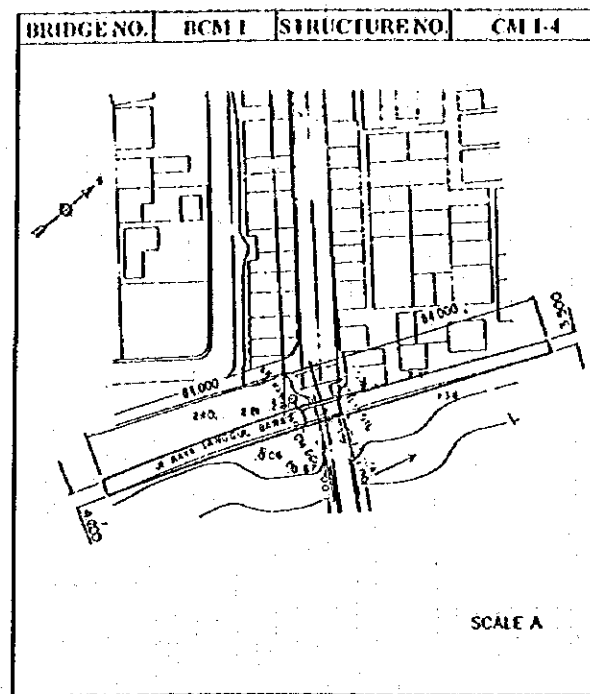
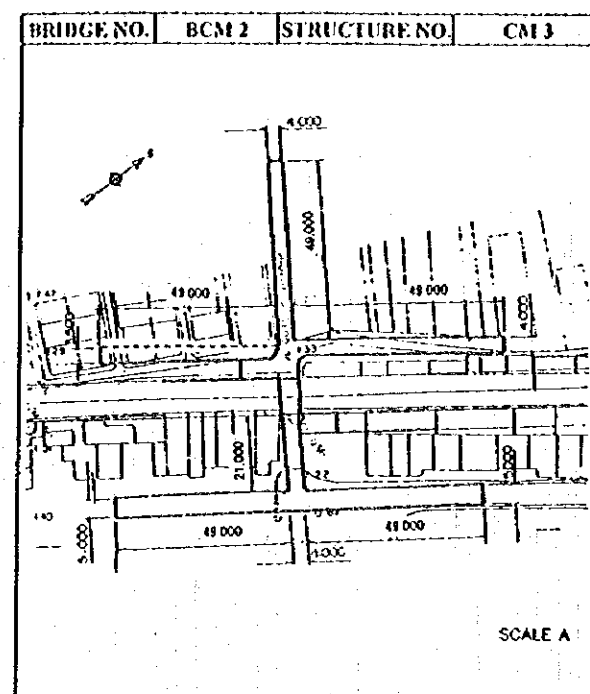


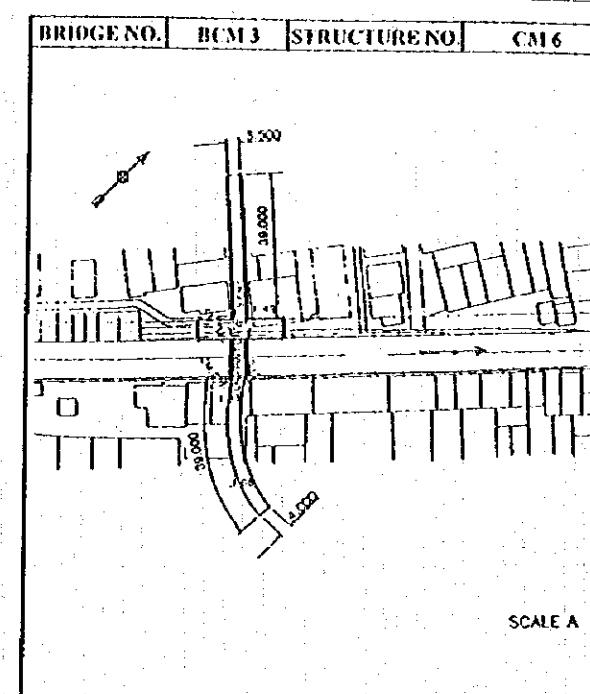
Bridge No.	BIM5		Elevation (m)	Bridge Road	3 413
Bridge Width (m)	Carriageway	11.00	-	Road	4 330
	OTHERS	2 x 0.60		Difference	2 613
	Total	12.20			
Approach Road (Length, m)	Trunk Line	139.00	Stair for Pedestrian (m)		
	Branch Line		Type of Side Protection	RW	



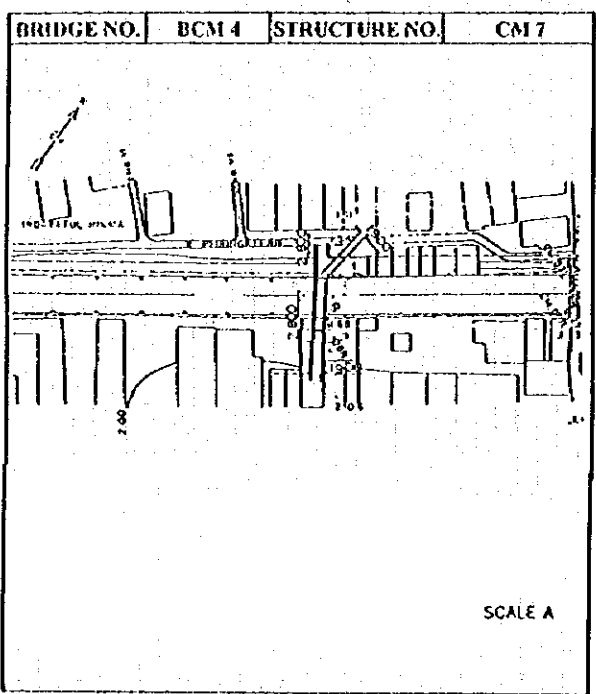
Bridge No.	BCM1		Elevation (m)	Bridge Road	3 218
Bridge Width (m)	Carriageway	4.00	-	Road	2 170
	OTHERS	2 x 0.30		Difference	1 640
	Total	4.60			
Approach Road (Length, m)	Trunk Line	128.00	Stair for Pedestrian (m)		
	Branch Line		Type of Side Protection	RW	



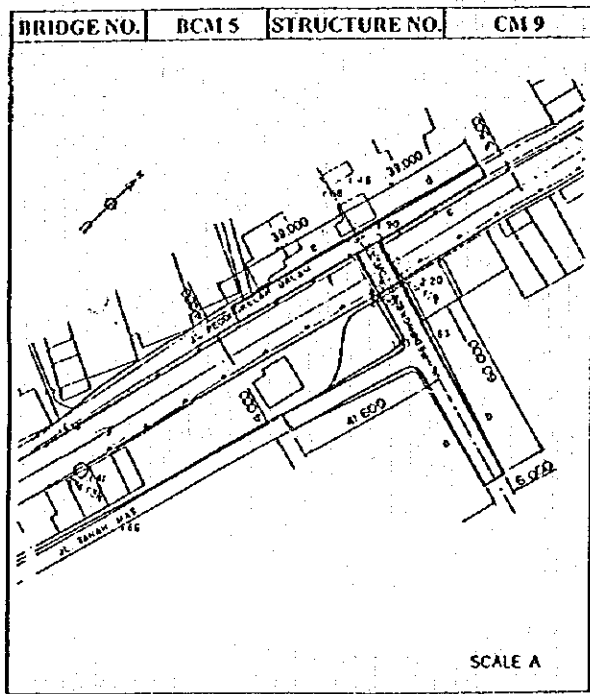
Bridge No.	BCM2		Elevation (m)	Bridge Road	3 271
Bridge Width (m)	Carriageway	4.00	-	Road	1 330
	OTHERS	2 x 0.30		Difference	1 941
	Total	4.60			
Approach Road (Length, m)	Trunk Line	151.00	Stair for Pedestrian (m)		
	Branch Line	99.00	Type of Side Protection	RW	



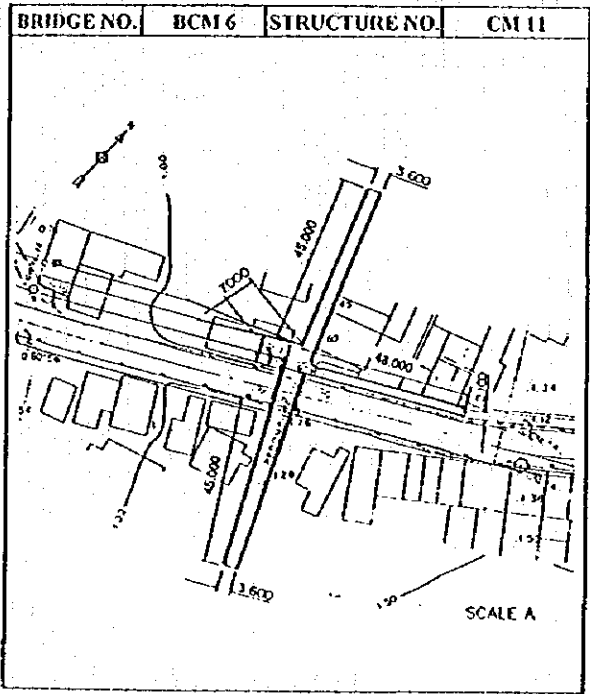
Bridge No.	BCM3		Elevation (m)	Bridge Road	3 274
Bridge Width (m)	Carriageway	4.00	-	Road	1 710
	OTHERS	2 x 0.30		Difference	1 344
	Total	4.60			
Approach Road (Length, m)	Trunk Line	78.00	Stair for Pedestrian (m)		
	Branch Line		Type of Side Protection	RW	



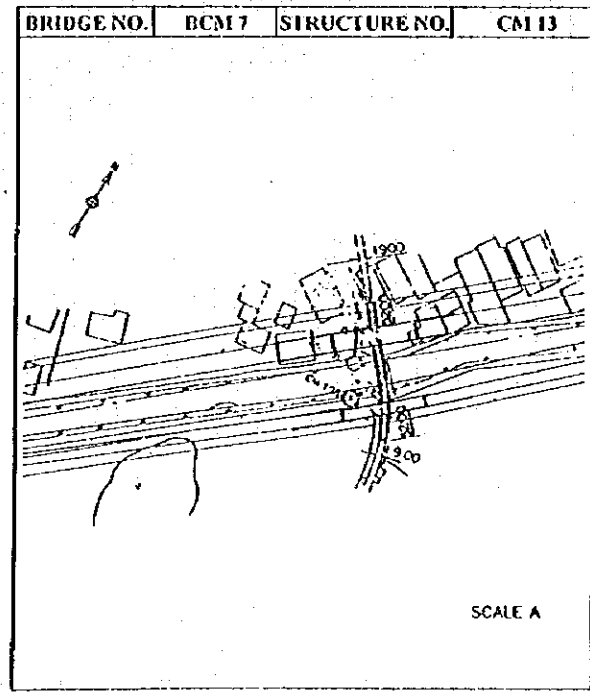
Bridge No.	BCM4		Elevation (m)	Bridge Road	3 056
Bridge Width (m)	Carriageway	1.50	-	Road	1 680
	OTHERS	2 x 0.30		Difference	1 376
	Total	2.10			
Approach Road (Length, m)	Trunk Line		Stair for Pedestrian (m)	1.60	
	Branch Line		Type of Side Protection	WALL	



Bridge No.	BCM5		Elevation (m)	Bridge Road	3 412
Bridge Width (m)	Carriageway	3.40	-	Road	2 000
	OTHERS	2 x 0.60		Difference	1 412
	Total	4.60			
Approach Road (Length, m)	Trunk Line	102.00	Stair for Pedestrian (m)		
	Branch Line	17.00	Type of Side Protection	RW	



Bridge No.	BCM6		Elevation (m)	Bridge Road	3 401
Bridge Width (m)	Carriageway	5.40	-	Road	1 600
	OTHERS	2 x 0.60		Difference	1 801
	Total	6.60			
Approach Road (Length, m)	Trunk Line	97.00	Stair for Pedestrian (m)		
	Branch Line	14.00	Type of Side Protection	RW	



Bridge No.	BCM7		Elevation (m)	Bridge Road	3 401
Bridge Width (m)	Carriageway	1.90	-	Road	2 810
	OTHERS	2 x 0.30		Difference	2 561
	Total	2.50			
Approach Road (Length, m)	Trunk Line		Stair for Pedestrian (m)	10.40	
	Branch Line		Type of Side Protection	WALL	



PREPARED	NO.
CHECKED	DATE
SUBMITTED	
REFERENCE	

MINISTRY OF PUBLIC WORKS  
DIRECTORATE GENERAL OF HUMAN SETTLEMENTS

JAPAN INTERNATIONAL COOPERATION AGENCY  
THE DETAILED DESIGN FOR URBAN DRAINAGE PROJECT  
IN  
THE CITY OF JAKARTA

FILE OF DRAWING  
APPROACH ROAD-5  
(BTM 5, BCM 1,2,3,4,5,6,7)

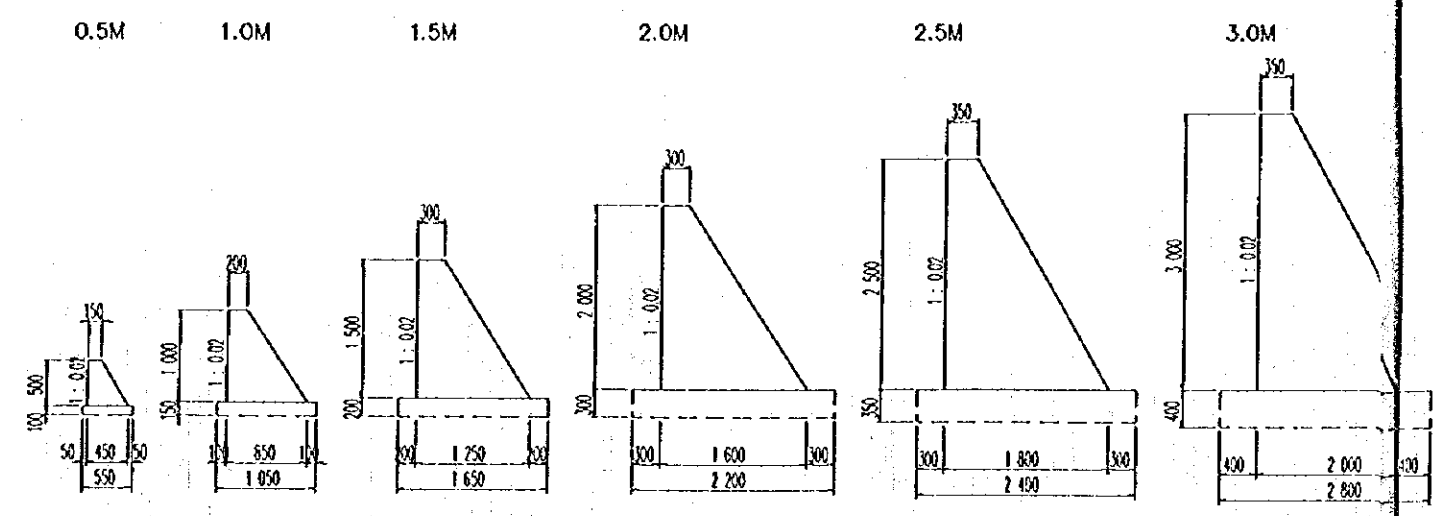
DWG NO.  
J-80-10-005

APPROVED

DATE

SUBSIDIARY WORK OF ACCESS ROAD SCALE A

RETAINING WALL SECTION



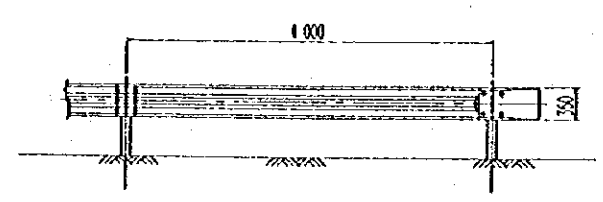
Bill of Quantities per one meter

Height (m)	Inclination	Backfilling	Retaining wall	
			Concrete (m <sup>3</sup> )	Formwork (m <sup>2</sup> )
0.50	0.02	Sandy soil	0.150	1.078
1.00			0.525	2.182
1.50			1.163	3.260
2.00			1.900	4.384
2.50			2.688	5.366
3.00			3.825	6.494

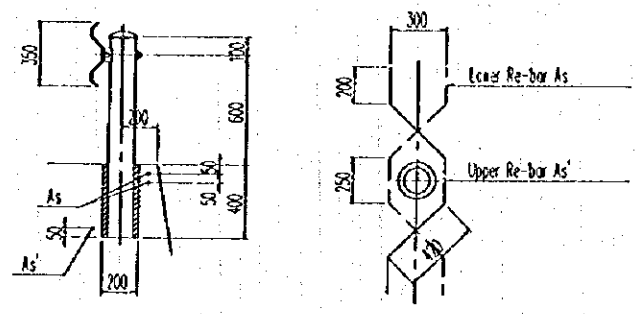
REMARKS

- 1) Retaining Wall of Access Road is to be selected among three standards standards corresponding to each height.
- 2) drainage holes are properly implemented with the engineer's indication.
- 3) Sealing joints shall be provided at less than intervals.

GUARD RAIL SIDE VIEW



RE-BAR ARRANGEMENT SCALE B

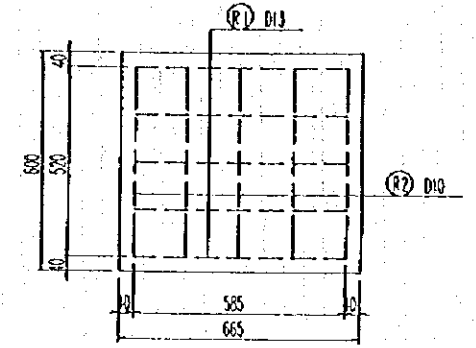
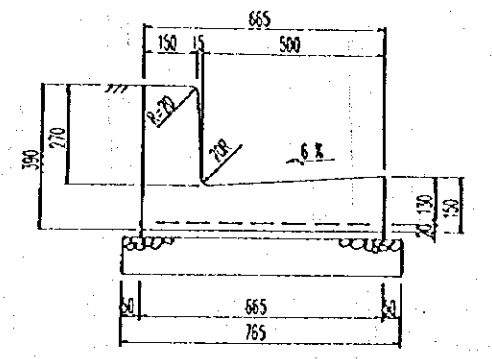


Re-bar diameter	Re-bar weight per 10 pieces
As 2015	50.30
As 2013	26.14 kg

REMARKS

- 1) Posts are constructed at 4m intervals
- 2) Products of manufacture can be used after the engineer approvals

DRAINAGE BLOCK SCALE C



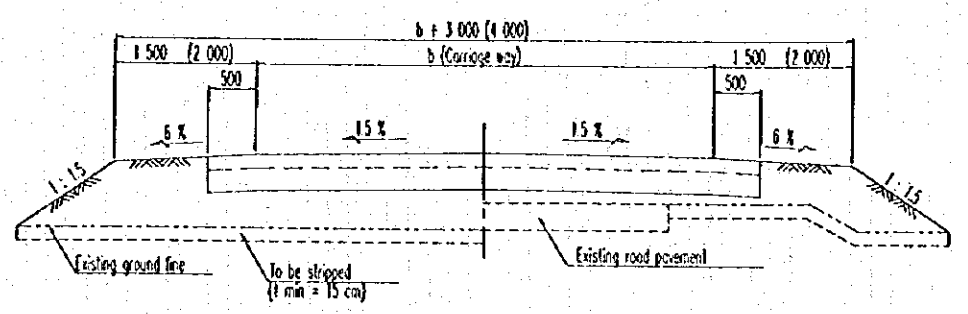
Bill of Quantities per 10m			
Basic material (m <sup>2</sup> )	Number	Leveling mortar (m <sup>3</sup> )	Filling mortar (m <sup>3</sup> )
0.165	16.5	0.133	0.133

	Re-Bar per one block		
	Diameter	Length (mm)	Weight (kg)
R1	D13	565	5
R2			2.940

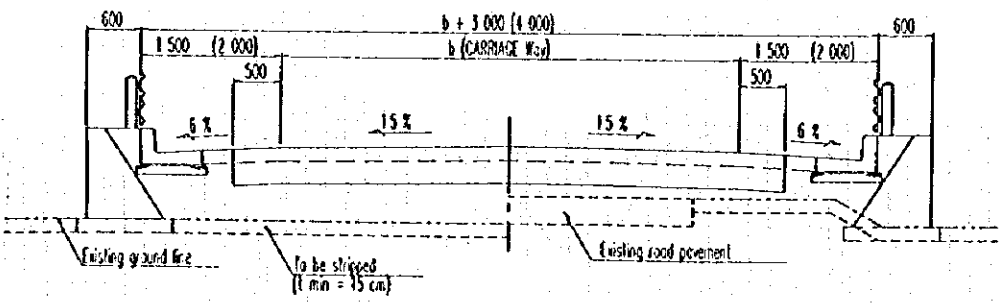
REMARKS

- 1) Concrete strength :  $\sigma_k = 240 \text{ kg/cm}^2$

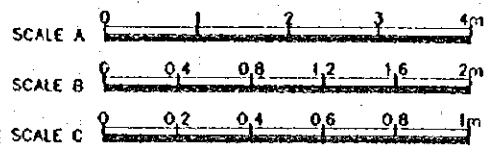
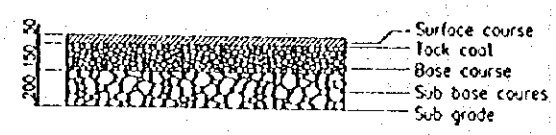
SLOPE PROTECTION SLOPE TYPE IN FIELD AREA



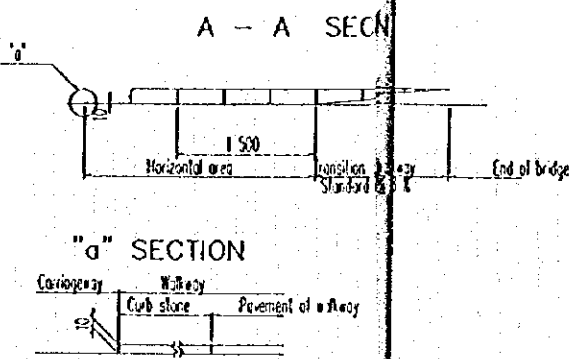
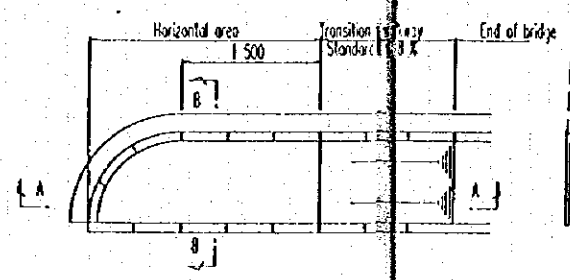
RETAINING WALL IN RESIDENT AREA



PAVEMENT DETAILS

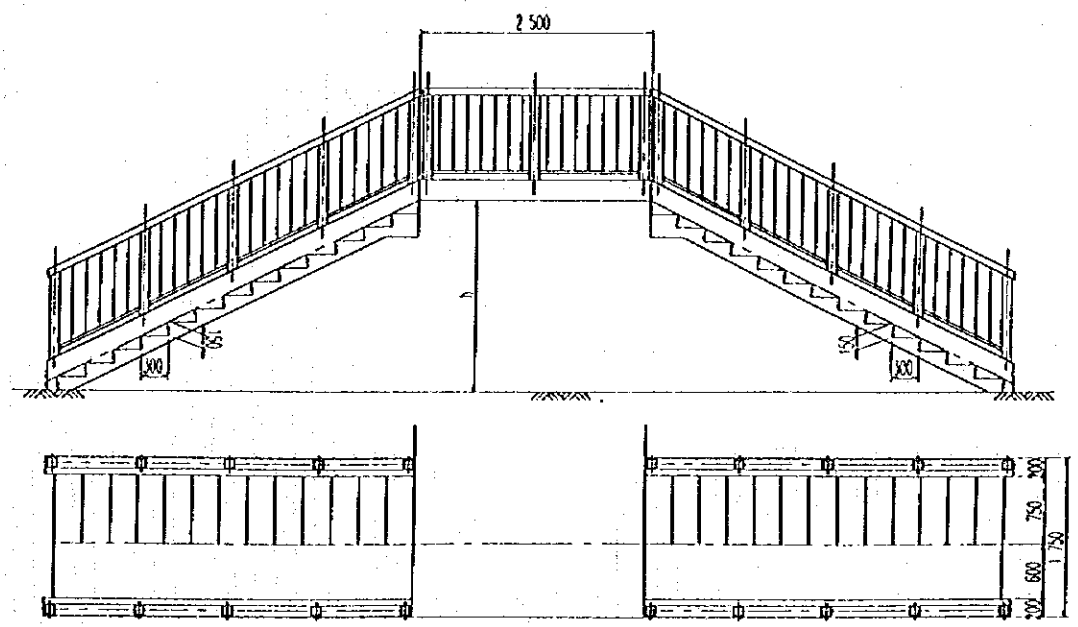


TRANSOM DETAIL



B - B SECTION

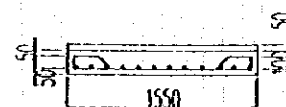
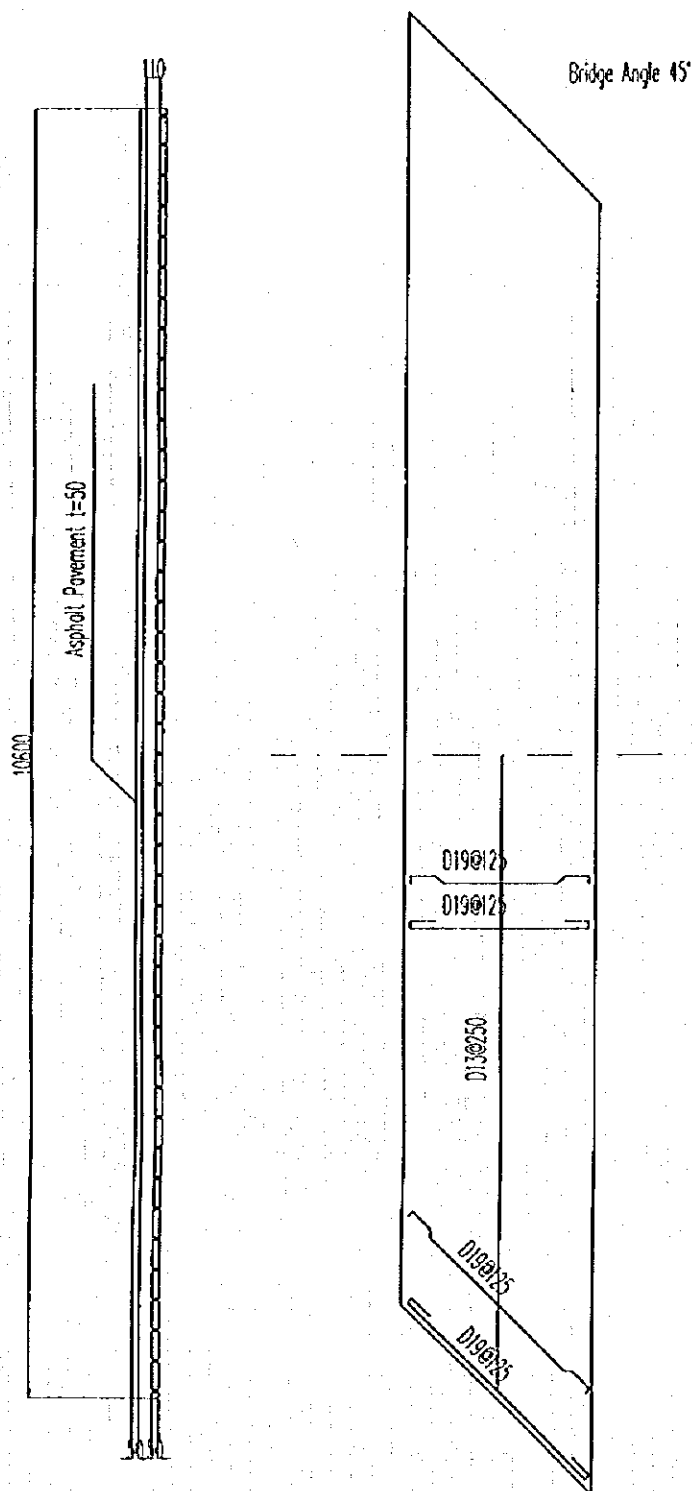
FOOT BRIDGE



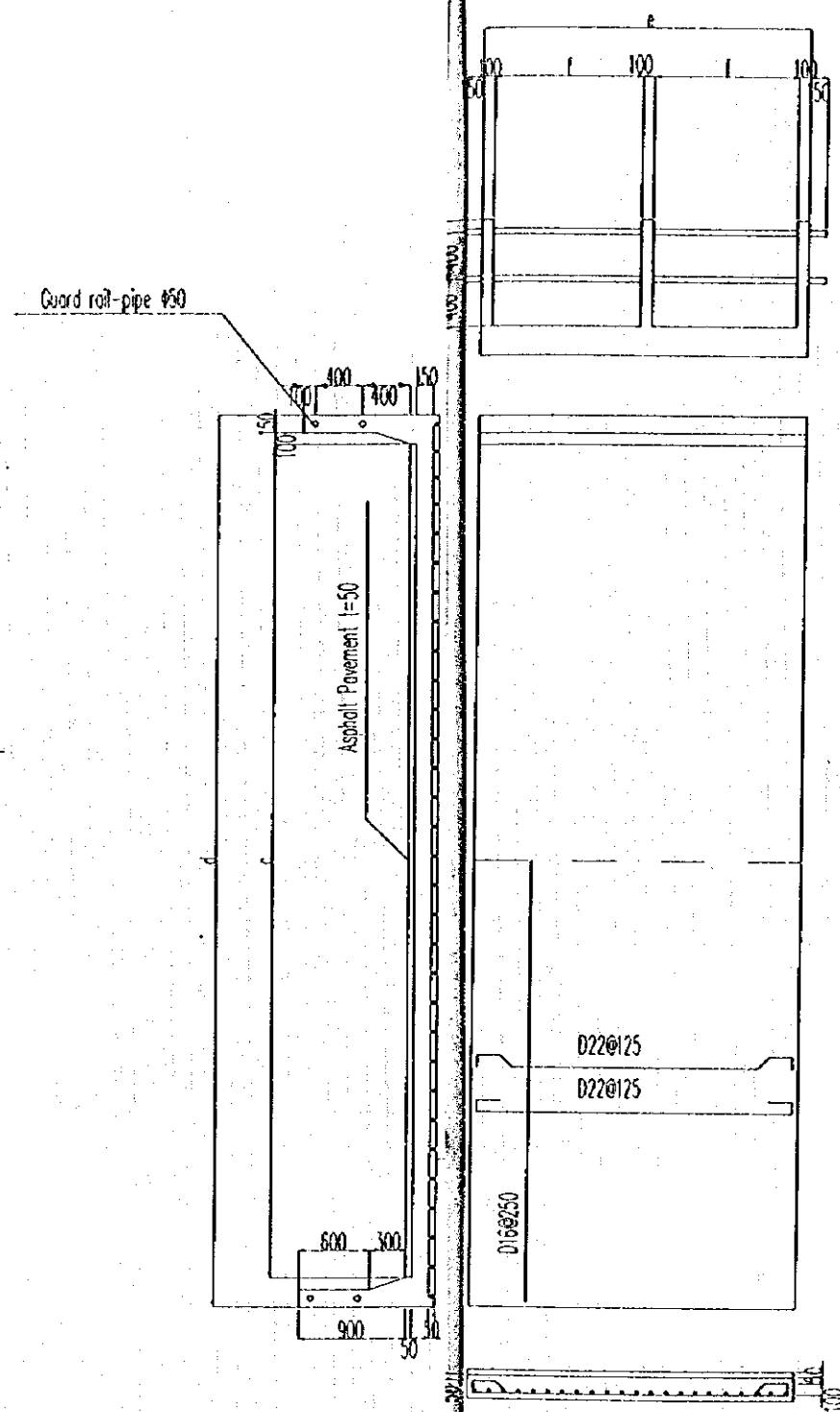
REFERENCE	PREPARED	MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HUMAN SETTLEMENTS	TITLE OF DRAWING	APPROVED
	CHECKED		SUBSIDIARY WORK OF ACCESS ROAD	
	SUBMITTED DATE	JAPAN INTERNATIONAL COOPERATION AGENCY THE DETAILED DESIGN FOR URBAN DRAINAGE PROJECT THE CITY OF JAKARTA	DWG NO	DATE
			J-80-10-009	

# IN-SITU BRIDGE RE-BAR ARRANGEMENT OF SUPER STRUCTURE

BMM12

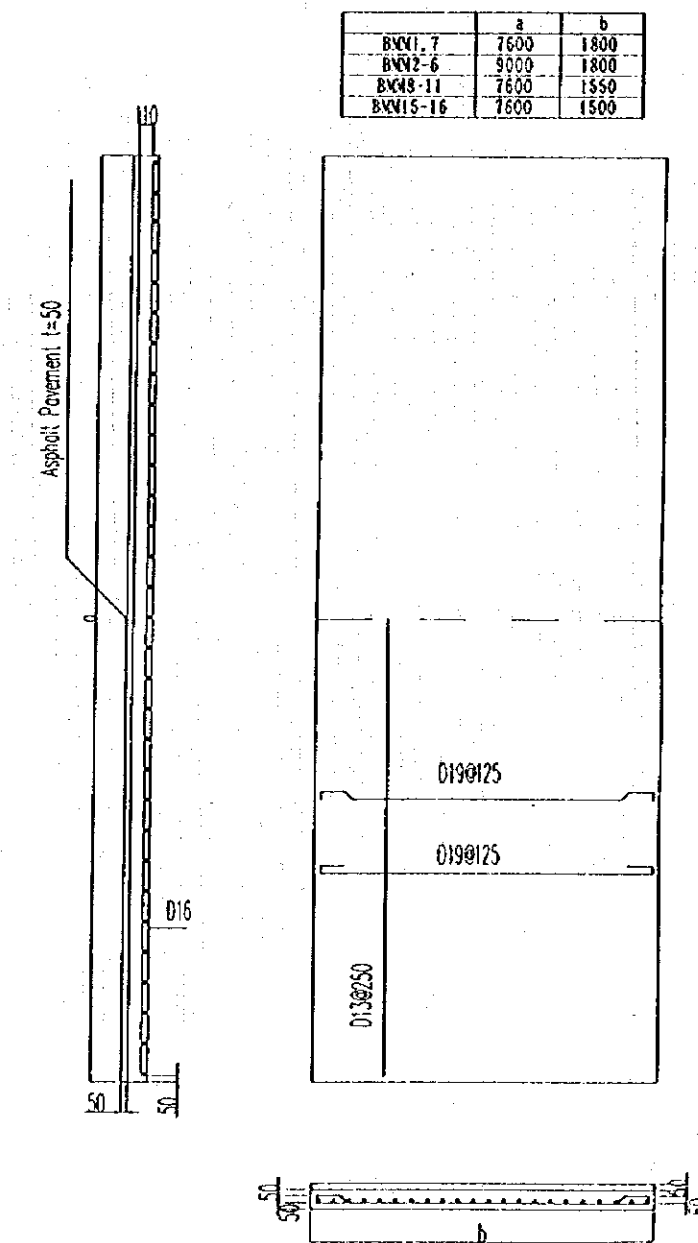


BMM13,14,BNM1-4,BKE19,20

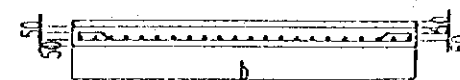


	d	e	f
BMM13,14	7600	2500	1100
BNM1-4	8200	2500	1100
BKE19,20	7600	2300	1000

BMM1-11,15,16



	a	b
BNM1-7	7600	1800
BNM2-6	9000	1800
BNM8-11	7600	1550
BNM15-16	7600	1500

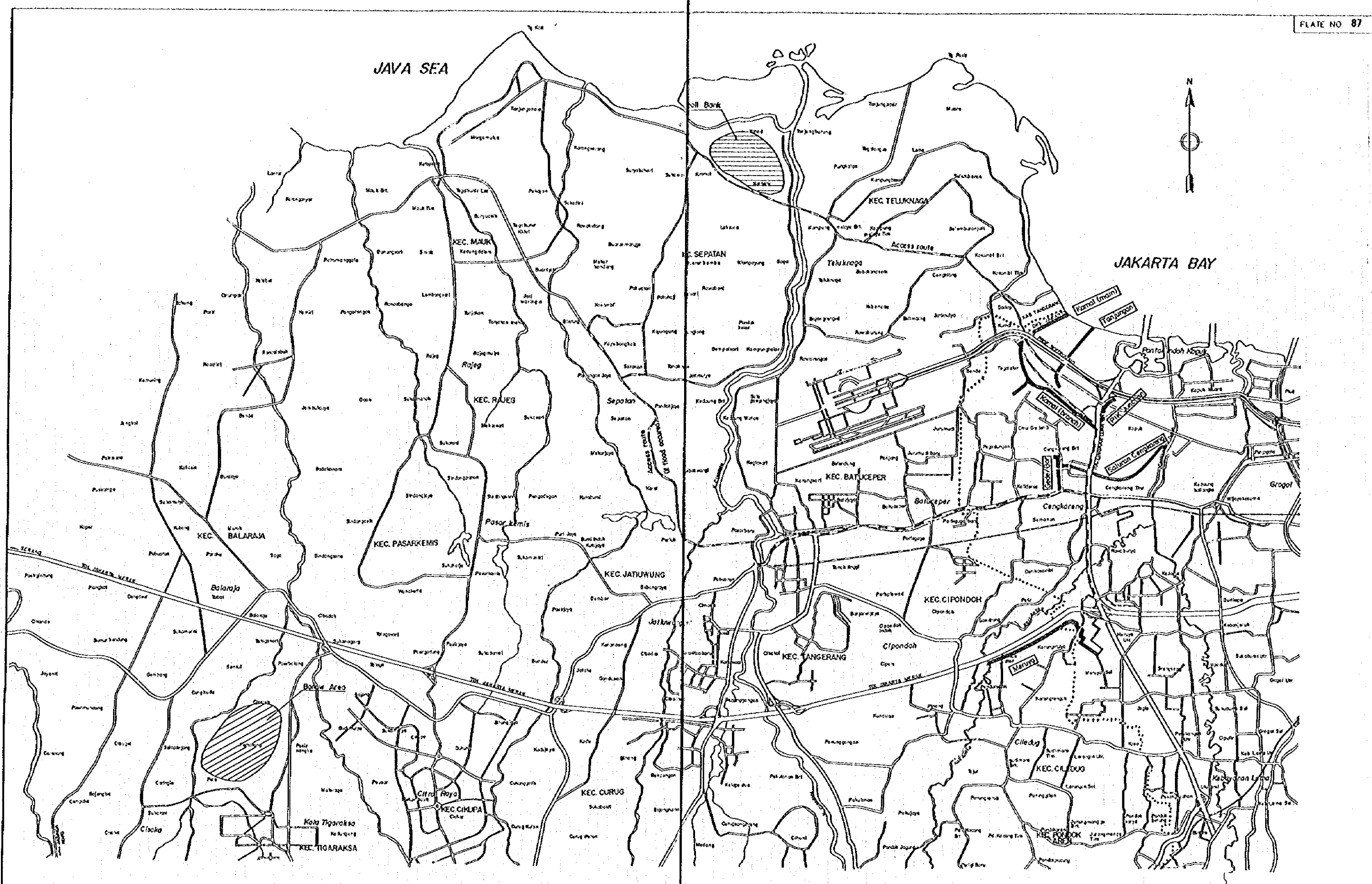


REFERENCE _____ _____ _____	PREPARED _____ CHECKED _____ SUBMITTED _____ DATE _____	MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HUMAN SETTLEMENTS  JAPAN INTERNATIONAL COOPERATION AGENCY THE DETAILED DESIGN FOR URBAN DRAINAGE PROJECT IN THE CITY OF JAKARTA	TITLE OF DRAWING IN-SITU SLAB BRIDGE  DWG NO. J-90-10-001  APPROVED _____ DATE _____
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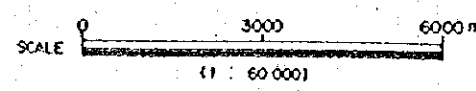
Description	Quantity	2003												2004												2005							
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	J	A	S	O
<b>KEY EVENT</b>	Notice to Proceed	Contract Period : 27 months																								Completion							
PREPARATORY WORKS 1. Temporary Buildings 2. Temporary Facilities	L.S. L.S.	Demolition																															
<b>TANJUNGAN DRAINAGE CHANNEL</b> I Section TM00+0m-TM17+0m Channel excavation, TM00+0m-TM17+0m Levee, Right, TM00+0m-TM16+47m Levee, Left, TM00+0m-TM16+58m Bridge BTM-1 at TM10+16m, 3-span, Roadway	1,430 lin.m 1,430 lin.m 1,442 lin.m 1,454 lin.m 13.5m(S)x5.4m(W)	Grading Grading Grading																															
II Section TM18+0m-TM25+5m Channel excavation, TM18+0m-TM25+5m Levee, Right, TM18+0m-TM22+10m Levee, Left, TM18+28m-TM21+44m L-shape wall, TM23+16m-TM25+5m Revelment II, Right, TM21+79m-TM23+16m Revelment II, Left, TM21+19m-TM23+16m Sluiceway STM-1R at TM25-13m w/slide gate, 1-lane Sluiceway STM-1L at TM25-13m w/slide gate, 1-lane Bridge BTM-3 at TM25-4m, 2-span, Roadway	527 lin.m 527 lin.m 326 lin.m 309 lin.m 14 lin.m 143 lin.m 204 lin.m 0.8m(W)x0.300m(L) 0.8m(W)x0.300m(L) 11.9m(S)x8.0m(L)	Grading Grading Grading																															
III Section TM25+5m-EP Channel excavation, TM25+5m-EP Inspection road, Right, TM26+29m-EP Concrete wall, TM25+5-EP Sluiceway STM-2L at TM30-10m w/slide gate, 2-lane Sluiceway STM-2R at TM30+5m w/stop gate, 1-lane Sluiceway STM-3L at TM30+16m w/slide gate, 1-lane Sluiceway STM-4L at TM35+13m w/slide gate, 1-lane Sluiceway STM-3R at TM35+0m w/slide gate, 1-lane Bridge BTM-4 at TM30-6m, 2-span, Roadway Bridge BTM-5 at TM33-4m, 2-span, Roadway Bridge BTM-6 at TM35+1m, 2-span, Pedestrian	553 lin.m 553 lin.m 495 lin.m 553 lin.m 1.0m(W)x0.300m(L) 0.4m(W)x6.050m(L) 0.8m(W)x0.300m(L) 1.0m(W)x0.3m(L) 0.8m(W)x5.700m(L) 9.6(S)x11m(W) 9.6(S)x11m(W) 8.4m(S)x1.9m(W)	Grading																															
<b>PK JUNCTION DRAINAGE CHANNEL</b> I Section EP-NM32+0m Channel excavation, EP-NM32+0m Concrete culvert, EP-NM32+0m Bridge BNM-1 at NM32-13m, In-situ slab, Roadway	455 lin.m 455 lin.m 455 lin.m 2.8m(S)x7.0m(W)																																
II Section NM32+0m-EP Channel excavation, NM32+0m-EP Concrete culvert, NM32+0m-EP Sluiceway SNN-1R at NM34+0m w/slide gate, 1-lane Bridge BNM-2 at NM33+7m, In-situ slab, Roadway Bridge BNM-3 at NM34-2m, In-situ slab, Roadway Bridge BNM-4 at NM34-36m, In-situ slab, Roadway	310 lin.m 310 lin.m 310 lin.m 1.1m(W)x0.300m(L) 2.8m(S)x4.0m(L) 2.8m(S)x4.0m(L) 2.8m(S)x4.0m(L)																																

Note: Rainy season : November - April

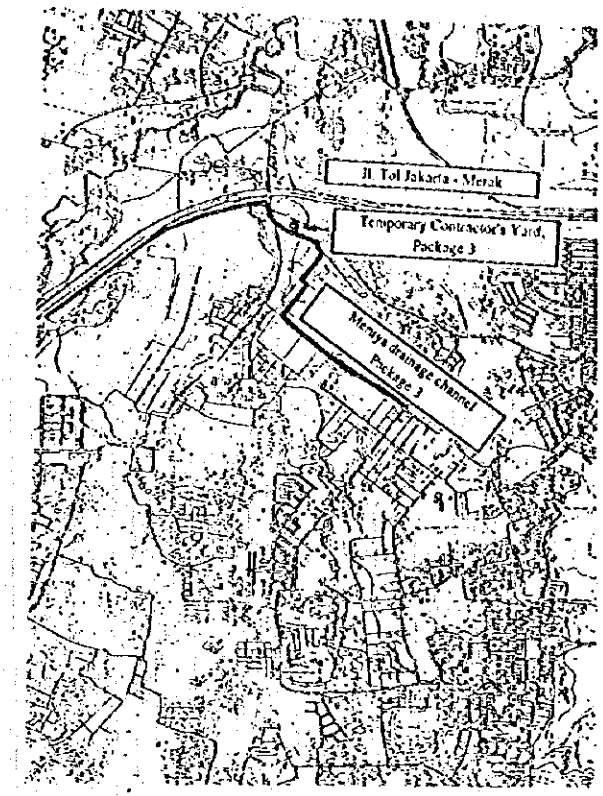
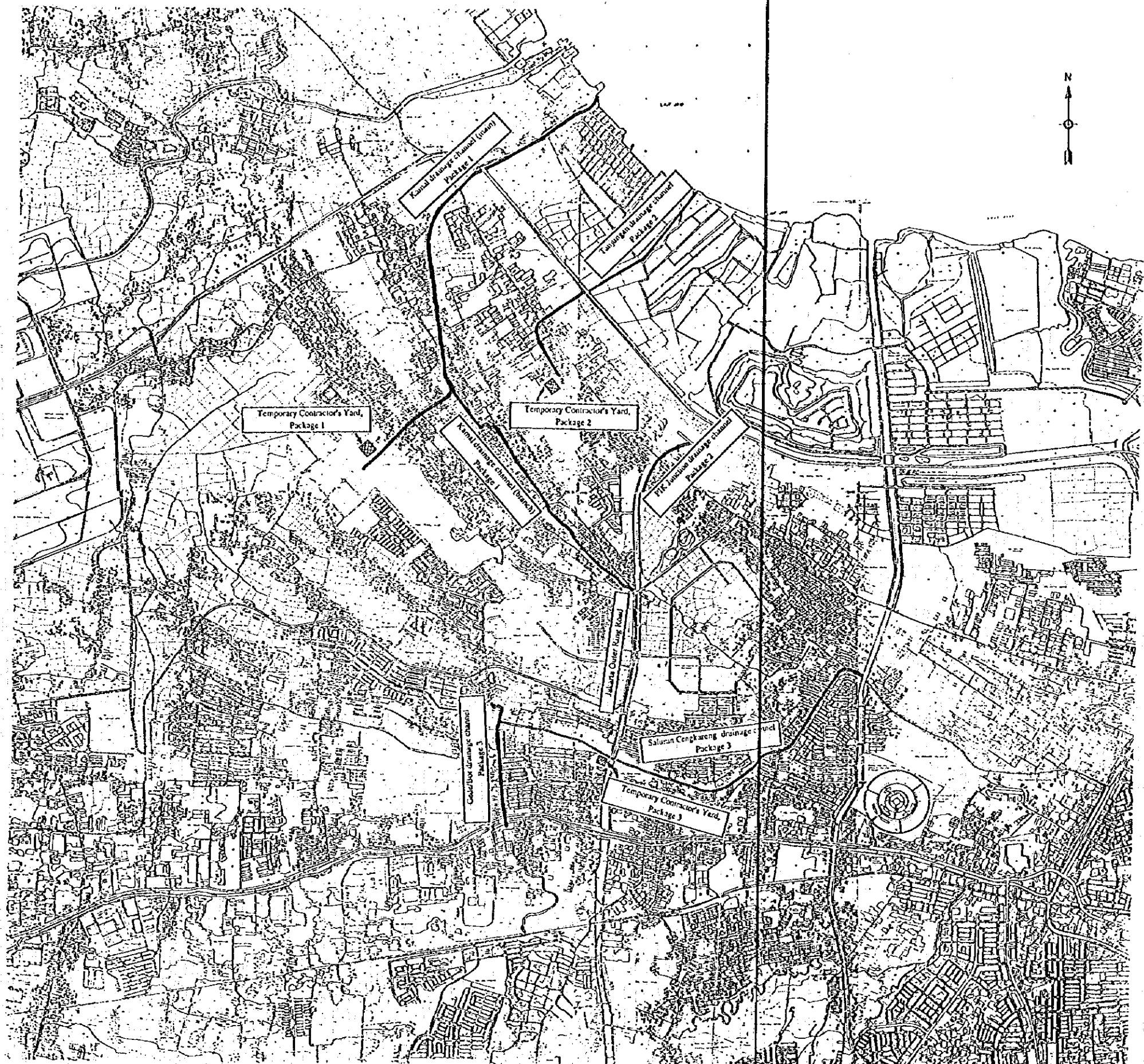
PREPARED.....	MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HUMAN SETTLEMENTS	TITLE OF DRAWING CONSTRUCTION TIME SCHEDULE, PACKAGE 2	APPROVED
CHECKED.....			
SUBMITTED.....	JAPAN INTERNATIONAL COOPERATION AGENCY THE DETAILED DESIGN FOR URBAN DRAINAGE PROJECT IN THE CITY OF JAKARTA	OWG NO. J-95-00-002	DATE
REFERENCE	OWG NO.		



LEGEND  
 --- Access routes



REFERENCE	DVG NO.	PREPARED.....	MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HUMAN SETTLEMENTS	TITLE OF DRAWING LOCATION MAP OF BORROW AREA AND SPOIL BANK	APPROVED
		CHECKED.....			
		SUBMITTED.....			
		DATE.....			
		JAPAN INTERNATIONAL COOPERATION AGENCY THE DETAILED DESIGN FOR URBAN DRAINAGE PROJECT IN THE CITY OF JAKARTA		DWG NO. J-95-10-001	DATE

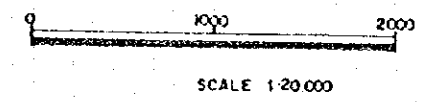


Meruya Area

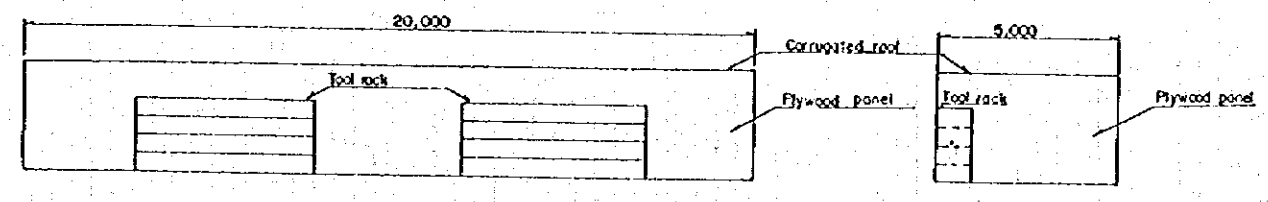
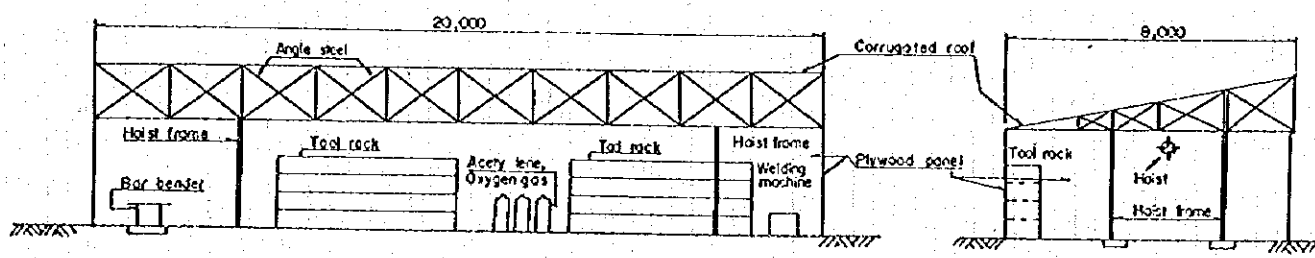
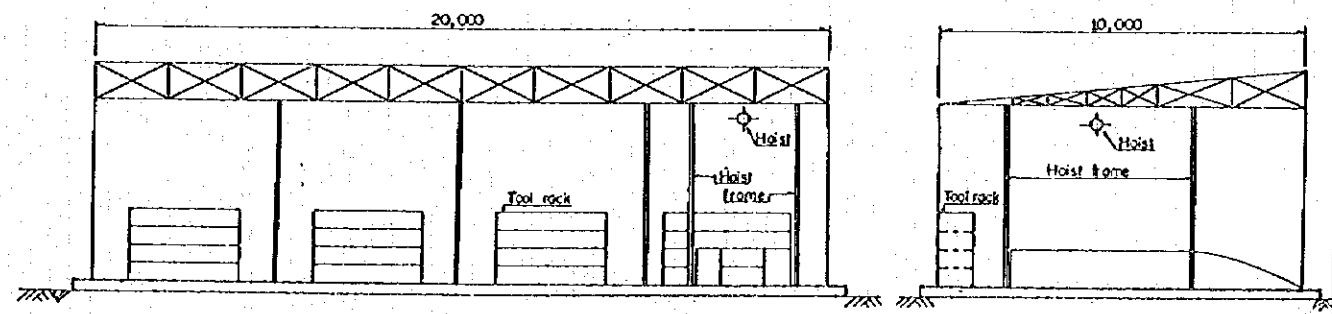
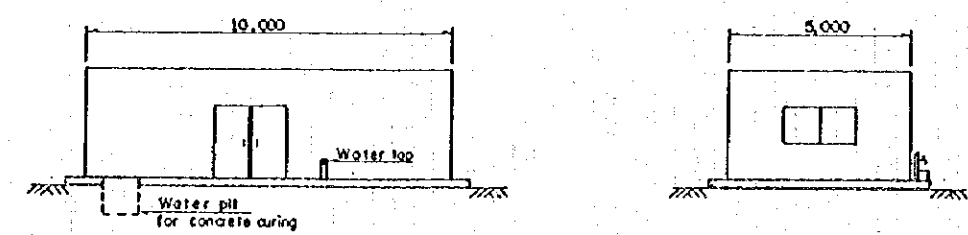
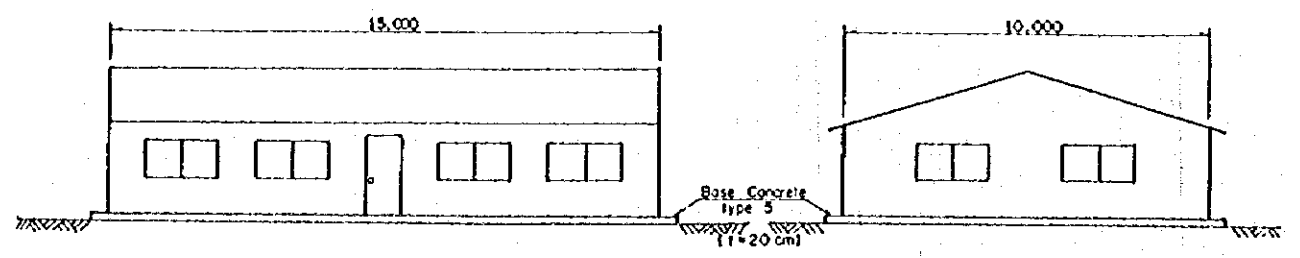
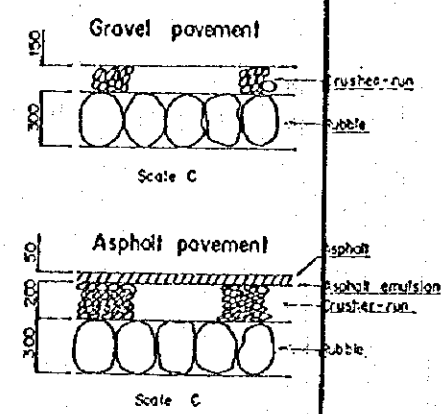
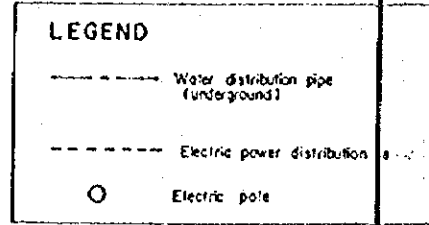
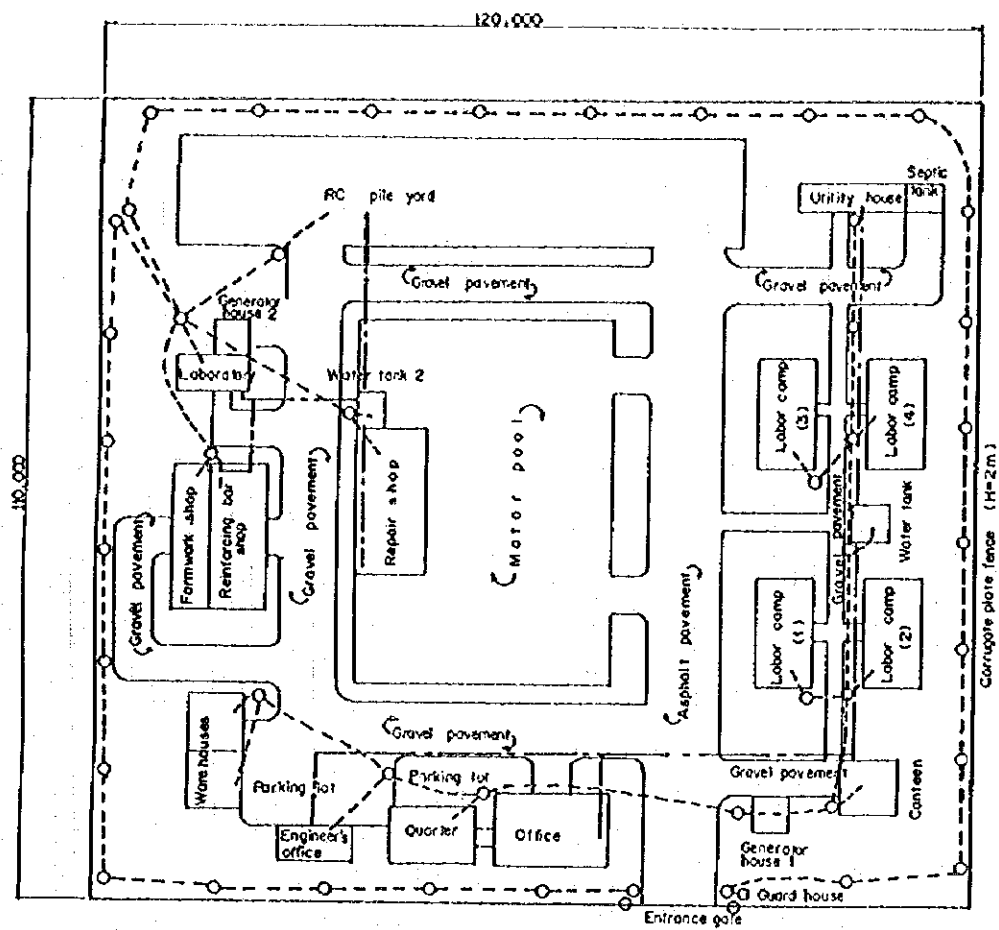
Note:

1. Temporary Contractor's Yard, Package 1. (13,200 m<sup>2</sup>)  
for - Kamal drainage channel (main), and  
- Kamal drainage channel (branch)
  2. Temporary Contractor's Yard, Package 2. (13,200 m<sup>2</sup>)  
for - Tonjangan drainage channel, and  
- PIK Junction drainage channel
  3. Temporary Contractor's Yard, package 3. (13,200 m<sup>2</sup> & 1,000 m<sup>2</sup>)  
for - Gede/Bor drainage channel,  
- Saluran Cengkareng drainage channel, and  
- Meruya drainage channel
- \*Temporary Contractor's Yard contains office, quarter, labor camp, motor pool, repair shop, warehouse, work shop, guard house, laboratory and facilities such as telecommunication system, water supply and sewage system and power supply system.

Cengkareng West Area

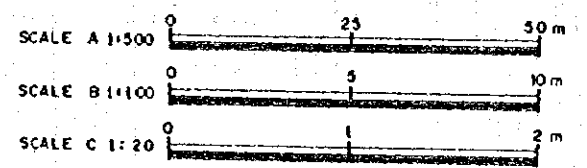


REFERENCE	D/C NO.	PREPARED.....	MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HUMAN SETTLEMENTS	TITLE OF DRAWING	APPROVED
		CHECKED.....		JAPAN INTERNATIONAL COOPERATION AGENCY THE DETAILED DESIGN FOR URBAN DRAINAGE PROJECT IN THE CITY OF JAKARTA	
		SUBMITTED.....		DWG NO.	DATE
		DATE.....		J-95-20-001	

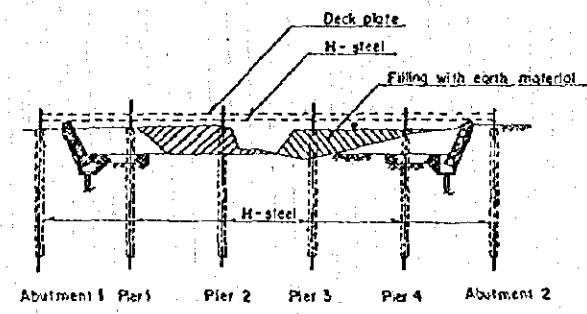
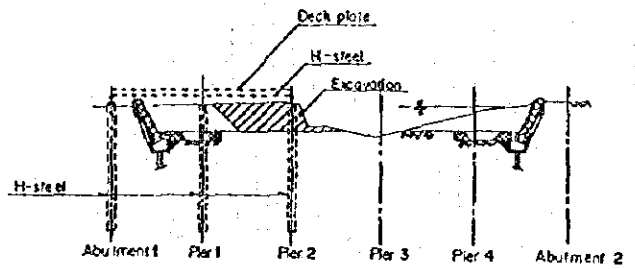
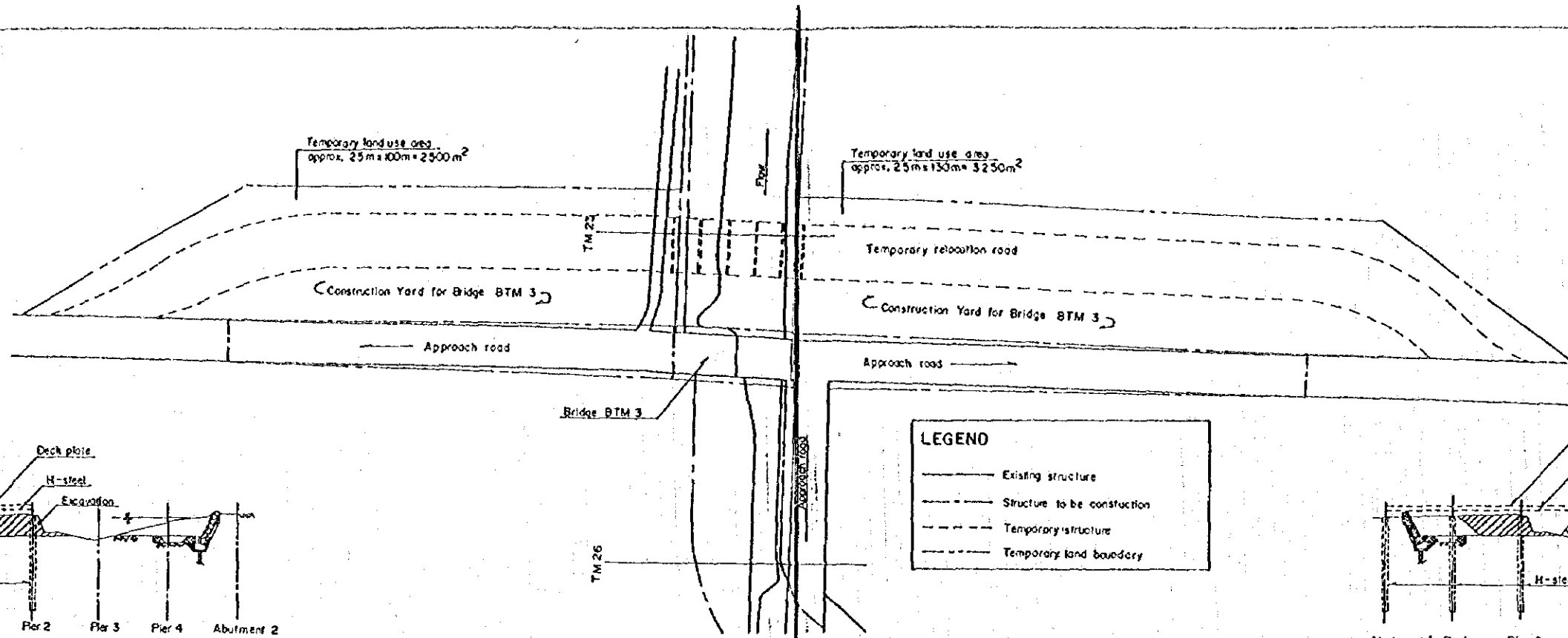


Building	Dimension (m)			Nos.	Area (sq m)	Material		Facility / Remarks	Water Demand		Power Demand	
	Length	Width	Height			Roof	Wall		Facility	Water supply	Facility	Power supply
Office	15	10	4	1	150	Wood	Brick	Office equipment and furniture	System 1	1 Office	12 kW	
Engineer's office	10	5	4	1	50	Wood	Brick	Office equipment and furniture	2 Engineer's office	5 kW		
Quar	12	8	4	1	96	Wood	Brick	Furniture	3 Quarter	8 kW		
Labor camp	15	8	4	4	480	Wood	Wood	Furniture	4 Labor camp	12 kW		
Canteen	8	7.5	3	1	60	Wood	Wood	Furniture	5 Canteen	5 kW		
Utility house	15	4	3	1	60	Wood	Brick	Washrooms with shower and septic tank	6 Utility house	3 kW		
Guard house	2	2	3	1	4	Wood	Brick	Furniture	7 Watchhouse	1 kW		
Laboratory	10	5	3	1	50	Corrugate plate	Plywood panel	Testing equipment	Total	45 kW		
Washhouse	8	7.5	3	2	120	Wood	Wood	Rack and base plate	Peak factor	1.2 times		
Repair shop	20	10	5	1	200	Corrugate plate	Plywood panel	Hoist, 3 ton : 3 m span x 5 m (L)	Demand Factor	0.7		
Re-bar shop	20	8	3	1	160	Corrugate plate	Plywood panel	Hoist, 0.5 ton : 3 m span x 13 m (L)	Load Factor	0.8		
Formwork shop	20	5	3	1	100	Corrugate plate	Plywood panel	Tool rack	Demand	48 kW		
Generator house	5	5	3	2	50	Wood	Brick	Cooler	System 2			
Total					1,580				1 Laboratory	12 kW		

NOTE: Temporary Contractor's yard is stripped (1-50cm approx) and embanked by borrowed earth material in a thickness of 2m (approx)

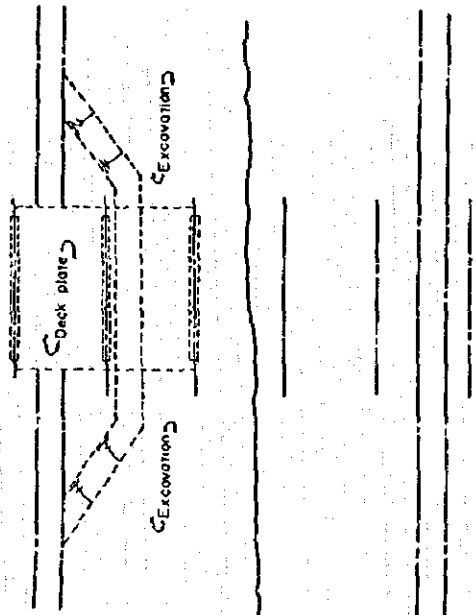
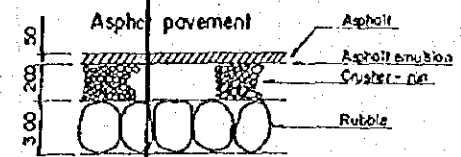


PREPARED	MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HUMAN SETTLEMENTS	TITLE OF DRAWING GENERAL LAYOUT PLAN OF CONTRACTOR'S TEMPORARY YARD	APPROVED
CHECKED	JAPAN INTERNATIONAL COOPERATION AGENCY THE DETAILED DESIGN FOR URBAN DRAINAGE PROJECT IN THE CITY OF JAKARTA	DWG NO. J-95-20-002	DATE
SUBMITTED			
DATE			
REFERENCE	DWG NO.		



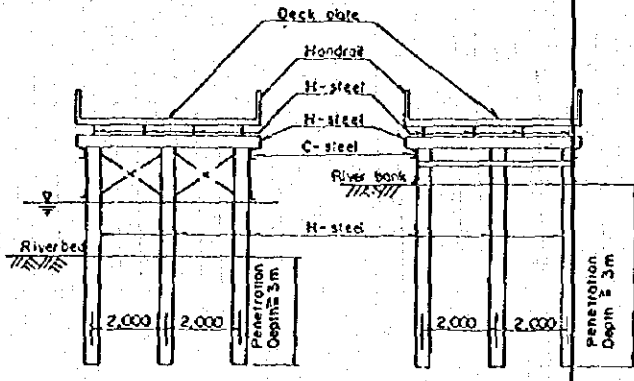
TEMPORARY RELOCATION ROAD AND BRIDGE FOR BRIDGE BTM 3

No scale



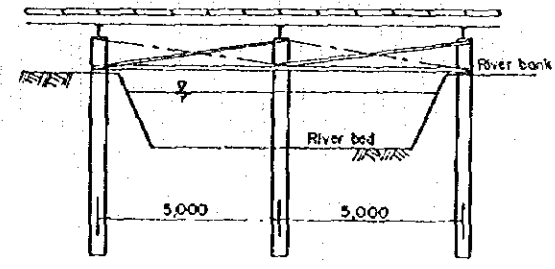
TEMPORARY BRIDGE CONSTRUCTION of 1ST STAGE

No scale



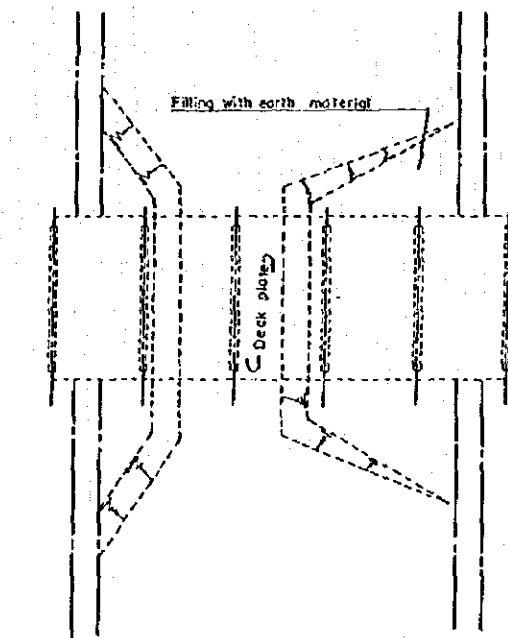
Temporary bridge, pier

Temporary bridge, abutment



Temporary bridge, side view

TEMPORARY BRIDGE (No scale)



TEMPORARY BRIDGE CONSTRUCTION at 2ND STAGE

No scale

Work Sequence of Temporary Bridge Construction, 1st Stage

- Step 1: H-shape steel supports are driven at the Piers 1 and 2 and Abutment 1.
- Step 2: Excavation in the existing drainage channel on the left half is carried out. Sand bags are provided on the excavated slope, where erosion may occur. On the same time, each H-shape steel support as a member of sub-structure is connected by L-shape steel and C-shape steel.
- Step 3: H-shape steel girders on a sub-structure and beams between sub-structures are erected as a part of superstructure between Abutment 1 and Pier 2. Following that, deck plates are placed on the beams, and steel pipes for handrail and the deck plates are bolted between Abutment 1 and Pier 2.

Removal of the temporary Bridge

- Step 1: After construction of permanent bridge BTM 3, removal of the superstructures is carried out from Abutment 1 to Abutment 2. On the same time, L-shape steel and C-shape steel are disconnected from H-shape steel supports.
- Step 2: Extract of H-shape steel support is carried out at Piers 3 and 4 and Abutment 2.
- Step 3: The filled earth material on the right half of the existing channel is removed to the left half of the channel to cover the area of Pier 2.
- Step 4: Extract of H-shape steel support is carried out at Abutment 1 and Piers 2 and 3.

Work Sequence of Temporary Bridge Construction, 2nd Stage

- Step 4: Filling with earth material is carried out on the right half of the existing drainage channel to cover the area of Piers 3 and 4.
- Step 5: H-shape steel supports are driven at the Piers 3 and 4 and Abutment 2.
- Step 6: Each H-shape steel support as a member of sub-structure is connected by L-shape steel and C-shape steel.
- Step 7: H-shape steel girders on a sub-structure and beams between sub-structures are erected as a part of superstructure between Pier 3 and Abutment 2. Following that, deck plates are placed on the beams, and steel pipes for handrail and the deck plates are bolted between Pier 3 and Abutment 2.
- Step 8: H-shape steel girders on a sub-structure and beams between sub-structures are erected as a part of superstructure between Piers 2 and 3. Following that, deck plates are placed on the beams, and steel pipes for handrail and the deck plates are bolted between Pier 2 and 3.

PREPARED		MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF HUMAN SETTLEMENTS  JAPAN INTERNATIONAL COOPERATION AGENCY THE DETAILED DESIGN FOR URBAN DRAINAGE PROJECT IN THE CITY OF JAKARTA	TITLE OF DRAWING TEMPORARY RELOCATION ROAD AND BRIDGE IN TANJUNGAN DRAINAGE CHANNEL DWG NO. J-95-30-201	APPROVED
CHECKED				DATE
SUBMITTED				
DATE				
REFERENCE	DWG NO.			







