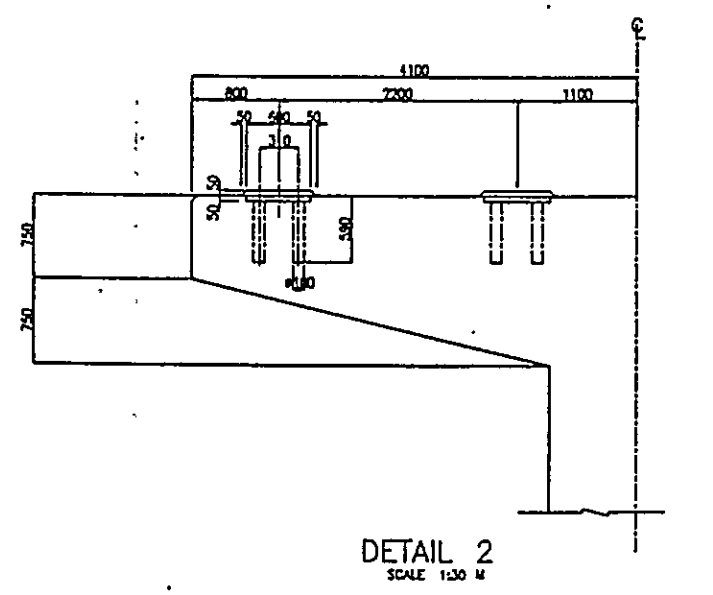
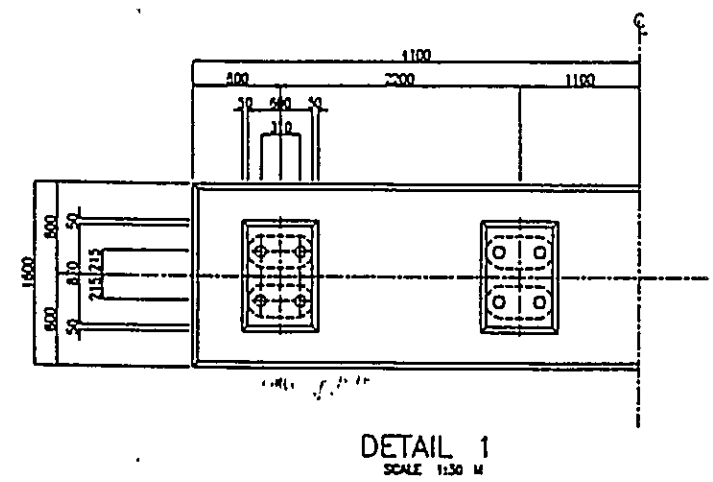
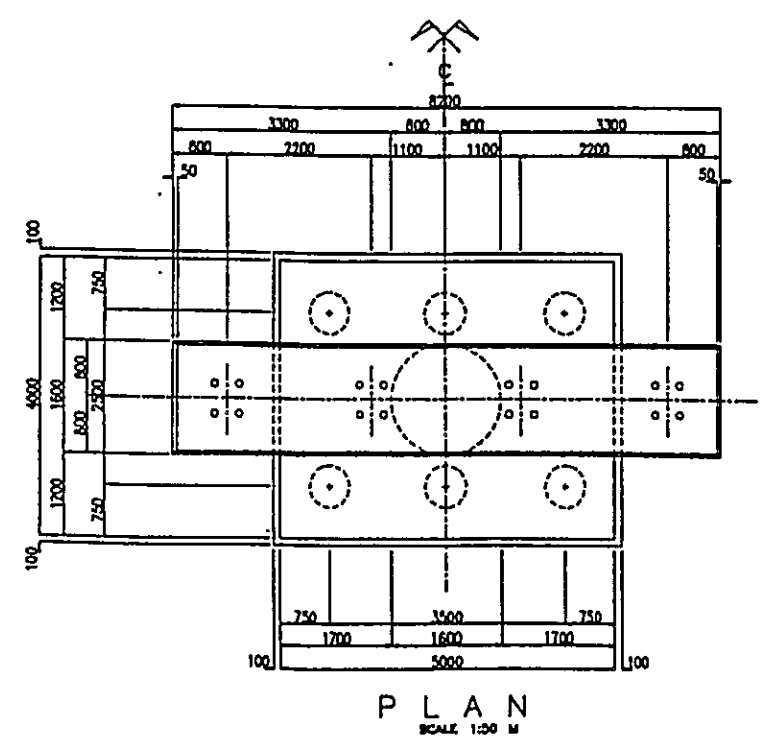
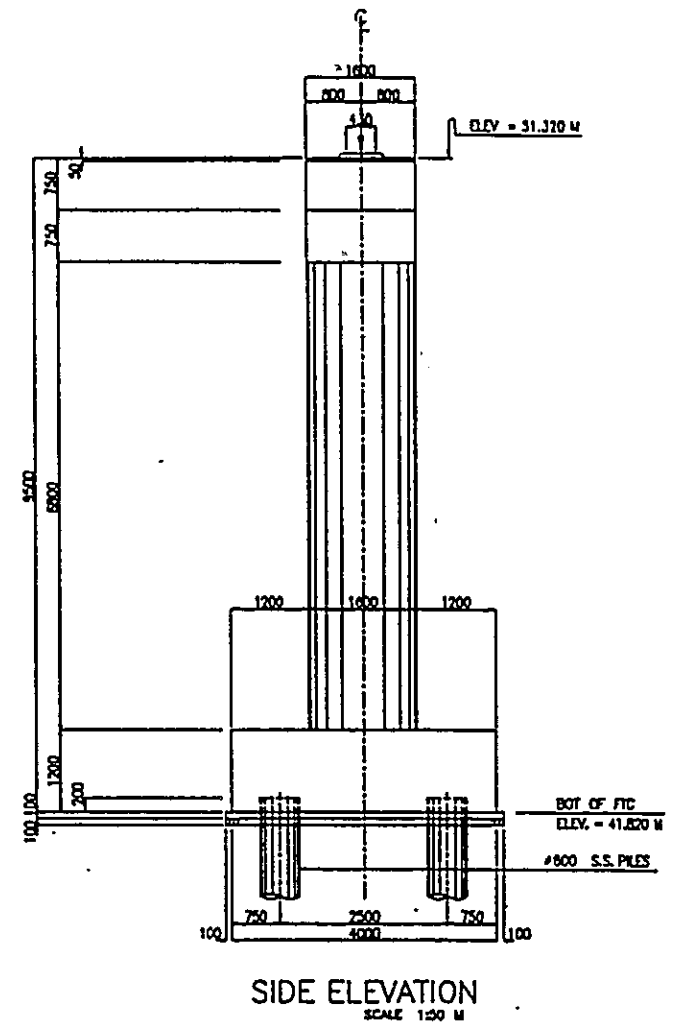
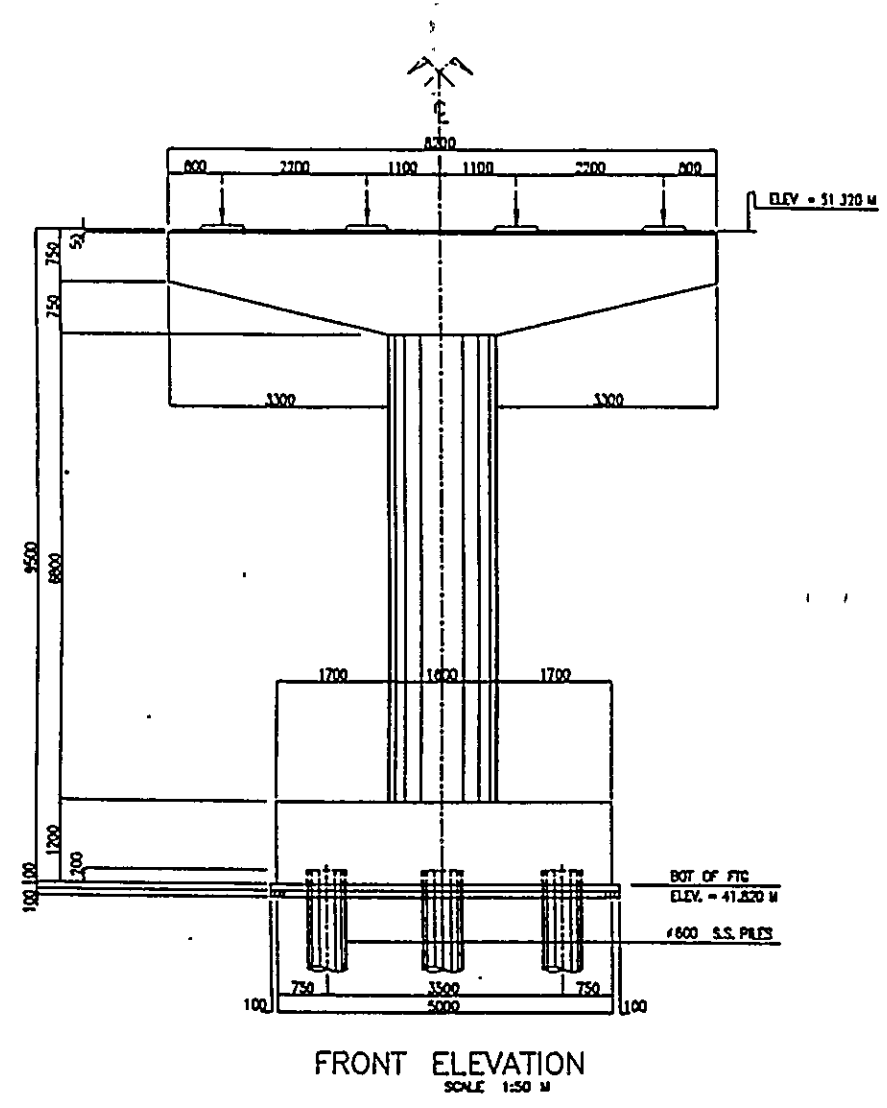


**BASIC DESIGN  
OF  
SUBSTRUCTURES  
(GROUP 2)**



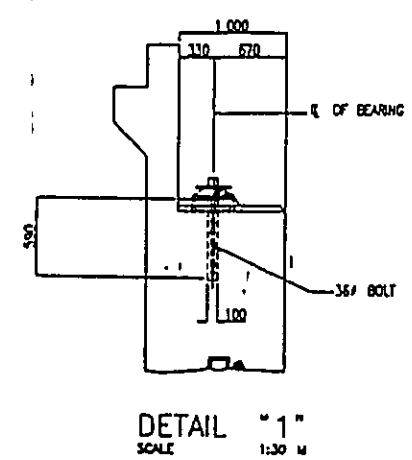
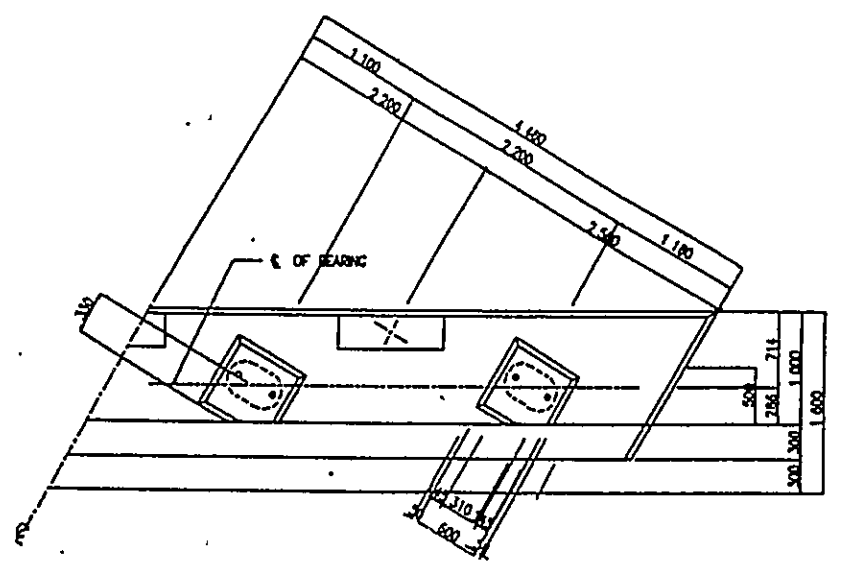
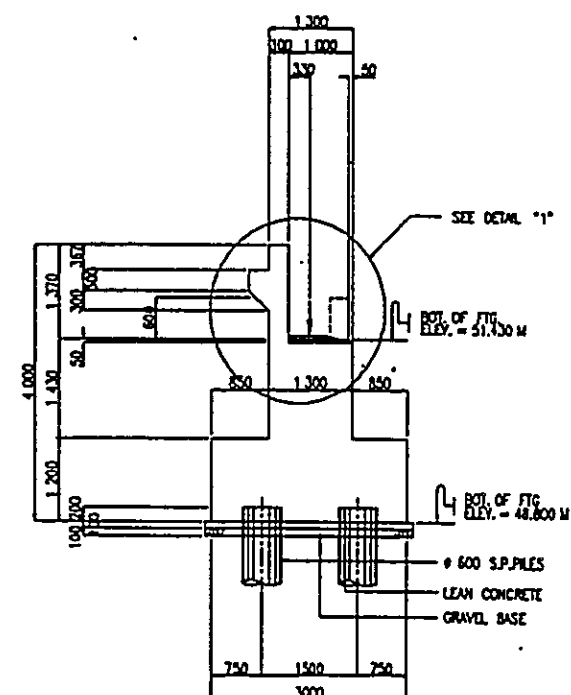
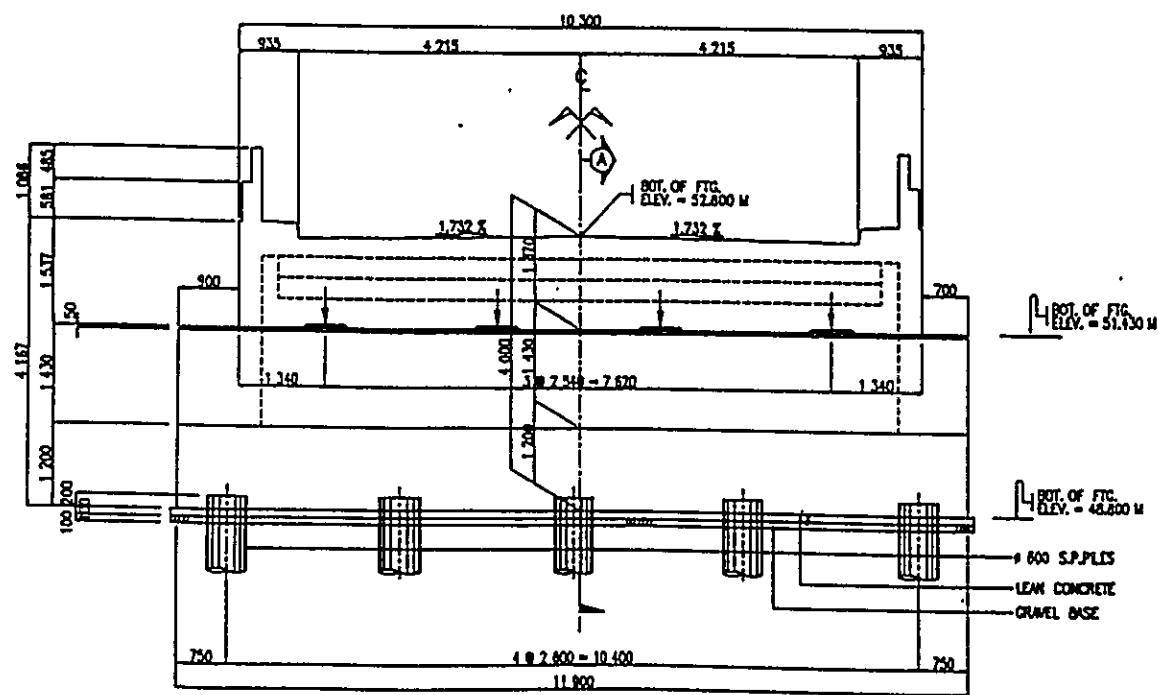
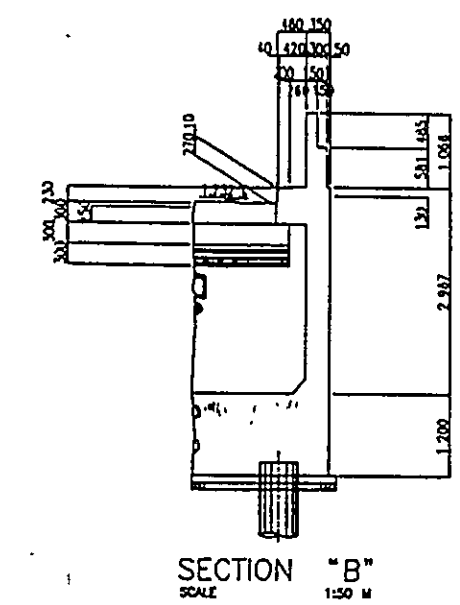
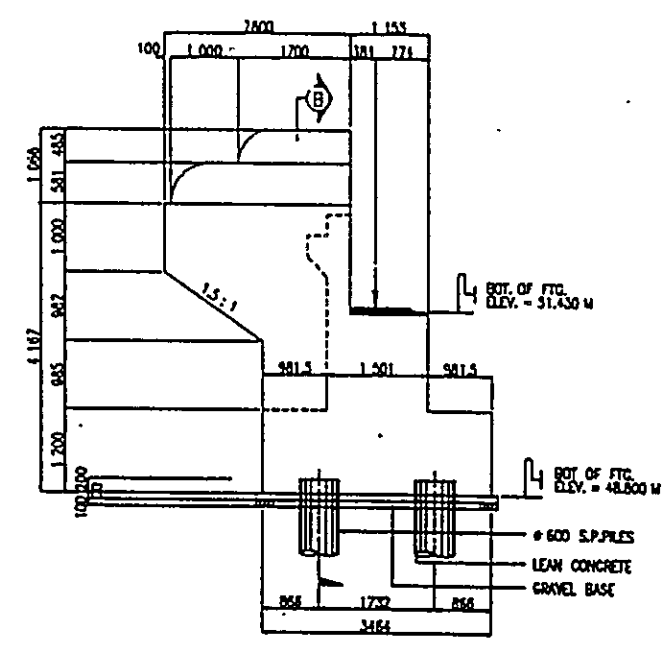
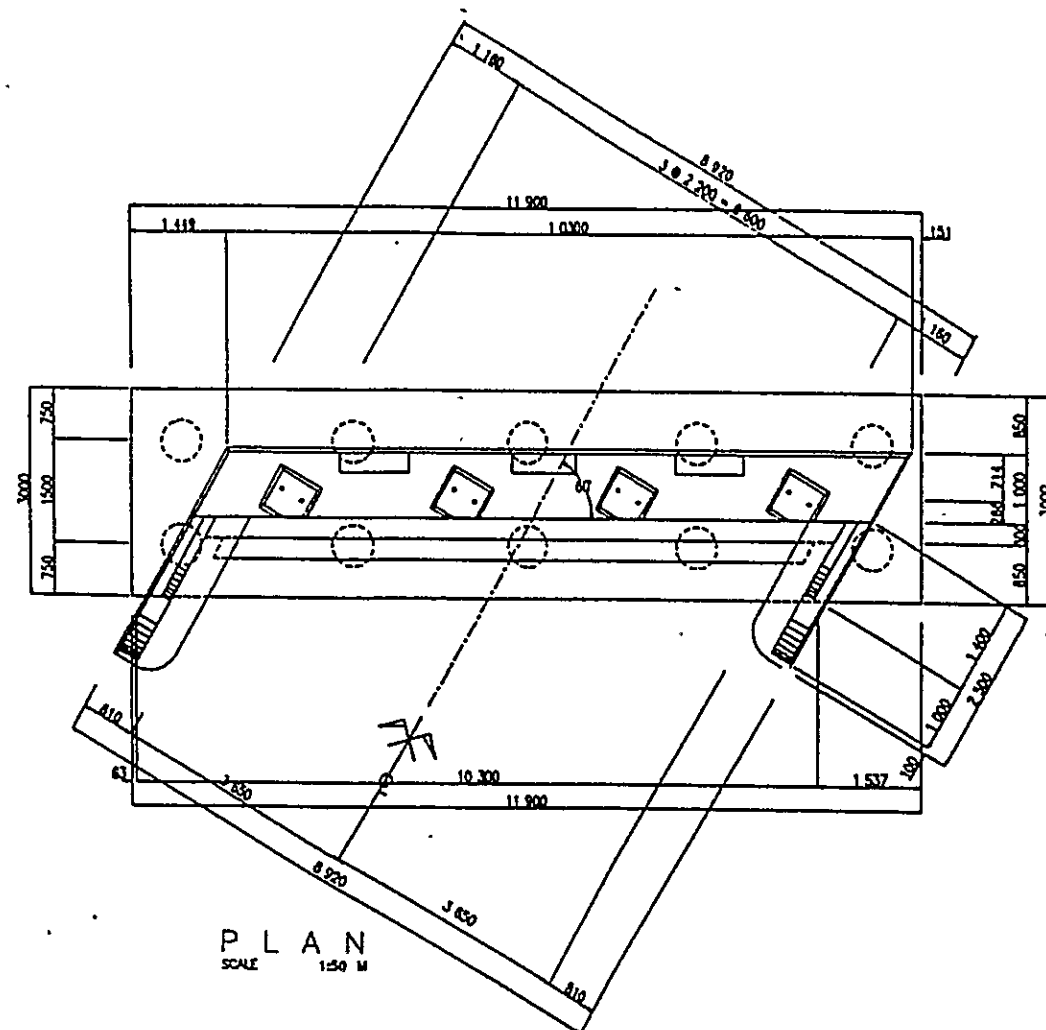


BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-08	LINGAYAO	156



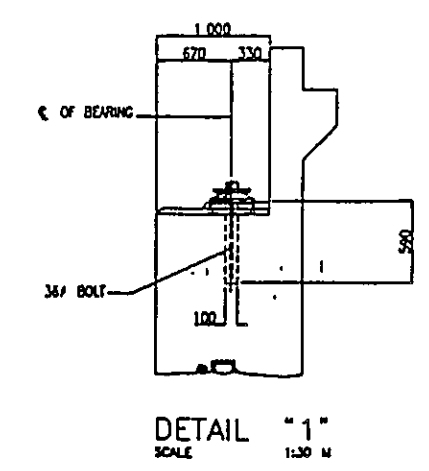
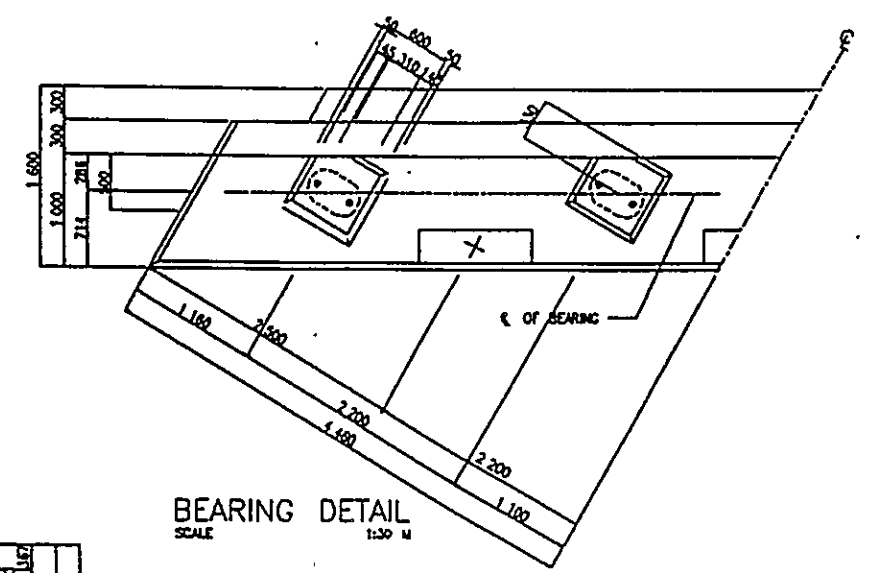
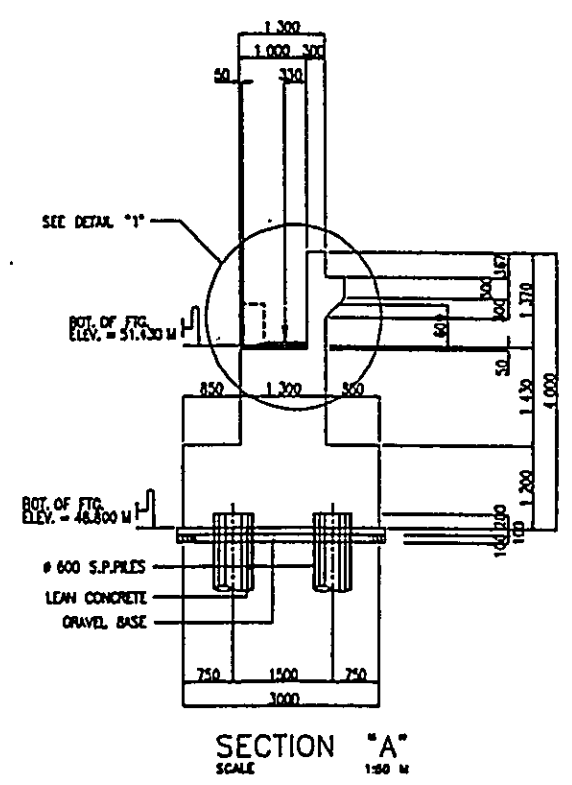
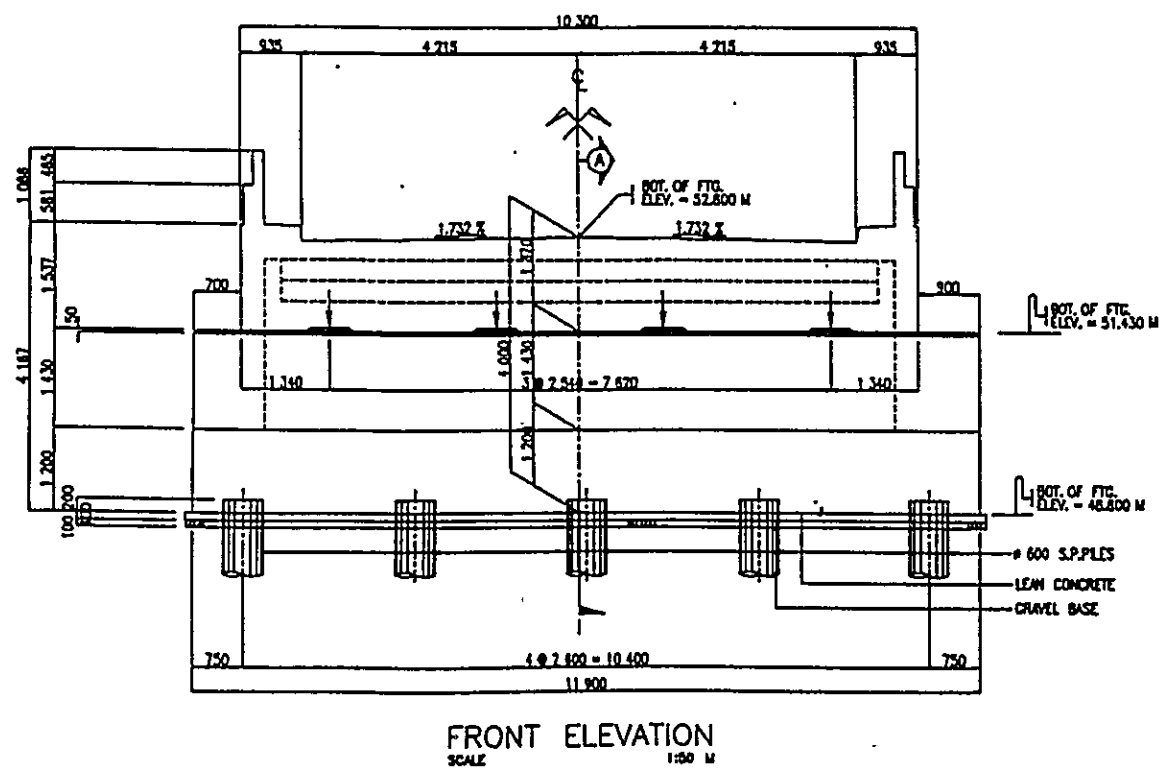
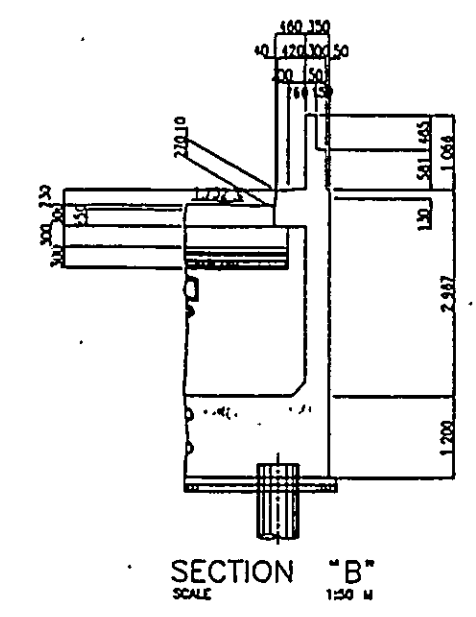
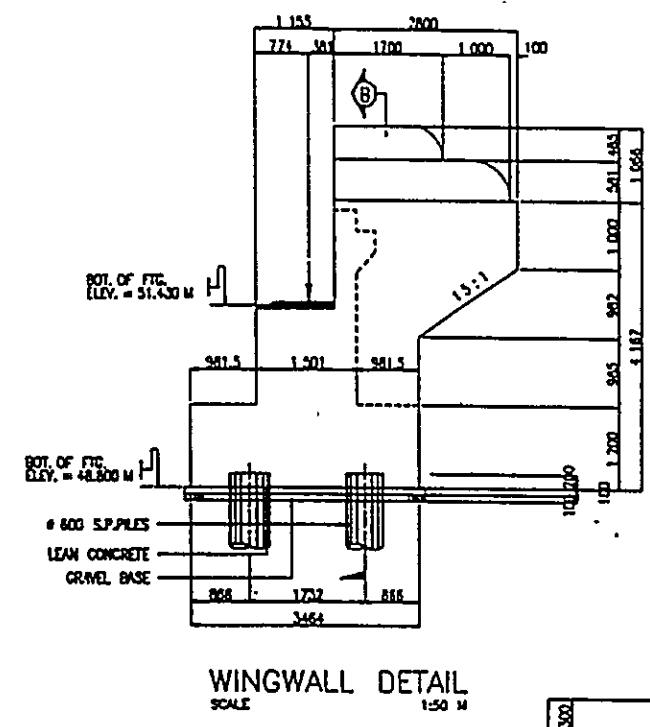
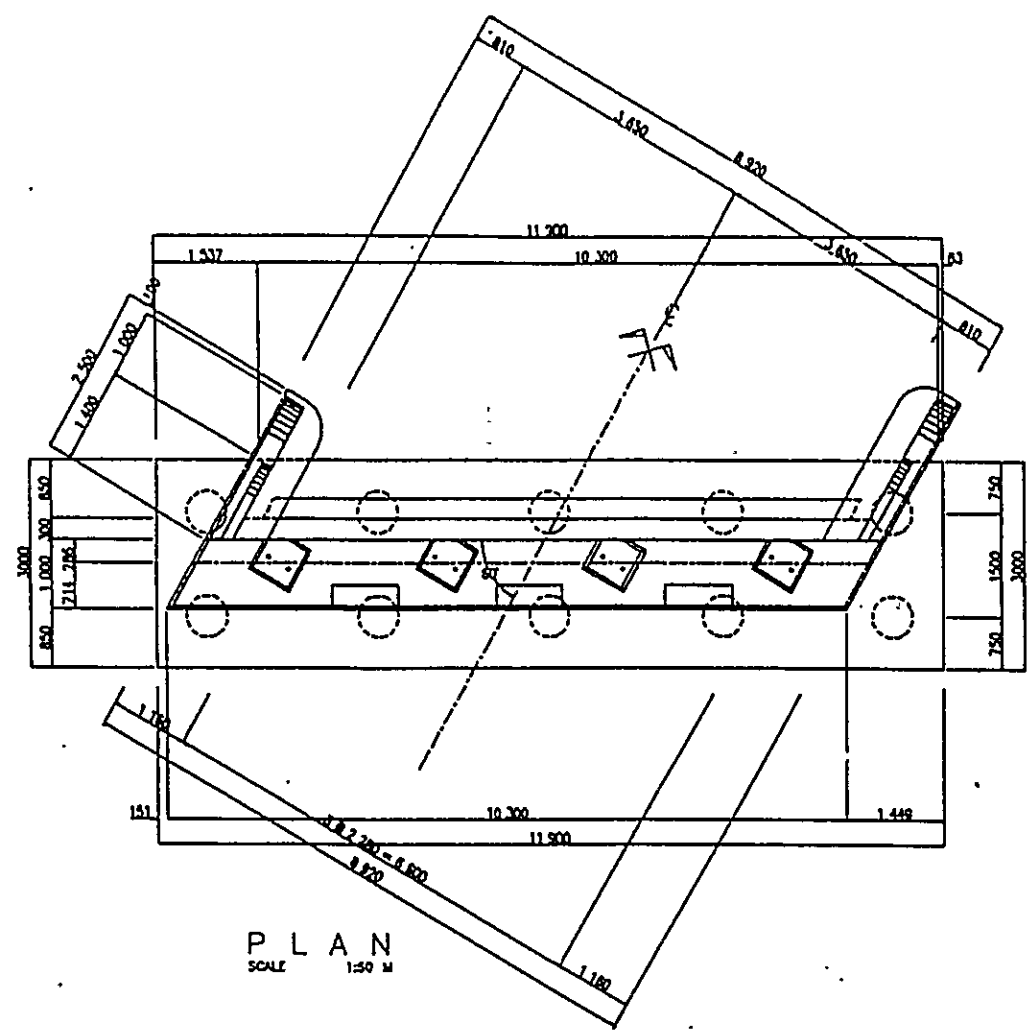
BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA

BRIDGE NO.	BRIDGE NAME	SHEET NO
10-01-09	MAGUS	157

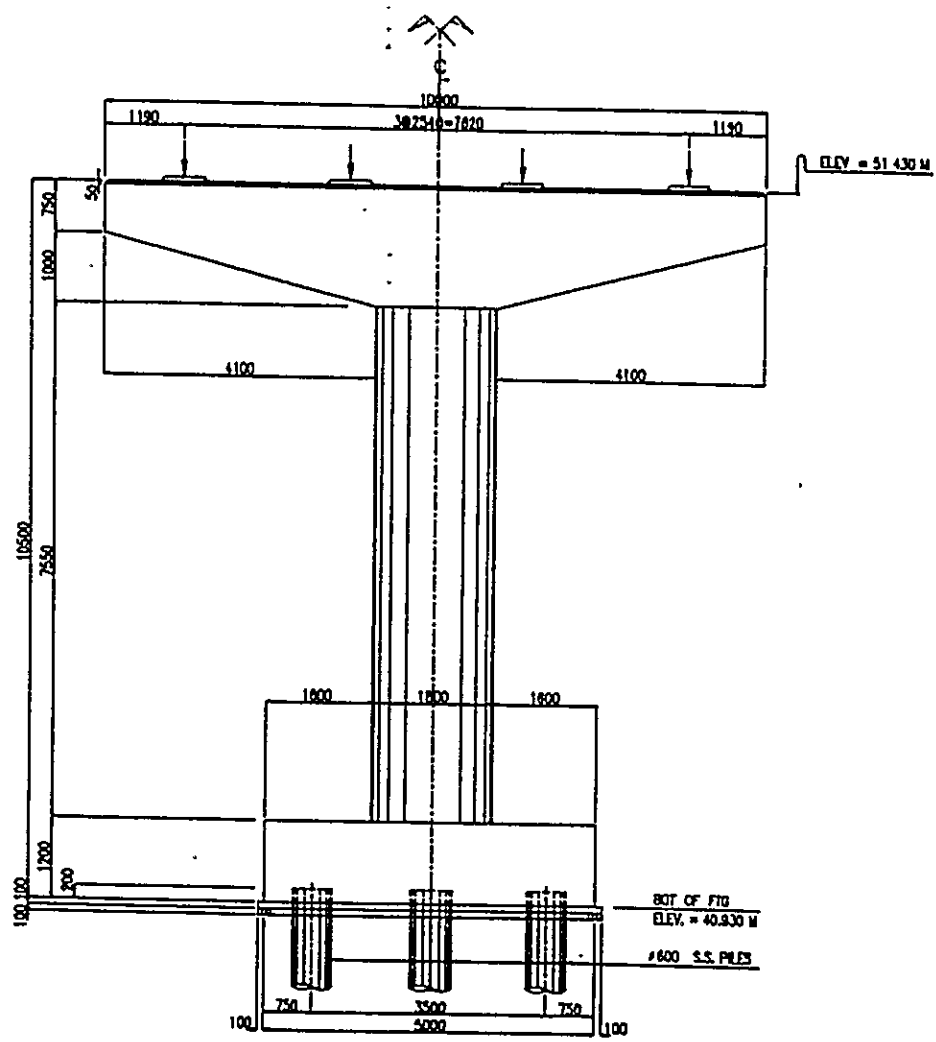


BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA

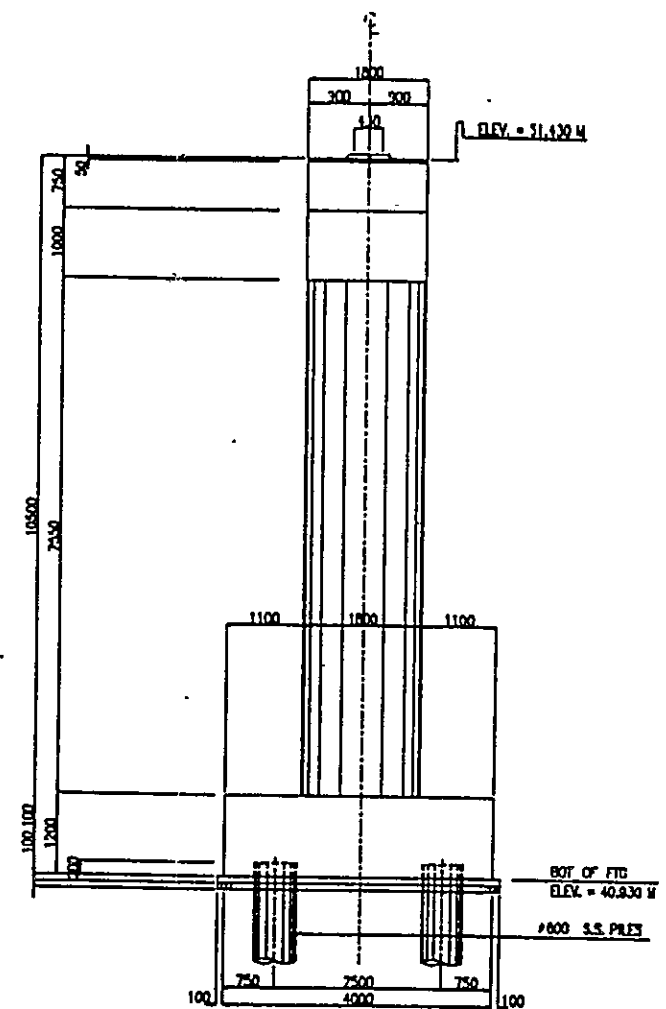
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-09	MAGUS	158



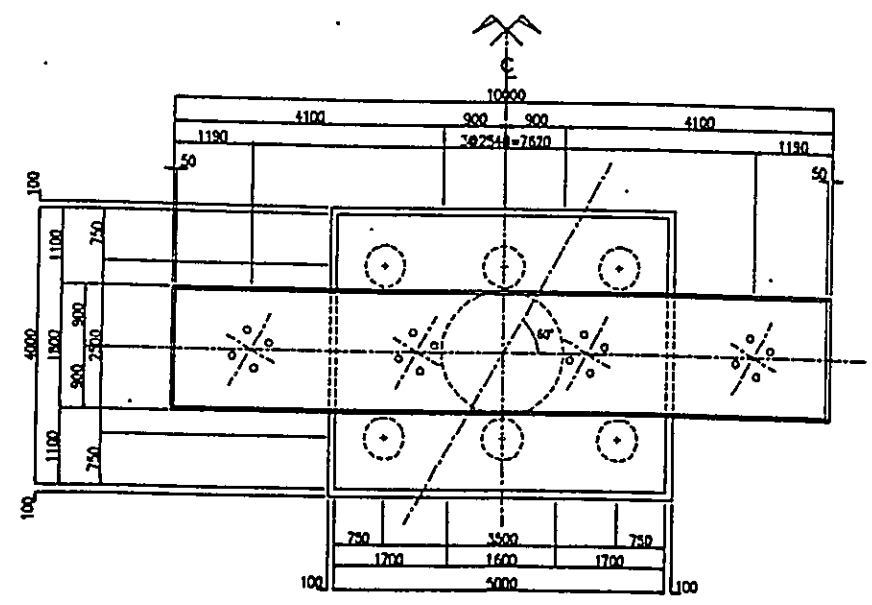
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-09	MAGUS	159



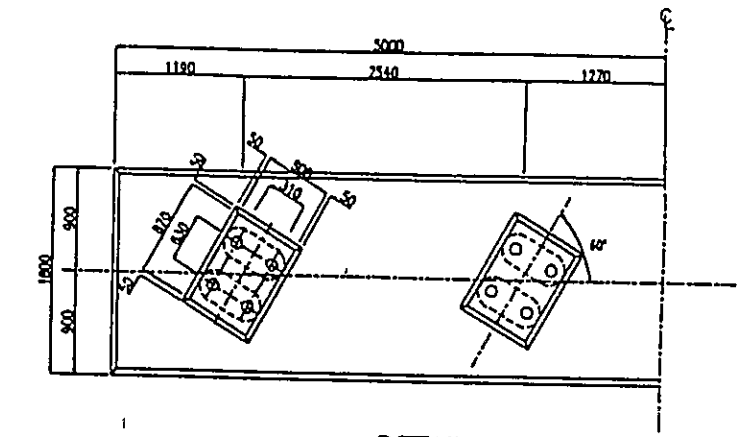
FRONT ELEVATION  
SCALE 1:50 M



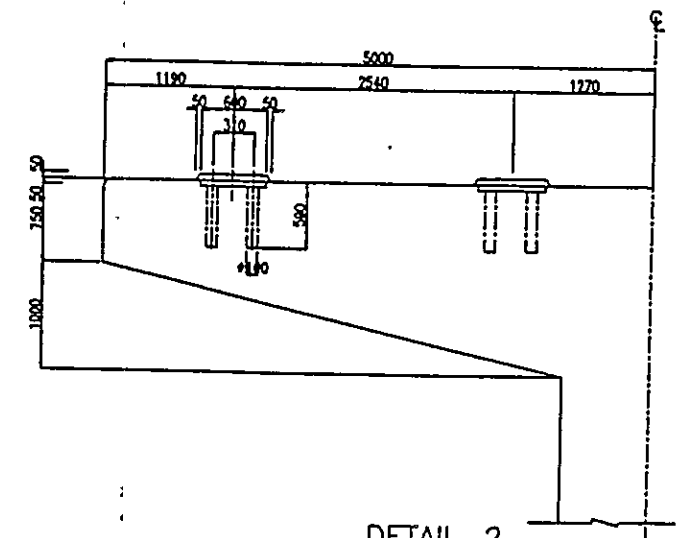
SIDE ELEVATION  
SCALE 1:50 M



PLAN  
SCALE 1:50 M

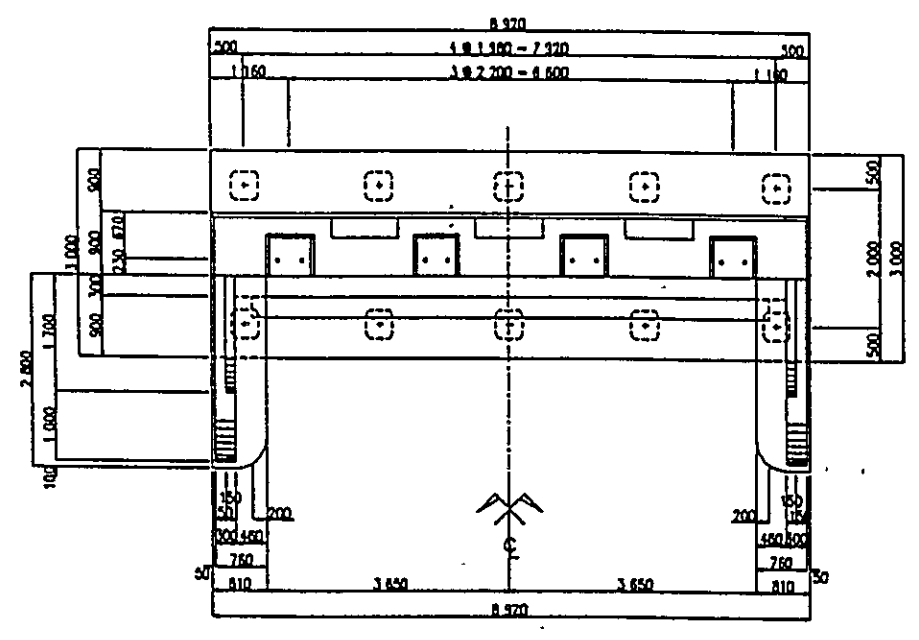


DETAIL 1  
SCALE 1:50 M

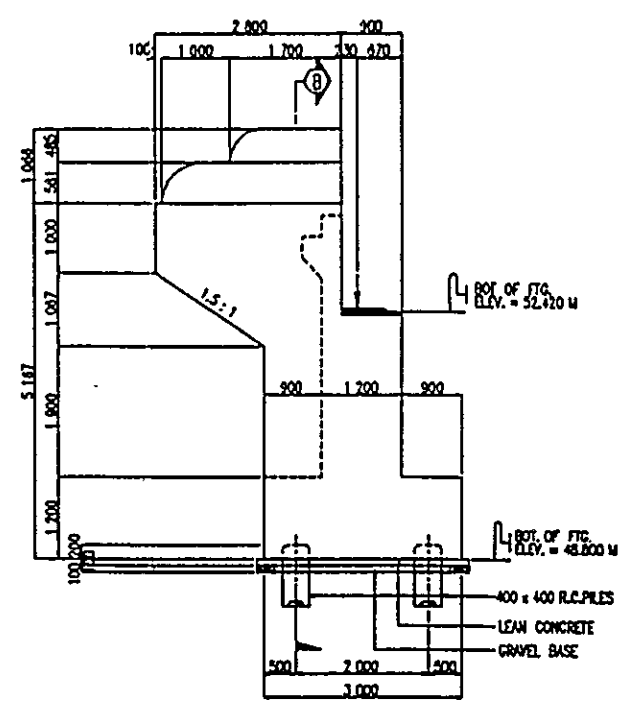


DETAIL 2  
SCALE 1:50 M

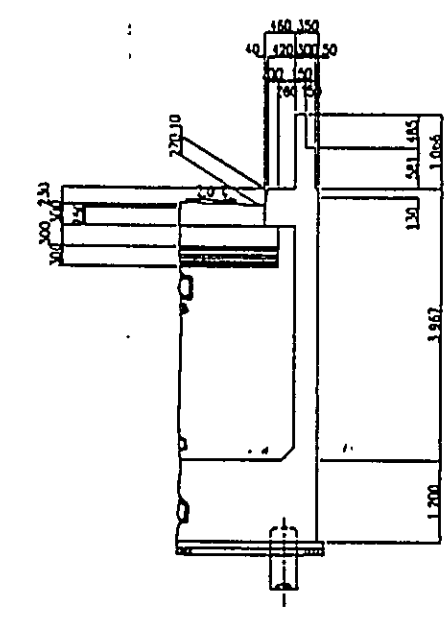
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-10	RIZAL	160



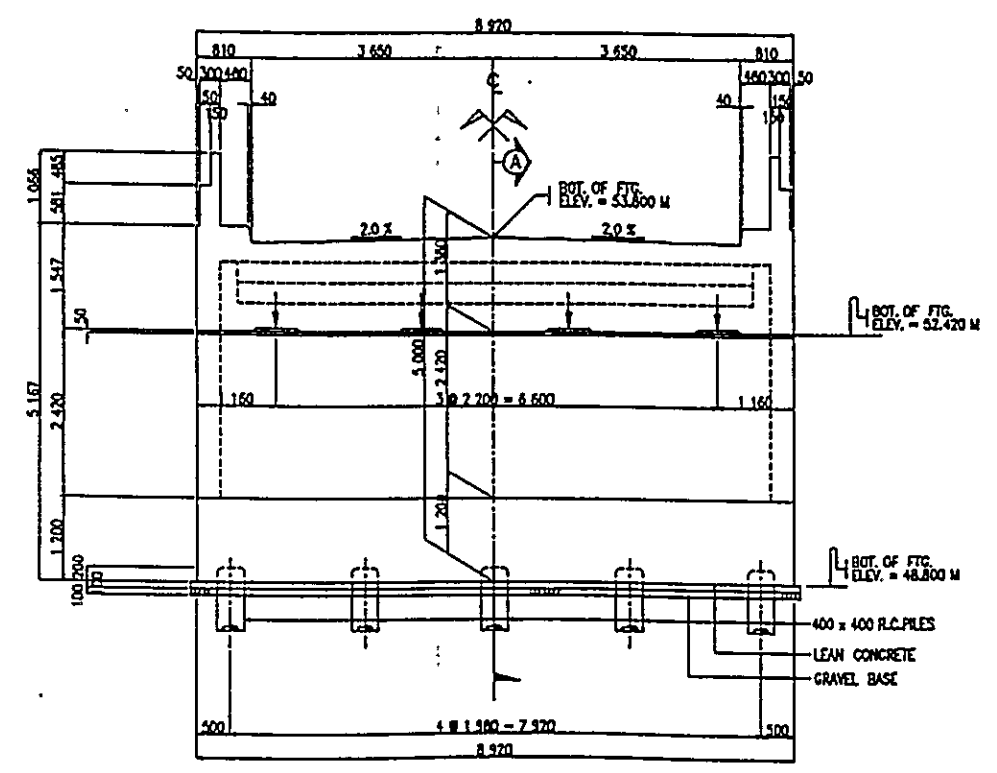
PLAN  
SCALE 1:50 M



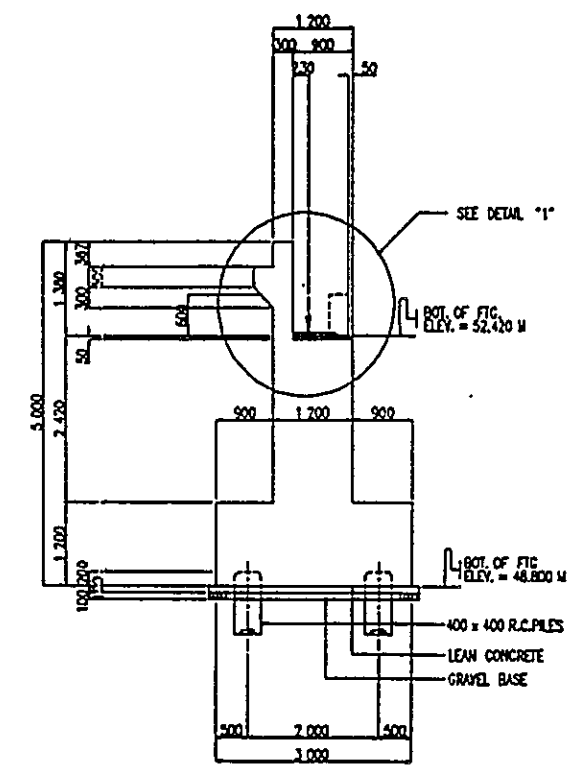
WINGWALL DETAIL  
SCALE 1:30 M



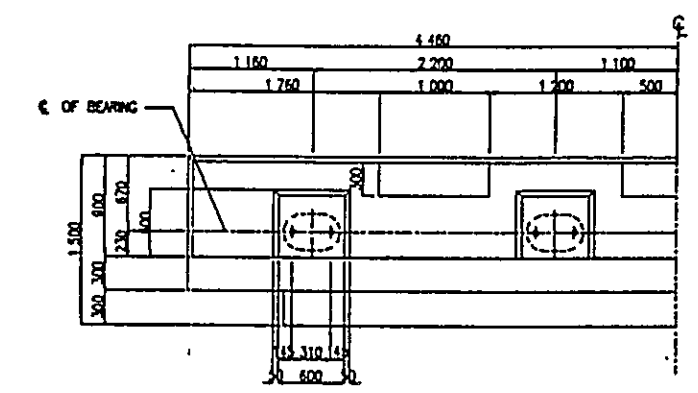
SECTION "B"  
SCALE 1:50 M



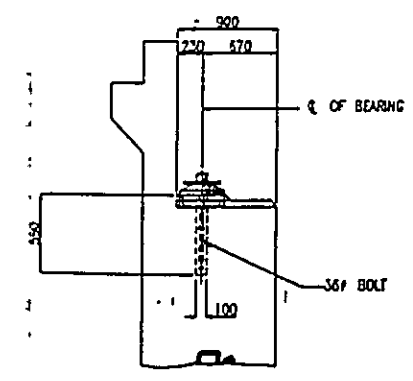
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M



BEARING DETAIL  
SCALE 1:30 M

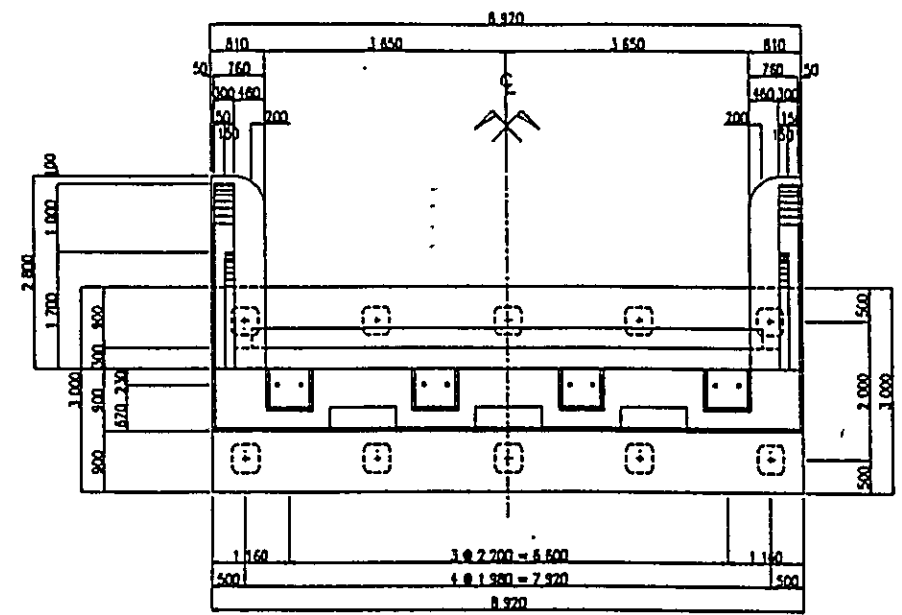


DETAIL "1"  
SCALE 1:30 M

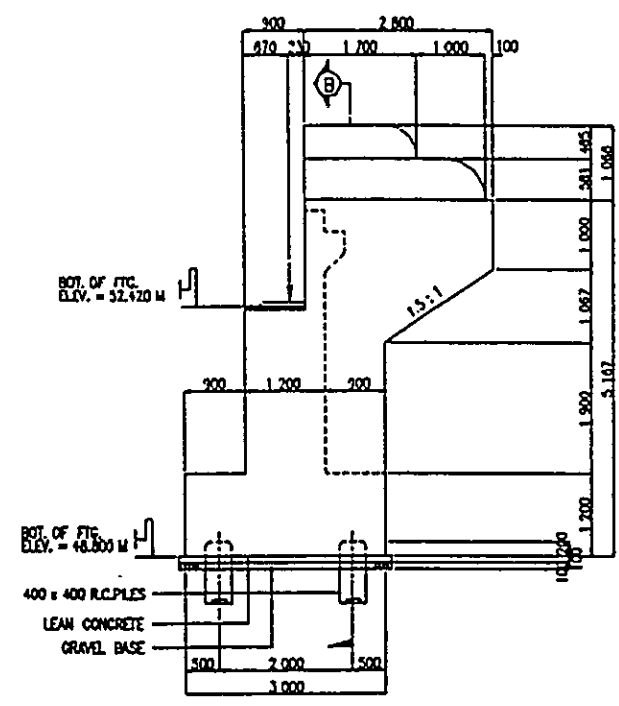


BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA

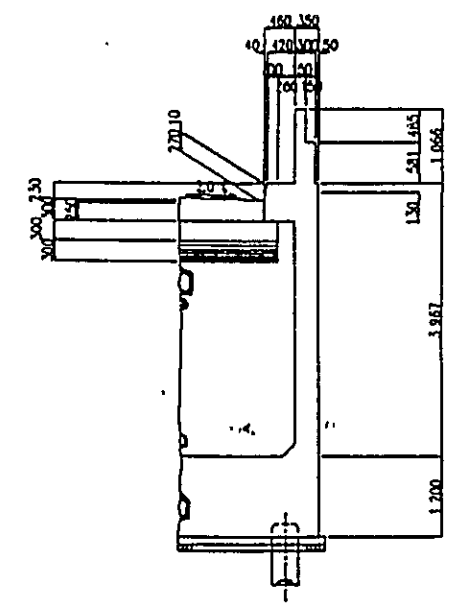
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-10	RIZAL	161



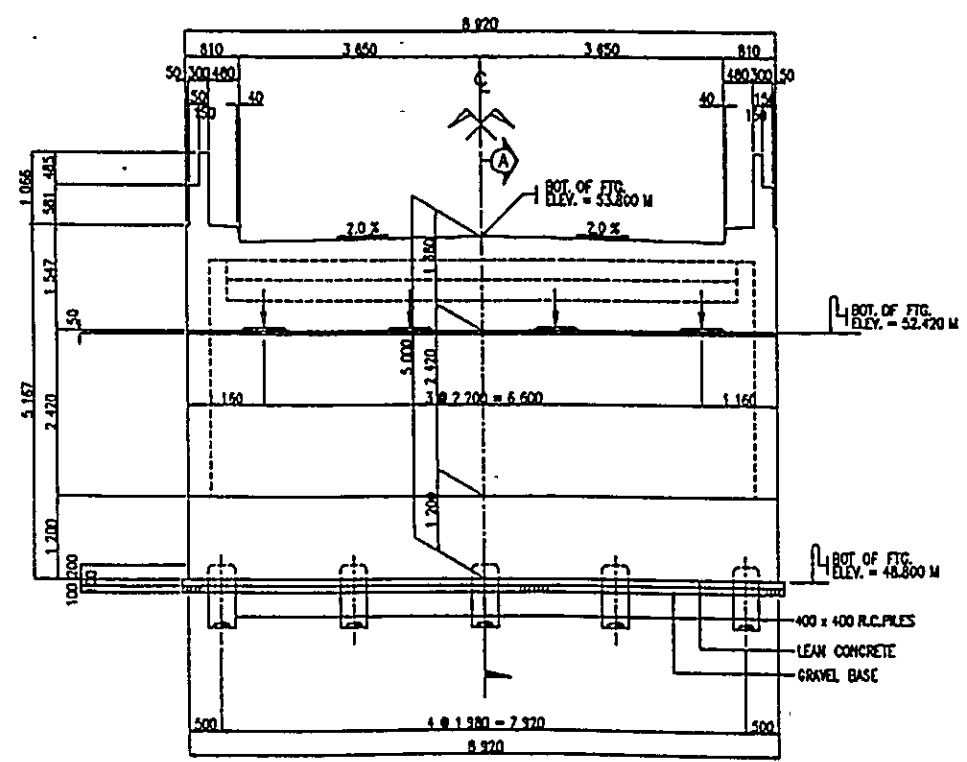
PLAN  
SCALE 1:50 M



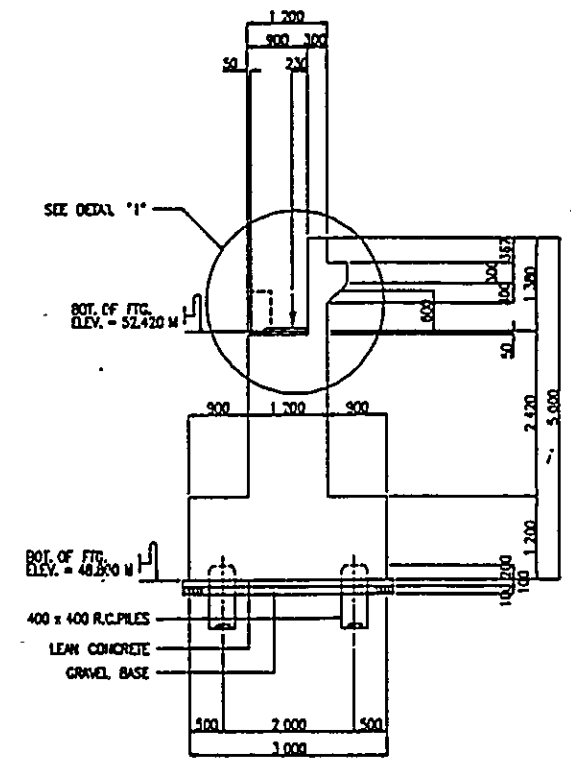
WINGWALL DETAIL  
SCALE 1:50 M



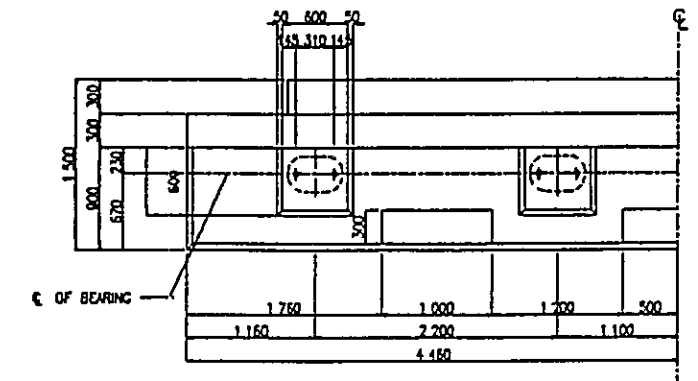
SECTION "B"  
SCALE 1:50 M



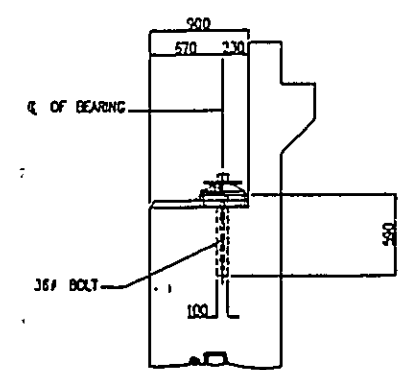
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M

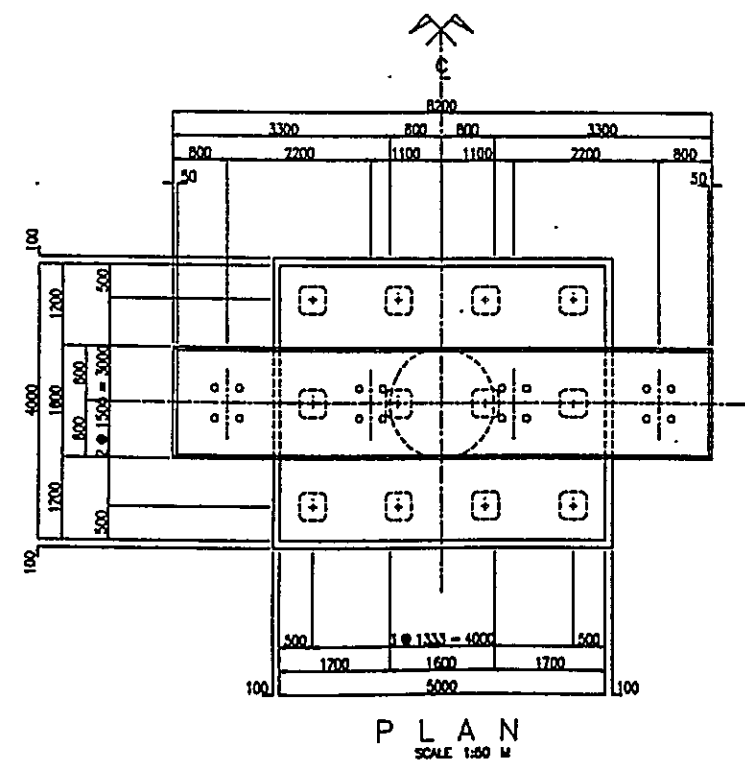
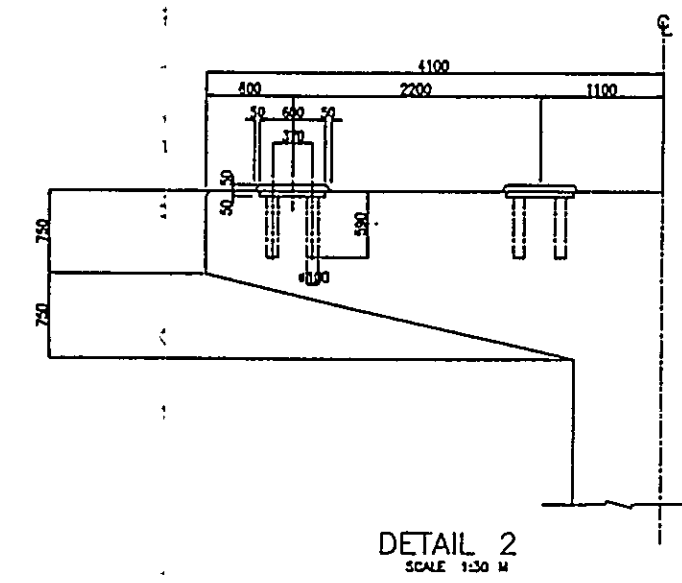
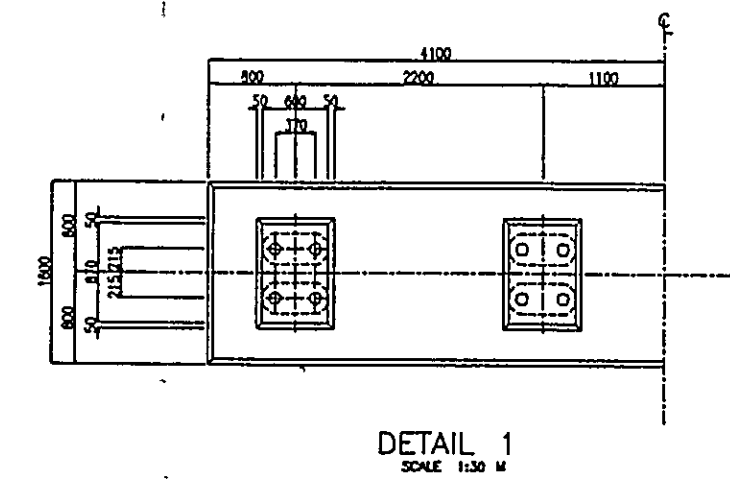
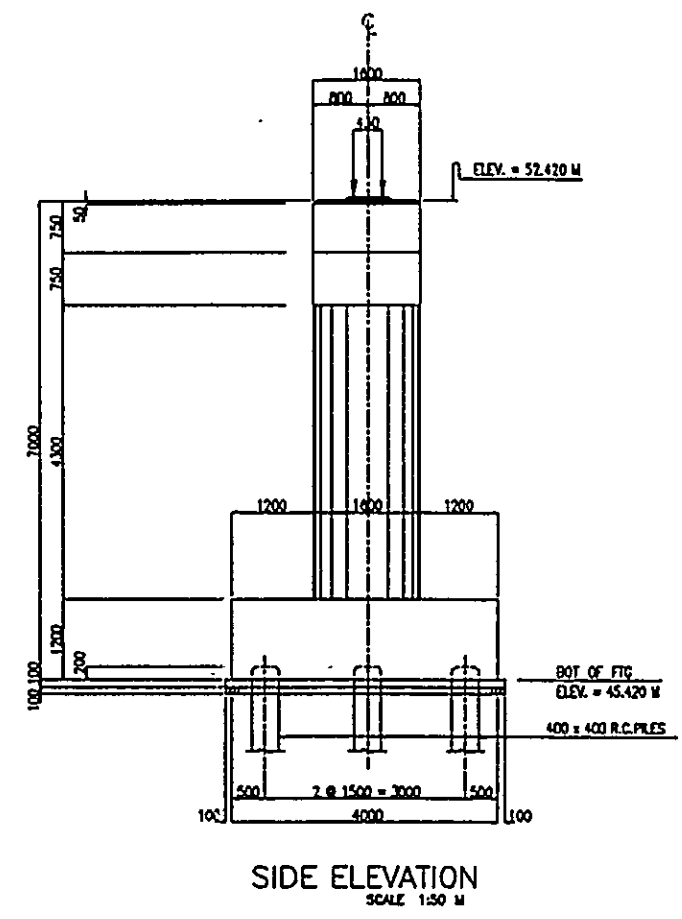
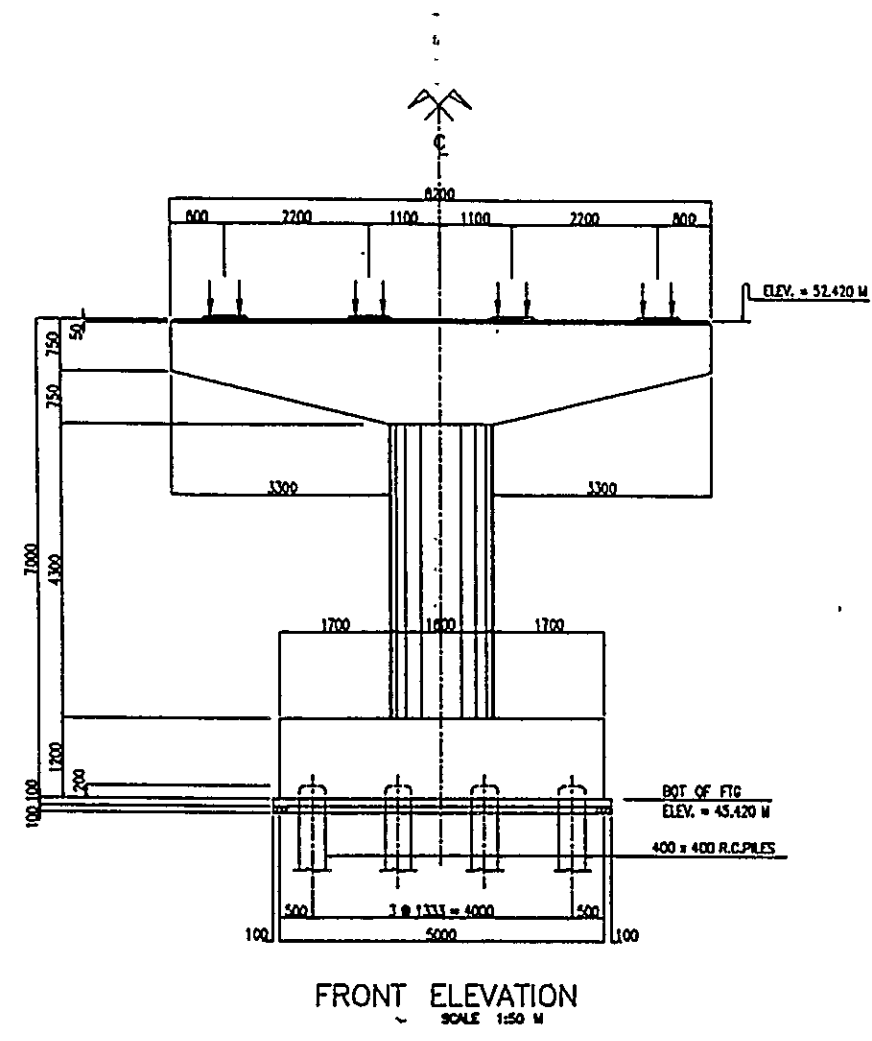


BEARING DETAIL  
SCALE 1:50 M

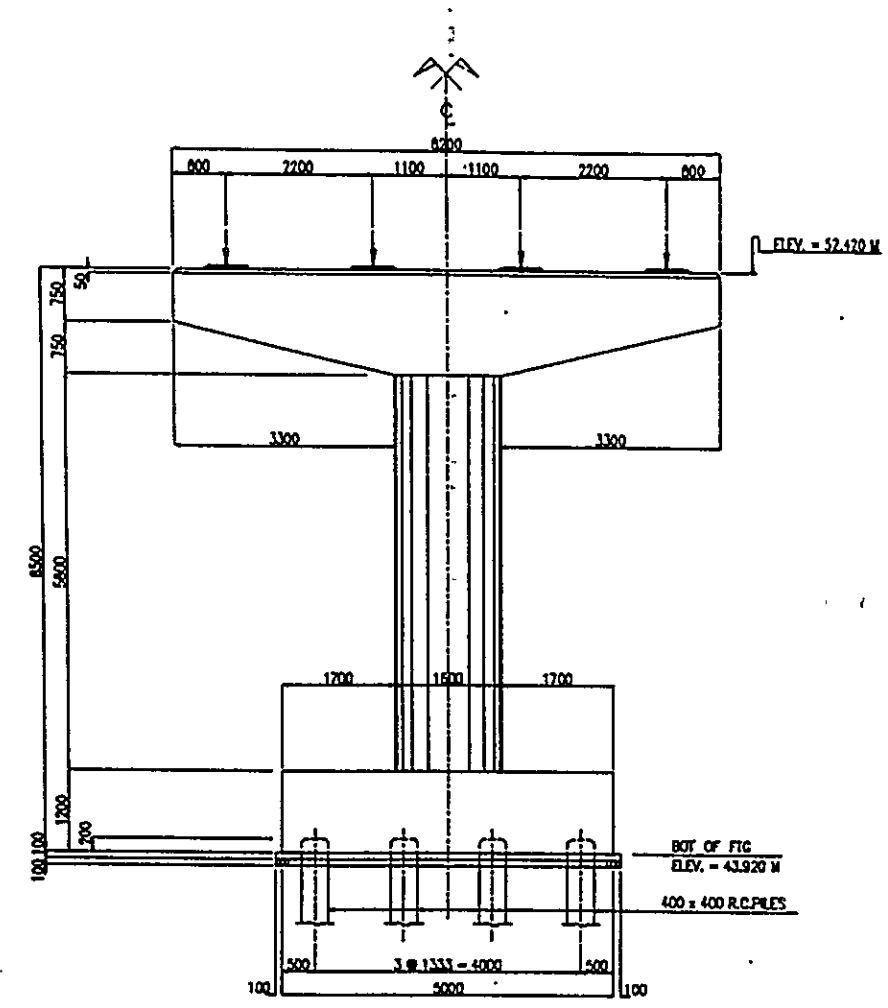


DETAIL "1"  
SCALE 1:30 M

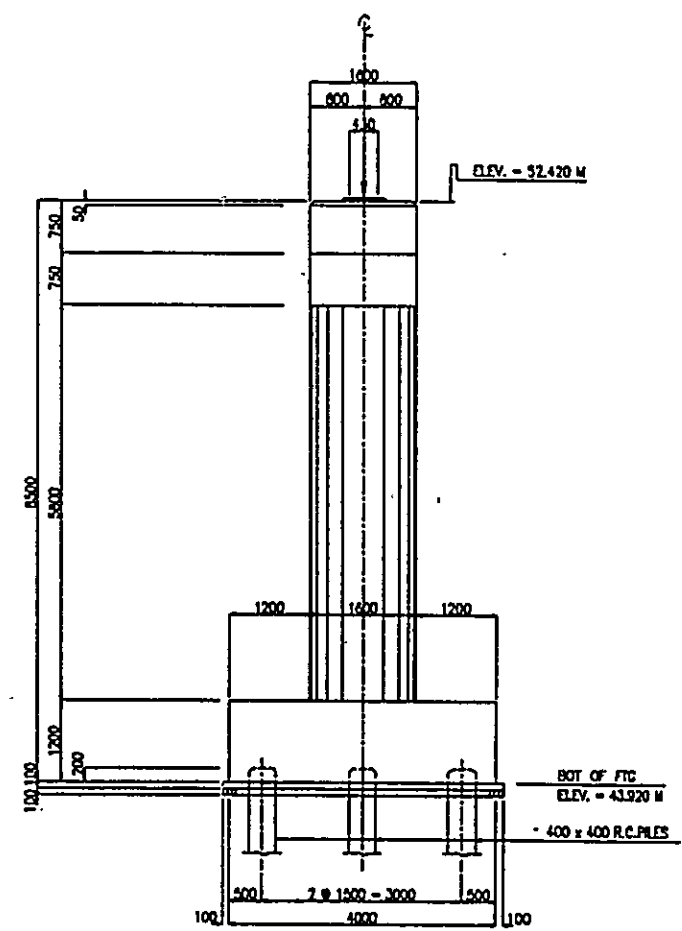
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-10	RIZAL	162



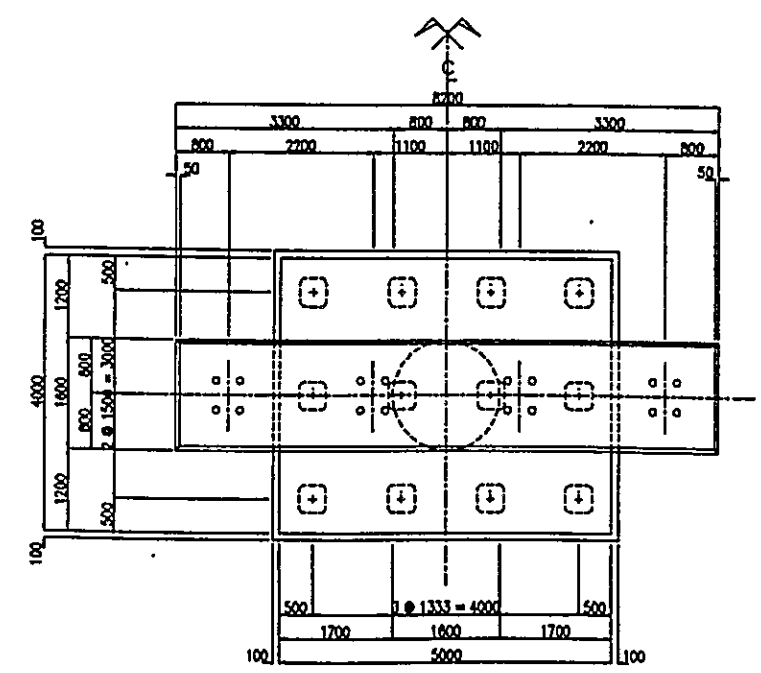
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-10	RIZAL	163



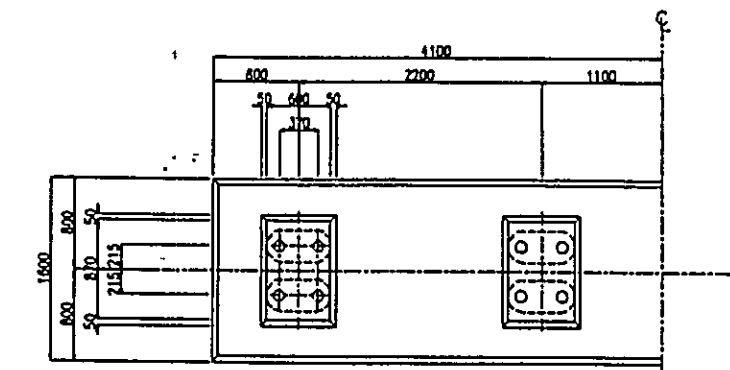
FRONT ELEVATION  
SCALE 1:50 M



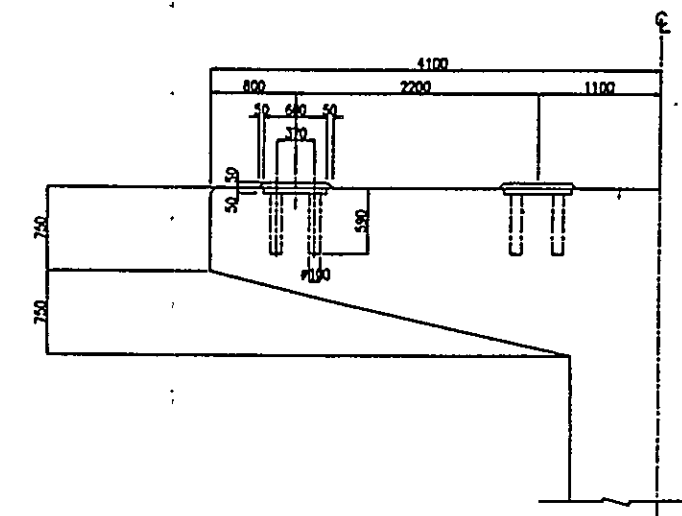
SIDE ELEVATION  
SCALE 1:50 M



PLAN  
SCALE 1:50 M

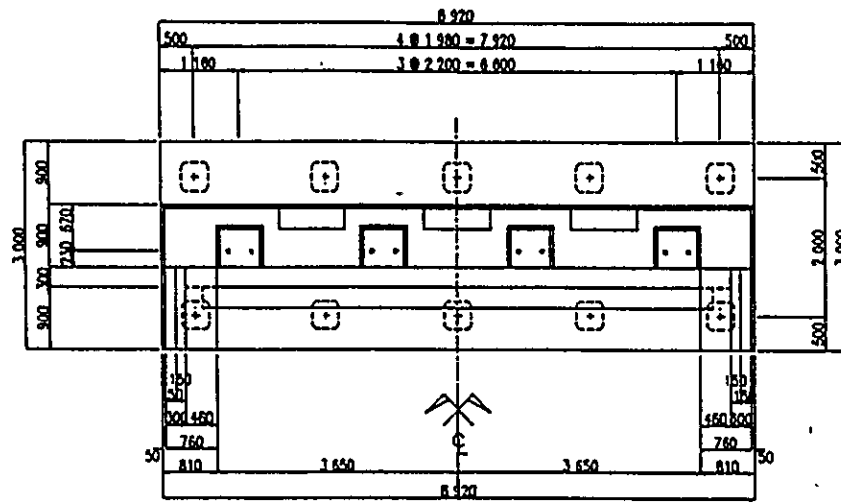


DETAIL 1  
SCALE 1:50 M

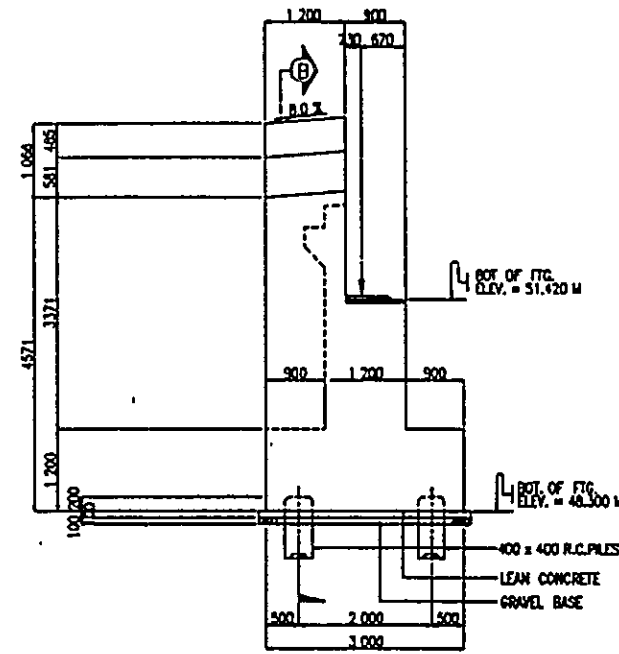


DETAIL 2  
SCALE 1:50 M

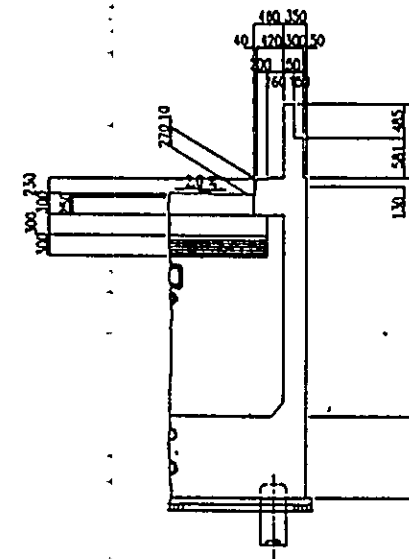
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-12	GUINABSAN	164



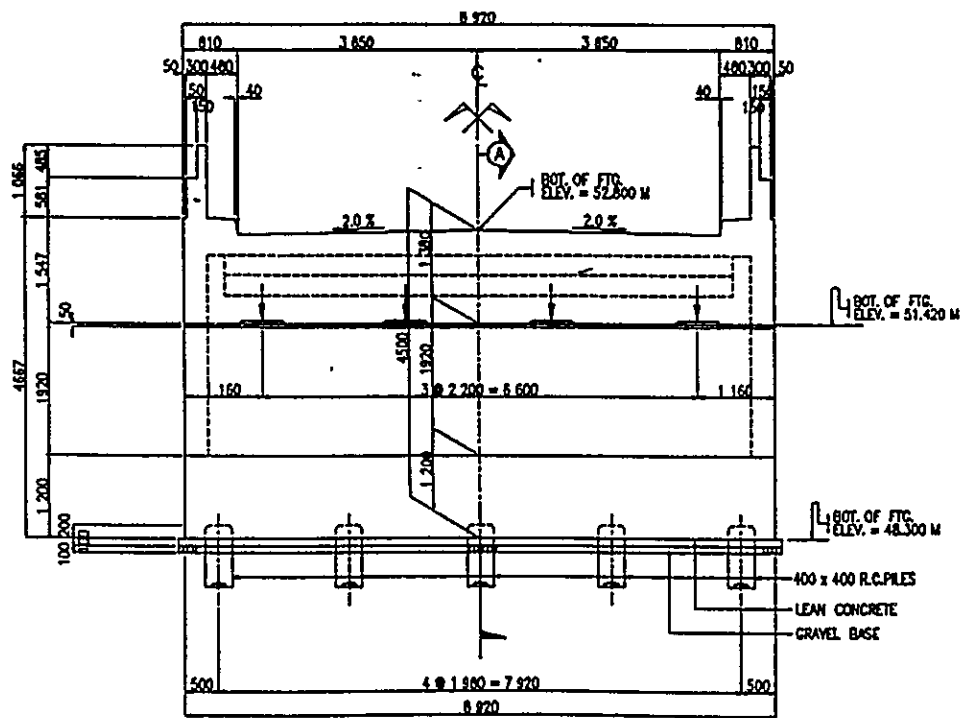
PLAN  
SCALE 1:50 M



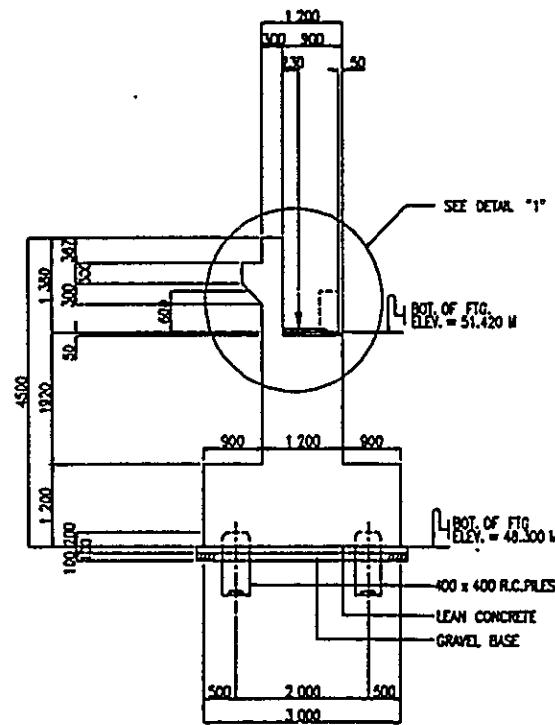
WINGWALL DETAIL  
SCALE 1:50 M



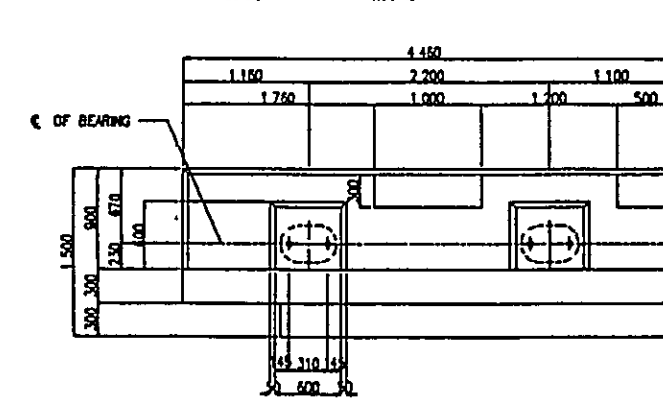
SECTION "B"  
SCALE 1:50 M



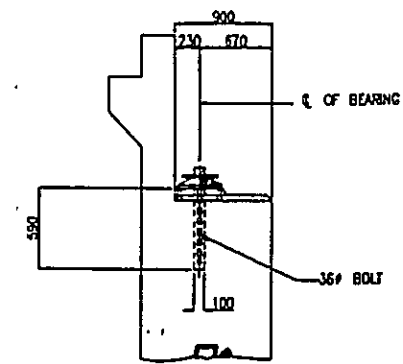
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M

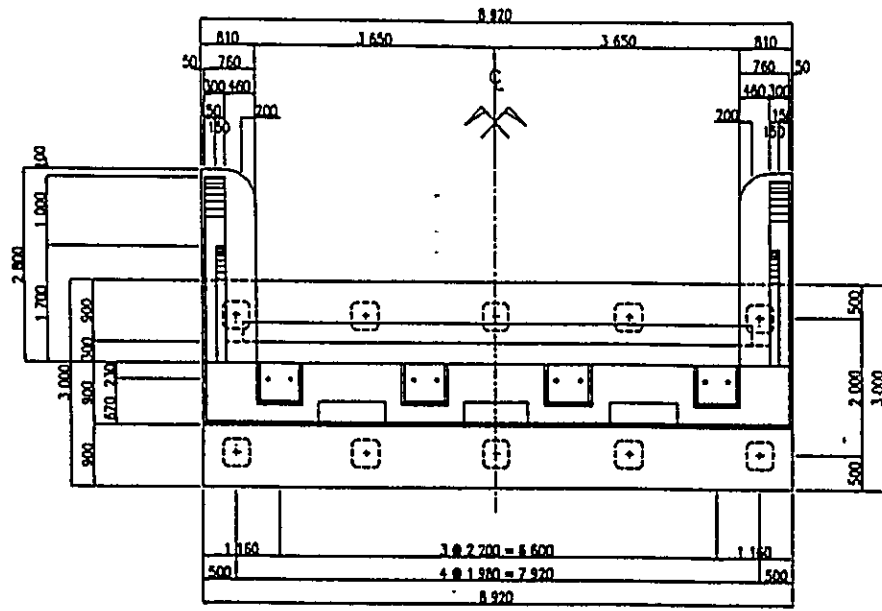


BEARING DETAIL  
SCALE 1:30 M

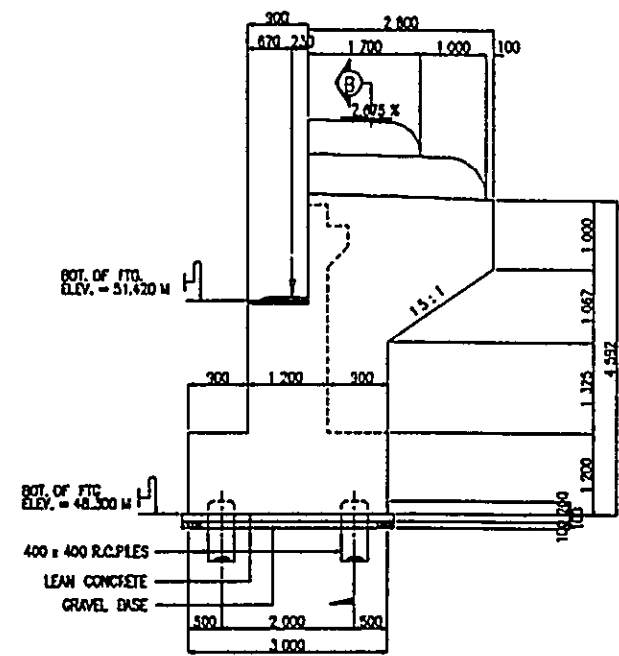


DETAIL "1"  
SCALE 1:30 M

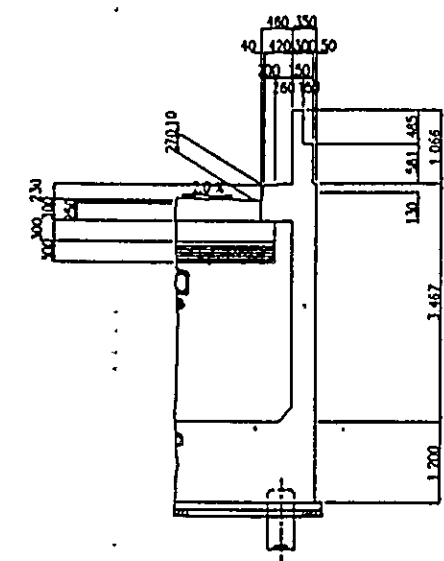
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-12	GUINABSAN	165



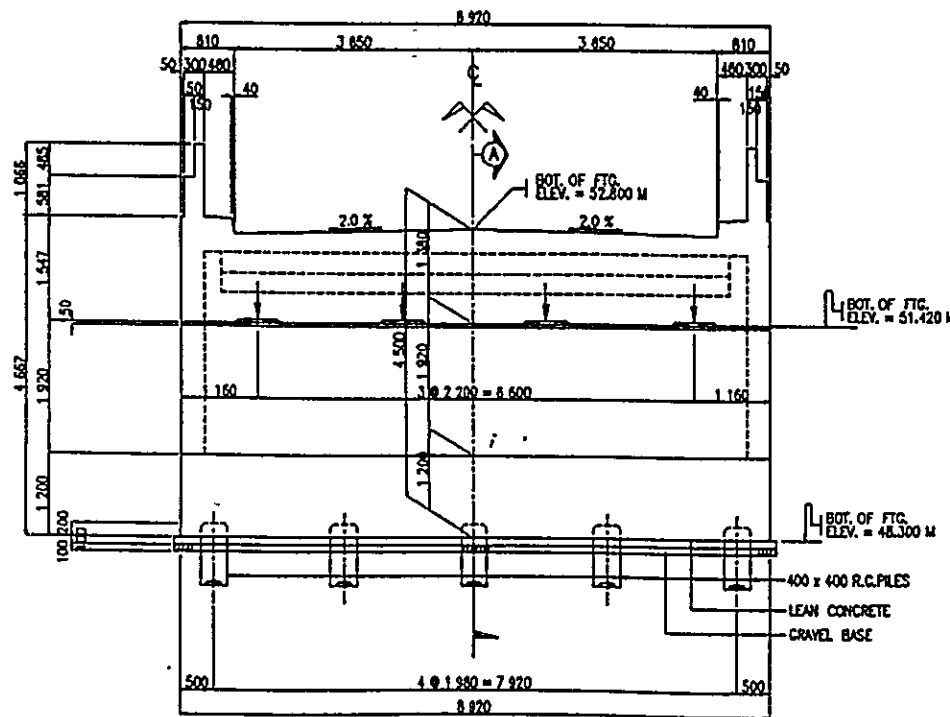
PLAN  
SCALE 1:50 M



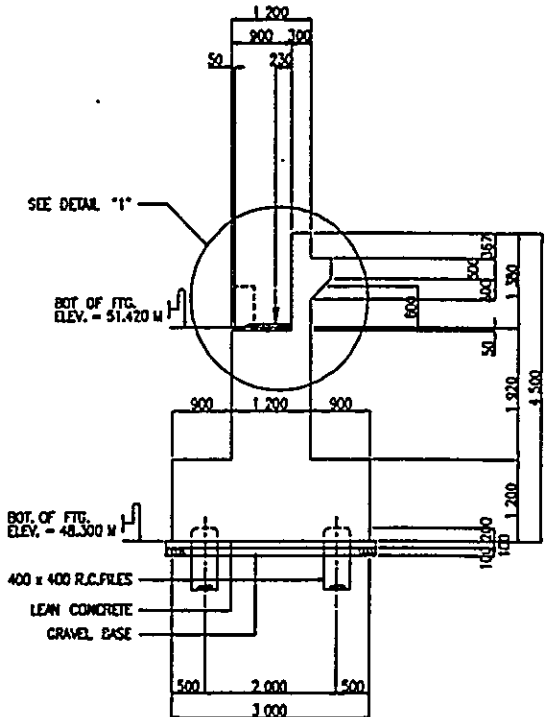
WINGWALL DETAIL  
SCALE 1:50 M



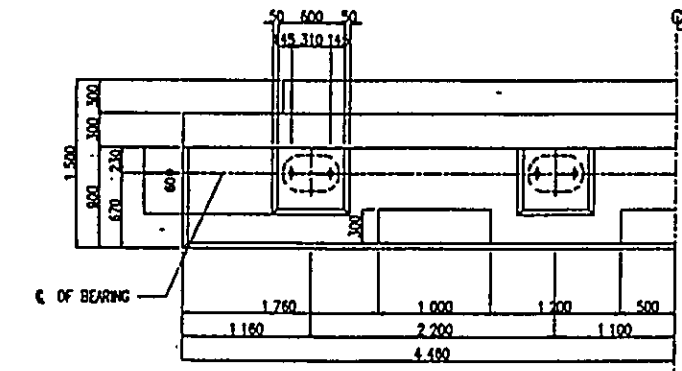
SECTION "B"  
SCALE 1:50 M



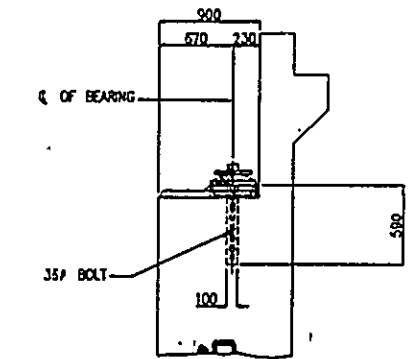
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M

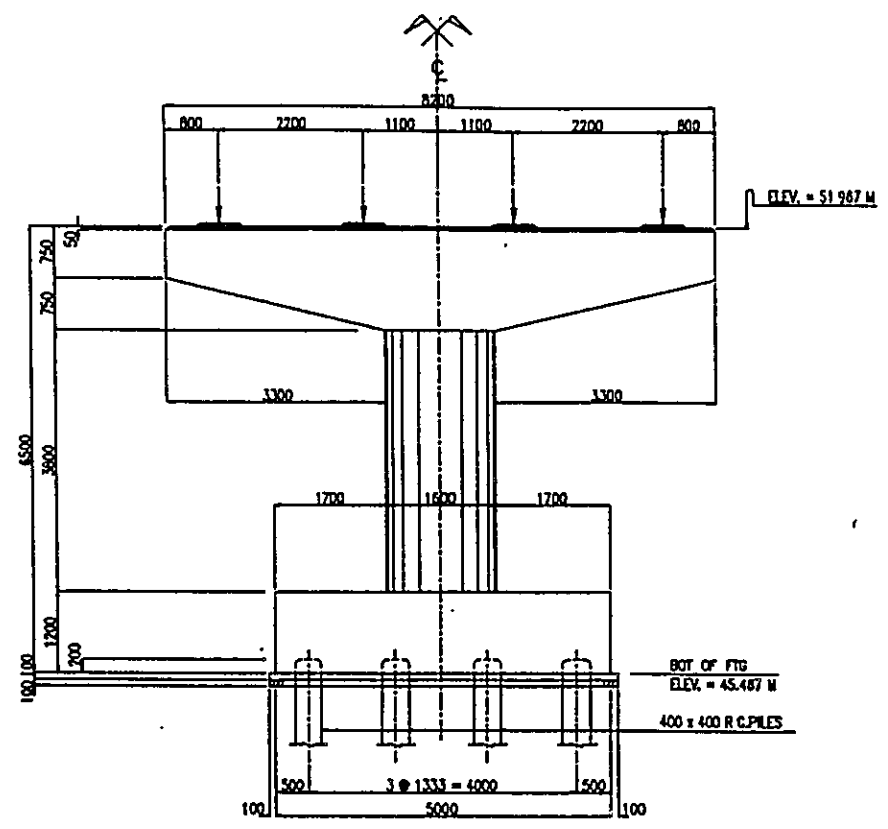


BEARING DETAIL  
SCALE 1:30 M

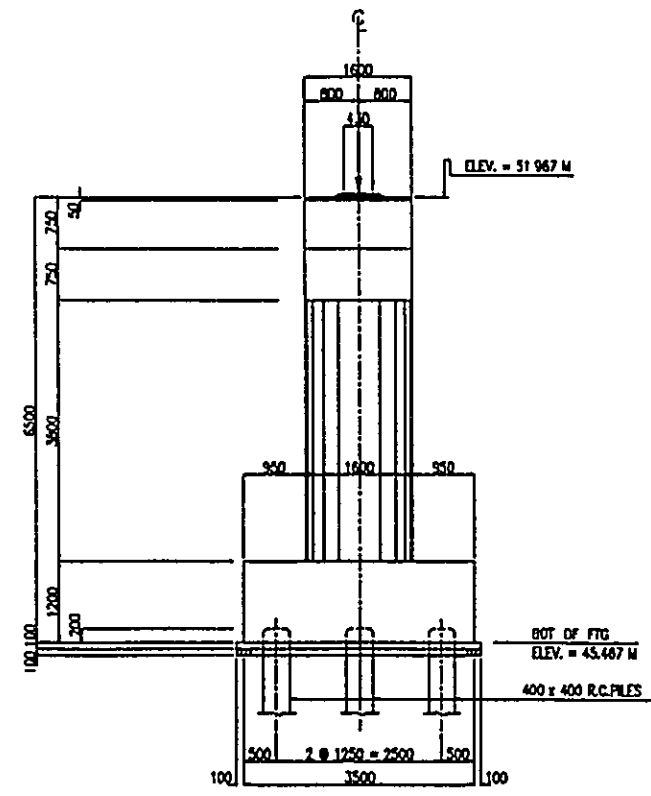


DETAIL "1"  
SCALE 1:30 M

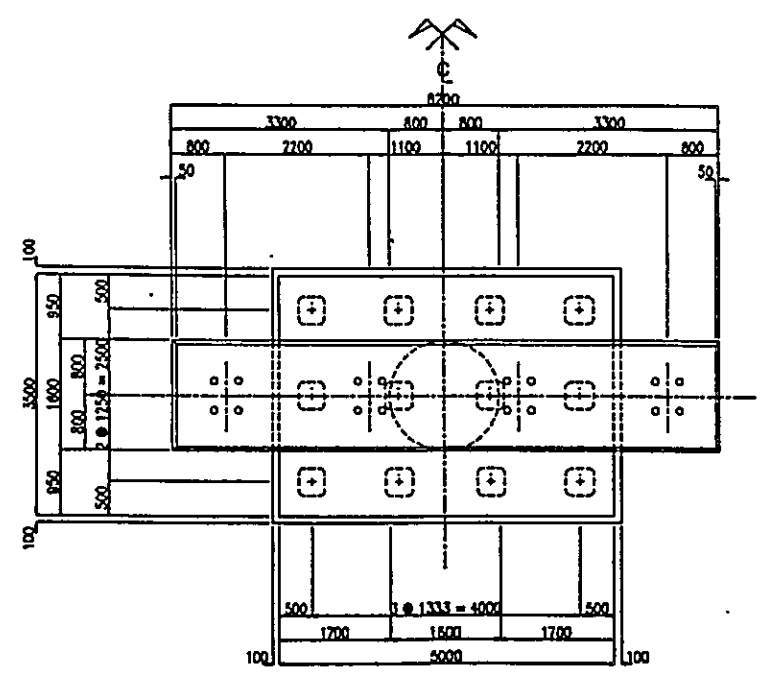
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-12	GUINABSAN	166



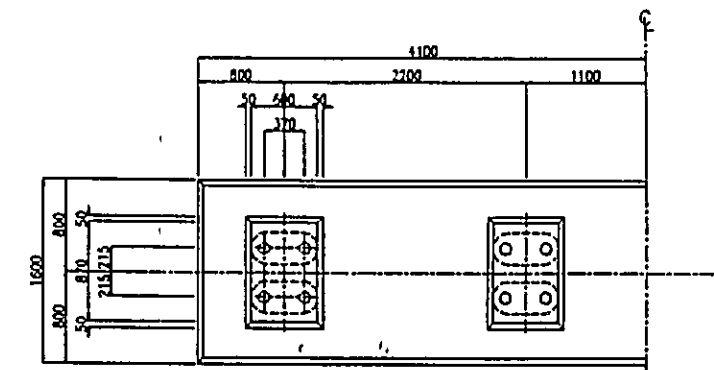
FRONT ELEVATION  
SCALE 1:50 M



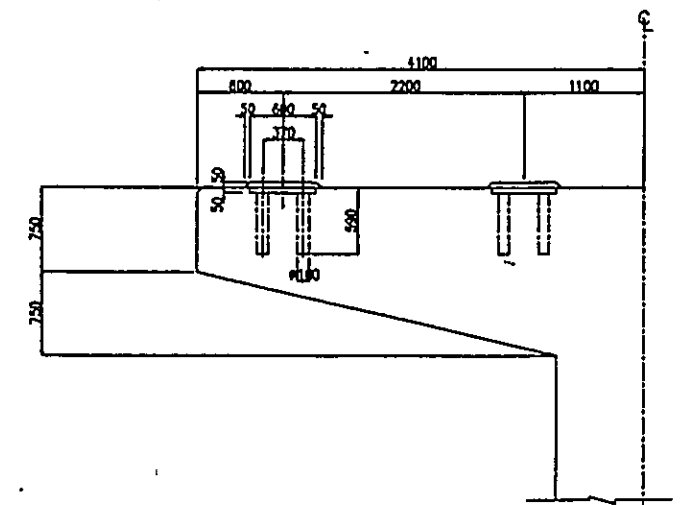
SIDE ELEVATION  
SCALE 1:50 M



PLAN  
SCALE 1:50 M



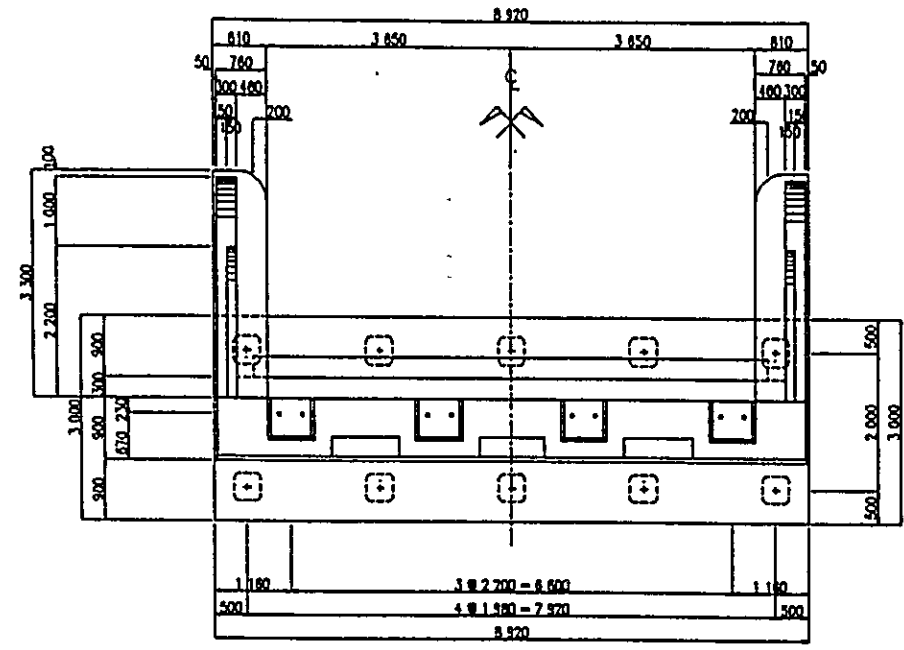
DETAIL 1  
SCALE 1:30 M



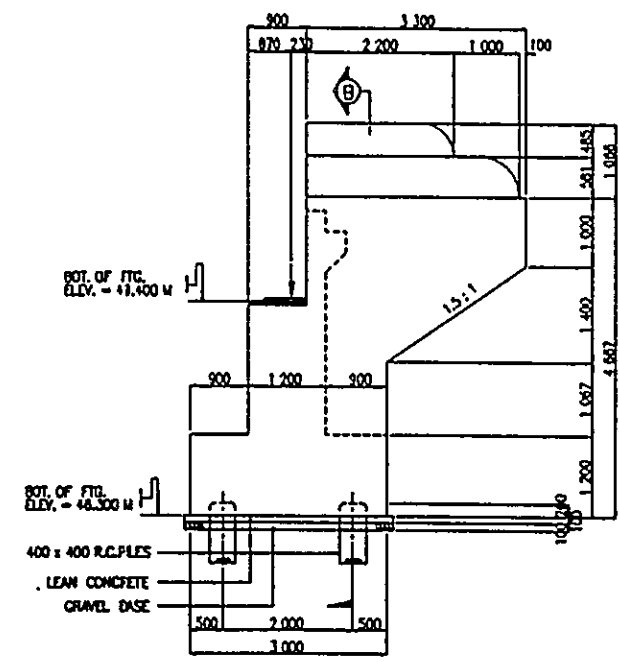
DETAIL 2  
SCALE 1:30 M



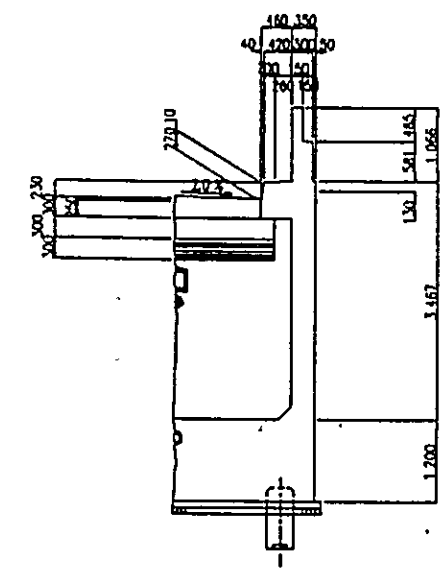
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-02-04	MAOG	16B



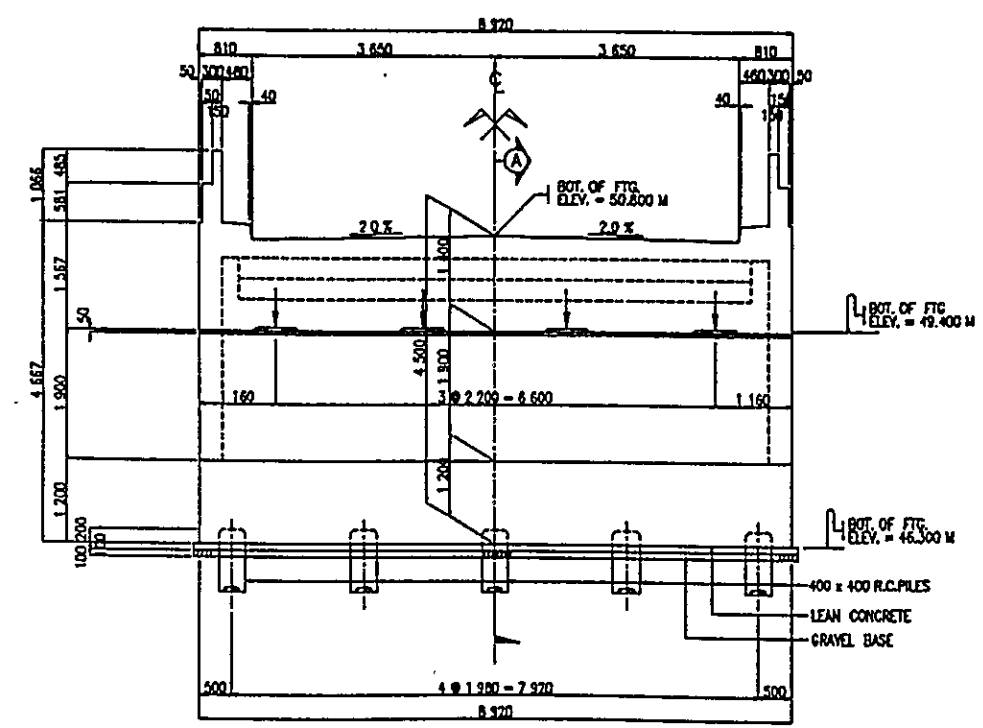
PLAN  
SCALE 1:50 M



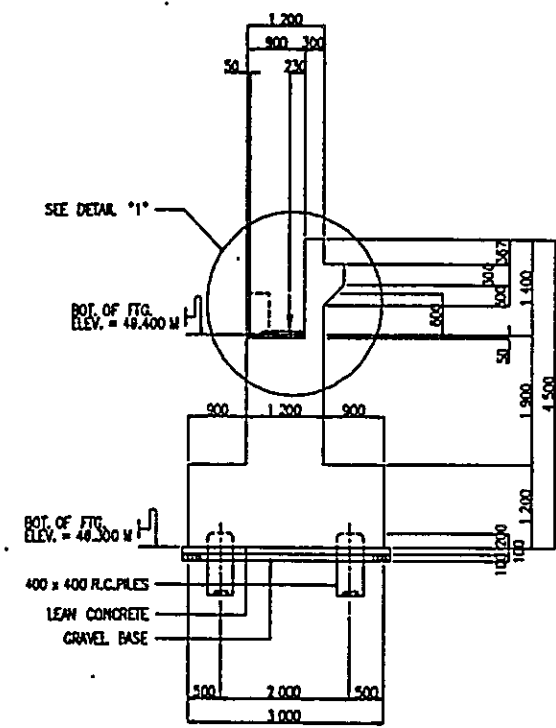
WINGWALL DETAIL  
SCALE 1:50 M



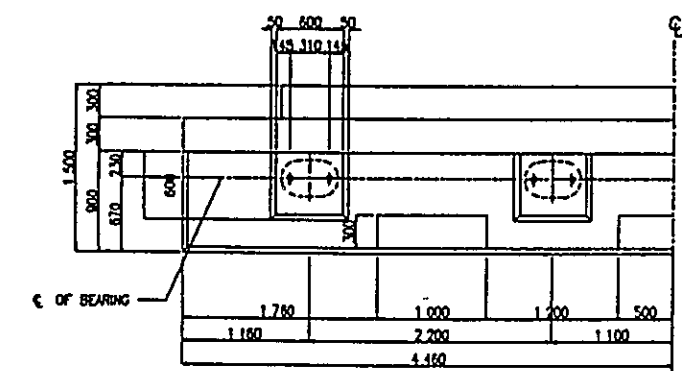
SECTION "B"  
SCALE 1:50 M



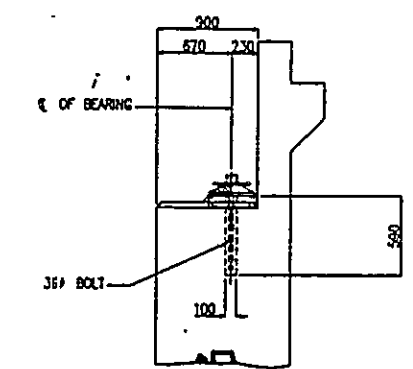
FRONT-ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M



BEARING DETAIL  
SCALE 1:30 M

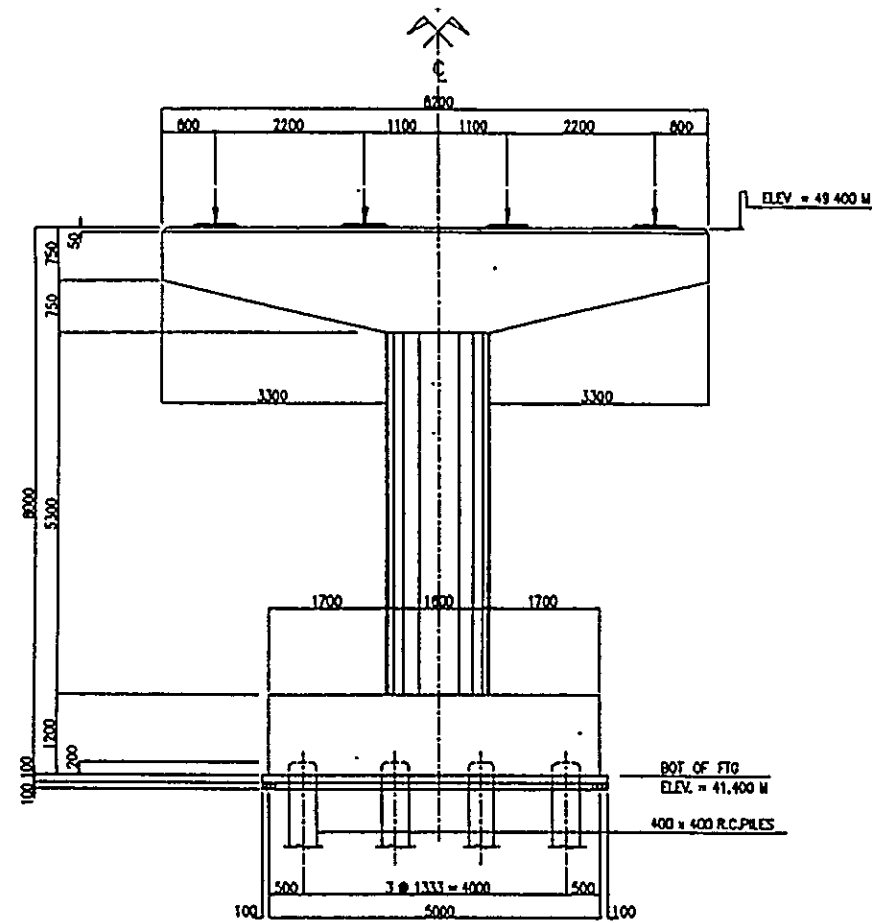


DETAIL "1"  
SCALE 1:30 M

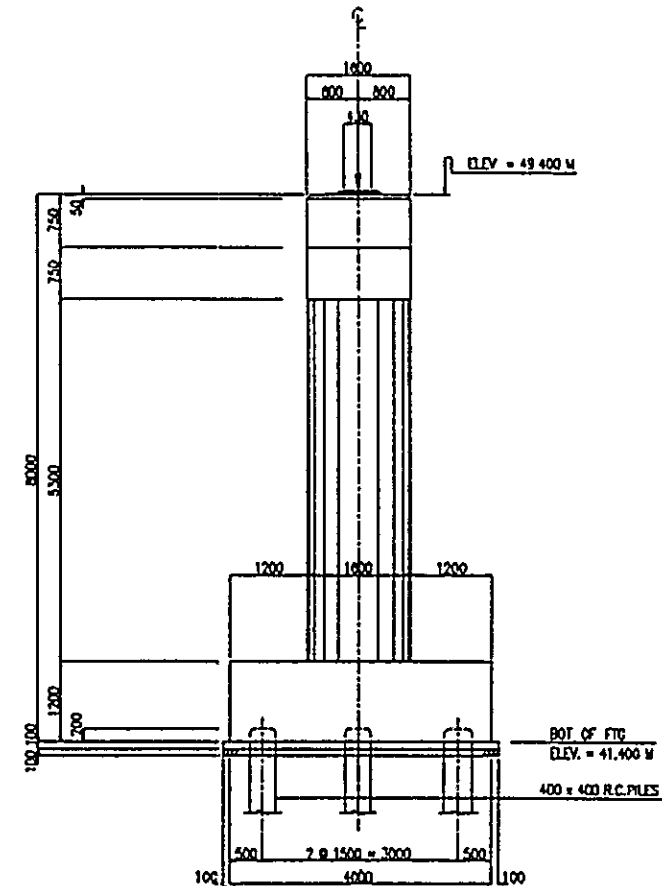


BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA

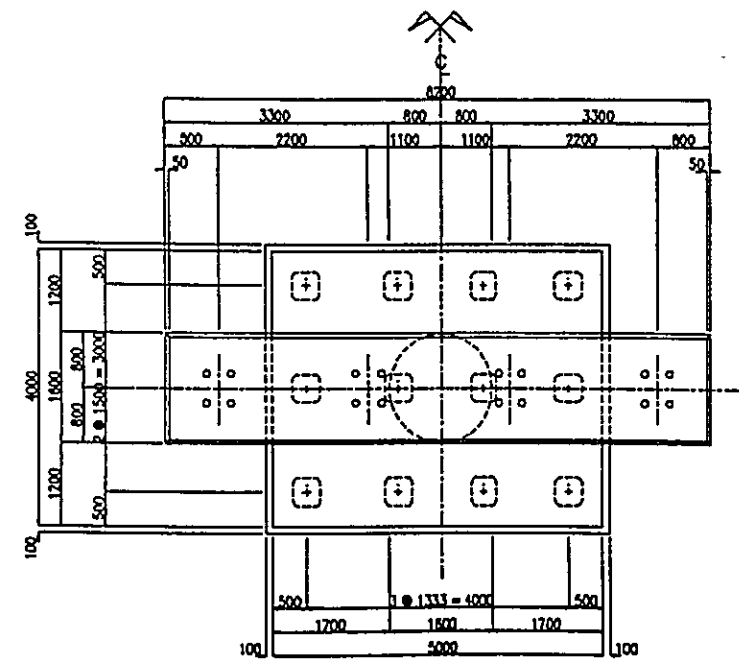
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-02-04	MAOG	169



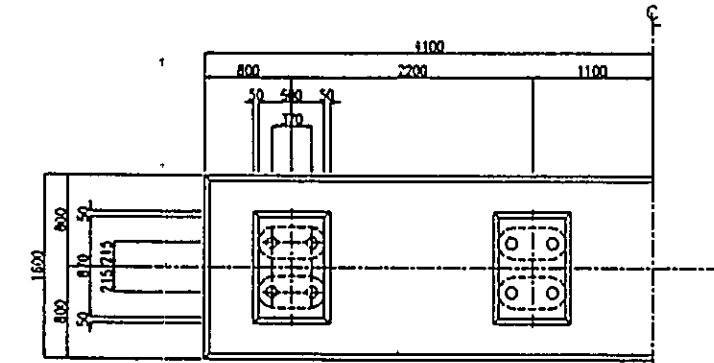
FRONT ELEVATION  
SCALE 1:50 M



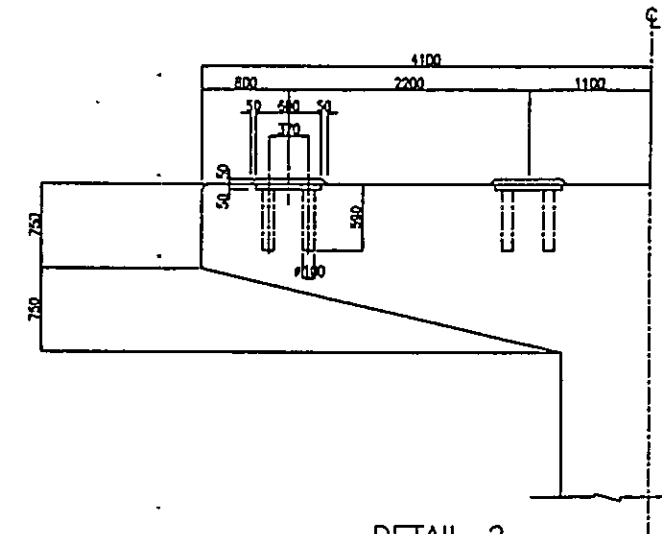
SIDE ELEVATION  
SCALE 1:50 M



PLAN  
SCALE 1:50 M



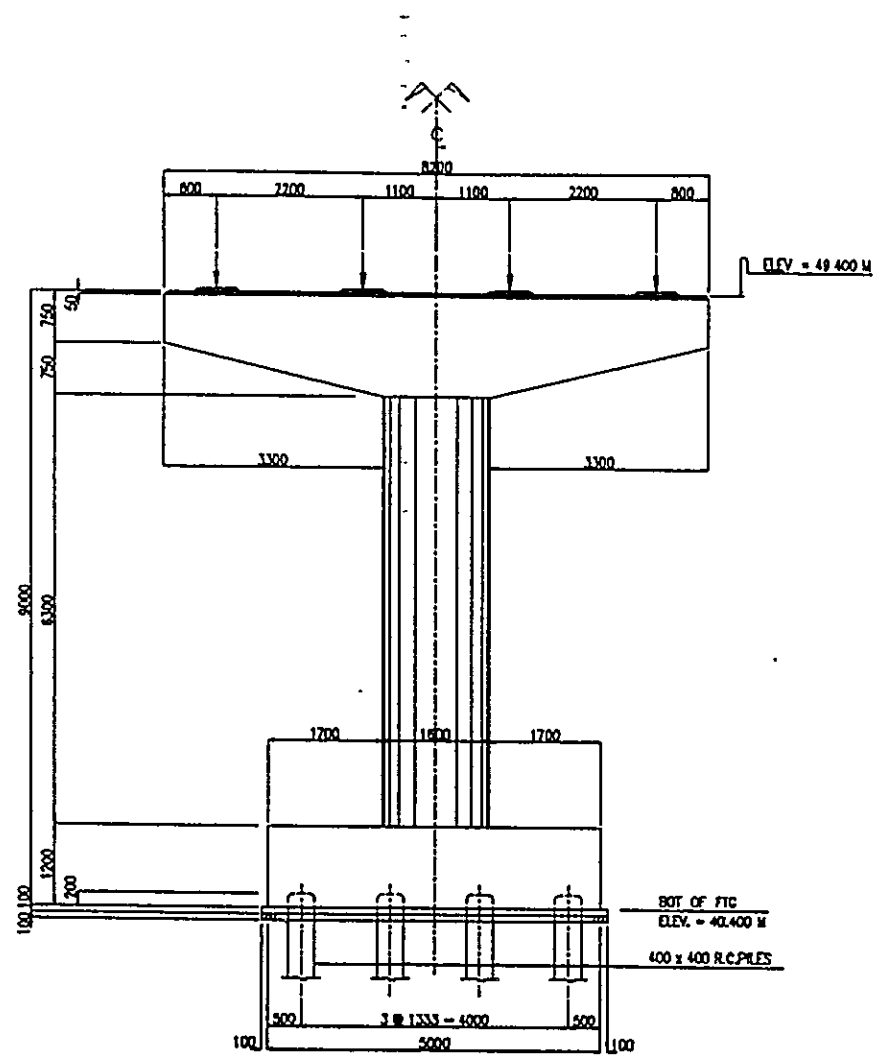
DETAIL 1  
SCALE 1:30 M



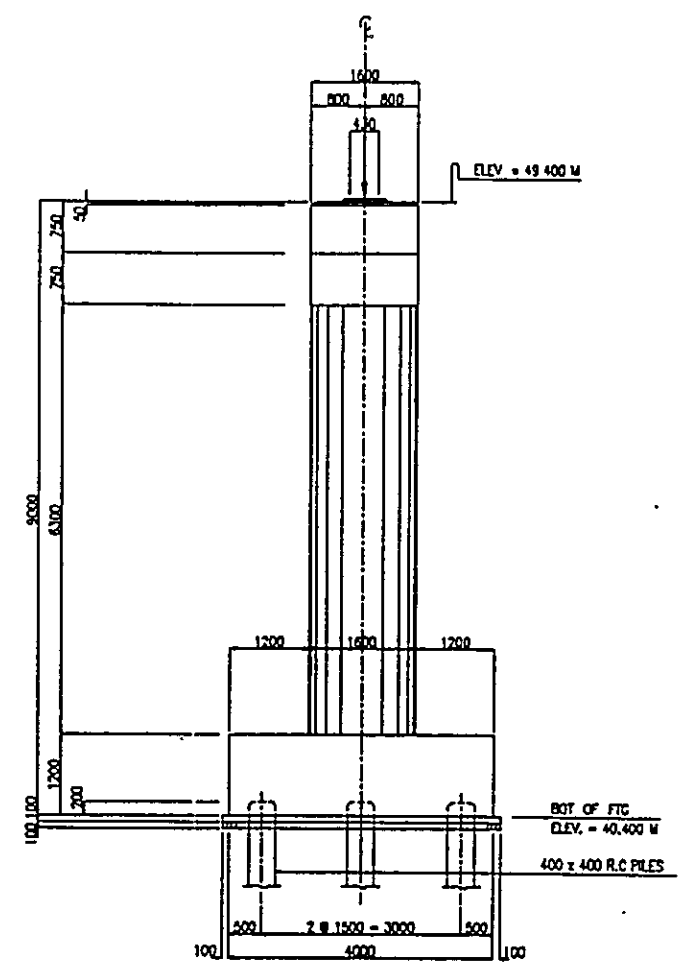
DETAIL 2  
SCALE 1:30 M

BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA

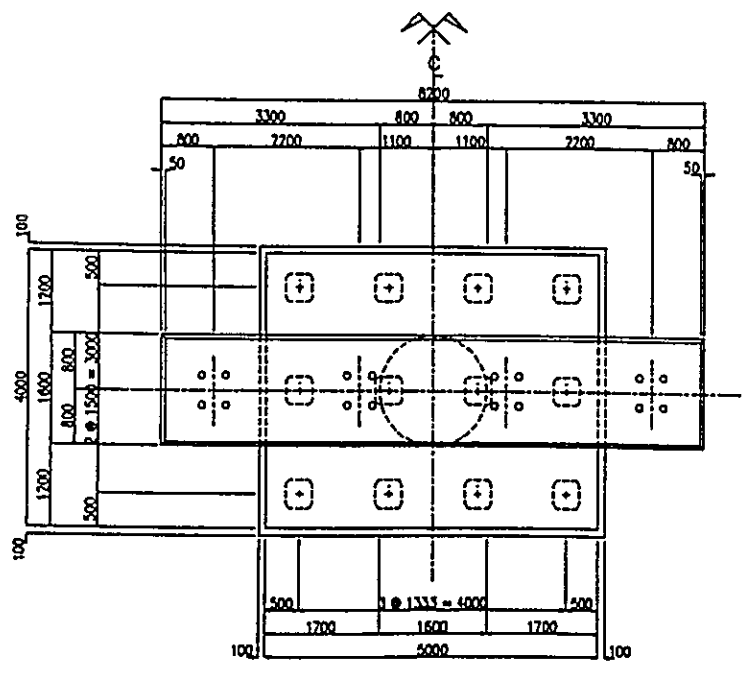
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-02-04	MAOG	170



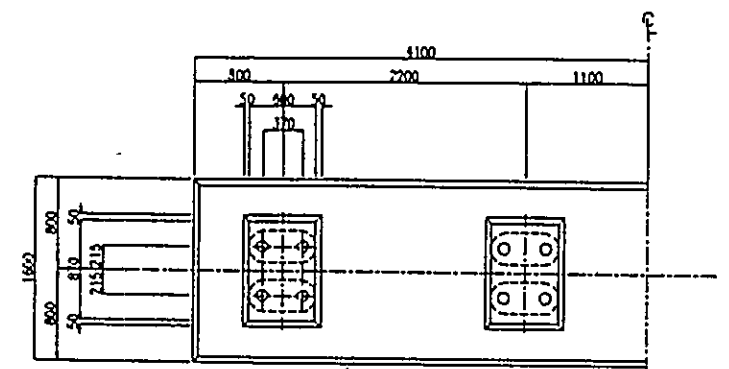
FRONT ELEVATION  
SCALE 1:50 M



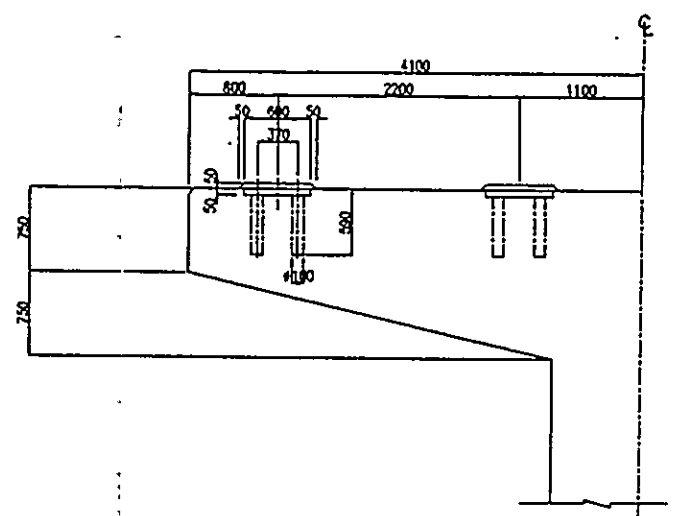
SIDE ELEVATION  
SCALE 1:50 M



PLAN  
SCALE 1:50 M



DETAIL 1  
SCALE 1:30 M



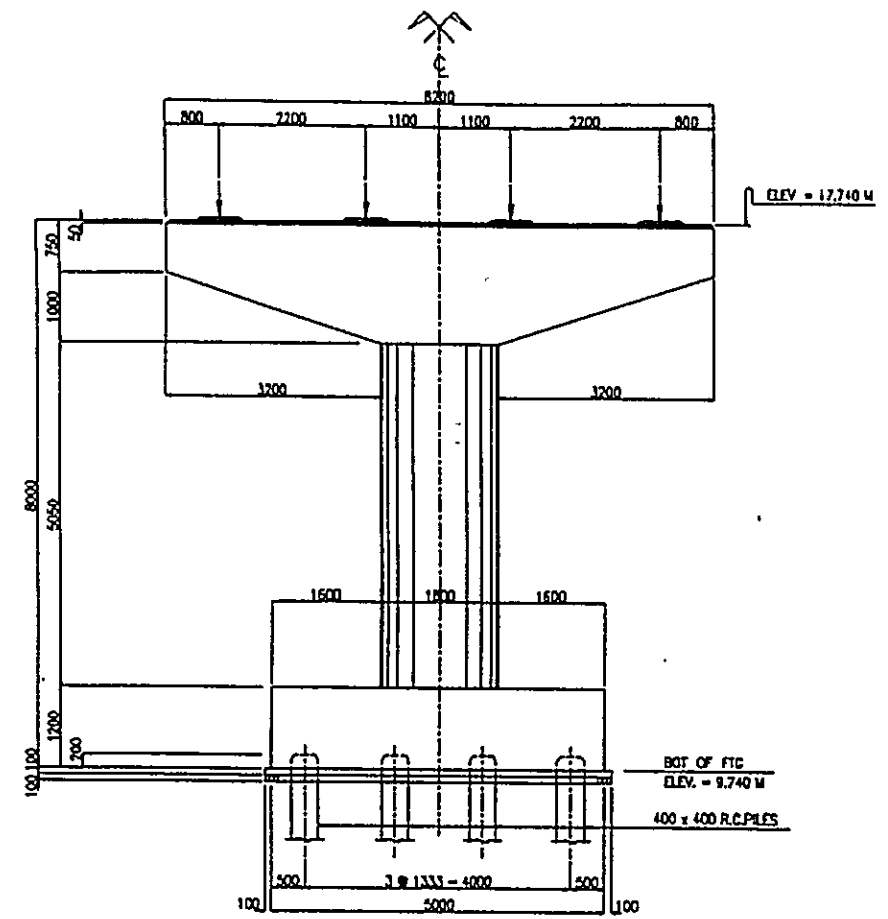
DETAIL 2  
SCALE 1:30 M



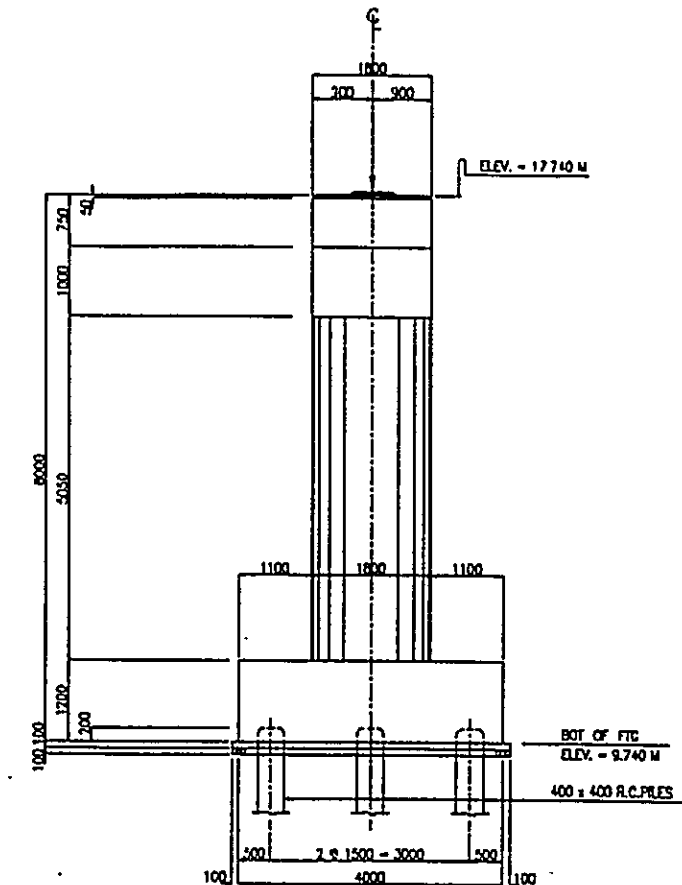


BASIC DESIGN STUDY ON THE PROJECT  
FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA

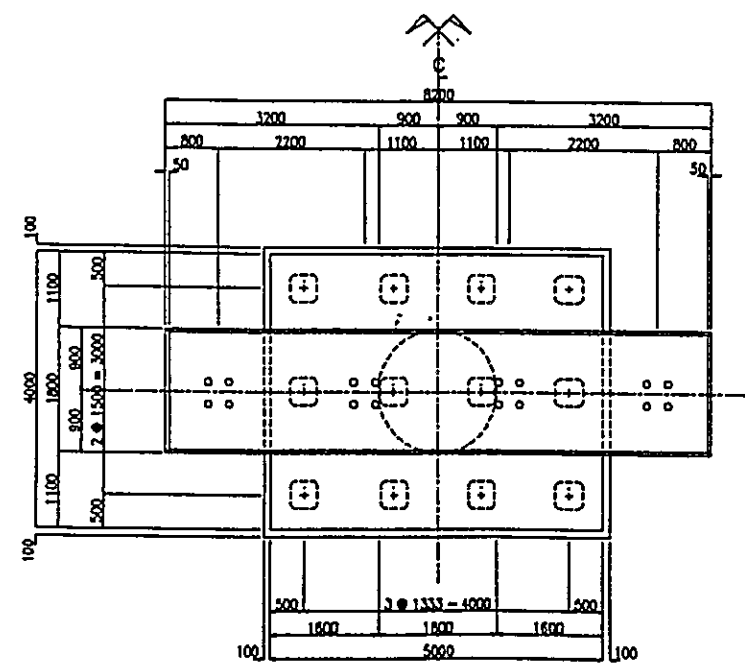
BRIDGE NO.	BRIDGE NAME	SHEET NO
10-05-09	PAGATPAT-SAN SIMON	173



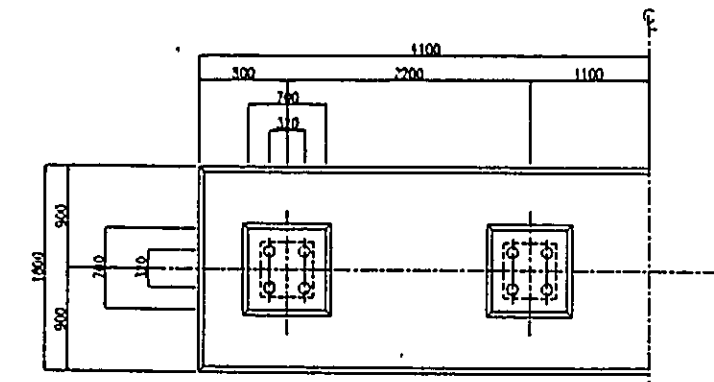
FRONT ELEVATION  
SCALE 1:50 M



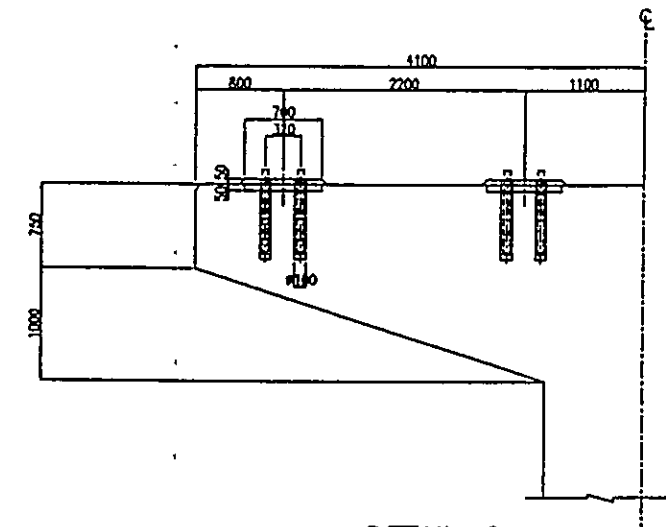
SIDE ELEVATION  
SCALE 1:50 M



PLAN  
SCALE 1:50 M

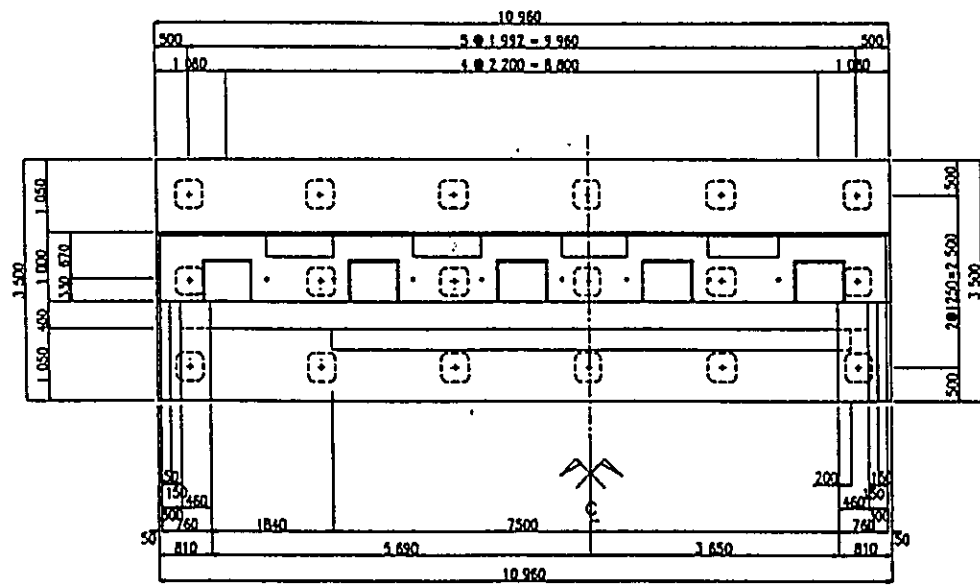


DETAIL 1  
SCALE 1:30 M

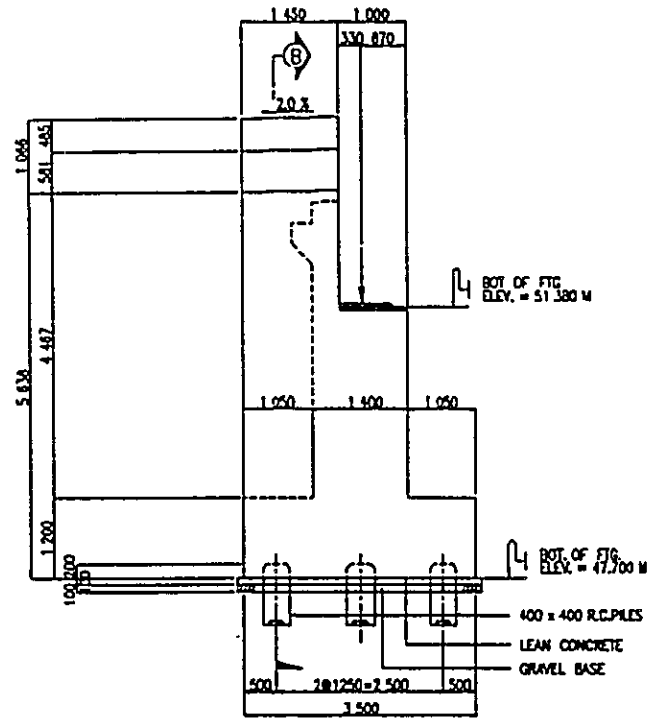


DETAIL 2  
SCALE 1:30 M

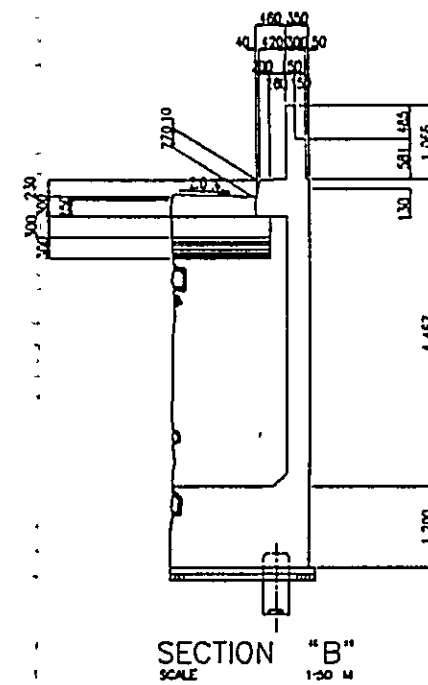
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
11-02-05	LOWER SILWAY	174



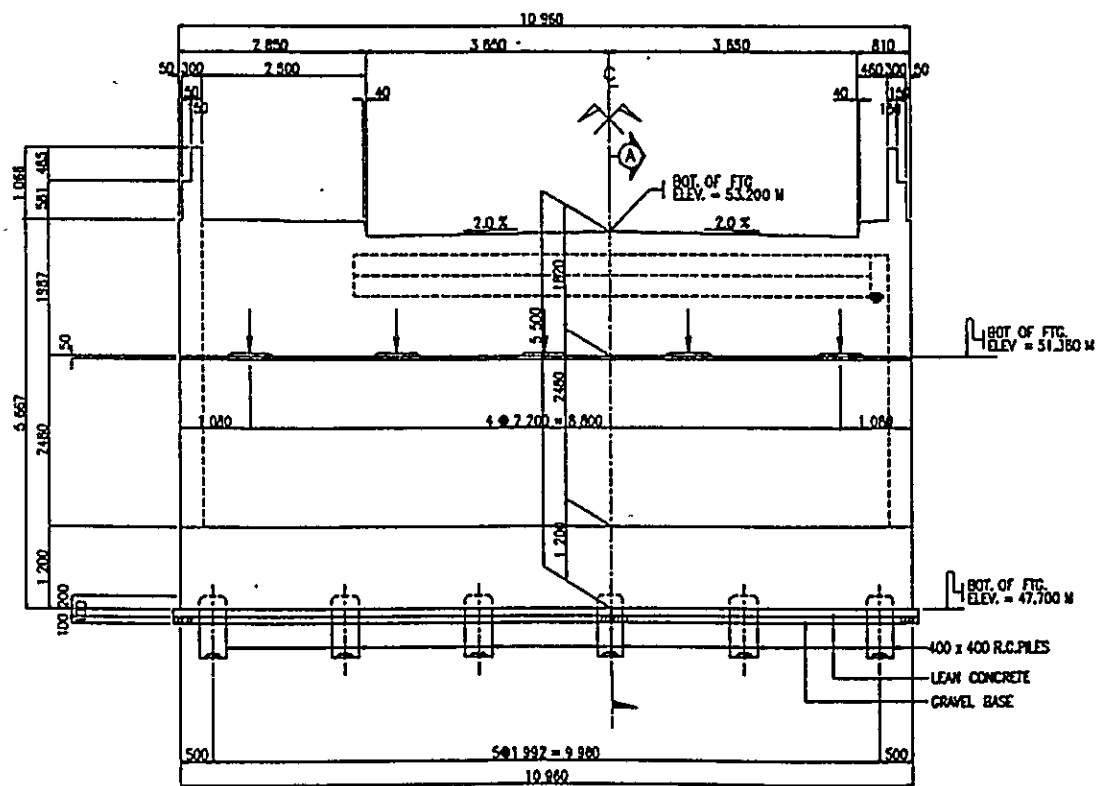
PLAN  
SCALE 1:50 M



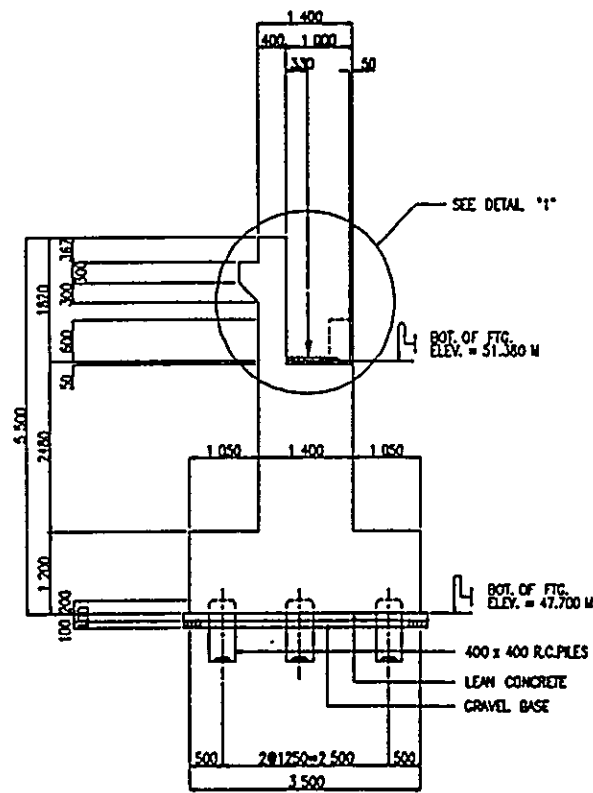
WINGWALL DETAIL  
SCALE 1:50 M



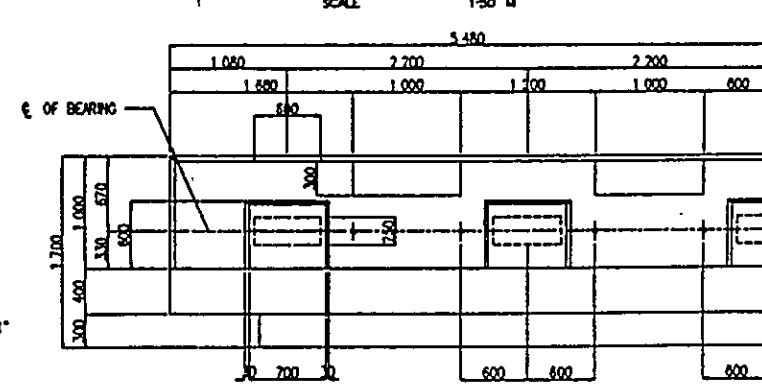
SECTION "B"  
SCALE 1:50 M



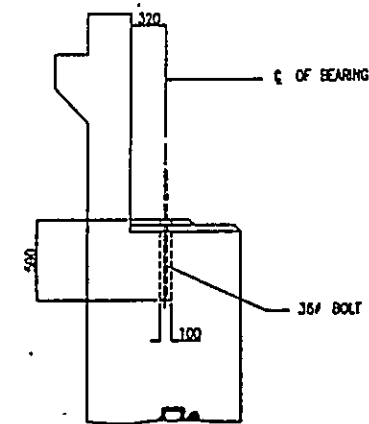
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M

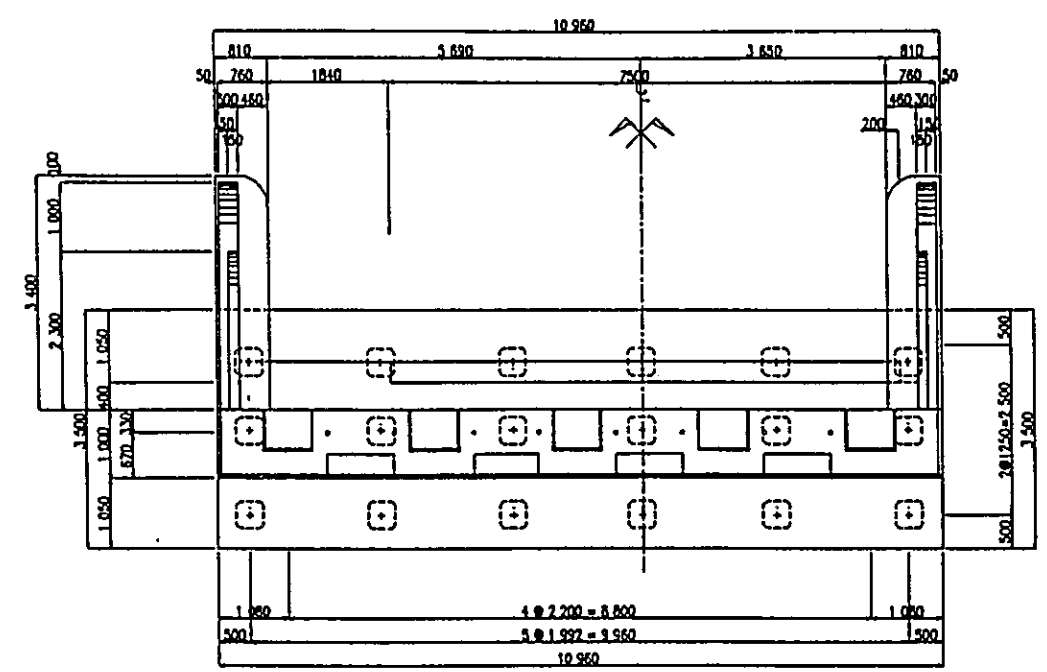


BEARING DETAIL  
SCALE 1:50 M

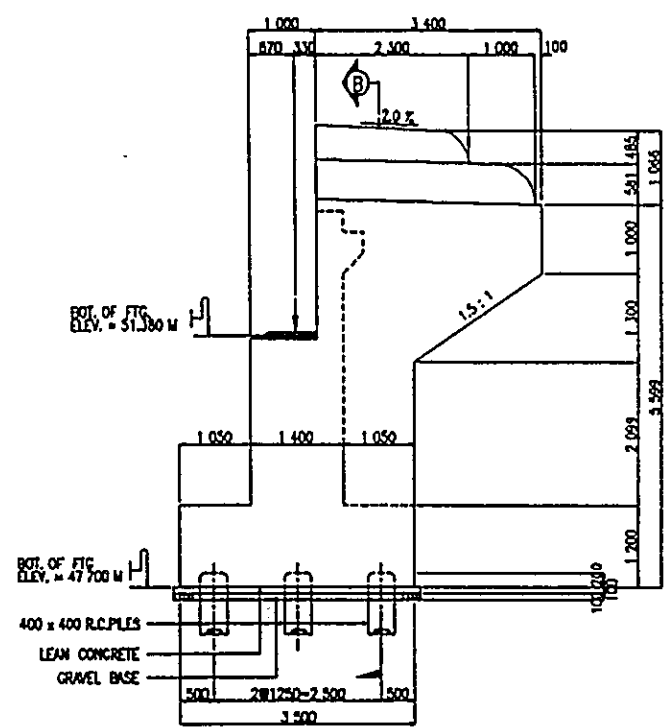


DETAIL "1"  
SCALE 1:50 M

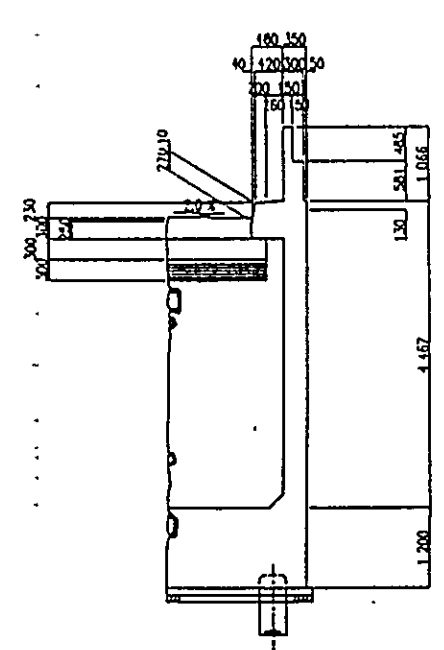
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
11-02-05	LOWER SILWAY	175



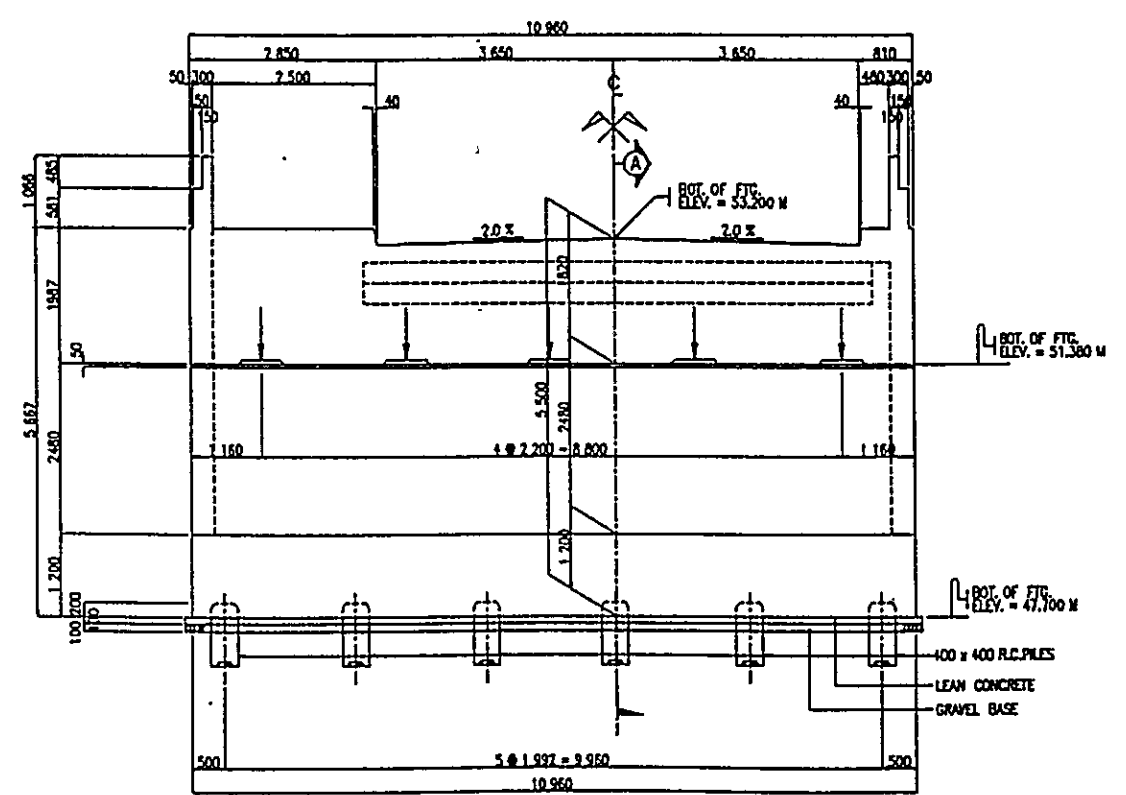
PLAN  
SCALE 1:50 M



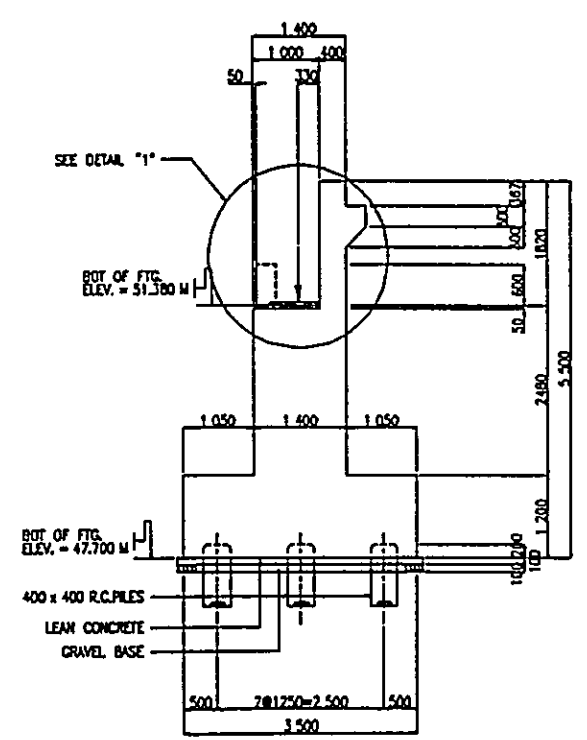
WINGWALL DETAIL  
SCALE 1:50 M



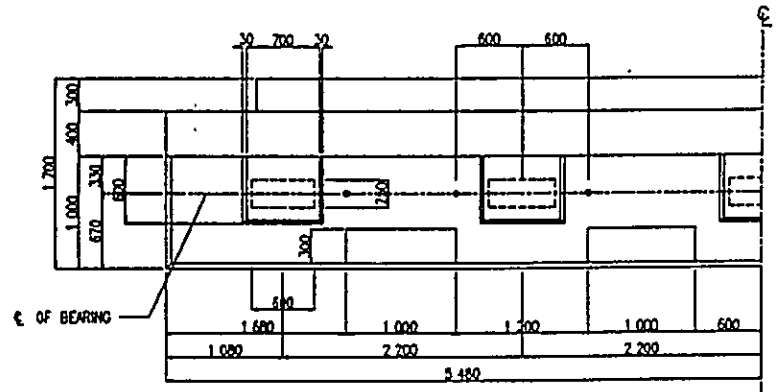
SECTION "B"  
SCALE 1:30 M



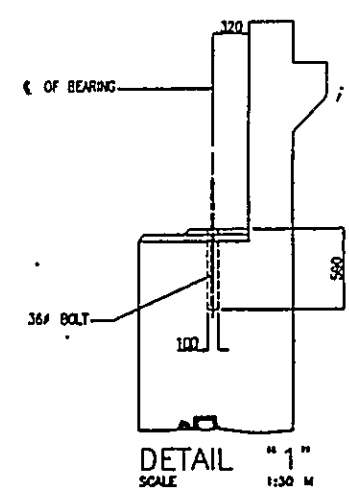
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M

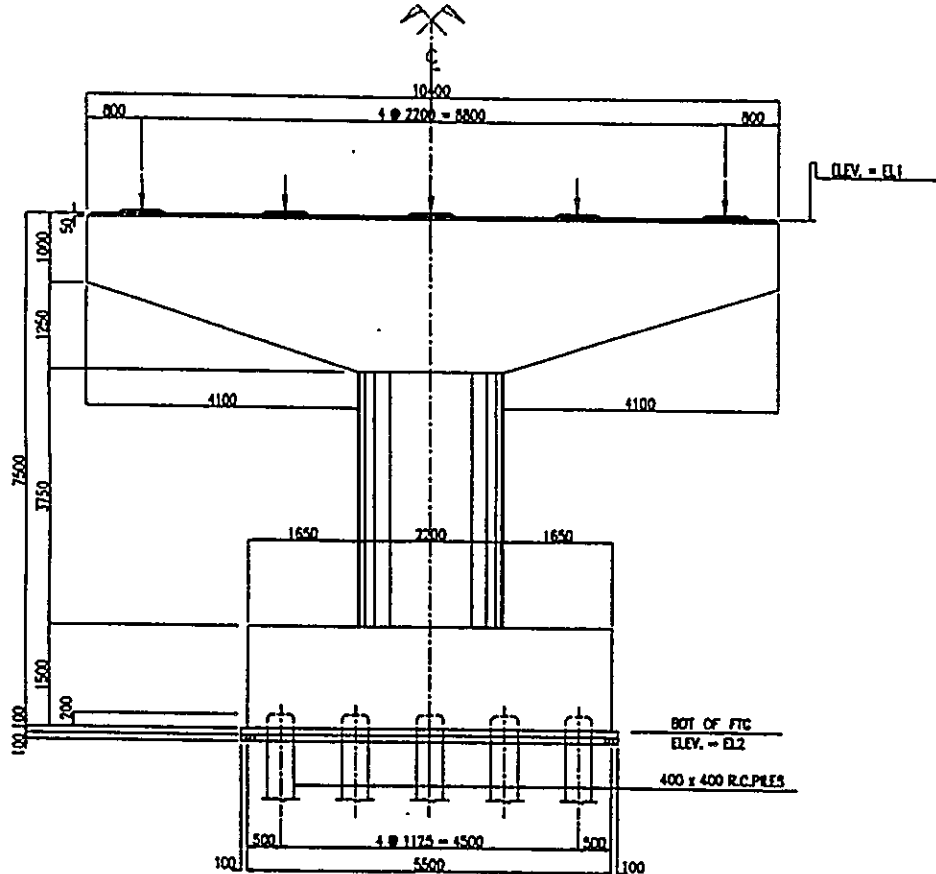


BEARING DETAIL  
SCALE 1:30 M

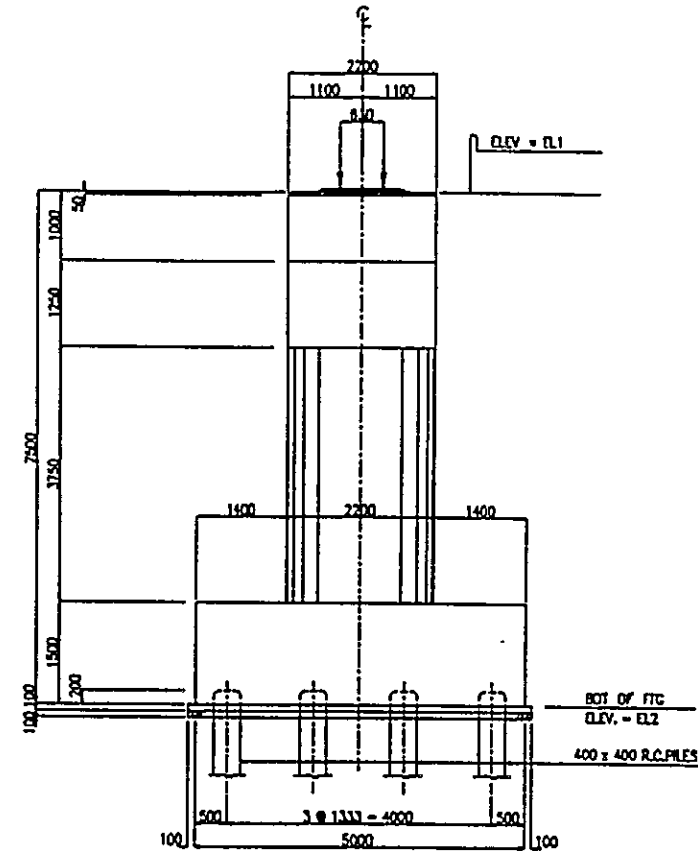


DETAIL "1"  
SCALE 1:30 M

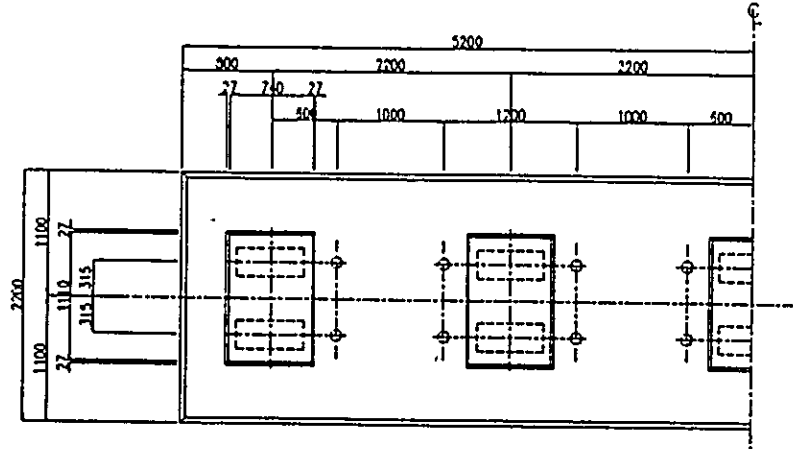
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
11-02-05	LOWER SILWAY	176



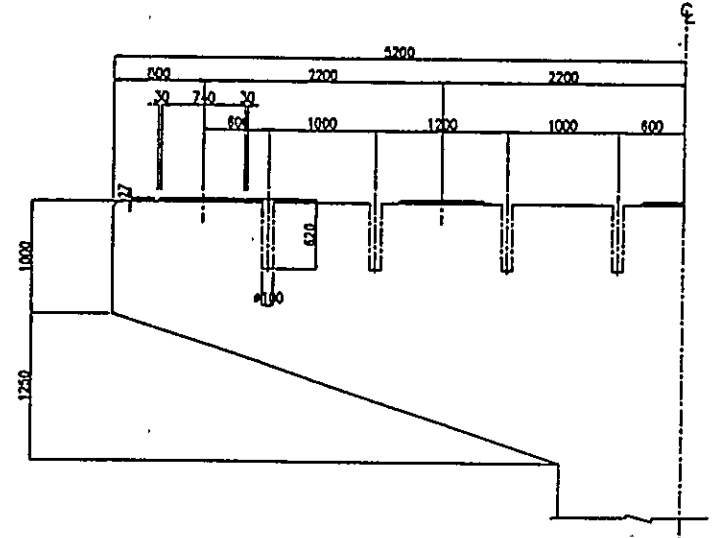
FRONT ELEVATION  
SCALE 1:50 M



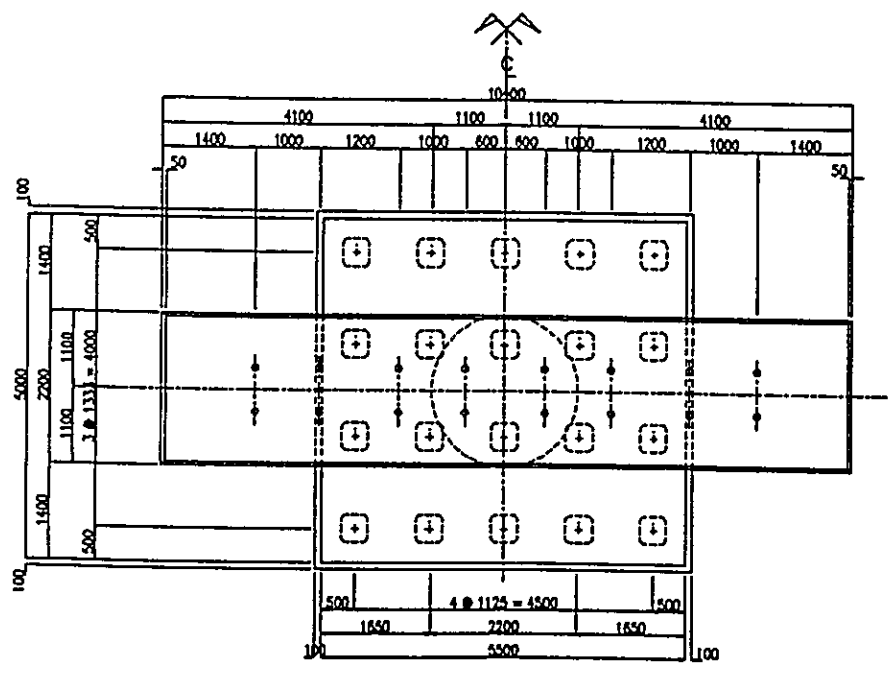
SIDE ELEVATION  
SCALE 1:50 M



DETAIL 1  
SCALE 1:50 M



DETAIL 2  
SCALE 1:50 M



PLAN  
SCALE 1:50 M

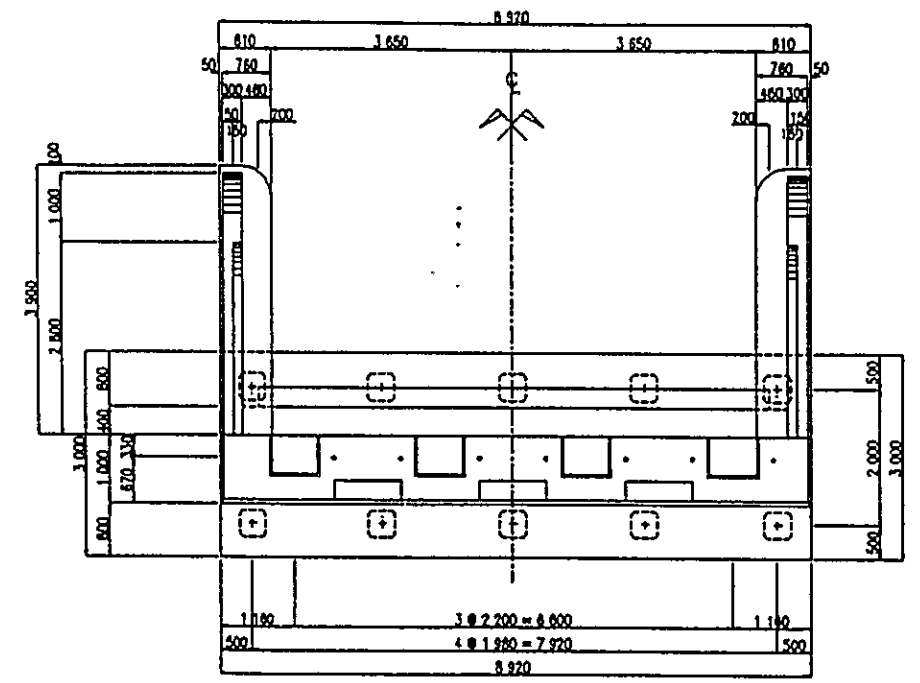
	P1&P4	P2&P3
P H	53.637	53.855
EL1	51.817	52.035
EL2	44.317	44.535

ELEVATION TABLE

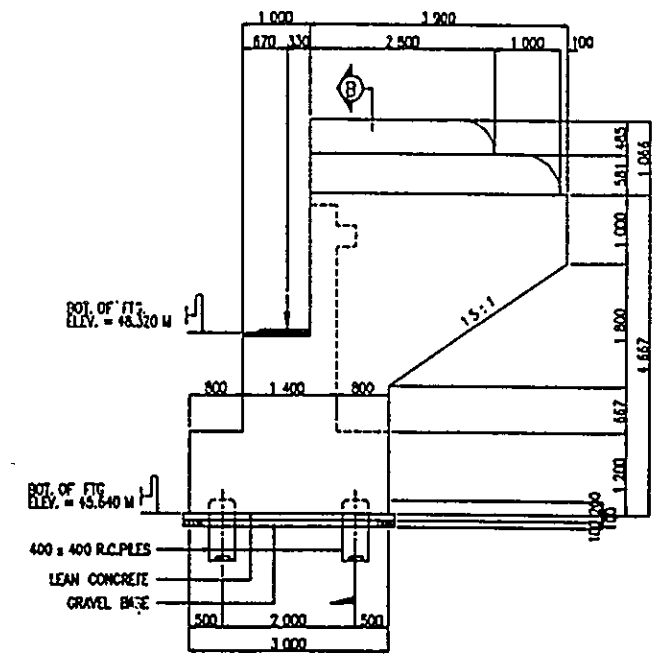




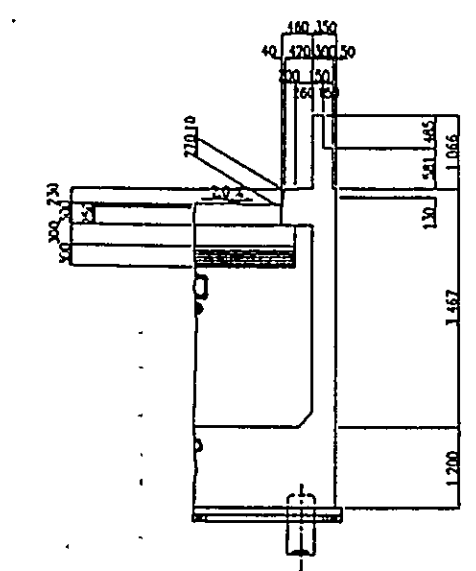
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
11-04-03	INAMBATAN	178



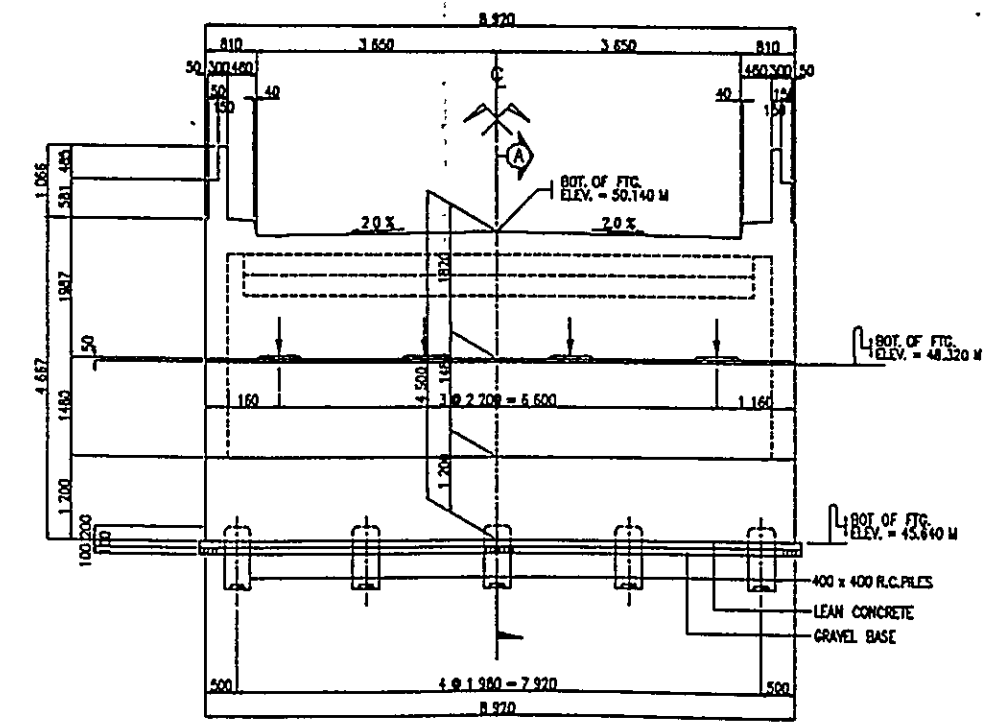
PLAN  
SCALE 1:50 M



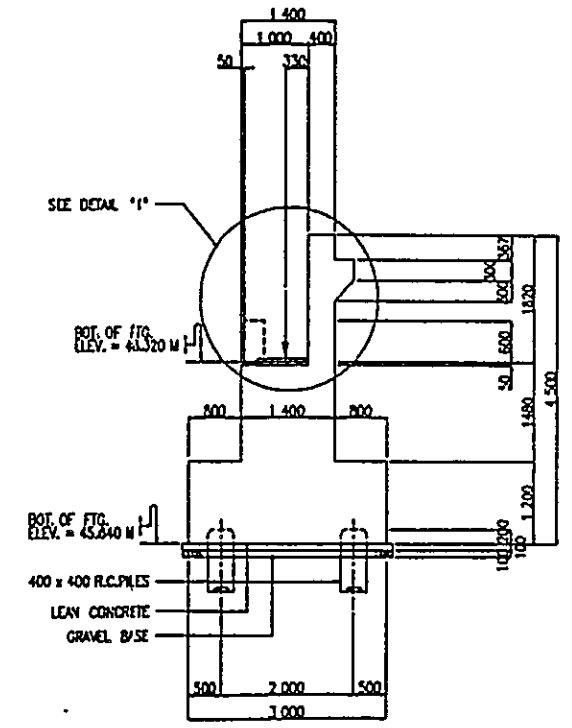
WINGWALL DETAIL  
SCALE 1:50 M



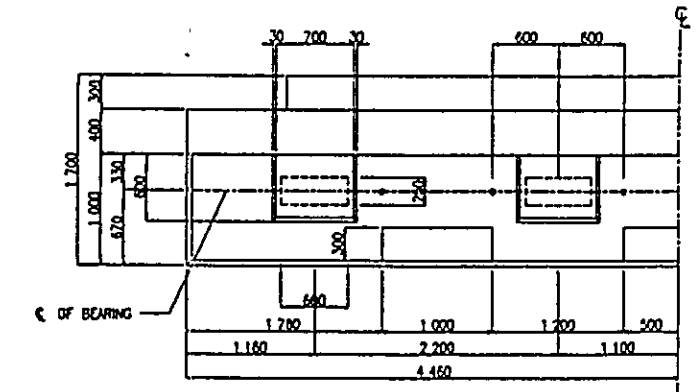
SECTION "B"  
SCALE 1:30 M



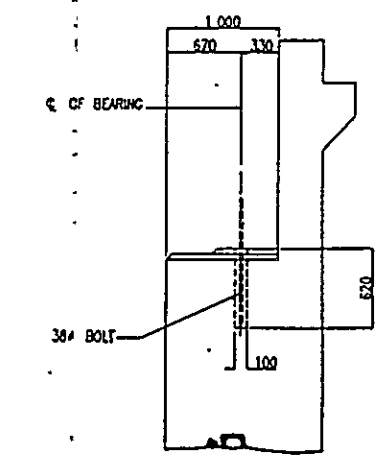
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M

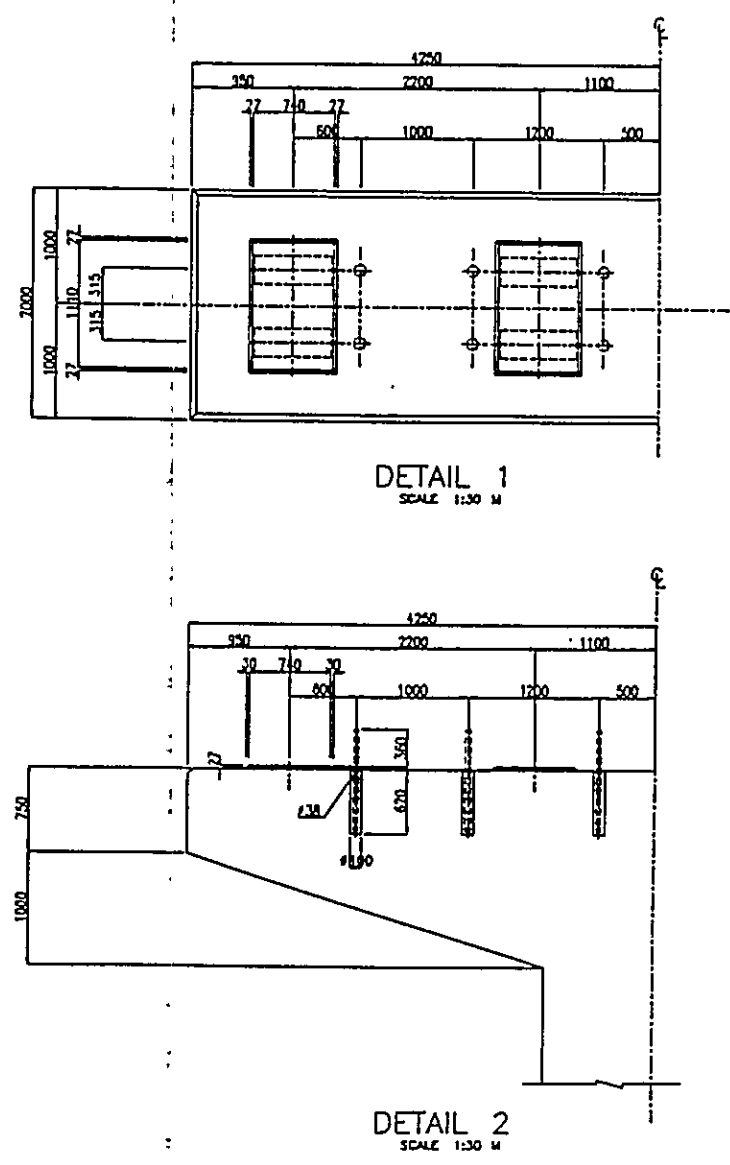
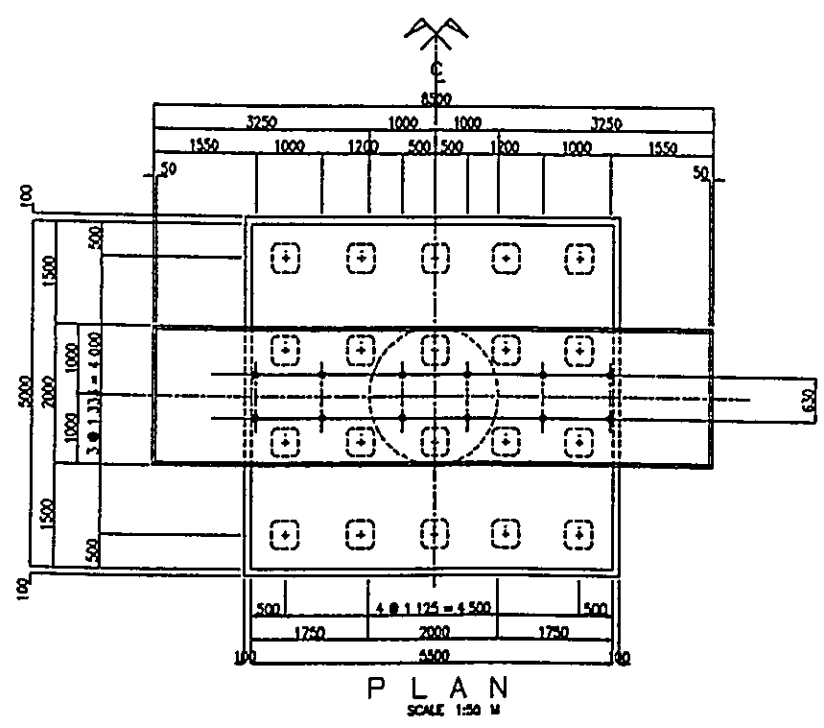
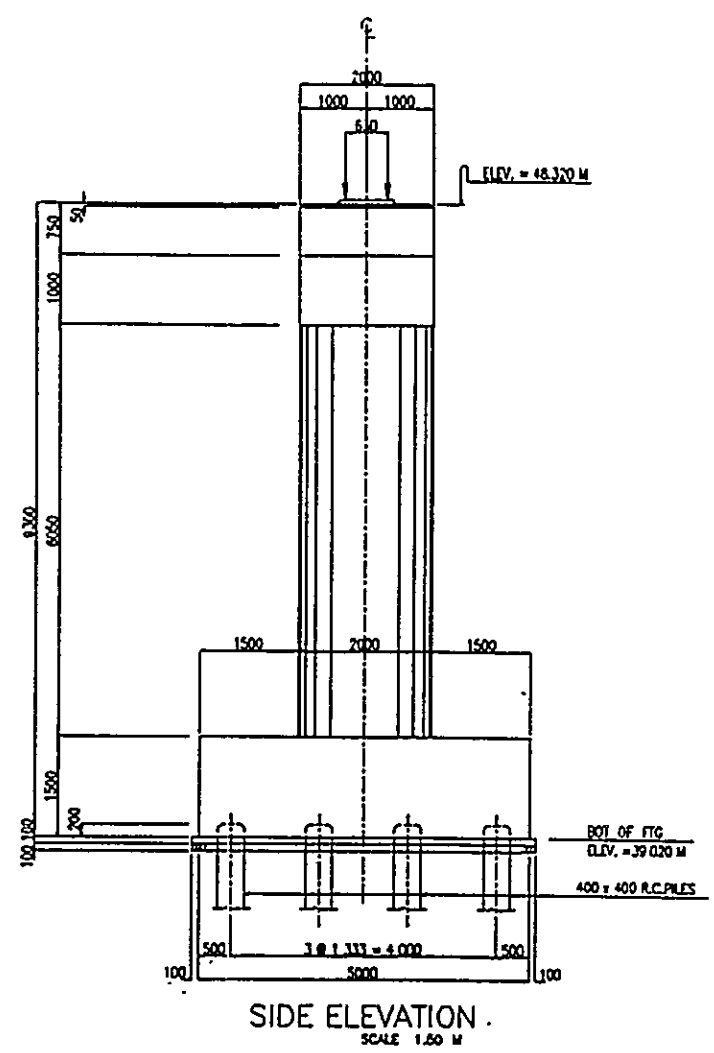
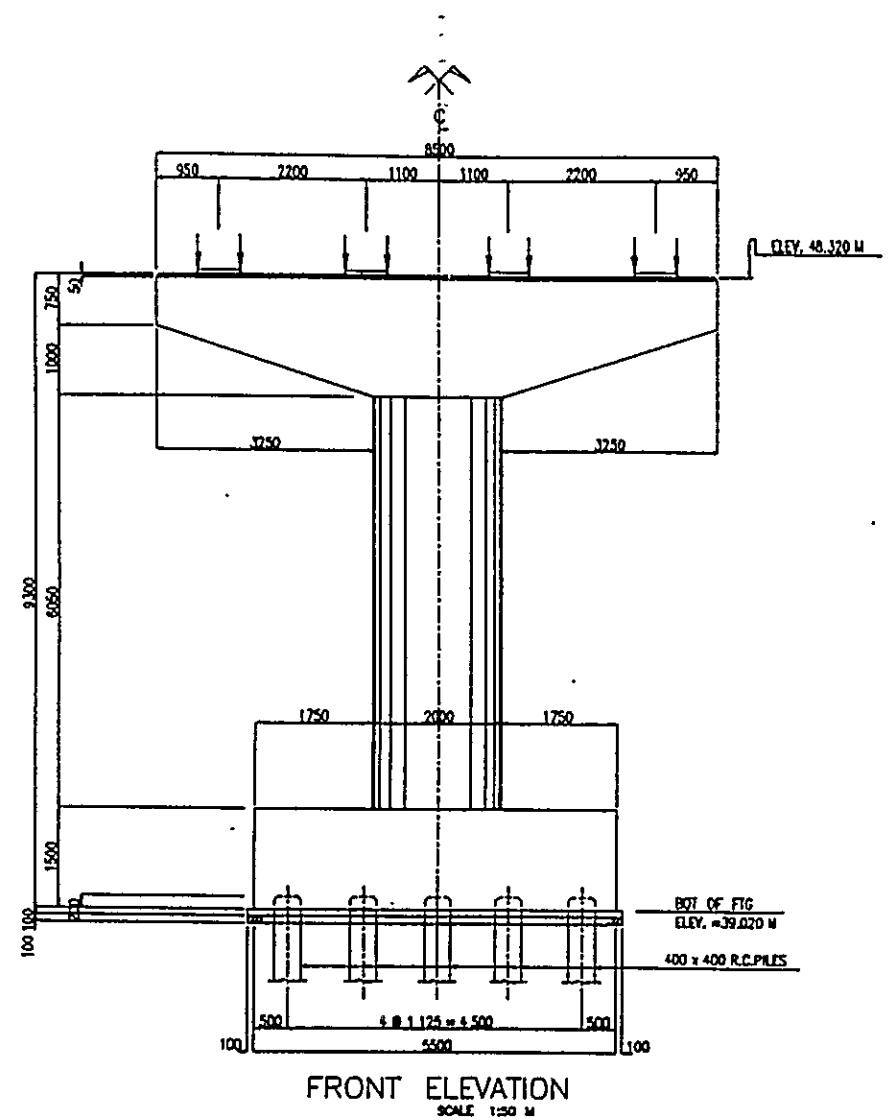


BEARING DETAIL  
SCALE 1:30 M

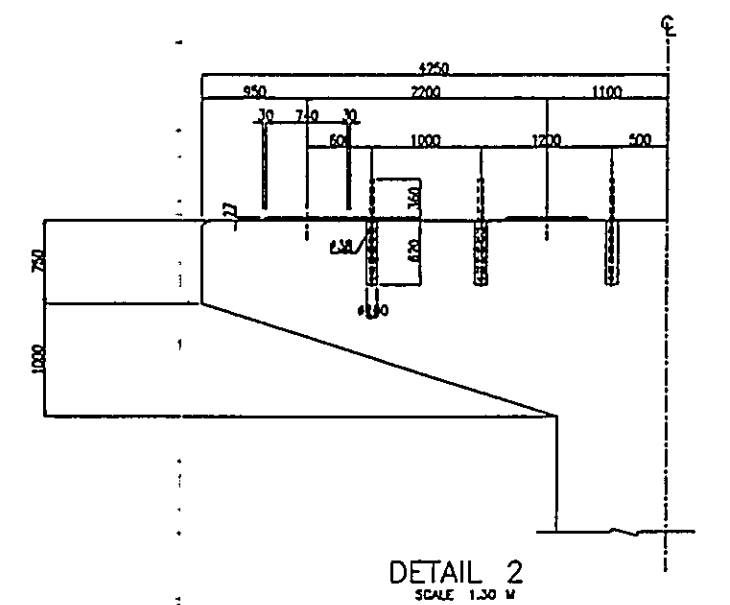
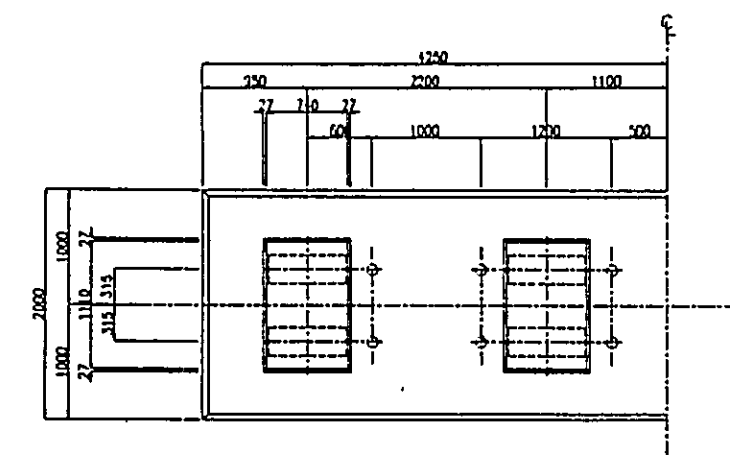
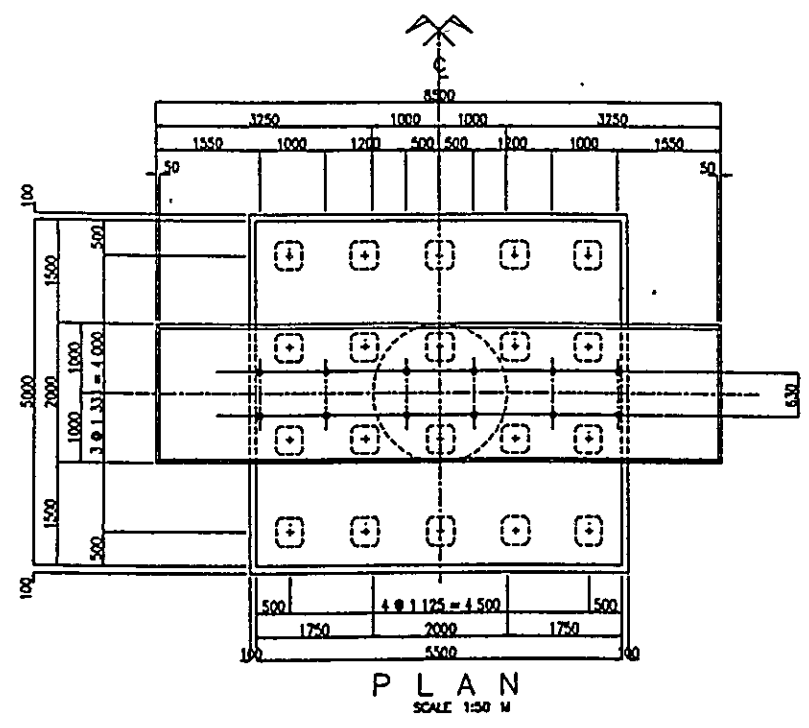
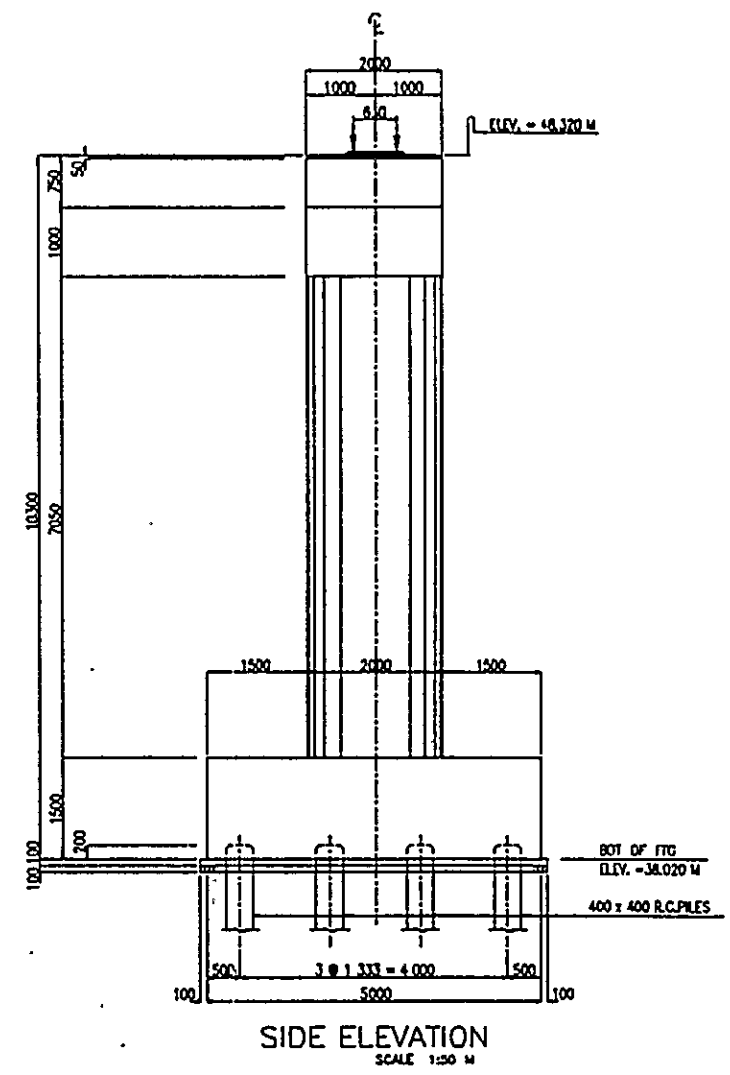
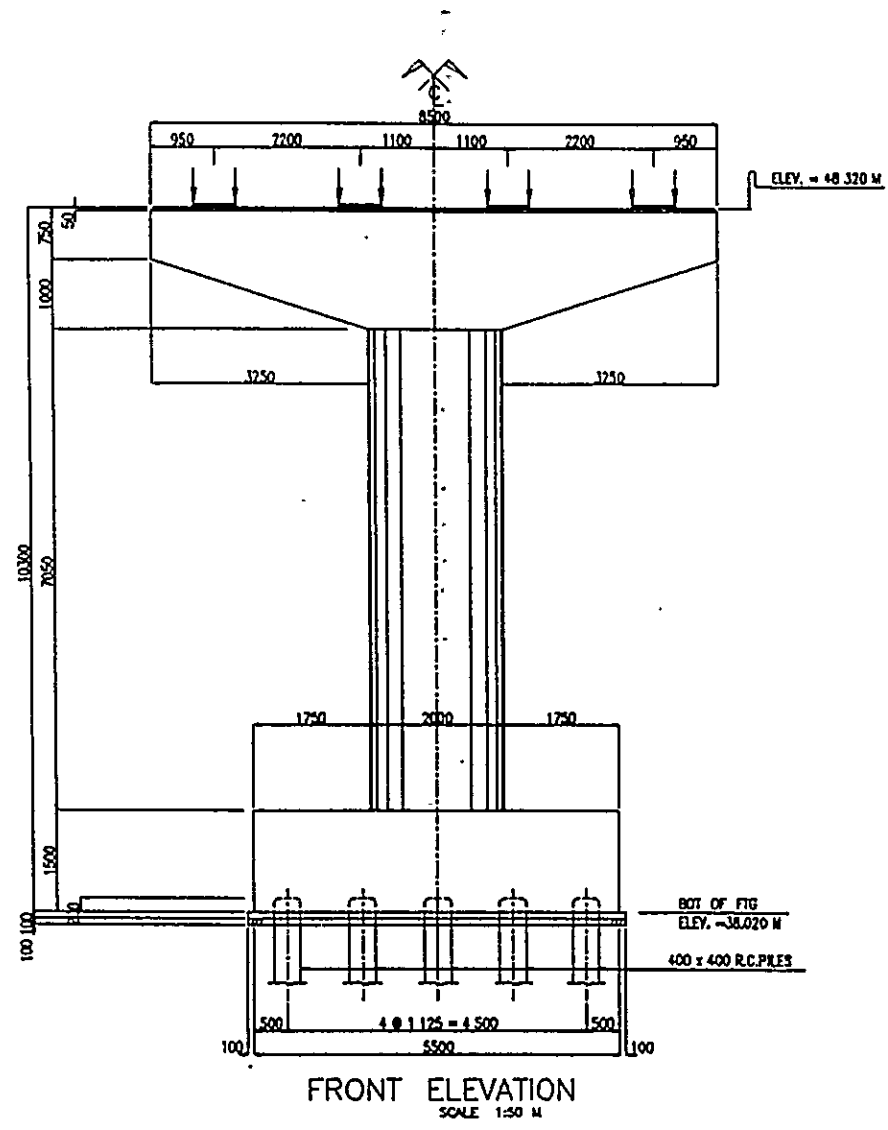


DETAIL "1"  
SCALE 1:30 M

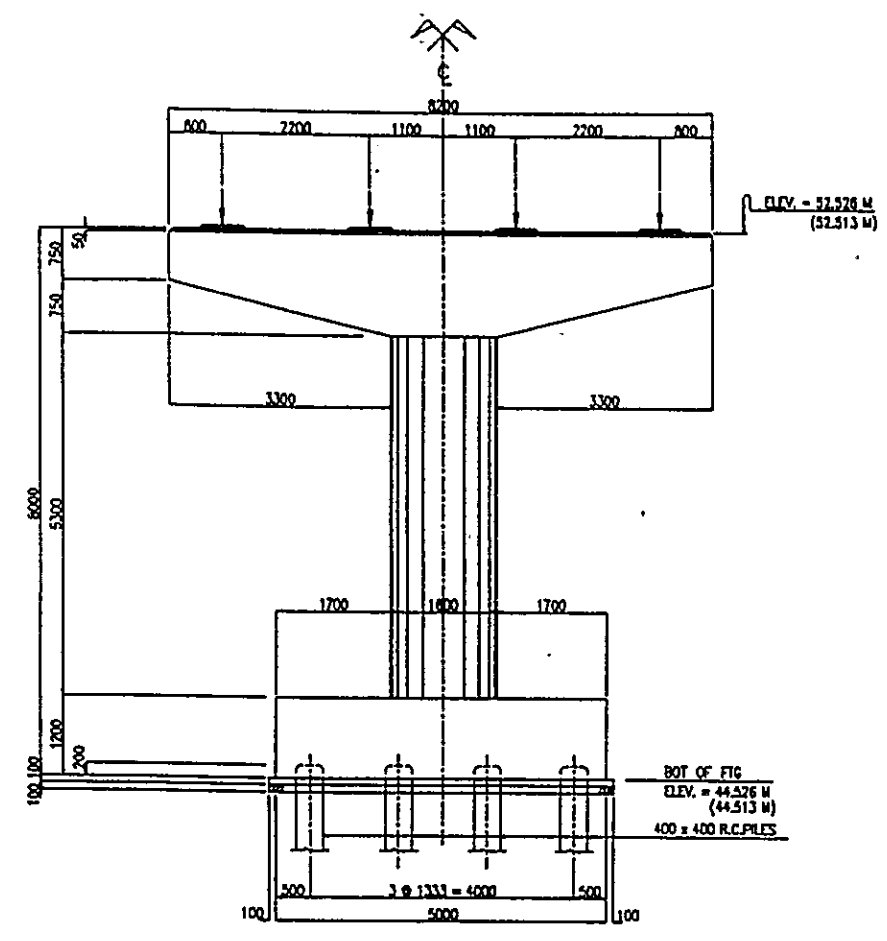
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO
11-04-03	INAMBATAN	179



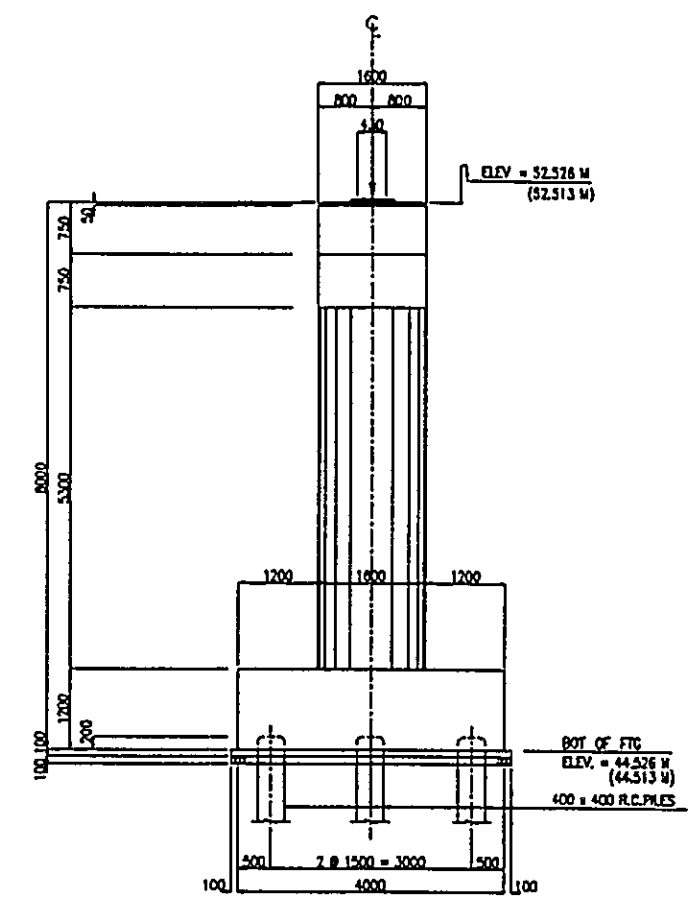
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
11-04-03	INAMBATAN	180



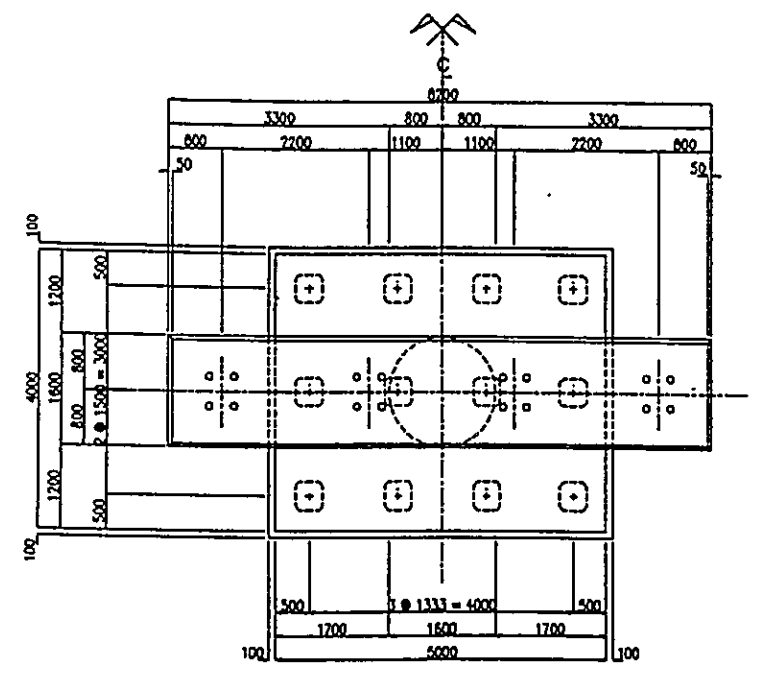
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
10-01-12	GUINABSAN	181



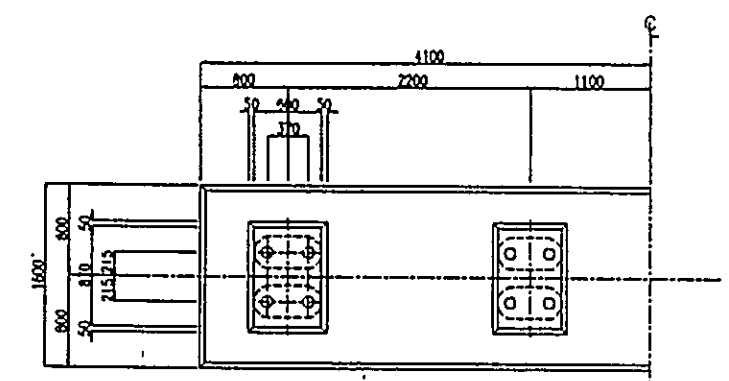
FRONT ELEVATION  
SCALE 1:50 M



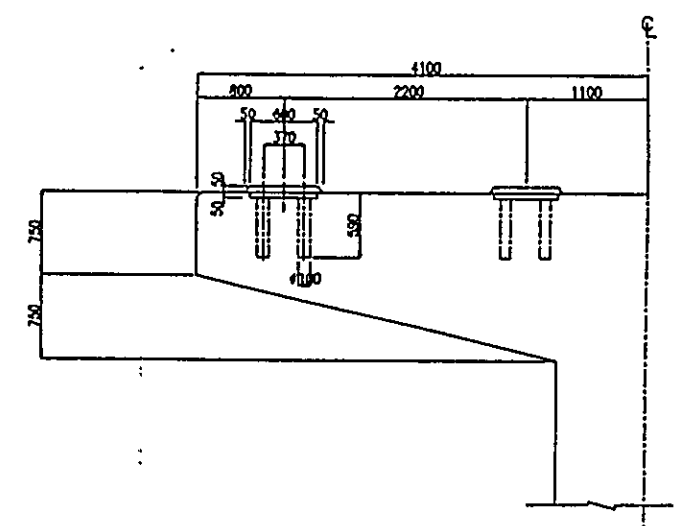
SIDE ELEVATION  
SCALE 1:50 M



P L A N  
SCALE 1:50 M

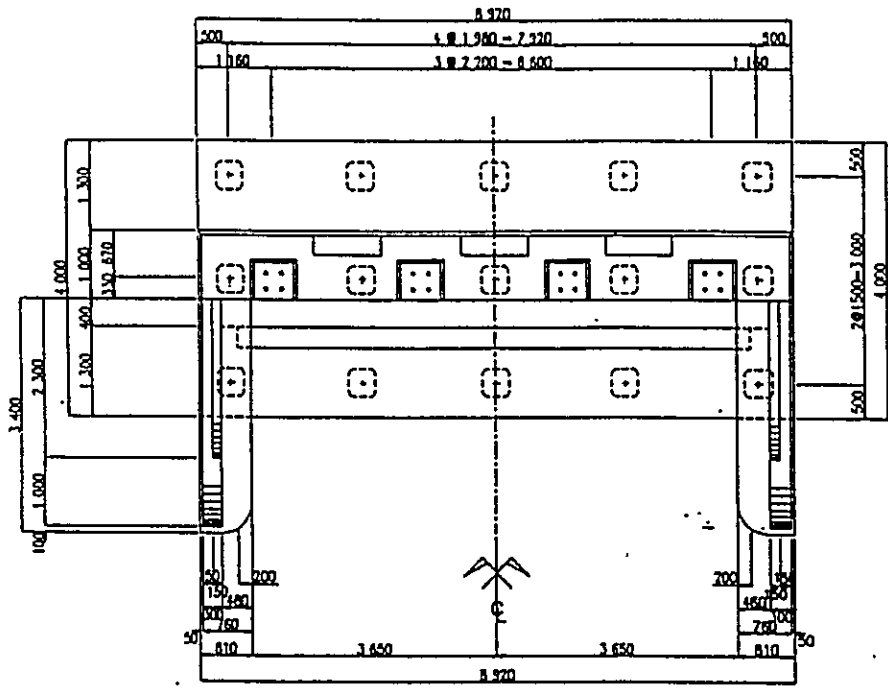


DETAIL 1  
SCALE 1:30 M

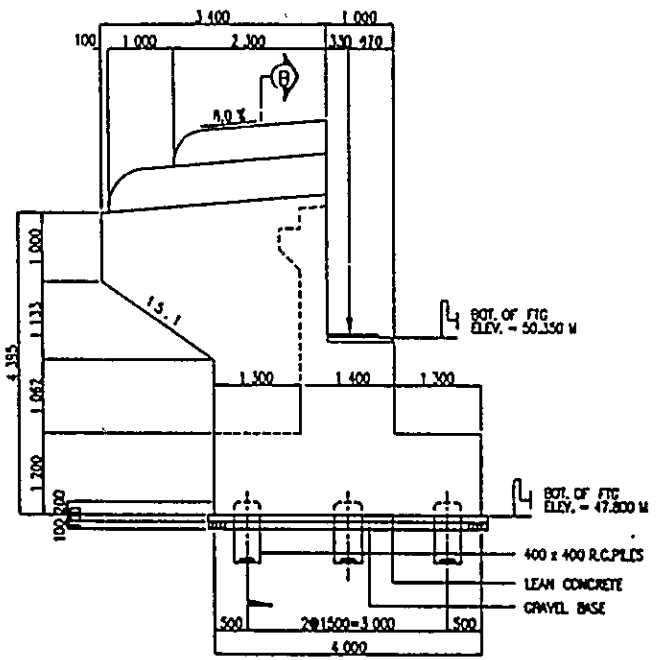


DETAIL 2  
SCALE 1:30 M

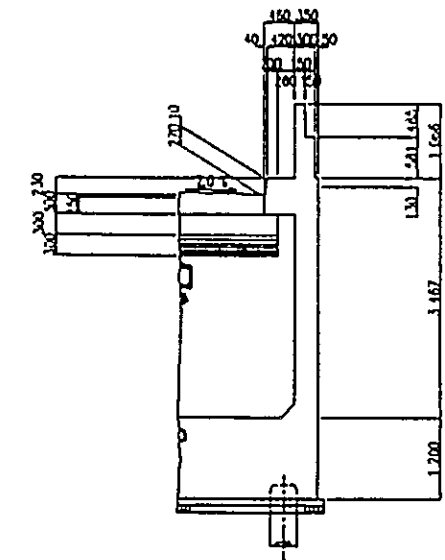
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
11-05-01	CULAMAN	182



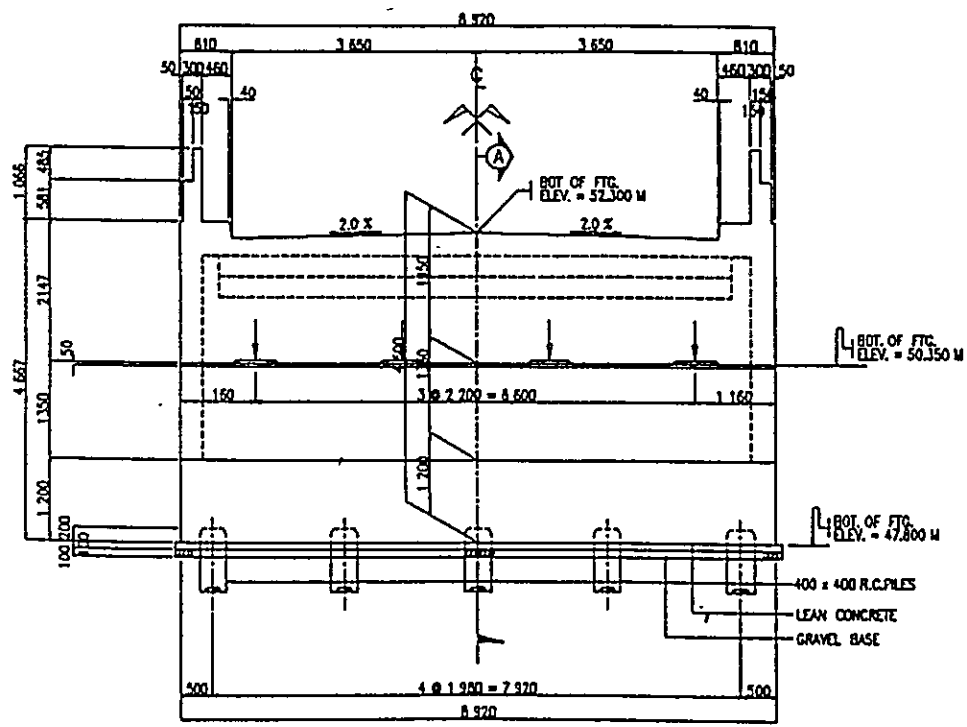
PLAN  
SCALE 1:50 M



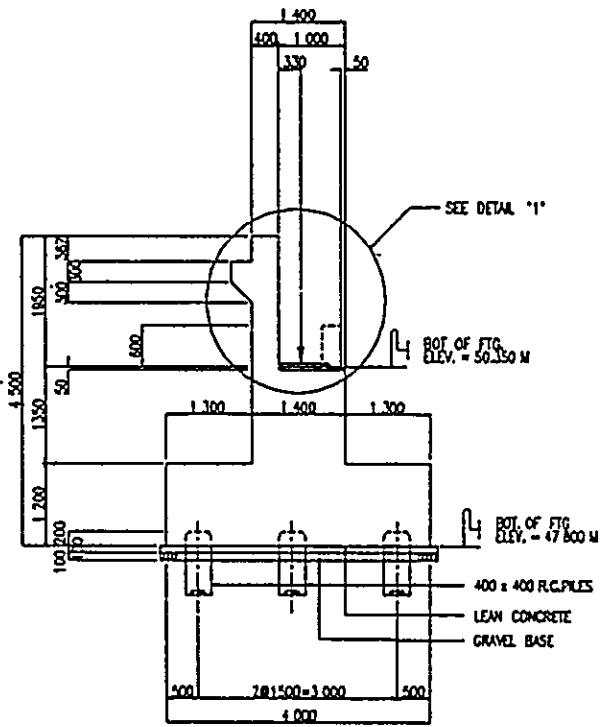
WINGWALL DETAIL  
SCALE 1:50 M



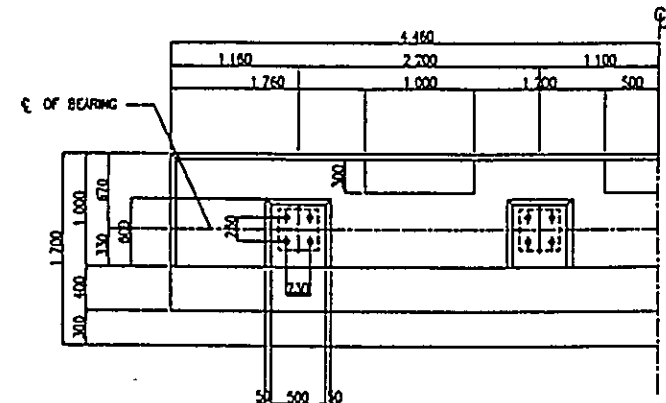
SECTION "B"  
SCALE 1:50 M



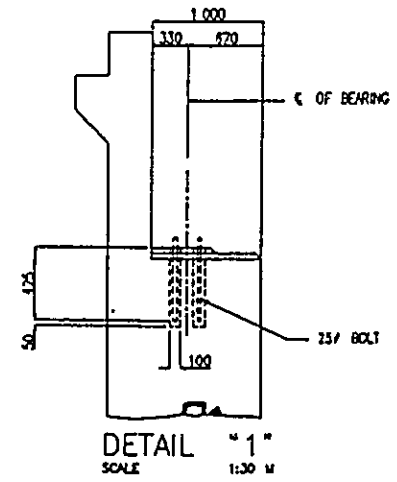
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M

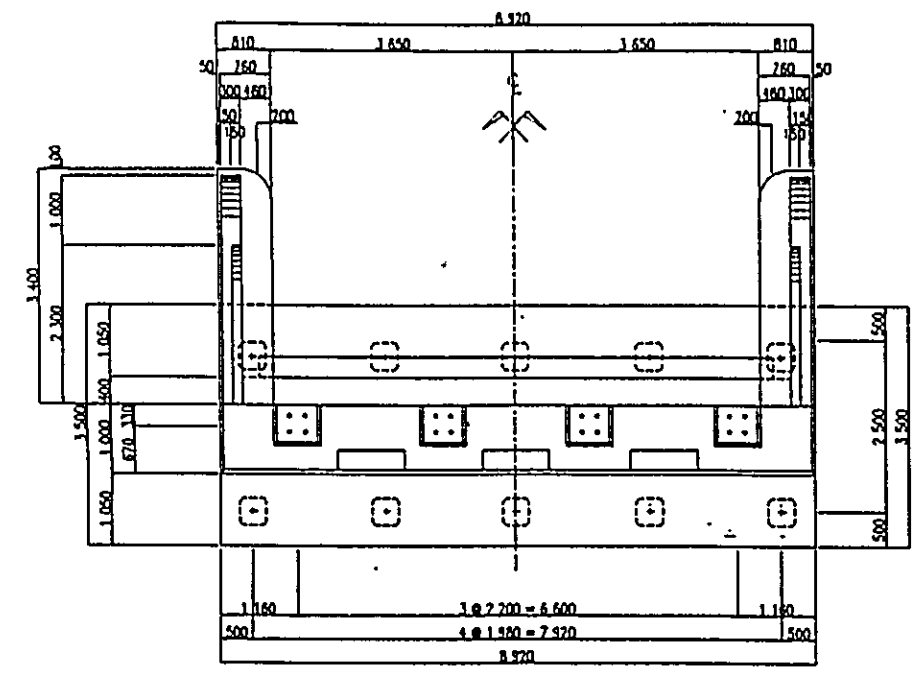


BEARING DETAIL  
SCALE 1:30 M

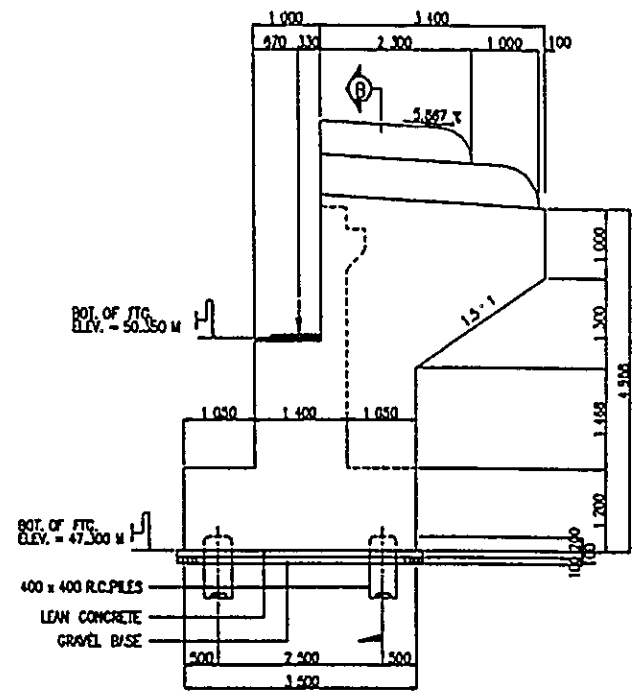


DETAIL "1"  
SCALE 1:30 M

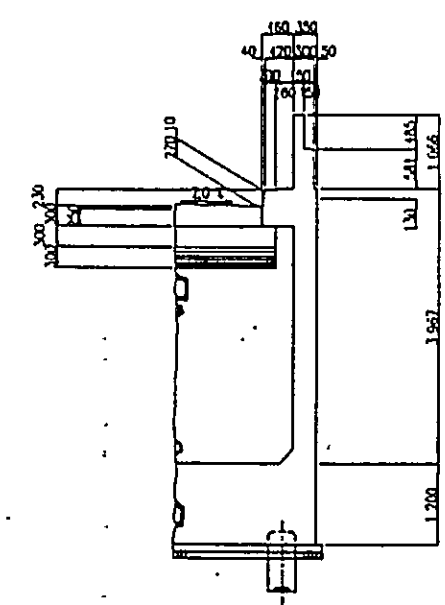
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO	BRIDGE NAME	SHEET NO
11-05-01	CULAMAN	183



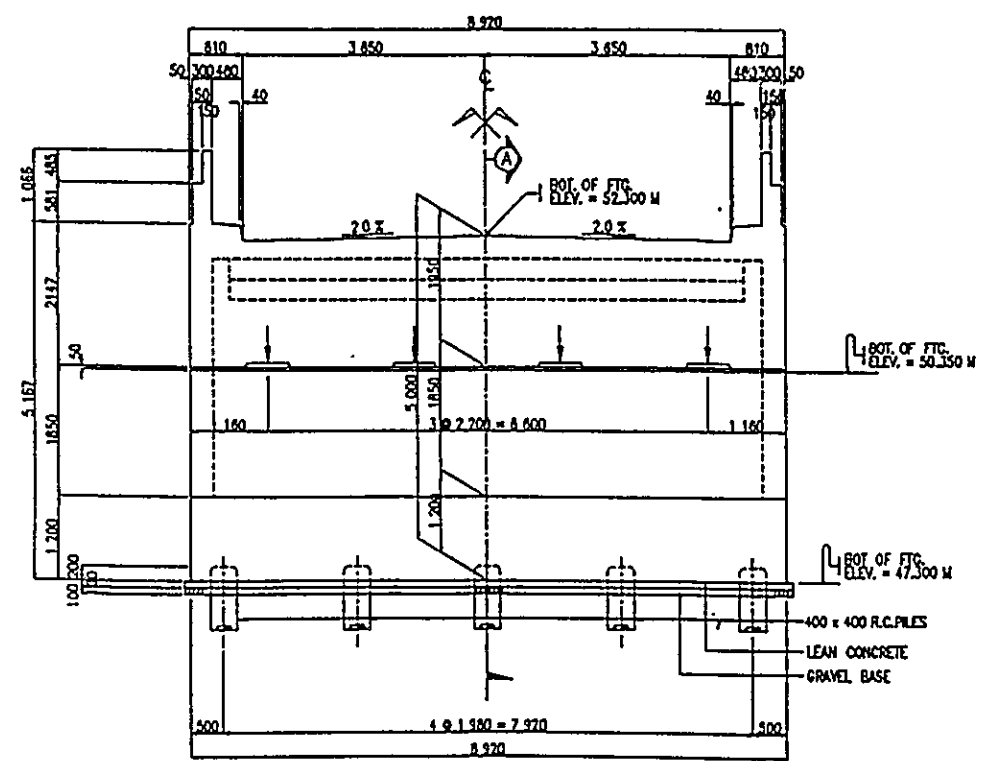
PLAN  
SCALE 1:50 M



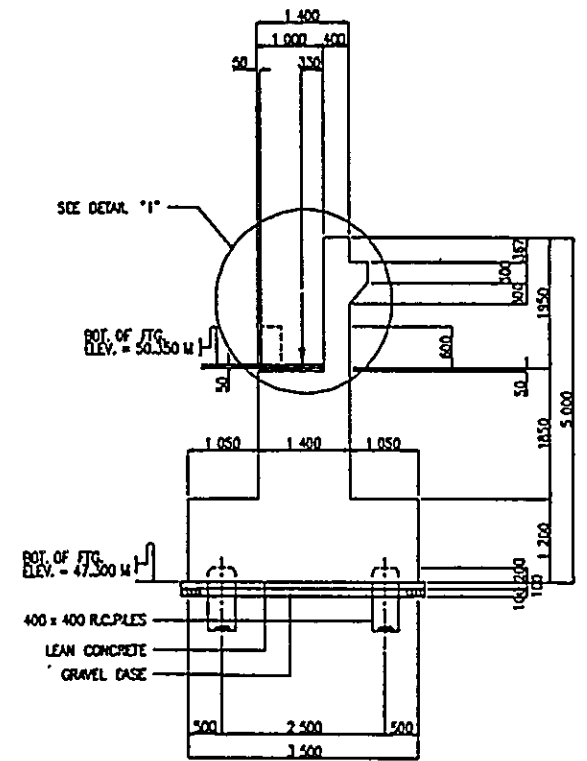
WINGWALL DETAIL  
SCALE 1:50 M



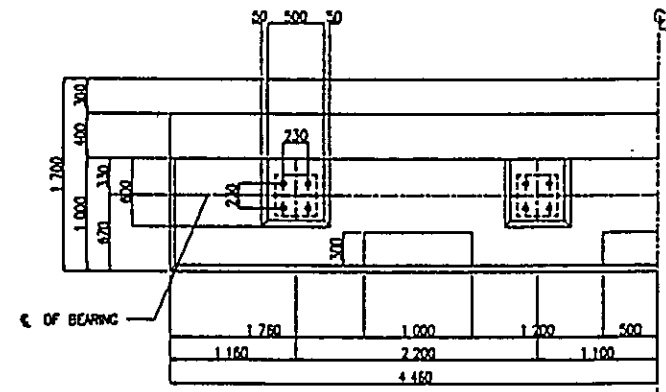
SECTION "B"  
SCALE 1:50 M



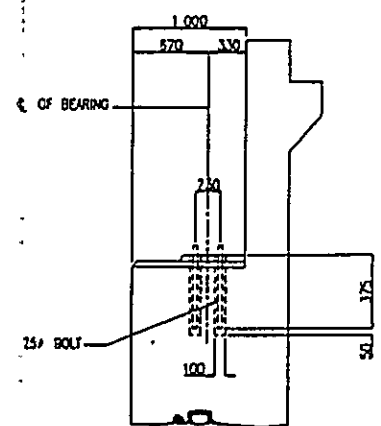
FRONT ELEVATION  
SCALE 1:50 M



SECTION "A"  
SCALE 1:50 M

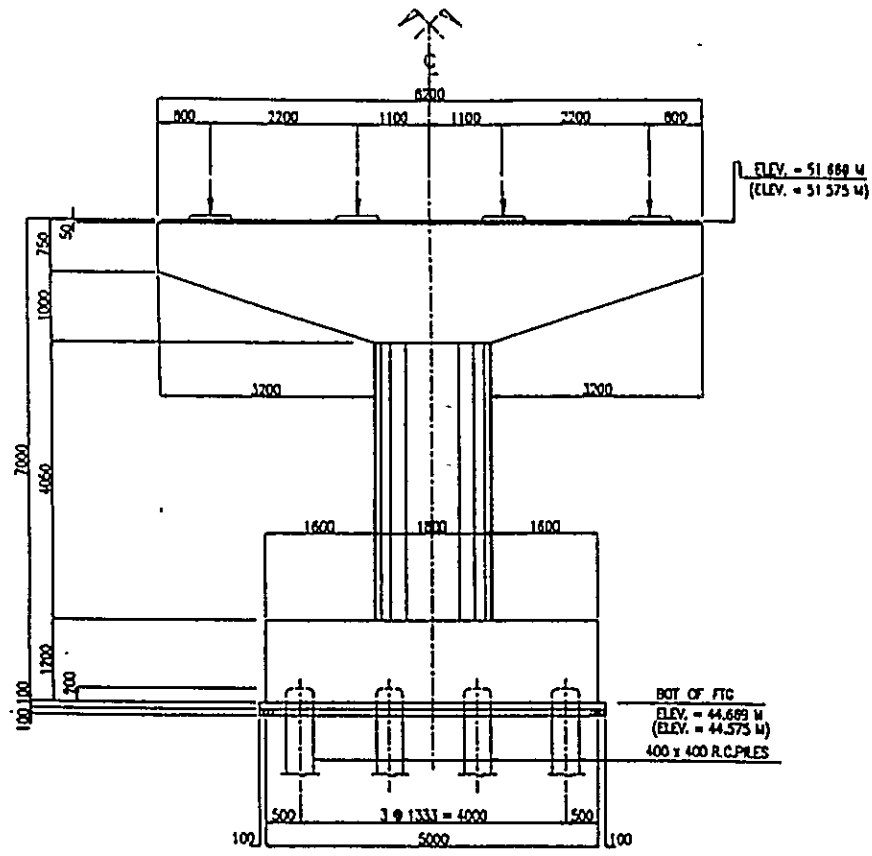


BEARING DETAIL  
SCALE 1:50 M

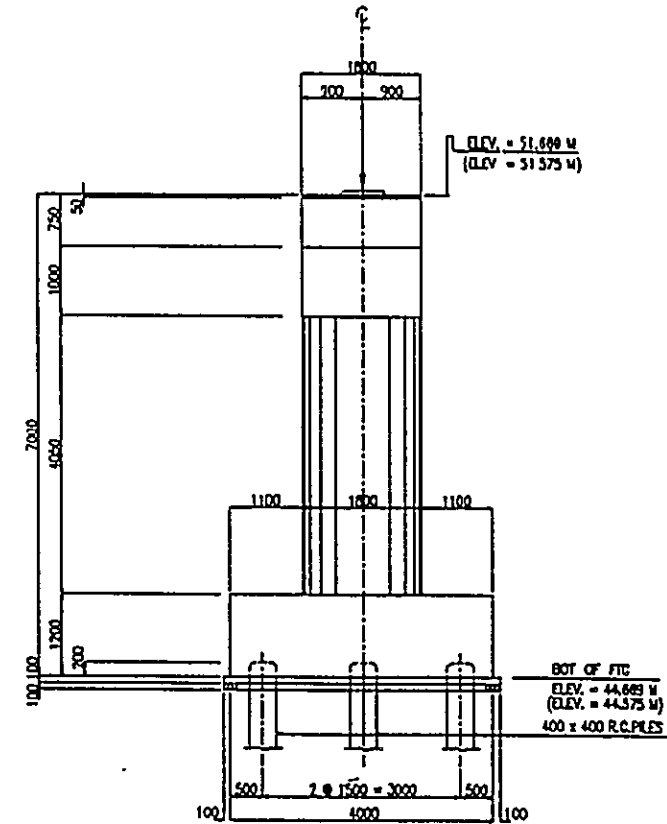


DETAIL "1"  
SCALE 1:50 M

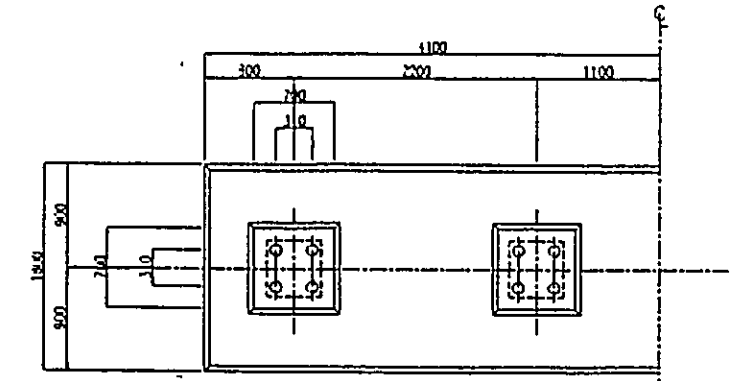
BASIC DESIGN STUDY ON THE PROJECT FOR CONSTRUCTION OF BRIDGES ALONG RURAL ROADS IN MINDANAO AREA		
BRIDGE NO.	BRIDGE NAME	SHEET NO.
11-05-01	CULAMAN	184



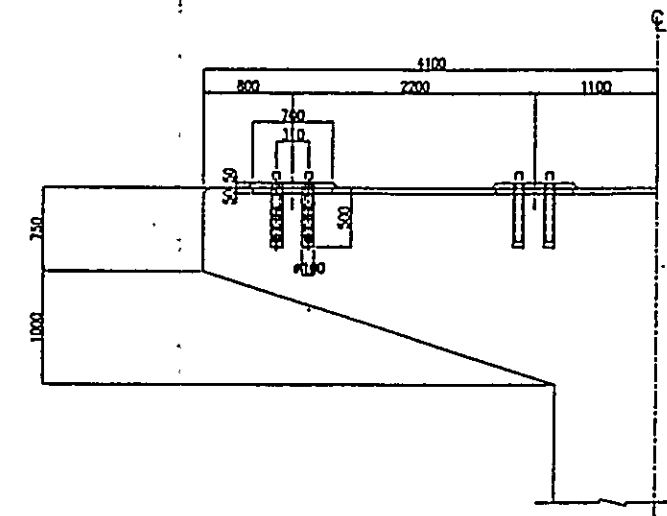
FRONT ELEVATION  
SCALE 1:50 M



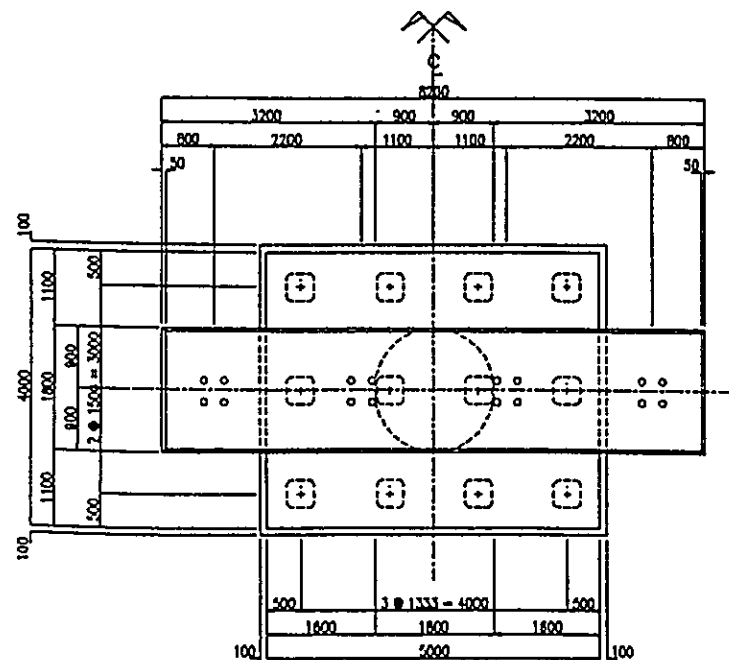
SIDE ELEVATION  
SCALE 1:50 M



DETAIL 1  
SCALE 1:30 M



DETAIL 2  
SCALE 1:30 M



P L A N  
SCALE 1:50 M

21 1/22 P2 2/27









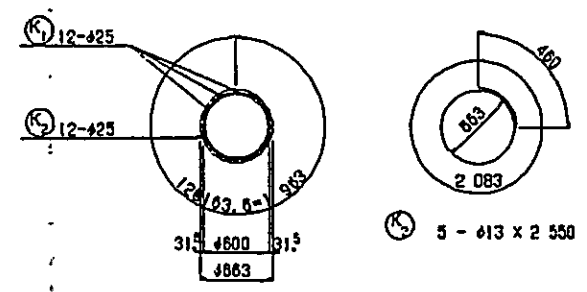
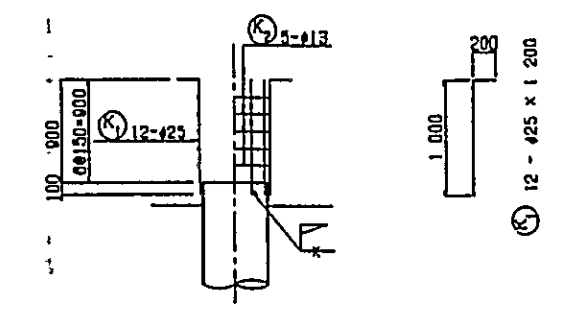
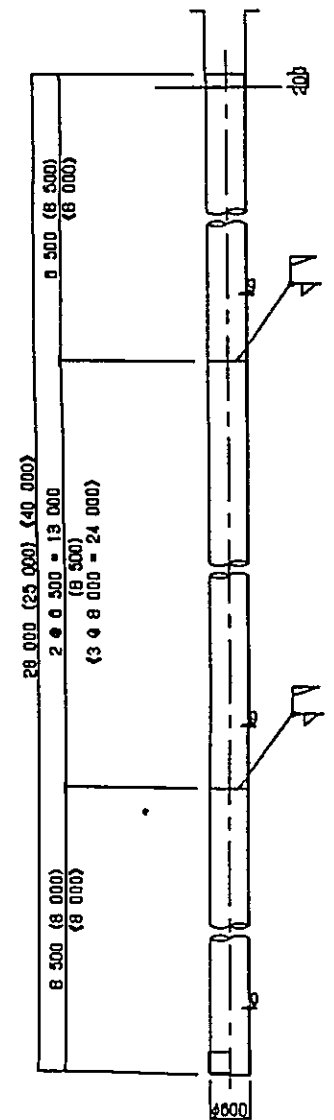
**BASIC DESIGN  
OF  
MISCELLANEOUS STRUCTURES  
(GROUP 2)**

86  
7  
R

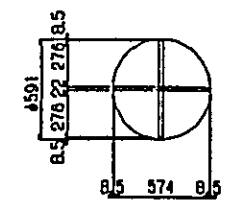
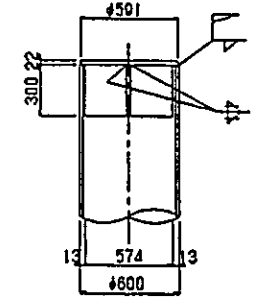


Detail For Pile Pile Head Connection  
scale 1:50M scale 1:30M

AL (P1) (AR)  
n=10 (6) (10)

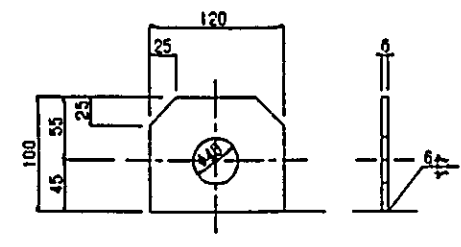


Pile Head Reinforcement  
scale 1:20M

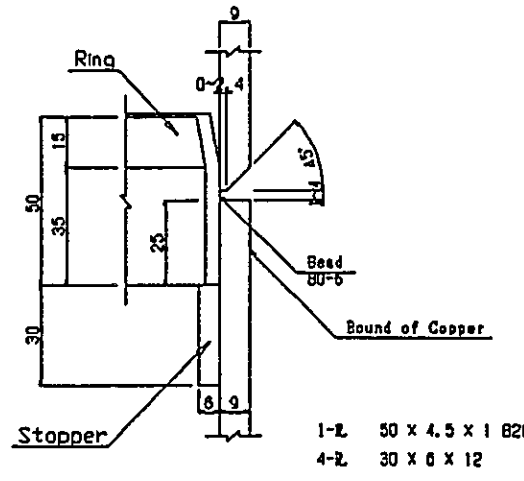


- 1-R #591 x 22
- 1-R 300 x 22 x 574
- 2-R 300 x 22 x 276

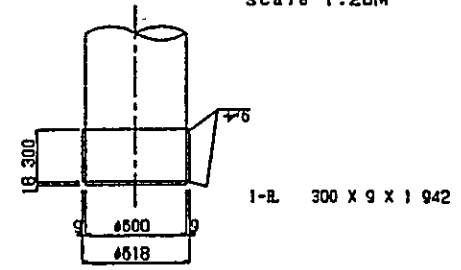
Metallic Hangers scale 1:30M



Detail For Spot Joint  
scale 1:1M

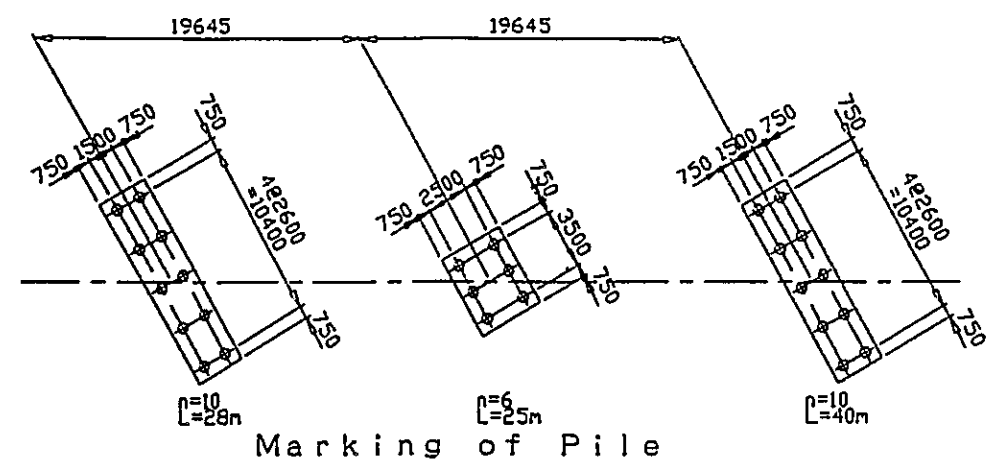


Pile Top Reinforcement  
scale 1:20M



Schedule of Material (One Pile)

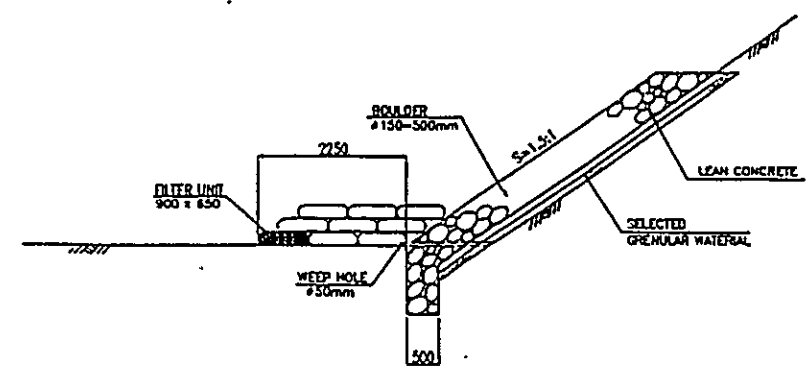
Designation	Size	Length	Number	Unit Wt.	Wt.	Numbers	TWL.	Remarks
<b>Abutment AL</b>								
S.P.P.	#600x9	8 500	3	131	2 554.5	10	25545	SKK400
"	#600x9	8 500	1	131	1 113.5	10	11135	"
					t=9mm	3 888.0	10	36680
Bar	φ 25	1 200	12	3.853	55.5	10	555	"
"	φ 13	2 550	5	1.042	13.3	10	133	"
					Total	88.8	10	688
<b>Metallic Accessories</b>								
R.	#591x22		1		47.4	10	474	SS400
"	300x22	574	1	51.8	29.7	10	297	"
"	300x22	276	2	51.8	28.6	10	286	"
"	50x4.5	1 828	3	1.77	9.7	10	97	"
"	30x6	12	12	1.41	0.2	10	2	"
"	300x9	1 942	1	21.2	41.2	10	412	"
					Total	156.8	10	1568
<b>Pier P1</b>								
S.P.P.	#600x9	8 500	2	131	2 227.0	6	13362	SKK400
"	"	8 000	1	131	1 048.0	6	6288	"
					t=9mm	3 275.0	6	19650
Bar	φ 25	1 200	12	3.853	55.5	6	333	"
"	φ 13	2 550	5	1.042	13.3	6	79.8	"
					Total	68.8	6	4128
<b>Metallic Accessories</b>								
R.	#591x22		1		47.4	6	284.4	SS400
"	300x22	574	1	51.8	29.7	6	178.2	"
"	300x22	276	2	51.8	28.6	6	171.6	"
"	50x4.5	1 828	2	1.77	6.5	6	39	"
"	30x6	12	8	1.41	0.1	6	0.6	"
"	300x9	1 942	1	21.2	41.2	6	274.2	"
					Total	153.5	6	921.0
<b>Abutment AR</b>								
S.P.P.	#600x9	8 500	5	131	5 587.5	10	55675	SKK400
					t=9mm	5 587.5	10	55675
Bar	φ 25	1 200	12	3.853	55.5	10	555	"
"	φ 13	2 550	5	1.042	13.3	10	133	"
					Total	68.8	10	688
<b>Metallic Accessories</b>								
R.	#591x22		1		47.4	10	474	SS400
"	300x22	574	1	51.8	29.7	10	297	"
"	300x22	276	2	51.8	28.6	10	286	"
"	50x4.5	1 828	4	1.77	12.9	10	129	"
"	30x6	12	16	1.41	0.3	10	3	"
"	300x9	1 942	1	21.2	41.2	10	412	"
					Total	160.1	10	1601



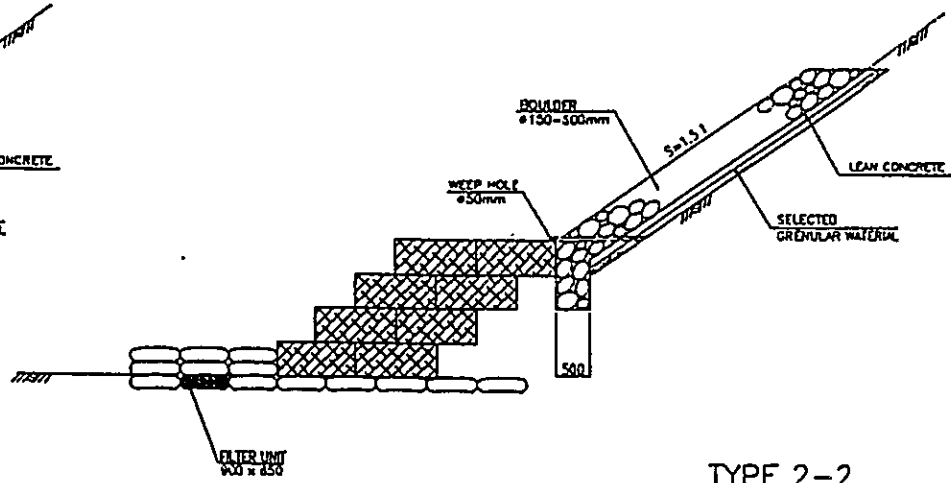
BRIDGE NO.		SHEET NO.
DETAIL OF PROTECTION		189

# DETELE OF PROTECTION

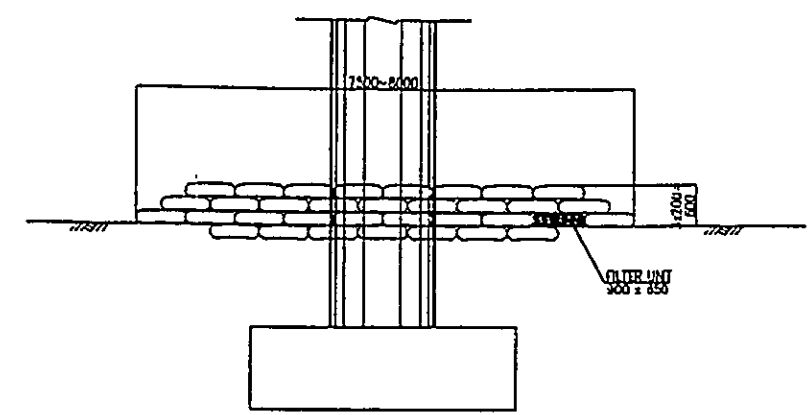
**TYPE 1**  
SCALE 1:50 M



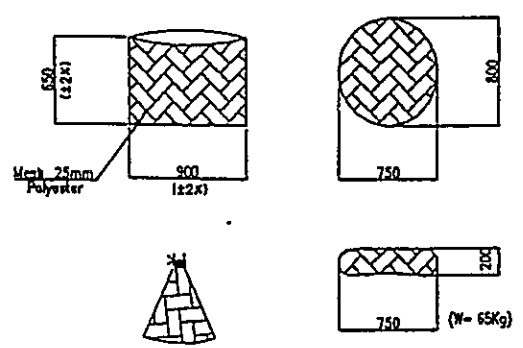
**TYPE 2-1**  
SCALE 1:50 M



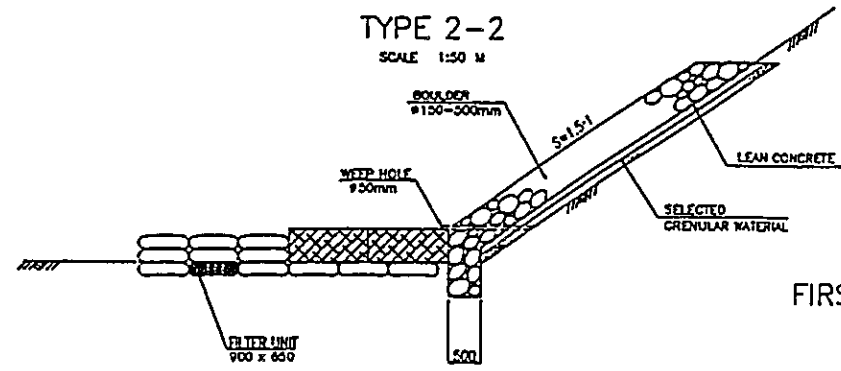
**TYPE 3**  
SCALE 1:50 M



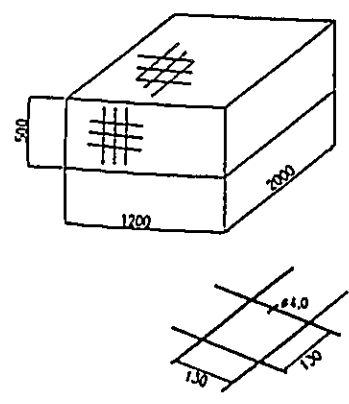
**DETELE OF FILTER UNIT**  
SCALE 1:25 M



**TYPE 2-2**  
SCALE 1:50 M

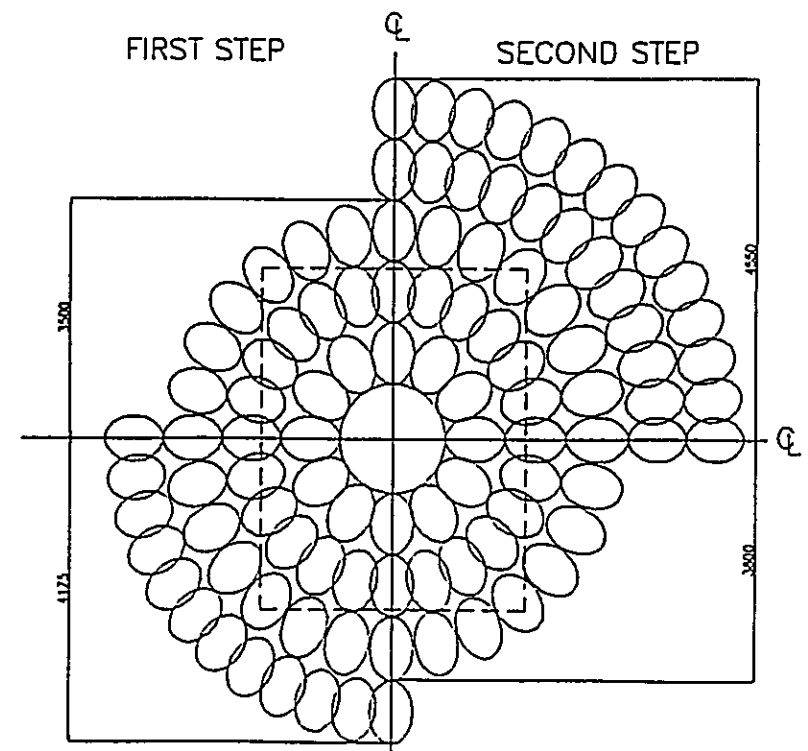


**DETELE OF GABION**  
SCALE 1:25 M



FIRST STEP

SECOND STEP



THIRD STEP

FORTH STEP

