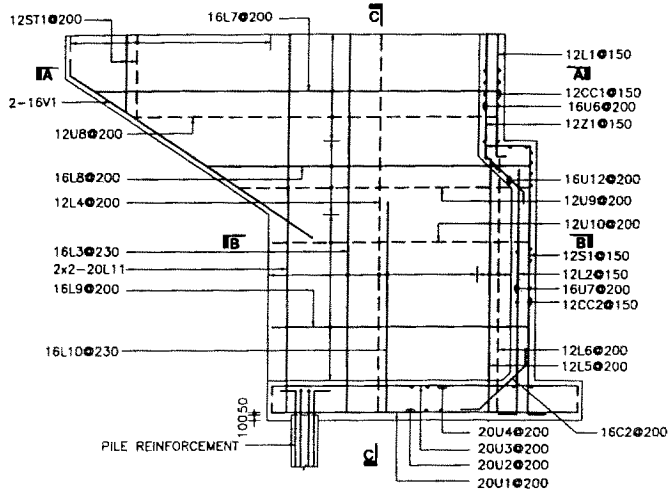
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.0m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220301

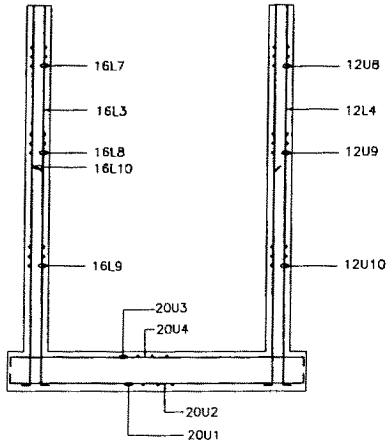
Web Copy

FA-242

SHEET 2 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: NO



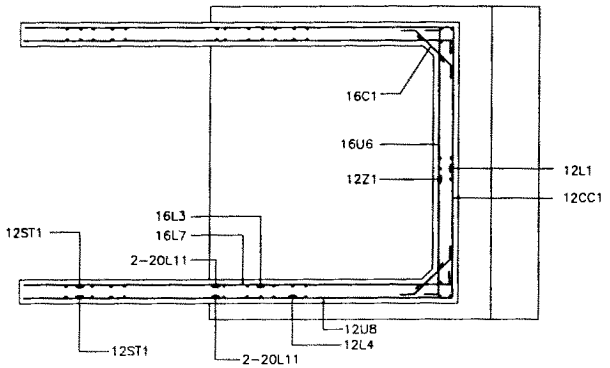
REINFORCEMENT DETAIL



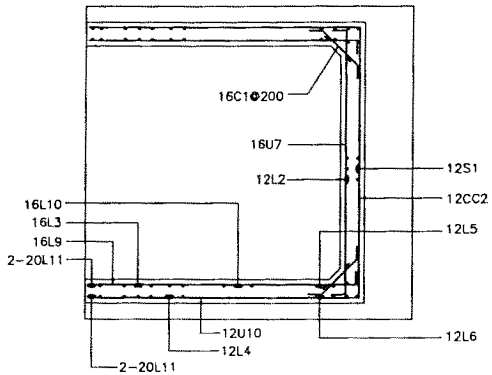
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1100)

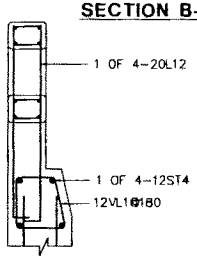
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	1450	144			1594
12	L2	29	1050	144			1194
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 750 to 1350	144			Avg. 1194
12	L6	6	Var. 750 to 1350	144			Avg. 1194
16	L7	14	Var. 1750 to 2800	192			Avg. 2542
16	L8	6	Var. 1775 to 1750	192			Avg. 1965
16	L9	6	1775	192			1967
16	L10	6	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	9	192	4112	192		4496
16	U7	3	192	4112	192		4496
12	U8	14	Var. 1750 to 2800	175	525		Avg. 3050
12	U9	6	Var. 1775 to 1750	175	525		Avg. 2463
12	U10	6	1775	175	525		2475
16	U12	6	192	4160	192		4544
12	CC1	10	1150	350	4160		5660
12	CC2	10	1150	350	4160		5660
12	Z1	29	1450	866	144		2460
12	S1	29	650	1600	240		2490
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	80	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000



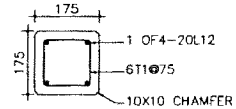
SECTION A-A



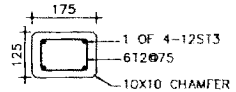
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 275 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220302

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	1350	144			1494
12	L2	29	1150	144			1294
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 850 to 1450	144			Avg. 1294
12	L6	6	Var. 850 to 1450	144			Avg. 1294
16	L7	12	Var. 1900 to 2800	192			Avg. 2692
16	L8	6	Var. 1775 to 1900	192			Avg. 2030
16	L9	6	1775	192			1967
16	L10	6	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U5	8	192	4112	192		4496
16	U7	3	192	4112	192		4496
12	U8	12	Var. 1900 to 2800	175	525		Avg. 3200
12	U9	6	Var. 1775 to 1900	175	525		Avg. 2538
12	U10	6	1775	175	525		2475
16	U12	6	192	4160	192		4544
12	CC1	10	1150	350	4160		5660
12	CC2	10	1150	350	4160		5660
12	Z1	29	1350	866	144		2360
12	S1	29	650	1700	240		2590
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

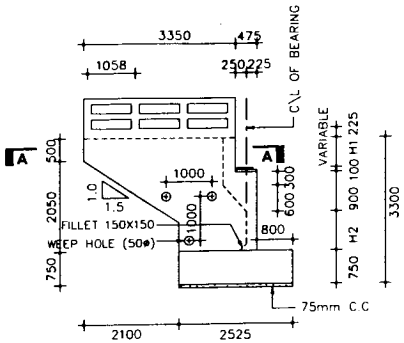
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220303	

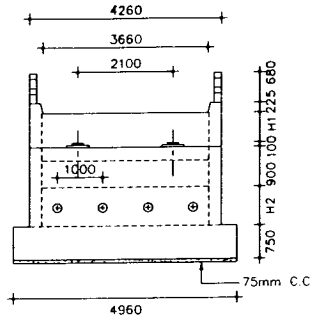
Web Copy

FA-244

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



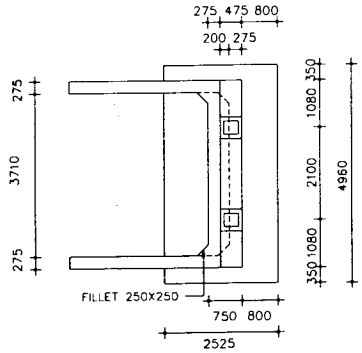
SIDE ELEVATION



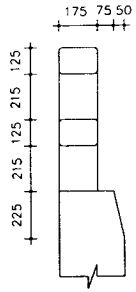
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	50	335	225
19500	1500	50	331	221
19000	1500	50	327	217
18500	1500	50	323	213
18000	1350	200	311	205
17500	1350	200	307	201
17000	1350	200	303	197
16500	1350	200	299	193
16000	1350	200	295	189
15500	1350	200	291	185
15000	1100	450	277	175
14500	1100	450	273	171
14000	1100	450	269	167
13500	1100	450	265	163
13000	1100	450	261	159
12500	1000	550	253	153



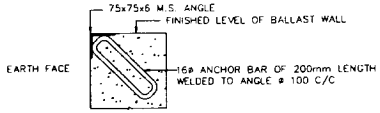
SECTION A-A



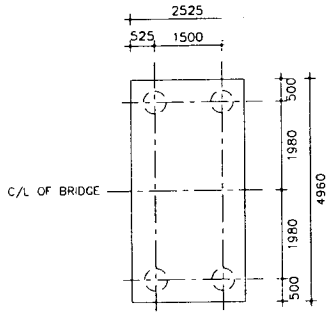
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-2

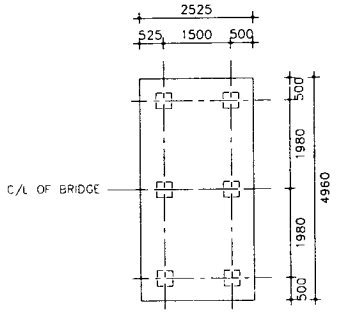
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	45	CAST IN SITU
TYPE – B	350x350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 3.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220331

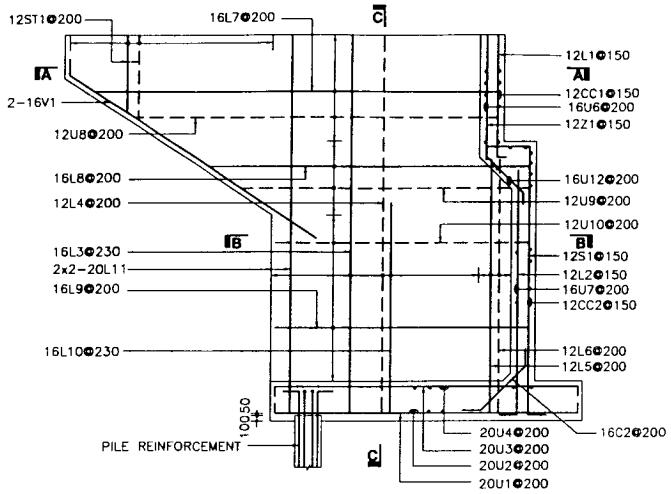
Web Copy

FA-245

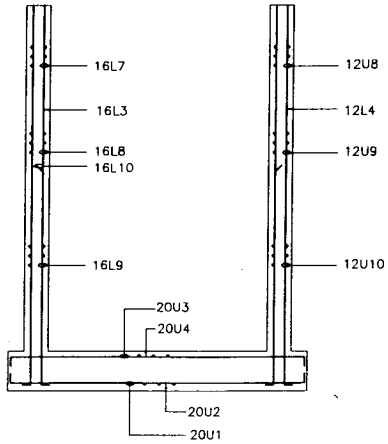
SHEET 2 OF 3

SPAN RANGE : 12.5m TO 20.0m

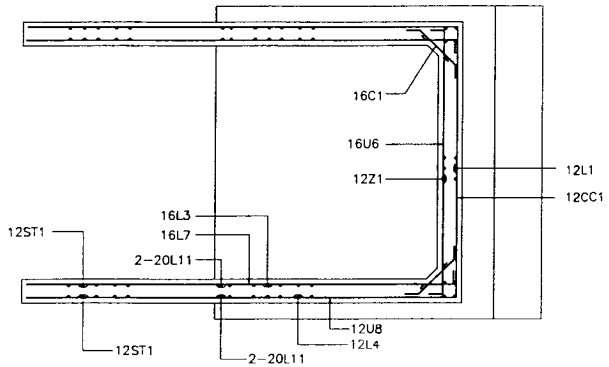
SIDE WALK: NO



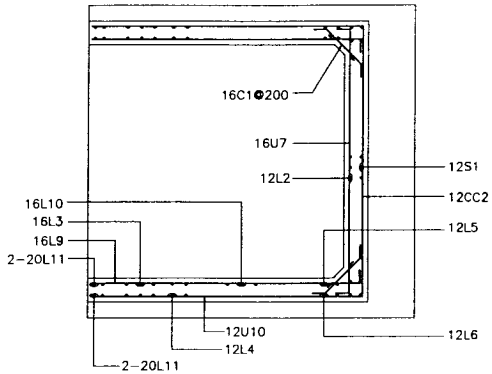
REINFORCEMENT DETAIL



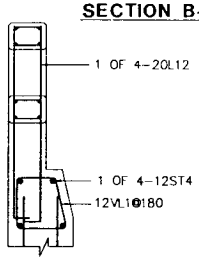
SECTION C-C



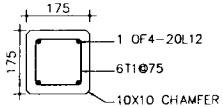
SECTION A-A



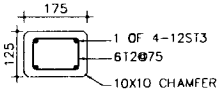
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	24	Var. 425 to 1825				Avg. 1125
12	ST3	16	3310				3310
12	ST4	8	3310				3310
12	L1	27	1800	144			1944
12	L2	27	450	144			594
16	L3	12	3150	192			3342
12	L4	12	3150	144			3294
12	L5	6	Var. 825 to 1425	144			Avg. 1269
12	L6	6	Var. 825 to 1425	144			Avg. 1269
16	L7	16	Var. 1700 to 3200	192			Avg. 2267
16	L8	4	Var. 1575 to 1700	192			Avg. 1830
16	L9	8	1575	192			1767
16	L10	14	1125	192			1317
20	L11	8	3150	240			3390
20	L12	32	905	120			1025
20	U1	26	240	2375	240		2855
20	U2	13	240	4710	240		5190
20	U3	26	240	2375	240		2855
20	U4	13	240	4810	240		5290
16	U6	10	192	4060	192		4444
16	U7	3	192	4060	192		4444
12	U8	16	Var. 1700 to 3200	125	575		Avg. 3525
12	U9	4	Var. 1575 to 1700	125	575		Avg. 2369
12	U10	4	1575	125	575		2275
16	U12	7	192	4110	192		4494
12	CC1	15	575	125	3860		4560
12	CC2	8	575	125	3860		4560
12	Z1	27	1725	1022	144		2891
12	S1	27	600	1650	240		2250
16	C1	28	240	490	240		730
16	C2	22	320	937.5	320		1258
16	V1	4	250	3143			3393
6	T1	88	286	286			572
6	T2	160	186	186			372
12	VL1	20	200	230	250	200	880

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\SC000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 4.26m)

DATE :

ISSUED BY :

CAD FILE REF : ABUT\R0220332

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SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	960				2860
12	ST4	8	2850				2850
12	L1	29	1700	144			1844
12	L2	29	800	144			944
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 500 to 1100	144			Avg. 944
12	L6	6	Var. 500 to 1100	144			Avg. 944
16	L7	16	Var. 1375 to 2800	192			Avg. 2280
16	L8	4	Var. 1775 to 1375	192			Avg. 1767
16	L9	6	1775	192			1967
16	L10	6	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	10	192	4112	192		4496
16	U7	1	192	4112	192		4496
12	U8	16	Var. 1375 to 2800	175	525		Avg. 2788
12	U9	4	Var. 1775 to 1375	175	525		Avg. 2275
12	U10	6	1775	175	525		2475
16	U12	6	192	4160	192		4544
12	CC1	12	1150	350	4160		5660
12	CC2	8	1150	350	4160		5660
12	Z1	29	1700	866	144		2710
12	S1	29	650	1350	240		2240
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	1450	144			1594
12	L2	29	1050	144			1194
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 750 to 1350	144			Avg. 1194
12	L6	6	Var. 750 to 1350	144			Avg. 1194
16	L7	14	Var. 1750 to 2800	192			Avg. 2542
16	L8	6	Var. 1775 to 1750	192			Avg. 1955
16	L9	6	1775	192			1967
16	L10	6	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	9	192	4112	192		4496
16	U7	3	192	4112	192		4496
12	U8	14	Var. 1750 to 2800	175	525		Avg. 3050
12	U9	6	Var. 1775 to 1750	175	525		Avg. 2463
12	U10	6	1775	175	525		2475
16	U12	6	192	4160	192		4544
12	CC1	10	1150	350	4160		5660
12	CC2	10	1150	350	4160		5660
12	Z1	29	1450	866	144		2460
12	S1	29	650	1600	240		2490
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

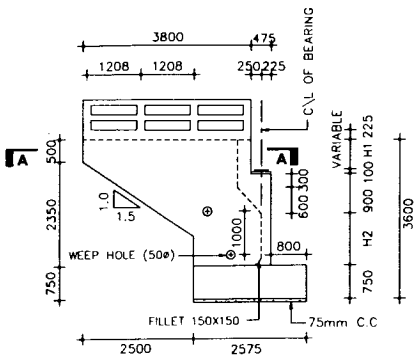
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1400				Avg. 900
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	29	1360	144			1494
12	L2	29	1150	144			1294
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 850 to 1450	144			Avg. 1294
12	L6	6	Var. 850 to 1450	144			Avg. 1294
16	L7	12	Var. 1900 to 2800	192			Avg. 2692
16	L8	6	Var. 1775 to 1900	192			Avg. 2030
16	L9	6	1775	192			1967
16	L10	6	1310	192			1502
20	L11	8	2800	240			3040
20	L12	24	971	120			1091
20	U1	26	240	2575	240		3055
20	U2	14	240	4860	240		5340
20	U3	26	240	2575	240		3055
20	U4	14	240	4860	240		5340
16	U6	8	192	4112	192		4496
16	U7	3	192	4112	192		4496
12	U8	12	Var. 1900 to 2800	175	525		Avg. 3200
12	U9	6	Var. 1775 to 1900	175	525		Avg. 2538
12	U10	6	1775	175	525		2475
16	U12	6	192	4160	192		4544
12	CC1	10	1150	350	4160		5660
12	CC2	10	1150	350	4160		5660
12	Z1	29	1360	866	144		2360
12	S1	29	650	1700	240		2590
16	C1	26	320	851	320		1491
16	C2	22	320	1240	320		1880
16	V1	4	250	2366			2616
6	T1	60	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

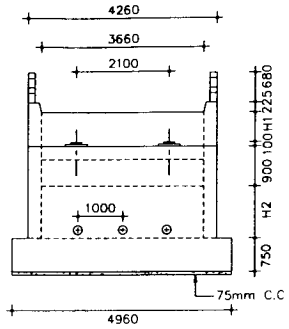
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220333	

Web Copy



SIDE ELEVATION



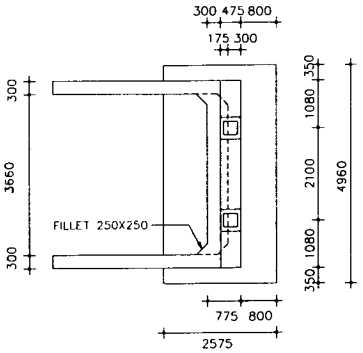
FRONT ELEVATION

TABLE-1

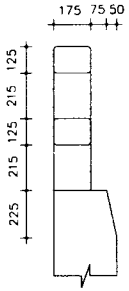
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	350	350	175
19500	1500	350	346	173
19000	1500	350	342	171
18500	1500	350	338	169
18000	1350	500	326	163
17500	1350	500	322	161
17000	1350	500	318	159
16500	1350	500	314	157
16000	1350	500	310	155
15500	1350	500	306	153
15000	1100	750	292	145
14500	1100	750	288	143
14000	1100	750	284	141
13500	1100	750	280	139
13000	1100	750	276	137
12500	1000	850	268	133

TABLE-2

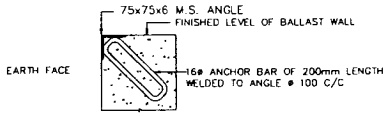
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	350x350	30	PRECAST



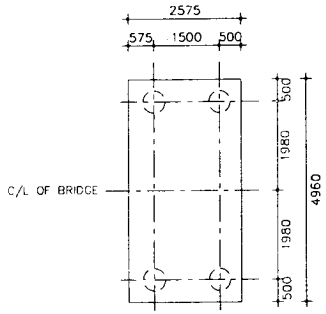
SECTION A-A



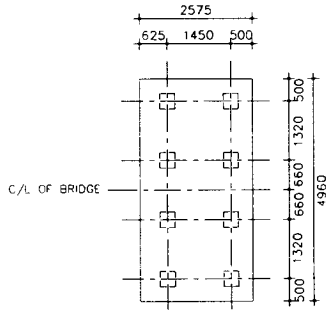
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horozontally and vertically as shown in drawings; filter metoriol shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\RQ22D361

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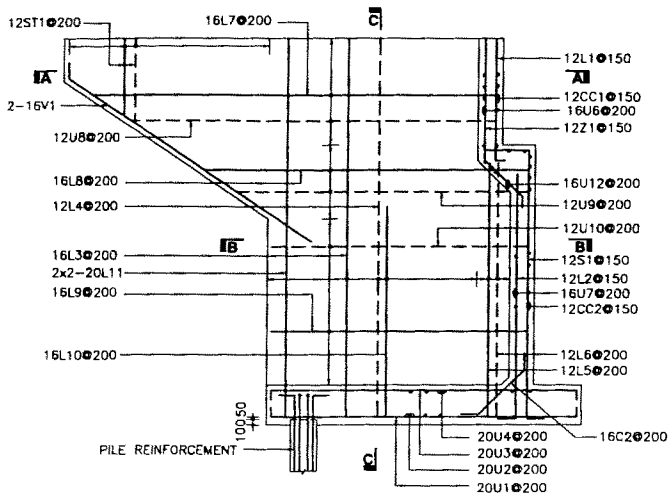
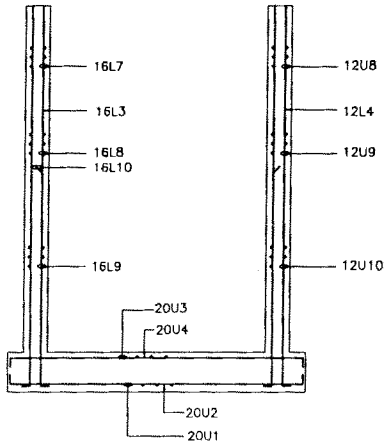
FA-248

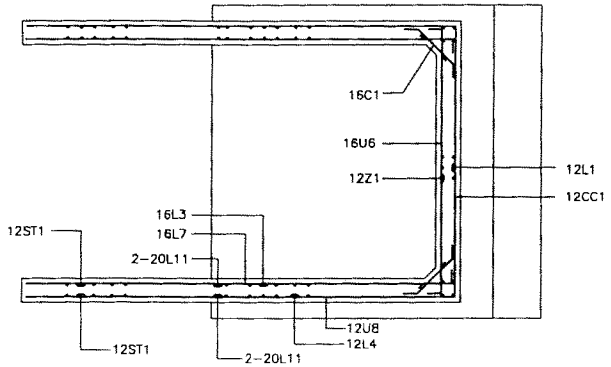
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: NO



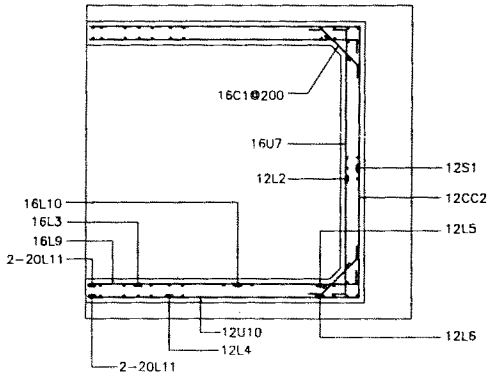
REINFORCEMENT DETAIL



SECTION C-C



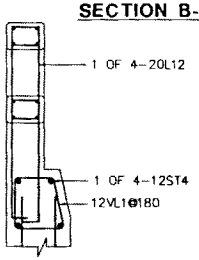
SECTION A-A



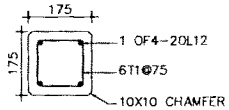
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1500)

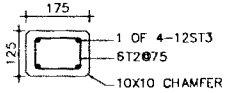
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1850	144			1994
12	L2	21	1250	144			1394
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 950 to 1550	144			Avg. 1394
12	L6	6	Var. 950 to 1550	144			Avg. 1394
16	L7	18	Var. 2050 to 3700	192			Avg. 2975
16	L8	8	Var. 1675 to 2050	192			Avg. 2055
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2450	240		2930
20	U2	14	240	3640	240		4120
20	U3	20	240	2450	240		2930
20	U4	14	240	3640	240		4120
16	U5	11	192	2892	192		3276
16	U7	4	192	2892	192		3276
12	U8	18	Var. 2050 to 3700	200	550		Avg. 3533
12	U9	8	Var. 1675 to 2050	200	550		Avg. 2613
12	U10	6	1675	200	550		2425
16	U12	7	192	2940	192		3324
12	CC1	13	1200	400	2940		4540
12	CC2	11	1200	400	2940		4540
12	Z1	21	1850	866	144		2860
12	S1	21	675	1800	240		2715
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220362

FA-Web Copy

SHEET 3 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1700	144			1844
12	L2	21	1400	144			1544
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1100 to 1700	144			Avg. 1544
12	L6	6	Var. 1100 to 1700	144			Avg. 1544
16	L7	16	Var. 2275 to 3700	192			Avg. 3180
16	L8	10	Var. 1675 to 2275	192			Avg. 2167
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2450	240		2930
20	U2	14	240	3640	240		4120
20	U3	20	240	2450	240		2930
20	U4	14	240	3640	240		4120
16	U6	10	192	2892	192		3276
16	U7	4	192	2892	192		3276
12	U8	16	Var. 2275 to 3700	200	550		Avg. 3738
12	U9	10	Var. 1675 to 2275	200	550		Avg. 2725
12	U10	6	1675	200	550		2425
16	U12	7	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	12	1200	400	2940		4540
12	Z1	21	1700	866	144		2710
12	S1	21	675	1950	240		2865
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1450	144			1594
12	L2	21	1650	144			1794
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1350 to 1950	144			Avg. 1794
12	L6	6	Var. 1350 to 1950	144			Avg. 1794
16	L7	14	Var. 2650 to 3700	192			Avg. 3442
16	L8	12	Var. 1675 to 2650	192			Avg. 2355
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2450	240		2930
20	U2	14	240	3640	240		4120
20	U3	20	240	2450	240		2930
20	U4	14	240	3640	240		4120
16	U6	9	192	2892	192		3276
16	U7	6	192	2892	192		3276
12	U8	14	Var. 2650 to 3700	200	550		Avg. 4000
12	U9	12	Var. 1675 to 2650	200	550		Avg. 2913
12	U10	6	1675	200	550		2425
16	U12	7	192	2940	192		3324
12	CC1	10	1200	400	2940		4540
12	CC2	14	1200	400	2940		4540
12	Z1	21	1450	866	144		2460
12	S1	21	675	2200	240		3115
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	21	1350	144			1494
12	L2	21	1750	144			1894
16	L3	6	3400	192			3592
12	L4	6	3400	144			3544
12	L5	6	Var. 1450 to 2050	144			Avg. 1894
12	L6	6	Var. 1450 to 2050	144			Avg. 1894
16	L7	12	Var. 2800 to 3700	192			Avg. 3592
16	L8	14	Var. 1675 to 2800	192			Avg. 2430
16	L9	6	1675	192			1867
16	L10	6	1244	192			1436
20	L11	8	3400	240			3640
20	L12	32	971	120			1091
20	U1	20	240	2450	240		2930
20	U2	14	240	3640	240		4120
20	U3	20	240	2450	240		2930
20	U4	14	240	3640	240		4120
16	U6	8	192	2892	192		3276
16	U7	6	192	2892	192		3276
12	U8	12	Var. 2800 to 3700	200	550		Avg. 4150
12	U9	14	Var. 1675 to 2800	200	550		Avg. 2988
12	U10	6	1675	200	550		2425
16	U12	7	192	2940	192		3324
12	CC1	10	1200	400	2940		4540
12	CC2	14	1200	400	2940		4540
12	Z1	21	1350	866	144		2360
12	S1	21	675	2300	240		3215
16	C1	32	320	922	320		1562
16	C2	16	320	1276	320		1916
16	V1	4	250	3680			3930
6	T1	80	306	306			612
6	T2	180	206	306			512
12	VL1	46	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220363	

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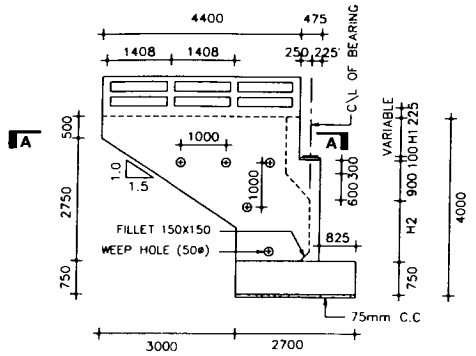
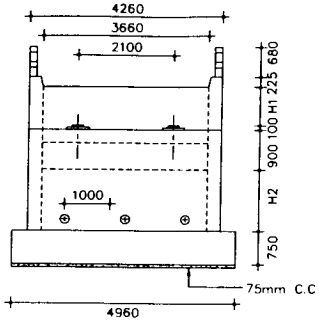
SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



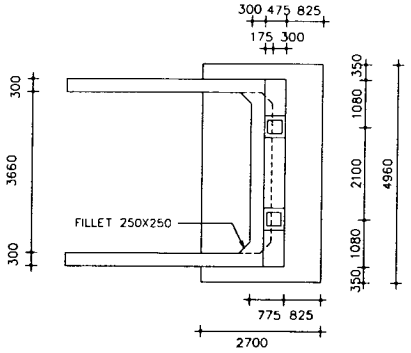
SIDE ELEVATION



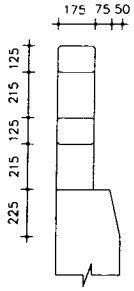
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	750	255	190
19500	1500	750	251	188
19000	1500	750	247	186
18500	1500	750	243	184
18000	1350	900	235	178
17500	1350	900	231	176
17000	1350	900	227	174
16500	1350	900	223	172
16000	1350	900	219	170
15500	1350	900	215	168
15000	1100	1150	205	160
14500	1100	1150	201	158
14000	1100	1150	197	156
13500	1100	1150	193	154
13000	1100	1150	189	152
12500	1000	1250	183	148



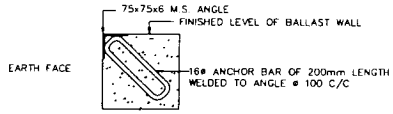
SECTION A-A



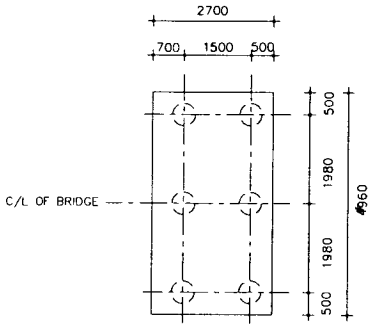
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

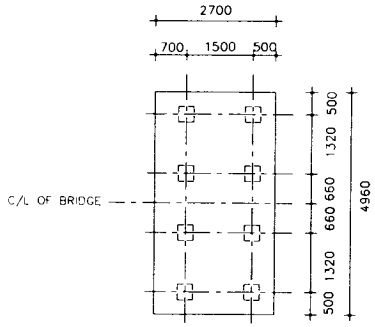
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	45	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

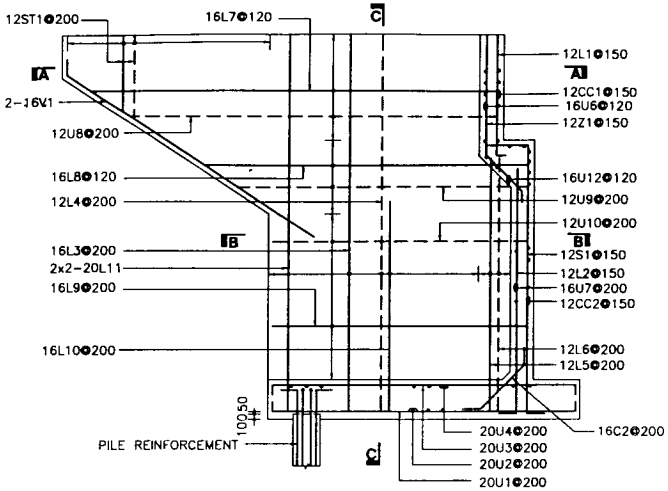
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.0m , DECK WIDTH 4.26m)

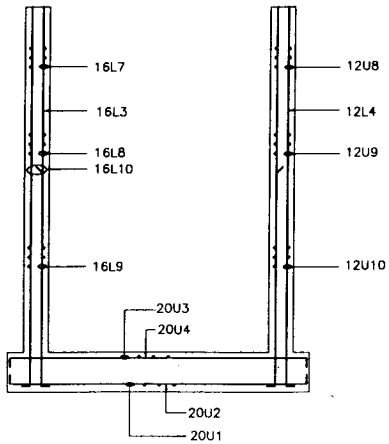
DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0220401	

Web Copy
FA-251

SHEET 2 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: NO



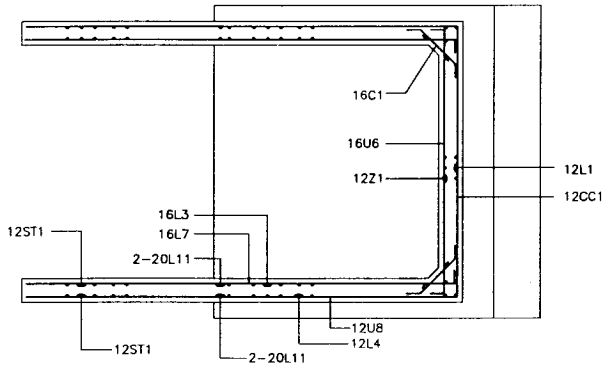
REINFORCEMENT DETAIL



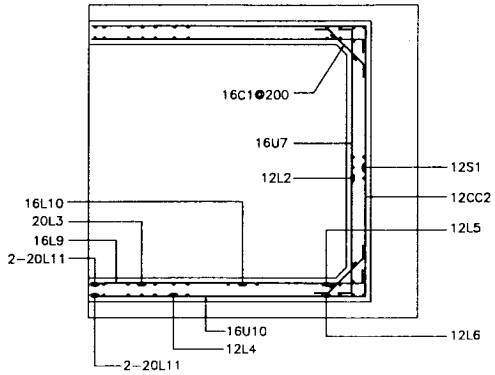
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

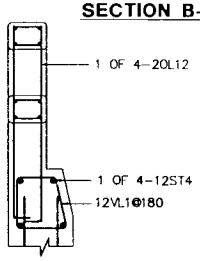
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1850	144			1994
12	L2	34	1650	144			1794
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1350 to 1950	144			Avg. 1794
12	L6	6	Var. 1350 to 1950	144			Avg. 1794
16	L7	30	Var. 2650 to 4300	192			Avg. 3502
16	L8	18	Var. 1775 to 2650	192			Avg. 2405
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	17	192	4862	192		5246
16	U7	6	192	4862	192		5246
12	U8	18	Var. 2650 to 4300	200	550		Avg. 4133
12	U9	12	Var. 1775 to 2650	200	550		Avg. 2963
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	14	1200	400	4910		6510
12	Z1	34	1850	866	144		2860
12	S1	34	675	2200	240		3115
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000
12	w1	4	200	575	206		981



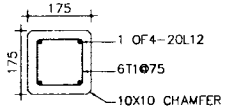
SECTION A-A



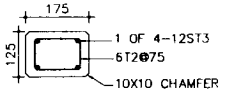
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 4.0m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220402

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SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 425 to 2425				Avg. 1425
12	ST3	16	4360				4360
12	ST4	8	4360				4360
12	L1	27	1400	144			1544
12	L2	27	1550	144			1694
16	L3	14	3850	192			4042
12	L4	14	3850	144			3994
12	L5	6	Var. 1925 to 2525	144			Avg. 2369
12	L6	6	Var. 1925 to 2525	144			Avg. 2369
16	L7	20	Var. 3350 to 4250	192			Avg. 3767
16	L8	24	Var. 1725 to 3350	192			Avg. 2730
16	L9	8	1725	192			1917
16	L10	16	1825	192			2017
20	L11	8	3850	240			4090
20	L12	32	905	120			1025
20	U1	26	240	2550	240		3030
20	U2	14	240	4710	240		5190
20	U3	26	240	2550	240		3030
20	U4	14	240	4810	240		5290
16	U6	13	192	4060	192		4444
16	U7	8	192	4060	192		4444
12	U8	12	Var. 3350 to 4250	150	600		Avg. 4775
12	U9	14	Var. 1725 to 3350	150	600		Avg. 3694
12	U10	4	1725	150	600		2475
16	U12	12	192	4110	192		4494
12	CC1	13	600	150	3810		4560
12	CC2	16	600	150	3810		4560
12	Z1	27	1325	1038	144		2507
12	S1	27	625	2750	240		3375
16	C1	36	240	534	240		774
16	C2	22	320	952.5	320		1273
16	V1	4	250	4356			4606
6	T1	88	286	286			572
6	T2	216	186	186			372
12	VL1	26	200	230	250	200	880

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1450	144			1594
12	L2	34	2050	144			2194
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1750 to 2350	144			Avg. 2194
12	L6	6	Var. 1750 to 2350	144			Avg. 2194
16	L7	22	Var. 3250 to 4300	192			Avg. 4015
16	L8	24	Var. 1775 to 3250	192			Avg. 2705
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	14	192	4862	192		5246
16	U7	8	192	4862	192		5246
12	U8	14	Var. 3250 to 4300	200	550		Avg. 4600
12	U9	16	Var. 1775 to 3250	200	550		Avg. 3263
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	16	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	2800	240		3515
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

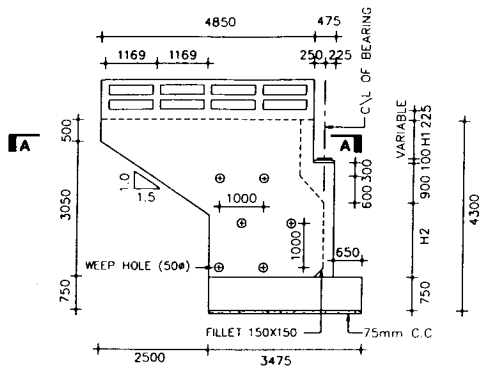
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1350	144			1494
12	L2	34	2150	144			2294
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1850 to 2450	144			Avg. 2294
12	L6	6	Var. 1850 to 2450	144			Avg. 2294
16	L7	20	Var. 3400 to 4300	192			Avg. 4132
16	L8	26	Var. 1775 to 3400	192			Avg. 2780
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	13	192	4862	192		5246
16	U7	8	192	4862	192		5246
12	U8	12	Var. 3400 to 4300	200	550		Avg. 4750
12	U9	16	Var. 1775 to 3400	200	550		Avg. 3338
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	17	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	2700	240		3615
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

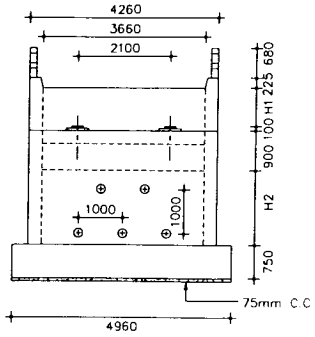
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220403

Web Copy



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	1050	320	165
19500	1500	1050	316	163
19000	1500	1050	312	161
18500	1500	1050	308	159
18000	1350	1200	300	155
17500	1350	1200	296	153
17000	1350	1200	292	151
16500	1350	1200	288	149
16000	1350	1200	284	147
15500	1350	1200	280	145
15000	1100	1450	270	139
14500	1100	1450	266	137
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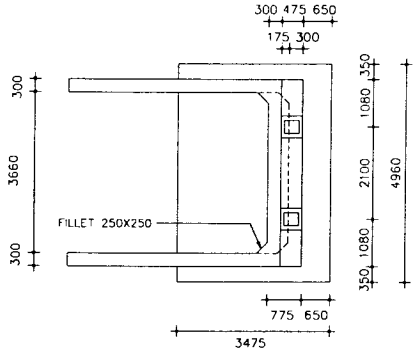
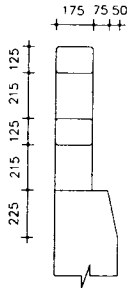
13500	1100	1450	258	133
13000	1100	1450	254	131
12500	1000	1550	248	127



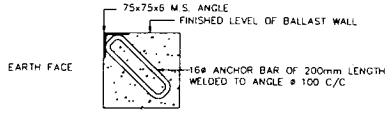
SECTION A-A



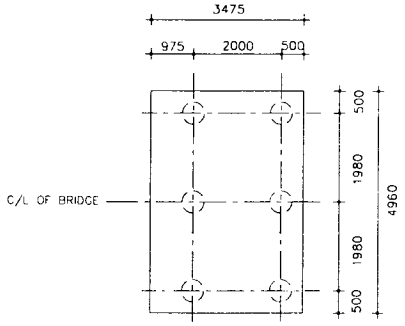
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-2

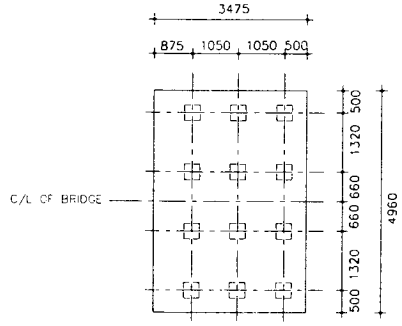
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 4.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/RO220431

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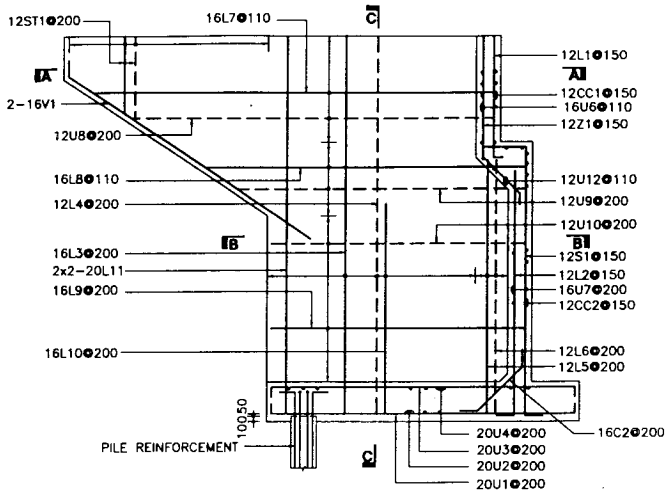
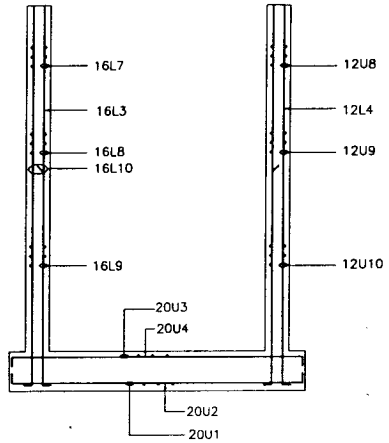
FA-254

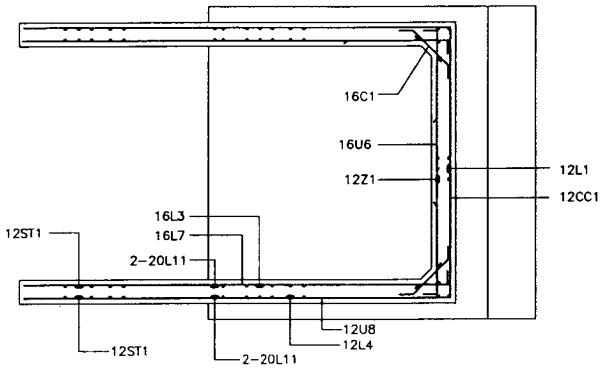
SHEET 2 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: NO



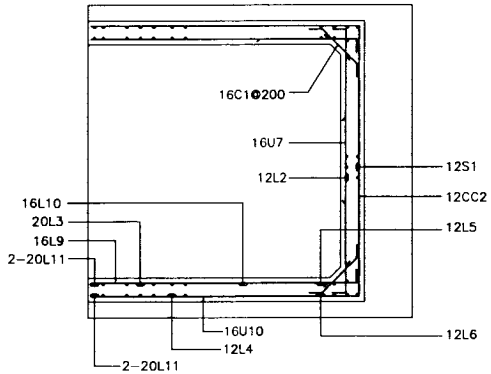
REINFORCEMENT DETAIL



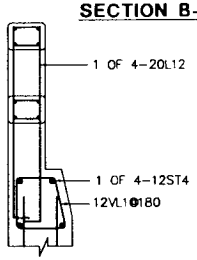
SECTION C-C



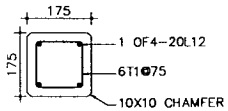
SECTION A-A



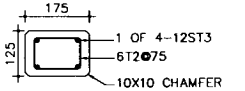
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2057				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	1850	144			1994
12	L2	29	1950	144			2094
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 1650 to 2250	144			Avg. 2094
12	L6	6	Var. 1650 to 2250	144			Avg. 2094
16	L7	30	Var. 3100 to 4750	192			Avg. 3952
16	L8	14	Var. 2725 to 3100	192			Avg. 3105
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3375	240		3855
20	U2	18	240	4860	240		5340
20	U3	26	240	3375	240		3855
20	U4	18	240	4860	240		5340
16	U5	18	192	4112	192		4496
16	U7	7	192	4112	192		4496
12	U8	18	Var. 3100 to 4750	200	550		Avg. 4583
12	U9	8	Var. 2725 to 3100	200	550		Avg. 3663
12	U10	12	2725	200	550		3475
16	U12	11	192	4160	192		4544
12	CC1	13	1200	400	4160		5760
12	CC2	16	1200	400	4160		5760
12	Z1	29	1850	866	144		2860
12	S1	29	675	2500	240		3415
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220432

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	1700	144			1844
12	L2	29	2100	144			2244
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 1800 to 2400	144			Avg. 2244
12	L6	6	Var. 1800 to 2400	144			Avg. 2244
16	L7	28	Var. 3325 to 4750	192			Avg. 4128
16	L8	16	Var. 2725 to 3325	192			Avg. 3217
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3375	240		3855
20	U2	18	240	4860	240		5340
20	U3	26	240	3375	240		3855
20	U4	18	240	4860	240		5340
16	U6	17	192	4112	192		4496
16	U7	8	192	4112	192		4496
12	U8	16	Var. 3325 to 4750	200	550		Avg. 4788
12	U9	10	Var. 2725 to 3325	200	550		Avg. 3775
12	U10	12	2725	200	550		3475
16	U12	11	192	4160	192		4544
12	CC1	12	1200	400	4160		5760
12	CC2	17	1200	400	4160		5760
12	Z1	29	1700	866	144		2710
12	S1	29	675	2650	240		3565
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	1450	144			1594
12	L2	29	2350	144			2494
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2050 to 2650	144			Avg. 2494
12	L6	6	Var. 2050 to 2650	144			Avg. 2494
16	L7	24	Var. 3700 to 4750	192			Avg. 4417
16	L8	20	Var. 2725 to 3700	192			Avg. 3405
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3375	240		3855
20	U2	18	240	4860	240		5340
20	U3	26	240	3375	240		3855
20	U4	18	240	4860	240		5340
16	U6	15	192	4112	192		4496
16	U7	9	192	4112	192		4496
12	U8	14	Var. 3700 to 4750	200	550		Avg. 5050
12	U9	12	Var. 2725 to 3700	200	550		Avg. 3963
12	U10	12	2725	200	550		3475
16	U12	11	192	4160	192		4544
12	CC1	10	1200	400	4160		5760
	CC2	18	1200	400	4160		5760
12	Z1	29	1450	866	144		2460
12	S1	29	675	2900	240		3815
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	29	1350	144			1494
12	L2	29	2450	144			2594
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2150 to 2750	144			Avg. 2594
12	L6	6	Var. 2150 to 2750	144			Avg. 2594
16	L7	22	Var. 3850 to 4750	192			Avg. 4533
16	L8	22	Var. 2725 to 3850	192			Avg. 3480
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	971	120			1091
20	U1	26	240	3375	240		3855
20	U2	18	240	4860	240		5340
20	U3	26	240	3375	240		3855
20	U4	18	240	4860	240		5340
16	U6	14	192	4112	192		4496
16	U7	10	192	4112	192		4496
12	U8	12	Var. 3850 to 4750	200	550		Avg. 5200
12	U9	14	Var. 2725 to 3850	200	550		Avg. 4008
12	U10	12	2725	200	550		3475
16	U12	11	192	4160	192		4544
12	CC1	10	1200	400	4160		5760
12	CC2	19	1200	400	4160		5760
12	Z1	29	1350	866	144		2360
12	S1	29	675	3000	240		3915
16	C1	38	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	100	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220433	

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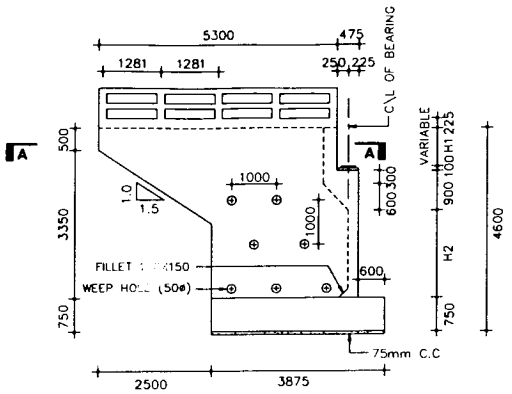
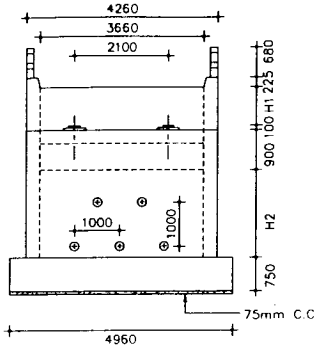
FA-256

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



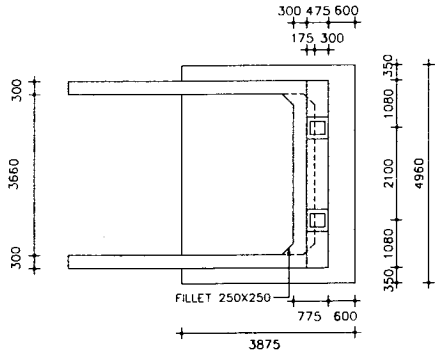
SIDE ELEVATION



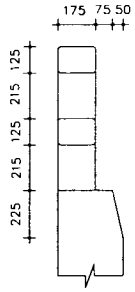
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	1350	365	185
19500	1500	1350	361	183
19000	1500	1350	357	181
18500	1500	1350	353	179
18000	1350	1500	345	175
17500	1350	1500	341	173
17000	1350	1500	337	171
16500	1350	1500	333	169
16000	1350	1500	329	167
15500	1350	1500	325	165
15000	1100	1750	315	159
14500	1100	1750	311	157
14000	1100	1750	307	155
13500	1100	1750	303	153
13000	1100	1750	299	151
12500	1000	1850	293	147



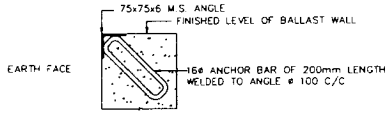
SECTION A-A



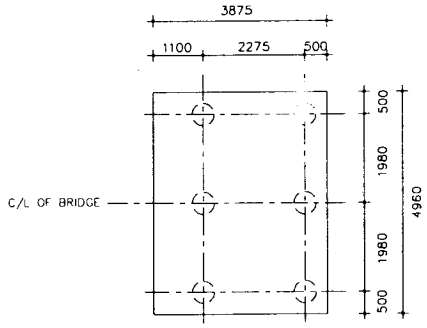
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-2

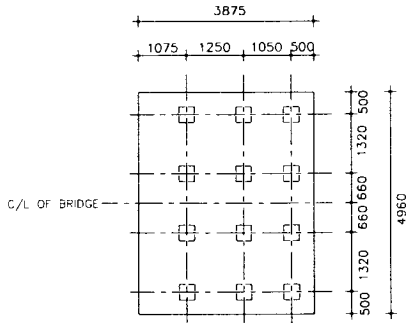
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

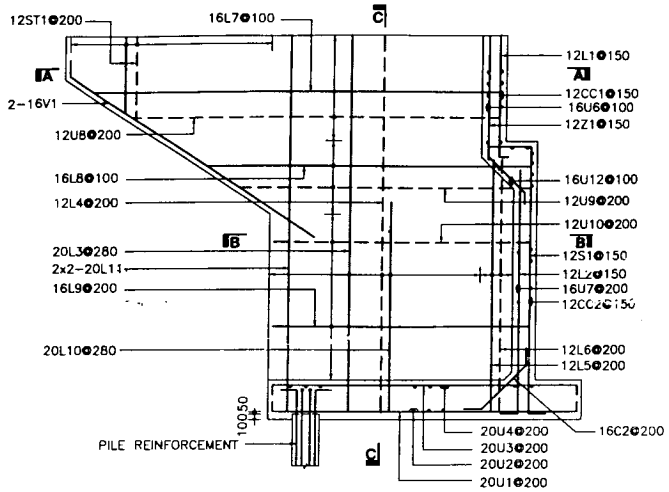
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.6m , DECK WIDTH 4.26m)

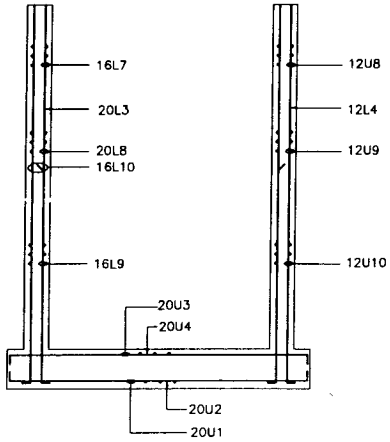
DATE :
ISSUED BY .
CAD FILE REF ABUT/R0220461

Web Copy
FA-257

SHEET 2 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: NO



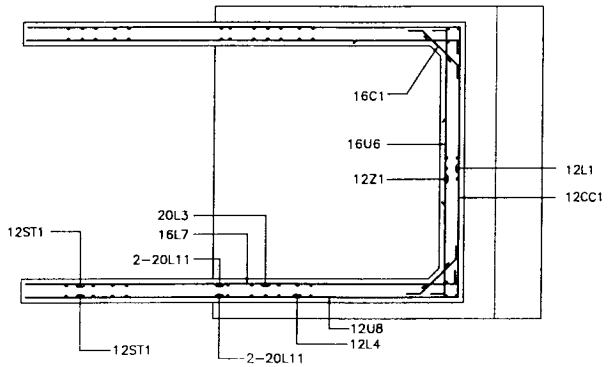
REINFORCEMENT DETAIL



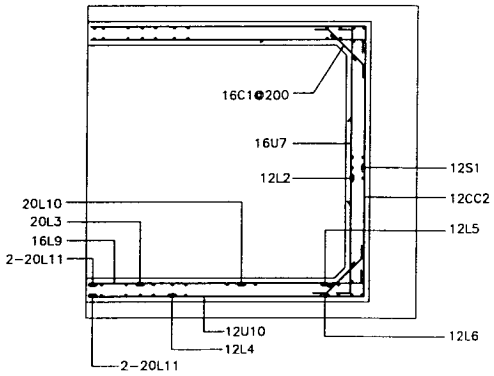
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1500)

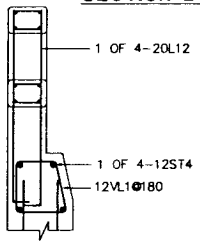
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5280				5280
12	ST4	8	5250				5250
12	L1	29	1850	144			1994
12	L2	29	2250	144			2394
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 1950 to 2550	144			Avg. 2394
12	L6	6	Var. 1950 to 2550	144			Avg. 2394
16	L7	32	Var. 3550 to 5200	192			Avg. 4361
16	L8	14	Var. 3175 to 3550	192			Avg. 3555
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3775	240		4255
20	U2	20	240	4860	240		5340
20	U3	26	240	3775	240		4255
20	U4	20	240	4860	240		5340
16	U6	20	192	4112	192		4496
16	U7	9	192	4112	192		4496
12	U8	18	Var. 3550 to 5200	200	550		Avg. 5033
12	U9	8	Var. 3175 to 3550	200	550		Avg. 4113
12	U10	16	3175	200	550		3925
16	U12	12	192	4160	192		4544
12	CC1	13	1200	400	4160		5760
12	CC2	18	1200	400	4160		5760
12	Z1	29	1850	866	144		2860
12	S1	29	675	2800	240		3715
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000



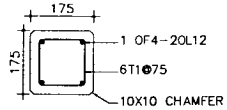
S CTION A-A



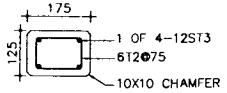
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220462

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	1700	144			1844
12	L2	29	2400	144			2544
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2100 to 2700	144			Avg. 2544
12	L6	6	Var. 2100 to 2700	144			Avg. 2544
16	L7	30	Var. 3775 to 5200	192			Avg. 4537
16	L8	18	Var. 3175 to 3775	192			Avg. 3667
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3775	240		4255
20	U2	20	240	4860	240		5340
20	U3	26	240	3775	240		4255
20	U4	20	240	4860	240		5340
16	U5	18	192	4112	192		4496
16	U7	9	192	4112	192		4496
12	U8	16	Var. 3775 to 5200	200	550		Avg. 5238
12	U9	10	Var. 3175 to 3775	200	550		Avg. 4225
12	U10	16	3175	200	550		3925
16	U12	12	192	4160	192		4544
12	CC1	12	1200	400	4160		5760
12	CC2	19	1200	400	4160		5760
12	Z1	29	1700	866	144		2710
12	S1	29	675	2950	240		3865
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	1450	144			1594
12	L2	29	2650	144			2794
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2350 to 2950	144			Avg. 2794
12	L6	6	Var. 2350 to 2950	144			Avg. 2794
16	L7	24	Var. 4150 to 5200	192			Avg. 4867
16	L8	22	Var. 3175 to 4150	192			Avg. 3855
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3775	240		4255
20	U2	20	240	4860	240		5340
20	U3	26	240	3775	240		4255
20	U4	20	240	4860	240		5340
16	U6	16	192	4112	192		4496
16	U7	11	192	4112	192		4496
12	U8	14	Var. 4150 to 5200	200	550		Avg. 5500
12	U9	12	Var. 3175 to 4150	200	550		Avg. 4413
12	U10	16	3175	200	550		3925
16	U12	12	192	4160	192		4544
12	CC1	10	1200	400	4160		5760
12	CC2	20	1200	400	4160		5760
12	Z1	29	1450	866	144		2460
12	S1	29	675	3200	240		4115
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	29	1350	144			1494
12	L2	29	2750	144			2894
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2450 to 3050	144			Avg. 2894
12	L6	6	Var. 2450 to 3050	144			Avg. 2894
16	L7	22	Var. 4300 to 5200	192			Avg. 4983
16	L8	24	Var. 3175 to 4300	192			Avg. 3930
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	971	120			1091
20	U1	26	240	3775	240		4255
20	U2	20	240	4860	240		5340
20	U3	26	240	3775	240		4255
20	U4	20	240	4860	240		5340
16	U6	15	192	4112	192		4496
16	U7	11	192	4112	192		4496
12	U8	12	Var. 4300 to 5200	200	550		Avg. 5650
12	U9	14	Var. 3175 to 4300	200	550		Avg. 4488
12	U10	16	3175	200	550		3925
16	U12	12	192	4160	192		4544
12	CC1	10	1200	400	4160		5760
12	CC2	21	1200	400	4160		5760
12	Z1	29	1350	866	144		2360
12	S1	29	675	3300	240		4215
16	C1	42	320	922	320		1562
16	C2	22	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	100	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

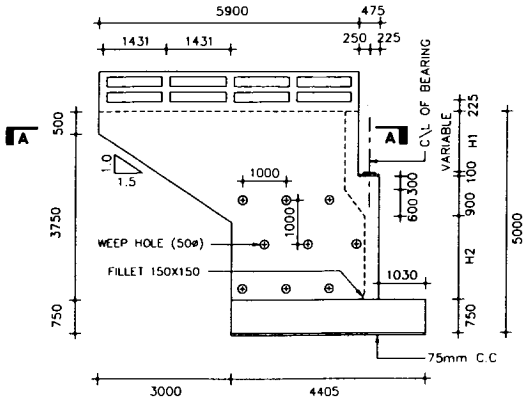
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220463	

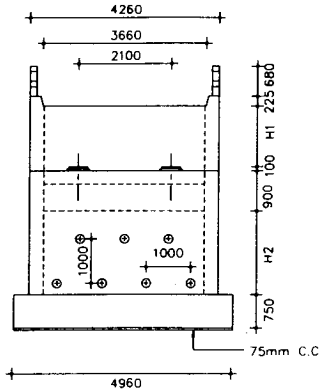
Web Copy

FA-259

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



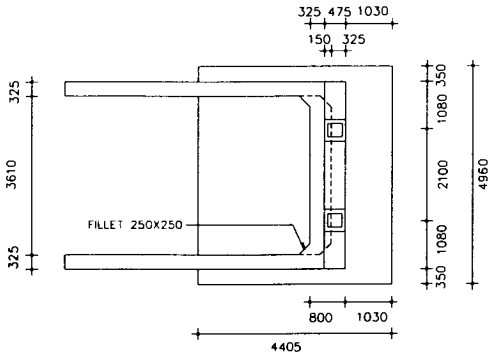
SIDE ELEVATION



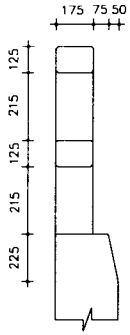
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	1750	265	150
19500	1500	1750	263	148
19000	1500	1750	261	146
18500	1500	1750	259	144
18000	1350	1900	253	140
17500	1350	1900	251	138
17000	1350	1900	249	136
16500	1350	1900	247	134
16000	1350	1900	245	132
15500	1350	1900	243	130
15000	1100	2150	237	126
14500	1100	2150	235	124
14000	1100	2150	233	122
13500	1100	2150	231	120
13000	1100	2150	229	118
12500	1000	2250	225	116



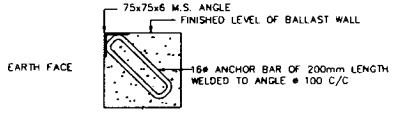
SECTION A-A



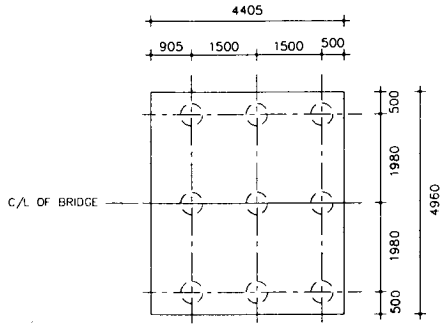
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

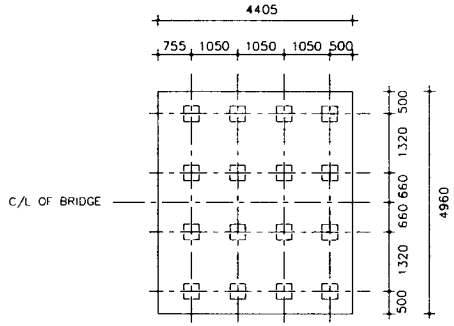
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	50	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.0m , DECK WIDTH 4.26m)

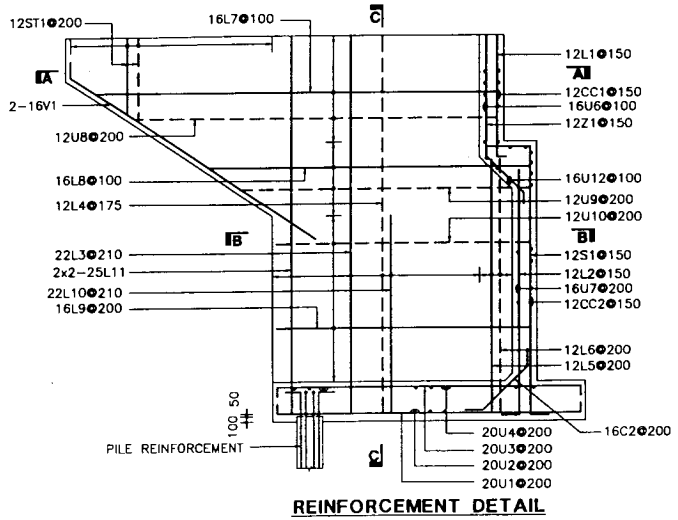
DATE :

ISSUED BY :

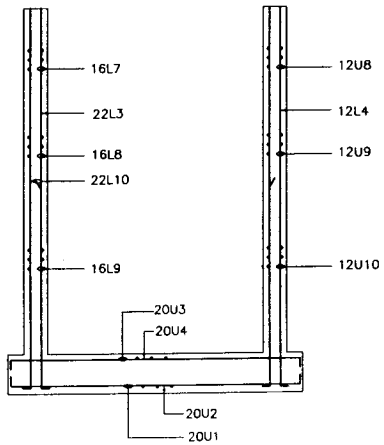
CAD FILE REF : ABUT\RD220501

Web Copy

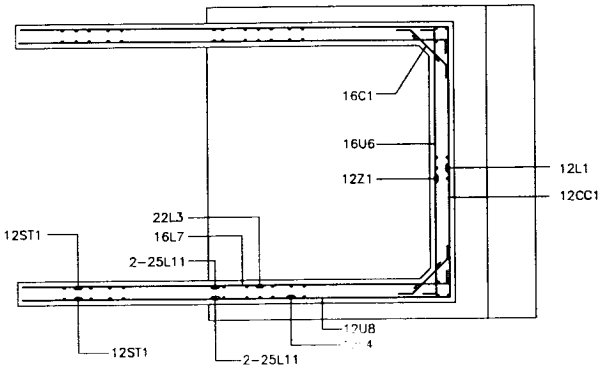
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



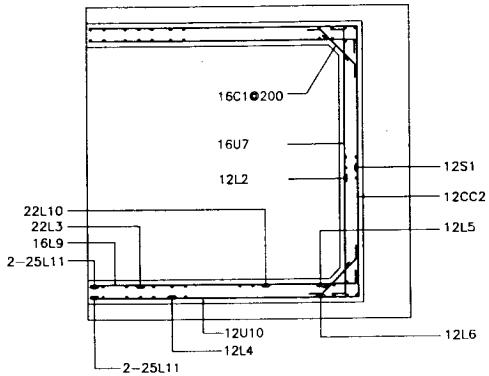
REINFORCEMENT DETAIL



SECTION C-C



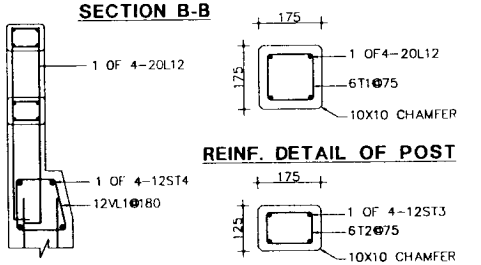
SECTION A-...



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1850	144			1994
12	L2	21	2650	144			2794
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2350 to 2950	144			Avg. 2794
12	L6	6	Var. 2350 to 2950	144			Avg. 2794
16	L7	32	Var. 4150 to 5800	192			Avg. 4961
16	L8	20	Var. 3275 to 4150	192			Avg. 3905
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1185	120			1305
20	U1	20	240	4275	240		4755
20	U2	23	240	3640	240		4120
20	U3	20	240	4275	240		4755
20	U4	23	240	3640	240		4120
16	U5	20	192	2892	192		3276
16	U7	11	192	2892	192		3276
12	U8	18	Var. 4150 to 5800	225	550		Avg. 5658
12	U9	12	Var. 3275 to 4150	225	550		Avg. 4488
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	13	1250	400	2940		4590
12	CC2	20	1250	400	2940		4590
12	Z1	21	1850	866	144		2860
12	S1	21	675	3200	240		4115
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000



RAILING ON WING WALL (REINF. DETAIL)

REINF. DETAIL OF POST

REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0220502	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1700	144			1844
12	L2	21	2800	144			2944
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2500 to 3100	144			Avg. 2944
12	L6	6	Var. 2500 to 3100	144			Avg. 2944
16	L7	30	Var. 4375 to 5800	192			Avg. 5137
16	L8	24	Var. 3275 to 4375	192			Avg. 4017
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1185	120			1305
20	U1	20	240	4275	240		4755
20	U2	23	240	3640	240		4120
20	U3	20	240	4275	240		4755
20	U4	23	240	3640	240		4120
16	U6	18	192	2892	192		3276
16	U7	11	192	2892	192		3276
12	U8	16	Var. 4375 to 5800	225	550		Avg. 5863
12	U9	14	Var. 3275 to 4375	225	550		Avg. 4600
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	12	1250	400	2940		4590
12	CC2	21	1250	400	2940		4590
12	Z1	21	1700	866	144		2710
12	S1	21	675	3350	240		4265
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1450	144			1594
12	L2	21	3050	144			3194
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2750 to 3350	144			Avg. 3194
12	L6	6	Var. 2750 to 3350	144			Avg. 3194
16	L7	24	Var. 4750 to 5800	192			Avg. 5467
16	L8	28	Var. 3275 to 4750	192			Avg. 4205
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1185	120			1305
20	U1	20	240	4275	240		4755
20	U2	23	240	3640	240		4120
20	U3	20	240	4275	240		4755
20	U4	23	240	3640	240		4120
16	U6	16	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	14	Var. 4750 to 5800	225	550		Avg. 6125
12	U9	16	Var. 3275 to 4750	225	550		Avg. 4788
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	10	1250	400	2940		4590
12	CC2	23	1250	400	2940		4590
12	Z1	21	1450	866	144		2460
12	S1	21	675	3800	240		4515
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5860				5860
12	ST4	8	5850				5850
12	L1	21	1350	144			1494
12	L2	21	3150	144			3294
22	L3	20	4800	264			5064
12	L4	26	4800	144			4944
12	L5	6	Var. 2850 to 3450	144			Avg. 3294
12	L6	6	Var. 2850 to 3450	144			Avg. 3294
16	L7	22	Var. 4900 to 5800	192			Avg. 5683
16	L8	30	Var. 3275 to 4900	192			Avg. 4280
16	L9	16	3275	192			3467
22	L10	20	2310	264			2574
25	L11	8	4800	300			5100
20	L12	40	1185	120			1305
20	U1	20	240	4275	240		4755
20	U2	23	240	3640	240		4120
20	U3	20	240	4275	240		4755
20	U4	23	240	3640	240		4120
16	U6	15	192	2892	192		3276
16	U7	13	192	2892	192		3276
12	U8	12	Var. 4900 to 5800	225	550		Avg. 6275
12	U9	16	Var. 3275 to 4900	225	550		Avg. 4863
12	U10	16	3275	225	575		4075
16	U12	12	192	2940	192		3324
12	CC1	10	1250	400	2940		4590
12	CC2	24	1250	400	2940		4590
12	Z1	21	1350	866	144		2360
12	S1	21	675	3700	240		4615
16	C1	46	320	957	320		1597
16	C2	16	320	1276	320		1916
16	V1	4	250	4544			4794
6	T1	100	306	306			612
6	T2	288	206	306			512
12	VL1	68	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

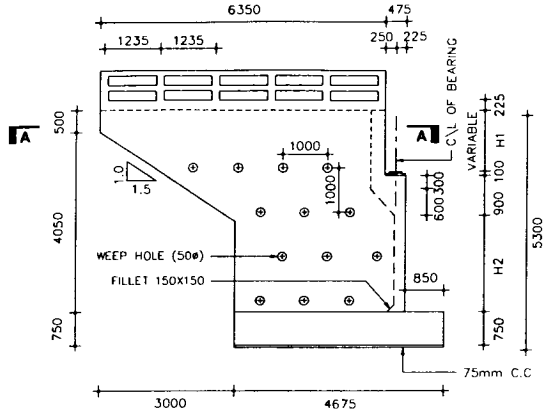
REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 5.0m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/RO220503

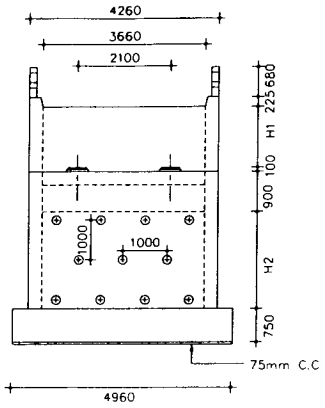
Web Copy

FA-262

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



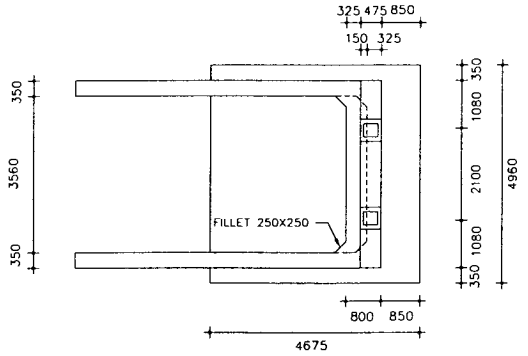
SIDE ELEVATION



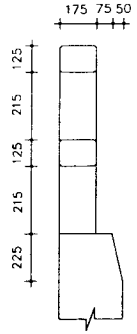
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	2050	295	165
19500	1500	2050	293	163
19000	1500	2050	291	161
18500	1500	2050	289	159
18000	1350	2200	283	155
17500	1350	2200	281	153
17000	1350	2200	279	151
16500	1350	2200	277	149
16000	1350	2200	275	147
15500	1350	2200	273	145
15000	1100	2450	267	141
14500	1100	2450	265	139
14000	1100	2450	263	137
13500	1100	2450	261	135
13000	1100	2450	259	133
12500	1000	2550	255	131



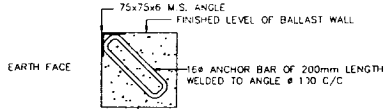
SECTION A-A



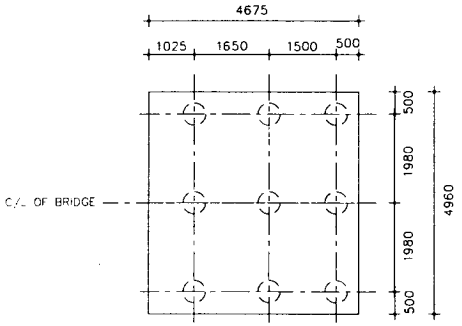
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

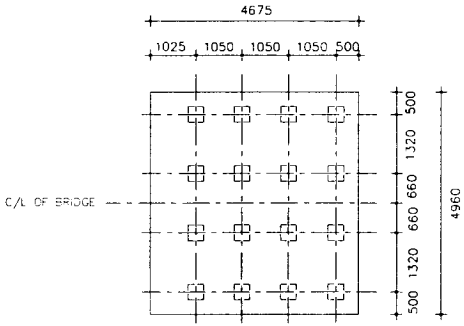
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350X350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

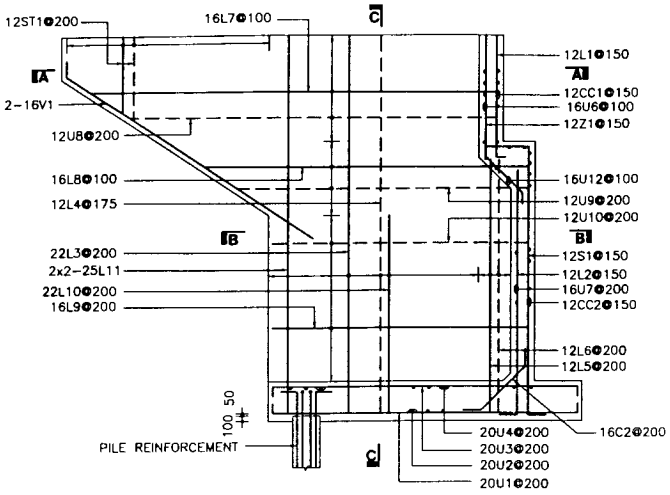
1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

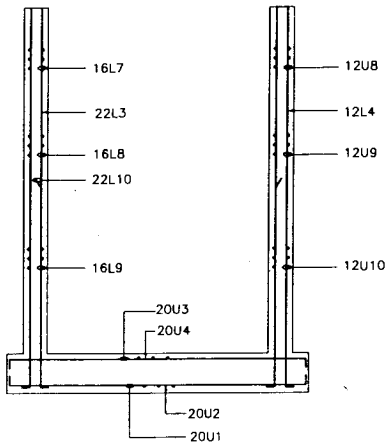
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220531

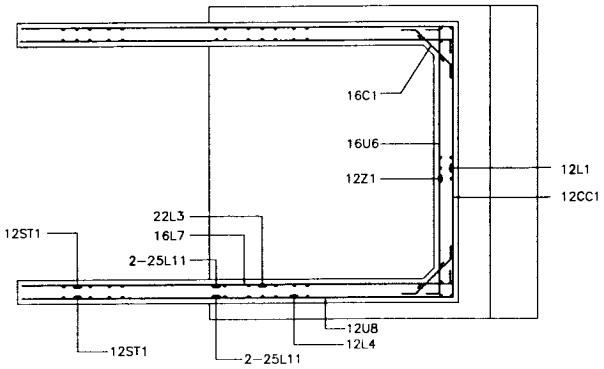
Web Copy



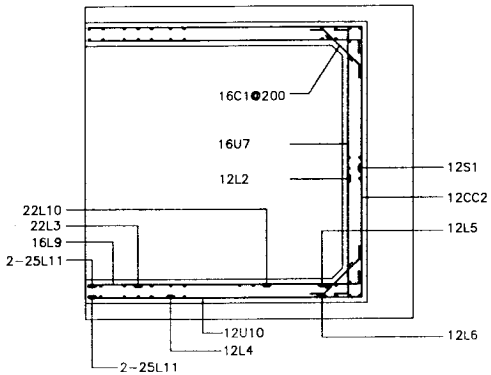
REINFORCEMENT DETAIL



SECTION C-C



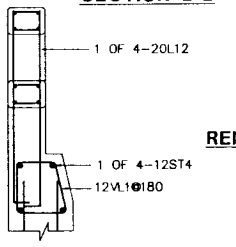
SECTION A-A



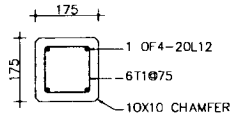
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

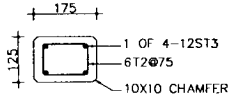
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6610				6610
12	ST4	8	6600				6600
12	L1	29	1850	144			1994
12	L2	29	3250	144			3394
22	L3	30	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 2950 to 3550	144			Avg. 3394
12	L6	6	Var. 2950 to 3550	144			Avg. 3394
16	L7	32	Var. 4900 to 6550	192			Avg. 5711
16	L8	20	Var. 4025 to 4900	192			Avg. 4655
16	L9	22	4025	192			4217
22	L10	30	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	5025	240		5505
20	U2	30	240	4860	240		5340
20	U3	29	240	5025	240		5605
20	U4	30	240	4860	240		5340
16	U5	20	192	4104	192		4488
16	U7	14	192	4112	192		4496
12	U8	18	Var. 4900 to 6550	275	600		Avg. 6508
12	U9	12	Var. 4025 to 4900	275	600		Avg. 5338
12	U10	22	4025	275	625		4925
16	U12	12	192	4160	192		4544
12	CC1	13	1350	500	4160		6010
12	CC2	24	1350	500	4160		6010
12	Z1	29	1850	866	144		2860
12	S1	29	725	3800	240		4765
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R0220532

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6610				6610
12	ST4	8	6600				6600
12	L1	29	1700	144			1844
12	L2	29	3400	144			3544
22	L3	30	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3100 to 3700	144			Avg. 3544
12	L6	6	Var. 3100 to 3700	144			Avg. 3544
16	L7	30	Var. 5125 to 6550	192			Avg. 5887
16	L8	24	Var. 4025 to 5125	192			Avg. 4767
16	L9	22	4025	192			4217
22	L10	30	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	5025	240		5505
20	U2	30	240	4860	240		5340
20	U3	29	240	5025	240		5505
20	U4	30	240	4860	240		5340
16	U5	18	192	4104	192		4488
16	U7	14	192	4112	192		4496
12	U8	16	Var. 5125 to 6550	275	600		Avg. 6713
12	U9	14	Var. 4025 to 5125	275	600		Avg. 5450
12	U10	22	4025	275	625		4925
16	U12	12	192	4160	192		4544
12	CC1	12	1350	500	4160		6010
12	CC2	25	1350	500	4160		6010
12	Z1	29	1700	866	144		2710
12	S1	29	725	3950	240		4915
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6610				6610
12	ST4	8	6600				6600
12	L1	29	1450	144			1594
12	L2	29	3650	144			3794
22	L3	30	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3350 to 3950	144			Avg. 3794
12	L6	6	Var. 3350 to 3950	144			Avg. 3794
16	L7	24	Var. 5500 to 6550	192			Avg. 6217
16	L8	28	Var. 4025 to 5500	192			Avg. 4955
16	L9	22	4025	192			4217
22	L10	30	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	5025	240		5505
20	U2	30	240	4860	240		5340
20	U3	29	240	5025	240		5505
20	U4	30	240	4860	240		5340
16	U5	16	192	4104	192		4488
16	U7	16	192	4112	192		4496
12	U8	14	Var. 5500 to 6550	275	600		Avg. 6975
12	U9	16	Var. 4025 to 5500	275	600		Avg. 5638
12	U10	22	4025	275	625		4925
16	U12	12	192	4160	192		4544
12	CC1	10	1350	500	4160		6010
12	CC2	27	1350	500	4160		6010
12	Z1	29	1450	866	144		2460
12	S1	29	725	4200	240		5165
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6610				6610
12	ST4	8	6600				6600
12	L1	29	1350	144			1494
12	L2	29	3750	144			3894
22	L3	30	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3450 to 4050	144			Avg. 3894
12	L6	6	Var. 3450 to 4050	144			Avg. 3894
16	L7	22	Var. 5650 to 6550	192			Avg. 6333
16	L8	30	Var. 4025 to 5650	192			Avg. 5030
16	L9	22	4025	192			4217
22	L10	30	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	5025	240		5505
20	U2	30	240	4860	240		5340
20	U3	29	240	5025	240		5505
20	U4	30	240	4860	240		5340
16	U6	15	192	4104	192		4488
16	U7	16	192	4112	192		4496
12	U8	12	Var. 5650 to 6550	275	600		Avg. 7125
12	U9	16	Var. 4025 to 5650	275	600		Avg. 5713
12	U10	22	4025	275	625		4925
16	U12	12	192	4160	192		4544
12	CC1	10	1350	500	4160		6010
12	CC2	28	1350	500	4160		6010
12	Z1	29	1350	866	144		2360
12	S1	29	725	4300	240		5265
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000

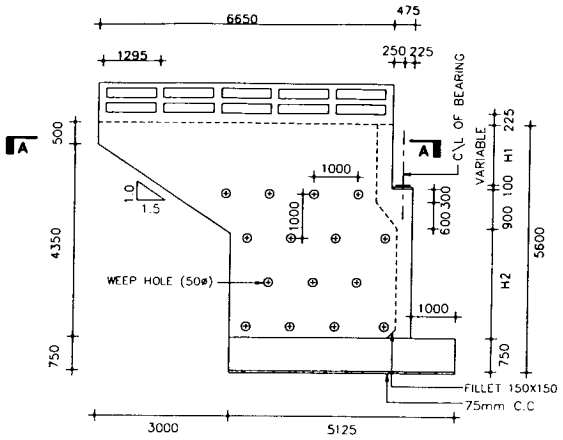
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 4.26m)

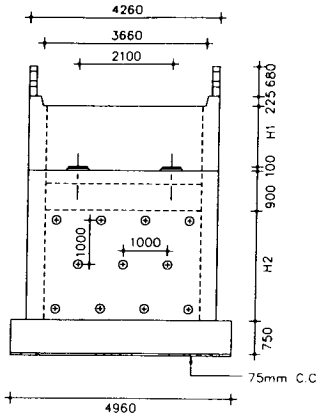
DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0220533	

Web Copy

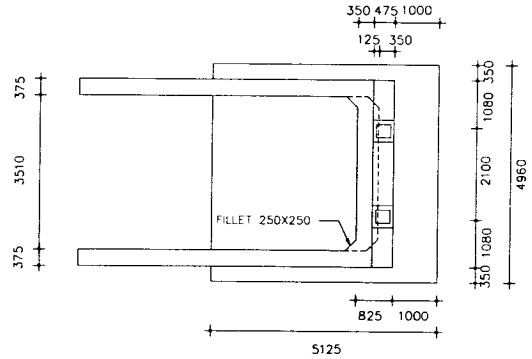
SHEET 1 OF 3	
SPAN RANGE : 12.5m TO 20m	
SIDE WALK : NO	



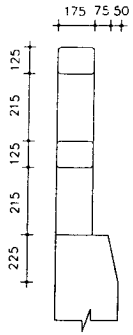
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



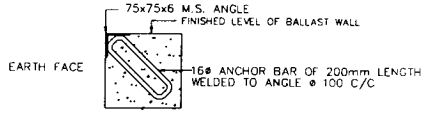
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

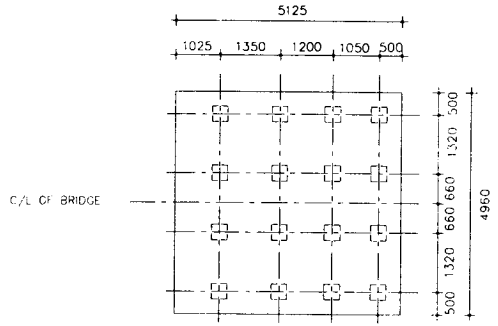
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	2350	330	185
19500	1500	2350	328	183
19000	1500	2350	326	181
18500	1500	2350	324	179
18000	1350	2500	318	175
17500	1350	2500	316	173
17000	1350	2500	314	171
16500	1350	2500	312	169
16000	1350	2500	310	167
15500	1350	2500	308	165
15000	1100	2750	302	161
14500	1100	2750	300	159
14000	1100	2750	298	157
13500	1100	2750	296	155
13000	1100	2750	294	153
12500	1000	2850	290	151

TABLE-2

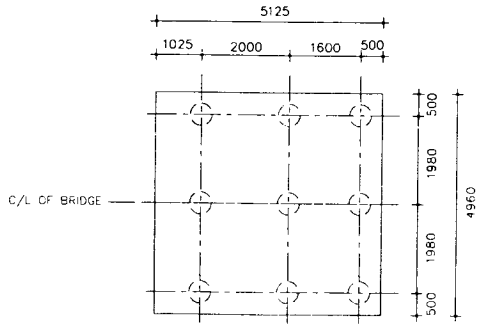
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - B



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

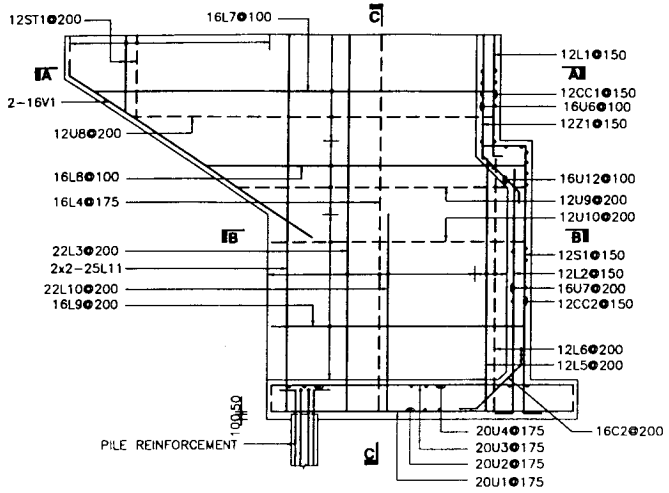
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.6m , DECK WIDTH 4.26m)

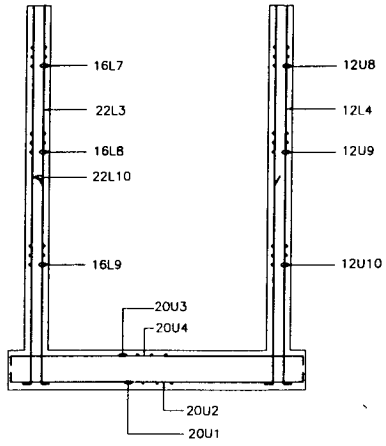
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220561	

Web Copy

SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.m
SIDE WALK : NO



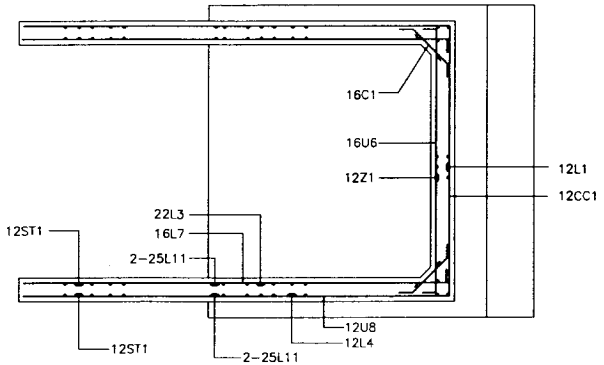
REINFORCEMENT DETAIL



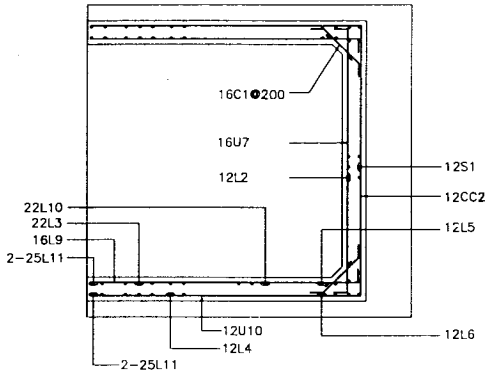
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

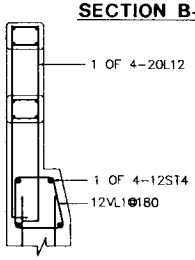
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6610				6610
12	ST4	8	6600				6600
12	L1	29	1850	144			1994
12	L2	29	3250	144			3394
22	L3	30	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 2950 to 3550	144			Avg. 3394
12	L6	6	Var. 2950 to 3550	144			Avg. 3394
16	L7	32	Var. 4900 to 6550	192			Avg. 5711
16	L8	20	Var. 4025 to 4900	192			Avg. 4655
16	L9	22	4025	192			4217
22	L10	30	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	5025	240		5505
20	U2	30	240	4860	240		5340
20	U3	29	240	5025	240		5505
20	U4	30	240	4860	240		5340
16	U6	20	192	4104	192		4488
16	U7	14	192	4112	192		4496
12	U8	18	Var. 4900 to 6550	275	600		Avg. 6508
12	U9	12	Var. 4025 to 4900	275	600		Avg. 5308
12	U10	22	4025	275	625		4925
16	U12	12	192	4160	192		4544
12	CC1	13	1350	500	4160		6010
12	CC2	24	1350	500	4160		6010
12	Z1	29	1850	866	144		2860
12	S1	29	725	3800	240		4765
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000



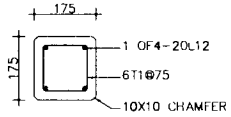
SECTION A-A



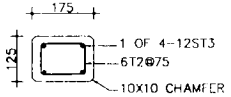
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 5.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/RD220562

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FA-267

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20.m
SIDE WALK : NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6610				6610
12	ST4	8	6800				6800
12	L1	29	1700	144			1844
12	L2	29	3400	144			3544
22	L3	30	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3100 to 3700	144			Avg. 3544
12	L6	6	Var. 3100 to 3700	144			Avg. 3544
16	L7	30	Var. 5125 to 6550	192			Avg. 5887
16	L8	24	Var. 4025 to 5125	192			Avg. 4767
16	L9	22	4025	192			4217
22	L10	30	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	5025	240		5505
20	U2	30	240	4860	240		5340
20	U3	29	240	5025	240		5505
20	U4	30	240	4860	240		5340
16	U5	18	192	4104	192		4488
16	U7	14	192	4112	192		4496
12	U8	16	Var. 5125 to 6550	275	600		Avg. 6713
12	U9	14	Var. 4025 to 5125	275	600		Avg. 5450
12	U10	22	4025	275	625		4925
16	U12	12	192	4160	192		4544
12	CC1	12	1350	500	4160		6010
12	CC2	25	1360	500	4160		6010
12	Z1	29	1700	866	144		2710
12	S1	29	725	3950	240		4915
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6610				6610
12	ST4	8	6800				6800
12	L1	29	1450	144			1594
12	L2	29	3650	144			3794
22	L3	30	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3350 to 3950	144			Avg. 3794
12	L6	6	Var. 3350 to 3950	144			Avg. 3794
16	L7	24	Var. 5500 to 6550	192			Avg. 6217
16	L8	28	Var. 4025 to 5500	192			Avg. 4955
16	L9	22	4025	192			4217
22	L10	30	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	5025	240		5505
20	U2	30	240	4860	240		5340
20	U3	29	240	5025	240		5505
20	U4	30	240	4860	240		5340
16	U6	16	192	4104	192		4488
16	U7	16	192	4112	192		4496
12	U8	14	Var. 5500 to 6550	275	600		Avg. 6975
12	U9	16	Var. 4025 to 5500	275	600		Avg. 5638
12	U10	22	4025	275	625		4925
16	U12	12	192	4160	192		4544
12	CC1	10	1350	500	4160		6010
12	CC2	27	1350	500	4160		6010
12	Z1	29	1450	866	144		2460
12	S1	29	725	4200	240		5165
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6610				6610
12	ST4	8	6800				6800
12	L1	29	1350	144			1494
12	L2	29	3750	144			3894
22	L3	30	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3450 to 4050	144			Avg. 3894
12	L6	6	Var. 3450 to 4050	144			Avg. 3894
16	L7	22	Var. 5650 to 6550	192			Avg. 6333
16	L8	30	Var. 4025 to 5650	192			Avg. 5030
16	L9	22	4025	192			4217
22	L10	30	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	971	120			1091
20	U1	29	240	5025	240		5505
20	U2	30	240	4860	240		5340
20	U3	29	240	5025	240		5505
20	U4	30	240	4860	240		5340
16	U6	15	192	4104	192		4488
16	U7	16	192	4112	192		4496
12	U8	12	Var. 5650 to 6550	275	600		Avg. 7125
12	U9	16	Var. 4025 to 5650	275	600		Avg. 5713
12	U10	22	4025	275	625		4925
16	U12	12	192	4160	192		4544
12	CC1	10	1350	500	4160		6010
12	CC2	28	1350	500	4160		6010
12	Z1	29	1350	866	144		2360
12	S1	29	725	4300	240		5265
16	C1	52	320	1099	320		1739
16	C2	22	320	1346	320		1986
16	V1	4	250	4656			4906
6	T1	120	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

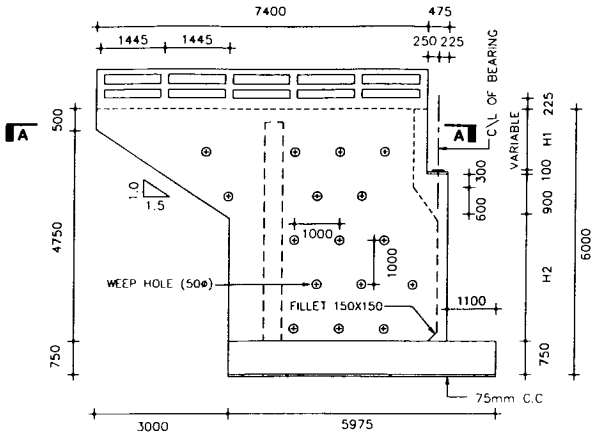
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220563

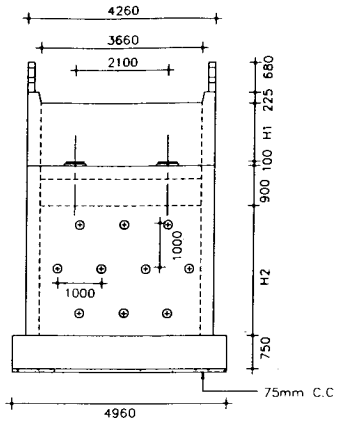
Web Copy

FA-268

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



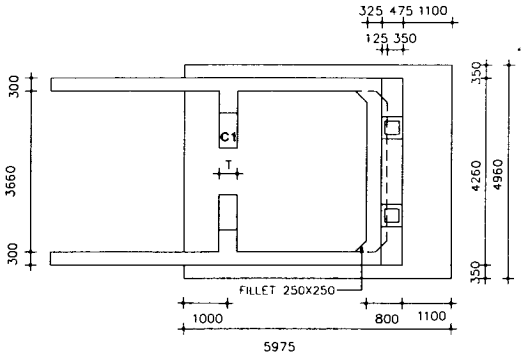
SIDE ELEVATION



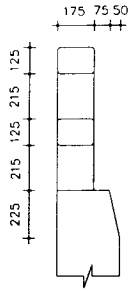
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	2750	290	175
19500	1500	2750	288	173
19000	1500	2750	286	171
18500	1500	2750	284	169
18000	1350	2900	280	165
17500	1350	2900	278	163
17000	1350	2900	276	161
16500	1350	2900	274	159
16000	1350	2900	272	157
15500	1350	2900	270	155
15000	1100	3150	264	151
14500	1100	3150	262	149
14000	1100	3150	260	147
13500	1100	3150	258	145
13000	1100	3150	256	143
12500	1000	3250	252	141



SECTION A-A



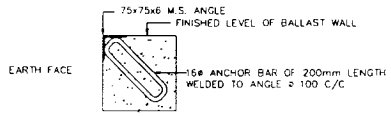
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

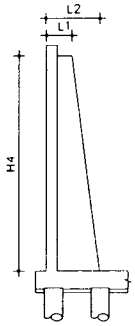
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	50	CAST IN SITU
TYPE – B	350x350	30	PRECAST

TABLE-3

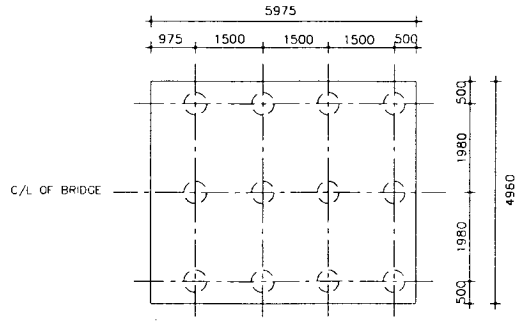
L1	1600	T	H4
700	1600	400	4950



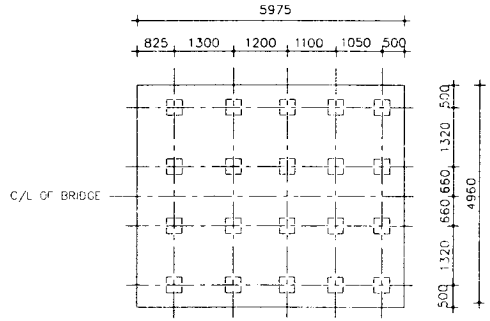
NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

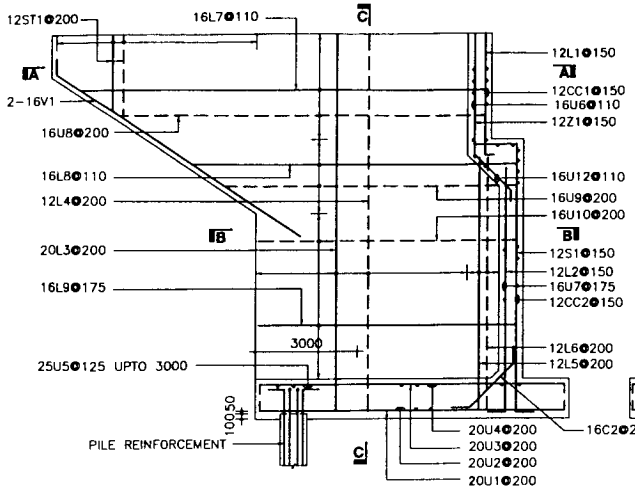
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.0m , DECK WIDTH 4.26m)

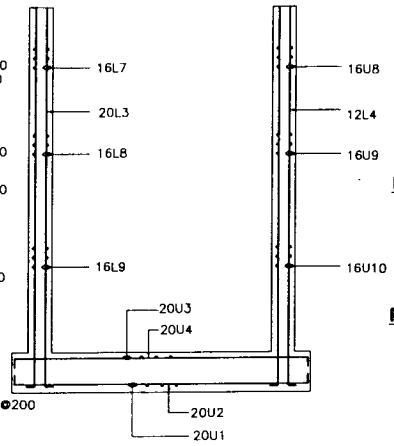
DATE :
ISSUED BY:
DRG NO : ABU1\R022060

Web Copy

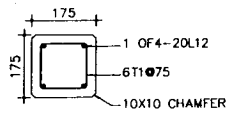
SHEET 2 OF 3
SPAN RANGE :12.5m TO 20m
SIDE WALK: NO



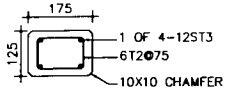
REINFORCEMENT DETAIL



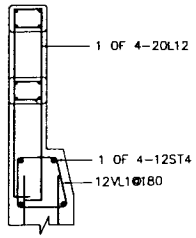
SECTION C-C



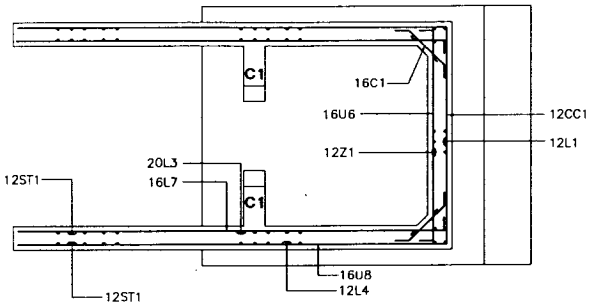
REINF. DETAIL OF POST



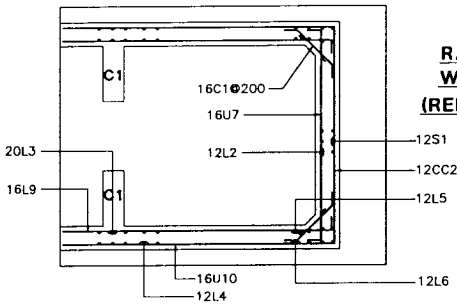
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



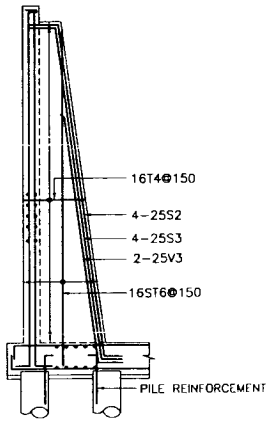
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	1850	144			1994
12	L2	29	3650	144			3794
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3350 to 3950	144			Avg. 3794
12	L6	6	Var. 3350 to 3950	144			Avg. 3794
16	L7	30	Var. 5650 to 7300	192			Avg. 6502
16	L8	20	Var. 4775 to 5650	192			Avg. 5405
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5875	240		6355
20	U2	31	240	4860	240		5340
20	U3	26	240	5875	240		6355
20	U4	16	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	18	192	4104	192		4488
16	U7	18	192	4104	192		4488
16	U8	18	Var. 5650 to 7300	200	575		Avg. 7158
16	U9	12	Var. 4775 to 5650	200	600		Avg. 6013
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	13	1200	450	4160		5810
12	CC2	27	1200	500	4160		5860
12	Z1	29	1850	850	144		2844
12	S1	29	700	4200	240		5140
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5360	600		6260
25	S3	8	325	5360	575		6260
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220602	

Web Copy

SHEET 3 OF 3
SPAN RANGE :12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	1700	144			1844
12	L2	29	3800	144			3944
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3500 to 4100	144			Avg. 3944
12	L6	6	Var. 3500 to 4100	144			Avg. 3944
16	L7	28	Var. 5875 to 7300	192			Avg. 6678
16	L8	22	Var. 4775 to 5875	192			Avg. 5517
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5875	240		6355
20	U2	31	240	4860	240		5340
20	U3	26	240	5875	240		6355
20	U4	16	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	17	192	4104	192		4488
16	U7	19	192	4104	192		4488
16	U8	16	Var. 5875 to 7300	200	575		Avg. 7363
16	U9	14	Var. 4775 to 5875	200	600		Avg. 6125
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	12	1200	450	4160		5810
12	CC2	28	1200	500	4160		5860
12	Z1	29	1700	850	144		2694
12	S1	29	700	4350	240		5290
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5360	600		6260
25	S3	8	325	5360	575		6260
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	1450	144			1594
12	L2	29	4050	144			4194
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3750 to 4350	144			Avg. 4194
12	L6	6	Var. 3750 to 4350	144			Avg. 4194
16	L7	24	Var. 6250 to 7300	192			Avg. 6967
16	L8	26	Var. 4775 to 6250	192			Avg. 5705
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5875	240		6355
20	U2	31	240	4860	240		5340
20	U3	26	240	5875	240		6355
20	U4	16	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	20	192	4104	192		4488
16	U8	14	Var. 6250 to 7300	200	575		Avg. 7625
16	U9	16	Var. 4775 to 6250	200	600		Avg. 6313
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	30	1200	500	4160		5860
12	Z1	29	1450	850	144		2444
12	S1	29	700	4600	240		5540
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5360	600		6260
25	S3	8	325	5360	575		6260
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7360				7360
12	ST4	8	7350				7350
12	L1	29	1350	144			1494
12	L2	29	4150	144			4294
20	L3	42	5800	240			6040
12	L4	42	5800	144			5944
12	L5	6	Var. 3850 to 4450	144			Avg. 4294
12	L6	6	Var. 3850 to 4450	144			Avg. 4294
16	L7	22	Var. 6400 to 7300	192			Avg. 7083
16	L8	28	Var. 4775 to 6400	192			Avg. 5780
16	L9	30	4775	192			4967
20	L12	48	971	120			1091
20	U1	26	240	5875	240		6355
20	U2	31	240	4860	240		5340
20	U3	26	240	5875	240		6355
20	U4	16	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	21	192	4104	192		4488
16	U8	12	Var. 6400 to 7300	200	575		Avg. 7775
16	U9	16	Var. 4775 to 6400	200	600		Avg. 6388
16	U10	26	4775	200	550		5525
16	U12	11	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	30	1200	500	4160		5860
12	Z1	29	1350	850	144		2344
12	S1	29	700	4700	240		5640
16	C1	56	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4731			4981
6	T1	120	306	306			612
6	T2	360	206	306			512
12	VL1	86	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5360	600		6260
25	S3	8	325	5360	575		6260
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

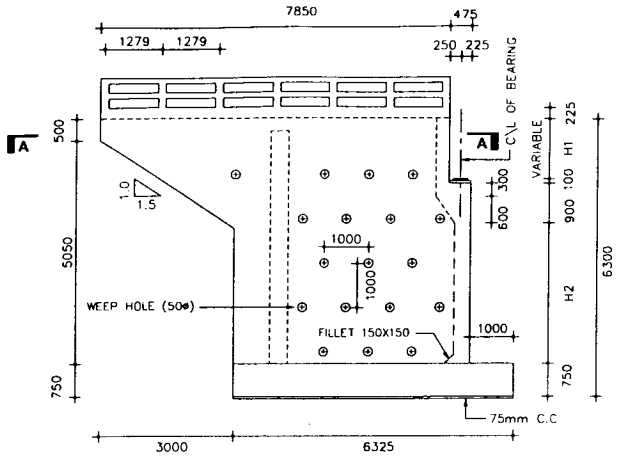
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220603	

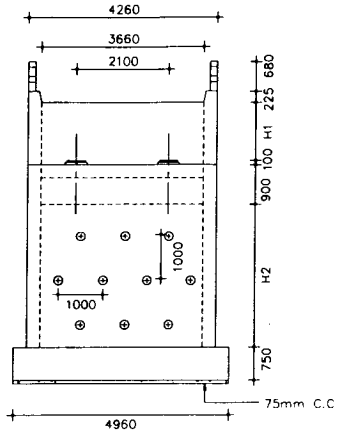
Web Copy

FA-271

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



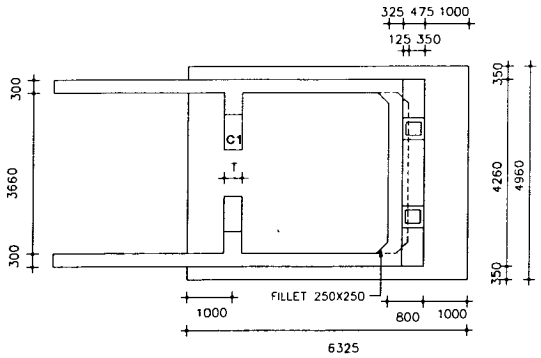
SIDE ELEVATION



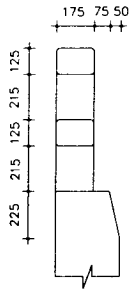
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	3050	320	NOT APPLICABLE
19500	1500	3050	318	
19000	1500	3050	316	
18500	1500	3050	314	
18000	1350	3200	310	
17500	1350	3200	308	
17000	1350	3200	306	
16500	1350	3200	304	
16000	1350	3200	302	
15500	1350	3200	300	
15000	1100	3450	294	
14500	1100	3450	292	
14000	1100	3450	290	
13500	1100	3450	288	
13000	1100	3450	286	
12500	1000	3550	282	



SECTION A-A



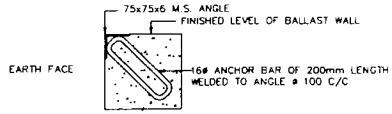
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

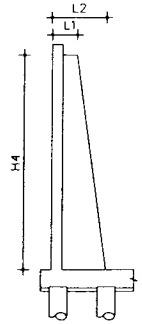
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

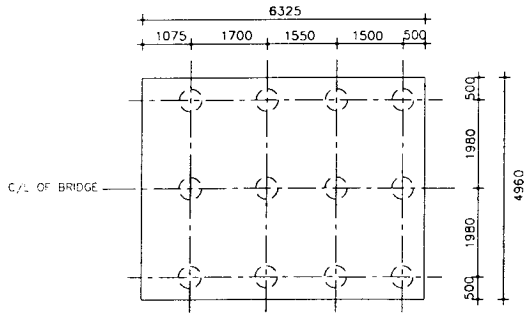
L1	L2	T	H4
700	1600	400	5250



NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metariol shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

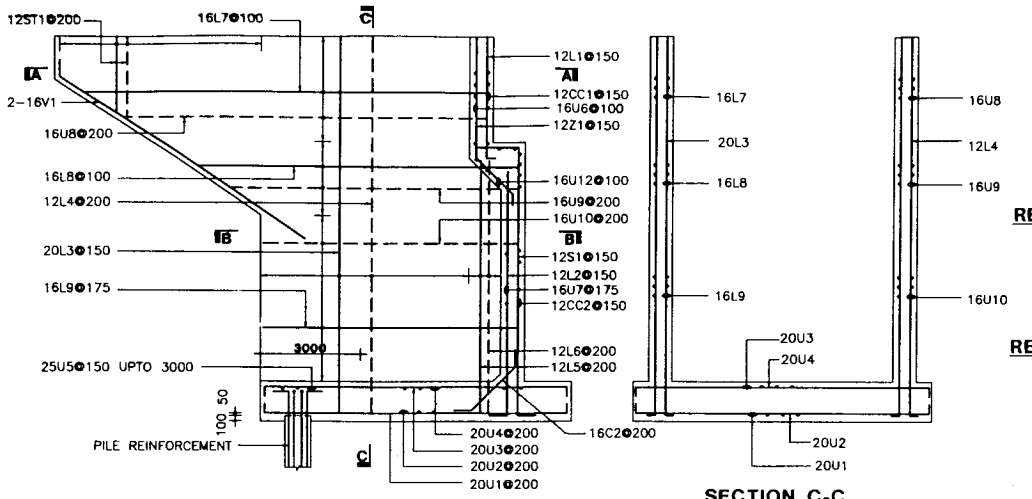
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY:
DRG. NO : ABUT\R02206.31

Web Copy

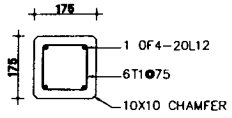
FA-272

SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

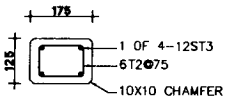


REINFORCEMENT DETAIL

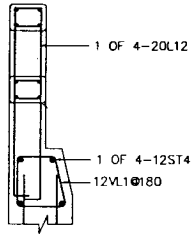
SECTION C-C



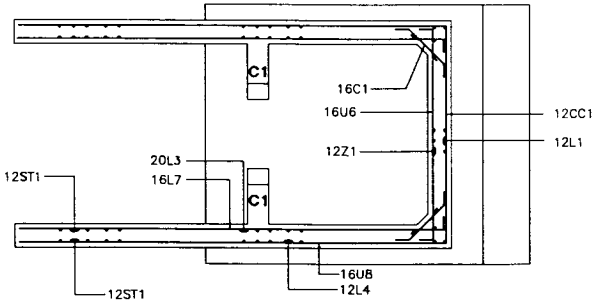
REINF. DETAIL OF POST



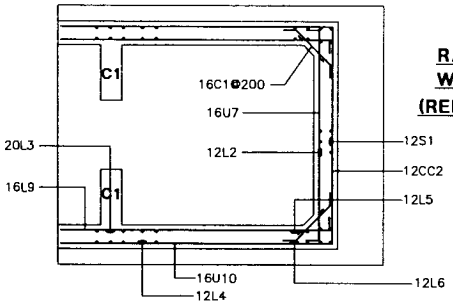
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



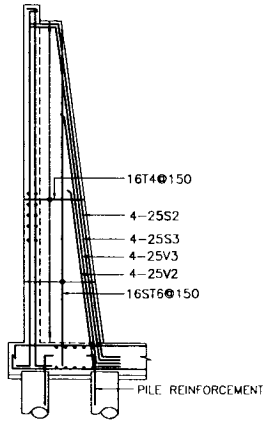
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	29	1850	144			1994
12	L2	29	3950	144			4094
20	L3	62	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 3650 to 4250	144			Avg. 4094
12	L6	6	Var. 3650 to 4250	144			Avg. 4094
16	L7	32	Var. 6100 to 7750	192			Avg. 6911
16	L8	20	Var. 5225 to 6100	192			Avg. 5855
16	L9	34	5225	192			5417
20	L12	56	971	120			1091
20	U1	26	240	6225	240		6705
20	U2	33	240	4860	240		5340
20	U3	26	240	6225	240		6705
20	U4	18	240	4860	240		5340
25	U5	21	300	4860	300		5460
16	U6	20	192	4104	192		4488
16	U7	20	192	4104	192		4488
16	U8	18	Var. 6100 to 7750	200	575		Avg. 7608
16	U9	12	Var. 5225 to 6100	200	600		Avg. 6463
16	U10	30	5225	200	550		5975
16	U12	12	192	4160	192		4544
12	CC1	13	1200	450	4160		5810
12	CC2	29	1200	500	4160		5860
12	Z1	29	1850	850	144		2844
12	S1	29	700	4500	240		5440
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5657	600		6557
25	S3	8	325	5657	575		6557
25	V3	8	350	3730			4080
25	V2	8	375	2932			3307
16	ST6	22	Var. 960 to 6060				Avg. 2815



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 doys cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220632

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	29	1700	144			1844
12	L2	29	4100	144			4244
20	L3	62	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 3800 to 4400	144			Avg. 4244
12	L6	6	Var. 3800 to 4400	144			Avg. 4244
16	L7	30	Var. 6325 to 7750	192			Avg. 7087
16	L8	24	Var. 5225 to 6325	192			Avg. 5967
16	L9	34	5225	192			5417
20	L12	56	971	120			1091
20	U1	26	240	6225	240		6705
20	U2	33	240	4860	240		5340
20	U3	26	240	6225	240		6705
20	U4	18	240	4860	240		5340
25	U5	21	300	4860	300		5460
16	U6	18	192	4104	192		4488
16	U7	20	192	4104	192		4488
16	U8	16	Var. 6325 to 7750	200	575		Avg. 7813
16	U9	14	Var. 5225 to 6325	200	600		Avg. 6575
16	U10	30	5225	200	550		5975
16	U12	12	192	4160	192		4544
12	CC1	12	1200	450	4160		5810
12	CC2	30	1200	500	4160		5860
12	Z1	29	1700	850	144		2694
12	S1	29	700	4650	240		5590
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5657	600		6557
25	S3	8	325	5657	575		6557
25	V3	8	350	3730			4080
25	V2	8	375	2932			3307
16	ST6	22	Var. 960 to 6060				Avg. 2815

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	29	1450	144			1594
12	L2	29	4350	144			4494
20	L3	62	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4050 to 4650	144			Avg. 4494
12	L6	6	Var. 4050 to 4650	144			Avg. 4494
16	L7	24	Var. 6700 to 7750	192			Avg. 7417
16	L8	28	Var. 5225 to 6700	192			Avg. 6155
16	L9	34	5225	192			5417
20	L12	56	971	120			1091
20	U1	26	240	6225	240		6705
20	U2	33	240	4860	240		5340
20	U3	26	240	6225	240		6705
20	U4	18	240	4860	240		5340
25	U5	21	300	4860	300		5460
16	U6	16	192	4104	192		4488
16	U7	22	192	4104	192		4488
16	U8	14	Var. 6700 to 7750	200	575		Avg. 8075
16	U9	16	Var. 5225 to 6700	200	600		Avg. 6763
16	U10	30	5225	200	550		5975
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	32	1200	500	4160		5860
12	Z1	29	1450	850	144		2444
12	S1	29	700	4900	240		5840
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5657	600		6557
25	S3	8	325	5657	575		6557
25	V3	8	350	3730			4080
25	V2	8	375	2932			3307
16	ST6	22	Var. 960 to 6060				Avg. 2815

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	29	1350	144			1494
12	L2	29	4450	144			4594
20	L3	62	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4150 to 4750	144			Avg. 4594
12	L6	6	Var. 4150 to 4750	144			Avg. 4594
16	L7	22	Var. 6850 to 7750	192			Avg. 7533
16	L8	30	Var. 5225 to 6850	192			Avg. 6230
16	L9	34	5225	192			5417
20	L12	56	971	120			1091
20	U1	26	240	6225	240		6705
20	U2	33	240	4860	240		5340
20	U3	26	240	6225	240		6705
20	U4	18	240	4860	240		5340
25	U5	21	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	22	192	4104	192		4488
16	U8	12	Var. 6850 to 7750	200	575		Avg. 8225
16	U9	16	Var. 5225 to 6850	200	600		Avg. 6838
16	U10	30	5225	200	550		5975
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	32	1200	500	4160		5860
12	Z1	29	1350	850	144		2344
12	S1	29	700	5000	240		5940
16	C1	58	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4787			5037
6	T1	140	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	72	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5657	600		6557
25	S3	8	325	5657	575		6557
25	V3	8	350	3730			4080
25	V2	8	375	2932			3307
16	ST6	22	Var. 960 to 6060				Avg. 2815

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R0220633

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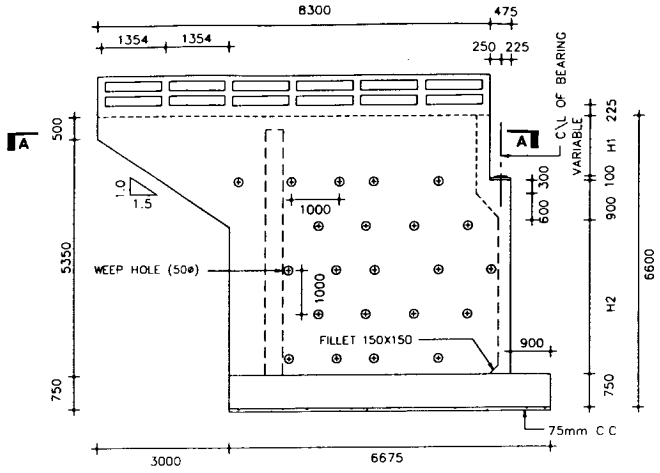
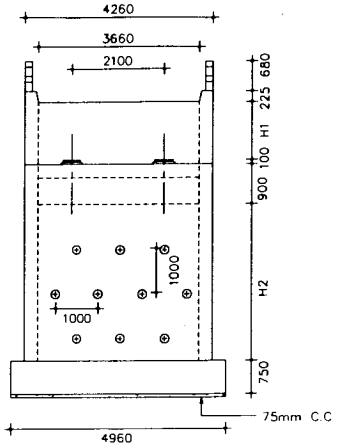
FA-274

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



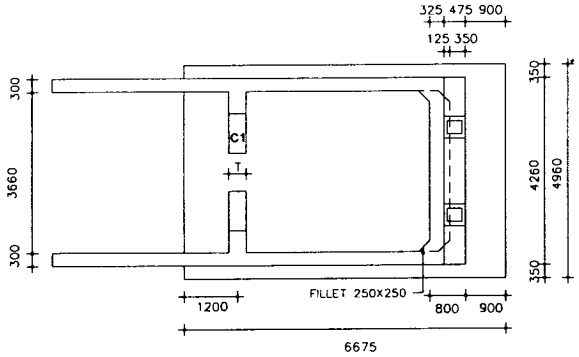
SIDE ELEVATION



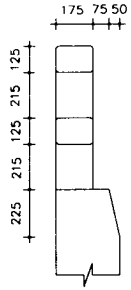
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	3350	350	NOT APPLICABLE
19500	1500	3350	348	
19000	1500	3350	346	
18500	1500	3350	344	
18000	1350	3500	340	
17500	1350	3500	338	
17000	1350	3500	336	
16500	1350	3500	334	
16000	1350	3500	332	
15500	1350	3500	330	
15000	1100	3750	324	
14500	1100	3750	322	
14000	1100	3750	320	
13500	1100	3750	318	
13000	1100	3750	316	
12500	1000	3850	312	



SECTION A-A



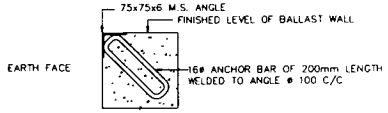
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

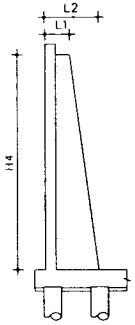
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

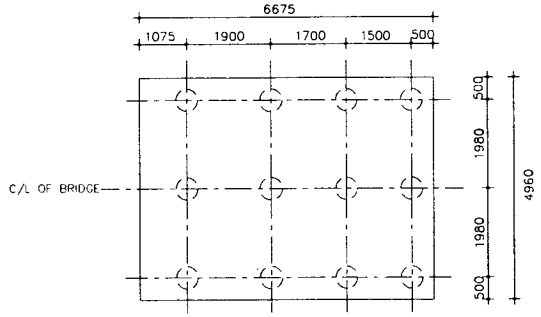
L1	L2	T	H4
700	1700	400	5550



NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metorial shall be provided as per specification.

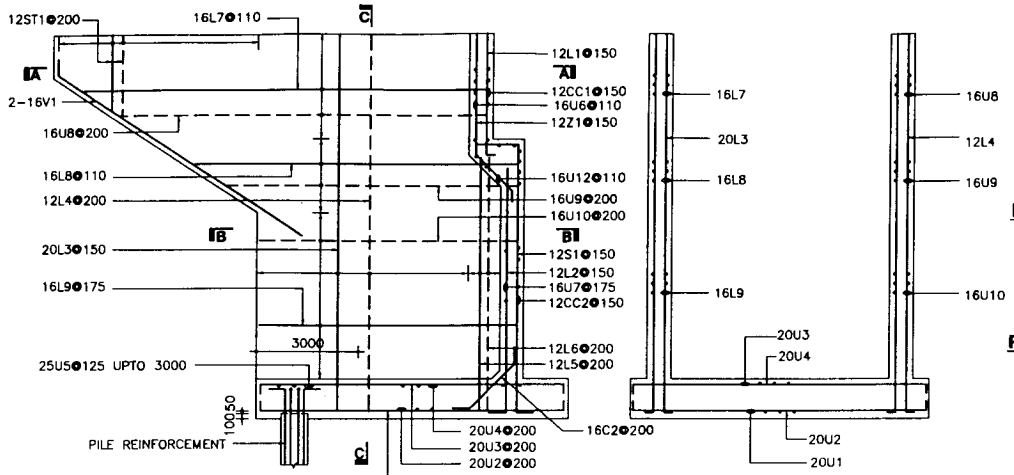
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 6.6m , DECK WIDTH 4.26m)

DATE :
ISSUED BY:
DRG. NO : ABUT\R0220661

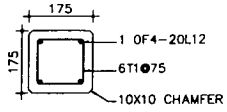
Web Copy
FA-275

SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

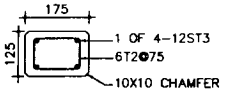


REINFORCEMENT DETAIL

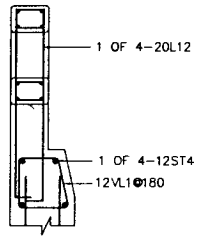
SECTION C-C



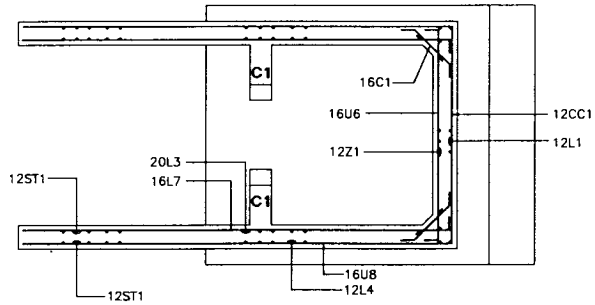
REINF. DETAIL OF POST



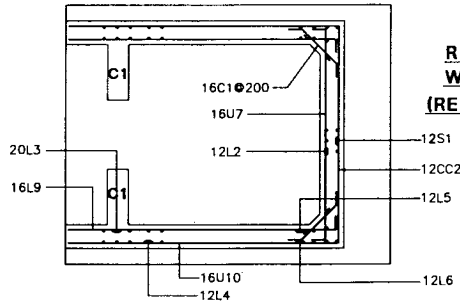
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



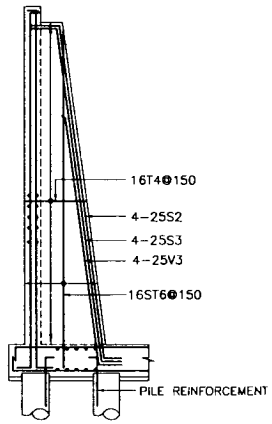
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	21	1850	144			1994
12	L2	21	4250	144			4394
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 3950 to 4550	144			Avg. 4394
12	L6	6	Var. 3950 to 4550	144			Avg. 4394
16	L7	26	Var. 6550 to 8200	192			Avg. 7377
16	L8	18	Var. 5675 to 6550	192			Avg. 6305
16	L9	32	5675	192			5867
20	L12	56	971	120			1091
20	U1	20	240	6475	240		6955
20	U2	34	240	3640	240		4120
20	U3	20	240	6475	240		6955
20	U4	18	240	3640	240		4120
25	U5	31	300	3640	300		4240
16	U6	16	192	2884	192		3268
16	U7	19	192	2884	192		3268
16	U8	18	Var. 6550 to 8200	200	550		Avg. 8033
16	U9	12	Var. 5675 to 6550	200	600		Avg. 6913
16	U10	32	5675	200	550		6425
16	U12	10	192	2940	192		3324
12	CC1	13	1200	400	2940		4540
12	CC2	31	1200	500	2940		4640
12	Z1	21	1850	836	144		2830
12	S1	21	675	4800	240		5715
16	C1	62	320	993	320		1633
16	C2	16	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	74	Var. 1296 to 2696	896			Avg. 2892
25	S2	10	300	5954	600		6854
25	S3	10	325	5954	575		6854
25	V2	6	375	3078			3453
25	V3	10	350	3927			4277
16	ST6	20	Var. 1299 to 6360				Avg. 3323



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 6.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220662	

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SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	1700	144			1844
12	L2	29	4400	144			4544
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4100 to 4700	144			Avg. 4544
12	L6	6	Var. 4100 to 4700	144			Avg. 4544
16	L7	28	Var. 6775 to 8200	192			Avg. 7578
16	L8	22	Var. 5675 to 6775	192			Avg. 6417
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6575	240		7055
20	U2	34	240	4860	240		5340
20	U3	26	240	6575	240		7055
20	U4	19	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	17	192	4104	192		4488
16	U7	22	192	4104	192		4488
16	U8	16	Var. 6775 to 8200	200	575		Avg. 8263
16	U9	14	Var. 5675 to 6775	200	600		Avg. 7025
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	12	1200	450	4160		5810
12	CC2	32	1200	500	4160		5860
12	Z1	29	1700	850	144		2694
12	S1	29	700	4950	240		5890
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	94	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	1450	144			1594
12	L2	29	4650	144			4794
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4350 to 4950	144			Avg. 4794
12	L6	6	Var. 4350 to 4950	144			Avg. 4794
16	L7	24	Var. 7150 to 8200	192			Avg. 7867
16	L8	26	Var. 5675 to 7150	192			Avg. 6605
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6575	240		7055
20	U2	34	240	4860	240		5340
20	U3	26	240	6575	240		7055
20	U4	19	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	24	192	4104	192		4488
16	U8	14	Var. 7150 to 8200	200	575		Avg. 8525
16	U9	16	Var. 5675 to 7150	200	600		Avg. 7213
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	34	1200	500	4160		5860
12	Z1	29	1450	850	144		2444
12	S1	29	700	5200	240		6140
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	94	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	29	1350	144			1494
12	L2	29	4750	144			4894
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4450 to 5050	144			Avg. 4894
12	L6	6	Var. 4450 to 5050	144			Avg. 4894
16	L7	22	Var. 7300 to 8200	192			Avg. 7983
16	L8	28	Var. 5675 to 7300	192			Avg. 6680
16	L9	38	5675	192			5867
20	L12	56	971	120			1091
20	U1	26	240	6575	240		7055
20	U2	34	240	4860	240		5340
20	U3	26	240	6575	240		7055
20	U4	19	240	4860	240		5340
25	U5	25	300	4860	300		5460
16	U6	14	192	4104	192		4488
16	U7	24	192	4104	192		4488
16	U8	12	Var. 7300 to 8200	200	575		Avg. 8675
16	U9	16	Var. 5675 to 7300	200	600		Avg. 7288
16	U10	32	5675	200	550		6425
16	U12	11	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	34	1200	500	4160		5860
12	Z1	29	1350	850	144		2344
12	S1	29	700	5300	240		6240
16	C1	62	320	993	320		1633
16	C2	22	320	1346	320		1986
16	V1	4	250	4844			5094
6	T1	140	306	306			612
6	T2	408	206	306			512
12	VL1	94	272	200	250	278	1000
16	T4	74	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	6004	600		6904
25	S3	8	325	6004	575		6904
25	V3	8	350	3927			4277
16	ST6	24	Var. 909 to 6360				Avg. 2726

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

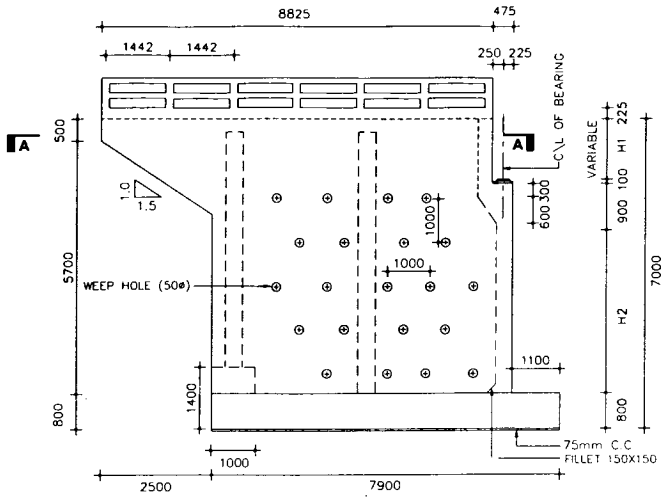
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220663	

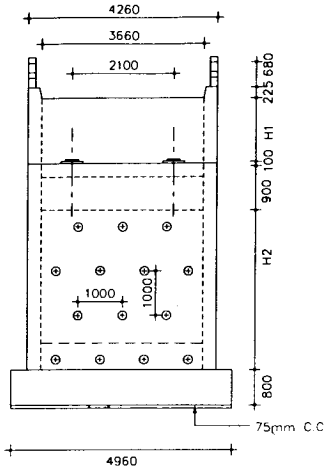
Web Copy

FA-277

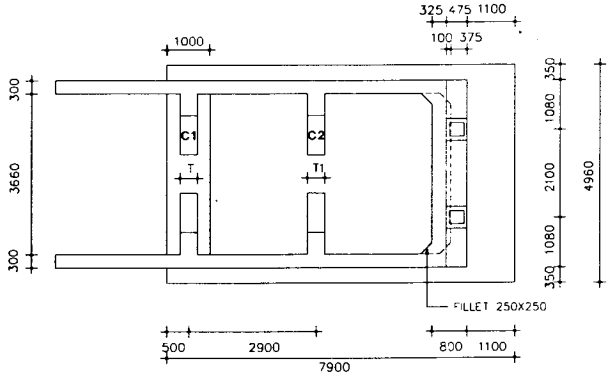
SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDEWALK : NO



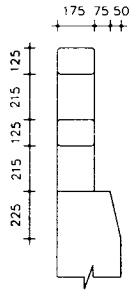
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

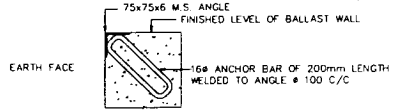
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	REACTION (TYPE-B)
20000	1500	3700	335	NOT APPLICABLE
19500	1500	3700	333	
19000	1500	3700	331	
18500	1500	3700	329	
18000	1350	3850	325	
17500	1350	3850	323	
17000	1350	3850	321	
16500	1350	3850	319	
16000	1350	3850	317	
15500	1350	3850	315	
15000	1100	4100	311	
14500	1100	4100	309	
14000	1100	4100	307	
13500	1100	4100	305	
13000	1100	4100	303	
12500	1000	4200	301	

TABLE-2

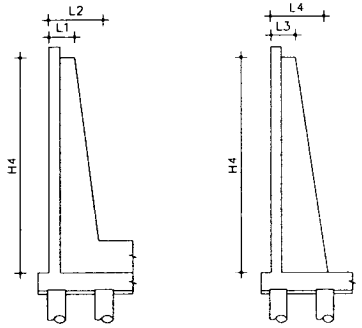
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

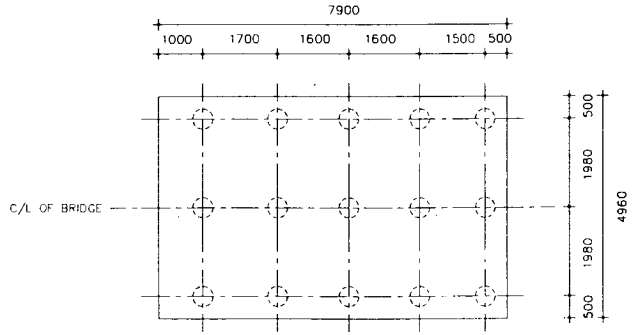
L1	L2	L3	L4	H4	T	T1
700	1690	700	1700	5900	400	400



NOSING AT ABUTMENT



COUNTERFORT C1 COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

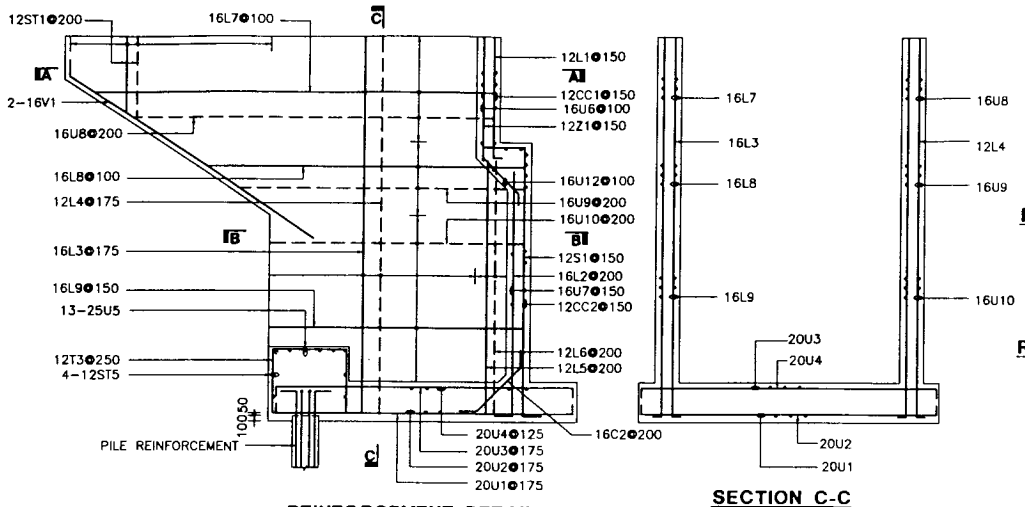
1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.0m , DECK WIDTH 4.26m)

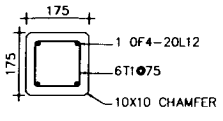
DATE :	ISSUED BY:
DRG NO : ABUT\R0220701	

Web Copy

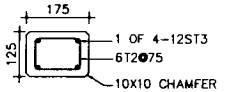


REINFORCEMENT DETAIL

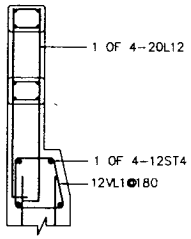
SECTION C-C



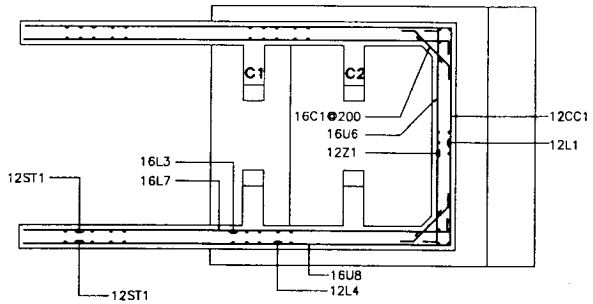
REINF. DETAIL OF POST



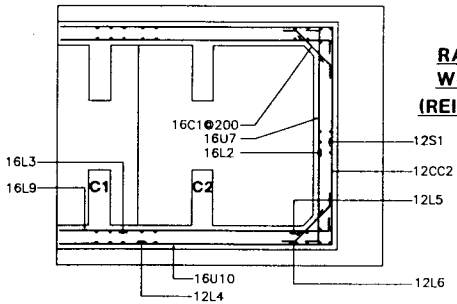
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



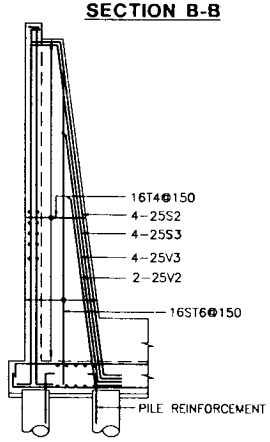
SECTION A-A



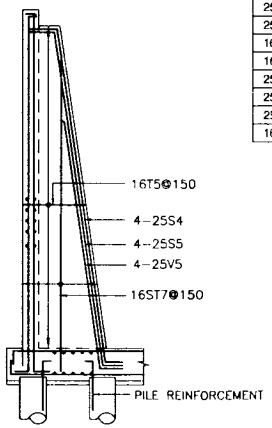
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	1850	144			1994
16	L2	22	4650	192			4842
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 4350 to 4950	144			Avg. 4794
12	L6	6	Var. 4350 to 4950	144			Avg. 4794
16	L7	32	Var. 7075 to 8725	192			Avg. 7886
16	L8	14	Var. 6700 to 7075	192			Avg. 7080
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7800	240		8280
20	U2	46	240	4860	240		5340
20	U3	29	240	7800	240		8280
20	U4	56	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	20	192	4104	192		4488
16	U7	27	192	4104	192		4488
16	U8	18	Var. 7075 to 8725	200	575		Avg. 8583
16	U9	8	Var. 6700 to 7075	200	625		Avg. 7713
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	13	1200	450	4160		5810
12	CC2	33	1200	550	4160		5910
12	Z1	29	1850	836	144		2830
12	S1	29	700	5200	240		6140
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
25	V3	8	350	4173			4523
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 4.26m)

DATE :

ISSUED BY :

CAD FILE REF : ABUT/R0220702

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	1700	144			1844
16	L2	22	4800	192			4992
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 4500 to 5100	144			Avg. 4944
12	L6	6	Var. 4500 to 5100	144			Avg. 4944
16	L7	30	Var. 7300 to 8725	192			Avg. 8062
16	L8	18	Var. 6700 to 7300	192			Avg. 7192
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7800	240		8280
20	U2	46	240	4860	240		5340
20	U3	29	240	7800	240		8280
20	U4	56	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	18	192	4104	192		4488
16	U7	28	192	4104	192		4488
16	U8	16	Var. 7300 to 8725	200	575		Avg. 8788
16	U9	10	Var. 6700 to 7300	200	625		Avg. 7825
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	12	1200	450	4160		5810
12	CC2	34	1200	550	4160		5910
12	Z1	29	1700	836	144		2680
12	S1	29	700	5350	240		6290
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
25	V3	8	350	4173			4523
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	1450	144			1594
16	L2	22	5050	192			5242
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 4750 to 5350	144			Avg. 5194
12	L6	6	Var. 4750 to 5350	144			Avg. 5194
16	L7	24	Var. 7675 to 8725	192			Avg. 8392
16	L8	22	Var. 6700 to 7675	192			Avg. 7380
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7800	240		8280
20	U2	46	240	4860	240		5340
20	U3	29	240	7800	240		8280
20	U4	56	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	16	192	4104	192		4488
16	U7	30	192	4104	192		4488
16	U8	14	Var. 7675 to 8725	200	575		Avg. 9050
16	U9	12	Var. 6700 to 7675	200	625		Avg. 8013
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	36	1200	550	4160		5910
12	Z1	29	1450	836	144		2430
12	S1	29	700	5600	240		6540
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
25	V3	8	350	4173			4523
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	8785				8785
12	ST4	8	8775				8775
12	L1	29	1350	144			1494
16	L2	22	5150	192			5342
16	L3	70	6800	192			6992
12	L4	70	6800	144			6944
12	L5	6	Var. 4850 to 5450	144			Avg. 5294
12	L6	6	Var. 4850 to 5450	144			Avg. 5294
16	L7	22	Var. 7825 to 8725	192			Avg. 8508
16	L8	24	Var. 6700 to 7825	192			Avg. 7455
16	L9	52	6700	192			6892
20	L12	56	971	120			1091
20	U1	29	240	7800	240		8280
20	U2	46	240	4860	240		5340
20	U3	29	240	7800	240		8280
20	U4	56	240	4860	240		5340
25	U5	13	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	30	192	4104	192		4488
16	U8	12	Var. 7825 to 8725	200	575		Avg. 9200
16	U9	14	Var. 6700 to 7825	200	625		Avg. 8088
16	U10	40	6700	200	550		7450
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	37	1200	550	4160		5910
12	Z1	29	1350	836	144		2330
12	S1	29	700	5700	240		6640
16	C1	64	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4318			4568
6	T1	140	306	306			612
6	T2	432	206	306			512
12	VL1	102	272	200	250	278	1000
12	T3	16	1872	2472			4344
12	ST5	4	4160				4160
16	T4	82	Var. 1296 to 3276	696			Avg. 2982
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3265			3640
25	V3	8	350	4173			4523
16	ST6	24	Var. 981 to 6760				Avg. 2907
16	T5	82	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4173			4523
16	ST7	24	Var. 969 to 6760				Avg. 2899

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

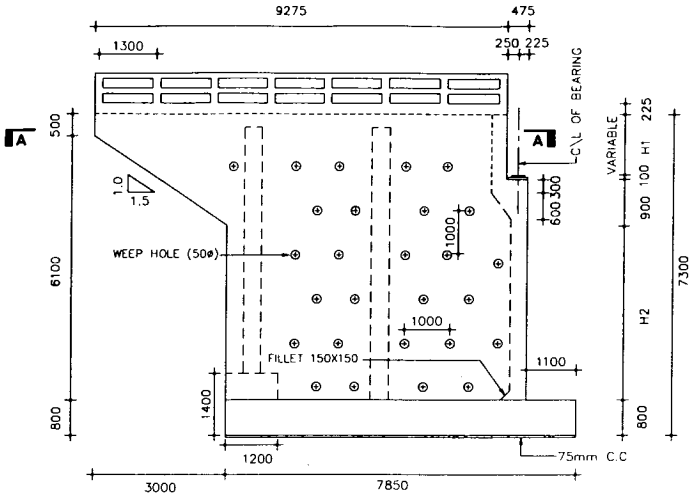
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0220703	

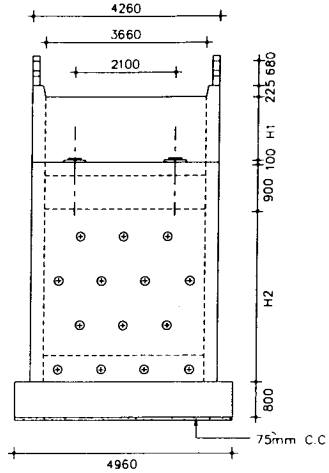
Web Copy

FA-280

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDEWALK : NO



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

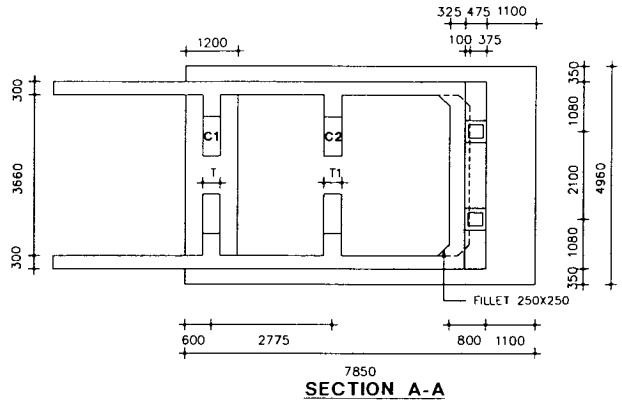
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	4000	345	NOT APPLICABLE
19500	1500	4000	343	
19000	1500	4000	341	
18500	1500	4000	339	
18000	1350	4150	335	
17500	1350	4150	333	
17000	1350	4150	331	
16500	1350	4150	329	
16000	1350	4150	327	
15500	1350	4150	325	
15000	1100	4400	321	
14500	1100	4400	319	
14000	1100	4400	317	
13500	1100	4400	315	
13000	1100	4400	313	
12500	1000	4500	311	

TABLE-2

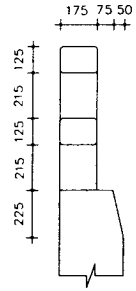
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

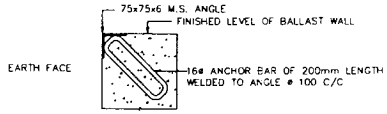
L1	L2	L3	L4	H4	T	T1
700	1695	700	1700	6200	400	400



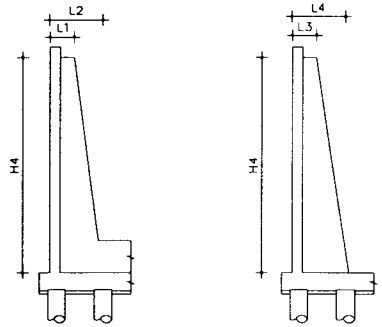
SECTION A-A



GENERAL ARRANGEMENT OF RAILING ON WING WALL

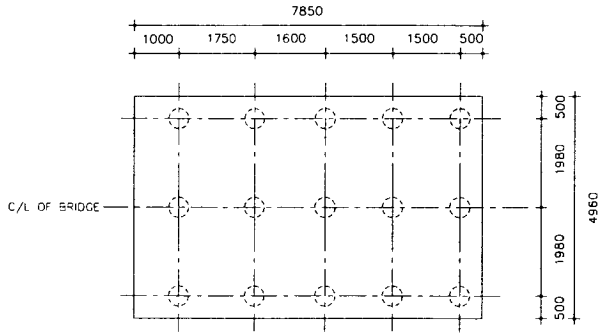


NOSING AT ABUTMENT



COUNTERFORT C1

COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horozontally and vertically as shown in drawings; filter meterial shall be provided as per specification.

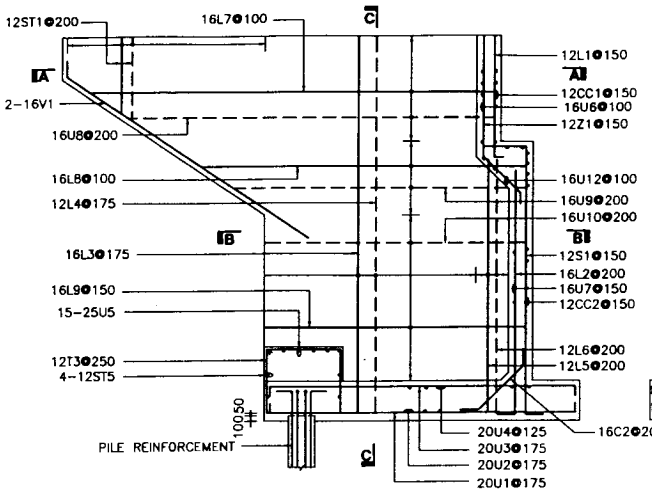
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.3m , DECK WIDTH 4.26m)

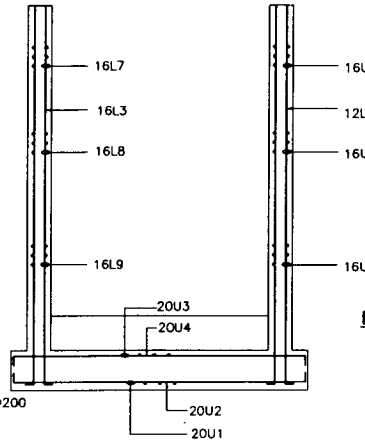
DATE :
ISSUED BY:
DRG. NO : ABUT/R0220731

Web Copy

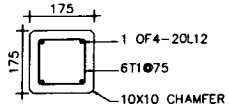
SHEET 2 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: NO



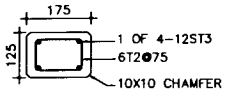
REINFORCEMENT DETAIL



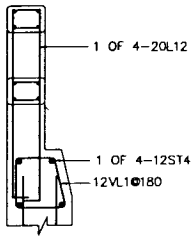
SECTION C-C



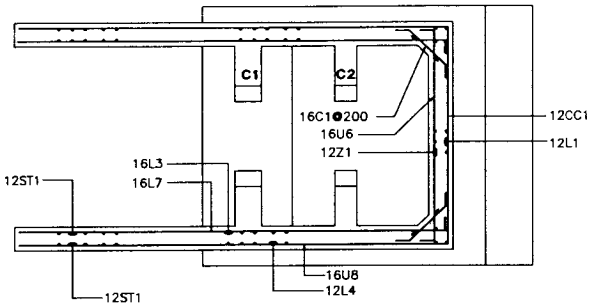
REINF. DETAIL OF POST



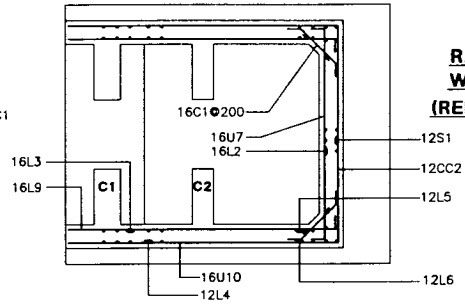
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



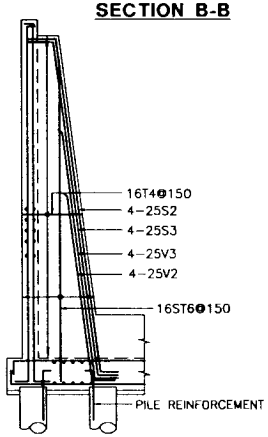
SECTION A-A



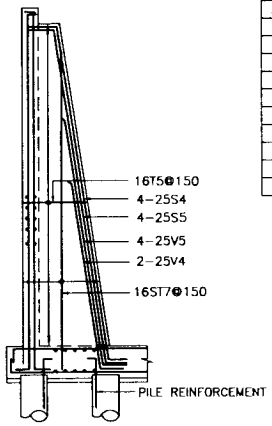
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	1850	144			1994
16	L2	22	4950	192			5142
16	L3	68	7100	192			7292
12	L4	68	7100	144			7244
12	L5	6	Var. 4650 to 5250	144			Avg. 5094
12	L6	6	Var. 4650 to 5250	144			Avg. 5094
16	L7	32	Var. 7525 to 9175	192			Avg. 8336
16	L8	20	Var. 6650 to 7525	192			Avg. 7280
16	L9	52	6650	192			6842
20	L12	64	971	120			1091
20	U1	29	240	7750	240		8230
20	U2	46	240	4860	240		5340
20	U3	29	240	7750	240		8230
20	U4	54	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	20	192	4104	192		4488
16	U7	29	192	4104	192		4488
16	U8	18	Var. 7525 to 9175	200	575		Avg. 9033
16	U9	12	Var. 6650 to 7525	200	625		Avg. 7913
16	U10	38	6650	200	550		7400
16	U12	12	192	4160	192		4544
12	CC1	13	1200	450	4160		5810
12	CC2	35	1200	550	4160		5910
12	Z1	29	1850	836	144		2830
12	S1	29	700	5500	240		6440
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
25	V3	8	350	4371			4721
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shope Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R0220732	

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FA-282

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	1700	144			1844
16	L2	22	5100	192			5292
16	L3	68	7100	192			7292
12	L4	68	7100	144			7244
12	L5	6	Var. 4800 to 5400	144			Avg. 5244
12	L6	6	Var. 4800 to 5400	144			Avg. 5244
16	L7	30	Var. 7750 to 9175	192			Avg. 8512
16	L8	24	Var. 6650 to 7750	192			Avg. 7392
16	L9	52	6650	192			6842
20	L12	64	971	120			1091
20	U1	29	240	7750	240		8230
20	U2	46	240	4860	240		5340
20	U3	29	240	7750	240		8230
20	U4	54	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	18	192	4104	192		4488
16	U7	30	192	4104	192		4488
16	U8	16	Var. 7750 to 9175	200	575		Avg. 9238
16	U9	14	Var. 6650 to 7750	200	625		Avg. 8025
16	U10	38	6650	200	550		7400
16	U12	12	192	4160	192		4544
12	CC1	12	1200	450	4160		5810
12	CC2	36	1200	550	4160		5910
12	Z1	29	1700	836	144		2680
12	S1	29	700	5650	240		6590
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
25	V3	8	350	4371			4721
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	1450	144			1594
16	L2	22	5350	192			5542
16	L3	68	7100	192			7292
12	L4	68	7100	144			7244
12	L5	6	Var. 5050 to 5650	144			Avg. 5494
12	L6	6	Var. 5050 to 5650	144			Avg. 5494
16	L7	24	Var. 8125 to 9175	192			Avg. 8842
16	L8	28	Var. 6650 to 8125	192			Avg. 7580
16	L9	52	6650	192			6842
20	L12	64	971	120			1091
20	U1	29	240	7750	240		8230
20	U2	46	240	4860	240		5340
20	U3	29	240	7750	240		8230
20	U4	54	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	16	192	4104	192		4488
16	U7	32	192	4104	192		4488
16	U8	14	Var. 8125 to 9175	200	575		Avg. 9500
16	U9	16	Var. 6650 to 8125	200	625		Avg. 8213
16	U10	38	6650	200	550		7400
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	38	1200	550	4160		5910
12	Z1	29	1450	836	144		2430
12	S1	29	700	5900	240		6840
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
25	V3	8	350	4371			4721
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9235				9235
12	ST4	8	9225				9225
12	L1	29	1350	144			1494
16	L2	22	5450	192			5642
16	L3	68	7100	192			7292
12	L4	68	7100	144			7244
12	L5	6	Var. 5150 to 5750	144			Avg. 5594
12	L6	6	Var. 5150 to 5750	144			Avg. 5594
16	L7	22	Var. 8275 to 9175	192			Avg. 8958
16	L8	30	Var. 6650 to 8275	192			Avg. 7655
16	L9	52	6650	192			6842
20	L12	64	971	120			1091
20	U1	29	240	7750	240		8230
20	U2	46	240	4860	240		5340
20	U3	29	240	7750	240		8230
20	U4	54	240	4860	240		5340
25	U5	15	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	32	192	4104	192		4488
16	U8	12	Var. 8275 to 9175	200	575		Avg. 9650
16	U9	16	Var. 6650 to 8275	200	625		Avg. 8288
16	U10	38	6650	200	550		7400
16	U12	12	192	4160	192		4544
12	CC1	10	1200	450	4160		5810
12	CC2	39	1200	550	4160		5910
12	Z1	29	1350	836	144		2330
12	S1	29	700	6000	240		6940
16	C1	68	320	1028	320		1668
16	C2	22	320	1452	320		2092
16	V1	4	250	4975			5225
6	T1	160	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	16	2272	2472			4744
12	ST5	4	4160				4160
16	T4	86	Var. 1296 to 3286	696			Avg. 2987
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3412			3787
25	V3	8	350	4371			4721
16	ST6	24	Var. 1021 to 7060				Avg. 3034
16	T5	86	Var. 1296 to 3296	696			Avg. 2992
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3412			3787
25	V5	8	350	4371			4721
16	ST7	24	Var. 1014 to 7060				Avg. 3029

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

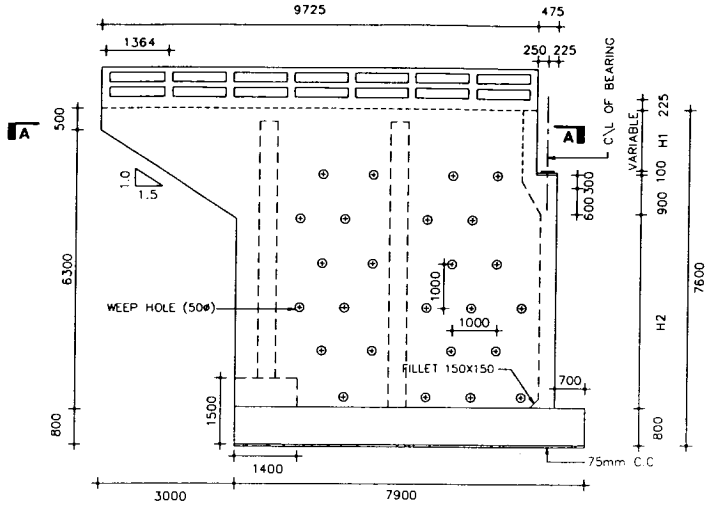
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R0220733

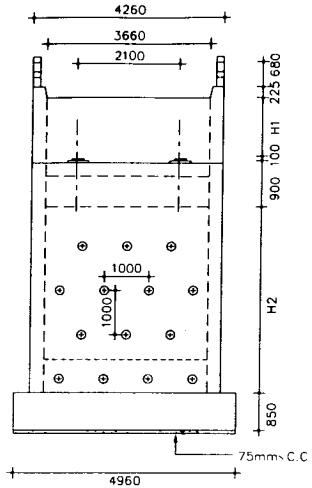
Web Copy

FA-283

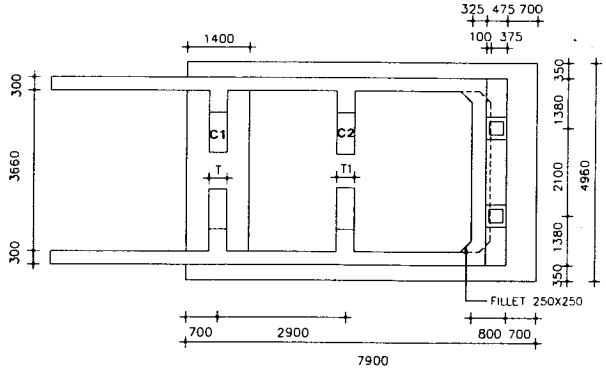
SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDEWALK : NO



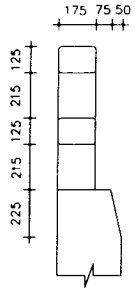
SIDE ELEVATION



FRONT ELEVATION



SECTION A-A



GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

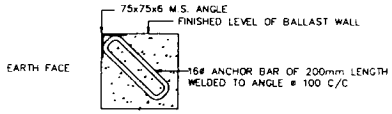
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	4300	350	NOT APPLICABLE
19500	1500	4300	348	
19000	1500	4300	346	
18500	1500	4300	344	
18000	1350	4450	340	
17500	1350	4450	338	
17000	1350	4450	336	
16500	1350	4450	334	
16000	1350	4450	332	
15500	1350	4450	330	
15000	1100	4700	326	
14500	1100	4700	324	
14000	1100	4700	322	
13500	1100	4700	320	
13000	1100	4700	318	
12500	1000	4800	316	

TABLE-2

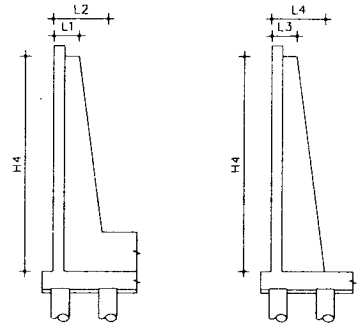
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

L1	L2	L3	L4	H4	T	T1
700	1710	700	1750	6500	400	400

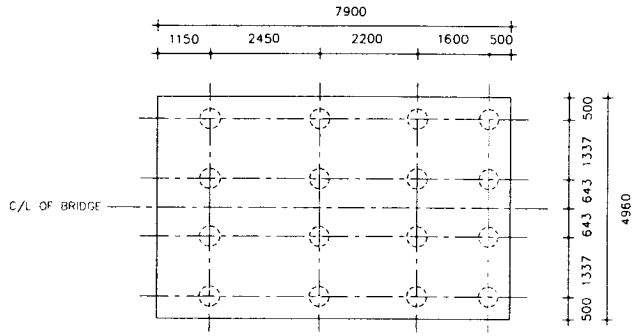


NOSING AT ABUTMENT



COUNTERFORT C1

COUNTERFORT C2



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

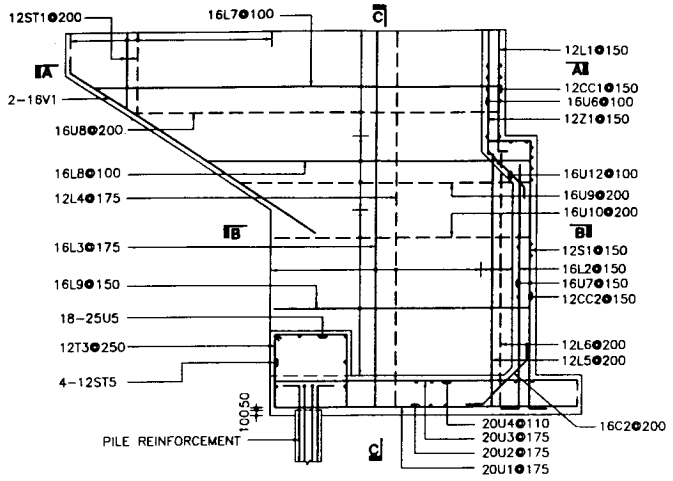
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.6m , DECK WIDTH 4.26m)

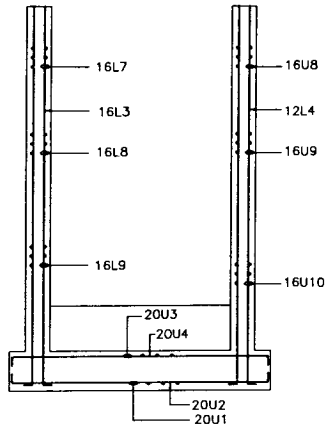
DATE :	ISSUED BY:
DRG. NO : ABUT/R0220761	

Web Copy

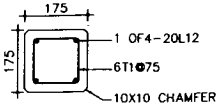
SHEET 2 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: NO



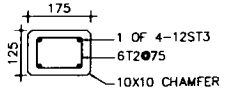
REINFORCEMENT DETAIL



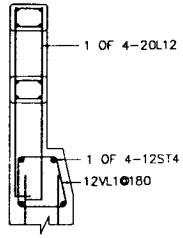
SECTION C-C



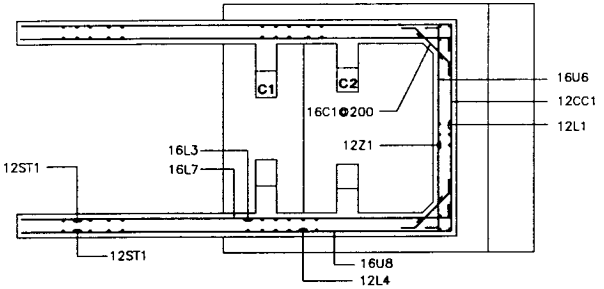
REINF. DETAIL OF POST



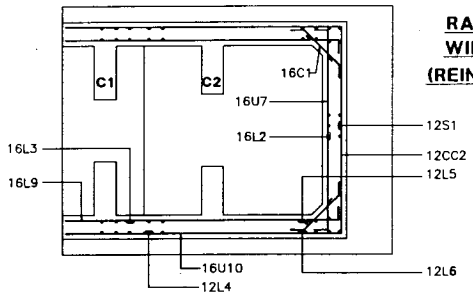
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



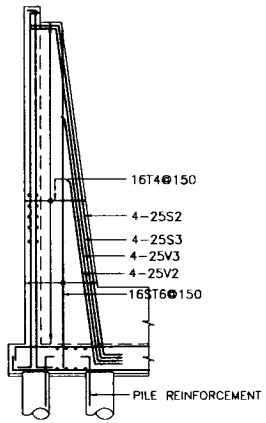
SECTION A-A



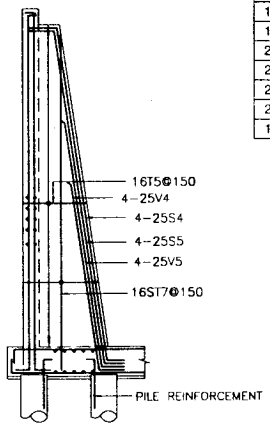
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	1850	144			1994
12	L2	21	5250	144			5394
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 4950 to 5550	144			Avg. 5394
12	L6	4	Var. 4950 to 5550	144			Avg. 5394
16	L7	32	Var. 7975 to 9625	192			Avg. 8786
16	L8	20	Var. 7100 to 7975	192			Avg. 7730
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7900	240		8380
20	U2	47	240	3640	240		4120
20	U3	22	240	7900	240		8380
20	U4	73	240	3640	240		4120
16	U5	20	192	2884	192		3268
16	U7	23	192	2884	192		3268
16	U8	18	Var. 7975 to 9625	200	550		Avg. 9458
16	U9	12	Var. 7100 to 7975	200	625		Avg. 8363
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	13	1200	400	2940		4540
12	CC2	37	1200	550	2940		4690
12	Z1	21	1850	822	144		2816
12	S1	21	675	5800	240		6715
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2892
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	20	Var. 1513 to 7360				Avg. 3952



COUNTERFORT C1



COUNTERFORT C2

REINFORCEMENT DETAILS OF COUNTERFORT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276** MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220762	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	1700	144			1844
12	L2	21	5400	144			5544
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5100 to 5700	144			Avg. 5544
12	L6	4	Var. 5100 to 5700	144			Avg. 5544
16	L7	30	Var. 8200 to 9625	192			Avg. 8962
16	L8	24	Var. 7100 to 8200	192			Avg. 7842
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7900	240		8380
20	U2	47	240	3640	240		4120
20	U3	22	240	7900	240		8380
20	U4	73	240	3640	240		4120
16	U6	18	192	2884	192		3268
16	U7	24	192	2884	192		3268
16	U8	16	Var. 8200 to 9625	200	550		Avg. 9063
16	U9	14	Var. 7100 to 8200	200	625		Avg. 8475
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	12	1200	400	2940		4540
12	CC2	38	1200	550	2940		4690
12	Z1	21	1700	822	144		2666
12	S1	21	675	5950	240		6865
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	20	Var. 1513 to 7360				Avg. 3852

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	1450	144			1594
12	L2	21	5650	144			5794
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5350 to 5950	144			Avg. 5794
12	L6	4	Var. 5350 to 5950	144			Avg. 5794
16	L7	24	Var. 8575 to 9625	192			Avg. 9292
16	L8	28	Var. 7100 to 8575	192			Avg. 8090
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7900	240		8380
20	U2	47	240	3640	240		4120
20	U3	22	240	7900	240		8380
20	U4	73	240	3640	240		4120
16	U6	16	192	2884	192		3268
16	U7	25	192	2884	192		3268
16	U8	14	Var. 8575 to 9625	200	550		Avg. 9925
16	U9	16	Var. 7100 to 8575	200	625		Avg. 8663
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	10	1200	400	2940		4540
12	CC2	40	1200	550	2940		4690
12	Z1	21	1450	822	144		2416
12	S1	21	675	6200	240		7115
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5031			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	20	Var. 1513 to 7360				Avg. 3852

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9685				9685
12	ST4	8	9675				9675
12	L1	21	1350	144			1494
12	L2	21	5750	144			5894
16	L3	66	7400	192			7592
12	L4	66	7400	144			7544
12	L5	4	Var. 5450 to 6050	144			Avg. 5894
12	L6	4	Var. 5450 to 6050	144			Avg. 5894
16	L7	22	Var. 8725 to 9625	192			Avg. 9408
16	L8	30	Var. 7100 to 8725	192			Avg. 8105
16	L9	42	7100	192			7292
20	L12	64	971	120			1091
20	U1	22	240	7900	240		8380
20	U2	47	240	3640	240		4120
20	U3	22	240	7900	240		8380
20	U4	73	240	3640	240		4120
16	U6	15	192	2884	192		3268
16	U7	26	192	2884	192		3268
16	U8	12	Var. 8725 to 9625	200	550		Avg. 10075
16	U9	16	Var. 7100 to 8725	200	625		Avg. 8738
16	U10	42	7100	200	550		7850
16	U12	12	192	2940	192		3324
12	CC1	10	1200	400	2940		4540
12	CC2	41	1200	550	2940		4690
12	Z1	21	1350	822	144		2316
12	S1	21	675	6300	240		7215
16	C1	70	320	1028	320		1668
16	C2	16	320	1452	320		2092
16	V1	4	250	5091			5281
6	T1	160	306	306			612
6	T2	476	206	306			512
12	VL1	112	272	200	250	278	1000
12	L13	11	5160	144			5304
12	L14	11	2860	144			3004
12	U11	20	300	2940	300		3540
16	T5	90	Var. 1296 to 2696	696			Avg. 2692
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3559			3934
25	V5	8	350	4568			4918
16	ST7	20	Var. 1513 to 7360				Avg. 3852

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

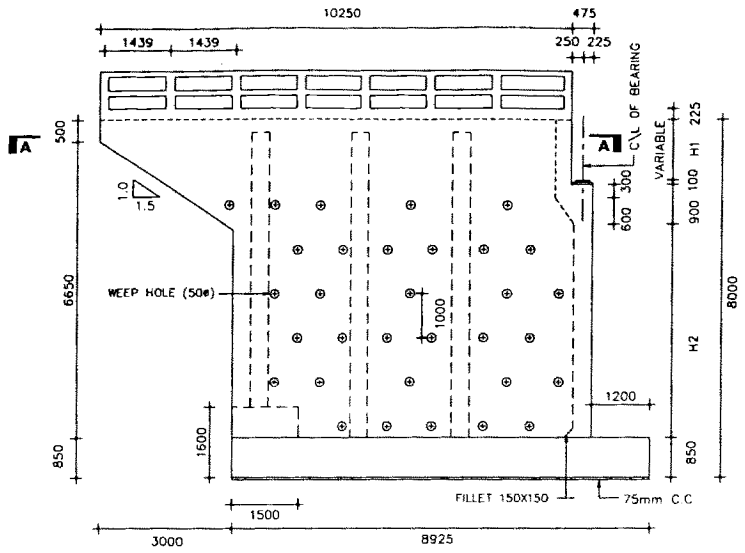
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 4.26m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220763	

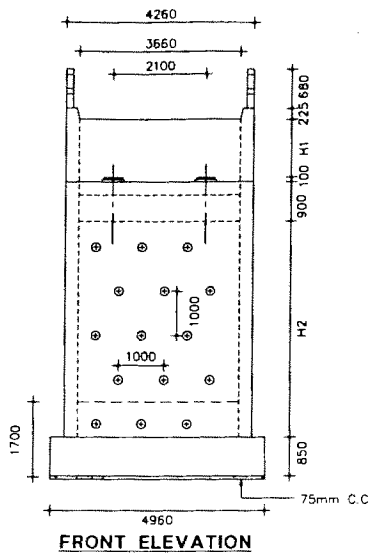
Web Copy

FA-286

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : NO



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	4650	415	NOT APPLICABLE
19500	1500	4650	413	
19000	1500	4650	411	
18500	1500	4650	409	
18000	1350	4800	405	
17500	1350	4800	403	
17000	1350	4800	401	
16500	1350	4800	399	
16000	1350	4800	397	
15500	1350	4800	395	
15000	1100	5050	394	
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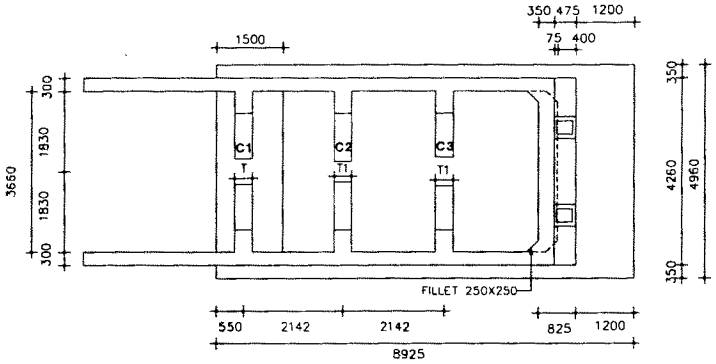
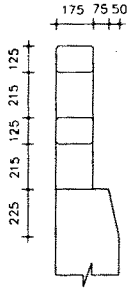
13000	1100	5050	386	
12500	1000	5150	384	



SECTION A-A



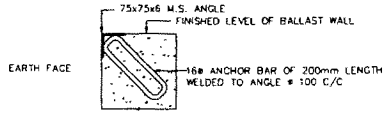
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

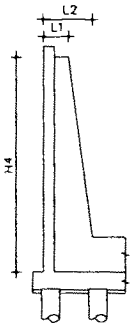
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	600ø	75	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

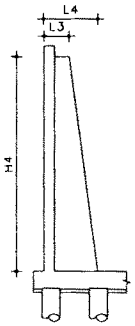
L1	L2	L3	L4	L5	L6	T	T1	H4
700	1840	700	1900	700	900	400	400	6850



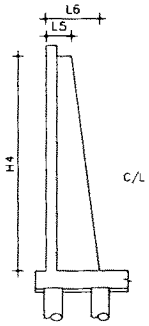
NOSING AT ABUTMENT



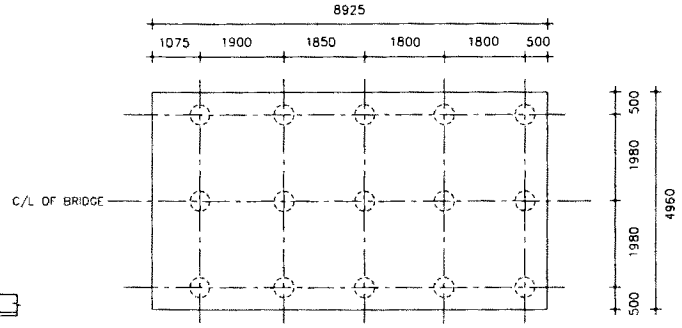
COUNTERFORT C1



COUNTERFORT C2



COUNTERFORT C3



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

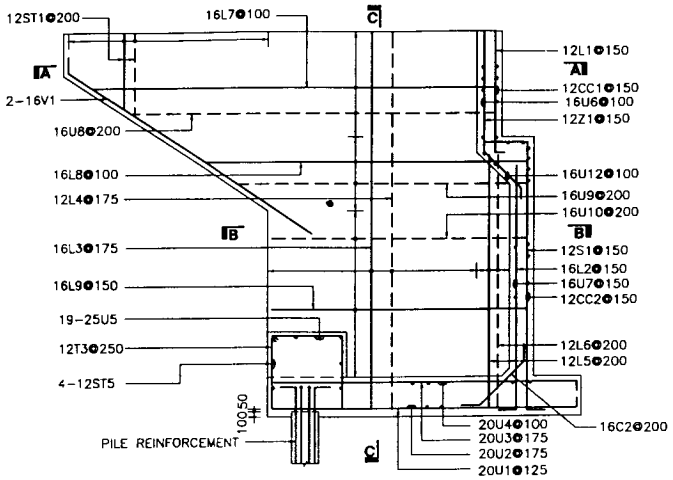
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 8.0m , DECK WIDTH 4.26m)

DATE :	ISSUED BY:
DRG NO : ABUT\R0220801	

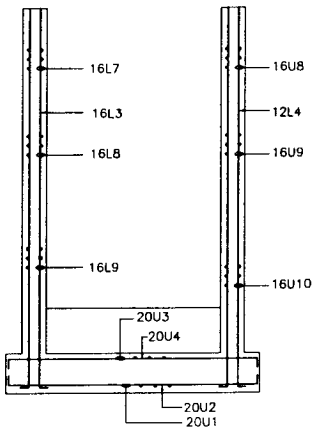
Web Copy

FA-287

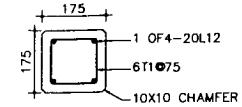
SHEET 2 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: NO



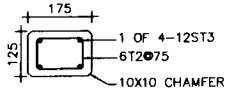
REINFORCEMENT DETAIL



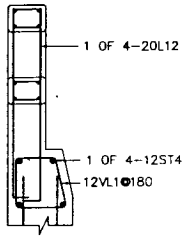
SECTION C-C



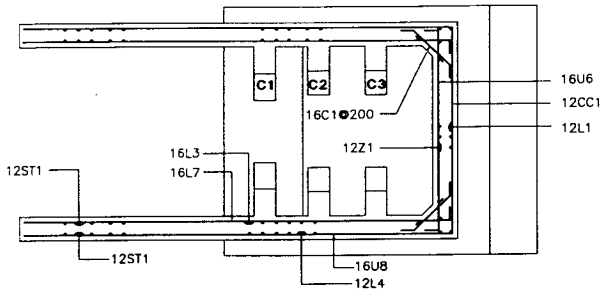
REINF. DETAIL OF POST



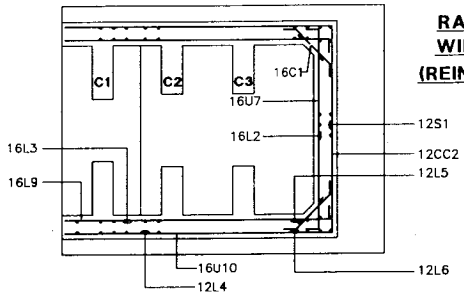
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



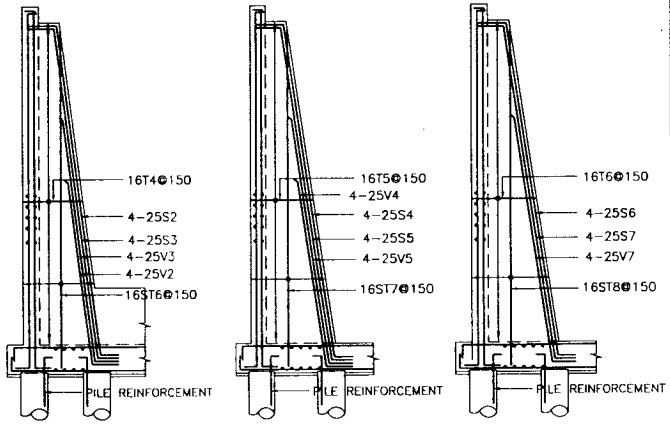
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	1850	144			1994
16	L2	29	5650	192			5842
16	L3	80	7800	192			7992
12	L4	80	7800	144			7944
12	L5	6	Var. 5350 to 5950	144			Avg. 5794
12	L6	6	Var. 5350 to 5950	144			Avg. 5794
16	L7	32	Var. 8500 to 10150	192			Avg. 9311
16	L8	20	Var. 7625 to 8500	192			Avg. 8255
16	L9	60	7625	192			7817
20	L12	64	971	120			1091
20	U1	40	240	8825	240		9305
20	U2	52	240	4860	240		5340
20	U3	29	240	8825	240		9305
20	U4	75	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	20	192	4104	192		4488
16	U7	33	192	4104	192		4488
16	U8	18	Var. 8500 to 10150	200	600		Avg. 10033
16	U9	12	Var. 7625 to 8500	200	650		Avg. 8913
16	U10	46	7625	200	550		8375
16	U12	12	192	4160	192		4544
12	CC1	13	1200	500	4160		5860
12	CC2	40	1200	600	4160		5960
12	Z1	29	1850	836	144		2830
12	S1	29	725	6200	240		7165
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
25	V3	8	350	4815			5165
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 1696	696			Avg. 2192
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	14	Var. 5601 to 7768				Avg. 7046



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3

REINFORCEMENT DETAILS OF COUNTERFORT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shope Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 4.26m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\RD220802

Web Copy

FA-288

SHEET 3 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	1700	144			1844
16	L2	29	5800	192			5992
16	L3	80	7800	192			7992
12	L4	80	7800	144			7944
12	L5	6	Var. 5500 to 6100	144			Avg. 5944
12	L6	6	Var. 5500 to 6100	144			Avg. 5944
16	L7	30	Var. 8725 to 10150	192			Avg. 9487
16	L8	24	Var. 7625 to 8725	192			Avg. 8367
16	L9	60	7625	192			7817
20	L12	64	971	120			1091
20	U1	40	240	8825	240		9305
20	U2	52	240	4860	240		5340
20	U3	29	240	8825	240		9305
20	U4	75	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	18	192	4104	192		4488
16	U7	34	192	4104	192		4488
16	U8	16	Var. 8725 to 10150	200	600		Avg. 10238
16	U9	14	Var. 7625 to 8725	200	650		Avg. 9025
16	U10	46	7625	200	550		8375
16	U12	12	192	4160	192		4544
12	CC1	12	1200	500	4160		5860
12	CC2	41	1200	600	4160		5960
12	Z1	29	1700	836	144		2680
12	S1	29	725	6350	240		7315
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
25	V3	8	350	4815			5165
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 1696	696			Avg. 2192
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	14	Var. 5601 to 7768				Avg. 7046

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	1450	144			1594
16	L2	29	6050	192			6242
16	L3	80	7800	192			7992
12	L4	80	7800	144			7944
12	L5	6	Var. 5750 to 6350	144			Avg. 6194
12	L6	6	Var. 5750 to 6350	144			Avg. 6194
16	L7	24	Var. 9100 to 10150	192			Avg. 9817
16	L8	28	Var. 7625 to 9100	192			Avg. 8555
16	L9	60	7625	192			7817
20	L12	64	971	120			1091
20	U1	40	240	8825	240		9305
20	U2	52	240	4860	240		5340
20	U3	29	240	8825	240		9305
20	U4	75	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	16	192	4104	192		4488
16	U7	36	192	4104	192		4488
16	U8	14	Var. 9100 to 10150	200	600		Avg. 10500
16	U9	16	Var. 7625 to 9100	200	650		Avg. 9213
16	U10	46	7625	200	550		8375
16	U12	12	192	4160	192		4544
12	CC1	10	1200	500	4160		5860
12	CC2	42	1200	600	4160		5960
12	Z1	29	1450	836	144		2430
12	S1	29	725	6600	240		7565
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
25	V3	8	350	4815			5165
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 1696	696			Avg. 2192
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	14	Var. 5601 to 7768				Avg. 7046

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10210				10210
12	ST4	8	10200				10200
12	L1	29	1350	144			1494
16	L2	29	6150	192			6342
16	L3	80	7800	192			7992
12	L4	80	7800	144			7944
12	L5	6	Var. 5850 to 6450	144			Avg. 6294
12	L6	6	Var. 5850 to 6450	144			Avg. 6294
16	L7	22	Var. 9250 to 10150	192			Avg. 9933
16	L8	30	Var. 7625 to 9250	192			Avg. 8630
16	L9	60	7625	192			7817
20	L12	64	971	120			1091
20	U1	40	240	8825	240		9305
20	U2	52	240	4860	240		5340
20	U3	29	240	8825	240		9305
20	U4	75	240	4860	240		5340
25	U5	19	300	4860	300		5460
16	U6	15	192	4104	192		4488
16	U7	37	192	4104	192		4488
16	U8	12	Var. 9250 to 10150	200	600		Avg. 10650
16	U9	16	Var. 7625 to 9250	200	650		Avg. 9288
16	U10	46	7625	200	550		8375
16	U12	12	192	4160	192		4544
12	CC1	10	1200	500	4160		5860
12	CC2	43	1200	600	4160		5960
12	Z1	29	1350	836	144		2330
12	S1	29	725	6700	240		7665
16	C1	74	320	1063	320		1703
16	C2	22	320	1558	320		2198
16	V1	4	250	5106			5356
6	T1	160	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	16	2872	2872			5744
12	ST5	4	4160				4160
16	T4	94	Var. 1296 to 3576	696			Avg. 3132
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3747			4122
25	V3	8	350	4815			5165
16	ST6	26	Var. 983 to 7760				Avg. 3068
16	T5	94	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3747			4122
25	V5	8	350	4815			5165
16	ST7	26	Var. 933 to 7760				Avg. 7887
16	T6	94	Var. 1296 to 1696	696			Avg. 2192
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4815			5165
16	ST8	14	Var. 5601 to 7768				Avg. 7046

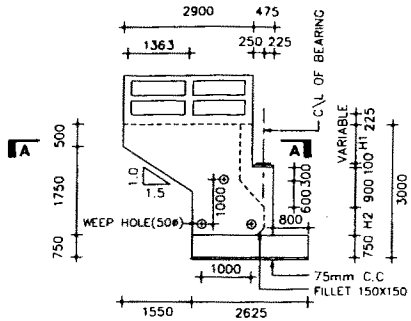
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 4.26m)

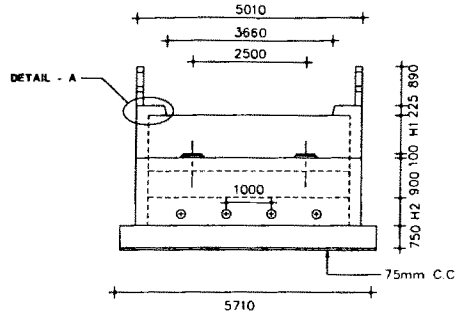
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R0220803	

Web Copy

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



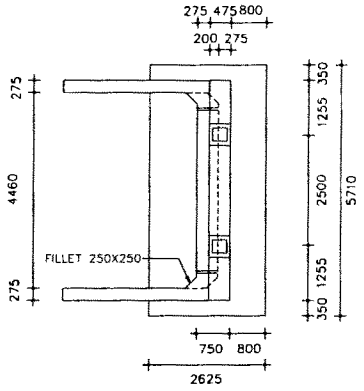
SIDE ELEVATION



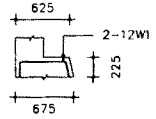
FRONT ELEVATION

TABLE-1

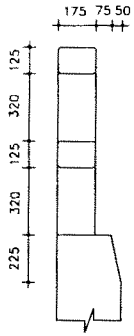
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
15000	1100	150	306	205
14500	1100	150	300	201
14000	1100	150	296	197
13500	1100	150	292	193
13000	1100	150	286	189
12500	1000	250	278	183



SECTION A-A



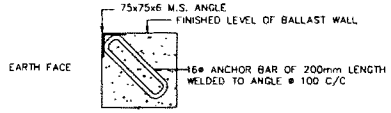
REINF. DETAIL 'A'



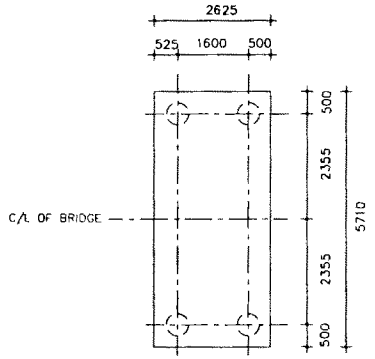
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

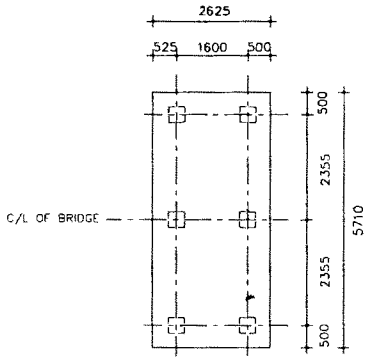
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	50	CAST IN SITU
TYPE - B	350X350	25	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

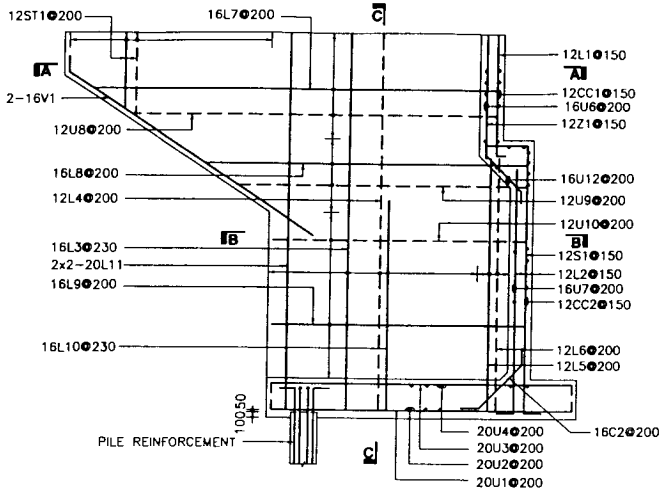
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 3.0m , DECK WIDTH 5.01m)

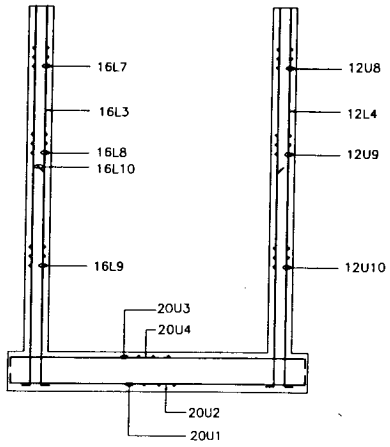
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220301	

Web Copy

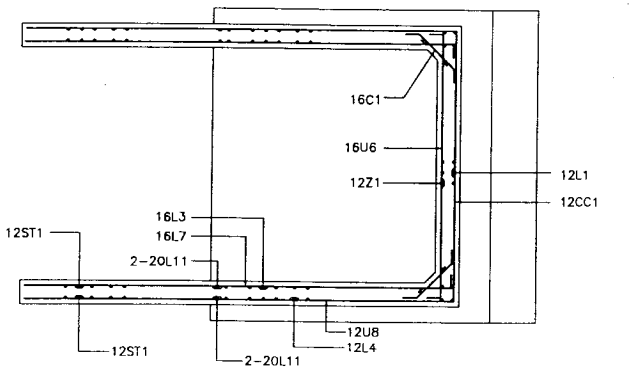
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES



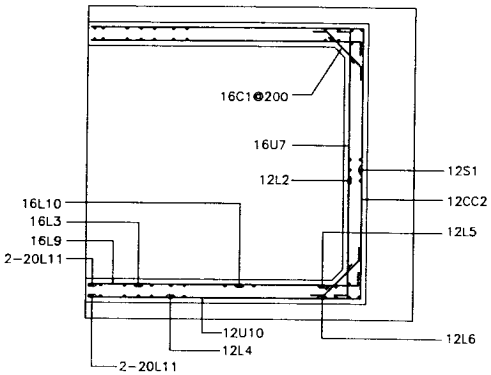
REINFORCEMENT DETAIL



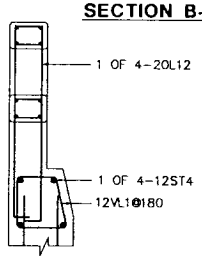
SECTION C-C



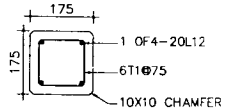
SECTION A-A



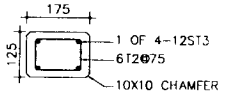
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1434				Avg. 917
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	34	1450	144			1594
12	L2	34	1050	144			1194
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 750 to 1350	144			Avg. 1194
12	L6	6	Var. 750 to 1350	144			Avg. 1194
16	L7	14	Var. 1750 to 2800	192			Avg. 2542
16	L8	6	Var. 1725 to 1750	192			Avg. 1930
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	2800	240			3040
20	L12	24	1181	120			1301
20	U1	30	240	2525	240		3005
20	U2	14	240	5610	240		6090
20	U3	30	240	2525	240		3005
20	U4	14	240	5610	240		6090
16	U6	9	192	4862	192		5246
16	U7	3	192	4862	192		5246
12	U8	14	Var. 1750 to 2800	175	525		Avg. 3050
12	U9	6	Var. 1725 to 1750	175	525		Avg. 2438
12	U10	6	1725	175	525		2425
16	U12	6	192	4910	192		5294
12	CC1	10	1150	350	4910		6410
12	CC2	10	1150	350	4910		6410
12	Z1	34	1450	866	144		2460
12	S1	34	650	1600	240		2490
16	C1	26	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	2426			2676
6	T1	72	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220302	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	32	Var. 400 to 1434				Avg. 917
12	ST3	16	2860				2860
12	ST4	8	2850				2850
12	L1	34	1350	144			1494
12	L2	34	1150	144			1294
16	L3	6	2800	192			2992
12	L4	8	2800	144			2944
12	L5	6	Var. 850 to 1450	144			Avg. 1294
12	L6	6	Var. 850 to 1450	144			Avg. 1294
16	L7	12	Var. 1900 to 2800	192			Avg. 2692
16	L8	8	Var. 1725 to 1900	192			Avg. 2005
16	L9	6	1725	192			1917
16	L10	6	1277	192			1469
20	L11	8	2800	240			3040
20	L12	24	1181	120			1301
20	U1	30	240	2525	240		3005
20	U2	14	240	5610	240		6090
20	U3	30	240	2525	240		3005
20	U4	14	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	3	192	4862	192		5246
12	U8	12	Var. 1900 to 2800	175	525		Avg. 3200
12	U9	8	Var. 1725 to 1900	175	525		Avg. 2513
12	U10	6	1725	175	525		2425
16	U12	6	192	4910	192		5294
12	CC1	10	1150	350	4910		6410
12	CC2	10	1150	350	4910		6410
12	Z1	34	1350	866	144		2360
12	S1	34	650	1700	240		2590
16	C1	26	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	2426			2676
6	T1	72	306	306			612
6	T2	136	206	306			512
12	VL1	36	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

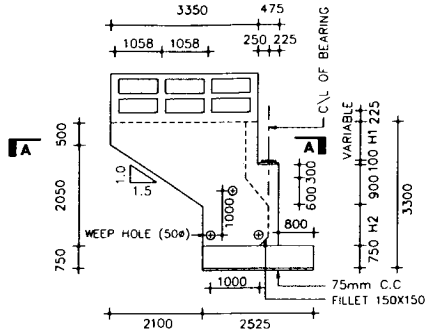
REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 3.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220303	

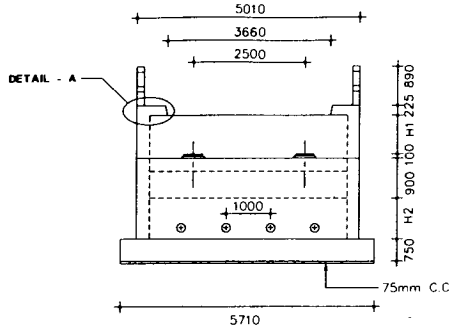
Web Copy

FA-292

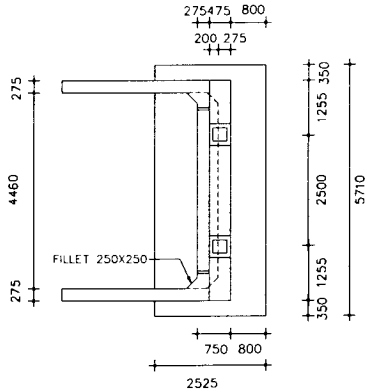
SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



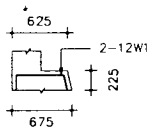
SIDE ELEVATION



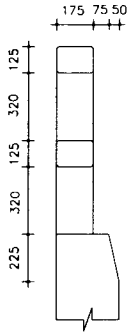
FRONT ELEVATION



SECTION A-A



REINF. DETAIL 'A'



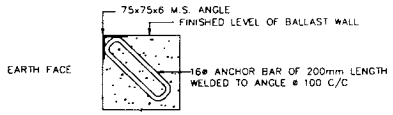
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-1

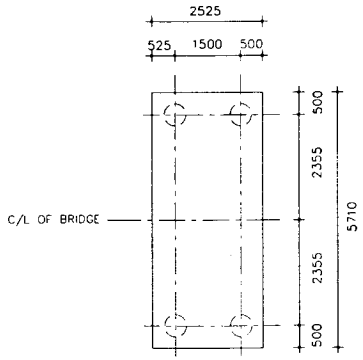
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	50	385	195
19500	1500	50	379	191
19000	1500	50	373	187
18500	1500	50	367	183
18000	1350	200	355	177
17500	1350	200	349	173
17000	1350	200	343	169
16500	1350	200	337	165
16000	1350	200	331	161
15500	1350	200	325	157
15000	1100	450	311	149
14500	1100	450	305	145
14000	1100	450	301	143
13500	1100	450	297	141
13000	1100	450	291	137
12500	1000	550	283	133

TABLE-2

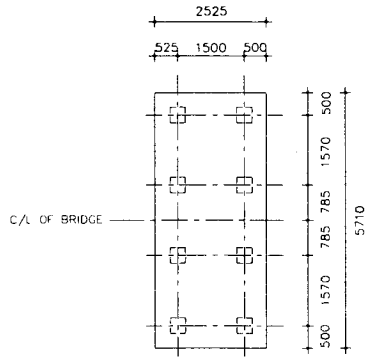
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horozontally and vertically as shown in drawings; filter meterial shall be provided as per specification.

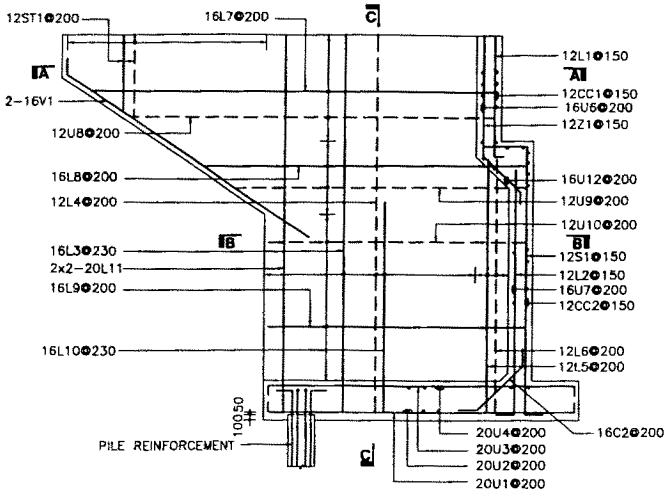
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.3m , DECK WIDTH 5.01m)

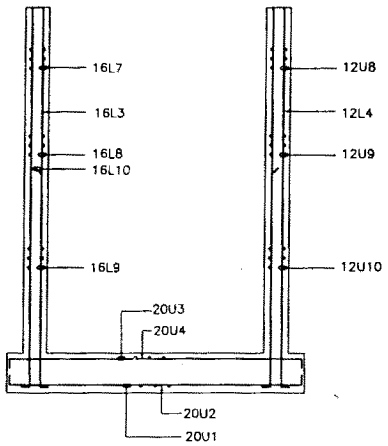
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220331

Web Copy

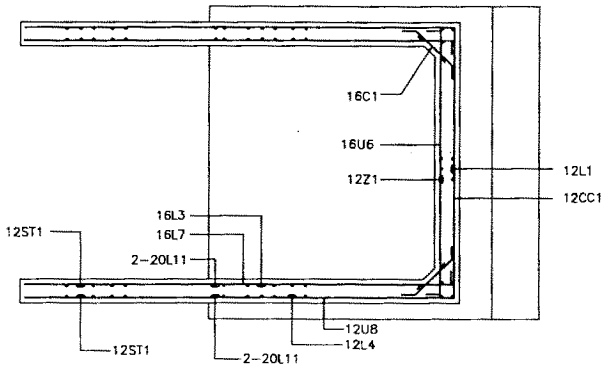
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES



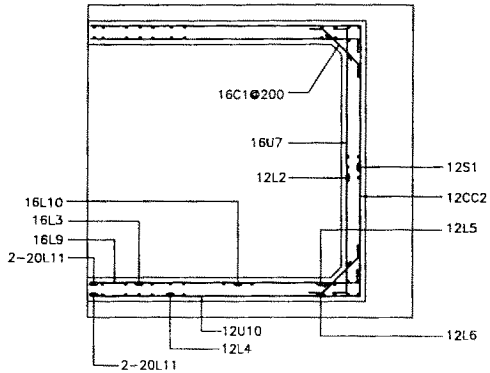
REINFORCEMENT DETAIL



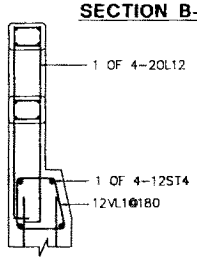
SECTION C-C



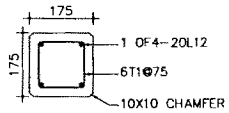
SECTION A-A



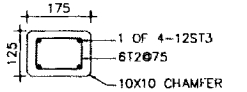
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	34	1850	144			1994
12	L2	34	950	144			1094
16	L3	6	3100	192			3292
12	L4	6	3100	144			3244
12	L5	6	Var. 650 to 1250	144			Avg. 1094
12	L6	6	Var. 650 to 1250	144			Avg. 1094
16	L7	18	Var. 1600 to 3250	192			Avg. 2525
16	L8	6	Var. 1625 to 1600	192			Avg. 1805
16	L9	6	1625	192			1817
16	L10	6	1210	192			1402
20	L11	8	3100	240			3340
20	L12	32	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	11	192	4862	192		5246
16	U7	2	192	4862	192		5246
12	U8	18	Var. 1600 to 3250	175	525		Avg. 2850
12	U9	6	Var. 1625 to 1600	175	525		Avg. 2313
12	U10	6	1625	175	525		2325
16	U12	6	192	4910	192		5294
12	CC1	13	1150	350	4910		6410
12	CC2	9	1150	350	4910		6410
12	Z1	34	1850	866	144		2960
12	S1	34	650	1500	240		2390
16	C1	28	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	3143			3393
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220332	

Web Copy

FA-294

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	34	1700	144			1844
12	L2	34	1100	144			1244
16	L3	6	3100	192			3292
12	L4	6	3100	144			3244
12	L5	6	Var. 800 to 1400	144			Avg. 1244
12	L6	6	Var. 800 to 1400	144			Avg. 1244
16	L7	16	Var. 1825 to 3250	192			Avg. 2730
16	L8	8	Var. 1625 to 1825	192			Avg. 1917
16	L9	6	1625	192			1817
16	L10	6	1210	192			1402
20	L11	8	3100	240			3340
20	L12	32	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	10	192	4862	192		5246
16	U7	3	192	4862	192		5246
12	U8	16	Var. 1825 to 3250	175	525		Avg. 3059
12	U9	8	Var. 1625 to 1825	175	525		Avg. 2425
12	U10	6	1625	175	525		2325
16	U12	6	192	4910	192		5294
12	CC1	12	1150	350	4910		6410
12	CC2	10	1150	350	4910		6410
12	Z1	34	1700	866	144		2710
12	S1	34	650	1650	240		2540
16	C1	28	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	3143			3393
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	34	1450	144			1594
12	L2	34	1350	144			1494
16	L3	6	3100	192			3292
12	L4	6	3100	144			3244
12	L5	6	Var. 1050 to 1650	144			Avg. 1494
12	L6	6	Var. 1050 to 1650	144			Avg. 1494
16	L7	14	Var. 2200 to 3250	192			Avg. 2932
16	L8	10	Var. 1625 to 2200	192			Avg. 2105
16	L9	6	1625	192			1817
16	L10	6	1210	192			1402
20	L11	8	3100	240			3340
20	L12	32	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	9	192	4862	192		5246
16	U7	4	192	4862	192		5246
12	U8	14	Var. 2200 to 3250	175	525		Avg. 3350
12	U9	10	Var. 1625 to 2200	175	525		Avg. 2613
12	U10	6	1625	175	525		2325
16	U12	6	192	4910	192		5294
12	CC1	10	1150	350	4910		6410
12	CC2	12	1150	350	4910		6410
12	Z1	34	1450	866	144		2460
12	S1	34	650	1900	240		2790
16	C1	28	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	3143			3393
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3310				3310
12	ST4	8	3300				3300
12	L1	34	1350	144			1494
12	L2	34	1450	144			1594
16	L3	6	3100	192			3292
12	L4	6	3100	144			3244
12	L5	6	Var. 1150 to 1750	144			Avg. 1594
12	L6	6	Var. 1150 to 1750	144			Avg. 1594
16	L7	12	Var. 2350 to 3250	192			Avg. 3142
16	L8	10	Var. 1625 to 2350	192			Avg. 2180
16	L9	6	1625	192			1817
16	L10	6	1210	192			1402
20	L11	8	3100	240			3340
20	L12	32	1181	120			1301
20	U1	30	240	2425	240		2905
20	U2	14	240	5610	240		6090
20	U3	30	240	2425	240		2905
20	U4	14	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	5	192	4862	192		5246
12	U8	12	Var. 2350 to 3250	175	525		Avg. 3500
12	U9	10	Var. 1625 to 2350	175	525		Avg. 2688
12	U10	6	1625	175	525		2325
16	U12	6	192	4910	192		5294
12	CC1	10	1150	350	4910		6410
12	CC2	12	1150	350	4910		6410
12	Z1	34	1350	866	144		2350
12	S1	34	650	2000	240		2890
16	C1	28	320	851	320		1491
16	C2	26	320	1240	320		1880
16	V1	4	250	3143			3393
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	40	272	200	250	278	1000
12	w1	4	200	575	206		981

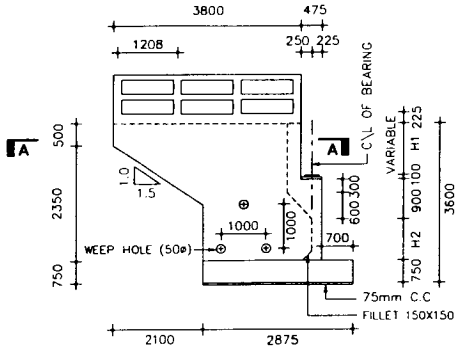
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.3m , DECK WIDTH 5.01m)

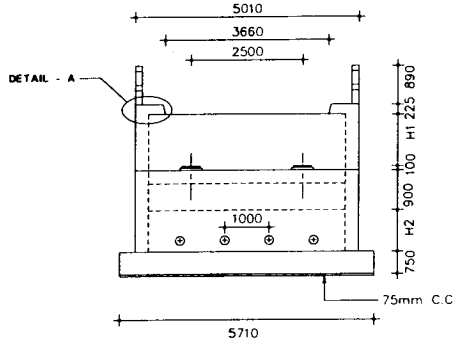
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220333

Web Copy

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



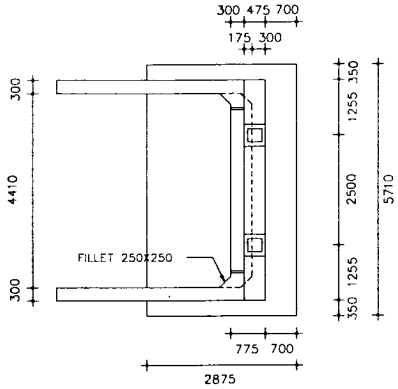
SIDE ELEVATION



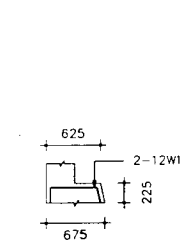
FRONT ELEVATION

TABLE-1

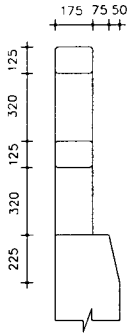
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	350	385	195
19500	1500	350	379	191
19000	1500	350	373	187
18500	1500	350	367	183
18000	1350	500	355	177
17500	1350	500	349	173
17000	1350	500	343	169
16500	1350	500	337	165
16000	1350	500	331	161
15500	1350	500	325	157
15000	1100	750	311	149
14500	1100	750	305	145
14000	1100	750	301	143
13500	1100	750	297	141
13000	1100	750	291	137
12500	1000	850	283	133



SECTION A-A



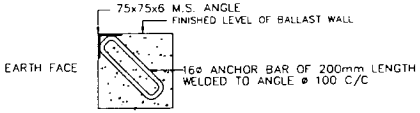
REINF. DETAIL 'A'



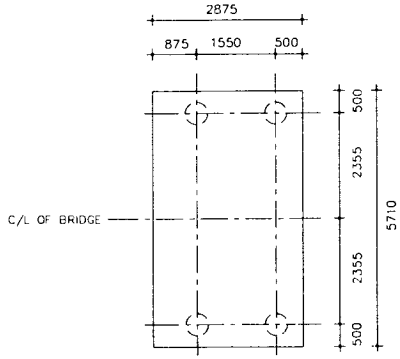
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

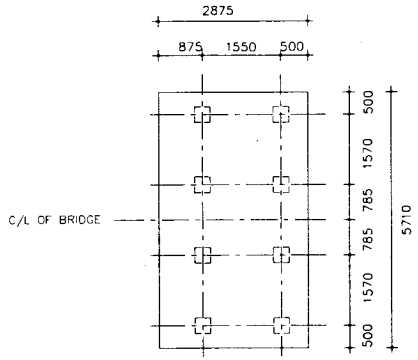
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	50	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter meterial shall be provided as per specification.

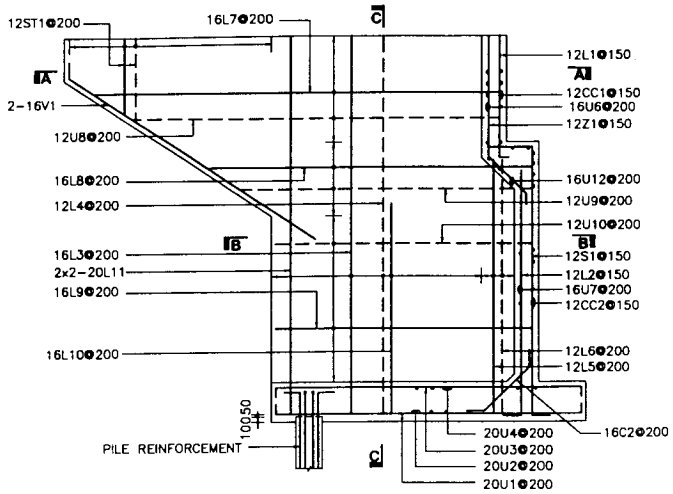
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 3.6m , DECK WIDTH 5.01m)

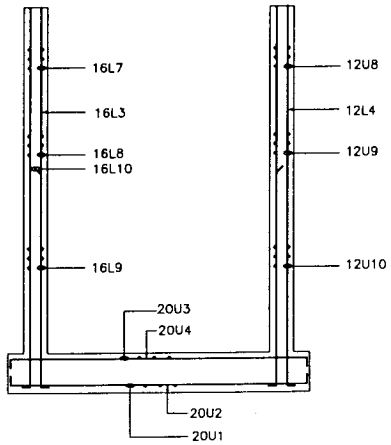
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220361	

Web Copy

SHEET 2 OF 3
SPAN RANGE :12.5m TO 20.0m
SIDE WALK: YES



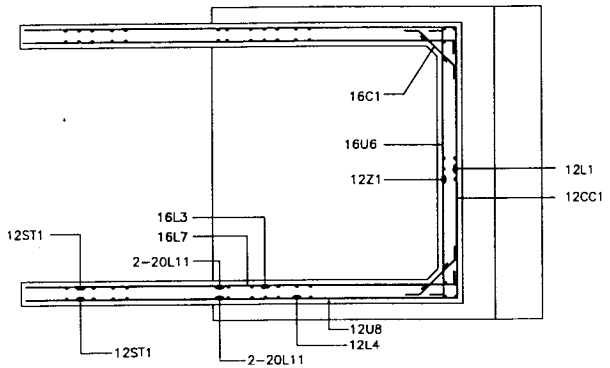
REINFORCEMENT DETAIL



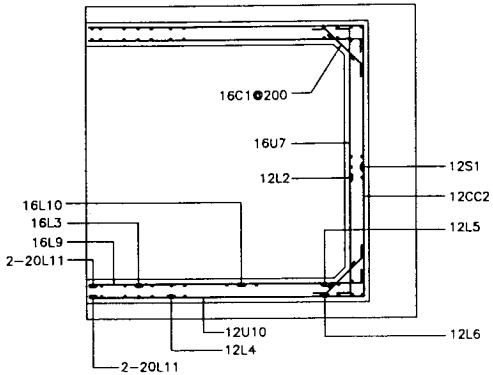
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

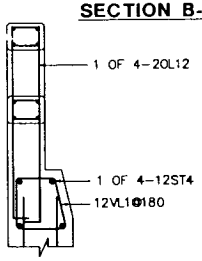
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	34	1850	144			1994
12	L2	34	1250	144			1394
16	L3	10	3400	192			3592
12	L4	10	3400	144			3544
12	L5	6	Var. 950 to 1550	144			Avg. 1394
12	L6	6	Var. 950 to 1550	144			Avg. 1394
16	L7	18	Var. 2050 to 3700	192			Avg. 2975
16	L8	6	Var. 2075 to 2050	192			Avg. 2255
16	L9	8	2075	192			2267
16	L10	10	1510	192			1702
20	L11	8	3400	240			3640
20	L12	32	1181	120			1301
20	U1	30	240	2775	240		3255
20	U2	15	240	5610	240		6090
20	U3	30	240	2775	240		3255
20	U4	15	240	5610	240		6090
16	U6	11	192	4862	192		5246
16	U7	4	192	4862	192		5246
12	U8	18	Var. 2050 to 3700	200	550		Avg. 3533
12	U9	6	Var. 2075 to 2050	200	550		Avg. 2813
12	U10	8	2075	200	550		2825
16	U12	7	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	11	1200	400	4910		6510
12	Z1	34	1850	866	144		2860
12	S1	34	675	1800	240		2715
16	C1	32	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3199			3449
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	46	272	200	250	278	1000
12	w1	4	200	575	206		981



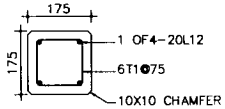
SECTION A-A



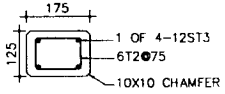
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 3.6m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220362

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	34	1700	144			1844
12	L2	34	1400	144			1544
16	L3	10	3400	192			3592
12	L4	10	3400	144			3544
12	L5	6	Var. 1100 to 1700	144			Avg. 1544
12	L6	6	Var. 1100 to 1700	144			Avg. 1544
16	L7	16	Var. 2275 to 3700	192			Avg. 3180
16	L8	8	Var. 2075 to 2275	192			Avg. 2367
16	L9	8	2075	192			2267
16	L10	10	1510	192			1702
20	L11	8	3400	240			3640
20	L12	32	1181	120			1301
20	U1	30	240	2775	240		3255
20	U2	15	240	5610	240		6090
20	U3	30	240	2775	240		3255
20	U4	15	240	5610	240		6090
16	U6	10	192	4862	192		5246
16	U7	4	192	4862	192		5246
12	U8	16	Var. 2275 to 3700	200	550		Avg. 3738
12	U9	8	Var. 2075 to 2275	200	550		Avg. 2925
12	U10	8	2075	200	550		2825
16	U12	7	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	12	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	1950	240		2865
16	C1	32	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3199			3449
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	46	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	34	1450	144			1594
12	L2	34	1650	144			1794
16	L3	10	3400	192			3592
12	L4	10	3400	144			3544
12	L5	6	Var. 1350 to 1950	144			Avg. 1794
12	L6	6	Var. 1350 to 1950	144			Avg. 1794
16	L7	14	Var. 2650 to 3700	192			Avg. 3442
16	L8	10	Var. 2075 to 2650	192			Avg. 2555
16	L9	8	2075	192			2267
16	L10	10	1510	192			1702
20	L11	8	3400	240			3640
20	L12	32	1181	120			1301
20	U1	30	240	2775	240		3255
20	U2	15	240	5610	240		6090
20	U3	30	240	2775	240		3255
20	U4	15	240	5610	240		6090
16	U6	9	192	4862	192		5246
16	U7	6	192	4862	192		5246
12	U8	14	Var. 2650 to 3700	200	550		Avg. 4000
12	U9	10	Var. 2075 to 2650	200	550		Avg. 3113
12	U10	8	2075	200	550		2825
16	U12	7	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	14	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	2200	240		3115
16	C1	32	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3199			3449
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	46	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	44	Var. 400 to 1800				Avg. 1100
12	ST3	16	3760				3760
12	ST4	8	3750				3750
12	L1	34	1350	144			1494
12	L2	34	1750	144			1894
16	L3	10	3400	192			3592
12	L4	10	3400	144			3544
12	L5	6	Var. 1450 to 2050	144			Avg. 1894
12	L6	6	Var. 1450 to 2050	144			Avg. 1894
16	L7	12	Var. 2800 to 3700	192			Avg. 3592
16	L8	10	Var. 2075 to 2800	192			Avg. 2630
16	L9	8	2075	192			2267
16	L10	10	1510	192			1702
20	L11	8	3400	240			3640
20	L12	32	1181	120			1301
20	U1	30	240	2775	240		3255
20	U2	15	240	5610	240		6090
20	U3	30	240	2775	240		3255
20	U4	15	240	5610	240		6090
16	U6	8	192	4862	192		5246
16	U7	6	192	4862	192		5246
12	U8	12	Var. 2800 to 3700	200	550		Avg. 4150
12	U9	10	Var. 2075 to 2800	200	550		Avg. 3188
12	U10	8	2075	200	550		2825
16	U12	7	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	14	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	2300	240		3215
16	C1	32	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3199			3449
6	T1	96	306	306			612
6	T2	156	206	306			512
12	VL1	46	272	200	250	278	1000
12	w1	4	200	575	206		981

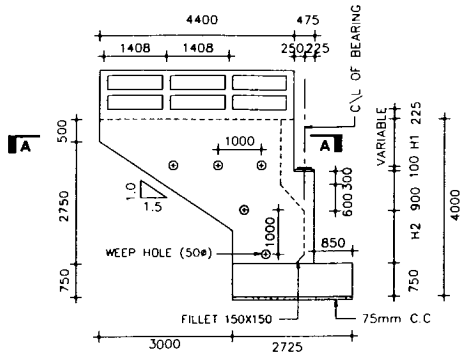
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 3.6m , DECK WIDTH 5.01m)

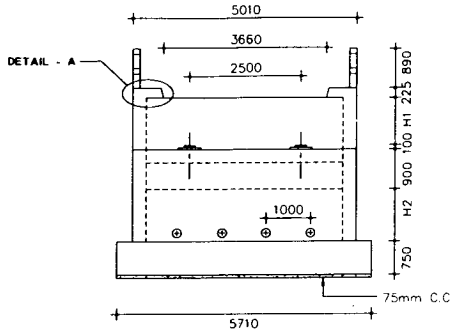
DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220363	

Web Copy

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



SIDE ELEVATION



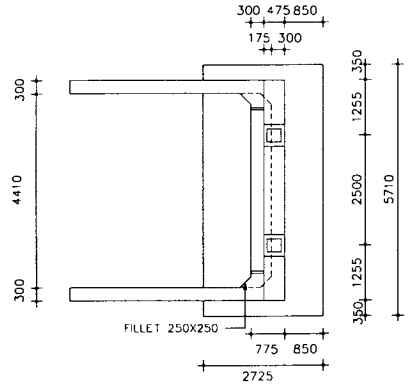
FRONT ELEVATION

TABLE-1

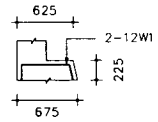
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	750	295	175
19500	1500	750	291	173
19000	1500	750	287	171
18500	1500	750	283	169
18000	1350	900	275	163
17500	1350	900	271	161
17000	1350	900	267	159
16500	1350	900	263	157
16000	1350	900	259	155
15500	1350	900	255	153
15000	1100	1150	245	147
14500	1100	1150	241	145
14000	1100	1150	237	143
13500	1100	1150	233	141
13000	1100	1150	229	139
12500	1000	1250	223	135

TABLE-2

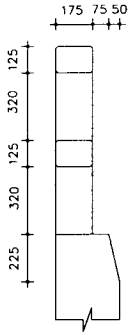
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	350X350	30	PRECAST



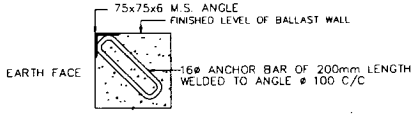
SECTION A-A



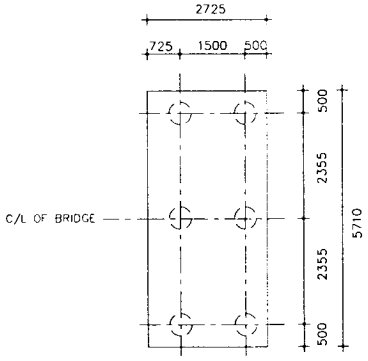
REINF. DETAIL 'A'



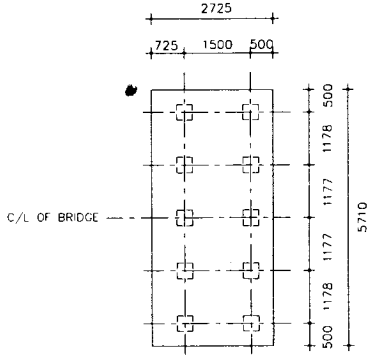
GENERAL ARRANGEMENT
OF RAILING ON WING WALL



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter meterial shall be provided as per specification

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY
CAD FILE REF : ABUT/R1220401

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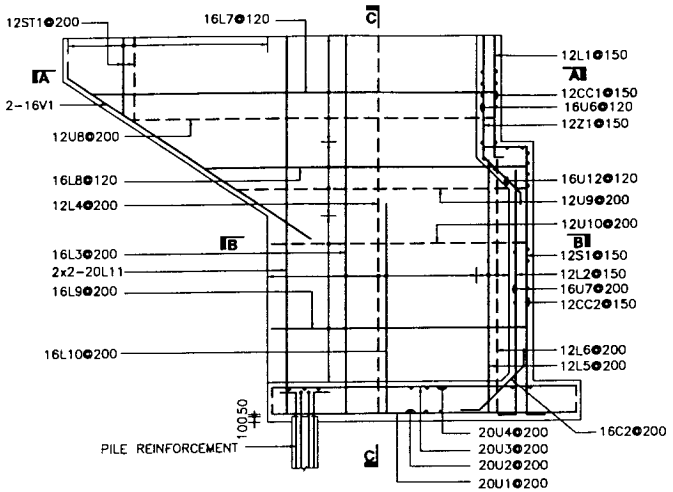
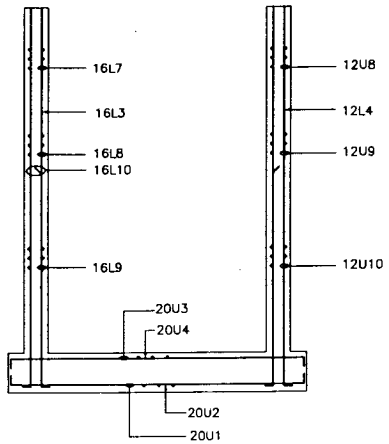
SHEET 2 OF 3

SPAN RANGE : 12.5m TO 20.0m

SIDE WALK: YES



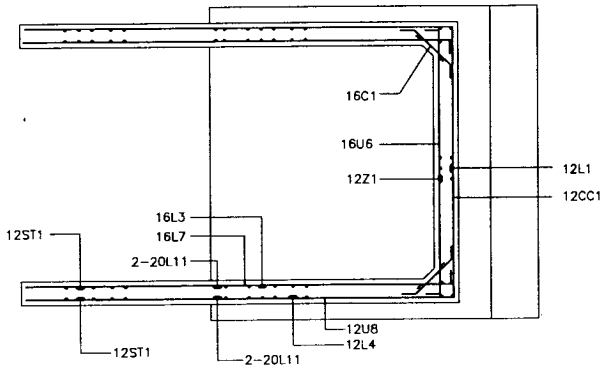
REINFORCEMENT DETAIL



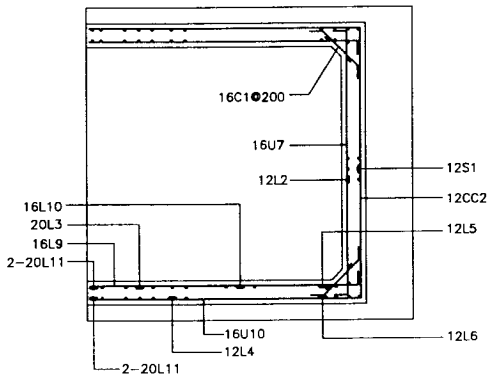
SECTION C-C

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

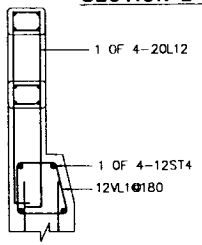
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4660				4660
12	ST4	8	4650				4650
12	L1	29	1850	144			1994
12	L2	29	1750	144			1894
16	L3	8	3900	192			4092
12	L4	8	3900	144			4044
12	L5	6	Var. 1450 to 2050	144			Avg. 1894
12	L6	6	Var. 1450 to 2050	144			Avg. 1894
16	L7	30	Var. 2950 to 4600	192			Avg. 3802
16	L8	18	Var. 2075 to 2950	192			Avg. 2705
16	L9	8	2075	192			2267
16	L10	8	1410	192			1602
20	L11	8	3900	240			4140
20	L12	32	971	120			1091
20	U1	29	240	3475	240		3955
16	U2	21	192	4860	192		5244
16	U3	29	192	3475	192		3859
16	U4	21	192	4860	192		5244
16	U6	17	192	4112	192		4496
16	U7	7	192	4112	192		4496
12	U8	18	Var. 2950 to 4600	200	550		Avg. 4433
12	U9	12	Var. 2075 to 2950	200	550		Avg. 3482
12	U10	8	2075	200	550		2625
16	U12	9	192	4160	192		4544
12	CC1	13	1200	400	4160		5760
12	CC2	15	1200	400	4160		5760
12	Z1	29	1850	866	144		2860
12	S1	29	675	2300	240		3215
16	C1	38	320	922	320		1562
16	C2	22	320	1134	320		1774
16	V1	4	250	4356			4606
6	T1	80	306	306			612
6	T2	228	206	306			512
12	VL1	56	272	200	250	278	1000



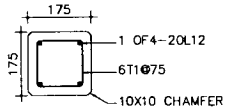
SECTION A-A



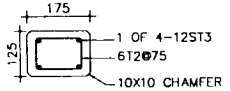
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 5.01m)

DATE :

ISSUED BY :

CAD FILE REF : ABUT\R1220402

Web Copy

FA-300

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: NO

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1700	144			1844
12	L2	34	1800	144			1944
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1500 to 2100	144			Avg. 1944
12	L6	6	Var. 1500 to 2100	144			Avg. 1944
16	L7	26	Var. 2875 to 4300	192			Avg. 3725
16	L8	20	Var. 1775 to 2875	192			Avg. 2517
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	16	192	4862	192		5246
16	U7	6	192	4862	192		5246
12	U8	16	Var. 2875 to 4300	200	550		Avg. 4338
12	U9	14	Var. 1775 to 2875	200	550		Avg. 3075
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	15	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	2350	240		3265
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1450	144			1594
12	L2	34	2050	144			2194
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1750 to 2350	144			Avg. 2194
12	L6	6	Var. 1750 to 2350	144			Avg. 2194
16	L7	22	Var. 3250 to 4300	192			Avg. 4015
16	L8	24	Var. 1775 to 3250	192			Avg. 2705
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	14	192	4862	192		5246
16	U7	8	192	4862	192		5246
12	U8	14	Var. 3250 to 4300	200	550		Avg. 4600
12	U9	16	Var. 1775 to 3250	200	550		Avg. 3263
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	16	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	2600	240		3515
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

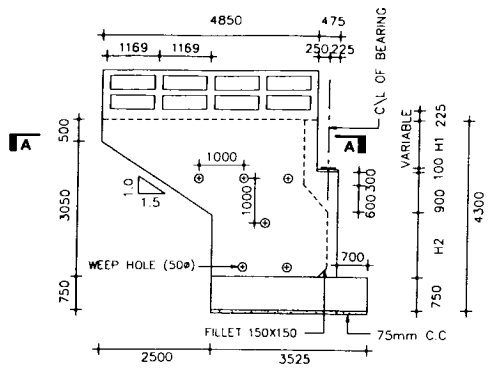
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	4360				4360
12	ST4	8	4350				4350
12	L1	34	1350	144			1494
12	L2	34	2150	144			2294
16	L3	8	3800	192			3992
12	L4	8	3800	144			3944
12	L5	6	Var. 1850 to 2450	144			Avg. 2294
12	L6	6	Var. 1850 to 2450	144			Avg. 2294
16	L7	20	Var. 3400 to 4300	192			Avg. 4132
16	L8	26	Var. 1775 to 3400	192			Avg. 2780
16	L9	6	1775	192			1967
16	L10	8	1310	192			1502
20	L11	8	3800	240			4040
20	L12	32	1181	120			1301
20	U1	30	240	2625	240		3105
20	U2	15	240	5610	240		6090
20	U3	30	240	2625	240		3105
20	U4	15	240	5610	240		6090
16	U6	13	192	4862	192		5246
16	U7	8	192	4862	192		5246
12	U8	12	Var. 3400 to 4300	200	550		Avg. 4750
12	U9	16	Var. 1775 to 3400	200	550		Avg. 3338
12	U10	6	1775	200	550		2525
16	U12	10	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	17	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	2700	240		3615
16	C1	36	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4356			4606
6	T1	96	306	306			612
6	T2	216	206	306			512
12	VL1	52	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

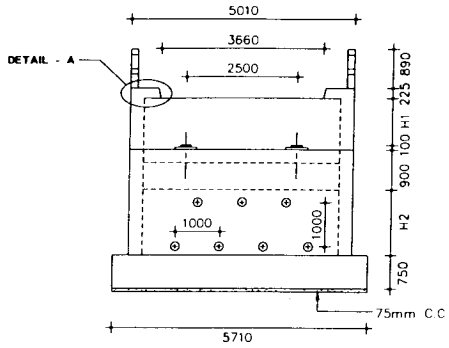
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220403

Web Copy



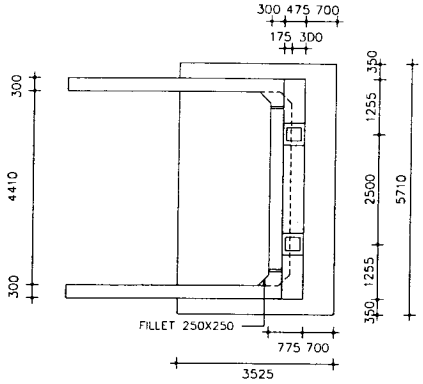
SIDE ELEVATION



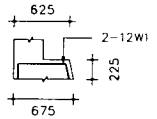
FRONT ELEVATION

TABLE-1

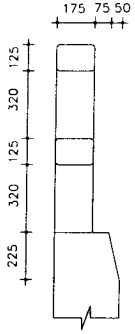
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	1050	375	190
19500	1500	1050	371	188
19000	1500	1050	367	186
18500	1500	1050	363	184
18000	1350	1200	355	180
17500	1350	1200	351	178
17000	1350	1200	347	176
16500	1350	1200	343	174
16000	1350	1200	337	172
15500	1350	1200	333	170
15000	1100	1450	323	164
14500	1100	1450	319	162
14000	1100	1450	315	160
13500	1100	1450	311	158
13000	1100	1450	307	156
12500	1000	1550	301	152



SECTION A-A



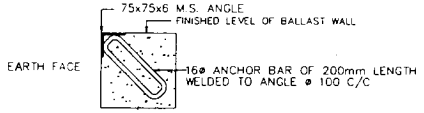
REINF. DETAIL 'A'



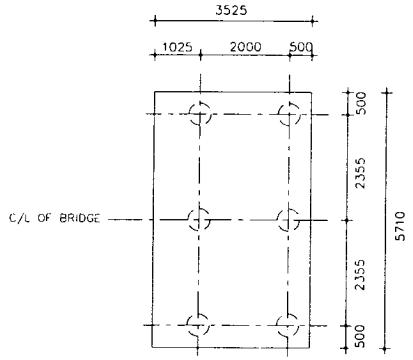
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

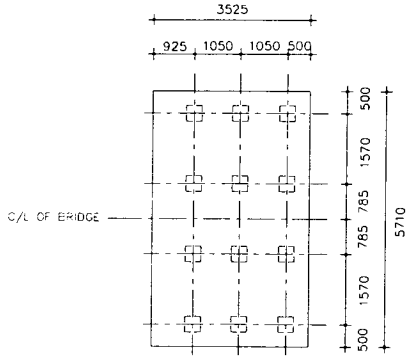
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

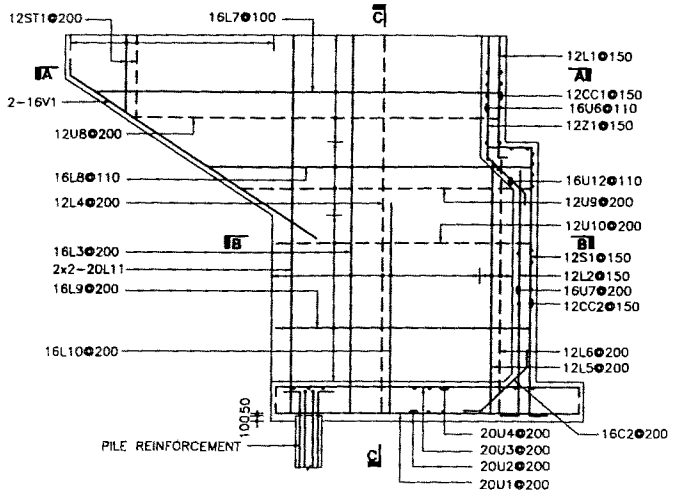
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.3m , DECK WIDTH 5.01m)

DATE :
ISSUED BY
CAD FILE REF : ABUT/R1220431

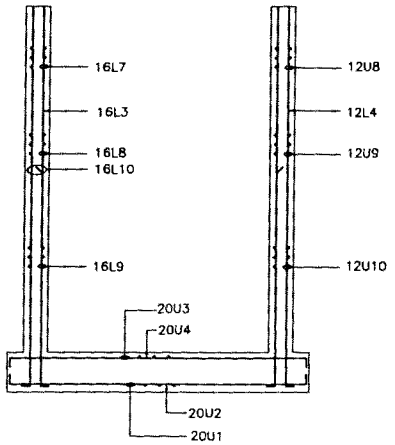
Web Copy

FA-302

SHEET 2 OF 3
SPAN RANGE : 1.5m TO 12.0m
SIDE WALK: YES

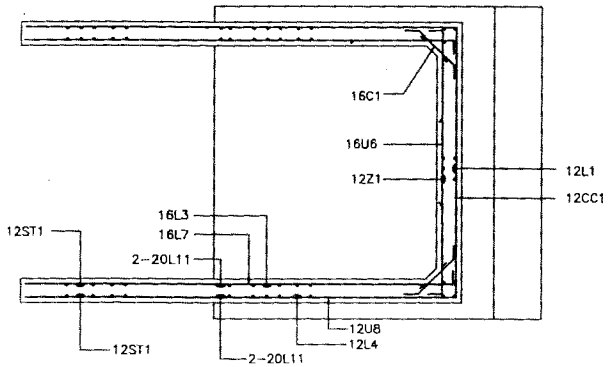


REINFORCEMENT DETAIL

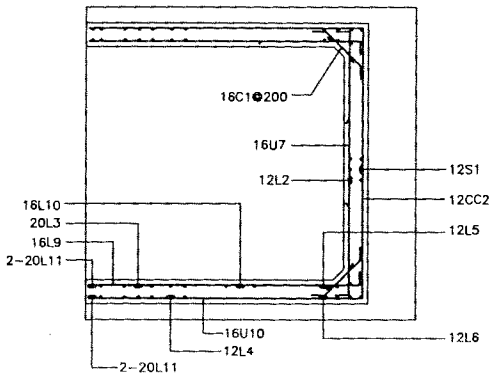


SECTION C-C

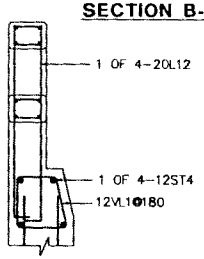
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	5110				5110
12	ST4	8	5100				5100
12	L1	34	1850	144			1994
12	L2	34	2050	144			2194
16	L3	14	4200	192			4392
12	L4	14	4200	144			4344
12	L5	6	Var. 1750 to 2350	144			Avg. 2194
12	L6	6	Var. 1750 to 2350	144			Avg. 2194
16	L7	30	Var. 3400 to 5050	192			Avg. 4252
16	L8	20	Var. 2525 to 3400	192			Avg. 3155
16	L9	12	2525	192			2717
16	L10	14	1710	192			1902
20	L11	8	4200	240			4440
20	L12	40	1181	120			1301
20	U1	39	240	4025	240		4505
16	U2	24	192	5610	192		5994
16	U3	34	192	4025	192		4409
16	U4	28	192	5610	192		5994
16	U6	18	192	4862	192		5246
16	U7	8	192	4862	192		5246
12	U8	18	Var. 3400 to 5050	200	550		Avg. 4700
12	U9	12	Var. 2525 to 3400	200	550		Avg. 3932
12	U10	12	2525	200	550		3275
16	U12	10	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	17	1200	400	4910		6510
12	Z1	34	1850	868	144		2860
12	S1	34	675	2600	240		3515
16	C1	40	320	922	320		1562
16	C2	26	320	1134	320		1774
16	V1	4	250	4412			4662
6	T1	120	306	306			612
6	T2	256	206	306			512
12	VL1	60	272	200	250	278	1000
12	w1	4	200	575	206		981



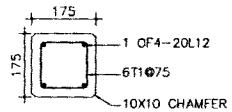
SECTION A-A



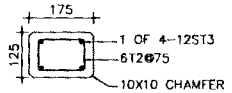
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 278 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220432	

Web Copy

FA-303

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2057				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	34	1700	144			1844
12	L2	34	2100	144			2244
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 1800 to 2400	144			Avg. 2244
12	L6	6	Var. 1800 to 2400	144			Avg. 2244
16	L7	30	Var. 3325 to 4750	192			Avg. 4087
16	L8	16	Var. 2725 to 3925	192			Avg. 3217
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	1181	120			1301
20	U1	30	240	3425	240		3905
20	U2	19	240	5610	240		6090
20	U3	30	240	3425	240		3905
20	U4	19	240	5610	240		6090
16	U6	17	192	4862	192		5246
16	U7	8	192	4862	192		5246
12	U8	16	Var. 3325 to 4750	200	550		Avg. 4788
12	U9	10	Var. 2725 to 3925	200	550		Avg. 3775
12	U10	12	2725	200	550		3475
16	U12	11	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	17	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	2650	240		3565
16	C1	38	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	120	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	34	1450	144			1594
12	L2	34	2350	144			2494
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2050 to 2650	144			Avg. 2494
12	L6	6	Var. 2050 to 2650	144			Avg. 2494
16	L7	24	Var. 3700 to 4750	192			Avg. 4417
16	L8	20	Var. 2725 to 3700	192			Avg. 3405
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	1181	120			1301
20	U1	30	240	3425	240		3905
20	U2	19	240	5610	240		6090
20	U3	30	240	3425	240		3905
20	U4	19	240	5610	240		6090
16	U6	15	192	4862	192		5246
16	U7	9	192	4862	192		5246
12	U8	14	Var. 3700 to 4750	200	550		Avg. 5050
12	U9	12	Var. 2725 to 3700	200	550		Avg. 3963
12	U10	12	2725	200	550		3475
16	U12	11	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	18	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	2900	240		3815
16	C1	38	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	120	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	4810				4810
12	ST4	8	4800				4800
12	L1	34	1350	144			1494
12	L2	34	2450	144			2594
16	L3	18	4100	192			4292
12	L4	18	4100	144			4244
12	L5	6	Var. 2150 to 2750	144			Avg. 2594
12	L6	6	Var. 2150 to 2750	144			Avg. 2594
16	L7	22	Var. 3850 to 4750	192			Avg. 4533
16	L8	22	Var. 2725 to 3850	192			Avg. 3480
16	L9	12	2725	192			2917
16	L10	18	1944	192			2136
20	L11	8	4100	240			4340
20	L12	40	1181	120			1301
20	U1	30	240	3425	240		3905
20	U2	19	240	5610	240		6090
20	U3	30	240	3425	240		3905
20	U4	19	240	5610	240		6090
16	U6	14	192	4862	192		5246
16	U7	10	192	4862	192		5246
12	U8	12	Var. 3850 to 4750	200	550		Avg. 5200
12	U9	14	Var. 2725 to 3850	200	550		Avg. 4038
12	U10	12	2725	200	550		3475
16	U12	11	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	19	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	3000	240		3915
16	C1	38	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3811			4061
6	T1	120	306	306			612
6	T2	240	206	306			512
12	VL1	56	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220433	

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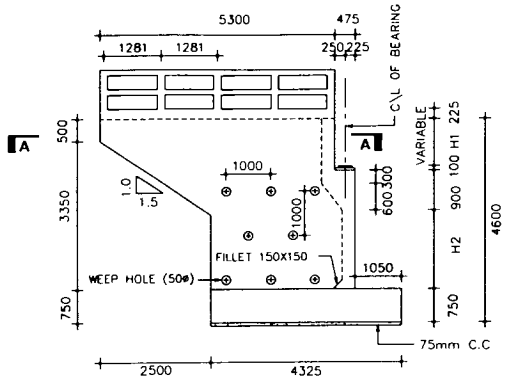
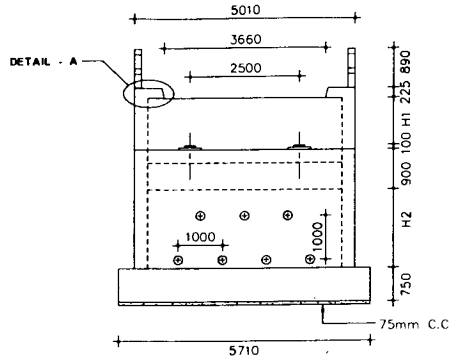
FA-304

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



SIDE ELEVATION



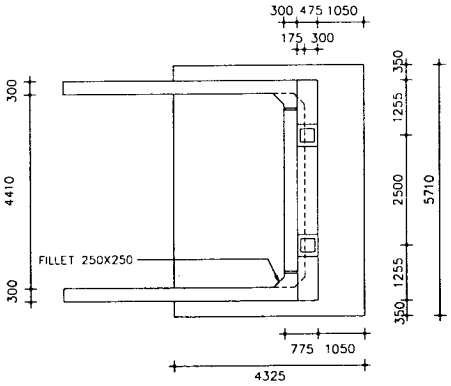
FRONT ELEVATION

TABLE-1

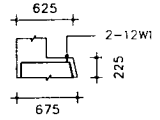
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	1350	290	155
19500	1500	1350	286	153
19000	1500	1350	282	151
18500	1500	1350	278	149
18000	1350	1500	272	145
17500	1350	1500	268	143
17000	1350	1500	264	141
16500	1350	1500	260	139
16000	1350	1500	256	137
15500	1350	1500	252	135
15000	1100	1750	244	131
14500	1100	1750	240	129
14000	1100	1750	238	127
13500	1100	1750	236	125
13000	1100	1750	232	123
12500	1000	1850	228	121

TABLE-2

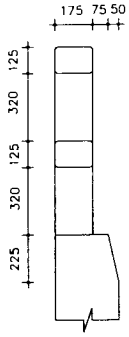
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	55	CAST IN SITU
TYPE - B	350x350	30	PRECAST



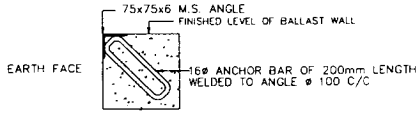
SECTION A-A



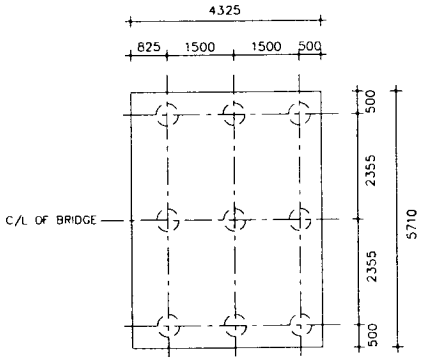
REINF. DETAIL 'A'



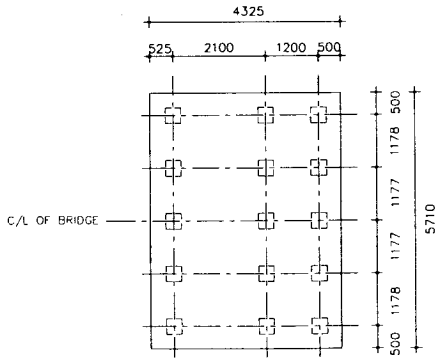
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

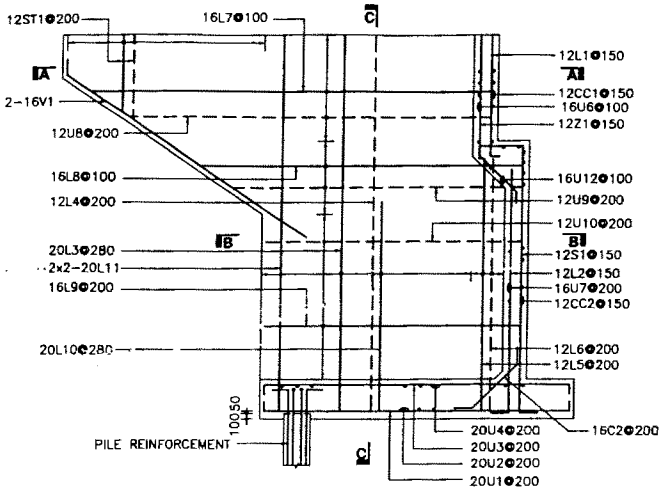
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 4.6m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R1220461

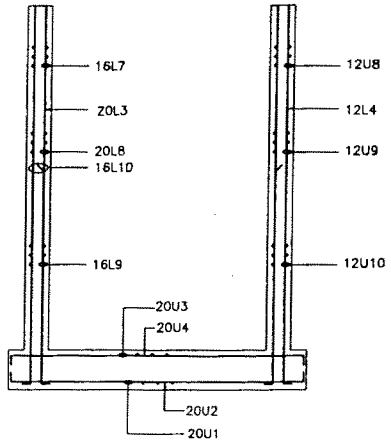
Web Copy

FA-305

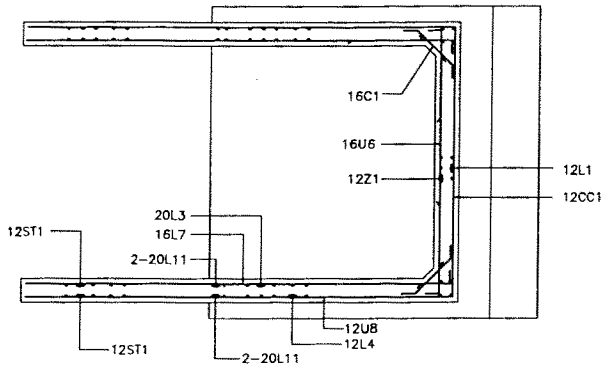
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES



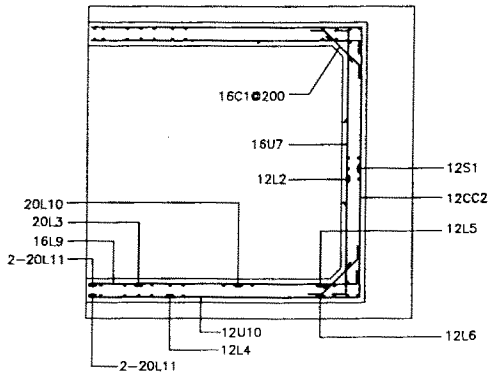
REINFORCEMENT DETAIL



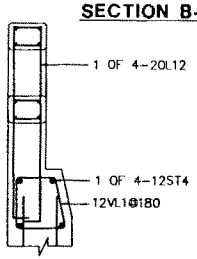
SECTION C-C



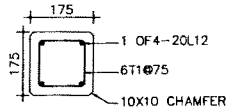
SECTION A-A



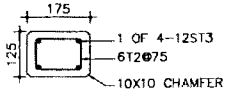
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2057				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	34	1850	144			1994
12	L2	34	2250	144			2394
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 1950 to 2550	144			Avg. 2394
12	L6	6	Var. 1950 to 2550	144			Avg. 2394
16	L7	32	Var. 3550 to 5200	192			Avg. 4361
16	L8	14	Var. 3175 to 3550	192			Avg. 3555
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	1181	120			1301
20	U1	30	240	4225	240		4705
20	U2	23	240	5610	240		6090
20	U3	30	240	4225	240		4705
20	U4	23	240	5610	240		6090
16	U6	20	192	4862	192		5246
16	U7	9	192	4862	192		5246
12	U8	18	Var. 3550 to 5200	200	550		Avg. 5033
12	U9	8	Var. 3175 to 3550	200	550		Avg. 4113
12	U10	16	3175	200	550		3925
16	U12	12	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	18	1200	400	4910		6510
12	Z1	34	1850	866	144		2860
12	S1	34	675	2800	240		3715
16	C1	42	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	120	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg.no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220462

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	34	1700	144			1844
12	L2	34	2400	144			2544
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2100 to 2700	144			Avg. 2544
12	L6	6	Var. 2100 to 2700	144			Avg. 2544
16	L7	30	Var. 3775 to 5200	192			Avg. 4537
16	L8	13	Var. 3175 to 3775	192			Avg. 3667
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	1181	120			1301
20	U1	30	240	4225	240		4705
20	U2	23	240	5610	240		6090
20	U3	30	240	4225	240		4705
20	U4	23	240	5610	240		6090
16	U6	18	192	4862	192		5246
16	U7	9	192	4862	192		5246
12	U8	16	Var. 3775 to 5200	200	550		Avg. 5238
12	U9	10	Var. 3175 to 3775	200	550		Avg. 4225
12	U10	16	3175	200	550		3925
16	U12	12	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	19	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	2950	240		3865
16	C1	42	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	120	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	34	1450	144			1594
12	L2	34	2650	144			2794
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2350 to 2950	144			Avg. 2794
12	L6	6	Var. 2350 to 2950	144			Avg. 2794
16	L7	24	Var. 4150 to 5200	192			Avg. 4867
16	L8	22	Var. 3175 to 4150	192			Avg. 3855
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	1181	120			1301
20	U1	30	240	4225	240		4705
20	U2	23	240	5610	240		6090
20	U3	30	240	4225	240		4705
20	U4	23	240	5610	240		6090
16	U6	16	192	4862	192		5246
16	U7	11	192	4862	192		5246
12	U8	14	Var. 4150 to 5200	200	550		Avg. 5500
12	U9	12	Var. 3175 to 4150	200	550		Avg. 4413
12	U10	16	3175	200	550		3925
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	20	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	3200	240		4115
16	C1	42	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	120	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

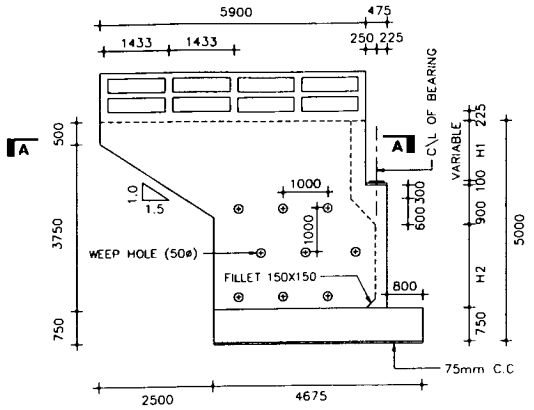
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	52	Var. 400 to 2067				Avg. 1234
12	ST3	16	5260				5260
12	ST4	8	5250				5250
12	L1	34	1350	144			1494
12	L2	34	2750	144			2894
20	L3	14	4400	240			4640
12	L4	22	4400	144			4544
12	L5	6	Var. 2450 to 3050	144			Avg. 2894
12	L6	6	Var. 2450 to 3050	144			Avg. 2894
16	L7	22	Var. 4300 to 5200	192			Avg. 4983
16	L8	24	Var. 3175 to 4300	192			Avg. 3800
16	L9	16	3175	192			3367
20	L10	14	2244	240			2484
20	L11	8	4400	240			4640
20	L12	40	1181	120			1301
20	U1	30	240	4225	240		4705
20	U2	23	240	5610	240		6090
20	U3	30	240	4225	240		4705
20	U4	23	240	5610	240		6090
16	U6	15	192	4862	192		5246
16	U7	11	192	4862	192		5246
12	U8	12	Var. 4300 to 5200	200	550		Avg. 5650
12	U9	14	Var. 3175 to 4300	200	550		Avg. 4488
12	U10	16	3175	200	550		3925
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	21	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	3300	240		4215
16	C1	42	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	3868			4118
6	T1	120	306	306			612
6	T2	256	206	306			512
12	VL1	62	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

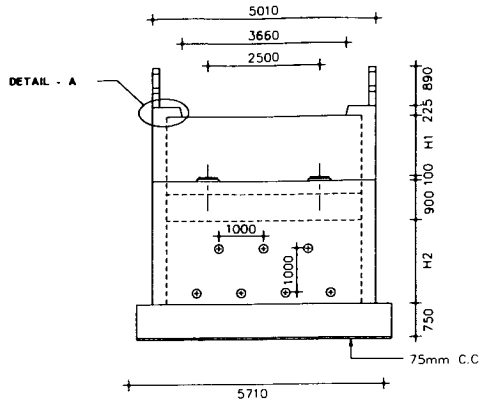
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 4.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220463	

Web Copy



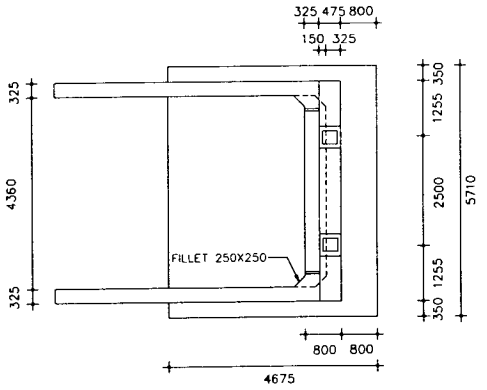
SIDE ELEVATION



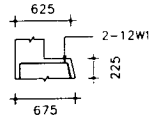
FRONT ELEVATION

TABLE-1

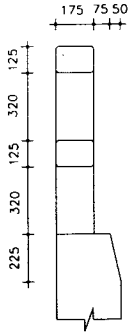
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	1750	335	190
19500	1500	1750	333	188
19000	1500	1750	329	186
18500	1500	1750	327	184
18000	1350	1900	321	180
17500	1350	1900	319	178
17000	1350	1900	317	176
16500	1350	1900	315	174
16000	1350	1900	313	172
15500	1350	1900	311	170
15000	1100	2150	303	166
14500	1100	2150	301	164
14000	1100	2150	299	162
13500	1100	2150	297	160
13000	1100	2150	295	158
12500	1000	2250	291	156



SECTION A-A



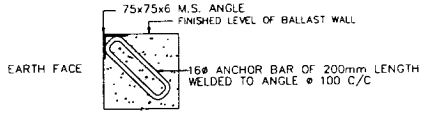
REINF. DETAIL 'A'



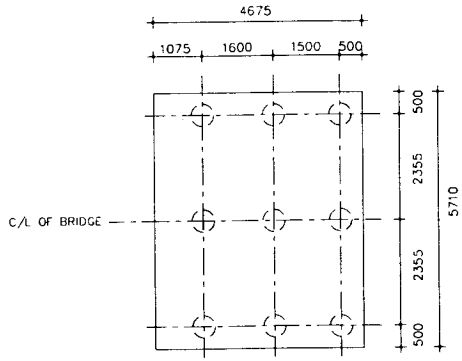
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

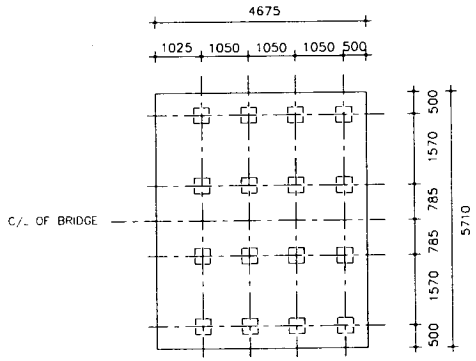
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

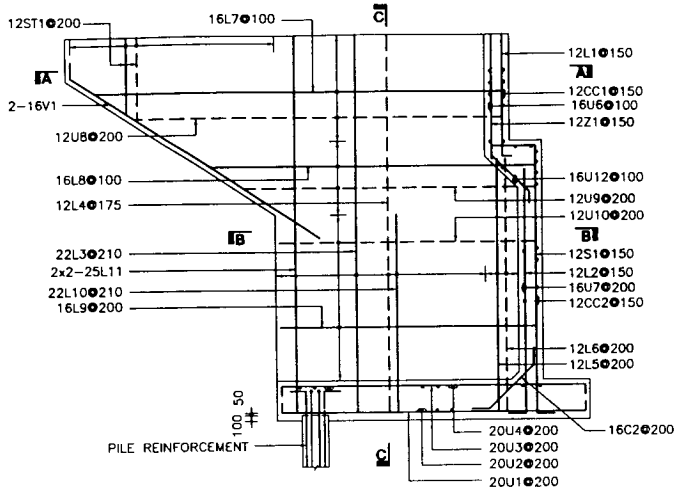
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.0m , DECK WIDTH 5.01m)

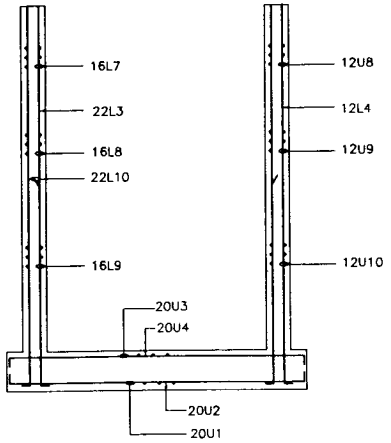
DATE :
ISSUED BY :
CAD FILE REF ABUT\R1220501

Web Copy

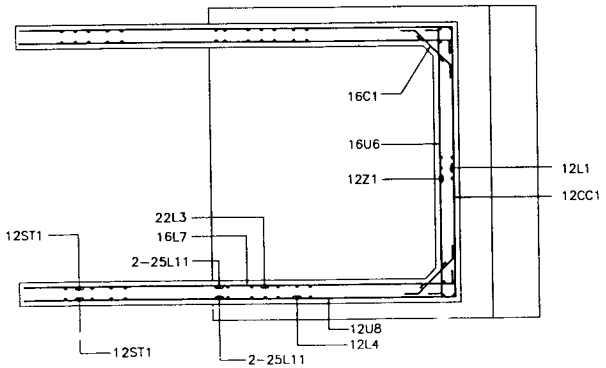
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



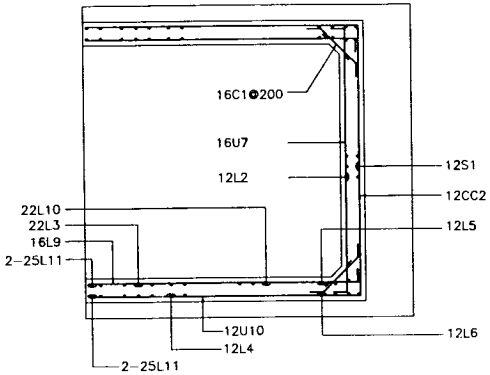
REINFORCEMENT DETAIL



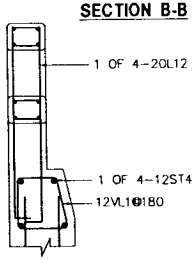
SECTION C-C



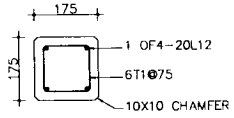
SECTION A-A



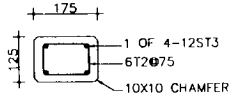
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6085				6085
12	ST4	8	6075				6075
12	L1	34	1850	144			1994
12	L2	34	2750	144			2894
22	L3	22	4900	264			5164
12	L4	26	4900	144			5044
12	L5	6	Var. 2450 to 3050	144			Avg. 2894
12	L6	6	Var. 2450 to 3050	144			Avg. 2894
16	L7	32	Var. 4375 to 6025	192			Avg. 5186
16	L8	20	Var. 3500 to 4375	192			Avg. 4130
16	L9	20	3500	192			3692
22	L10	22	2410	264			2674
25	L11	8	4900	300			5200
20	L12	40	1181	120			1301
20	U1	42	240	5000	240		5480
20	U2	21	240	5610	240		6090
20	U3	24	240	5000	240		5480
20	U4	26	240	5610	240		6090
16	U6	20	192	4862	192		5246
16	U7	11	192	4862	192		5246
12	U8	18	Var. 4375 to 6025	225	575		Avg. 5725
12	U9	12	Var. 3500 to 4375	225	575		Avg. 4957
12	U10	18	3500	225	575		4300
16	U12	11	192	4910	192		5294
12	CC1	13	1250	450	4910		6610
12	CC2	21	1250	450	4910		6610
12	Z1	34	1850	866	144		2860
12	S1	34	700	3300	240		4240
16	C1	46	320	993	320		1633
16	C2	26	320	1240	320		1880
16	V1	4	250	4544			4794
6	T1	120	306	306			612
6	T2	304	206	306			512
12	VL1	72	272	200	250	278	1000
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Cleor cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cod File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220502

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6085				6085
12	ST4	8	6075				6075
12	L1	34	1700	144			1844
12	L2	34	2900	144			3044
22	L3	22	4900	264			5164
12	L4	26	4900	144			5044
12	L5	6	Var. 2600 to 3200	144			Avg. 3044
12	L6	6	Var. 2600 to 3200	144			Avg. 3044
16	L7	30	Var. 4600 to 6025	192			Avg. 5362
16	L8	24	Var. 3500 to 4600	192			Avg. 4242
16	L9	20	3500	192			3692
22	L10	22	2410	264			2674
25	L11	8	4900	300			5200
20	L12	40	1181	120			1301
20	U1	42	240	5000	240		5480
20	U2	21	240	5610	240		6090
20	U3	24	240	5000	240		5480
20	U4	26	240	5610	240		6090
16	U6	18	192	4862	192		5246
16	U7	12	192	4862	192		5246
12	U8	16	Var. 4600 to 6025	225	575		Avg. 5934
12	U9	14	Var. 3500 to 4600	225	575		Avg. 5125
12	U10	18	3500	225	575		4300
16	U12	11	192	4910	192		5294
12	CC1	12	1250	450	4910		6610
12	CC2	22	1250	450	4910		6610
12	Z1	34	1700	866	144		2710
12	S1	34	700	3450	240		4390
16	C1	46	320	993	320		1633
16	C2	26	320	1240	320		1880
16	V1	4	250	4544			4794
6	T1	120	306	306			612
6	T2	304	206	306			512
12	VL1	72	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6085				6085
12	ST4	8	6075				6075
12	L1	34	1450	144			1594
12	L2	34	3150	144			3294
22	L3	22	4900	264			5164
12	L4	26	4900	144			5044
12	L5	6	Var. 2850 to 3450	144			Avg. 3294
12	L6	6	Var. 2850 to 3450	144			Avg. 3294
16	L7	24	Var. 4975 to 6025	192			Avg. 5692
16	L8	28	Var. 3500 to 4975	192			Avg. 4430
16	L9	20	3500	192			3692
22	L10	22	2410	264			2674
25	L11	8	4900	300			5200
20	L12	40	1181	120			1301
20	U1	42	240	5000	240		5480
20	U2	21	240	5610	240		6090
20	U3	24	240	5000	240		5480
20	U4	26	240	5610	240		6090
16	U6	16	192	4862	192		5246
16	U7	13	192	4862	192		5246
12	U8	14	Var. 4975 to 6025	225	575		Avg. 6225
12	U9	16	Var. 3500 to 4975	225	575		Avg. 5407
12	U10	18	3500	225	575		4300
16	U12	11	192	4910	192		5294
12	CC1	10	1250	450	4910		6610
12	CC2	24	1250	450	4910		6610
12	Z1	34	1450	866	144		2460
12	S1	34	700	3700	240		4640
16	C1	46	320	993	320		1633
16	C2	26	320	1240	320		1880
16	V1	4	250	4544			4794
6	T1	120	306	306			612
6	T2	304	206	306			512
12	VL1	72	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6085				6085
12	ST4	8	6075				6075
12	L1	34	1350	144			1494
12	L2	34	3250	144			3394
22	L3	22	4900	264			5164
12	L4	26	4900	144			5044
12	L5	6	Var. 2950 to 3550	144			Avg. 3394
12	L6	6	Var. 2950 to 3550	144			Avg. 3394
16	L7	22	Var. 5125 to 6025	192			Avg. 5808
16	L8	30	Var. 3500 to 5125	192			Avg. 4505
16	L9	20	3500	192			3692
22	L10	22	2410	264			2674
25	L11	8	4900	300			5200
20	L12	40	1181	120			1301
20	U1	42	240	5000	240		5480
20	U2	21	240	5610	240		6090
20	U3	24	240	5000	240		5480
20	U4	26	240	5610	240		6090
16	U6	15	192	4862	192		5246
16	U7	14	192	4862	192		5246
12	U8	12	Var. 5125 to 6025	225	575		Avg. 6375
12	U9	16	Var. 3500 to 5125	225	575		Avg. 5519
12	U10	18	3500	225	575		4300
16	U12	11	192	4910	192		5294
12	CC1	10	1250	450	4910		6610
12	CC2	25	1250	450	4910		6610
12	Z1	34	1350	866	144		2360
12	S1	34	700	3800	240		4740
16	C1	46	320	993	320		1633
16	C2	26	320	1240	320		1880
16	V1	4	250	4544			4794
6	T1	120	306	306			612
6	T2	304	206	306			512
12	VL1	72	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

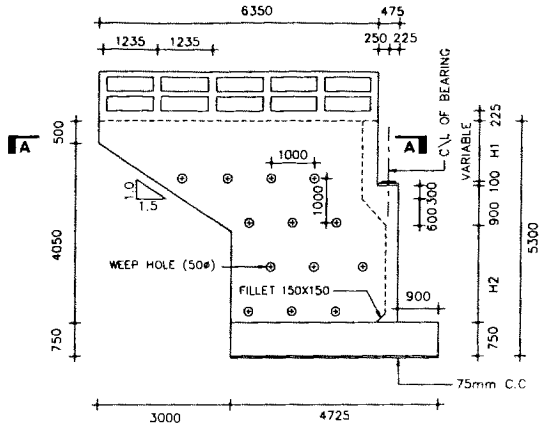
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1220503	

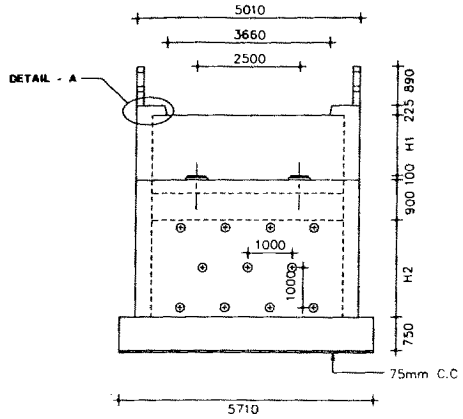
Web Copy

FA-310

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



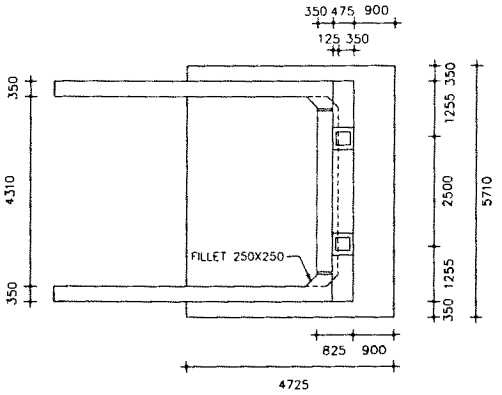
SIDE ELEVATION



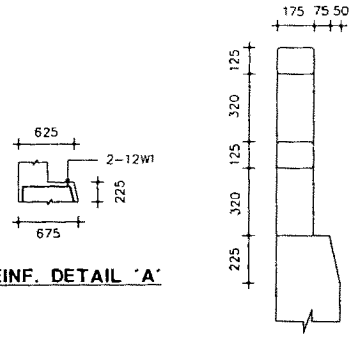
FRONT ELEVATION

TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	2050	345	160
19500	1500	2050	343	158
19000	1500	2050	339	156
18500	1500	2050	337	154
18000	1350	2200	331	150
17500	1350	2200	329	148
17000	1350	2200	327	146
16500	1350	2200	325	144
16000	1350	2200	323	142
15500	1350	2200	321	140
15000	1100	2450	313	136
14500	1100	2450	311	134
14000	1100	2450	309	132
13500	1100	2450	307	130
13000	1100	2450	305	128
12500	1000	2550	301	126



SECTION A-A

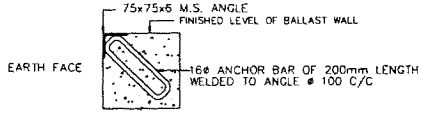


REINF. DETAIL 'A'

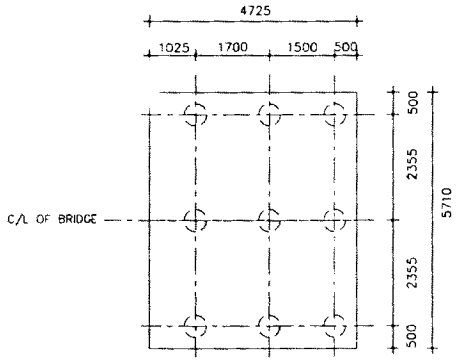
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

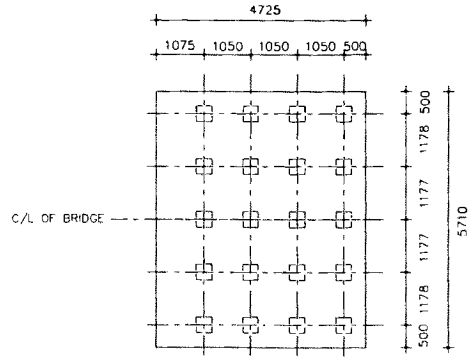
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	50	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metorial shall be provided as per specification.

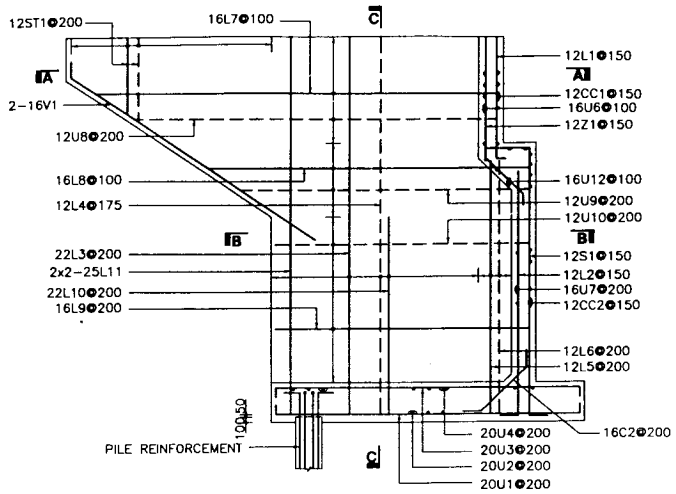
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.3m , DECK WIDTH 5.01m)

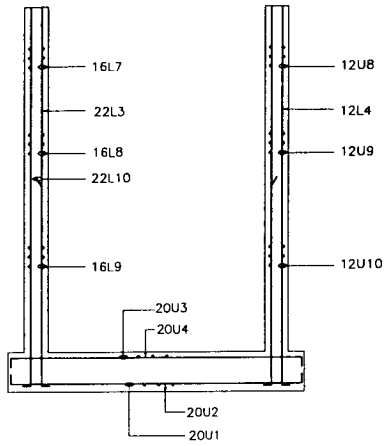
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220531

Web Copy

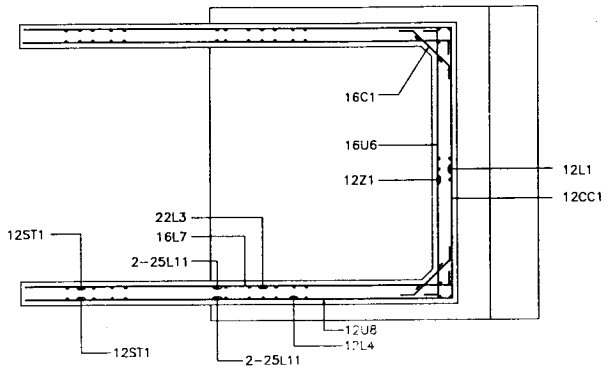
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



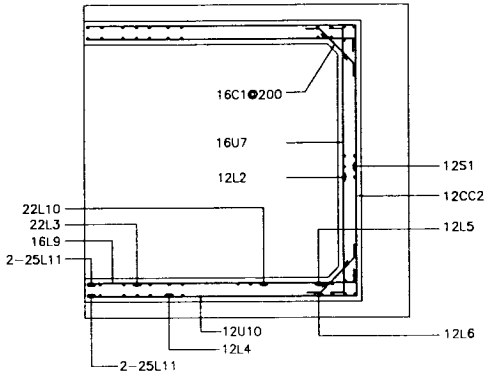
REINFORCEMENT DETAIL



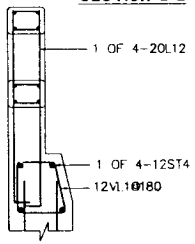
SECTION C-C



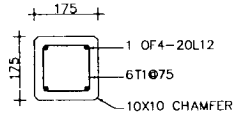
SECTION A-



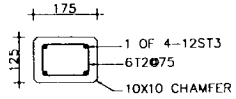
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6535				6535
12	ST4	8	6525				6525
12	L1	34	1850	144			1994
12	L2	34	3050	144			3194
22	L3	28	5200	264			5464
12	L4	32	5200	144			5344
12	L5	6	Var. 2750 to 3350	144			Avg. 3194
12	L6	6	Var. 2750 to 3350	144			Avg. 3194
16	L7	32	Var. 4825 to 6475	192			Avg. 5636
16	L8	20	Var. 3950 to 4825	192			Avg. 4580
16	L9	24	3950	192			4142
22	L10	28	2710	264			2974
25	L11	8	5200	300			5500
20	L12	48	1181	120			1301
20	U1	42	240	5450	240		5930
20	U2	23	240	5610	240		6090
20	U3	24	240	5450	240		5930
20	U4	29	240	5610	240		6090
16	U6	20	192	4862	192		5246
16	U7	14	192	4862	192		5246
12	U8	18	Var. 4825 to 6475	250	600		Avg. 6225
12	U9	12	Var. 3950 to 4825	250	600		Avg. 5457
12	U10	20	3950	250	600		4800
16	U12	11	192	4910	192		5294
12	CC1	13	1300	500	4910		6710
12	CC2	23	1300	500	4910		6710
12	Z1	34	1850	866	144		2860
12	S1	34	725	3600	240		4565
16	C1	50	320	1063	320		1703
16	C2	26	320	1276	320		1916
16	V1	4	250	4600			4850
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 5.01m)

DATE :

ISSUED BY :

CAD FILE REF : ABUT\R1220532

Web Copy

FA-312

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	34	1700	144			1844
12	L2	34	3100	144			3244
22	L3	26	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 2800 to 3400	144			Avg. 3244
12	L6	6	Var. 2800 to 3400	144			Avg. 3244
16	L7	30	Var. 4825 to 6250	192			Avg. 5587
16	L8	24	Var. 3725 to 4825	192			Avg. 4467
16	L9	20	3725	192			3917
22	L10	26	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	1181	120			1301
20	U1	30	240	4625	240		5105
20	U2	25	240	5610	240		6090
20	U3	30	240	4625	240		5105
20	U4	25	240	5610	240		6090
16	U6	18	192	4862	192		5246
16	U7	13	192	4862	192		5246
12	U8	16	Var. 4825 to 6250	250	600		Avg. 6388
12	U9	14	Var. 3725 to 4825	250	600		Avg. 5125
12	U10	20	3725	250	600		4575
16	U12	12	192	4910	192		5294
12	CC1	12	1300	500	4910		6710
12	CC2	23	1300	500	4910		6710
12	Z1	34	1700	866	144		2710
12	S1	34	725	3650	240		4615
16	C1	48	320	1063	320		1703
16	C2	26	320	1346	320		1986
16	V1	4	250	4600			4850
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	34	1450	144			1594
12	L2	34	3350	144			3494
22	L3	26	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3050 to 3650	144			Avg. 3494
12	L6	6	Var. 3050 to 3650	144			Avg. 3494
16	L7	24	Var. 5200 to 6250	192			Avg. 5917
16	L8	28	Var. 3725 to 5200	192			Avg. 4655
16	L9	20	3725	192			3917
22	L10	26	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	1181	120			1301
20	U1	30	240	4625	240		5105
20	U2	25	240	5610	240		6090
20	U3	30	240	4625	240		5105
20	U4	25	240	5610	240		6090
16	U6	16	192	4862	192		5246
16	U7	14	192	4862	192		5246
12	U8	14	Var. 5200 to 6250	250	600		Avg. 6650
12	U9	16	Var. 3725 to 5200	250	600		Avg. 5313
12	U10	20	3725	250	600		4575
16	U12	12	192	4910	192		5294
12	CC1	10	1300	500	4910		6710
12	CC2	25	1300	500	4910		6710
12	Z1	34	1450	866	144		2460
12	S1	34	725	3900	240		4865
16	C1	48	320	1063	320		1703
16	C2	26	320	1346	320		1986
16	V1	4	250	4600			4850
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6310				6310
12	ST4	8	6300				6300
12	L1	34	1350	144			1494
12	L2	34	3450	144			3594
22	L3	26	5100	264			5364
12	L4	32	5100	144			5244
12	L5	6	Var. 3150 to 3750	144			Avg. 3594
12	L6	6	Var. 3150 to 3750	144			Avg. 3594
16	L7	22	Var. 5350 to 6250	192			Avg. 6033
16	L8	30	Var. 3725 to 5350	192			Avg. 4730
16	L9	20	3725	192			3917
22	L10	26	2610	264			2874
25	L11	8	5100	300			5400
20	L12	48	1181	120			1301
20	U1	30	240	4625	240		5105
20	U2	25	240	5610	240		6090
20	U3	30	240	4625	240		5105
20	U4	25	240	5610	240		6090
16	U6	15	192	4862	192		5246
16	U7	15	192	4862	192		5246
12	U8	12	Var. 5350 to 6250	250	600		Avg. 6800
12	U9	16	Var. 3725 to 5350	250	600		Avg. 5388
12	U10	20	3725	250	600		4575
16	U12	12	192	4910	192		5294
12	CC1	10	1300	500	4910		6710
12	CC2	26	1300	500	4910		6710
12	Z1	34	1350	866	144		2360
12	S1	34	725	4000	240		4965
16	C1	48	320	1063	320		1703
16	C2	26	320	1346	320		1986
16	V1	4	250	4600			4850
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	74	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

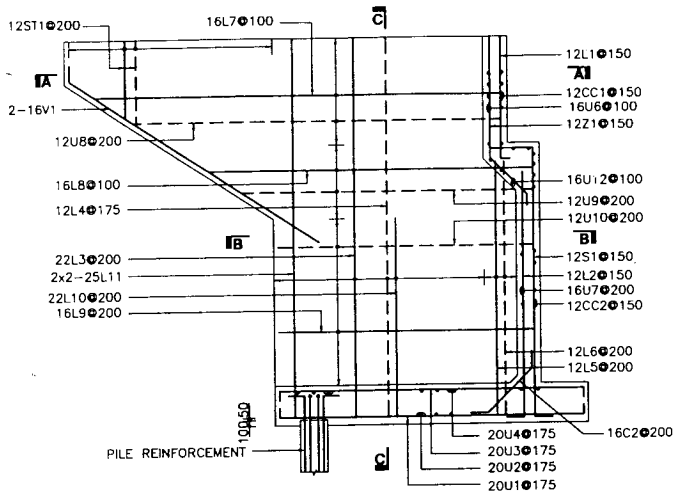
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.3m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220533

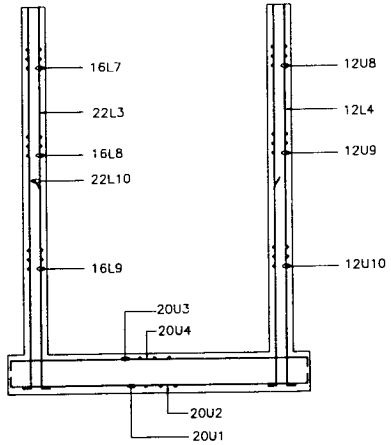
Web Copy

FA-314

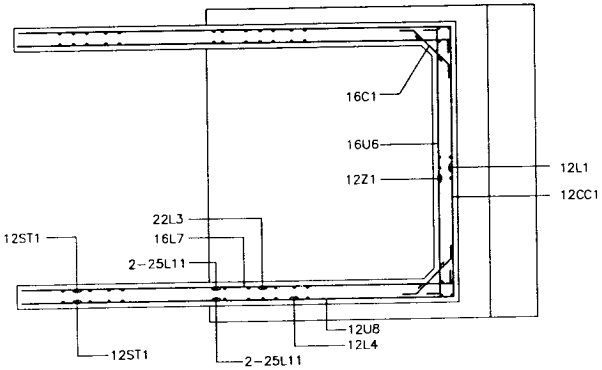
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



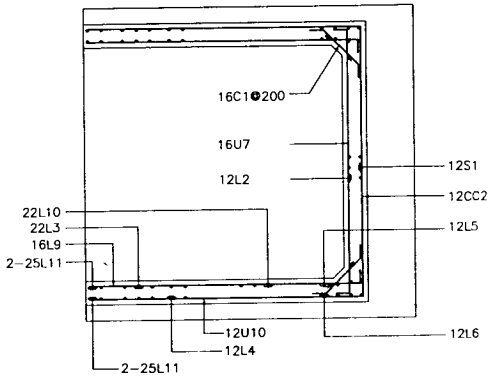
REINFORCEMENT DETAIL



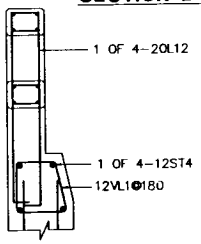
SECTION C-C



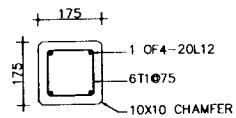
SECTION A-A



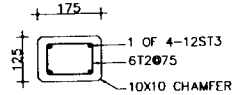
SECTION B-B



RAILING ON WING WALL (REINF. DETAIL)



REINF. DETAIL OF POST



REINF. DETAIL OF RAILING

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6535				6535
12	ST4	8	6525				6525
12	L1	34	1850	144			1994
12	L2	34	3250	144			3394
22	L3	28	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 2950 to 3550	144			Avg. 3394
12	L6	6	Var. 2950 to 3550	144			Avg. 3394
16	L7	32	Var. 4825 to 6475	192			Avg. 5636
16	L8	20	Var. 3950 to 4825	192			Avg. 4580
16	L9	22	3950	192			4142
22	L10	28	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	1181	120			1301
20	U1	34	240	4950	240		5430
20	U2	30	240	5610	240		6090
20	U3	34	240	4950	240		5430
20	U4	30	240	5610	240		6090
16	U6	20	192	4854	192		5238
16	U7	14	192	4862	192		5246
12	U8	18	Var. 4825 to 6475	275	625		Avg. 6458
12	U9	12	Var. 3950 to 4825	275	625		Avg. 5288
12	U10	22	3950	275	625		4850
16	U12	12	192	4910	192		5294
12	CC1	13	1350	550	4910		6810
12	CC2	24	1350	550	4910		6810
12	Z1	34	1850	866	144		2860
12	S1	34	750	3800	240		4790
16	C1	52	320	1134	320		1774
16	C2	26	320	1382	320		2022
16	V1	4	250	4656			4906
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strenght of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For Pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shope Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 5.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1220562	

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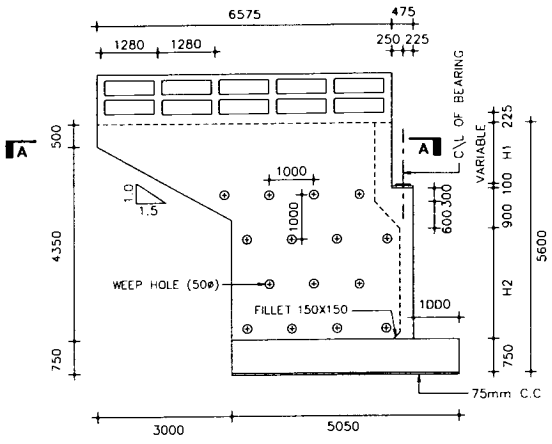
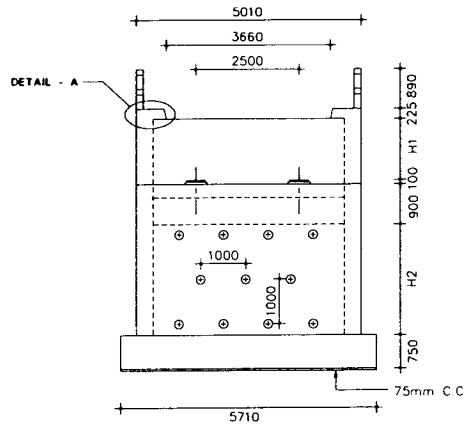
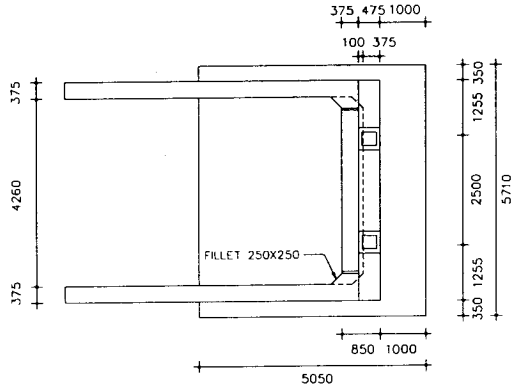
SHEET 1 OF 3	
SPAN RANGE : 12.5m TO 20m	
SIDE WALK : YES	



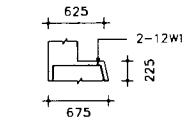
SIDE ELEVATION



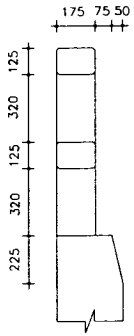
FRONT ELEVATION



SECTION A-A



REINF. DETAIL 'A'



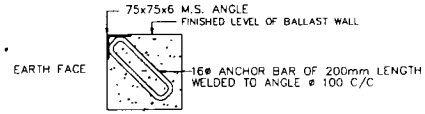
GENERAL ARRANGEMENT
OF RAILING ON WING WALL

TABLE-1

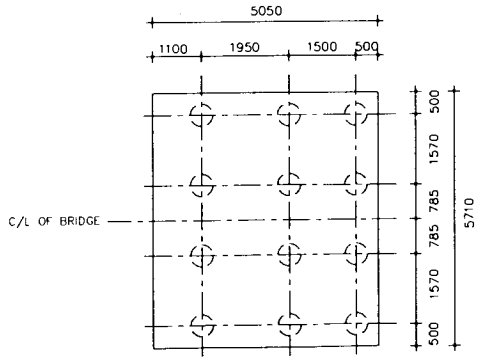
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	2350	290	175
19500	1500	2350	288	173
19000	1500	2350	286	171
18500	1500	2350	284	169
18000	1350	2500	280	165
17500	1350	2500	278	163
17000	1350	2500	276	161
16500	1350	2500	274	159
16000	1350	2500	272	157
15500	1350	2500	270	155
15000	1100	2750	264	151
14500	1100	2750	262	149
14000	1100	2750	260	147
13500	1100	2750	258	145
13000	1100	2750	256	143
12500	1000	2850	252	141

TABLE-2

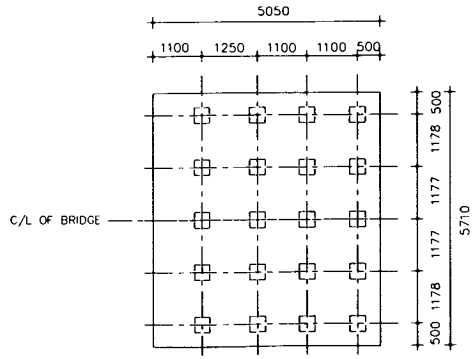
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	350X350	30	PRECAST



NOSING AT ABUTMENT



LAYOUT PLAN OF FOUNDATION TYPE - A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 5.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABU1\R1220561	

Web Copy

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6535				6535
12	ST4	8	6525				6525
12	L1	34	1700	144			1844
12	L2	34	3400	144			3544
22	L3	28	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3100 to 3700	144			Avg. 3544
12	L6	6	Var. 3100 to 3700	144			Avg. 3544
16	L7	30	Var. 5050 to 6475	192			Avg. 5812
16	L8	24	Var. 3950 to 5050	192			Avg. 4692
16	L9	22	3950	192			4142
22	L10	28	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	1181	120			1301
20	U1	34	240	4950	240		5430
20	U2	30	240	5610	240		6090
20	U3	34	240	4950	240		5430
20	U4	30	240	5610	240		6090
16	U6	18	192	4854	192		5238
16	U7	14	192	4862	192		5246
12	U8	16	Var. 5050 to 6475	275	625		Avg. 6663
12	U9	14	Var. 3950 to 5050	275	625		Avg. 5400
12	U10	22	3950	275	625		4850
16	U12	12	192	4910	192		5294
12	CC1	12	1350	550	4910		6810
12	CC2	25	1350	550	4910		6810
12	Z1	34	1700	866	144		2710
12	S1	34	750	3950	240		4940
16	C1	52	320	1134	320		1774
16	C2	26	320	1382	320		2022
16	V1	4	250	4656			4906
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6535				6535
12	ST4	8	6525				6525
12	L1	34	1450	144			1594
12	L2	34	3650	144			3794
22	L3	28	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3350 to 3950	144			Avg. 3794
12	L6	6	Var. 3350 to 3950	144			Avg. 3794
16	L7	24	Var. 5425 to 6475	192			Avg. 6142
16	L8	28	Var. 3950 to 5425	192			Avg. 4880
16	L9	22	3950	192			4142
22	L10	28	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	1181	120			1301
20	U1	34	240	4950	240		5430
20	U2	30	240	5610	240		6090
20	U3	34	240	4950	240		5430
20	U4	30	240	5610	240		6090
16	U6	16	192	4854	192		5238
16	U7	16	192	4862	192		5246
12	U8	14	Var. 5425 to 6475	275	625		Avg. 6925
12	U9	16	Var. 3950 to 5425	275	625		Avg. 5588
12	U10	22	3950	275	625		4850
16	U12	12	192	4910	192		5294
12	CC1	10	1350	550	4910		6810
12	CC2	27	1350	550	4910		6810
12	Z1	34	1450	866	144		2460
12	S1	34	750	4200	240		5190
16	C1	52	320	1134	320		1774
16	C2	26	320	1382	320		2022
16	V1	4	250	4656			4906
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	6535				6535
12	ST4	8	6525				6525
12	L1	34	1350	144			1494
12	L2	34	3750	144			3894
22	L3	28	5400	264			5664
16	L4	34	5400	192			5592
12	L5	6	Var. 3450 to 4050	144			Avg. 3894
12	L6	6	Var. 3450 to 4050	144			Avg. 3894
16	L7	22	Var. 5575 to 6475	192			Avg. 6258
16	L8	30	Var. 3950 to 5575	192			Avg. 4955
16	L9	22	3950	192			4142
22	L10	28	2910	264			3174
25	L11	8	5400	300			5700
20	L12	48	1181	120			1301
20	U1	34	240	4950	240		5430
20	U2	30	240	5610	240		6090
20	U3	34	240	4950	240		5430
20	U4	30	240	5610	240		6090
16	U6	15	192	4854	192		5238
16	U7	16	192	4862	192		5246
12	U8	12	Var. 5575 to 6475	275	625		Avg. 7075
12	U9	16	Var. 3950 to 5575	275	625		Avg. 5663
12	U10	22	3950	275	625		4850
16	U12	12	192	4910	192		5294
12	CC1	10	1350	550	4910		6810
12	CC2	28	1350	550	4910		6810
12	Z1	34	1350	866	144		2360
12	S1	34	750	4300	240		5290
16	C1	52	320	1134	320		1774
16	C2	26	320	1382	320		2022
16	V1	4	250	4656			4906
6	T1	144	306	306			612
6	T2	320	206	306			512
12	VL1	76	272	200	250	278	1000
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 5.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1220563	

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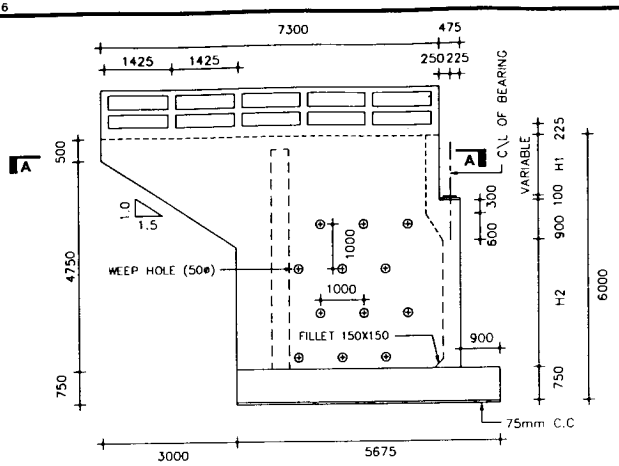
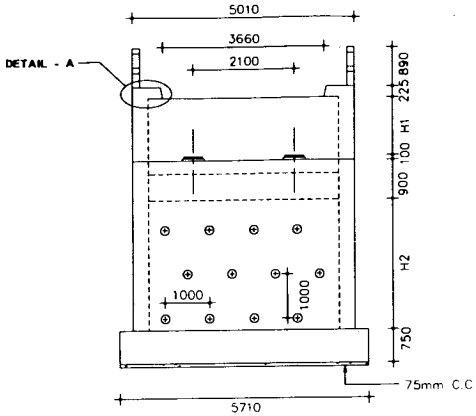
FA-316

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

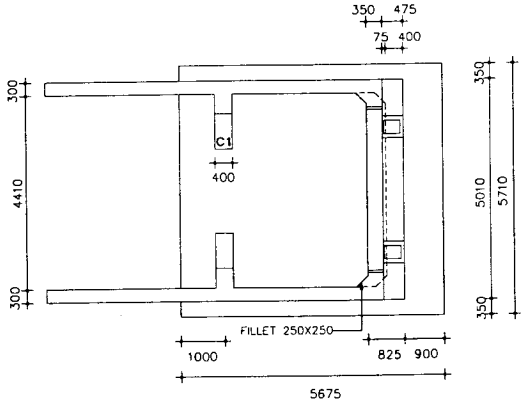
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	2750	335	165
19500	1500	2750	333	163
19000	1500	2750	331	161
18500	1500	2750	329	159
18000	1350	2900	325	157
17500	1350	2900	323	155
17000	1350	2900	321	153
16500	1350	2900	319	151
16000	1350	2900	317	149
15500	1350	2900	315	147
15000	1100	3150	309	143
14500	1100	3150	307	141
14000	1100	3150	305	139
13500	1100	3150	303	137
13000	1100	3150	301	135
12500	1000	3250	297	133

TABLE-2

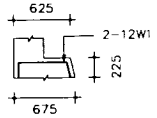
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	350x350	30	PRECAST

TABLE-3

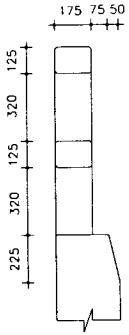
L1	L2	T	H4
700	1600	400	4950



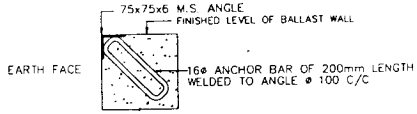
SECTION A-A



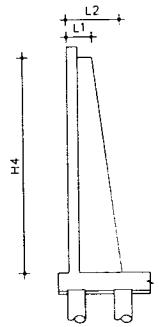
REINF. DETAIL 'A'



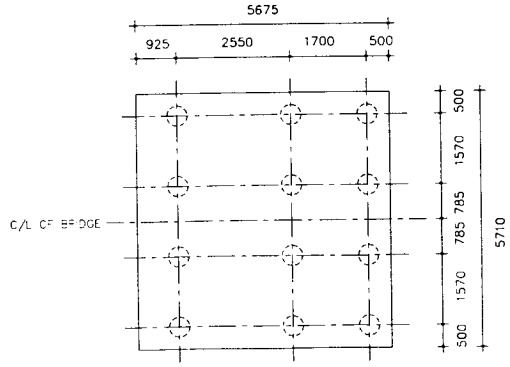
GENERAL ARRANGEMENT OF RAILING ON WING WALL



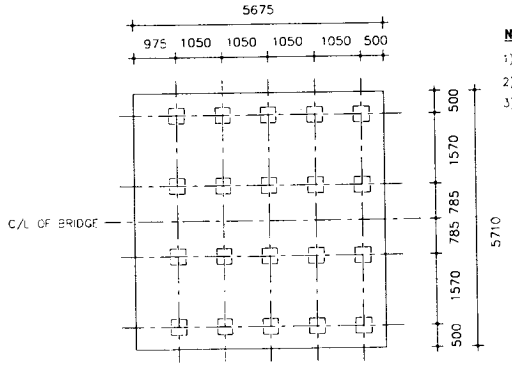
NOSING AT ABUTMENT



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE- A



LAYOUT PLAN OF FOUNDATION TYPE - B

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

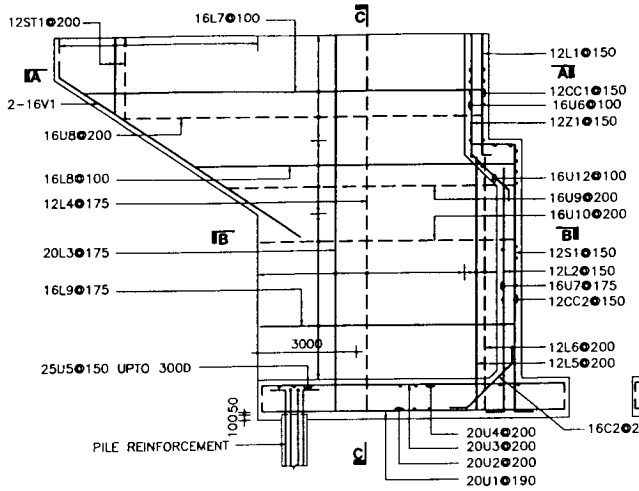
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.0m , DECK WIDTH 5.01m)

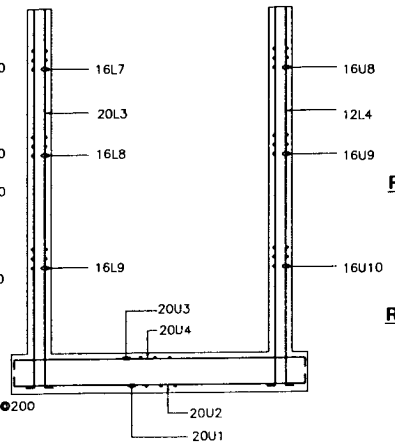
DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220601

Web Copy

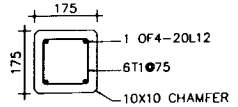
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: YES



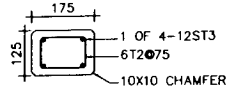
REINFORCEMENT DETAIL



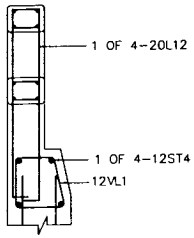
SECTION C-C



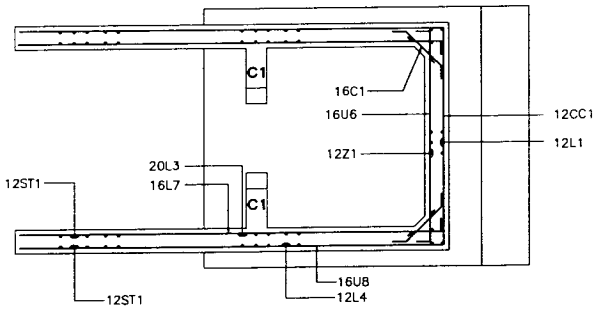
REINF. DETAIL OF POST



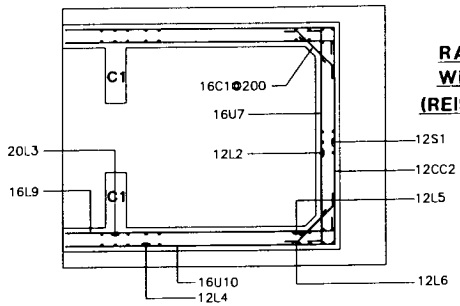
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



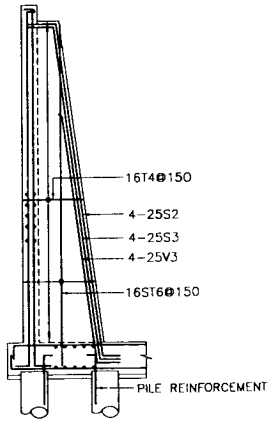
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7260				7260
12	ST4	8	7250				7250
12	L1	34	1850	144			1994
12	L2	34	3650	144			3794
20	L3	46	5800	240			6040
12	L4	46	5800	144			5944
12	L5	6	Var. 3350 to 3950	144			Avg. 3794
12	L6	6	Var. 3350 to 3950	144			Avg. 3794
16	L7	32	Var. 5550 to 7200	192			Avg. 6361
16	L8	20	Var. 4675 to 5550	192			Avg. 5305
16	L9	30	4675	192			4867
20	L12	48	1181	120			1301
20	U1	31	240	5575	240		6055
20	U2	29	240	5610	240		6090
20	U3	30	240	5575	240		6055
20	U4	13	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	20	192	4854	192		5238
16	U7	18	192	4854	192		5238
16	U8	18	Var. 5550 to 7200	200	600		Avg. 7083
16	U9	12	Var. 4675 to 5550	200	650		Avg. 5963
16	U10	26	4675	200	550		5425
16	U12	12	192	4910	192		5294
12	CC1	13	1200	500	4910		6610
12	CC2	27	1200	600	4910		6710
12	Z1	34	1850	836	144		2830
12	S1	34	725	4200	240		5165
16	C1	56	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	144	306	306			612
6	T2	360	206	306			512
12	VL1	84	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5095	600		5995
25	S3	8	325	5096	575		5996
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674
12	w1	4	200	575	206		981



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coorse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Cleor cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220602	

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FA-318

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7260				7260
12	ST4	8	7250				7250
12	L1	34	1700	144			1844
12	L2	34	3800	144			3944
20	L3	46	5800	240			6040
12	L4	46	5800	144			5944
12	L5	6	Var. 3500 to 4100	144			Avg. 3944
12	L6	6	Var. 3500 to 4100	144			Avg. 3944
16	L7	30	Var. 5775 to 7200	192			Avg. 6537
16	L8	24	Var. 4675 to 5775	192			Avg. 5417
16	L9	30	4675	192			4867
20	L12	48	1181	120			1301
20	U1	31	240	5575	240		6055
20	U2	29	240	5610	240		6090
20	U3	30	240	5575	240		6055
20	U4	13	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	18	192	4854	192		5238
16	U7	19	192	4854	192		5238
16	U8	16	Var. 5775 to 7200	200	600		Avg. 7288
16	U9	14	Var. 4675 to 5775	200	650		Avg. 6075
16	U10	26	4675	200	550		5425
16	U12	12	192	4910	192		5294
12	CC1	12	1200	500	4910		6610
12	CC2	28	1200	600	4910		6710
12	Z1	34	1700	836	144		2680
12	S1	34	725	4350	240		5315
16	C1	56	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	144	306	306			612
6	T2	360	206	306			512
12	VL1	84	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5095	600		5995
25	S3	8	325	5096	575		5996
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7260				7260
12	ST4	8	7250				7250
12	L1	34	1450	144			1594
12	L2	34	4050	144			4194
20	L3	46	5800	240			6040
12	L4	46	5800	144			5944
12	L5	6	Var. 3750 to 4350	144			Avg. 4194
12	L6	6	Var. 3750 to 4350	144			Avg. 4194
16	L7	24	Var. 6150 to 7200	192			Avg. 6867
16	L8	28	Var. 4675 to 6150	192			Avg. 5605
16	L9	30	4675	192			4867
20	L12	48	1181	120			1301
20	U1	31	240	5575	240		6055
20	U2	29	240	5610	240		6090
20	U3	30	240	5575	240		6055
20	U4	13	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	16	192	4854	192		5238
16	U7	20	192	4854	192		5238
16	U8	14	Var. 6150 to 7200	200	600		Avg. 7550
16	U9	16	Var. 4675 to 6150	200	650		Avg. 6263
16	U10	26	4675	200	550		5425
16	U12	12	192	4910	192		5294
12	CC1	10	1200	500	4910		6610
12	CC2	30	1200	600	4910		6710
12	Z1	34	1450	836	144		2430
12	S1	34	725	4600	240		5565
16	C1	56	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	144	306	306			612
6	T2	360	206	306			512
12	VL1	84	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5095	600		5995
25	S3	8	325	5096	575		5996
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7260				7260
12	ST4	8	7250				7250
12	L1	34	1350	144			1494
12	L2	34	4150	144			4294
20	L3	46	5800	240			6040
12	L4	46	5800	144			5944
12	L5	6	Var. 3850 to 4450	144			Avg. 4294
12	L6	6	Var. 3850 to 4450	144			Avg. 4294
16	L7	22	Var. 6300 to 7200	192			Avg. 6983
16	L8	30	Var. 4675 to 6300	192			Avg. 5680
16	L9	30	4675	192			4867
20	L12	48	1181	120			1301
20	U1	31	240	5575	240		6055
20	U2	29	240	5610	240		6090
20	U3	30	240	5575	240		6055
20	U4	13	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	21	192	4854	192		5238
16	U8	12	Var. 6300 to 7200	200	600		Avg. 7700
16	U9	16	Var. 4675 to 6300	200	650		Avg. 6338
16	U10	26	4675	200	550		5425
16	U12	12	192	4910	192		5294
12	CC1	10	1200	500	4910		6610
12	CC2	30	1200	600	4910		6710
12	Z1	34	1350	836	144		2330
12	S1	34	725	4700	240		5665
16	C1	56	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4731			4981
6	T1	144	306	306			612
6	T2	360	206	306			512
12	VL1	84	272	200	250	278	1000
16	T4	68	Var. 1296 to 3096	696			Avg. 2892
25	S2	8	300	5095	600		5995
25	S3	8	325	5096	575		5996
25	V3	4	350	3534			3884
16	ST6	22	Var. 910 to 5760				Avg. 2674
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

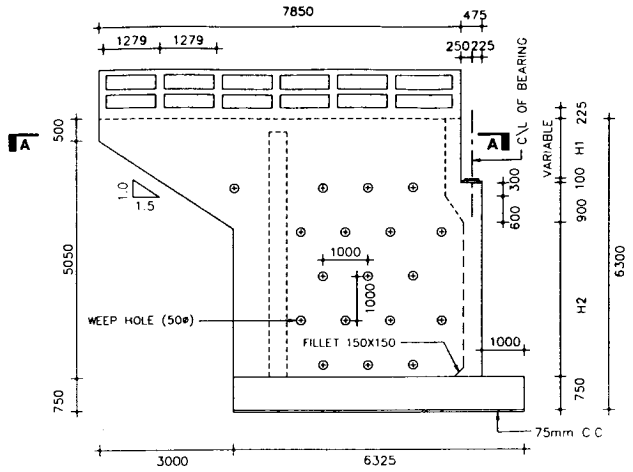
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220603	

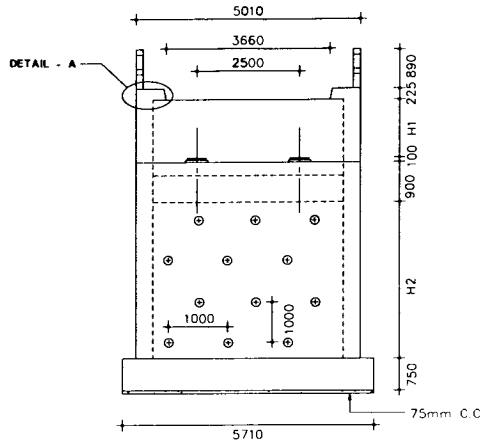
Web Copy

FA-319

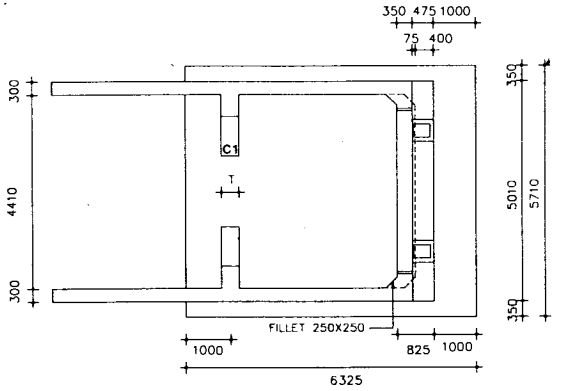
SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



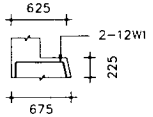
SIDE ELEVATION



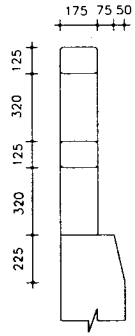
FRONT ELEVATION



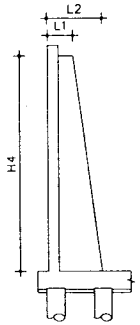
SECTION A-A



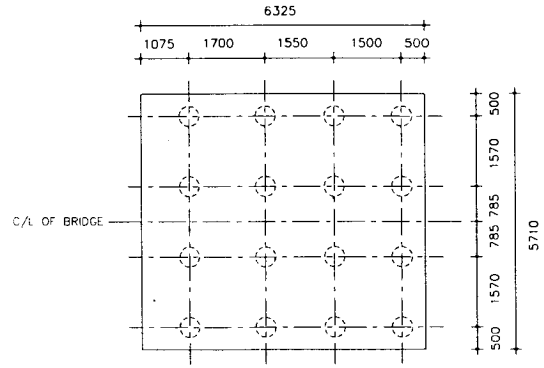
REINF. DETAIL 'A'



GENERAL ARRANGEMENT OF RAILING ON WING WALL



COUNTERFORT C1



LAYOUT PLAN OF FOUNDATION TYPE- A

TABLE-1

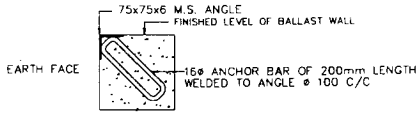
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	3050	280	NOT APPLICABLE
19500	1500	3050	278	
19000	1500	3050	276	
18500	1500	3050	274	
18000	1350	3200	270	
17500	1350	3200	268	
17000	1350	3200	266	
16500	1350	3200	264	
16000	1350	3200	262	
15500	1350	3200	260	
15000	1100	3450	256	
14500	1100	3450	254	
14000	1100	3450	252	
13500	1100	3450	250	
13000	1100	3450	248	
12500	1000	3550	246	

TABLE-2

FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

L1	L2	T	H4
700	1700	400	5250



NOSING AT ABUTMENT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF ABUTMENT (HEIGHT = 6.3m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R122063

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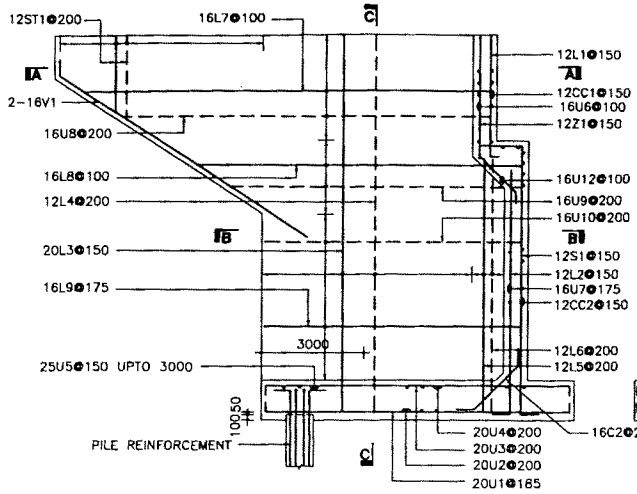
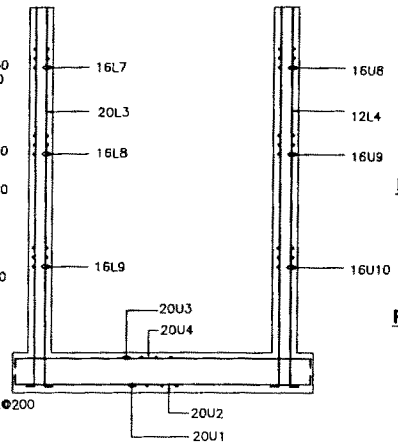
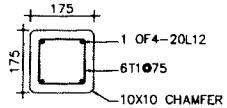
SHEET 2 OF 3
SPAN RANGE :12.5m TO 20m
SIDE WALK: YES



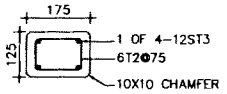
REINFORCEMENT DETAIL



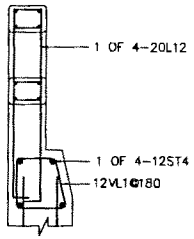
SECTION C-C



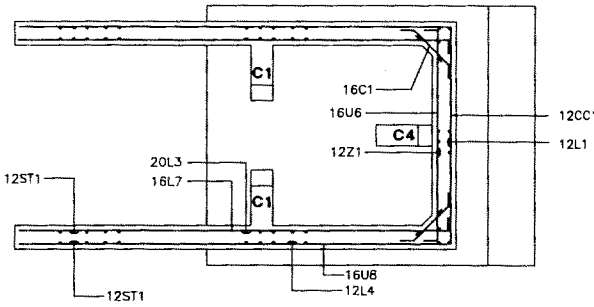
REINF. DETAIL OF POST



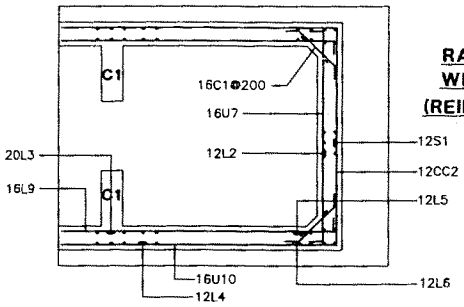
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



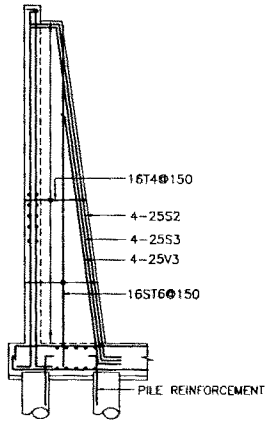
SECTION A-A



SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	34	1850	144			1994
12	L2	34	3950	144			4094
20	L3	60	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 3650 to 4250	144			Avg. 4094
12	L6	6	Var. 3650 to 4250	144			Avg. 4094
16	L7	32	Var. 6100 to 7750	192			Avg. 6911
16	L8	20	Var. 5225 to 6100	192			Avg. 5855
16	L9	34	5225	192			5417
20	L12	56	1181	120			1301
20	U1	32	240	6225	240		6705
20	U2	33	240	5610	240		6090
20	U3	30	240	6225	240		6705
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	20	192	4854	192		5238
16	U7	20	192	4854	192		5238
16	U8	18	Var. 6100 to 7750	200	600		Avg. 7633
16	U9	12	Var. 5225 to 6100	200	650		Avg. 6513
16	U10	30	5225	200	550		5975
16	U12	12	192	4910	192		5294
12	CC1	13	1200	500	4910		6610
12	CC2	29	1200	600	4910		6710
12	Z1	34	1850	836	144		2830
12	S1	34	725	4500	240		5465
16	C1	58	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4787			5037
6	T1	168	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	5707	600		6607
25	S3	8	325	5707	575		6607
25	V3	8	350	3730			4080
16	ST6	24	Var. 864 to 6060				Avg. 2596
12	w1	4	200	575	206		981



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220632	

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FA-321

SHEET 3 OF 3

SPAN RANGE : 12.5m TO 20m

SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	34	1700	144			1844
12	L2	34	4100	144			4244
20	L3	60	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 3800 to 4400	144			Avg. 4244
12	L6	6	Var. 3800 to 4400	144			Avg. 4244
16	L7	30	Var. 6325 to 7750	192			Avg. 7087
16	L8	24	Var. 5225 to 6325	192			Avg. 5967
16	L9	34	5225	192			5417
20	L12	56	1181	120			1301
20	U1	32	240	6225	240		6705
20	U2	33	240	5610	240		6090
20	U3	30	240	6225	240		6705
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	18	192	4854	192		5238
16	U7	20	192	4854	192		5238
16	U8	16	Var. 6325 to 7750	200	600		Avg. 7838
16	U9	14	Var. 5225 to 6325	200	650		Avg. 6625
16	U10	30	5225	200	550		5975
16	U12	12	192	4910	192		5294
12	CC1	12	1200	500	4910		6610
12	CC2	30	1200	600	4910		6710
12	Z1	34	1700	836	144		2680
12	S1	34	725	4650	240		5615
16	C1	58	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4787			5037
6	T1	168	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	5707	600		6607
25	S3	8	325	5707	575		6607
25	V3	8	350	3730			4080
16	ST6	24	Var. 864 to 6060				Avg. 2596
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	34	1450	144			1594
12	L2	34	4350	144			4494
20	L3	60	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4050 to 4650	144			Avg. 4494
12	L6	6	Var. 4050 to 4650	144			Avg. 4494
16	L7	24	Var. 6700 to 7750	192			Avg. 7417
16	L8	28	Var. 5225 to 6700	192			Avg. 6155
16	L9	34	5225	192			5417
20	L12	56	1181	120			1301
20	U1	32	240	6225	240		6705
20	U2	33	240	5610	240		6090
20	U3	30	240	6225	240		6705
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	16	192	4854	192		5238
16	U7	22	192	4854	192		5238
16	U8	14	Var. 6700 to 7750	200	600		Avg. 8100
16	U9	16	Var. 5225 to 6700	200	650		Avg. 6813
16	U10	30	5225	200	550		5975
16	U12	12	192	4910	192		5294
12	CC1	10	1200	500	4910		6610
12	CC2	32	1200	600	4910		6710
12	Z1	34	1450	836	144		2430
12	S1	34	725	4900	240		5865
16	C1	58	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4787			5037
6	T1	168	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	5707	600		6607
25	S3	8	325	5707	575		6607
25	V3	8	350	3730			4080
16	ST6	24	Var. 864 to 6060				Avg. 2596
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	7810				7810
12	ST4	8	7800				7800
12	L1	34	1350	144			1494
12	L2	34	4450	144			4594
20	L3	60	6100	240			6340
12	L4	46	6100	144			6244
12	L5	6	Var. 4150 to 4750	144			Avg. 4594
12	L6	6	Var. 4150 to 4750	144			Avg. 4594
16	L7	22	Var. 6850 to 7750	192			Avg. 7533
16	L8	30	Var. 5225 to 6850	192			Avg. 6230
16	L9	34	5225	192			5417
20	L12	56	1181	120			1301
20	U1	32	240	6225	240		6705
20	U2	33	240	5610	240		6090
20	U3	30	240	6225	240		6705
20	U4	17	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	22	192	4854	192		5238
16	U8	12	Var. 6850 to 7750	200	600		Avg. 8250
16	U9	16	Var. 5225 to 6850	200	650		Avg. 6888
16	U10	30	5225	200	550		5975
16	U12	12	192	4910	192		5294
12	CC1	10	1200	500	4910		6610
12	CC2	32	1200	600	4910		6710
12	Z1	34	1350	836	144		2330
12	S1	34	725	5000	240		5965
16	C1	58	320	1063	320		1703
16	C2	26	320	1417	320		2057
16	V1	4	250	4787			5037
6	T1	168	306	306			612
6	T2	384	206	306			512
12	VL1	90	272	200	250	278	1000
16	T4	70	Var. 1296 to 3296	696			Avg. 2992
25	S2	8	300	5707	600		6607
25	S3	8	325	5707	575		6607
25	V3	8	350	3730			4080
16	ST6	24	Var. 864 to 6060				Avg. 2596
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.3m , DECK WIDTH 5.01m)

DATE :

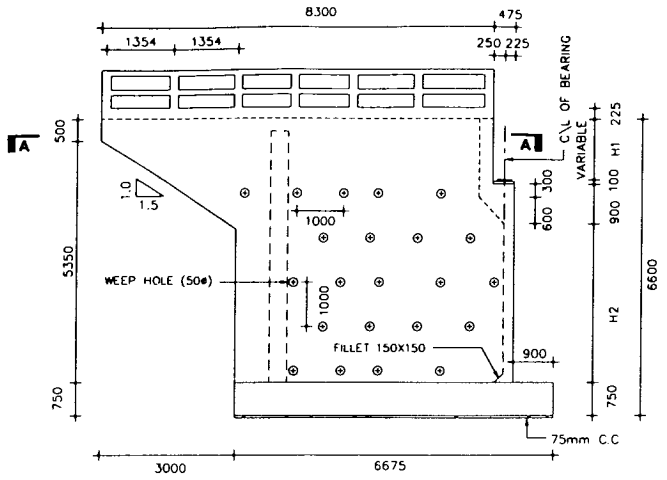
ISSUED BY :

CAD FILE REF : ABUT\R1220633

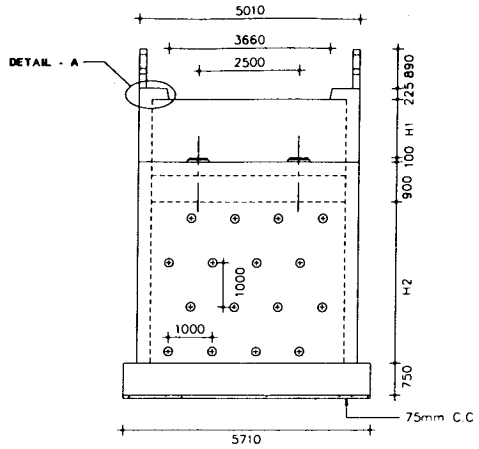
Web Copy

FA-322

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDEWALK : YES



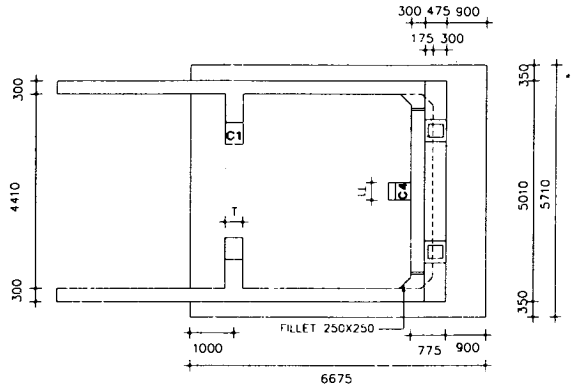
SIDE ELEVATION



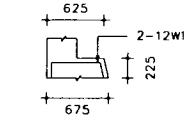
FRONT ELEVATION

TABLE-1

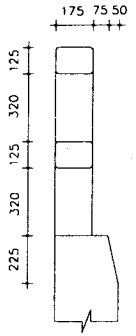
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	3350	310	NOT APPLICABLE
19500	1500	3350	308	
19000	1500	3350	306	
18500	1500	3350	304	
18000	1350	3500	300	
17500	1350	3500	298	
17000	1350	3500	296	
16500	1350	3500	294	
16000	1350	3500	292	
15500	1350	3500	290	
15000	1100	3750	286	
14500	1100	3750	284	
14000	1100	3750	282	
13500	1100	3750	280	
13000	1100	3750	278	
12500	1000	3850	276	



SECTION A-A



REINF. DETAIL 'A'



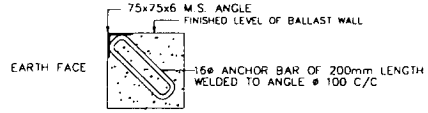
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

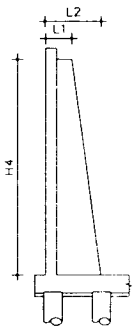
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE - A	500ø	60	CAST IN SITU
TYPE - B	NOT APPLICABLE		

TABLE-3

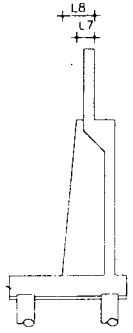
L1	L2	L7	L8	T	T1	H4
700	1750	650	800	400	-	5250



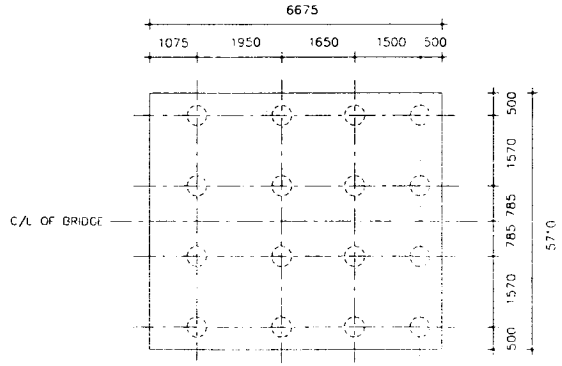
NOSING AT ABUTMENT



COUNTERFORT C1



COUNTERFORT C4



LAYOUT PLAN OF FOUNDATION TYPE- A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter meterial shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

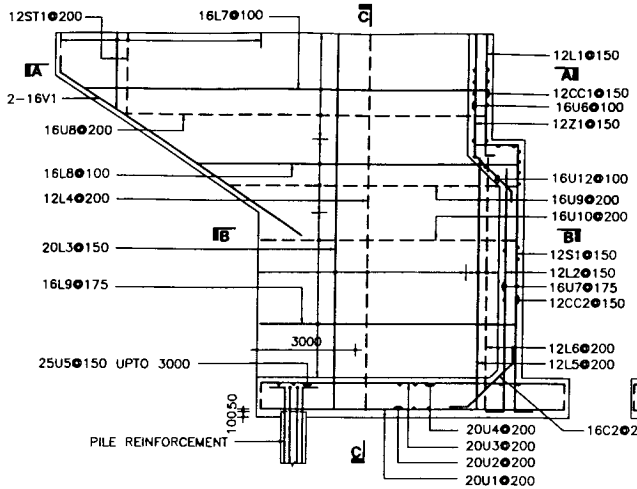
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 6.6m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R1220661

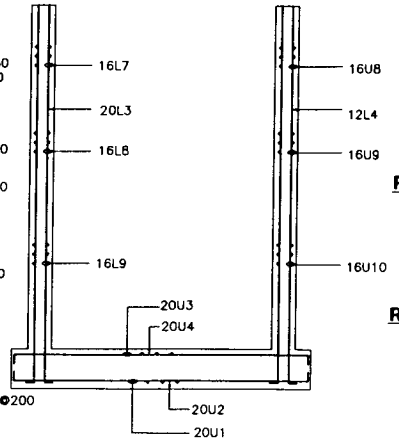
Web Copy

FA-323

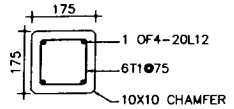
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK: YES



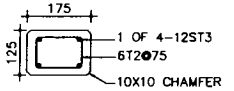
REINFORCEMENT DETAIL



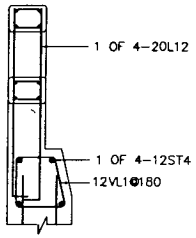
SECTION C-C



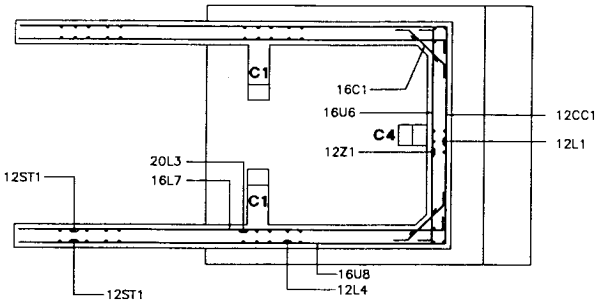
REINF. DETAIL OF POST



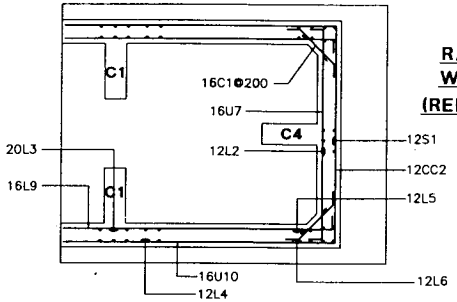
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



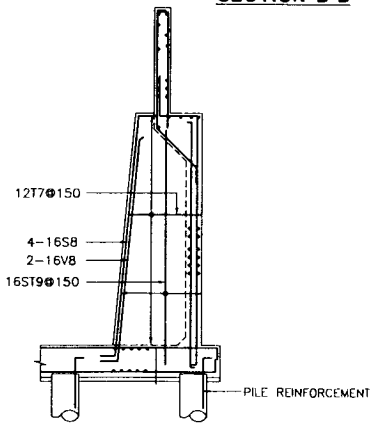
SECTION A-A



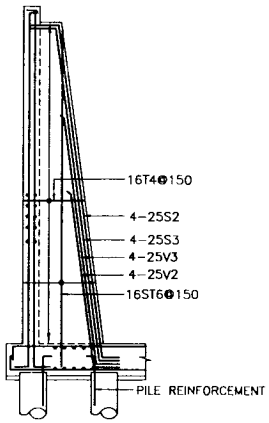
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	34	1850	144			1994
12	L2	34	4250	144			4394
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 3950 to 4550	144			Avg. 4394
12	L6	6	Var. 3950 to 4550	144			Avg. 4394
16	L7	32	Var. 6550 to 8200	192			Avg. 7381
16	L8	20	Var. 5675 to 6550	192			Avg. 6305
16	L9	38	5675	192			5867
20	L12	56	1181	120			1301
20	U1	30	240	6575	240		7055
20	U2	34	240	5610	240		6090
20	U3	30	240	6575	240		7055
20	U4	18	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	20	192	4854	192		5238
16	U7	21	192	4854	192		5238
16	U8	18	Var. 6550 to 8200	200	550		Avg. 8033
16	U9	12	Var. 5675 to 6550	200	550		Avg. 6863
16	U10	32	5675	200	550		6425
16	U12	12	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	31	1200	400	4910		6510
12	Z1	34	1850	866	144		2860
12	S1	34	675	4800	240		5715
16	C1	62	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4844			5094
6	T1	168	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	76	Var. 1296 to 3396	696			Avg. 3042
25	S2	8	300	5954	600		6854
25	S3	8	325	5954	575		6854
25	V2	8	375	3078			3453
25	V3	8	350	3927			4277
16	ST6	24	Var. 986 to 6360				Avg. 2777
12	T7	29	Var. 2122 to 2422	672			Avg. 2944
16	S8	8	192	4723	350		5265
16	V8	4	217	3778			3995
16	ST9	9	Var. 950 to 4009				Avg. 2989
12	w1	4	200	575	206		981



REINFORCEMENT DETAIL OF COUNTERFORT C4



REINFORCEMENT DETAIL OF COUNTERFORT C1

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 6.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220662	

Web Copy

SHEET 3 OF 3
SPAN RANGE :12.5m TO 20m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	34	1700	144			1844
12	L2	34	4400	144			4544
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4100 to 4700	144			Avg. 4544
12	L6	6	Var. 4100 to 4700	144			Avg. 4544
16	L7	30	Var. 6775 to 8200	192			Avg. 7537
16	L8	24	Var. 5675 to 6775	192			Avg. 6417
16	L9	38	5675	192			5867
20	L12	56	1181	120			1301
20	U1	30	240	6575	240		7055
20	U2	34	240	5610	240		6090
20	U3	30	240	6575	240		7055
20	U4	18	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	18	192	4854	192		5238
16	U7	22	192	4854	192		5238
16	U8	16	Var. 6775 to 8200	200	550		Avg. 8238
16	U9	14	Var. 5675 to 6775	200	550		Avg. 6975
16	U10	32	5675	200	550		6425
16	U12	12	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	32	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	4950	240		5865
16	C1	62	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4844			5094
6	T1	168	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	76	Var. 1296 to 3396	696			Avg. 3042
25	S2	8	300	5954	600		6854
25	S3	8	325	5954	575		6854
25	V2	8	375	3078			3453
25	V3	8	350	3927			4277
16	ST6	24	Var. 986 to 6360				Avg. 2777
12	T7	29	Var. 2122 to 2422	672			Avg. 2944
16	S8	8	192	4723	350		5265
16	V8	4	217	3778			3995
16	ST9	9	Var. 950 to 4009				Avg. 2989
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	34	1450	144			1594
12	L2	34	4650	144			4794
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4350 to 4950	144			Avg. 4794
12	L6	6	Var. 4350 to 4950	144			Avg. 4794
16	L7	24	Var. 7150 to 8200	192			Avg. 7867
16	L8	28	Var. 5675 to 7150	192			Avg. 6605
16	L9	38	5675	192			5867
20	L12	56	1181	120			1301
20	U1	30	240	6575	240		7055
20	U2	34	240	5610	240		6090
20	U3	30	240	6575	240		7055
20	U4	18	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	16	192	4854	192		5238
16	U7	24	192	4854	192		5238
16	U8	14	Var. 7150 to 8200	200	550		Avg. 8500
16	U9	16	Var. 5675 to 7150	200	550		Avg. 7163
16	U10	32	5675	200	550		6425
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	34	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	5200	240		6115
16	C1	62	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4844			5094
6	T1	168	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	76	Var. 1296 to 3396	696			Avg. 3042
25	S2	8	300	5954	600		6854
25	S3	8	325	5954	575		6854
25	V2	8	375	3078			3453
25	V3	8	350	3927			4277
16	ST6	24	Var. 986 to 6360				Avg. 2777
12	T7	29	Var. 2122 to 2422	672			Avg. 2944
16	S8	8	192	4723	350		5265
16	V8	4	217	3778			3995
16	ST9	9	Var. 950 to 4009				Avg. 2989
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8260				8260
12	ST4	8	8250				8250
12	L1	34	1450	144			1594
12	L2	34	4650	144			4794
20	L3	68	6400	240			6640
12	L4	50	6400	144			6544
12	L5	6	Var. 4350 to 4950	144			Avg. 4794
12	L6	6	Var. 4350 to 4950	144			Avg. 4794
16	L7	24	Var. 7150 to 8200	192			Avg. 7867
16	L8	28	Var. 5675 to 7150	192			Avg. 6605
16	L9	38	5675	192			5867
20	L12	56	1181	120			1301
20	U1	30	240	6575	240		7055
20	U2	34	240	5610	240		6090
20	U3	30	240	6575	240		7055
20	U4	18	240	5610	240		6090
25	U5	21	300	5610	300		6210
16	U6	16	192	4854	192		5238
16	U7	24	192	4854	192		5238
16	U8	14	Var. 7150 to 8200	200	550		Avg. 8500
16	U9	16	Var. 5675 to 7150	200	550		Avg. 7163
16	U10	32	5675	200	550		6425
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	34	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	5200	240		6115
16	C1	62	320	922	320		1562
16	C2	26	320	1276	320		1916
16	V1	4	250	4844			5094
6	T1	168	306	306			612
6	T2	408	206	306			512
12	VL1	96	272	200	250	278	1000
16	T4	76	Var. 1296 to 3396	696			Avg. 3042
25	S2	8	300	5954	600		6854
25	S3	8	325	5954	575		6854
25	V2	8	375	3078			3453
25	V3	8	350	3927			4277
16	ST6	24	Var. 986 to 6360				Avg. 2777
12	T7	29	Var. 2122 to 2422	672			Avg. 2944
16	S8	8	192	4723	350		5265
16	V8	4	217	3778			3995
16	ST9	9	Var. 950 to 4009				Avg. 2989
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

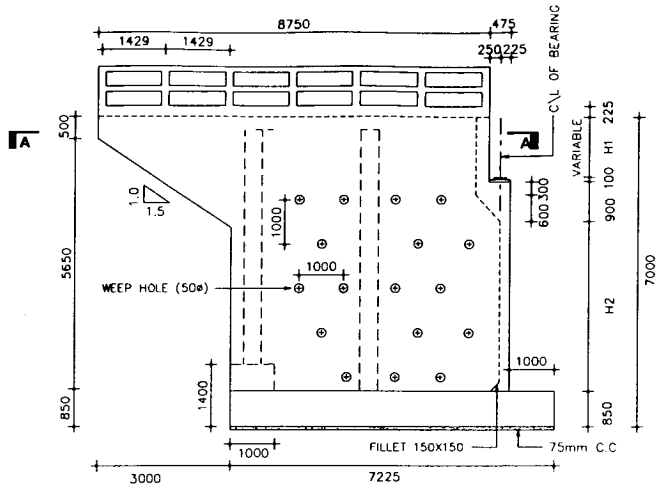
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 6.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220663	

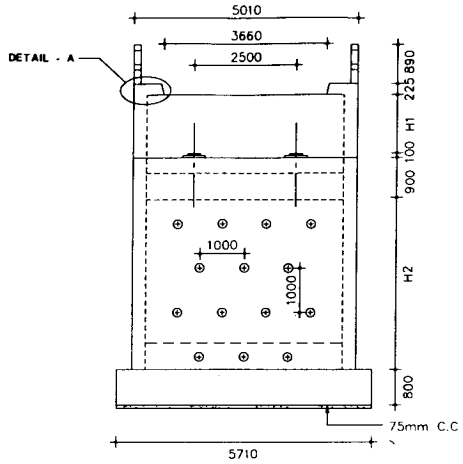
Web Copy

FA-325

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDEWALK : YES



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

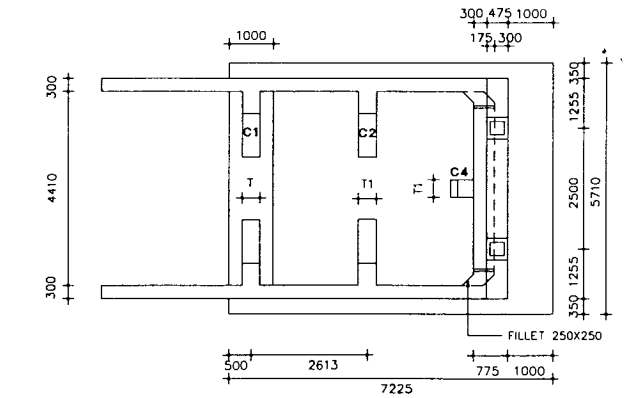
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	3650	345	NOT APPLICABLE
19500	1500	3650	343	
19000	1500	3650	341	
18500	1500	3650	339	
18000	1350	3800	335	
17500	1350	3800	333	
17000	1350	3800	331	
16500	1350	3800	329	
16000	1350	3800	327	
15500	1350	3800	325	
15000	1100	4050	321	
14500	1100	4050	319	
14000	1100	4050	317	
13500	1100	4050	315	
13000	1100	4050	313	
12500	1000	4150	312	

TABLE-2

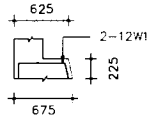
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

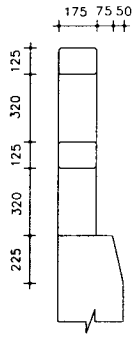
L1	L2	L3	L4	L7	L8	H4	T	T1
700	1800	700	1800	650	800	5850	400	400



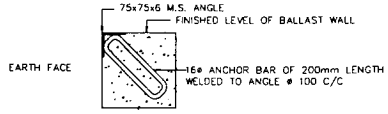
SECTION A-A



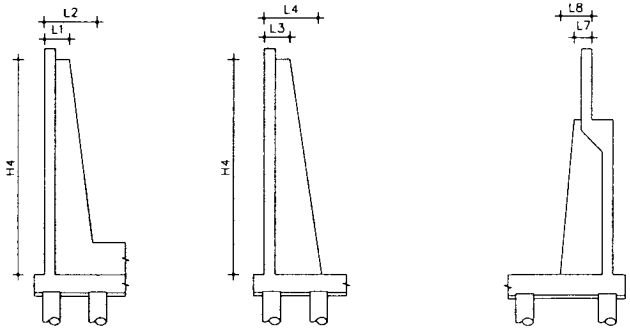
REINF. DETAIL 'A'



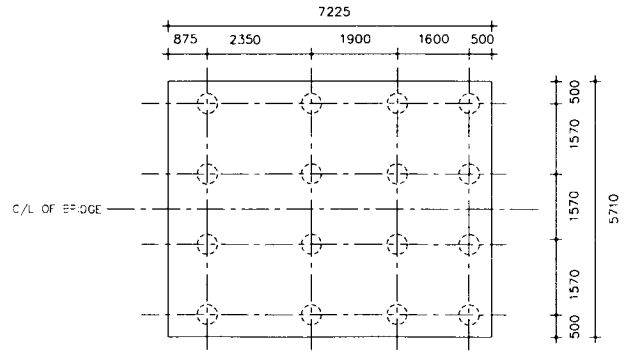
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C4



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter metarial shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

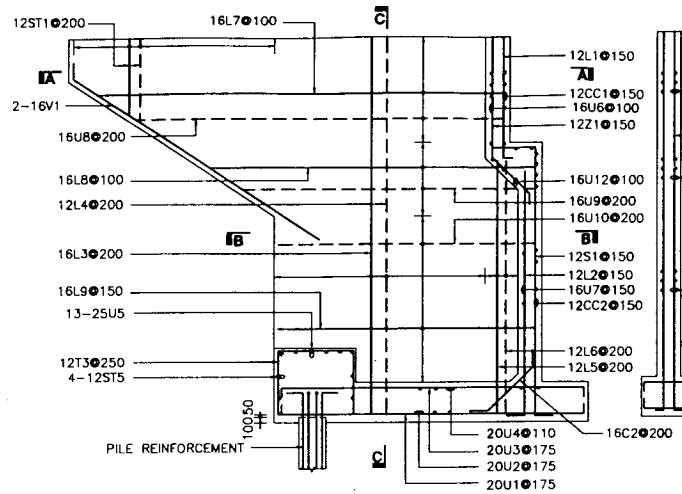
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R1220701

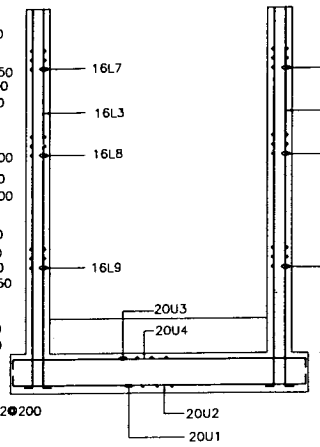
Web Copy

FA-326

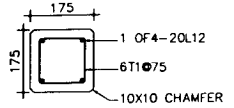
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES



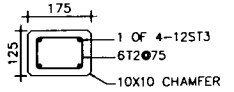
REINFORCEMENT DETAIL



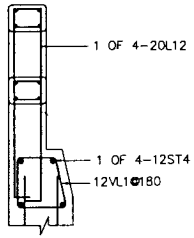
SECTION C-C



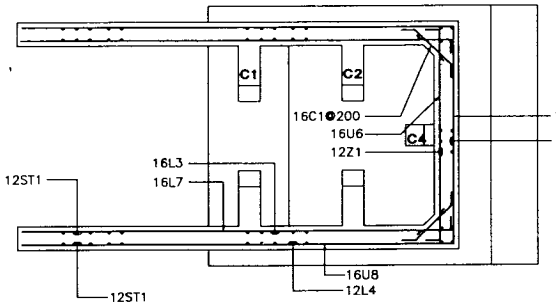
REINF. DETAIL OF POST



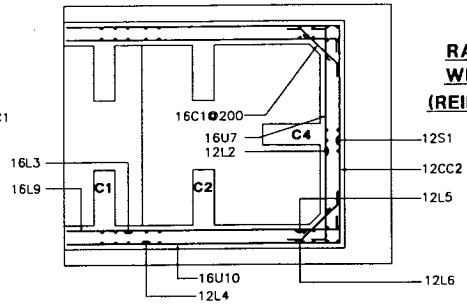
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



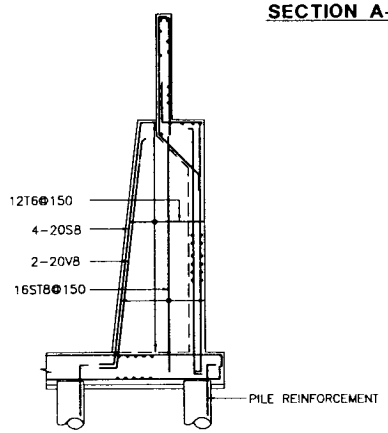
SECTION A-A



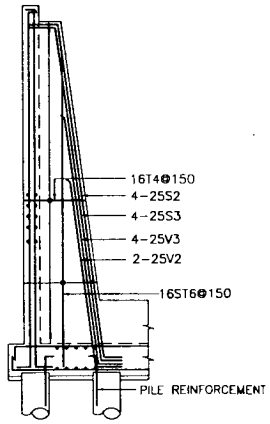
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

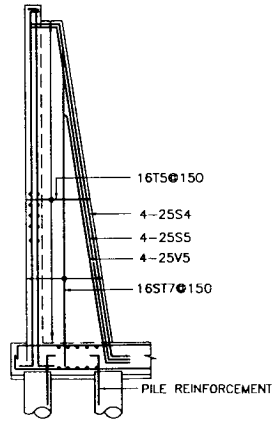
BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8710				8710
12	ST4	8	8700				8700
12	L1	34	1850	144			1994
12	L2	34	4650	144			4794
16	L3	56	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4350 to 4950	144			Avg. 4794
12	L6	6	Var. 4350 to 4950	144			Avg. 4794
16	L7	32	Var. 7000 to 8650	192			Avg. 7811
16	L8	20	Var. 6125 to 7000	192			Avg. 6755
16	L9	48	6125	192			6317
20	L12	56	1181	120			1301
20	U1	34	240	7125	240		7605
20	U2	42	240	5610	240		6090
20	U3	34	240	7125	240		7605
20	U4	57	240	5610	240		6090
25	U5	13	300	5610	300		6210
16	U6	20	192	4854	192		5238
16	U7	27	192	4854	192		5238
16	U8	18	Var. 7000 to 8650	200	550		Avg. 8483
16	U9	12	Var. 6125 to 7000	200	550		Avg. 7313
16	U10	36	6125	200	550		6875
16	U12	12	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	33	1200	400	4910		6510
12	Z1	34	1850	866	144		2860
12	S1	34	675	5200	240		6115
16	C1	64	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	168	306	306			612
6	T2	432	206	306			512
12	VL1	100	272	200	250	278	1000
12	T3	19	1872	2472			4344
12	ST5	4	4910				4910
16	T4	80	Var. 1296 to 3496	696			Avg. 3092
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3257			3632
25	V3	8	350	4157			4507
16	ST6	26	Var. 1451 to 6760				Avg. 3221
16	T5	80	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4157			4507
16	ST7	26	Var. 1451 to 6760				Avg. 3221
12	T6	31	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5122	350		5712
20	V8	4	265	4111			4376
16	ST9	9	Var. 1014 to 4326				Avg. 3222
12	w1	4	200	575	206		981



REINFORCEMENT DETAIL OF COUNTERFORT C4



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT/R1220702

Web Copy

SHEET 3 OF 3

SPAN RANGE : 12.5m TO 20.0m

SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8710				8710
12	ST4	8	8700				8700
12	L1	34	1700	144			1844
12	L2	34	4800	144			4944
16	L3	56	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4500 to 5100	144			Avg. 4944
12	L6	6	Var. 4500 to 5100	144			Avg. 4944
16	L7	30	Var. 7225 to 8650	192			Avg. 7987
16	L8	24	Var. 6125 to 7225	192			Avg. 6867
16	L9	48	6125	192			6317
20	L12	56	1181	120			1301
20	U1	34	240	7125	240		7605
20	U2	42	240	5610	240		6090
20	U3	34	240	7125	240		7605
20	U4	57	240	5610	240		6090
25	U5	13	300	5610	300		6210
16	U6	18	192	4854	192		5238
16	U7	28	192	4854	192		5238
16	U8	16	Var. 7225 to 8650	200	550		Avg. 8688
16	U9	14	Var. 6125 to 7225	200	550		Avg. 7425
16	U10	36	6125	200	550		6875
16	U12	12	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	34	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	5350	240		6265
16	C1	64	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	168	306	306			612
6	T2	432	206	306			512
12	VL1	100	272	200	250	278	1000
12	T3	19	1872	2472			4344
12	ST5	4	4910				4910
16	T4	80	Var. 1296 to 3496	696			Avg. 3092
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3257			3632
25	V3	8	350	4157			4507
16	ST6	26	Var. 1451 to 6760				Avg. 3221
16	T5	80	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4157			4507
16	ST7	26	Var. 1451 to 6760				Avg. 3221
12	T6	31	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5122	350		5712
20	V8	4	265	4111			4376
16	ST9	9	Var. 1014 to 4326				Avg. 3222
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8710				8710
12	ST4	8	8700				8700
12	L1	34	1450	144			1594
12	L2	34	5050	144			5194
16	L3	56	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4750 to 5350	144			Avg. 5194
12	L6	6	Var. 4750 to 5350	144			Avg. 5194
16	L7	24	Var. 7600 to 8650	192			Avg. 8317
16	L8	28	Var. 6125 to 7600	192			Avg. 7055
16	L9	48	6125	192			6317
20	L12	56	1181	120			1301
20	U1	34	240	7125	240		7605
20	U2	42	240	5610	240		6090
20	U3	34	240	7125	240		7605
20	U4	57	240	5610	240		6090
25	U5	13	300	5610	300		6210
16	U6	16	192	4854	192		5238
16	U7	29	192	4854	192		5238
16	U8	14	Var. 7600 to 8650	200	550		Avg. 8950
16	U9	16	Var. 6125 to 7600	200	550		Avg. 7613
16	U10	36	6125	200	550		6875
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	36	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	5600	240		6515
16	C1	64	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	168	306	306			612
6	T2	432	206	306			512
12	VL1	100	272	200	250	278	1000
12	T3	19	1872	2472			4344
12	ST5	4	4910				4910
16	T4	80	Var. 1296 to 3496	696			Avg. 3092
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3257			3632
25	V3	8	350	4157			4507
16	ST6	26	Var. 1451 to 6760				Avg. 3221
16	T5	80	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4157			4507
16	ST7	26	Var. 1451 to 6760				Avg. 3221
12	T6	31	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5122	350		5712
20	V8	4	265	4111			4376
16	ST9	9	Var. 1014 to 4326				Avg. 3222
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	8710				8710
12	ST4	8	8700				8700
12	L1	34	1350	144			1494
12	L2	34	5150	144			5294
16	L3	56	6800	192			6992
12	L4	56	6800	144			6944
12	L5	6	Var. 4850 to 5450	144			Avg. 5294
12	L6	6	Var. 4850 to 5450	144			Avg. 5294
16	L7	22	Var. 7750 to 8650	192			Avg. 8433
16	L8	30	Var. 6125 to 7750	192			Avg. 7130
16	L9	48	6125	192			6317
20	L12	56	1181	120			1301
20	U1	34	240	7125	240		7605
20	U2	42	240	5610	240		6090
20	U3	34	240	7125	240		7605
20	U4	57	240	5610	240		6090
25	U5	13	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	30	192	4854	192		5238
16	U8	12	Var. 7750 to 8650	200	550		Avg. 9100
16	U9	16	Var. 6125 to 7750	200	550		Avg. 7688
16	U10	36	6125	200	550		6875
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	36	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	5700	240		6615
16	C1	64	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4919			5169
6	T1	168	306	306			612
6	T2	432	206	306			512
12	VL1	100	272	200	250	278	1000
12	T3	19	1872	2472			4344
12	ST5	4	4910				4910
16	T4	80	Var. 1296 to 3496	696			Avg. 3092
25	S2	8	300	6352	600		7252
25	S3	8	325	6352	575		7252
25	V2	4	375	3257			3632
25	V3	8	350	4157			4507
16	ST6	26	Var. 1451 to 6760				Avg. 3221
16	T5	80	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6402	600		7302
25	S5	8	325	6402	575		7302
25	V5	8	350	4157			4507
16	ST7	26	Var. 1451 to 6760				Avg. 3221
12	T6	31	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5122	350		5712
20	V8	4	265	4111			4376
16	ST9	9	Var. 1014 to 4326				Avg. 3222
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.0m , DECK WIDTH 5.01m)

DATE :

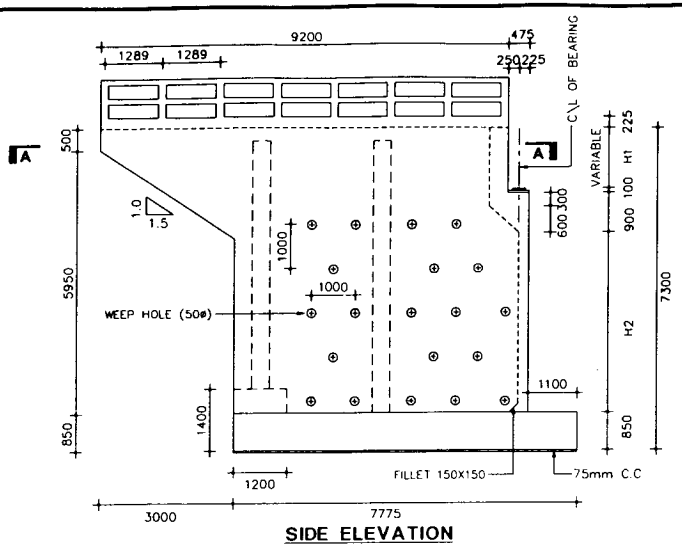
ISSUED BY :

CAD FILE REF : ABUT/R1220703

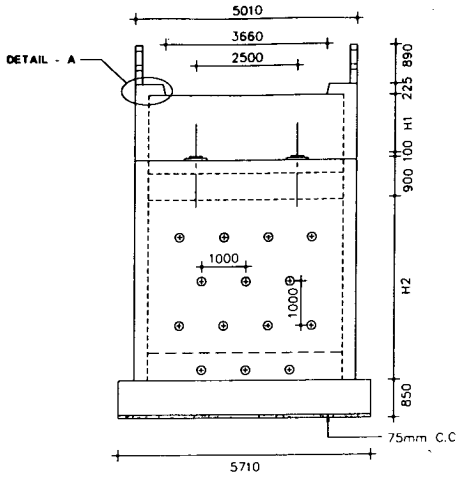
Web Copy

FA-328

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDEWALK : YES



SIDE ELEVATION

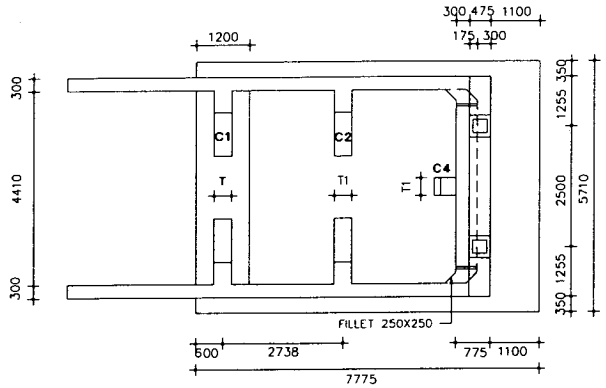


FRONT ELEVATION

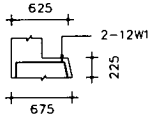
TABLE-1

GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	3950	305	NOT APPLICABLE
19500	1500	3950	303	
19000	1500	3950	301	
18500	1500	3950	299	
18000	1350	4100	295	
17500	1350	4100	293	
17000	1350	4100	291	
16500	1350	4100	289	
16000	1350	4100	287	
15500	1350	4100	285	
15000	1100	4350	281	
14500	1100	4350	279	
14000	1100	4350	277	
13500	1100	4350	275	
13000	1100	4350	273	
12500	1000	4450	271	

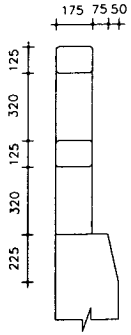
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	55	CAST IN SITU
TYPE – B	NOT APPLICABLE		



SECTION A-A



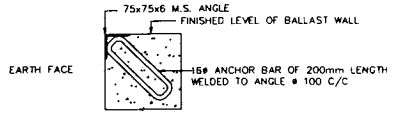
REINF. DETAIL 'A'



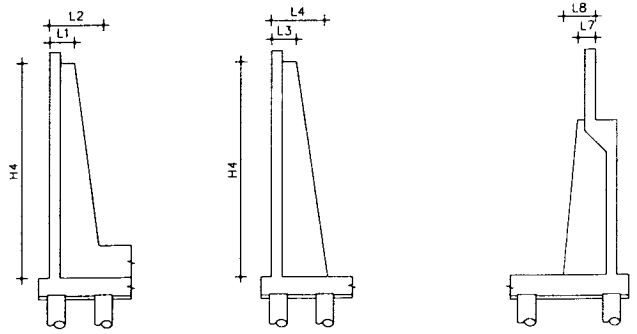
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-3

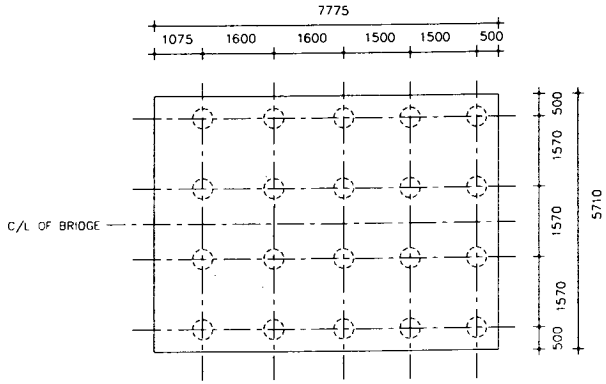
L1	L2	L3	L4	L7	L8	H4	T	T1
700	1795	700	1800	650	800	6150	400	400



NOSING AT ABUTMENT



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C4



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

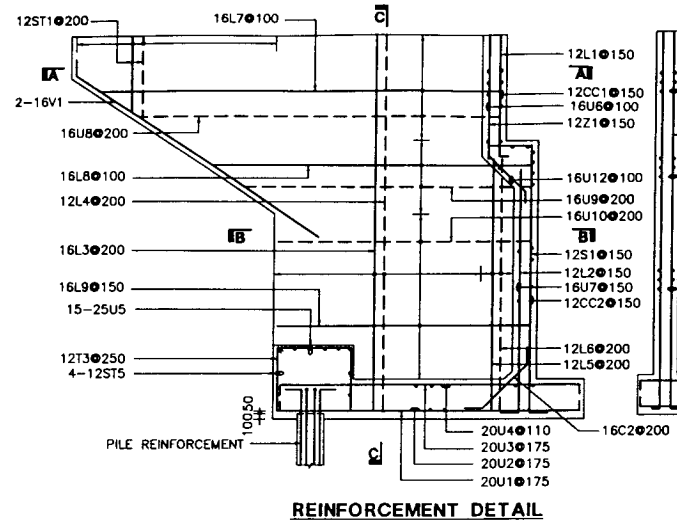
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 7.3m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220731

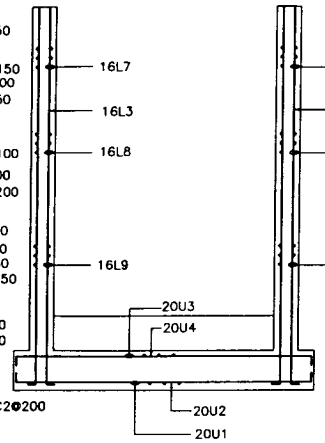
Web Copy

FA-329

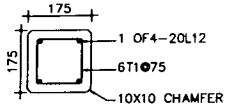
SHEET 2 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES



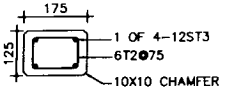
REINFORCEMENT DETAIL



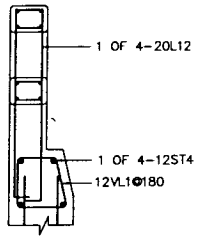
SECTION C-C



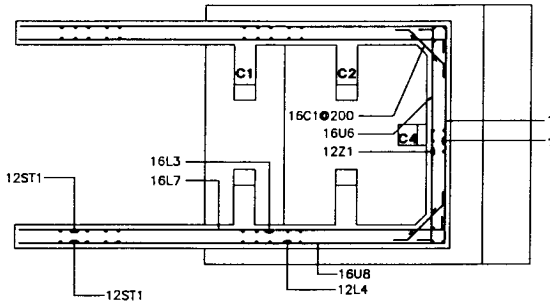
REINF. DETAIL OF POST



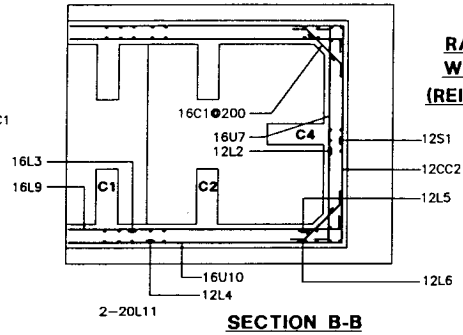
REINF. DETAIL OF RAILING



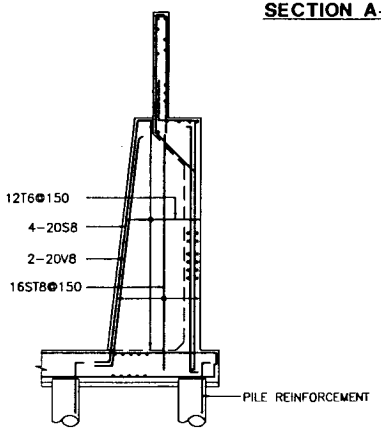
RAILING ON WING WALL (REINF. DETAIL)



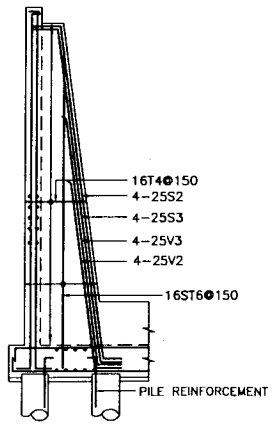
SECTION A-A



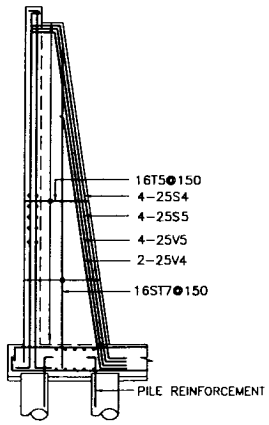
SECTION B-B



REINFORCEMENT DETAIL OF COUNTERFORT C4



REINFORCEMENT DETAIL OF COUNTERFORT C1



REINFORCEMENT DETAIL OF COUNTERFORT C2

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9160				9160
12	ST4	8	9150				9150
12	L1	34	1850	144			1994
12	L2	34	4950	144			5094
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 4650 to 5250	144			Avg. 5094
12	L6	6	Var. 4650 to 5250	144			Avg. 5094
16	L7	32	Var. 7450 to 9100	192			Avg. 8261
16	L8	20	Var. 6575 to 7450	192			Avg. 7205
16	L9	52	6575	192			6767
20	L12	64	1181	120			1301
20	U1	34	240	7675	240		8155
20	U2	45	240	5610	240		6090
20	U3	34	240	7675	240		8155
20	U4	60	240	5610	240		6090
25	U5	15	300	5610	300		6210
16	U6	20	192	4854	192		5238
16	U7	29	192	4854	192		5238
16	U8	18	Var. 7450 to 9100	200	550		Avg. 8933
16	U9	12	Var. 6575 to 7450	200	550		Avg. 7763
16	U10	38	6575	200	550		7325
16	U12	12	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	35	1200	400	4910		6510
12	Z1	34	1850	866	144		2860
12	S1	34	675	5500	240		6415
16	C1	68	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	192	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	19	2272	2472			4744
12	ST5	4	4910				4910
16	T4	84	Var. 1296 to 3486	696			Avg. 3087
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3404			3779
25	V3	8	350	4354			4704
16	ST6	26	Var. 1496 to 7060				Avg. 3350
16	T5	84	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3404			3779
25	V5	8	350	4354			4704
16	ST7	26	Var. 1496 to 7060				Avg. 3350
12	T7	33	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5422	350		6012
20	V8	4	265	4411			4676
16	ST9	9	Var. 1318 to 4626				Avg. 3523
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be 21 MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of 276 MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT/R1220732	

Web Copy

FA-330

SHEET 3 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9160				9160
12	ST4	8	9150				9150
12	L1	34	1700	144			1844
12	L2	34	5100	144			5244
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 4800 to 5400	144			Avg. 5244
12	L6	6	Var. 4800 to 5400	144			Avg. 5244
16	L7	30	Var. 7675 to 9100	192			Avg. 8437
16	L8	24	Var. 6575 to 7675	192			Avg. 7317
16	L9	52	6575	192			6767
20	L12	64	1181	120			1301
20	U1	34	240	7675	240		8155
20	U2	45	240	5610	240		6090
20	U3	34	240	7675	240		8155
20	U4	60	240	5610	240		6090
25	U5	15	300	5610	300		6210
16	U6	18	192	4854	192		5238
16	U7	30	192	4854	192		5238
16	U8	16	Var. 7675 to 9100	200	550		Avg. 9138
16	U9	14	Var. 6575 to 7675	200	550		Avg. 7875
16	U10	38	6575	200	550		7325
16	U12	12	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	36	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	5650	240		6565
16	C1	68	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	192	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	19	2272	2472			4744
12	ST5	4	4910				4910
16	T4	84	Var. 1296 to 3486	696			Avg. 3087
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3404			3779
25	V3	8	350	4354			4704
16	ST6	26	Var. 1496 to 7060				Avg. 3350
16	T5	84	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3404			3779
25	V5	8	350	4354			4704
16	ST7	26	Var. 1496 to 7060				Avg. 3350
12	T7	33	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5422	350		6012
20	V8	4	265	4411			4676
16	ST9	9	Var. 1318 to 4626				Avg. 3523
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9160				9160
12	ST4	8	9150				9150
12	L1	34	1450	144			1594
12	L2	34	5350	144			5494
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5050 to 5650	144			Avg. 5494
12	L6	6	Var. 5050 to 5650	144			Avg. 5494
16	L7	24	Var. 8050 to 9100	192			Avg. 8767
16	L8	28	Var. 6575 to 8050	192			Avg. 7505
16	L9	52	6575	192			6767
20	L12	64	1181	120			1301
20	U1	34	240	7675	240		8155
20	U2	45	240	5610	240		6090
20	U3	34	240	7675	240		8155
20	U4	60	240	5610	240		6090
25	U5	15	300	5610	300		6210
16	U6	16	192	4854	192		5238
16	U7	31	192	4854	192		5238
16	U8	14	Var. 8050 to 9100	200	550		Avg. 9400
16	U9	16	Var. 6575 to 8050	200	550		Avg. 8063
16	U10	38	6575	200	550		7325
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	38	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	5900	240		6815
16	C1	68	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	192	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	19	2272	2472			4744
12	ST5	4	4910				4910
16	T4	84	Var. 1296 to 3486	696			Avg. 3087
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3404			3779
25	V3	8	350	4354			4704
16	ST6	26	Var. 1496 to 7060				Avg. 3350
16	T5	84	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3404			3779
25	V5	8	350	4354			4704
16	ST7	26	Var. 1496 to 7060				Avg. 3350
12	T7	33	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5422	350		6012
20	V8	4	265	4411			4676
16	ST9	9	Var. 1318 to 4626				Avg. 3523
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg 1400
12	ST3	16	9160				9160
12	ST4	8	9150				9150
12	L1	34	1350	144			1494
12	L2	34	5450	144			5594
16	L3	60	7100	192			7292
12	L4	60	7100	144			7244
12	L5	6	Var. 5150 to 5750	144			Avg. 5594
12	L6	6	Var. 5150 to 5750	144			Avg. 5594
16	L7	22	Var. 8200 to 9100	192			Avg. 8883
16	L8	30	Var. 6575 to 8200	192			Avg. 7580
16	L9	52	6575	192			6767
20	L12	64	1181	120			1301
20	U1	34	240	7675	240		8155
20	U2	45	240	5610	240		6090
20	U3	34	240	7675	240		8155
20	U4	60	240	5610	240		6090
25	U5	15	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	32	192	4854	192		5238
16	U8	12	Var. 8200 to 9100	200	550		Avg. 9550
16	U9	16	Var. 6575 to 8200	200	550		Avg. 8138
16	U10	38	6575	200	550		7325
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	38	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	6000	240		6915
16	C1	68	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	4975			5225
6	T1	192	306	306			612
6	T2	448	206	306			512
12	VL1	106	272	200	250	278	1000
12	T3	19	2272	2472			4744
12	ST5	4	4910				4910
16	T4	84	Var. 1296 to 3486	696			Avg. 3087
25	S2	8	300	6650	600		7550
25	S3	8	325	6650	575		7550
25	V2	8	375	3404			3779
25	V3	8	350	4354			4704
16	ST6	26	Var. 1496 to 7060				Avg. 3350
16	T5	84	Var. 1296 to 3496	696			Avg. 3092
25	S4	8	300	6650	600		7550
25	S5	8	325	6650	575		7550
25	V4	4	375	3404			3779
25	V5	8	350	4354			4704
16	ST7	26	Var. 1496 to 7060				Avg. 3350
12	T7	33	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5422	350		6012
20	V8	4	265	4411			4676
16	ST9	9	Var. 1318 to 4626				Avg. 3523
12	w1	4	200	575	206		981

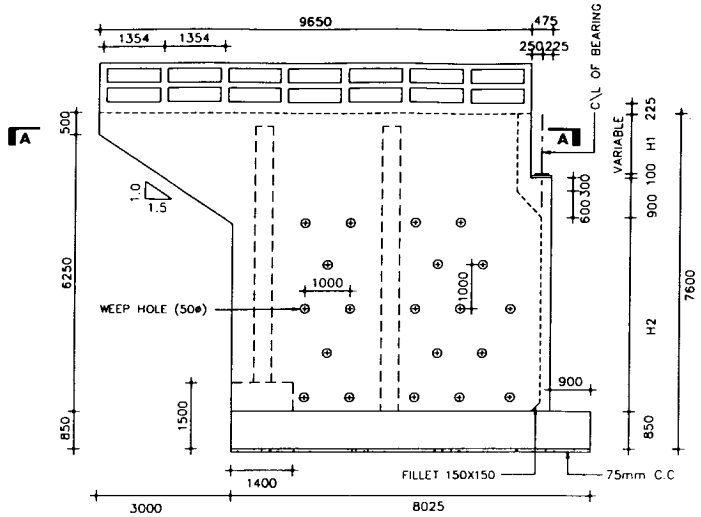
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.3m , DECK WIDTH 5.01m)

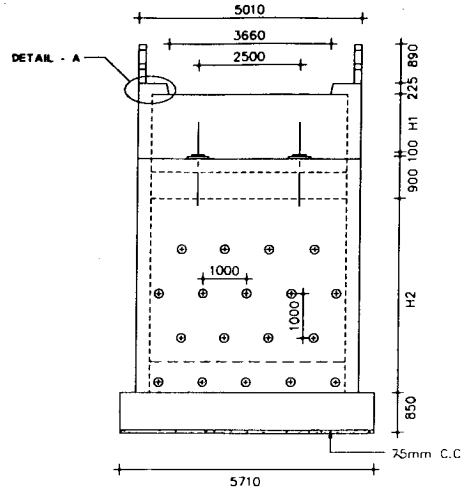
DATE :
ISSUED BY :
CAD FILE REF : ABUT/R1220733

Web Copy
FA-331

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20.0m
SIDEWALK : YES



SIDE ELEVATION



FRONT ELEVATION

TABLE-1

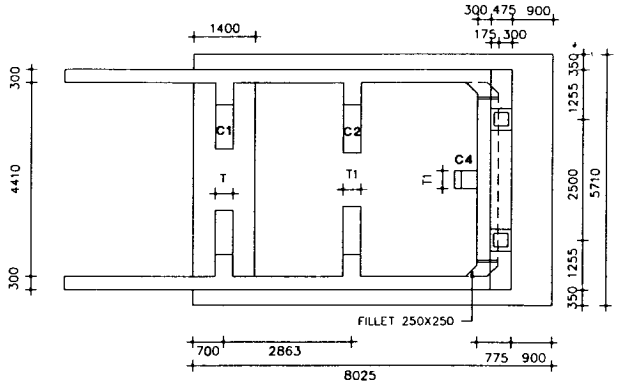
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	4250	330	NOT APPLICABLE
19500	1500	4250	328	
19000	1500	4250	326	
18500	1500	4250	324	
18000	1350	4400	320	
17500	1350	4400	318	
17000	1350	4400	316	
16500	1350	4400	314	
16000	1350	4400	312	
15500	1350	4400	310	
15000	1100	4650	306	
14500	1100	4650	304	
14000	1100	4650	302	
13500	1100	4650	300	
13000	1100	4650	298	
12500	1000	4750	296	

TABLE-2

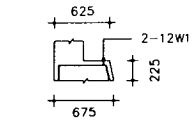
FOUNDATION TYPE	PILE DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	500ø	60	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

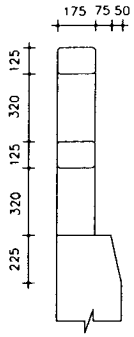
L1	L2	L3	L4	L7	L8	H4	T	T1
700	1805	700	1900	650	800	6450	400	400



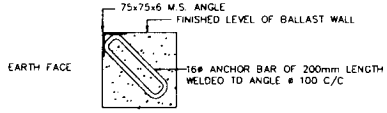
SECTION A-A



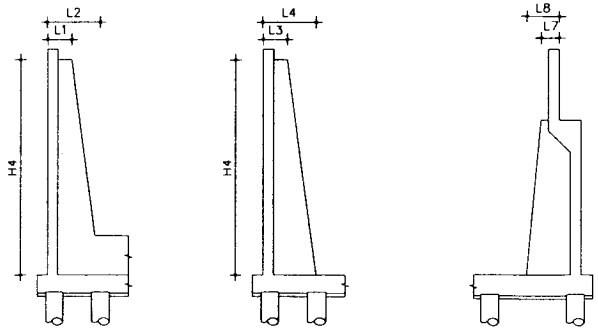
REINF. DETAIL 'A'



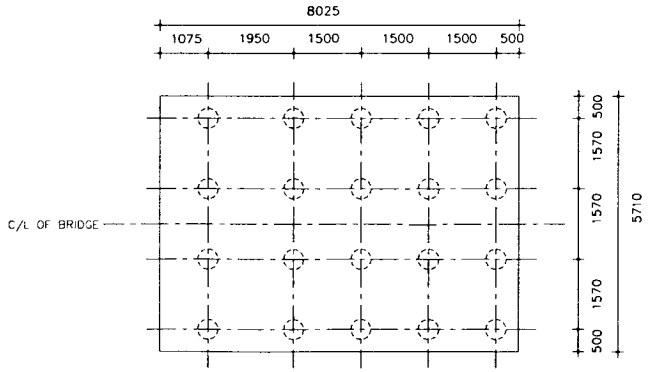
GENERAL ARRANGEMENT OF RAILING ON WING WALL



NOSING AT ABUTMENT



COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C4



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horizontally and vertically as shown in drawings; filter material shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

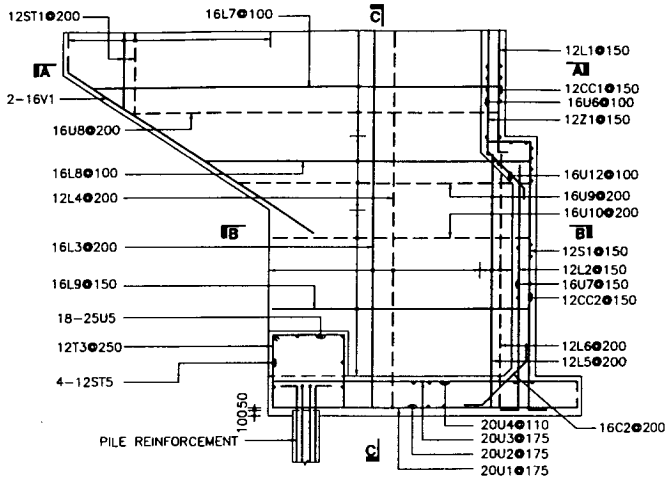
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT : 7.6m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220761

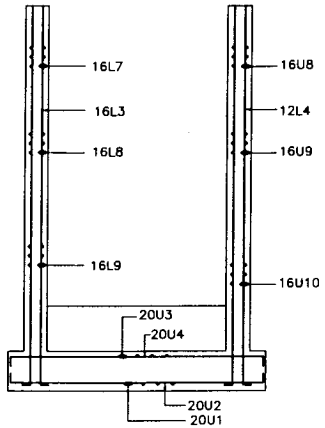
Web Copy

FA-332

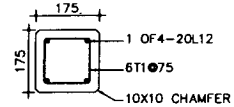
SHEET 2 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: YES



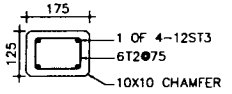
REINFORCEMENT DETAIL



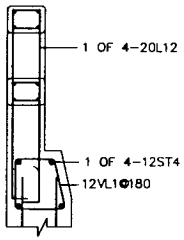
SECTION C-C



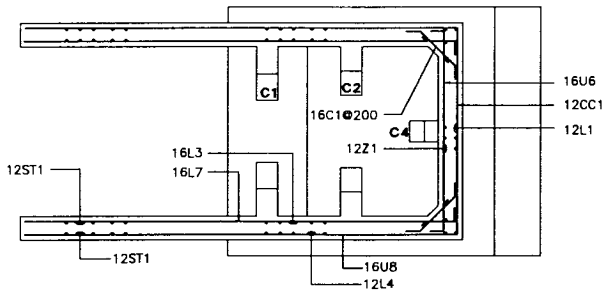
REINF. DETAIL OF POST



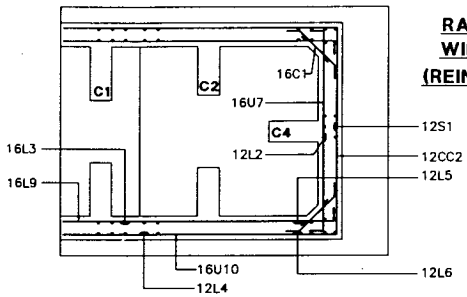
REINF. DETAIL OF RAILING



RAILING ON WING WALL (REINF. DETAIL)



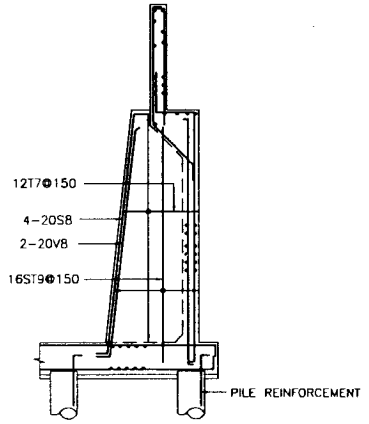
SECTION A-A



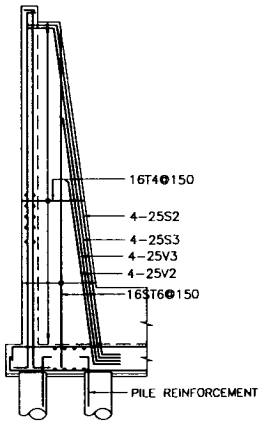
SECTION B-B

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1500)

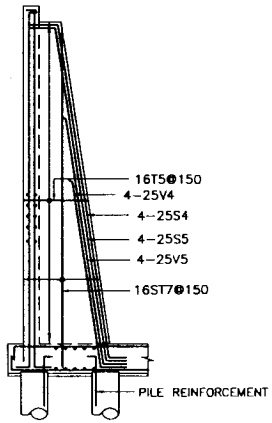
BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9610				9610
12	ST4	8	9600				9600
12	L1	34	1850	144			1994
12	L2	34	5250	144			5394
16	L3	64	7400	192			7592
12	L4	64	7400	144			7544
12	L5	6	Var. 4950 to 5550	144			Avg. 5394
12	L6	6	Var. 4950 to 5550	144			Avg. 5394
16	L7	32	Var. 7900 to 9550	192			Avg. 8711
16	L8	20	Var. 7025 to 7900	192			Avg. 7655
16	L9	56	7025	192			7217
20	L12	64	1181	120			1301
20	U1	34	240	7925	240		8405
20	U2	47	240	5610	240		6090
20	U3	34	240	7925	240		8405
20	U4	61	240	5610	240		6090
25	U5	18	300	5610	300		6210
16	U6	20	192	4854	192		5238
16	U7	31	192	4854	192		5238
16	U8	18	Var. 7900 to 9550	200	550		Avg. 9383
16	U9	12	Var. 7025 to 7900	200	550		Avg. 8213
16	U10	42	7025	200	550		7775
16	U12	12	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	37	1200	400	4910		6510
12	Z1	34	1850	866	144		2860
12	S1	34	675	5800	240		6715
16	C1	70	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	5031			5281
6	T1	192	306	306			612
6	T2	476	206	306			512
12	VL1	110	272	200	250	278	1000
12	T3	19	2672	2672			5344
12	ST5	4	4910				4910
16	T4	88	Var. 1296 to 3506	696			Avg. 3097
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3551			3926
25	V3	8	350	4552			4902
16	ST6	26	Var. 1529 to 7364				Avg. 3474
16	T5	88	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3551			3926
25	V5	8	350	4552			4902
16	ST7	26	Var. 1529 to 7360				Avg. 3323
12	T7	35	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5722	350		6312
20	V8	4	265	4710			4975
16	ST9	9	Var. 1092 to 4926				Avg. 3648
12	w1	4	200	575	206		981



COUNTERFORT C4



COUNTERFORT C1



COUNTERFORT C2

REINFORCEMENT DETAILS OF COUNTERFORT

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessorily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **278**MPa.
6) Clear cover for : a) Rail-20mm, b) Past-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001
8) This drawing is to be read in conjunction with Shape Code; Cad File ABUT\S0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220762

Web Copy

FA-333

SHEET 3 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1350)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9610				9610
12	ST4	8	9600				9600
12	L1	34	1700	144			1844
12	L2	34	5400	144			5544
16	L3	64	7400	192			7592
12	L4	64	7400	144			7544
12	L5	6	Var. 5100 to 5700	144			Avg. 5544
12	L6	6	Var. 5100 to 5700	144			Avg. 5544
16	L7	30	Var. 8125 to 9550	192			Avg. 8887
16	L8	24	Var. 7025 to 8125	192			Avg. 7767
16	L9	56	7025	192			7217
20	L12	64	1181	120			1301
20	U1	34	240	7925	240		8405
20	U2	47	240	5610	240		6090
20	U3	34	240	7925	240		8405
20	U4	61	240	5610	240		6090
25	U5	18	300	5610	300		6210
16	U6	18	192	4854	192		5238
16	U7	32	192	4854	192		5238
16	U8	16	Var. 8125 to 9550	200	550		Avg. 9588
16	U9	14	Var. 7025 to 8125	200	550		Avg. 8325
16	U10	42	7025	200	550		7775
16	U12	12	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	38	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	5950	240		6865
16	C1	70	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	5031			5281
6	T1	192	306	306			612
6	T2	476	206	306			512
12	VL1	110	272	200	250	278	1000
12	T3	19	2672	2672			5344
12	ST5	4	4910				4910
16	T4	88	Var. 1296 to 3506	696			Avg. 3097
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3551			3926
25	V3	8	350	4552			4902
16	ST6	26	Var. 1529 to 7364				Avg. 3474
16	T5	88	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3551			3926
25	V5	8	350	4552			4902
16	ST7	26	Var. 1529 to 7360				Avg. 3323
12	T7	35	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5722	350		6312
20	V8	4	265	4710			4975
16	ST9	9	Var. 1092 to 4926				Avg. 3648
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1100)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9610				9610
12	ST4	8	9600				9600
12	L1	34	1450	144			1594
12	L2	34	5650	144			5794
16	L3	64	7400	192			7592
12	L4	64	7400	144			7544
12	L5	6	Var. 5350 to 5950	144			Avg. 5794
12	L6	6	Var. 5350 to 5950	144			Avg. 5794
16	L7	24	Var. 8500 to 9550	192			Avg. 9217
16	L8	28	Var. 7025 to 8500	192			Avg. 7955
16	L9	56	7025	192			7217
20	L12	64	1181	120			1301
20	U1	34	240	7925	240		8405
20	U2	47	240	5610	240		6090
20	U3	34	240	7925	240		8405
20	U4	61	240	5610	240		6090
25	U5	18	300	5610	300		6210
16	U6	16	192	4854	192		5238
16	U7	33	192	4854	192		5238
16	U8	14	Var. 8500 to 9550	200	550		Avg. 9850
16	U9	16	Var. 7025 to 8500	200	550		Avg. 8513
16	U10	42	7025	200	550		7775
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	40	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	6200	240		7115
16	C1	70	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	5031			5281
6	T1	192	306	306			612
6	T2	476	206	306			512
12	VL1	110	272	200	250	278	1000
12	T3	19	2672	2672			5344
12	ST5	4	4910				4910
16	T4	88	Var. 1296 to 3506	696			Avg. 3097
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3551			3926
25	V3	8	350	4552			4902
16	ST6	26	Var. 1529 to 7364				Avg. 3474
16	T5	88	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3551			3926
25	V5	8	350	4552			4902
16	ST7	26	Var. 1529 to 7360				Avg. 3323
12	T7	35	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5722	350		6312
20	V8	4	265	4710			4975
16	ST9	9	Var. 1092 to 4926				Avg. 3648
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH =1000)

BAR DIA	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	9610				9610
12	ST4	8	9600				9600
12	L1	34	1350	144			1494
12	L2	34	5750	144			5894
16	L3	64	7400	192			7592
12	L4	64	7400	144			7544
12	L5	6	Var. 5450 to 6050	144			Avg. 5894
12	L6	6	Var. 5450 to 6050	144			Avg. 5894
16	L7	22	Var. 8650 to 9550	192			Avg. 9333
16	L8	30	Var. 7025 to 8650	192			Avg. 8030
16	L9	56	7025	192			7217
20	L12	64	1181	120			1301
20	U1	34	240	7925	240		8405
20	U2	47	240	5610	240		6090
20	U3	34	240	7925	240		8405
20	U4	61	240	5610	240		6090
25	U5	18	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	34	192	4854	192		5238
16	U8	12	Var. 8650 to 9550	200	550		Avg. 10000
16	U9	16	Var. 7025 to 8650	200	550		Avg. 8588
16	U10	42	7025	200	550		7775
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	40	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	6300	240		7215
16	C1	70	320	922	320		1562
16	C2	26	320	1417	320		2057
16	V1	4	250	5031			5281
6	T1	192	306	306			612
6	T2	476	206	306			512
12	VL1	110	272	200	250	278	1000
12	T3	19	2672	2672			5344
12	ST5	4	4910				4910
16	T4	88	Var. 1296 to 3506	696			Avg. 3097
25	S2	8	300	6948	600		7848
25	S3	8	325	6948	575		7848
25	V2	8	375	3551			3926
25	V3	8	350	4552			4902
16	ST6	26	Var. 1529 to 7364				Avg. 3474
16	T5	88	Var. 1296 to 3696	696			Avg. 3192
25	S4	8	300	6948	600		7848
25	S5	8	325	6948	575		7848
25	V4	8	375	3551			3926
25	V5	8	350	4552			4902
16	ST7	26	Var. 1529 to 7360				Avg. 3323
12	T7	35	Var. 2122 to 2422	672			Avg. 2944
20	S8	8	240	5722	350		6312
20	V8	4	265	4710			4975
16	ST9	9	Var. 1092 to 4926				Avg. 3648
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

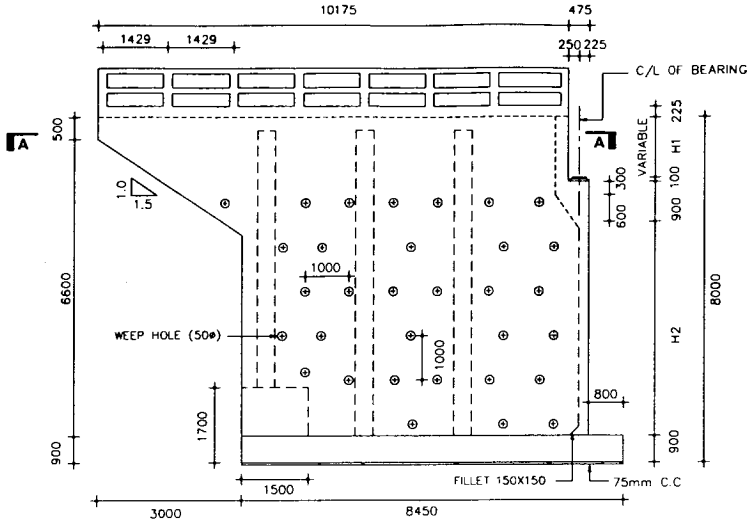
REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 7.6m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220763	

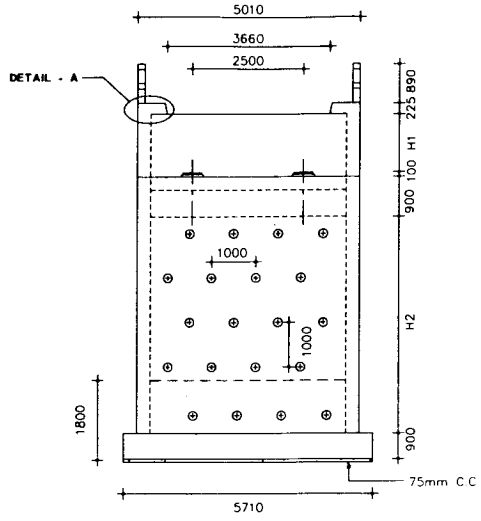
Web Copy

FA-334

SHEET 1 OF 3
SPAN RANGE : 12.5m TO 20m
SIDE WALK : YES



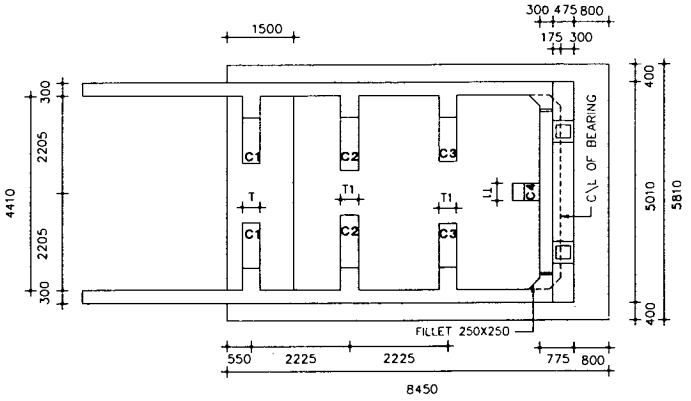
SIDE ELEVATION



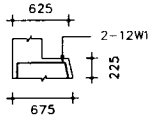
FRONT ELEVATION

TABLE-1

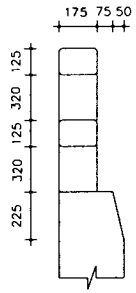
GIRDER SPAN	H1	H2	PILE REACTION (TYPE-A)	PILE REACTION (TYPE-B)
20000	1500	4600	455	NOT APPLICABLE
19500	1500	4600	453	
19000	1500	4600	451	
18500	1500	4600	449	
18000	1350	4750	445	
17500	1350	4750	443	
17000	1350	4750	441	
16500	1350	4750	439	
16000	1350	4750	437	
15500	1350	4750	435	
15000	1100	5000	431	
14500	1100	5000	429	
14000	1100	5000	427	
13500	1100	5000	425	
13000	1100	5000	423	
12500	1000	5100	421	



SECTION A-A



REINF. DETAIL 'A'



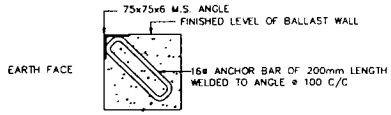
GENERAL ARRANGEMENT OF RAILING ON WING WALL

TABLE-2

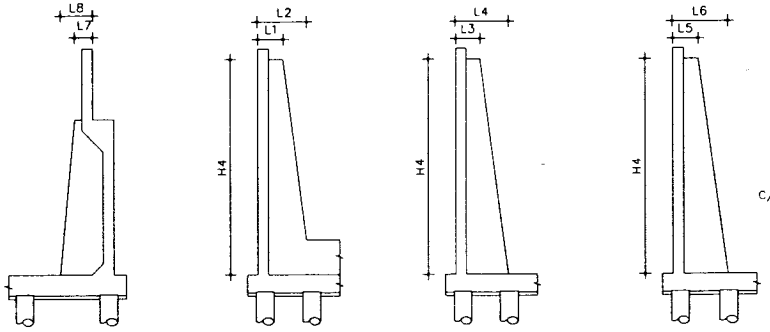
FOUNDATION TYPE	DIMENSION	HORIZONTAL PILE REACTION	PILE TYPE
TYPE – A	600ø	75	CAST IN SITU
TYPE – B	NOT APPLICABLE		

TABLE-3

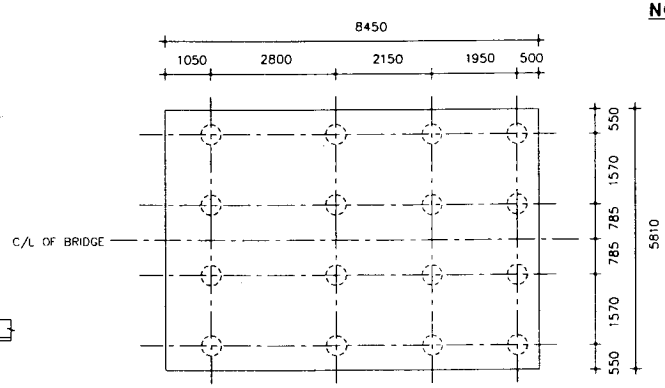
L1	L2	L3	L4	L5	L6	L7	L8	T	T1	H4
700	1830	700	2000	700	1800	650	900	400	400	6800



NOSING AT ABUTMENT



COUNTERFORT C4 COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3



LAYOUT PLAN OF FOUNDATION TYPE - A

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Pile reaction are in kN.
3) Weep hole shall be provided at 1000mm horozontally and vertically as shown in drawings; filter metariol shall be provided as per specification.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

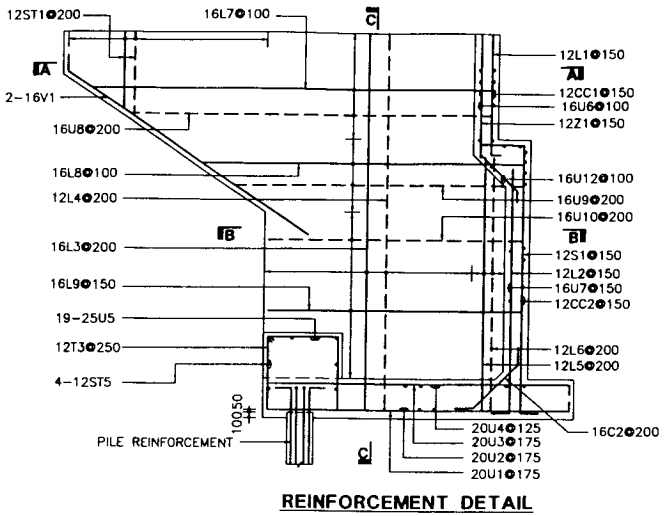
GENERAL ARRANGEMENT OF ABUTMENT
(HEIGHT = 8.0m, DECK WIDTH 5.01m)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\R1220801

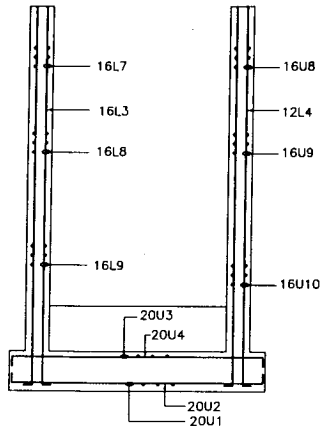
Web Copy

FA-335

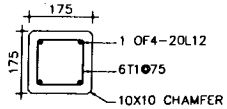
SHEET 2 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: YES



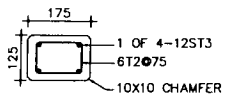
REINFORCEMENT DETAIL



SECTION C-C



REINF. DETAIL OF POST



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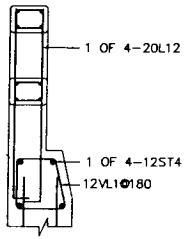
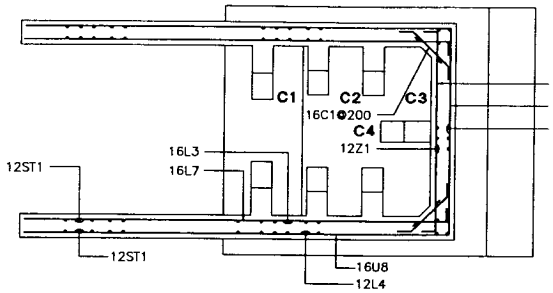
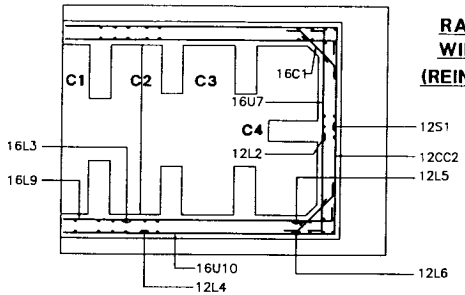


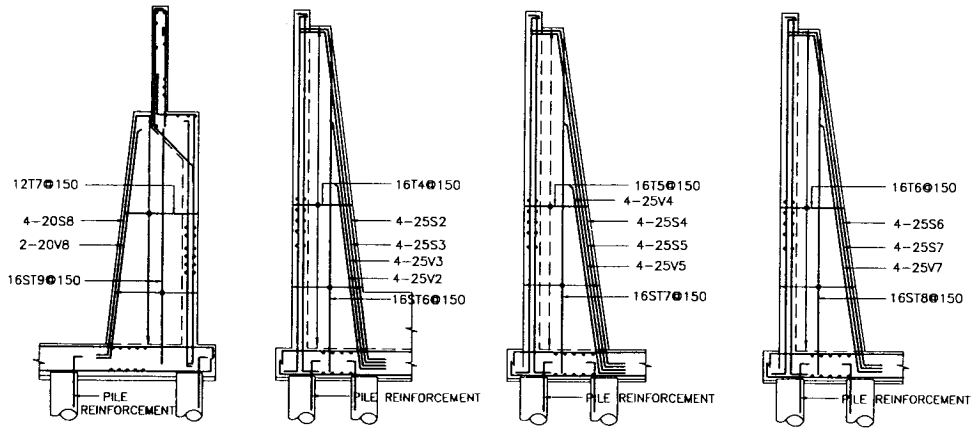
RAILING ON WING WALL (REINF. DETAIL)



SECTION A-A



SECTION B-B



COUNTERFORT C4 COUNTERFORT C1 COUNTERFORT C2 COUNTERFORT C3

REINFORCEMENT DETAILS OF COUNTERFORT

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1500)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10135				10135
12	ST4	8	10125				10125
12	L1	34	1850	144			1994
12	L2	34	5650	144			5794
16	L3	70	7800	192			7992
12	L4	70	7800	144			7944
12	L5	6	Var. 5350 to 5950	144			Avg. 5794
12	L6	6	Var. 5350 to 5950	144			Avg. 5794
16	L7	32	Var. 8425 to 10075	192			Avg. 9236
16	L8	20	Var. 7550 to 8425	192			Avg. 8180
16	L9	60	7550	192			7742
20	L12	64	1181	120			1301
20	U1	34	240	8350	240		8830
20	U2	49	240	5610	240		6090
20	U3	34	240	8350	240		8830
20	U4	56	240	5610	240		6090
25	U5	19	300	5610	300		6210
16	U6	20	192	4854	192		5238
16	U7	33	192	4854	192		5238
16	U8	18	Var. 8425 to 10075	200	550		Avg. 9908
16	U9	12	Var. 7550 to 8425	200	550		Avg. 8738
16	U10	44	7550	200	550		8300
16	U12	12	192	4910	192		5294
12	CC1	13	1200	400	4910		6510
12	CC2	39	1200	400	4910		6510
12	Z1	34	1850	866	144		2860
12	S1	34	675	6200	240		7115
16	C1	74	320	922	320		1562
16	C2	26	320	1488	320		2128
16	V1	4	250	5106	-		5356
6	T1	192	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	19	2872	3072	-		5944
12	ST5	4	4910				4910
16	T4	94	Var. 1296 to 3556	696			Avg. 3122
25	S2	8	300	7346	800		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3739			4114
25	V3	8	350	4799			5149
16	ST6	26	Var. 1606 to 7760				Avg. 3500
16	T5	94	Var. 1296 to 3896	696			Avg. 3292
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3739			4114
25	V5	8	350	4799			5149
16	ST7	28	Var. 1606 to 7760				Avg. 7850
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4799			5149
16	ST8	26	Var. 1606 to 7760				Avg. 3657
12	T7	38	Var. 2122 to 2622	672			Avg. 3044
20	S8	8	240	6126	350		6716
20	V8	4	265	5081			5346
16	ST9	10	Var. 1433 to 5278				Avg. 3426
12	w1	4	200	575	206		981

NOTES

1) All dimensions are in millimetre unless otherwise specified.
2) Not all reinforcement are necessarily shown in any view.
3) Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
4) 28 days cylinder strength of concrete shall be **21** MPa.
5) Reinforcement shall be structural grade deformed bars, with minimum yield strength of **276**MPa.
6) Clear cover for : a) Rail-20mm, b) Post-20mm, c) Curb-25mm, d) Wall-50mm, e) Base-50mm
7) For pile reinforcement see dwg. no. ABUT\P0000001

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT (HEIGHT 8.0m , DECK WIDTH 5.01m)

DATE :

ISSUED BY :

CAD FILE REF : ABUT\R1220802

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FA-336

SHEET 3 OF 3
SPAN RANGE : 12.5m to 20m
SIDE WALK: YES

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1350)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10135				10135
12	ST4	8	10125				10125
12	L1	34	1700	144			1844
12	L2	34	5800	144			5944
16	L3	70	7800	192			7992
12	L4	70	7800	144			7944
12	L5	6	Var. 5500 to 6100	144			Avg. 5944
12	L6	6	Var. 5500 to 6100	144			Avg. 5944
16	L7	30	Var. 8650 to 10075	192			Avg. 9412
16	L8	24	Var. 7550 to 8650	192			Avg. 8292
16	L9	80	7550	192			7742
20	L12	64	1181	120			1301
20	U1	34	240	8350	240		8830
20	U2	49	240	5610	240		6090
20	U3	34	240	8350	240		8830
20	U4	56	240	5610	240		6090
25	U5	19	300	5610	300		6210
16	U6	18	192	4854	192		5238
16	U7	34	192	4854	192		5238
16	U8	16	Var. 8650 to 10075	200	550		Avg. 10113
16	U9	14	Var. 7550 to 8650	200	550		Avg. 8850
16	U10	44	7550	200	550		8300
16	U12	12	192	4910	192		5294
12	CC1	12	1200	400	4910		6510
12	CC2	40	1200	400	4910		6510
12	Z1	34	1700	866	144		2710
12	S1	34	675	6350	240		7265
16	C1	74	320	922	320		1562
16	C2	26	320	1488	320		2128
16	V1	4	250	5106			5356
6	T1	192	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	19	2872	3072			5944
12	ST5	4	4910				4910
16	T4	94	Var. 1296 to 3556	696			Avg. 3122
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3739			4114
25	V3	8	350	4799			5149
16	ST6	26	Var. 1606 to 7760				Avg. 3500
16	T5	94	Var. 1296 to 3896	696			Avg. 3292
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3739			4114
25	V5	8	350	4799			5149
16	ST7	28	Var. 1606 to 7760				Avg. 7850
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4799			5149
16	ST8	26	Var. 1606 to 7760				Avg. 3657
12	T7	38	Var. 2122 to 2622	672			Avg. 3044
20	S8	8	240	6126	350		6716
20	V8	4	265	5081			5345
16	ST9	10	Var. 1433 to 5278				Avg. 3426
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1100)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10135				10135
12	ST4	8	10125				10125
12	L1	34	1450	144			1594
12	L2	34	6050	144			6194
16	L3	70	7800	192			7992
12	L4	70	7800	144			7944
12	L5	6	Var. 5750 to 6350	144			Avg. 6194
12	L6	6	Var. 5750 to 6350	144			Avg. 6194
16	L7	24	Var. 9325 to 10075	192			Avg. 9742
16	L8	28	Var. 7550 to 9025	192			Avg. 8480
16	L9	60	7550	192			7742
20	L12	64	1181	120			1301
20	U1	34	240	8350	240		8830
20	U2	49	240	5610	240		6090
20	U3	34	240	8350	240		8830
20	U4	56	240	5610	240		6090
25	U5	19	300	5610	300		6210
16	U6	16	192	4854	192		5238
16	U7	36	192	4854	192		5238
16	U8	14	Var. 9025 to 10075	200	550		Avg. 10375
16	U9	16	Var. 7550 to 9025	200	550		Avg. 9038
16	U10	44	7550	200	550		8300
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	42	1200	400	4910		6510
12	Z1	34	1450	866	144		2460
12	S1	34	675	6600	240		7515
16	C1	74	320	922	320		1562
16	C2	26	320	1488	320		2128
16	V1	4	250	5106			5356
6	T1	192	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	19	2872	3072			5944
12	ST5	4	4910				4910
16	T4	94	Var. 1296 to 3556	696			Avg. 3122
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3739			4114
25	V3	8	350	4799			5149
16	ST6	26	Var. 1606 to 7760				Avg. 3500
16	T5	94	Var. 1296 to 3896	696			Avg. 3292
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3739			4114
25	V5	8	350	4799			5149
16	ST7	28	Var. 1606 to 7760				Avg. 7850
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4799			5149
16	ST8	26	Var. 1606 to 7760				Avg. 3657
12	T7	38	Var. 2122 to 2622	672			Avg. 3044
20	S8	8	240	6126	350		6716
20	V8	4	265	5081			5346
16	ST9	10	Var. 1433 to 5278				Avg. 3426
12	w1	4	200	575	206		981

BAR BENDING SCHEDULE FOR ONE ABUTMENT (GIRDER DEPTH = 1000)

BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
12	ST1	60	Var. 400 to 2400				Avg. 1400
12	ST3	16	10135				10135
12	ST4	8	10125				10125
12	L1	34	1350	144			1494
12	L2	34	6150	144			6294
16	L3	70	7800	192			7992
12	L4	70	7800	144			7944
12	L5	6	Var. 5850 to 6450	144			Avg. 6294
12	L6	6	Var. 5850 to 6450	144			Avg. 6294
16	L7	22	Var. 9175 to 10075	192			Avg. 9858
16	L8	30	Var. 7550 to 9175	192			Avg. 8555
16	L9	60	7550	192			7742
20	L12	64	1181	120			1301
20	U1	34	240	8350	240		8830
20	U2	49	240	5610	240		6090
20	U3	34	240	8350	240		8830
20	U4	56	240	5610	240		6090
25	U5	19	300	5610	300		6210
16	U6	15	192	4854	192		5238
16	U7	36	192	4854	192		5238
16	U8	12	Var. 9175 to 10075	200	550		Avg. 10525
16	U9	16	Var. 7550 to 9175	200	550		Avg. 9113
16	U10	44	7550	200	550		8300
16	U12	12	192	4910	192		5294
12	CC1	10	1200	400	4910		6510
12	CC2	43	1200	400	4910		6510
12	Z1	34	1350	866	144		2360
12	S1	34	675	6700	240		7615
16	C1	74	320	922	320		1562
16	C2	26	320	1488	320		2128
16	V1	4	250	5106			5356
6	T1	192	306	306			612
6	T2	504	206	306			512
12	VL1	116	272	200	250	278	1000
12	T3	19	2872	3072			5944
12	ST5	4	4910				4910
16	T4	94	Var. 1296 to 3556	696			Avg. 3122
25	S2	8	300	7346	600		8246
25	S3	8	325	7346	575		8246
25	V2	8	375	3739			4114
25	V3	8	350	4799			5149
16	ST6	26	Var. 1606 to 7760				Avg. 3500
16	T5	94	Var. 1296 to 3896	696			Avg. 3292
25	S4	8	300	7346	600		8246
25	S5	8	325	7346	575		8246
25	V4	8	375	3739			4114
25	V5	8	350	4799			5149
16	ST7	28	Var. 1606 to 7760				Avg. 7850
16	T6	94	Var. 1296 to 3496	696			Avg. 3092
25	S6	8	300	7396	600		8296
25	S7	8	325	7396	575		8296
25	V7	8	350	4799			5149
16	ST8	26	Var. 1606 to 7760				Avg. 3657
12	T7	38	Var. 2122 to 2622	672			Avg. 3044
20	S8	8	240	6126	350		6716
20	V8	4	265	5081			5345
16	ST9	10	Var. 1433 to 5278				Avg. 3426
12	w1	4	200	575	206		981

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF ABUTMENT
(HEIGHT 8.0m , DECK WIDTH 5.01m)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\R1220803	

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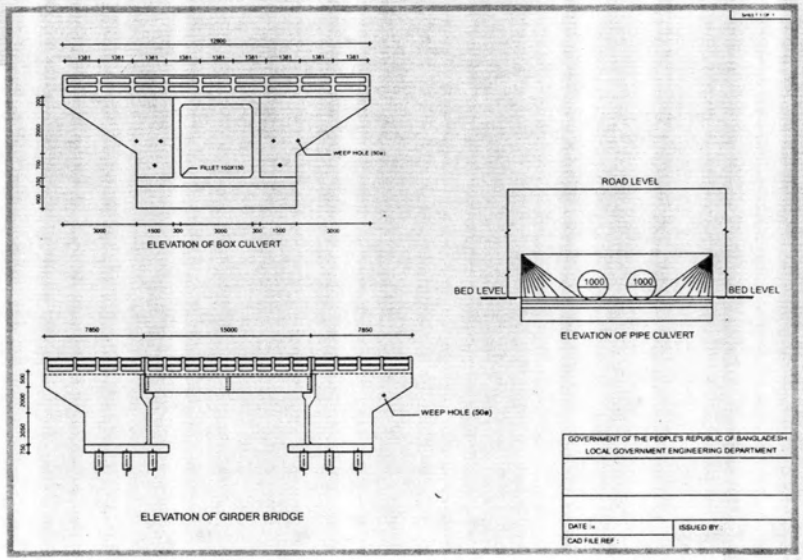
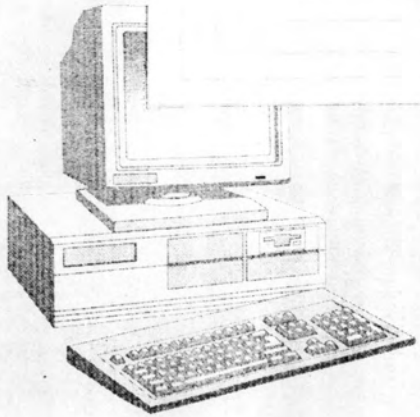


STUB ABUTMENT



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SELECTION OF STANDARD DESIGN

STUB ABUTMENTS :

Introduction

Standard design of brick and R.C.C. Stub Abutments of various height are presented in the Manual. Height of brick abutment ranges 3.0m to 6.0m with an increment of 0.3m.Three types of R.C.C abutments, open abutment, full depth abutment and stub abutments have been provided in the Manual. Open and full depth abutment with carriageway width (cw) 3.66m with footpath and of height ranges from 3.0m to 8.0m and cw of 3.66m and 2.44m without footpath and of height ranges from 3.0m to 8.0m have been provided in the Manual. Stub Abutments have been designed for a low height ranging from 2.0m to 3.0m with and without footpaths.

Procedure of Selection

Selection of an abutment along with its type (whether brick, open, full depth or stub) and height will be determined by following the flow chart given in Chapter Part A of the Manual. Standard designs with detailed drawing of the required type of structure along with bar schedule are available in this section. Brick abutment will be provided in case of open foundation only. R.C.C abutments with open foundation are also available in the manual. The height ranges from 3.0m to 6.0m with an increment of 0.3m.

Selection of a suitable structure may also be done with the assistance of structure WORKS, a computer software. See Part C of the Road Structure Manual for more information.

Quantity Estimate

The estimates of quantities involving different items of works are presented in the form of a Table in the following pages. Estimate for a particular design can be obtained from these tables.

The items of works whose quantities depend on the particular site conditions are included in the table, but their quantities are kept blank. Those are to be determined after actual field measurements.

In preparing the bill of quantities the full description of the related items should be taken from Chapter 16-Bill of Quantities.

List of all box culverts are summarized below :

Structural List of Stub Abutment

Sl. No.	Reference Code	Structure Description	Page No.
1	ABUT\S0100001	Abutment Stub; Without Footpath; DW 2.44m; Precast; H 2.0m	SA-1
2	ABUT\S0200001	Abutment Stub; Without Footpath; DW 3.66m; Precast; H 2.0m	SA-4
3	ABUT\S1200001	Abutment Stub; Without Footpath; DW 3.66m; Precast; H 2.0m	SA-7
4	ABUT\S0101001	Abutment Stub; Without Footpath; DW 2.44m; Cast-in-situ; H 2.0m	SA-10
5	ABUT\S0201001	Abutment Stub; Without Footpath; DW 3.66m; Cast-in-situ; H 2.0m	SA-13
6	ABUT\S1201001	Abutment Stub; With Footpath; DW 3.66m; Cast-in-situ; H 2.0m	SA-16

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SA-II

STUB ABUTMENT

Estimate Of Quantities For Stub Abutment On Pre-Cast Pile

E.Q. Table No. 6e

Abutment Height (m)				2 to 3										
Foot-Path				Yes				No						
Carriage way Width (m)				3.66				3.66				2.44		
Type of Loading				H20/ H15				H20/ H15				H10		
Span Range (m)				12.5	13-15	15.5-18	18.5-20	12.5	13.0-15	15.5-18	18.5-20	12.5-15	15.5-18	18.5-20
Sl. No.	Item No.	Brief Description	Unit											
1	1	Mobilization	L. S.											
2	2	Engineer's office	L. S.											
3	3/46/47	Diversion	Cu.m/L-m/L-m											
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m											
5	6	Earth work in excavation	Cu-m											
6	7	Bailing out water	Cu-m											
7	10	Brick on edge pavement	Sq-m											
8	15	a) Reinforcement												
		i) Pile cap, abutment & railing	Kg	2400	2512	2776	2936	2083	2193	2455	2616	1745	1844	1986
		ii) Pre-cast pile	Kg	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1.1)	Eq. (1.1)	Eq. (1.1)	Eq. (1.1)	Eq. (1.2)	Eq. (1.2)	Eq. (1.2)
		Total of (i) & (ii)	Kg											
9	16	Metal shoes	Each	16	16	16	16	12	12	12	12	12	12	12
10	17	Mobilization for pre-cast pile	L. S.											
11	18	Driving of pre-cast pile												
		b) Size 350mm x 350mm												
		i) 0 to 5m depth	L-m	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)
		ii) 5m to above	L-m	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)	Eq. (2.1)
12	20	Breaking the head of pile	Cu-m	0.98	0.98	0.98	0.98	0.75	0.75	0.75	0.75	0.75	0.75	0.75
13	21	Earth work in temporary cofferdam	Nos.											
14	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each											
15	24	R.C.C work (1:2:4)												
		g) Pile cap, curb, side walk	Cu-m	11.12	11.12	11.12	11.12	9.46	9.46	9.46	9.46	6.75	6.75	6.75
		h) Abutment & wing wall	Cu-m	4.88	5.43	6.85	7.75	4.52	5.03	6.37	7.22	3.63	4.76	5.48
		m) Railing & post	Cu-m	0.54	0.57	0.63	0.67	0.46	0.49	0.55	0.59	0.40	0.52	0.56
16	25	R.C.C work (1:1.5:3) for pre-cast pile	Cu-m	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)
17	30	Back filling	Cu-m											
18	31	Earth work in bridge approaches	Cu-m											
19	33	Nosing	L-m											
20	35	Placing of gunny bagged rip-rap filled	Cu-m											
21	36	Turfing on embankment	Sq-m											
22	37	Hanging of sign board	L. S.											
23	38	Name plate	Each											
24	42	Marking the post & rail	Sq-m											
25	48	Demobilization	L. S.											
Remarks		N = No. of pile in 2 - abutment	No	16	16	16	16	12	12	12	12	12	12	12

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

L = Length of pile = ... m

Equ. (1) For It. no. 15 (a) (ii) Reinforcement = { 30.9 Kg x (L-1m + 24.4 Kg X 1.0m} x N } Kg ,When L is equal or less than 8.250 m

Reinforcement = [{ 30.9 Kg x 7.25m + 17.27 Kg x (L - 7.25 -1.0)m + 24.4 Kg X 1.0m} x N] Kg , When L is grater than 8.250 m

Equ. (1.1) For It. no. 15 (a) (ii) Reinforcement = { 28.8 Kg x (L-1) + 24.4 Kg X 1.0m} x N } Kg ,When L is equal or less than 8.250 m

Reinforcement = [{ 28.8 Kg x 7.25m + 17.27 Kg x (L - 7.25 -1.0)m + 24.4 Kg X 1.0m} x N] Kg , When L is grater than 8.250 m

Equ. (1.2) For It. no. 15 (a) (ii) Reinforcement = { 18.01 Kg x L x N } Kg

Equ. (2) For It. no. 18 (b) (i) Driving pre - cast pile = (L x N) m , When L is equal or less than 5 m

= (5 x N) m , When L is greater than 5 m

Equ. (2.1) For It. no. 18 (b) (ii) Driving pre cast pile = { (L - 5.0) x N } m , When L is greater than 5 m

Equ .(3) For It. no. 25 R C C work of pile = (0.1225 x L x N) m^3.

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STUB ABUTMENT

Estimate Of Qantities For Stub Abutment On Cast-In-Situ Pile

E. Q. Table No. 6f

Abutment Height (m)				2 to 3										
Foot-Path				Yes				No						
Road way Width (m)				3.66				3.66				2.44		
Type of Loading				H20/ H15				H20/ H15				H10		
Span Range (m)				12.5	13-15	15.5-18	18.5-20	12.5	13-15	15.5-18	18.5- 20	12.5-15	15.5-18	18.5-20
Sl. No.	Item No.	Brief Description	Unit											
1	1	Mobilization	L. S.											
2	2	Engineer's office	L. S.											
3	3/46/47	Diversion	Cu.m/L-m/L-m											
4	4/43/44/45	Dismantling	L.S/Cu-m/ton/Cu-m											
5	6	Earth work in excavation	Cu-m											
6	7	Bailing out water	Cu-m											
7	10	Brick on edge pavement	Sq-m											
8	15	a) Reinforcement												
		i) Pile cap, abutment & railing	Kg	2643	2743	3000	3153	2354	2452	2705	2859	1809	1910	2034
		ii) Cast- in -situ pile	Kg	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1)	Eq. (1.1)	Eq. (1.1)	Eq. (1.1)	Eq. (1.1)	Eq. (1.2)	Eq. (1.2)	Eq. (1.2)
		Total of (i) & (ii)	kg											
9	19	Boring and casting												
		a) Boring												
		(i) 600mm dia/ (ii) 500mm dia	L-m	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)	Eq. (2)
		(b) Concreting												
		(i) 600mm dia/ (ii) 500 mm dia	Cu-m	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)	Eq. (3)
10	20	Breaking the head of pile	Cu-m	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.20	1.20	1.20
11	21	Earthwork in temporary cofferdams	Nos											
12	22	Supplying steel pipe												
		(i) 600 mm dia/ (ii) 500 mm dia	L-m											
13	23	Load test (a) Up to 60 ton	Each	1	1	1	1	1	1	1	1	1	1	1
		(b) Above 60 ton	Each											
14	24	R.C.C work (1:2:4)												
		g) Pile cap,curb, side walk	Cu-m	14.75	14.75	14.75	14.75	12.53	12.53	12.53	12.53	8.94	8.94	8.94
		h) Abutment,wing wall	Cu-m	4.97	5.53	7.00	7.91	4.59	5.11	6.50	7.35	3.71	4.87	5.62
		m) Railing & post	Cu-m	0.54	0.57	0.64	0.67	0.47	0.49	0.56	0.60	0.40	0.52	0.56
15	30	Back filling	Cu-m											
16	31	Earth work in bridge approaches	Cu-m											
17	33	Nosing	L-m	10.02	10.02	10.02	10.02	8.52	8.52	8.52	8.52	6.08	6.08	6.08
18	34	Welding (a) Spairal												
		(i) 600mm dia/ (ii) 500 mm dia	Each spot	Eq. (1.3)	Eq. (1.3)	Eq. (1.3)	Eq. (1.3)	Eq. (1.4)	Eq. (1.4)	Eq. (1.4)	Eq. (1.4)	Eq. (1.5)	Eq. (1.5)	Eq. (1.5)
		(b) Main reinforcement												
		(i) 600 mm dia/ (ii) 500 mm dia	Each point	252	252	252	252	252	252	252	252	144	144	144
19	35	Placing of gunny bagged rip-rap filled	Cu-m											
20	36	Turfing on embankment	Sq-m											
21	37	Hanging of sign board	L. S.											
22	38	Name plate	Each											
23	42	Marking the post &Rail	Sq-m											
24	45	Demobilization	L. S.											
Remarks		N = No. of pile in 2 - abutment	No	12	12	12	12	12	12	12	12	8	8	8

The items of work whose quantities depend on the length of pile are to be calculated by applying following equations :

L = Length of pile = ... m

Eq. (1) For It. no. 15 (a) (ii) Reinforcement = { 65.57 Kg x L m x N } Kg , When L is equal or less than 7.6m and Dia. of pile = **500** mm.
15 (a) (ii) Reinforcement = [{65.57 Kg x 7.6 m + 15.90 Kg x (L - 7.6)m} x N] Kg . When L is grater than 7.6m and Dia. of pile = 500 mm.

Eq. (1.3) For It. no. 34 (a) (ii) Welding = (48 x N x L) Nos. When L is equal or less than 7.6m
34 (a) (ii) Welding = [{ 48 x 7.6m + 21 x (L - 7.6)m} xN] Nos. When L is grater than 7.6m

Eq. (1.1) For It. no. 15 (a) (ii) Reinforcement = {50.72 Kg x L x N } Kg . When L is equal or less than 7.5m and Dia. of pile = **500** mm.
15 (a) (ii) Reinforcement = [{50.72 Kg x 7.5 m + 15.90 Kg x (L - 7.5)m} x N] Kg . When L is grater than 7.5m and Dia. of pile = 500 mm.

Eq. (1.4) For It. no. 34 (a) (ii) Welding = (48 x N x L) Nos. When L is equal or less than 7.5m
34 (a) (ii) Welding = [{ 48 x 7.5m + 21 x (L - 7.5)m}xN] Nos. When L is grater than 7.5m

Eq. (1.2) For It. no. 15 (a) (ii) Reinforcement = { 36.51 Kg x Lm x N } Kg , When L is equal or less than 7.4m and Dia. of pile = **500** mm.
15 (a) (ii) Reinforcement = [{36.51 Kg x 7.4 m + 14.40 Kg x (L - 7.4)m} x N] Kg . When L is grater than 7.4m and Dia. of pile = 500 mm.

Eq. (1.5) For It. no. 34 (a) (ii) Welding = (42 x N x L) Nos. When L is equal or less than 7.4m
34 (a) (ii) Welding = [{ 42 x 7.4m + 21 x (L - 7.4)m} x N] Nos. When L is grater than 7.4m

Eq. (2) For It. no. 19 (a) (ii) Boring of pile = (L x N) m

Eq. (3) For It. no. 19 (b) (ii) Concreting of pile = (0.197 x L x N) m^3 , When dia. of pile = **500** mm

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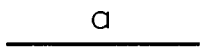

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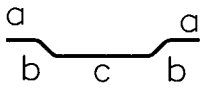

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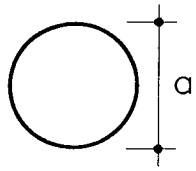

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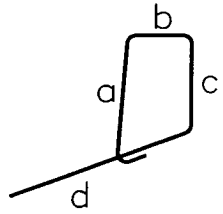

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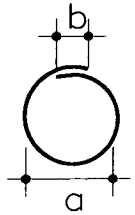

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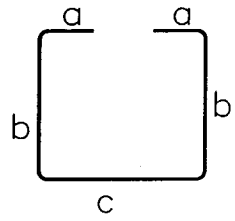

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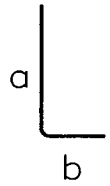

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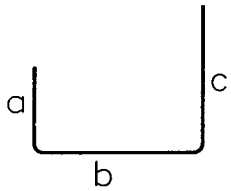

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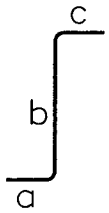

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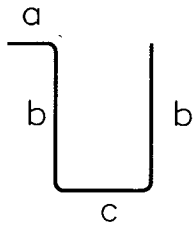

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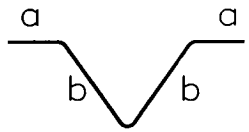

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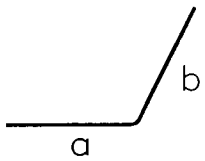

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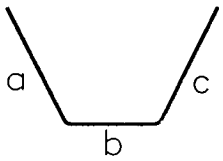

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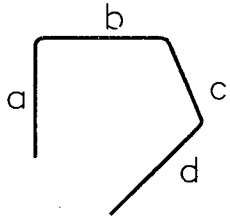

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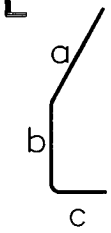

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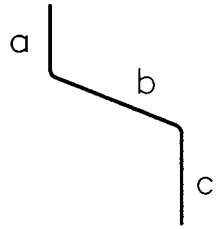

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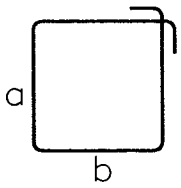

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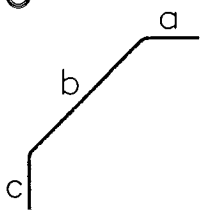

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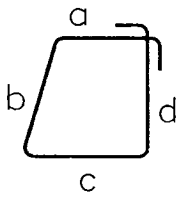

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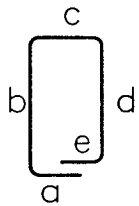

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

STANDARD BAR SHAPE & SHAPE CODE

DATE :

ISSUED BY :

CAD FILE REF : ABUT\S0000001

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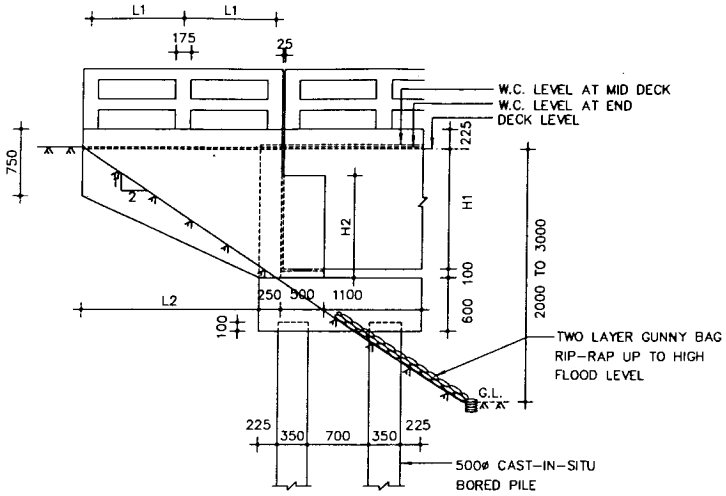
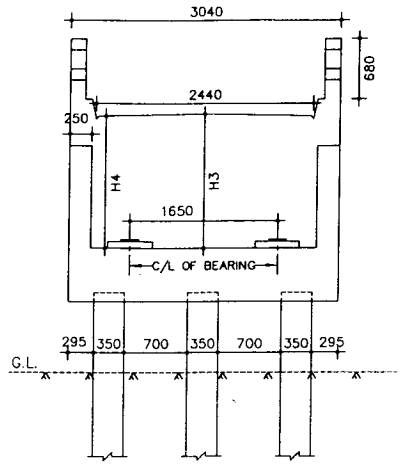
SHEET 1 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO



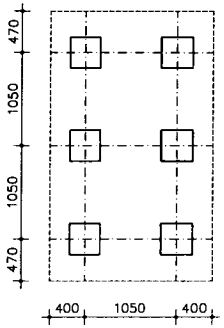
SIDE ELEVATION



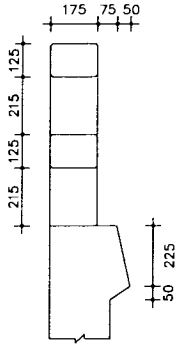
FRONT ELEVATION

TABLE-1

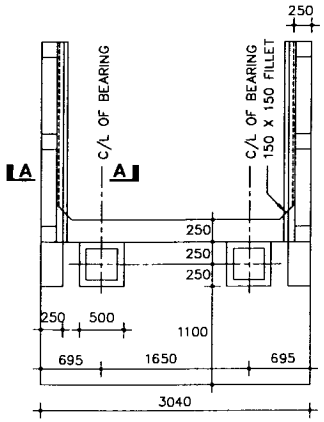
GIRDER SPAN	PILE REACTION	NO. OF POST	L1	L2	H1	H2	H3	H4
20000	122	3	1045	2015	1350	1150	1510	1485
19500	121	3	1045	2015	1350	1150	1510	1485
19000	121	3	1045	2015	1350	1150	1510	1485
18500	120	3	1045	2015	1350	1150	1510	1485
18000	113	3	933	1790	1200	1000	1360	1335
17500	113	3	933	1790	1200	1000	1360	1335
17000	113	3	933	1790	1200	1000	1360	1335
16500	112	3	933	1790	1200	1000	1360	1335
16000	112	3	933	1790	1200	1000	1360	1335
15500	112	3	933	1790	1200	1000	1360	1335
15000	101	2	1490	1415	950	750	1110	1085
14500	100	2	1490	1415	950	750	1110	1085
14000	100	2	1490	1415	950	750	1110	1085
13500	100	2	1490	1415	950	750	1110	1085
13000	99	2	1490	1415	950	750	1110	1085
12500	99	2	1490	1415	950	750	1110	1085



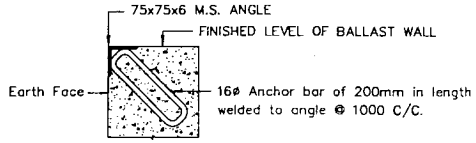
PILE LAYOUT



SEC. A-A



TOP PLAN



NOSING AT ABUTMENT

NOTES :

1. All dimensions are in millimeter.
2. Pile Reactions are in kN.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF STUB ABUTMENT
(DECK WIDTH = 3.04m WITH PRE-CAST PILE)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\S0100001	

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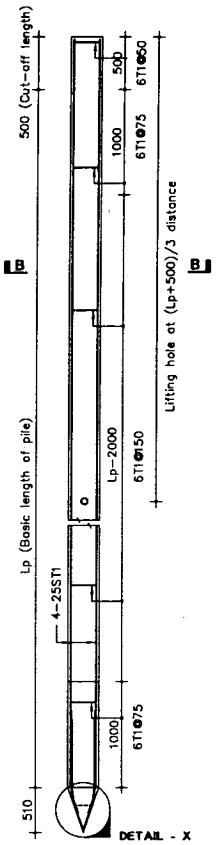
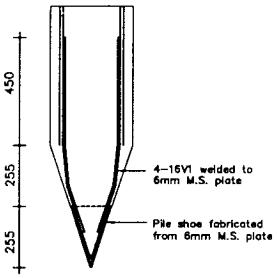
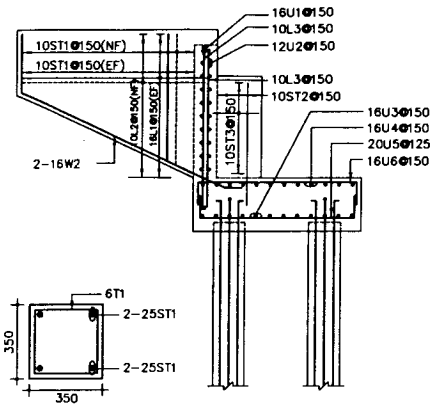
SHEET 2 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO



PILE DETAILS

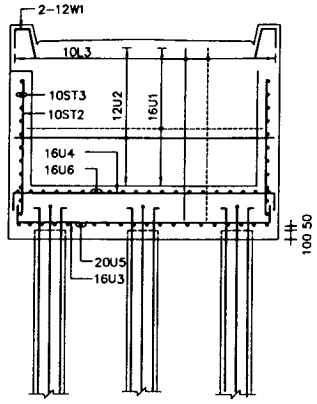


DETAILS - X

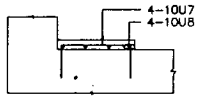


SEC. B-B

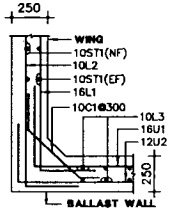
REINF. DETAILS
(SIDE VIEW)



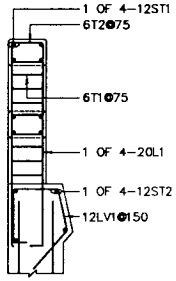
REINF. DETAILS
(WATER SIDE VIEW)



BEARING PAD REINFORCEMENT



CORNER REINF. DETAILS



REINF. DETAILS OF
RAILING ON WING

BAR BENDING SCHEDULE (GIRDER SPAN = 20000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WAL	16	W2	4	650	2775	192		3617
	12	ST1(NF)	30	Var. 650 to 1350				Avg. 1000
	12	ST1(EF)	30	Var. 650 to 1350				Avg. 1000
	16	L1(EF)	32	Var. 2165 to 0	192			Avg. 3440
	10	L2(NF)	32	Var. 2165 to 0	120			Avg. 3368
	10	ST2	8	1400				1400
	10	ST3	16	500				500
	10	L3	42	1700	120			1820
	16	U1	11	192	2940	192		3324
	12	U2	11	144	2940	144		3228
	16	U3	13	192	2940	192		3324
	16	U4	13	192	2940	192		3324
	20	U5	25	240	1750	240		2230
	16	U6	21	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	12	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	2225				2225
	12	ST2	8	2225				2225
	6	T1	36	286	286			572
	6	T2	78	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	30	225	210	278	200	913
Pile	25	ST1	4	11920				11920
	6	T1	106	576	#REF!			#REF!
	16	V1	4	835				835

BAR BENDING SCHEDULE (GIRDER SPAN = 1800)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WAL	16	W2	4	650	2505	192		3347
	12	ST1(NF)	26	Var. 650 to 1200				Avg. 925
	12	ST1(EF)	26	Var. 650 to 1200				Avg. 925
	16	L1(EF)	30	Var. 1940 to 0	192			Avg. 3102
	10	L2(NF)	30	Var. 1940 to 0	120			Avg. 3030
	10	ST2	8	1250				1250
	10	ST3	14	500				500
	10	L3	42	1550	120			1670
	16	U1	10	192	2940	192		3324
	12	U2	10	144	2940	144		3228
	16	U3	13	192	2940	192		3324
	16	U4	13	192	2940	192		3324
	20	U5	25	240	1750	240		2230
	16	U6	21	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	12	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	2001				2001
	12	ST2	8	2001				2001
	6	T1	36	286	286			572
	6	T2	72	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	28	225	210	278	200	913
Pile	25	ST1	4	11920				11920
	6	T1	106	576	#REF!			#REF!
	16	V1	4	835				835

NOTES :

1. All dimensions are in millimeter unless otherwise specified.
2. Pile reactions are in kN.
3. Concrete (Structure), Cylinder strength at 28 days : 21MPa-ASTM C39.
4. Concrete (Pile), Cylinder strength at 28 days : 24MPa-ASTM C39.
5. Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
6. Deformed Reinforcing steel, Yield strength : 276MPa-ASTM A615.
7. Dimension Lp are site dependent.
9. Not all reinforcement are necessarily shown in any view.
9. Clear cover for : a) Vertical member - 50mm, b) Pile cap - 50mm, c) Pile - 40mm, d) Post - 25mm, e) Rail - 20mm.
10. This drawing is to be read in conjunction with Shape Code; Cad File: ABUT\S0000001.

LEGEND :

NF = Near Face.
EF = Earth Face.
WF = Water Face.

BAR BENDING SCHEDULE FOR PILE

MEMBER	BAR DIA	SHAPE CODE	TOTAL NO	SEGMENT DIMENSIONS a	b	c	d	BAR LENGHT
PILE	25	ST1	4	Lp+460				Lp+460
	6	T1	$37+\frac{Lp-2000}{150}$	270	270	270	270	1200
	16	V1	4	620	200			820

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 3.04m WITH PRE-CAST PILE)

DATE :

ISSUED BY :

CAD FILE REF : ABUT\S0100002

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SHEET 3 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO

BAR BENDING SCHEDULE (GIRDER SPAN = 1500)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	2054	192		2896
	12	ST1(NF)	22	Var. 650 to 950				Avg. 800
	12	ST1(EF)	22	Var. 650 to 950				Avg. 800
	16	L1(EF)	28	Var. 1565 to 0	192			Avg. 2540
	10	L2(NF)	28	Var. 1565 to 0	120			Avg. 2468
	10	ST2	8	1000				1000
	10	ST3	12	500				500
	10	L3	42	1300	120			1420
	16	U1	8	192	2940	192		3324
	12	U2	8	144	2940	144		3228
	16	U3	13	192	2940	192		3324
	16	U4	13	192	2940	192		3324
	20	U5	25	240	1750	240		2230
	16	U6	21	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	3115				3115
	12	ST2	8	3115				3115
	6	T1	36	286	286			572
	6	T2	114	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	42	225	210	278	200	913
Pile	25	ST1	4	11920				11920
	6	T1	106	576	540			1116
	16	V1	4	835				835

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

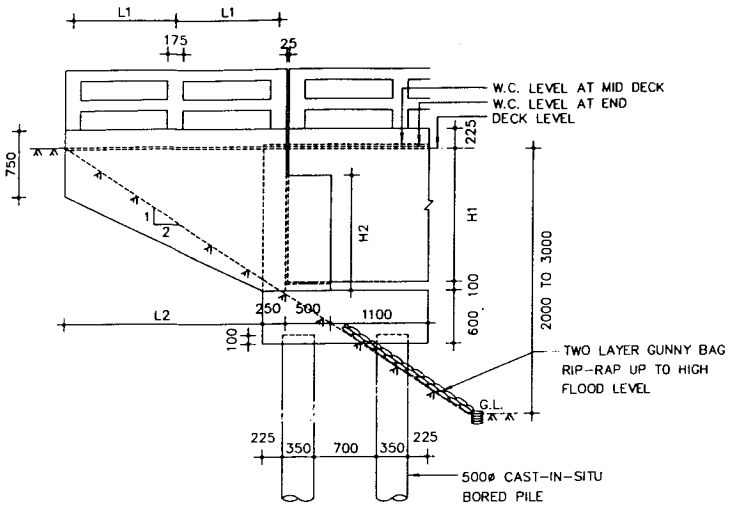
REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 3.04m WITH PRE-CAST PILE)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\S0100003	

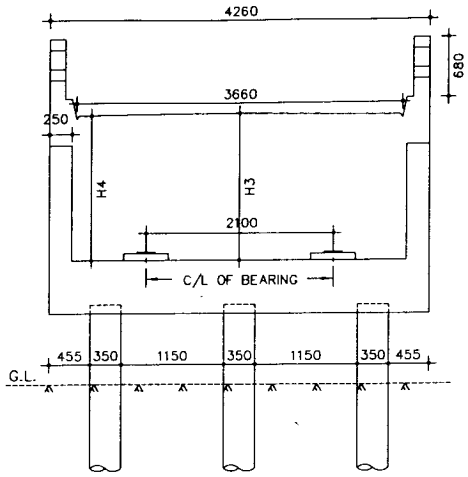
Web Copy

SA-4

SHEET 1 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO



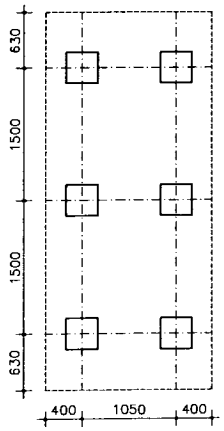
SIDE ELEVATION



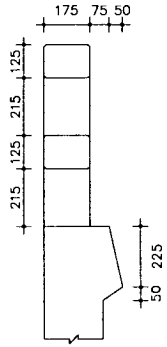
FRONT ELEVATION

TABLE-1

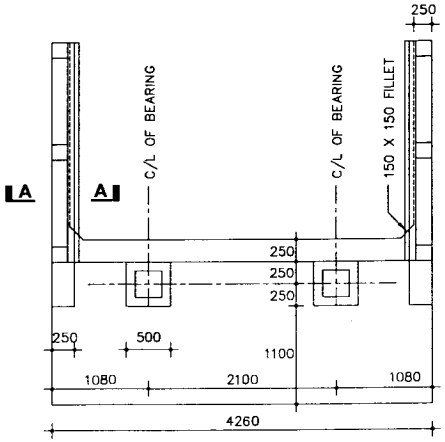
GIRDER SPAN	PILE REACTION	NO. OF POST	L1	L2	H1	H2	H3	H4
20000	182	3	1158	2240	1500	1300	1660	1635
19500	181	3	1158	2240	1500	1300	1660	1635
19000	181	3	1158	2240	1500	1300	1660	1635
18500	180	3	1158	2240	1500	1300	1660	1635
18000	170	3	1045	2015	1350	1150	1510	1485
17500	169	3	1045	2015	1350	1150	1510	1485
17000	169	3	1045	2015	1350	1150	1510	1485
16500	168	3	1045	2015	1350	1150	1510	1485
16000	168	3	1045	2015	1350	1150	1510	1485
15500	168	3	1045	2015	1350	1150	1510	1485
15000	150	3	858	1640	1100	900	1260	1235
14500	149	3	858	1640	1100	900	1260	1235
14000	149	3	858	1640	1100	900	1260	1235
13500	149	3	858	1640	1100	900	1260	1235
13000	148	3	858	1640	1100	900	1260	1235
12500	141	3	783	1490	1000	800	1160	1135



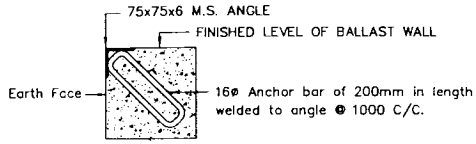
PILE LAYOUT



SEC. A-A



TOP PLAN



NOSING AT ABUTMENT

NOTES :

1. All dimensions are in millimeter.
2. Pile Reactions are in kN.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF STUB ABUTMENT
(DECK WIDTH = 4.26m WITH PRE-CAST PILE)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\S0200001

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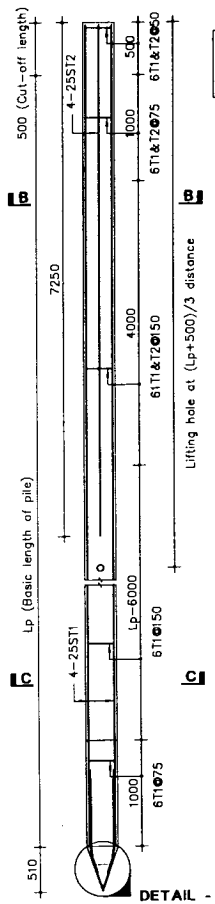
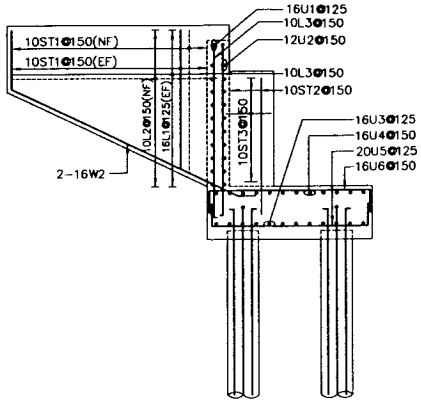
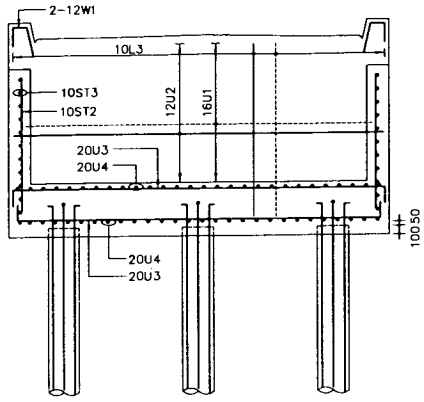
SHEET 2 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO



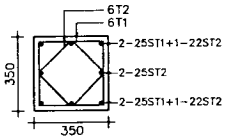
PILE DETAILS



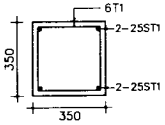
REINF. DETAILS
(SIDE VIEW)



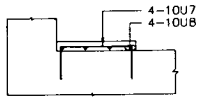
REINF. DETAILS
(WATER SIDE VIEW)



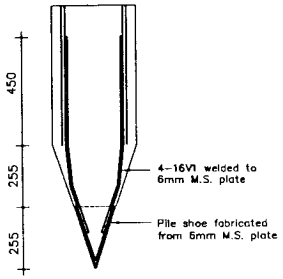
SEC. B-B



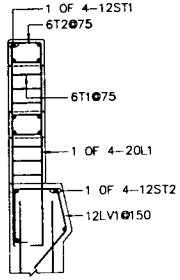
SEC. C-C



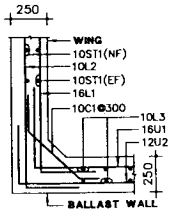
BEARING PAD REINFORCEMENT



DETAILS - X



REINF. DETAILS OF RAILING ON WING



CORNER REINF. DETAILS

BAR BENDING SCHEDULE (GIRDER SPAN = 20000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WAL	16	W2	4	650	3046	192		3888
	10	ST1(NF)	32	Var. 650 to 1500				Avg. 1075
	10	ST1(EF)	32	Var. 650 to 1500				Avg. 1075
	16	L1(EF)	40	Var. 2390 to 0	192			Avg. 4777
	10	L2(NF)	34	Var. 2390 to 0	120			Avg. 3705
	10	ST2	8	1550				1550
	10	ST3	18	500				500
	10	L3	58	1850	120			1970
	16	U1	14	192	4160	192		4544
	12	U2	12	144	4160	144		4448
	16	U3	15	192	4160	192		4544
	16	U4	13	192	4160	192		4544
	20	U5	35	240	1750	240		2230
	16	U6	29	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	14	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	2451				2451
	12	ST2	8	2451				2451
	6	T1	36	286	286			572
	6	T2	90	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	34	225	210	278	200	913
Pile	25	ST1	4	11920				11920
	22	ST2	4	7210				7210
	6	T1	106	576	576			1152
	6	T2	66	420	420			840
	16	V1	4	835				835

BAR BENDING SCHEDULE (GIRDER SPAN =18000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WAL	16	W2	4	650	2775	192		3617
	10	ST1(NF)	30	Var. 650 to 1350				Avg. 1000
	10	ST1(EF)	30	Var. 650 to 1350				Avg. 1000
	16	L1(EF)	38	Var. 2165 to 0	192			Avg. 3440
	10	L2(NF)	32	Var. 2165 to 0	120			Avg. 3368
	10	ST2	8	1400				1400
	10	ST3	16	500				500
	10	L3	58	1700	120			1820
	16	U1	13	192	4160	192		4544
	12	U2	11	144	4160	144		4448
	16	U3	15	192	4160	192		4544
	16	U4	13	192	4160	192		4544
	20	U5	35	240	1750	240		2230
	16	U6	29	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	12	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	2225				2225
	12	ST2	8	2225				2225
	6	T1	16	286	286			572
	6	T2	78	306	206			512
	20	L1	24	905	120			1035
	12	W1	4	225	210	278		713
	12	LV1	30	225	210	278	200	913
Pile	25	ST1	4	11920				11920
	22	ST2	4	7210				7210
	6	T1	106	576	576			1152
	6	T2	66	420	420			840
	16	V1	4	835				835

NOTES :

1. All dimensions are in millimeter unless otherwise specified.
2. Pile reactions are in kN.
3. Concrete (Structure), Cylinder strength at 28 days : 21MPa–ASTM C39.
4. Concrete (Pile), Cylinder strength at 28 days : 21MPa–ASTM C39.
5. Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
6. Deformed Reinforcing steel, Yield strength : 276MPa–ASTM A615.
7. Dimension Lp are site dependent.
8. Not all reinforcement are necessarily shown in any view.
9. Clear cover for : a) Vertical member – 50mm, b) Pile cap – 50mm, c) Pile – 40mm, d) Post – 25mm, e) Rail – 20mm.
10. This drawing is to be read in conjunction with Shape Code; Cad File: ABUT\S0000001.

LEGEND :

NF = Near Face.
EF = Earth Face.
WF = Water Face.

BAR BENDING SCHEDULE FOR PILE

MEMBER	BAR DIA	SHAPE CODE	TOTAL NO	SEGMENT DIMENSIONS a	b	c	d	BAR LENGHT
PILE	25	ST1	4	Lp+460				Lp+460
	25	ST2	4	7210				7210
	6	T1	$64+\frac{Lp-6000}{150}$	270	270	270	270	1200
	6	T2	51	191	191	191	191	884
	16	V1	4	620	200			820

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 4.26m WITH PRE-CAST PILE)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\S0200002

Web Copy

SA-6

SHEET 3 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO

BAR BENDING SCHEDULE (GIRDER SPAN =15000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
	16	W2	4	650	2325	192		3167
	10	ST1(NF)	24	Var. 650 to 1100				Avg. 875
	10	ST1(EF)	24	Var. 650 to 1100				Avg. 875
	16	L1(EF)	34	Var. 1790 to 0	192			Avg. 2877
	10	L2(NF)	30	Var. 1790 to 0	120			Avg. 2805
	10	ST2	8	1150				1150
ABUTMENT	10	ST3	14	500				500
AND	10	L3	58	1450	120			1570
WING WAL	16	U1	11	192	4160	192		4544
	12	U2	9	144	4160	144		4448
	16	U3	15	192	4160	192		4544
	16	U4	13	192	4160	192		4544
	20	U5	35	240	1750	240		2230
	16	U6	29	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
	12	ST1	16	1851				1851
RAIL	12	ST2	8	1851				1851
POST	6	T1	36	286	286			572
SIDE	6	T2	66	306	206			512
WALK	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	26	225	210	278	200	913
	25	ST1	4	11920				11920
	22	ST2	4	7210				7210
Pile	6	T1	106	576	576			1152
	6	T2	66	420	420			840
	16	V1	4	835				835

BAR BENDING SCHEDULE (GIRDER SPAN =12500)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
	16	W2	4	650	2144	192		2986
	10	ST1(NF)	22	Var. 650 to 1000				Avg. 825
	10	ST1(EF)	22	Var. 650 to 1000				Avg. 825
	16	L1(EF)	32	Var. 1640 to 0	192			Avg. 2632
	10	L2(NF)	28	Var. 1640 to 0	120			Avg. 2580
	10	ST2	8	1050				1050
ABUTMENT	10	ST3	12	500				500
AND	10	L3	58	1350	120			1470
WING WAL	16	U1	10	192	4160	192		4544
	12	U2	8	144	4160	144		4448
	16	U3	15	192	4160	192		4544
	16	U4	13	192	4160	192		4544
	20	U5	35	240	1750	240		2230
	16	U6	29	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
	12	ST1	16	1701				1701
RAIL	12	ST2	8	1701				1701
POST	6	T1	36	286	286			572
SIDE	6	T2	60	306	206			512
WALK	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	24	225	210	278	200	913
	25	ST1	4	11920				11920
	22	ST2	4	7210				7210
Pile	6	T1	106	576	576			1152
	6	T2	66	420	420			840
	16	V1	4	835				835

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 4.26m WITH PRE-CAST PILE)

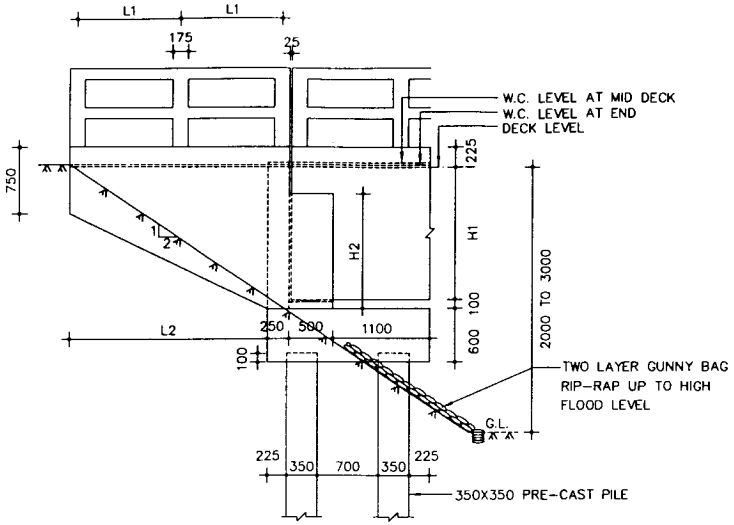
DATE :

ISSUED BY :

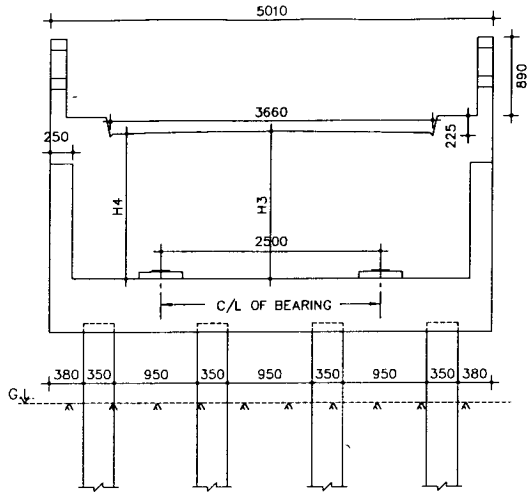
CAD FILE REF : ABUT\S0200003

Web Copy

SHEET 1 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : YES



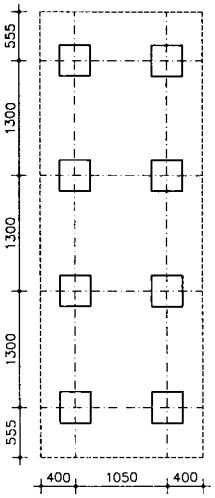
SIDE ELEVATION



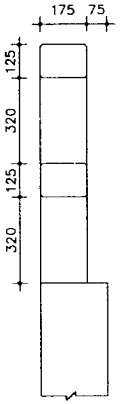
FRONT ELEVATION

TABLE-1

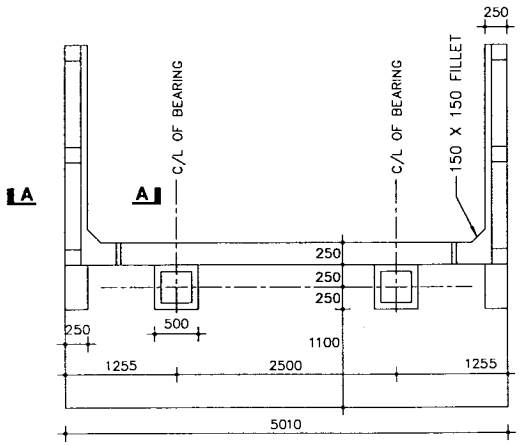
GIRDER SPAN	PILE REACTION	NO. OF POST	L1	L2	H1	H2	H3	H4
20000	164	3	1158	2240	1500	1300	1660	1635
19500	163	3	1158	2240	1500	1300	1660	1635
19000	163	3	1158	2240	1500	1300	1660	1635
18500	162	3	1158	2240	1500	1300	1660	1635
18000	153	3	1045	2015	1350	1150	1510	1485
17500	152	3	1045	2015	1350	1150	1510	1485
17000	152	3	1045	2015	1350	1150	1510	1485
16500	151	3	1045	2015	1350	1150	1510	1485
16000	151	3	1045	2015	1350	1150	1510	1485
15500	151	3	1045	2015	1350	1150	1510	1485
15000	135	3	858	1640	1100	900	1260	1235
14500	134	3	858	1640	1100	900	1260	1235
14000	134	3	858	1640	1100	900	1260	1235
13500	134	3	858	1640	1100	900	1260	1235
13000	133	3	858	1640	1100	900	1260	1235
12500	127	3	783	1490	1000	800	1160	1135



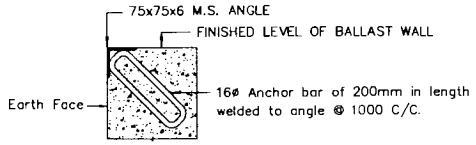
PILE LAYOUT



SEC. A-A



TOP PLAN



NOSING AT ABUTMENT

NOTES :

1. All dimensions are in millimeter.
2. Pile Reactions are in kN.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF STUB ABUTMENT
(DECK WIDTH = 5.01m WITH PRE-CAST PILE)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\S1200001

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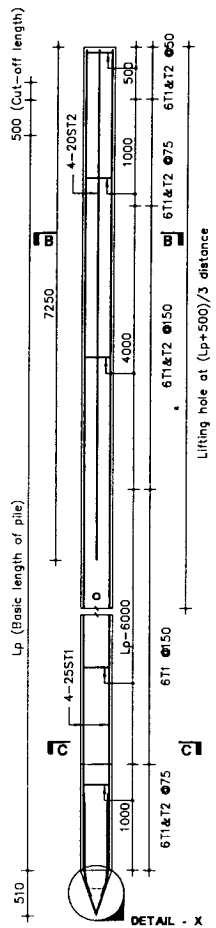
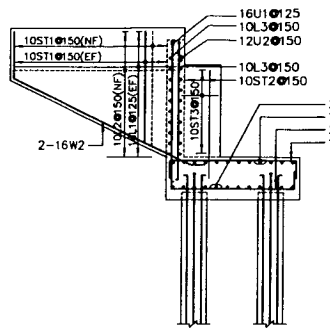
SA-8

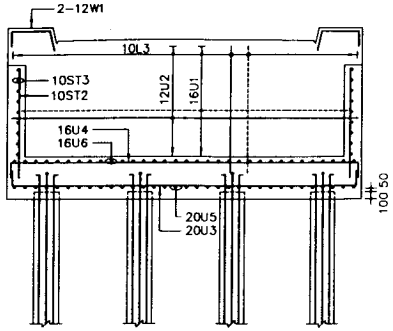
SHEET 2 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : YES



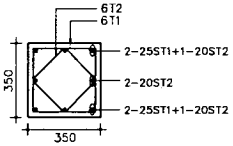
PILE DETAILS



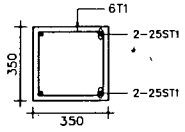
REINF. DETAILS
(SIDE VIEW)



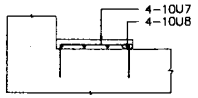
REINF. DETAILS
(WATER SIDE VIEW)



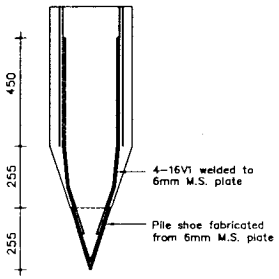
SEC. B-B



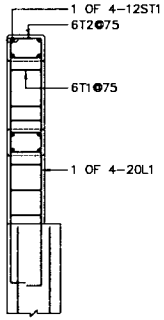
SEC. C-C



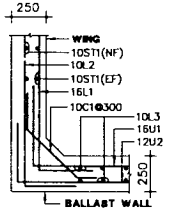
BEARING PAD REINFORCEMENT



DETAILS - X



REINF. DETAILS OF
RAILING ON WING



CORNER REINF. DETAILS

BAR BENDING SCHEDULE (GIRDER SPAN = 20000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	3046	192		3888
	10	ST1(NF)	32	Var. 650 to 1500				Avg. 1075
	10	ST1(EF)	32	Var. 650 to 1500				Avg. 1075
	16	L1(EF)	40	Var. 2390 to 0	192			Avg. 1777
	10	L2(NF)	34	Var. 2390 to 0	120			Avg. 3705
	10	ST2	8	1550				1550
	10	ST3	18	500				500
	10	L3	68	1850	120			1970
	16	U1	14	192	4910	192		5294
	12	U2	12	144	4910	144		5198
	20	U3	13	240	4910	240		5390
	16	U4	13	192	4910	192		5294
	20	U5	41	240	1750	240		2230
	16	U6	34	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	14	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	2451				2451
	12	ST2	8	2451				2451
	6	T1	60	286	286			572
	6	T2	90	306	206			512
	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
Pile	25	ST1	4	11920				11920
	20	ST2	4	7210				7210
	6	T1	106	576	576			1152
	6	T2	66	420	420			840
	16	V1	4	835				835

BAR BENDING SCHEDULE (GIRDER SPAN = 18000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	2775	192		3617
	10	ST1(NF)	30	Var. 650 to 1350				Avg. 1000
	10	ST1(EF)	30	Var. 650 to 1350				Avg. 1000
	16	L1(EF)	38	Var. 2165 to 0	192			Avg. 3440
	10	L2(NF)	32	Var. 2165 to 0	120			Avg. 3368
	10	ST2	8	1400				1400
	10	ST3	16	500				500
	10	L3	68	1700	120			1820
	16	U1	13	192	4910	192		5294
	12	U2	11	144	4910	144		5198
	20	U3	13	240	4910	240		5390
	16	U4	13	192	4910	192		5294
	20	U5	41	240	1750	240		2230
	16	U6	34	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	12	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	2225				2225
	12	ST2	8	2225				2225
	6	T1	60	286	286			572
	6	T2	78	306	206			512
	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
Pile	25	ST1	4	11920				11920
	20	ST2	4	7210				7210
	6	T1	106	576	576			1152
	6	T2	66	420	420			840
	16	V1	4	835				835

NOTES :

1. All dimensions are in millimeter unless otherwise specified.
2. Pile reactions are in kN.
3. Concrete (Structure), Cylinder strength at 28 days : 21MPa–ASTM C39.
4. Concrete (Pile), Cylinder strength at 28 days : 21MPa–ASTM C39.
5. Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
6. Deformed Reinforcing steel, Yield strength : 276MPa–ASTM A615.
7. Dimension Lp are site dependent.
8. Nat all reinforcement are necessarily shown in any view.
9. Clear cover for : a) Vertical member – 50mm, b) Pile cap – 50mm, c) Pile – 40mm, d) Post – 25mm, e) Rail – 20mm.
10. This drawing is to be read in conjunction with Shape Code; Cad File: ABUT\S0000001.

LEGEND :

NF = Near Face.
EF = Earth Face.
WF = Water Face.

BAR BENDING SCHEDULE FOR PILE

MEMBER	BAR DIA	SHAPE CODE	TOTAL NO	SEGMENT DIMENSIONS a	b	c	d	BAR LENGHT
PILE	25	ST1	4	Lp+460				Lp+460
	20	ST2	4	7210				7210
	6	T1	64+ (Lp-6000)/150	270	270	270	270	1200
	6	T2	51	191	191	191	191	884
	16	V1	4	620	200			820

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 5.01m WITH PRE-CAST PILE)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\S1200002

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SHEET 3 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : YES

BAR BENDING SCHEDULE (GIRDER SPAN = 15000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	2325	192		3167
	10	ST1(NF)	24	Var. 650 to 1100				Avg. 875
	10	ST1(EF)	24	Var. 650 to 1100				Avg. 875
	16	L1(EF)	34	Var. 1790 to 0	192			Avg. 2877
	10	L2(NF)	30	Var. 1790 to 0	120			Avg. 2805
	10	ST2	8	1150				1150
	10	ST3	14	500				500
	10	L3	68	1450	120			1570
	16	U1	11	192	4910	192		5294
	12	U2	9	144	4910	144		5198
	20	U3	13	240	4910	240		5390
	16	U4	13	192	4910	192		5294
	20	U5	41	240	1750	240		2230
	16	U6	34	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	1851				1851
	12	ST2	8	1851				1851
	6	T1	60	286	286			572
	6	T2	66	306	206			512
	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
Pile	25	ST1	4	11920				11920
	20	ST2	4	7210				7210
	6	T1	106	576	576			1152
	6	T2	66	420	420			840
	16	V1	4	835				835

BAR BENDING SCHEDULE (GIRDER SPAN =12500)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	2144	192		2986
	10	ST1(NF)	22	Var. 650 to 1000				Avg. 825
	10	ST1(EF)	22	Var. 650 to 1000				Avg. 825
	16	L1(EF)	32	Var. 1640 to 0	192			Avg. 2652
	10	L2(NF)	28	Var. 1640 to 0	120			Avg. 2580
	10	ST2	8	1050				1050
	10	ST3	12	500				500
	10	L3	68	1350	120			1470
	16	U1	10	192	4910	192		5294
	12	U2	8	144	4910	144		5198
	20	U3	13	240	4910	240		5390
	16	U4	13	192	4910	192		5294
	20	U5	41	240	1750	240		2230
	16	U6	34	192	1750	192		2134
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	1701				1701
	12	ST2	8	1701				1701
	6	T1	60	286	286			572
	6	T2	60	306	206			512
	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
Pile	25	ST1	4	11920				11920
	20	ST2	4	7210				7210
	6	T1	106	576	576			1152
	6	T2	66	420	420			840
	16	V1	4	835				835

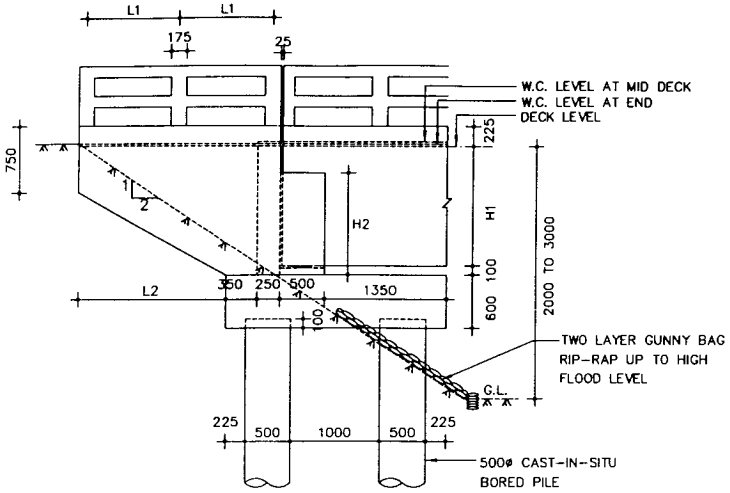
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 5.01m WITH PRE-CAST PILE)

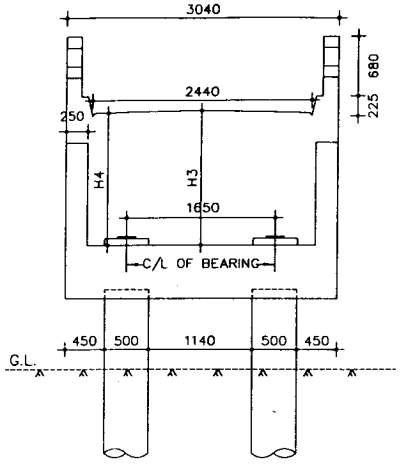
DATE :
ISSUED BY :
CAD FILE REF : ABUT\S1200003

Web Copy

SHEET 1 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO



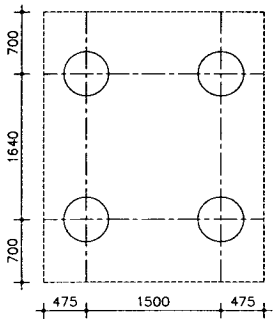
SIDE ELEVATION



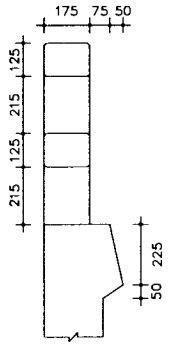
FRONT ELEVATION

TABLE-1

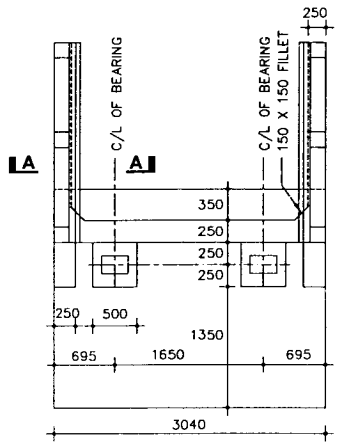
GIRDER SPAN	PILE REACTION	NO. OF POST	L1	L2	H1	H2	H3	H4
20000	201	3	1045	1665	1350	1150	1510	1485
19500	194	3	1045	1665	1350	1150	1510	1485
19000	193	3	1045	1665	1350	1150	1510	1485
18500	191	3	1045	1665	1350	1150	1510	1485
18000	181	3	933	1440	1200	1000	1360	1335
17500	179	3	933	1440	1200	1000	1360	1335
17000	178	3	933	1440	1200	1000	1360	1335
16500	177	3	933	1440	1200	1000	1360	1335
16000	174	3	933	1440	1200	1000	1360	1335
15500	159	3	933	1440	1200	1000	1360	1335
15000	157	3	1490	1065	950	750	1110	1085
14500	156	3	1490	1065	950	750	1110	1085
14000	155	3	1490	1065	950	750	1110	1085
13500	154	3	1490	1065	950	750	1110	1085
13000	153	3	1490	1065	950	750	1110	1085
12500	163	3	1490	1065	950	750	1110	1085



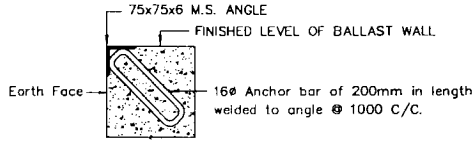
PILE LAYOUT



SEC. A-A



TOP PLAN



NOSING AT ABUTMENT

NOTES :

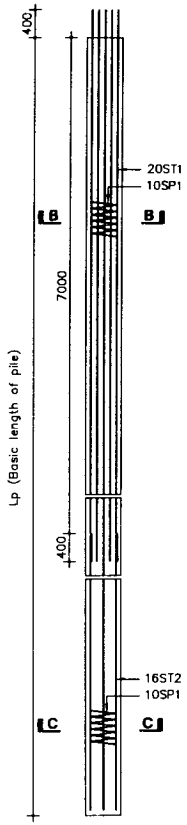
1. All dimensions are in millimeter.
2. Pile Reactions are in kN.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

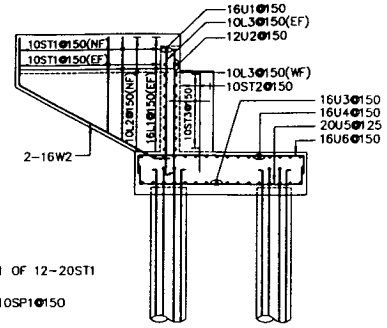
GENERAL ARRANGEMENT OF STUB ABUTMENT
(DECK WIDTH : 3.04m WITH CAST-IN-SITU PILE)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\S0101001

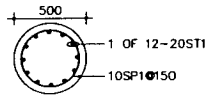
Web Copy



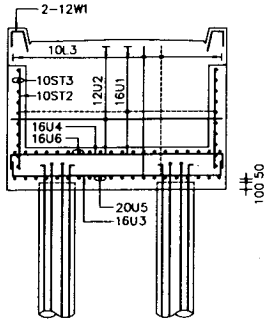
PILE DETAILS



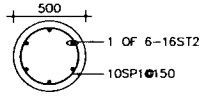
REINF. DETAILS
(SIDE VIEW)



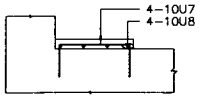
SEC. B-B



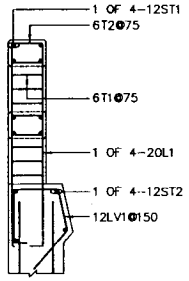
REINF. DETAILS
(WATER SIDE VIEW)



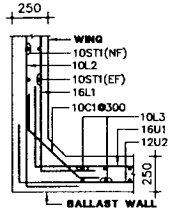
SEC. C-C



BEARING PAD REINFORCEMENT



REINF. DETAILS OF RAILING ON WING



CORNER REINF. DETAILS

BAR BENDING SCHEDULE (GIRDER SPAN = 20000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WAL	16	W2	4	650	2355	192		3197
	10	ST1(NF)	24	Var. 650 to 1350				Avg. 1000
	10	ST1(EF)	24	Var. 650 to 1350				Avg. 1000
	16	L1(EF)	30	Var. 1815 to 0	192			Avg. 2915
	10	L2(NF)	30	Var. 1815 to 0	120			Avg. 2843
	10	ST2	8	1400				1400
	10	ST3	16	500				500
	10	L3	42	1700	120			1820
	16	U1	11	192	2940	192		3324
	12	U2	11	144	2940	144		3228
	16	U3	17	192	2940	192		3324
	16	U4	17	192	2940	192		3324
	20	U5	25	240	2350	240		2830
	16	U6	21	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	12	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	2225				2225
	12	ST2	8	2225				2225
	6	T1	36	286	286			572
	6	T2	78	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	30	225	210	278	200	913
Pile	20	ST1	12	7800				7800
	16	ST2	6	12925				12925
	6	SP1	138	1099.56				1100

BAR BENDING SCHEDULE (GIRDER SPAN = 18000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WAL	16	W2	4	650	2084	192		2926
	10	ST1(NF)	22	Var. 650 to 1200				Avg. 925
	10	ST1(EF)	22	Var. 650 to 1200				Avg. 925
	16	L1(EF)	28	Var. 1590 to 0	192			Avg. 2577
	10	L2(NF)	28	Var. 1590 to 0	120	"		Avg. 2505
	10	ST2	8	1250				1250
	10	ST3	14	500				500
	10	L3	42	1550	120			1670
	16	U1	10	192	2940	192		3324
	12	U2	10	144	2940	144		3228
	16	U3	17	192	2940	192		3324
	16	U4	17	192	2940	192		3324
	20	U5	25	240	2350	240		2830
	16	U6	21	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	12	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	2001				2001
	12	ST2	8	2001				2001
	6	T1	36	286	286			572
	6	T2	72	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	28	225	210	278	200	913
Pile	20	ST1	12	7800				7800
	16	ST2	6	12925				12925
	6	SP1	138	1099.56				1100

NOTES :

1. All dimensions are in millimeter unless otherwise specified.
2. Pile reactions are in kN.
3. Concrete (Structure), Cylinder strength at 28 days : 21MPa-ASTM C39.
4. Concrete (Pile), Cylinder strength at 28 days : 21MPa-ASTM C39.
5. Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
6. Deformed Reinforcing steel, Yield strength : 276MPa-ASTM A615.
7. Dimension Lp are site dependent.
8. Not all reinforcement are necessarily shown in any view.
9. Clear cover for : a) Vertical member - 50mm, b) Pile cap - 50mm, c) Pile - 75mm, d) Post - 25mm, e) Rail - 20mm.
10. This drawing is to be read in conjunction with Shape Code; Cad File: ABUT\S0000001.

LEGEND :

NF = Near Face.
EF = Earth Face.
WF = Water Face.

BAR BENDING SCHEDULE FOR PILE

MEMBER	BAR DIA	SHAPE CODE	TOTAL NO	SEGMENT DIMENSIONS a	b	c	d	BAR LENGHT
PILE	20	ST1	12	7800				7800
	16	ST2	6	Lp-6925		Lp		Lp-6925
	10	SP1	Lp-150 / 150	1131				1131

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 3.04m WITH CAST-IN-SITU PILE)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\S0101002

Web Copy

SHEET 3 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO

BAR BENDING SCHEDULE (GIRDER SPAN = 15000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	1634	192		2476
	10	ST1(NF)	16	Var. 650 to 950				Avg. 800
	10	ST1(EF)	16	Var. 650 to 950				Avg. 800
	16	L1(EF)	24	Var. 1215 to 0	192			Avg. 2015
	10	L2(NF)	24	Var. 1215 to 0	120			Avg. 1943
	10	ST2	8	1000				1000
	10	ST3	12	500				500
	10	L3	42	1300	120			1420
	16	U1	8	192	2940	192		3324
	12	U2	8	144	2940	144		3228
	16	U3	17	192	2940	192		3324
	16	U4	17	192	2940	192		3324
	20	U5	25	240	2350	240		2830
	16	U6	21	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	3115				3115
	12	ST2	8	3115				3115
	6	T1	36	286	286			572
	6	T2	114	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	42	225	210	278	200	913
Pile	20	ST1	12	7800				7800
	16	ST2	6	12925				12925
	6	SP1	138	1099.56				1100

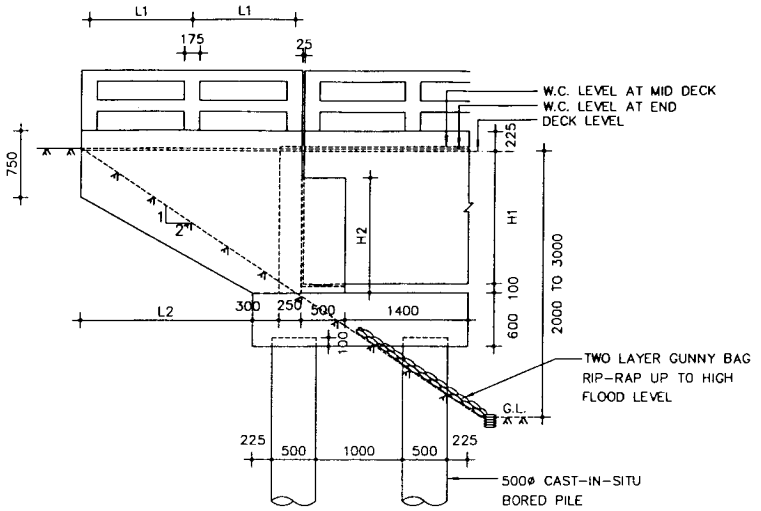
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 3.04m WITH CAST-IN-SITU PILE)

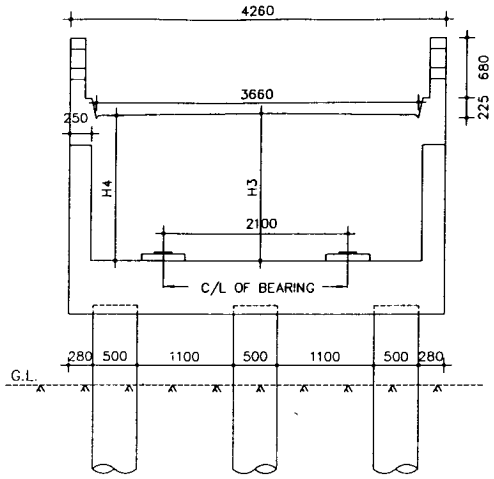
DATE :	ISSUED BY :
CAD FILE REF : ABUT\S0101003	

Web Copy

SHEET 1 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO



SIDE ELEVATION

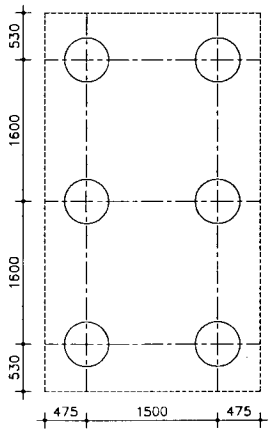


FRONT ELEVATION

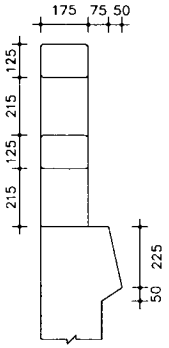
1100

TABLE-1

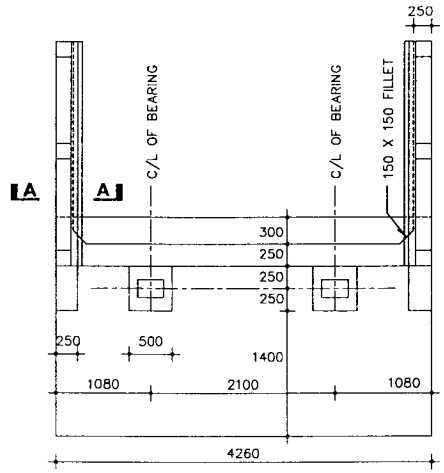
GIRDER SPAN	PILE REACTION	NO. OF POST	L1	L2	H1	H2	H3	H4
20000	193	3	1158	1940	1500	1300	1660	1635
19500	189	3	1158	1940	1500	1300	1660	1635
19000	185	3	1158	1940	1500	1300	1660	1635
18500	184	3	1158	1940	1500	1300	1660	1635
18000	175	3	1045	1715	1350	1150	1510	1485
17500	174	3	1045	1715	1350	1150	1510	1485
17000	173	3	1045	1715	1350	1150	1510	1485
16500	172	3	1045	1715	1350	1150	1510	1485
16000	171	3	1045	1715	1350	1150	1510	1485
15500	170	3	1045	1715	1350	1150	1510	1485
15000	155	3	858	1340	1100	900	1260	1235
14500	154	3	858	1340	1100	900	1260	1235
14000	153	3	858	1340	1100	900	1260	1235
13500	152	3	858	1340	1100	900	1260	1235
13000	151	3	858	1340	1100	900	1260	1235
12500	145	3	783	1190	1000	800	1160	1135



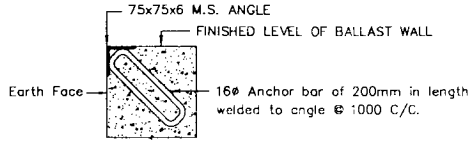
PILE LAYOUT



SEC. A-A



TOP PLAN



NOSING AT ABUTMENT

NOTES :

1. All dimensions are in millimeter.
2. Pile Reactions are in kN.

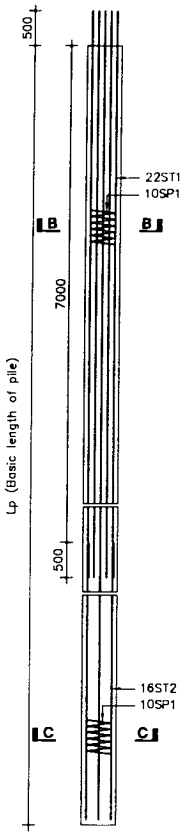
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF STUB ABUTMENT
(DECK WIDTH = 4.26m WITH CAST-IN-SITU PILE)

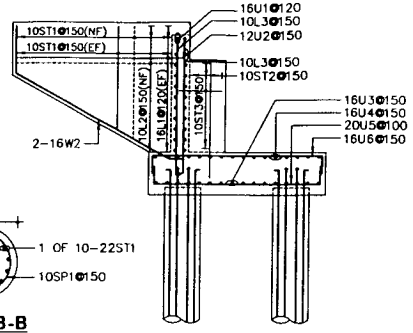
DATE :
ISSUED BY :
CAD FILE REF : ABUT\S0201001

Web Copy

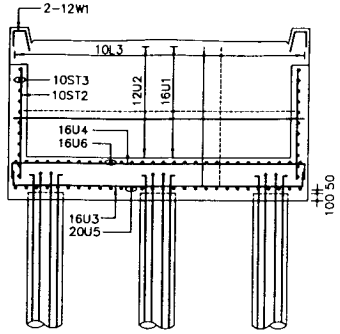
SHEET 2 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO



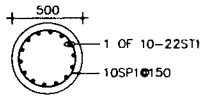
PILE DETAILS



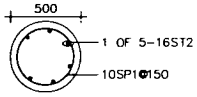
REINF. DETAILS
(SIDE VIEW)



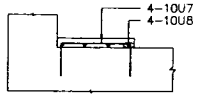
REINF. DETAILS
(WATER SIDE VIEW)



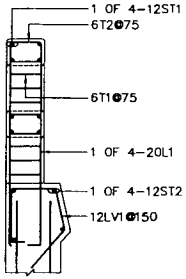
SEC. B-B



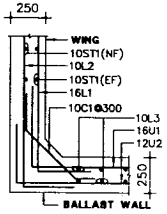
SEC. C-C



BEARING PAD REINFORCEMENT



REINF. DETAILS OF
RAILING ON WING



CORNER REINF. DETAILS

BAR BENDING SCHEDULE (GIRDER SPAN = 20000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
	16	W2	4	650	2685	192		3527
	10	ST1(NF)	28	Var. 650 to 1500				Avg. 1075
	10	ST1(EF)	28	Var. 650 to 1500				Avg. 1075
	16	L1(EF)	18	Var. 2090 to 0	192			Avg. 3327
	10	L2(NF)	32	Var. 2090 to 0	120			Avg. 3255
	10	ST2	8	1550				1550
ABUTMENT	10	ST3	18	500				500
AND	10	L3	68	1850	120			1970
WING WALL	16	U1	14	192	4910	192		5294
	12	U2	12	144	4910	144		5198
	16	U3	17	192	4910	192		5294
	16	U4	17	192	4910	192		5294
	20	U5	51	240	2350	240		2830
	16	U6	34	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	14	150	580	150		880
	12	ST1	16	2451				2451
RAIL	12	ST2	8	2451				2451
POST	6	T1	60	286	286			572
SIDE	6	T2	90	306	206			512
WALK	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
	22	ST1	14	8200				8200
	16	ST2	7	12925				12925
Pile	6	SP1	139	1099.56				1100

BAR BENDING SCHEDULE (GIRDER SPAN =18000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
	16	W2	4	650	2415	192		3257
	10	ST1(NF)	26	Var. 630 to 1350				Avg. 1000
	10	ST1(EF)	26	Var. 650 to 1350				Avg. 1000
	16	L1(EF)	36	Var. 1865 to 0	192			Avg. 2990
	10	L2(NF)	30	Var. 1865 to 0	120			Avg. 2918
	10	ST2	8	1400				1400
ABUTMENT	10	ST3	16	500				500
AND	10	L3	68	1700	120			1820
WING WALL	16	U1	13	192	4910	192		5294
	12	U2	11	144	4910	144		5198
	16	U3	17	192	4910	192		5294
	16	U4	17	192	4910	192		5294
	20	U5	51	240	2350	240		2830
	16	U6	34	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	12	150	580	150		880
	12	ST1	16	2225				2225
RAIL	12	ST2	8	2225				2225
POST	6	T1	60	286	286			572
SIDE	6	T2	78	306	206			512
WALK	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
	22	ST1	14	8200				8200
	16	ST2	7	12925				12925
Pile	6	SP1	139	1099.56				1100

NOTES :

1. All dimensions are in millimeter unless otherwise specified.
2. Pile reactions are in kN.
3. Concrete (Structure), Cylinder strength at 28 days : 21MPa-ASTM C39.
4. Concrete (Pile), Cylinder strength at 28 days : 21MPa-ASTM C39.
5. Coarse aggregate for Concrete shall be 19mm down graded stone chips conforming ASTM C33.
6. Deformed Reinforcing steel, Yield strength : 276MPa-ASTM A615.
7. Dimension Lp are site dependent.
8. Not all reinforcement are necessarily shown in any view.
9. Clear cover for : a) Vertical member - 50mm, b) Pile cap - 50mm, c) Pile - 75mm, d) Post - 25mm, e) Rail - 20mm.
10. This drawing is to be read in conjunction with Shape Code; Cad File: ABUT\S0000001.

LEGEND :

NF = Near Face.
EF = Earth Face.
WF = Water Face.

BAR BENDING SCHEDULE FOR PILE

MEMBER	BAR DIA	SHAPE CODE	TOTAL NO	SEGMENT DIMENSIONS a	b	c	d	BAR LENGHT
PILE	22	ST1	14	8000				8000
	16	ST2	7	Lp-6925		Lp		Lp-6925
	10	SP1	Lp-150 / 150	1131				1131

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 4.26m WITH CAST-IN-SITU PILE)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\S0201002

Web Copy

SHEET 3 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : NO

BAR BENDING SCHEDULE (GIRDER SPAN = 15000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	1964	192		2806
	10	ST1(NF)	20	Var. 650 to 1100				Avg. 875
	10	ST1(EF)	20	Var. 650 to 1100				Avg. 875
	16	L1(EF)	32	Var. 1490 to 0	192			Avg. 2427
	10	L2(NF)	26	Var. 1490 to 0	120			Avg. 2355
	10	ST2	8	1150				1150
	10	ST3	14	500				500
	10	L3	58	1450	120			1570
	16	U1	11	192	4160	192		4544
	12	U2	9	144	4160	144		4448
	16	U3	17	192	4160	192		4544
	16	U4	17	192	4160	192		4544
	20	U5	43	240	2350	240		2830
	16	U6	29	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	1851				1851
	12	ST2	8	1851				1851
	6	T1	36	286	286			572
	6	T2	66	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	26	225	210	278	200	913
Pile	22	ST1	14	8000				8000
	16	ST2	7	12925				12925
	6	SP1	138	1099.56				1100

BAR BENDING SCHEDULE (GIRDER SPAN = 12500)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	1784	192		2626
	10	ST1(NF)	18	Var. 650 to 1000				Avg. 825
	10	ST1(EF)	18	Var. 650 to 1000				Avg. 825
	16	L1(EF)	30	Var. 1340 to 0	192			Avg. 2202
	10	L2(NF)	26	Var. 1340 to 0	120			Avg. 2130
	10	ST2	8	1050				1050
	10	ST3	12	500				500
	10	L3	58	1350	120			1470
	16	U1	10	192	4160	192		4544
	12	U2	8	144	4160	144		4448
	16	U3	17	192	4160	192		4544
	16	U4	17	192	4160	192		4544
	20	U5	43	240	2350	240		2830
	16	U6	29	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
RAIL POST SIDE WALK	12	ST1	16	1701				1701
	12	ST2	8	1701				1701
	6	T1	36	286	286			572
	6	T2	60	306	206			512
	20	L1	24	905	120			1025
	12	W1	4	225	210	278		713
	12	LV1	24	225	210	278	200	913
Pile	22	ST1	14	8000				8000
	16	ST2	7	12925				12925
	6	SP1	138	1099.56				1100

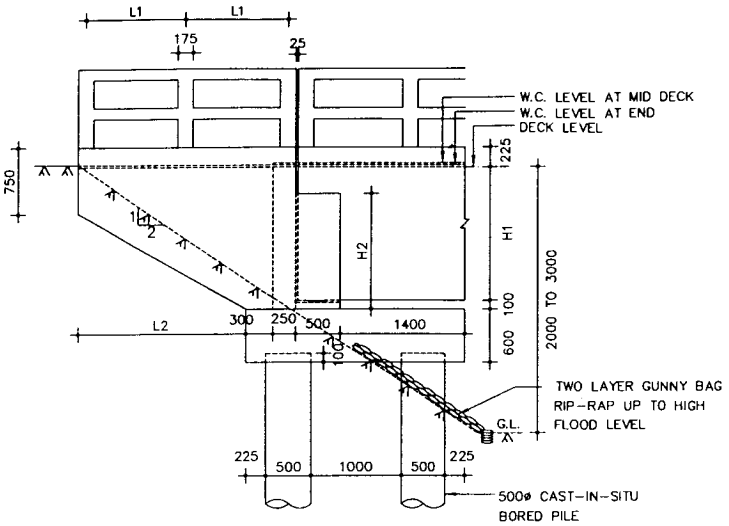
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 4.26m WITH CAST-IN-SITU PILE)

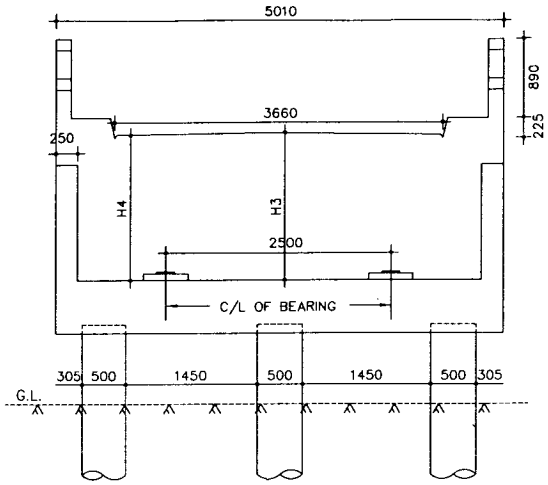
DATE :
ISSUED BY :
CAD FILE REF : ABUT\S0201003

Web Copy

SHEET 1 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : YES



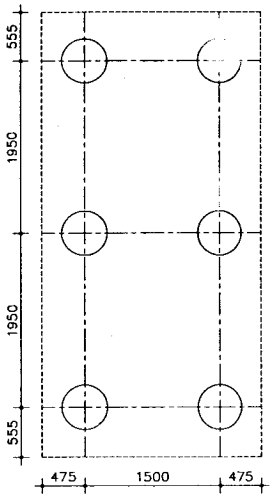
SIDE ELEVATION



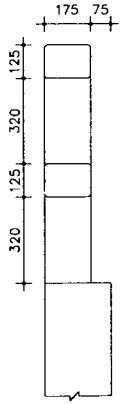
FRONT ELEVATION

TABLE-1

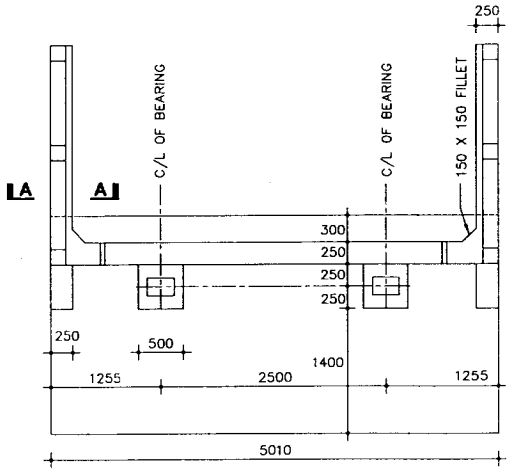
GIRDER SPAN	PILE REACTION	NO. OF POST	L1	L2	H1	H2	H3	H4
20000	218	3	1158	1940	1500	1300	1660	1635
19500	217	3	1158	1940	1500	1300	1660	1635
19000	216	3	1158	1940	1500	1300	1660	1635
18500	214	3	1158	1940	1500	1300	1660	1635
18000	203	3	1045	1715	1350	1150	1510	1485
17500	202	3	1045	1715	1350	1150	1510	1485
17000	201	3	1045	1715	1350	1150	1510	1485
16500	099	3	1045	1715	1350	1150	1510	1485
16000	198	3	1045	1715	1350	1150	1510	1485
15500	197	3	1045	1715	1350	1150	1510	1485
15000	179	3	858	1340	1100	900	1260	1235
14500	178	3	858	1340	1100	900	1260	1235
14000	177	3	858	1340	1100	900	1260	1235
13500	176	3	858	1340	1100	900	1260	1235
13000	175	3	858	1340	1100	900	1260	1235
12500	167	3	783	1190	1000	800	1160	1135



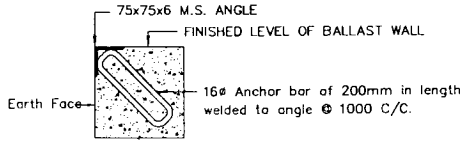
PILE LAYOUT



SECTION A-A



TOP PLAN



NOSING AT ABUTMENT

NOTES :

1. All dimensions are in millimeter.
2. Pile Reactions are in kN.

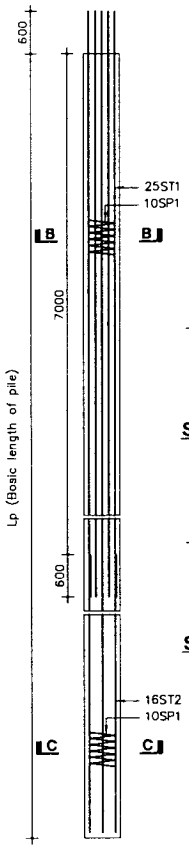
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

GENERAL ARRANGEMENT OF STUB ABUTMENT
(DECK WIDTH = 5.01m WITH CAST-IN-SITU PILE)

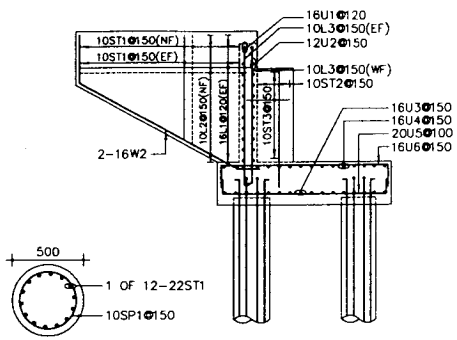
DATE :
ISSUED BY :
CAD FILE REF : ABUT\S1201001

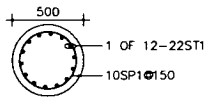
Web Copy

SHEET 2 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : YES



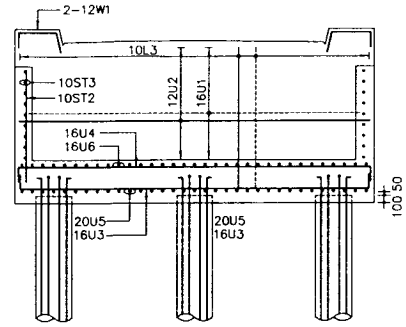
PILE DETAILS



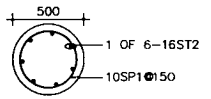


SEC. B-B

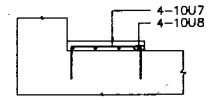
REINF. DETAILS
(SIDE VIEW)



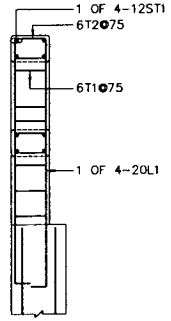
REINF. DETAILS
(WATER SIDE VIEW)



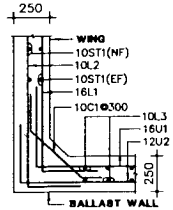
SEC. C-C



BEARING PAD REINFORCEMENT



REINF. DETAILS OF
RAILING ON WING



CORNER REINF. DETAILS

BAR BENDING SCHEDULE (GIRDER SPAN = 20000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
	16	W2	4	650	2685	192		3527
	10	ST1(NF)	28	Var. 650 to 1500				Avg. 1075
	10	ST1(EF)	28	Var. 650 to 1500				Avg. 1075
	16	L1(EF)	38	Var. 2090 to 0	192			Avg. 3327
	10	L2(NF)	32	Var. 2090 to 0	120			Avg. 3255
	10	ST2	8	1550				1550
ABUTMENT	10	ST3	18	500				500
AND	10	L3	68	1850	120			1970
WING WAL	16	U1	13	192	4910	192		5294
	12	U2	12	144	4910	144		5198
	16	U3	17	192	4910	192		5294
	16	U4	17	192	4910	192		5294
	20	U5	51	240	2350	240		2830
	16	U6	34	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	14	150	580	150		880
	12	ST1	16	2451				2451
RAIL	12	ST2	8	2451				2451
POST	6	T1	60	286	286			572
SIDE	6	T2	90	306	206			512
WALK	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
	22	ST1	14	8200				8200
	16	ST2	7	12925				12925
Pile	6	SP1	139	1099.56				1100

BAR BENDING SCHEDULE (GIRDER SPAN = 18000)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
	16	W2	4	650	2415	192		3257
	10	ST1(NF)	26	Var. 650 to 1350				Avg. 1000
	10	ST1(EF)	26	Var. 650 to 1350				Avg. 1000
	16	L1(EF)	36	Var. 1865 to 0	192			Avg. 2990
	10	L2(NF)	30	Var. 1865 to 0	120			Avg. 2918
	10	ST2	8	1400				1400
ABUTMENT	10	ST3	16	500				500
AND	10	L3	68	1700	120			1820
WING WAL	16	U1	13	192	4910	192		5294
	12	U2	11	144	4910	144		5198
	16	U3	17	192	4910	192		5294
	16	U4	17	192	4910	192		5294
	20	U5	51	240	2350	240		2830
	16	U6	34	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	12	150	580	150		880
	12	ST1	16	2225				2225
RAIL	12	ST2	8	2225				2225
POST	6	T1	60	286	286			572
SIDE	6	T2	78	306	206			512
WALK	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
	22	ST1	14	8200				8200
	16	ST2	7	12925				12925
Pile	6	SP1	139	1099.56				1100

NOTES :

1. All dimensions are in millimeter unless otherwise specified.
2. Pile reactions are in kN.
3. Concrete (Structure), Cylinder strength at 28 days : 21MPa-ASTM C39.
4. Concrete (Pile), Cylinder strength at 28 days : 21MPa-ASTM C39.
5. Coarse aggregate for Concrete shall be 19mm dawn graded stone chips conforming ASTM C33.
6. Deformed Reinforcing steel, Yield strength : 276MPa-ASTM A615.
7. Dimension Lp are site dependent.
8. Not all reinforcement are necessarily shown in any view.
9. Clear cover for : a) Vertical member - 50mm, b) Pile cap - 50mm, c) Pile - 75mm, d) Post - 25mm, e) Rail - 20mm.
10. This drawing is to be read in conjunction with Shape Code; Cad File: ABUT\S0000001.

LEGEND :

NF = Near Face.
EF = Earth Face.
WF = Water Face.

BAR BENDING SCHEDULE FOR PILE

MEMBER	BAR DIA	SHAPE CODE	TOTAL NO	SEGMENT DIMENSIONS a	b	c	d	BAR LENGHT
PILE	25	ST1	14	8200				8200
	16	ST2	7	Lp-6925		Lp		Lp-6925
	10	SP1	$\frac{Lp-150}{150}$	1131				1131

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 5.01m WITH CAST-IN-SITU PILE)

DATE :
ISSUED BY :
CAD FILE REF : ABUT\S1201002

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SHEET 3 OF 3
SPAN TO BE SUPPORTED : 12.5m TO 20m
SIDEWALK : YES

BAR BENDING SCHEDULE (GIRDER SPAN =12500)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	1784	192		2626
	10	ST1(NF)	18	Var. 650 to 1000				Avg. 825
	10	ST1(EF)	18	Var. 650 to 1000				Avg. 825
	16	L1(EF)	30	Var. 1340 to 0	192			Avg. 2202
	10	L2(NF)	26	Var. 1340 to 0	120			Avg. 2130
	10	ST2	8	1050				1050
	10	ST3	12	500				500
	10	L3	68	1350	120			1470
	16	U1	10	192	4910	192		5294
	12	U2	8	144	4910	144		5198
	16	U3	17	192	4910	192		5294
	16	U4	17	192	4910	192		5294
	20	U5	51	240	2350	240		2830
	16	U6	34	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
RAIL	12	ST1	16	1701				1701
	12	ST2	8	1701				1701
POST	6	T1	60	286	286			572
SIDE	6	T2	60	306	206			512
WALK	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
Pile	22	ST1	14	8200				8200
	16	ST2	7	12925				12925
	6	SP1	139	1099.56				1100

BAR BENDING SCHEDULE (GIRDER SPAN =15500)

MEMBER	BAR DIA.	SHAPE CODE	TOTAL NO.	SEGMENT DIMENSIONS a	b	c	d	BAR LENGTH
ABUTMENT AND WING WALL	16	W2	4	650	1964	192		2806
	10	ST1(NF)	20	Var. 650 to 1100				Avg. 875
	10	ST1(EF)	20	Var. 650 to 1100				Avg. 875
	16	L1(EF)	32	Var. 1490 to 0	192			Avg. 2427
	10	L2(NF)	26	Var. 1490 to 0	120			Avg. 2355
	10	ST2	8	1150				1150
	10	ST3	14	500				500
	10	L3	68	1450	120			1570
	16	U1	11	192	4910	192		5294
	12	U2	9	144	4910	144		5198
	16	U3	17	192	4910	192		5294
	16	U4	17	192	4910	192		5294
	20	U5	51	240	2350	240		2830
	16	U6	34	192	2350	192		2734
	10	U7	8	120	400	120		520
	10	U8	8	120	400	120		520
	10	C1	10	150	580	150		880
RAIL	12	ST1	16	1851				1851
	12	ST2	8	1851				1851
POST	6	T1	60	286	286			572
SIDE	6	T2	66	306	206			512
WALK	20	L1	24	1115	120			1235
	12	W1	4	225	585	278		1088
Pile	22	ST1	14	8200				8200
	16	ST2	7	12925				12925
	6	SP1	139	1099.56				1100

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMERNT ENGINEERING DEPARTMENT

REINFORCEMENT DETAILS OF STUB ABUTMENT
(DECK WIDTH 5.01m WITH CAST-IN-SITU PILE)

DATE :	ISSUED BY :
CAD FILE REF : ABUT\S1201003	