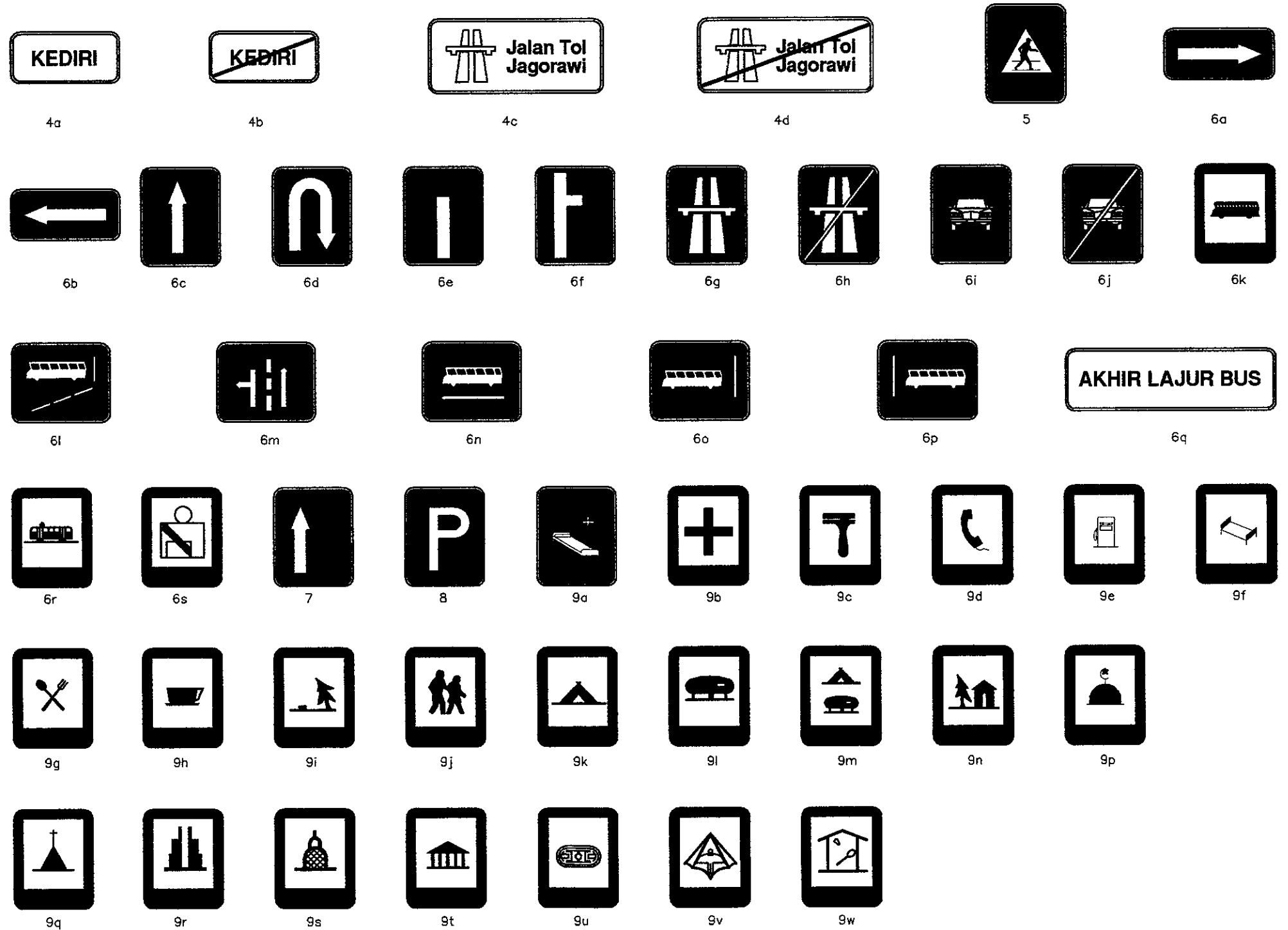


TABLE III. GUIDE SIGNS



- 4a. INCOMING BORDER OF KEDIRI CITY
- 4b. OUT GOING BORDER OF KEDIRI CITY
- 4c. BEGINNING OF TOLL ROAD
- 4d. END OF TOLL ROAD
- 5. PEDESTRIAN CROSSING PLACE
- 6a. ONE WAY RIGHT
- 6b. ONE WAY LEFT
- 6c. STRAIGHT ONE WAY
- 6d. U TURN
- 6e. DEAD END
- 6f. DEAD END DIRECTION RIGHT WAY
- 6g. TOLL ROAD
- 6h. END OF TOLL ROAD
- 6i. VEHICLE ONLY
- 6j. END OF VEHICLE
- 6k. BUS STOP
- 6l. START OF BUS LINE
- 6m. OTHER TRAFFIC
- 6n. SPECIAL BUS LINE
- 6o. ONE DIRECTION BUS LINE
- 6p. TWO DIRECTION BUS LINE
- 6q. END OF BUS LINE
- 6r. FIXED LANE HALT
- 6s. USED SAFETY BELT
- 7. PRIORITY GIVEN TO THE COMING TRAFFIC
- 8. PARKING AREA
- 9a. HOSPITAL
- 9b. FIRST AID OFFICE
- 9c. VEHICLE WORK SHOP
- 9d. PUBLIC TELEPHONE
- 9e. GAS / FUEL STATION
- 9f. HOTEL AND MOTEL
- 9g. RESTAURANT
- 9h. CAFE
- 9i. RECREATIONAL AREA
- 9j. PASSING ZONE
- 9k. CAMPING AREA
- 9l. REST AREA
- 9m. CARAVAN AREA
- 9n. BUNGALOW / VILLE
- 9o. MOSQUE
- 9p. CHURCH
- 9r. HINDUS TEMPLE
- 9s. BUDHIST TEMPLE
- 9t. MUSEUM
- 9u. OPEN SPORT STADIUM
- 9v. GLIDING AREA
- 9w. SPORT HALL

COLOR LEGEND :

- RED
- BLACK
- BLUE

NOTE :
 STANDARD TRAFFIC ROAD SIGNS
 SHOULD CONFORM WITH THE "DINAS PERHUBUNGAN LALU LINTAS DAN ANGKUTAN JALAN SETEMPAT"

ADDITIONAL TRAFFIC SIGNS
 (FOR TRAFFIC IMPLEMENTATION)



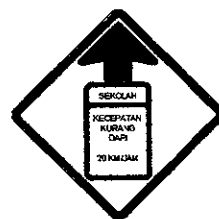
S1-1



W16-7PL



S4-4



S4-5



S4-5a



R3-5L



R3-5R



R3-6L



R3-6R



W20-7a



W2-16



W4-3L



W4-3R

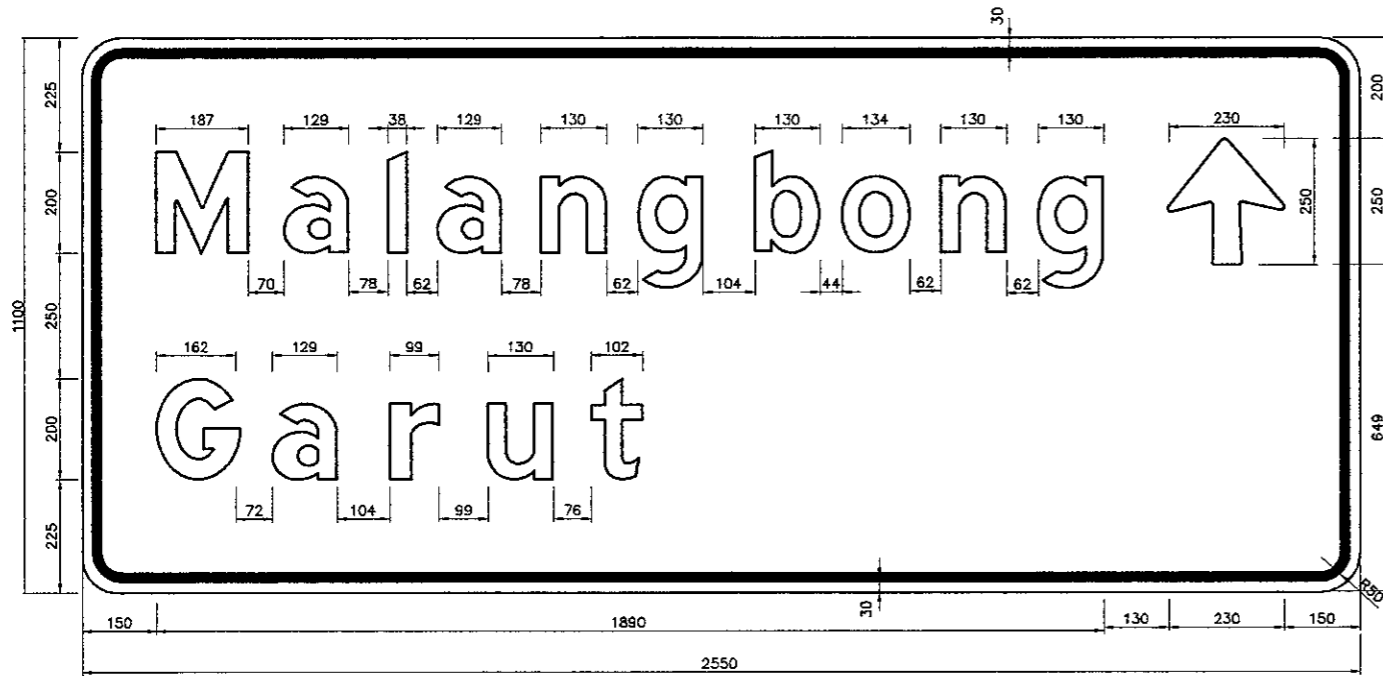
- S1-1 SCHOOL
- S4-5 REDUCED SPEED (SCHOOL) ZONE AHEAD
- S4-5a REDUCED SPEED (SCHOOL) ZONE AHEAD
- R3-5L MANDATORY MOVEMENT LANE CONTROL (LEFT)
- R3-5R MANDATORY MOVEMENT LANE CONTROL (RIGHT)
- R3-6L OPTIONAL MOVEMENT LANE CONTROL (LEFT)
- R3-6R OPTIONAL MOVEMENT LANE CONTROL (RIGHT)
- W20-7a FLAGGER
- W2-16 DISTANCE
- W4-3L ADDED LINE (LEFT)
- W4-3R ADDED LINE (RIGHT)
- W16-7PL LEFT DIAGONAL ARROW PLAQUE

COLOR LEGEND :

- YELLOW
- RED
- BLACK
- BLUE

NOTE :

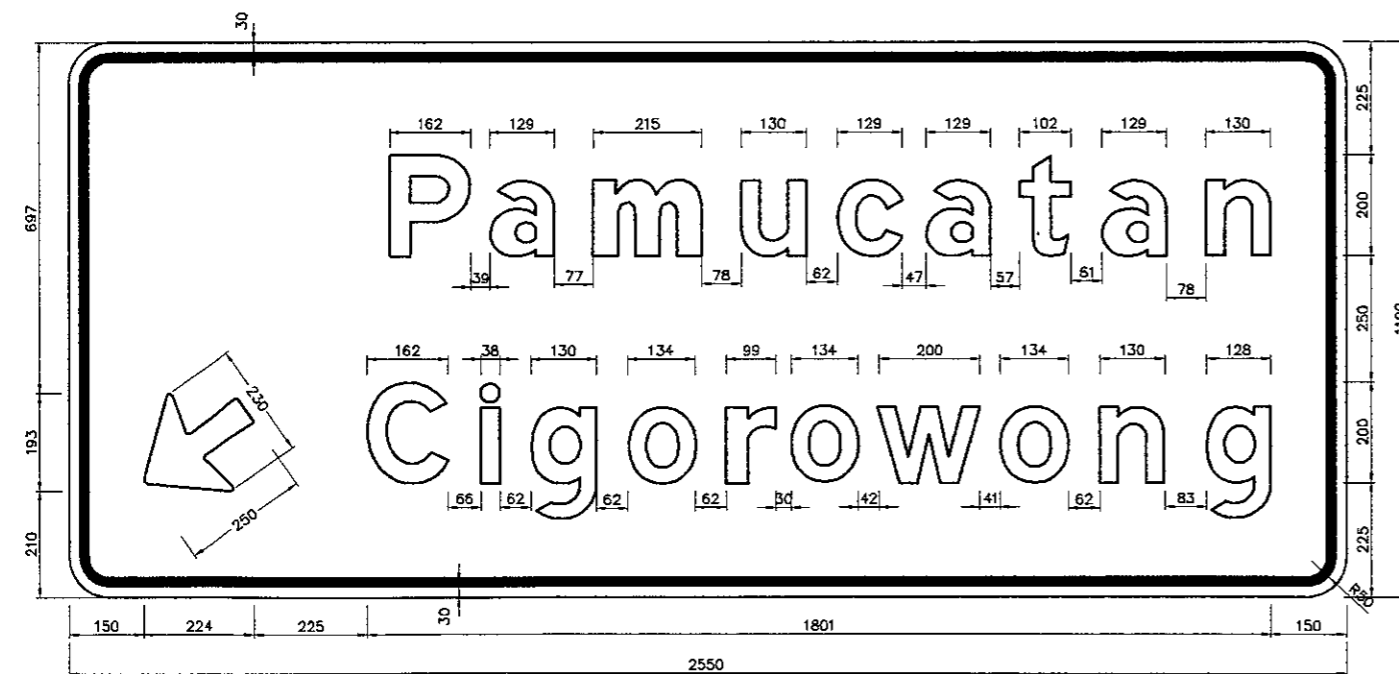
STANDARD TRAFFIC WITH ROAD SIGNS SHOULD CONFORM WITH THE "DINAS PERHUBUNGAN LALU LINTAS DAN ANGKUTAN JALAN SETEMPAT"



GS - 2



GS - 3

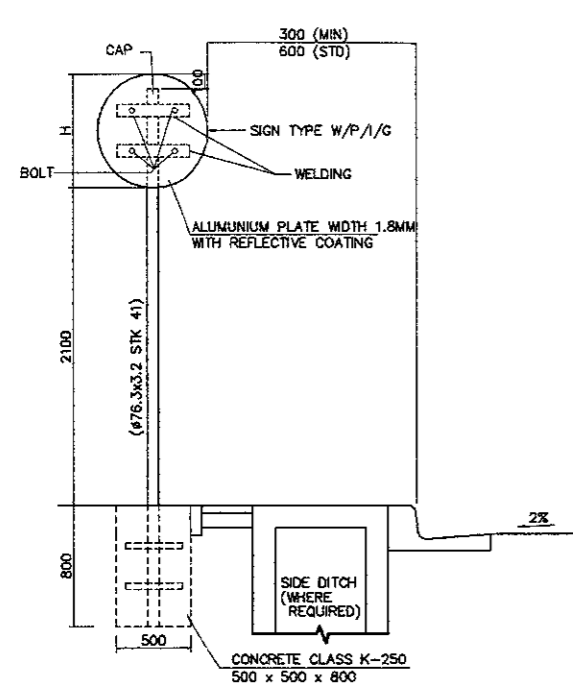


GS - 1

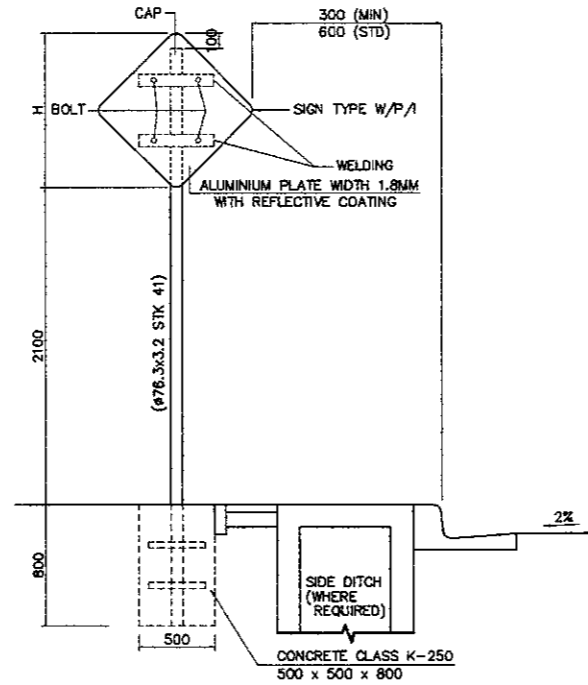
NOTES :

- USED LETTER : REFER TO THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS, FHWA 1977
 : USED TYPE UPPERCASE E(M) 200, LOWERCASE LC 150
- USED COLOUR : BACKGROUND : GREEN (REFLECTORIZED) ENGINEERING GRADE (EG)
 LETTER : WHITE (REFLECTORIZED) HIGH INTENSITY
 ARROW : WHITE (REFLECTORIZED) HIGH INTENSITY
 BORDER LINE : WHITE BOLD 30 MM (REFLECTORIZED) HIGH INTENSITY
 CORNER RADIUS : 50 MM

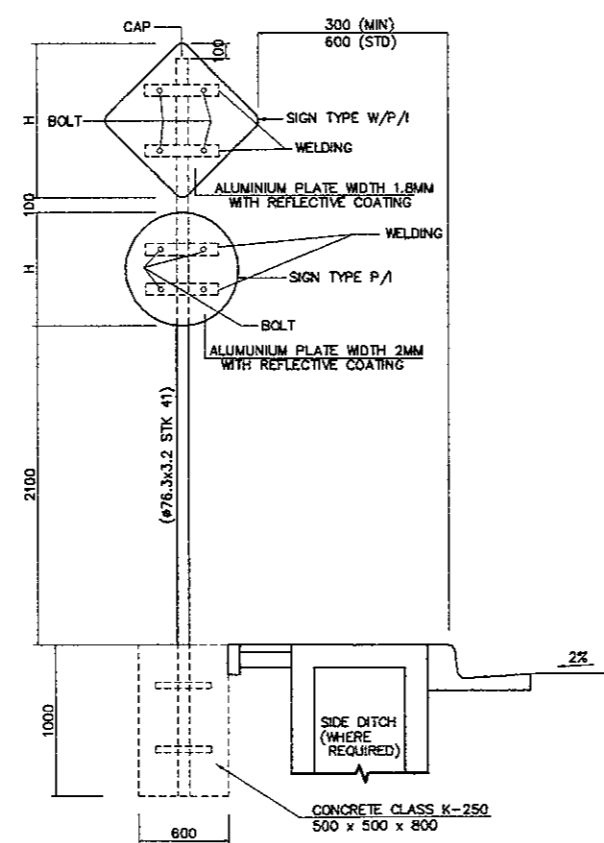
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name R. UENO	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



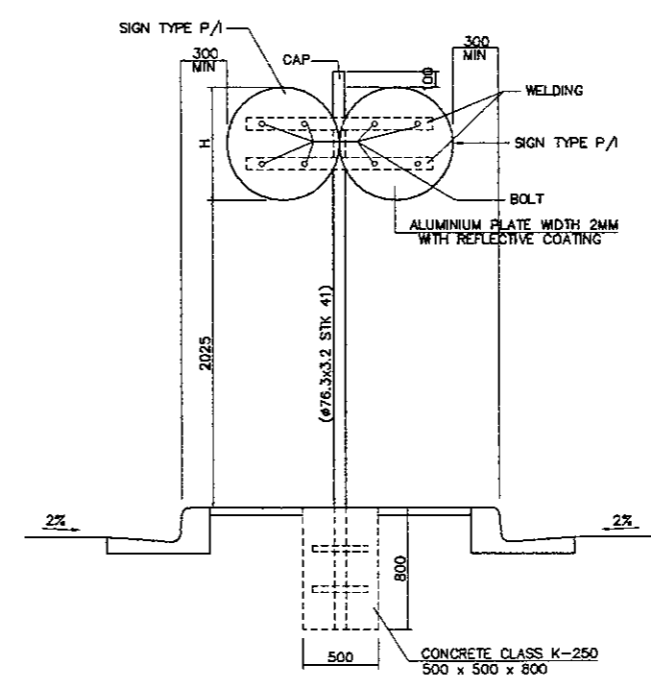
1 TYPE - A
 SCALE 1:50



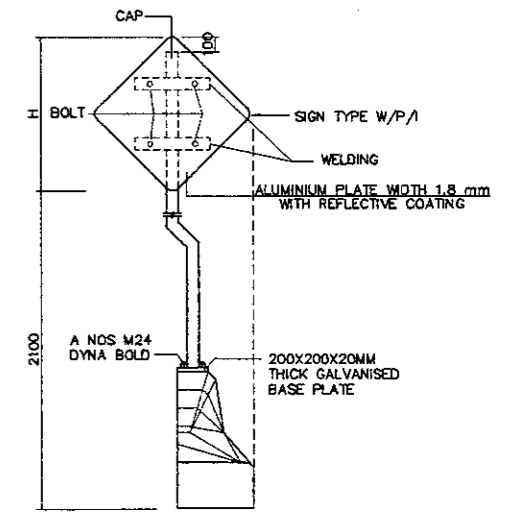
2 TYPE - B
 SCALE 1:50



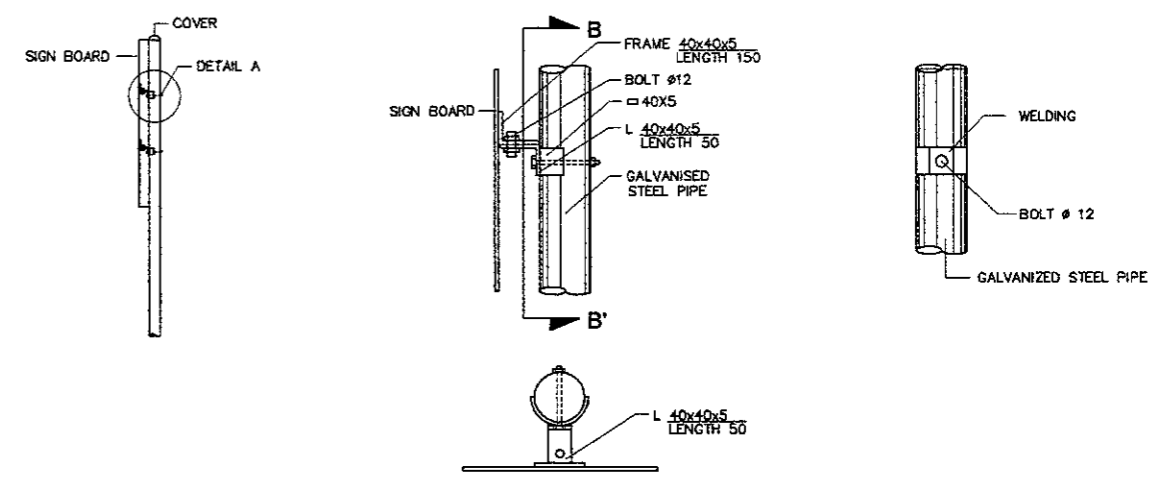
3 TYPE - C
 SCALE 1:50



4 TYPE - D
 SCALE 1:50



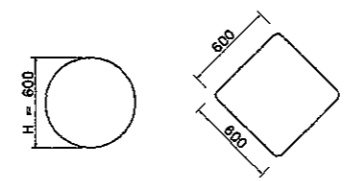
5 TYPE - E
 SCALE 1:50



7 TYPICAL INSTALLATION OF SIGN AT STEEL POLE
 NOT TO SCALE

8 DETAIL A
 NTS

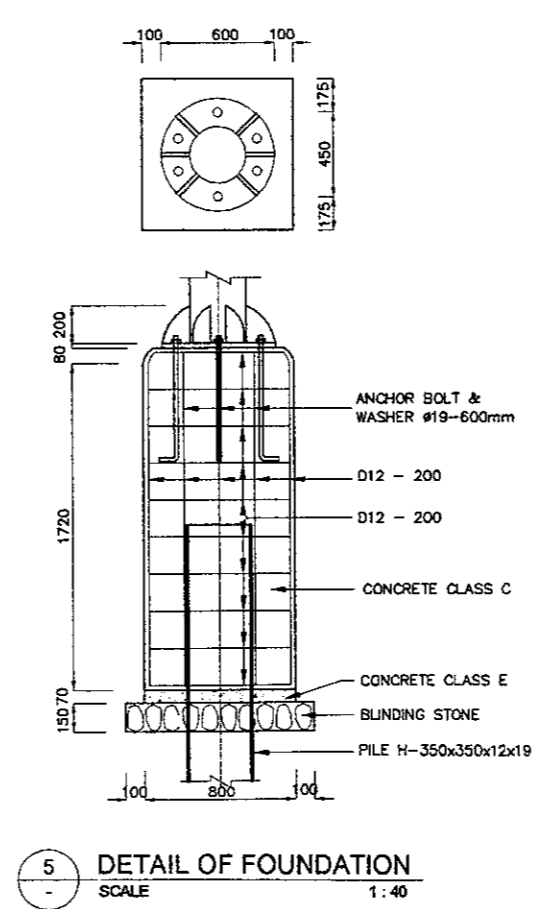
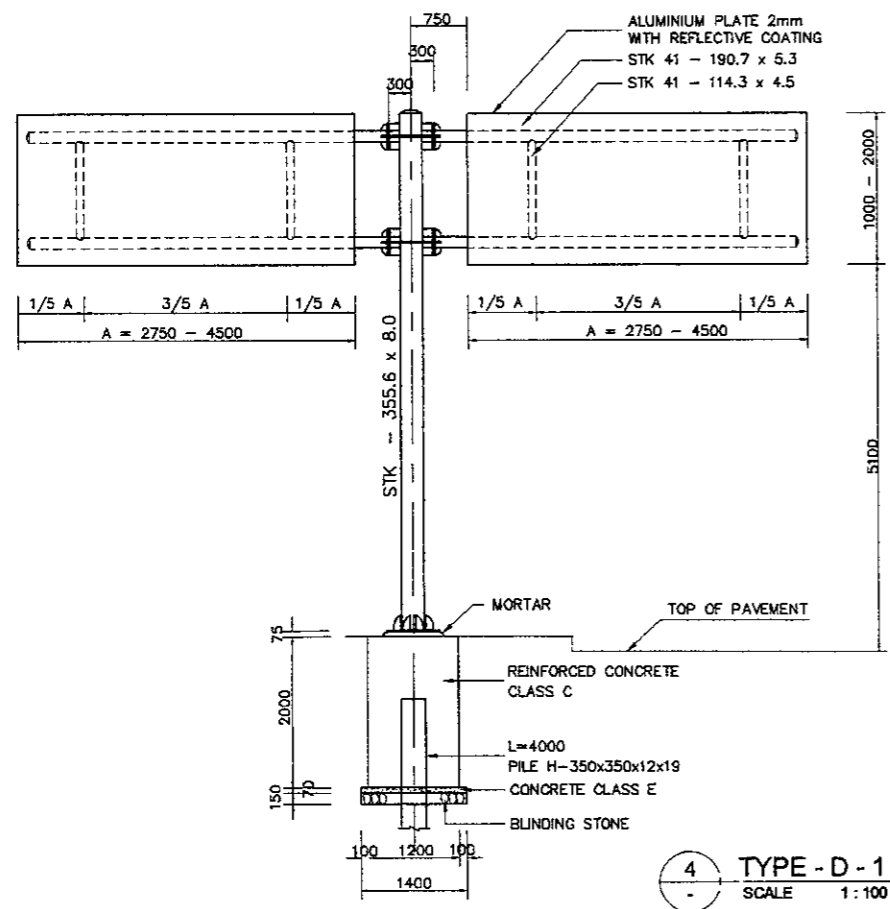
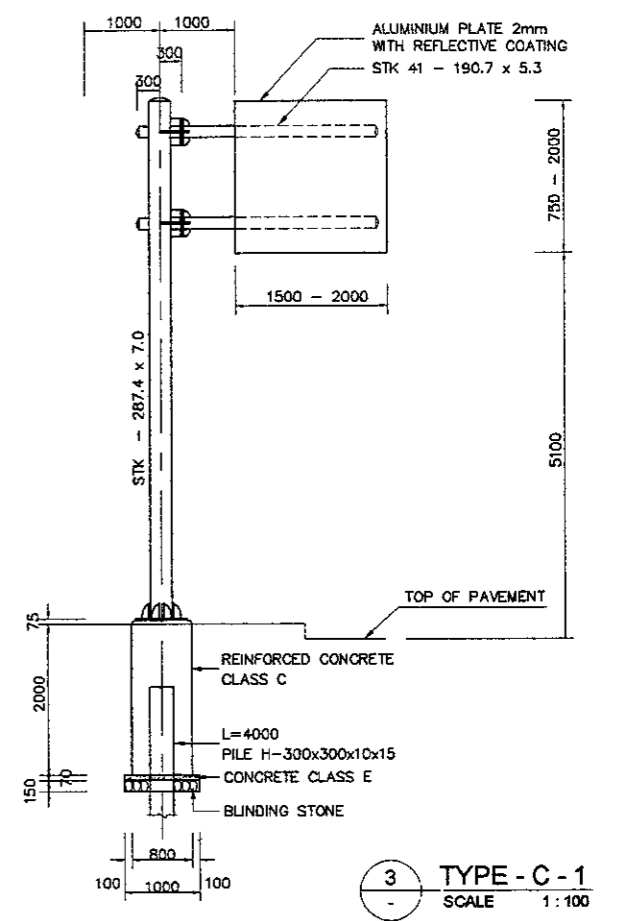
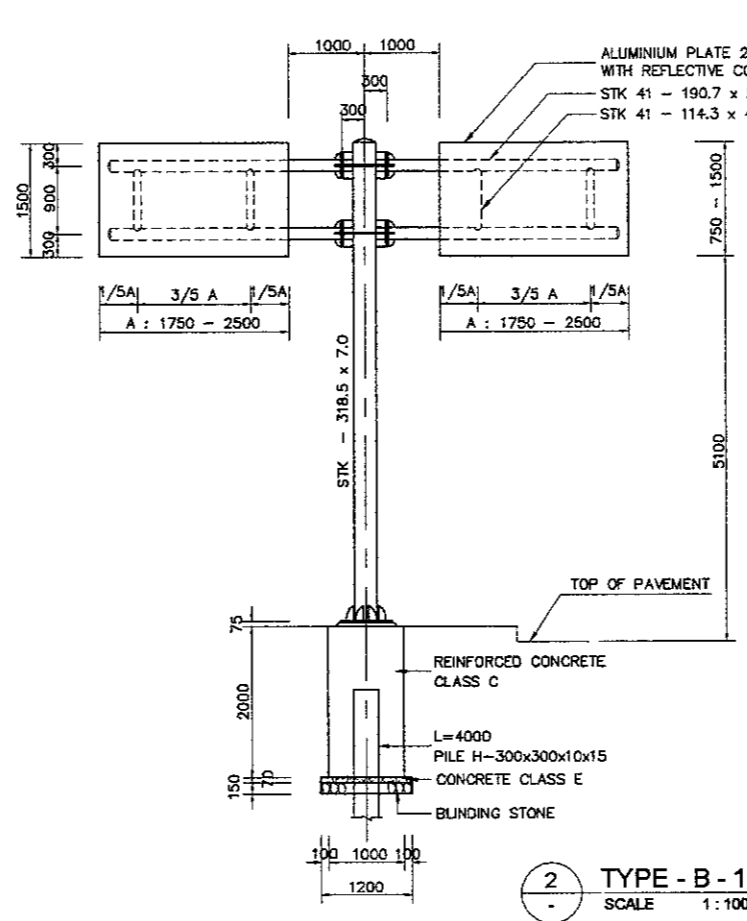
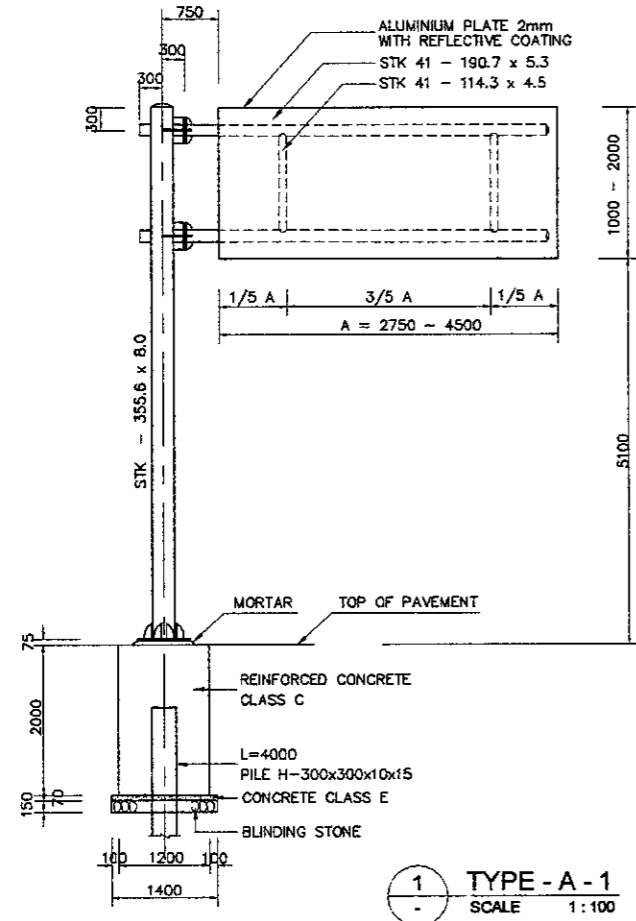
9 SEC. B-B'
 NTS



6 DIMENSIONS OF SIGN
 SCALE 1:50

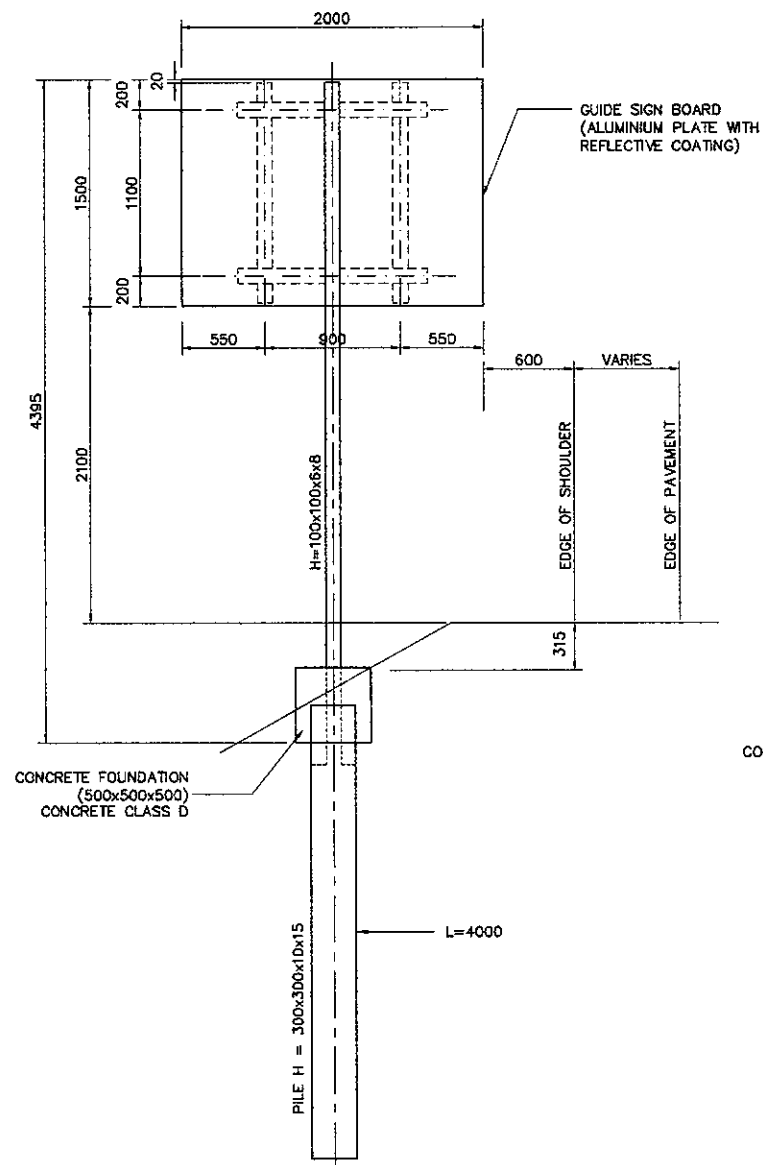
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN
- DETAILS SHALL BE IN ACCORDANCE WITH SK MEN-HUB NO. 61 TAHUN 1993
- ALUMINIUM PLATE WITH REFLECTIVE SHEETING (AASHTO M 268) SHALL BE USED.
- UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, THE THICKNESS OF ALUMINIUM PLATE SHALL BE 2MM.
- DETAILS OF CLAMPS SHALL BE APPROVED BY THE ENGINEER.
- LOCATION OF SIGNS AND EACH TYPE OF SIGNS SHALL BE AS DIRECTED AND APPROVED BY THE ENGINEER

DESIGNED BY	CHECKED BY	SUBMITTED BY
Name R. UENO	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



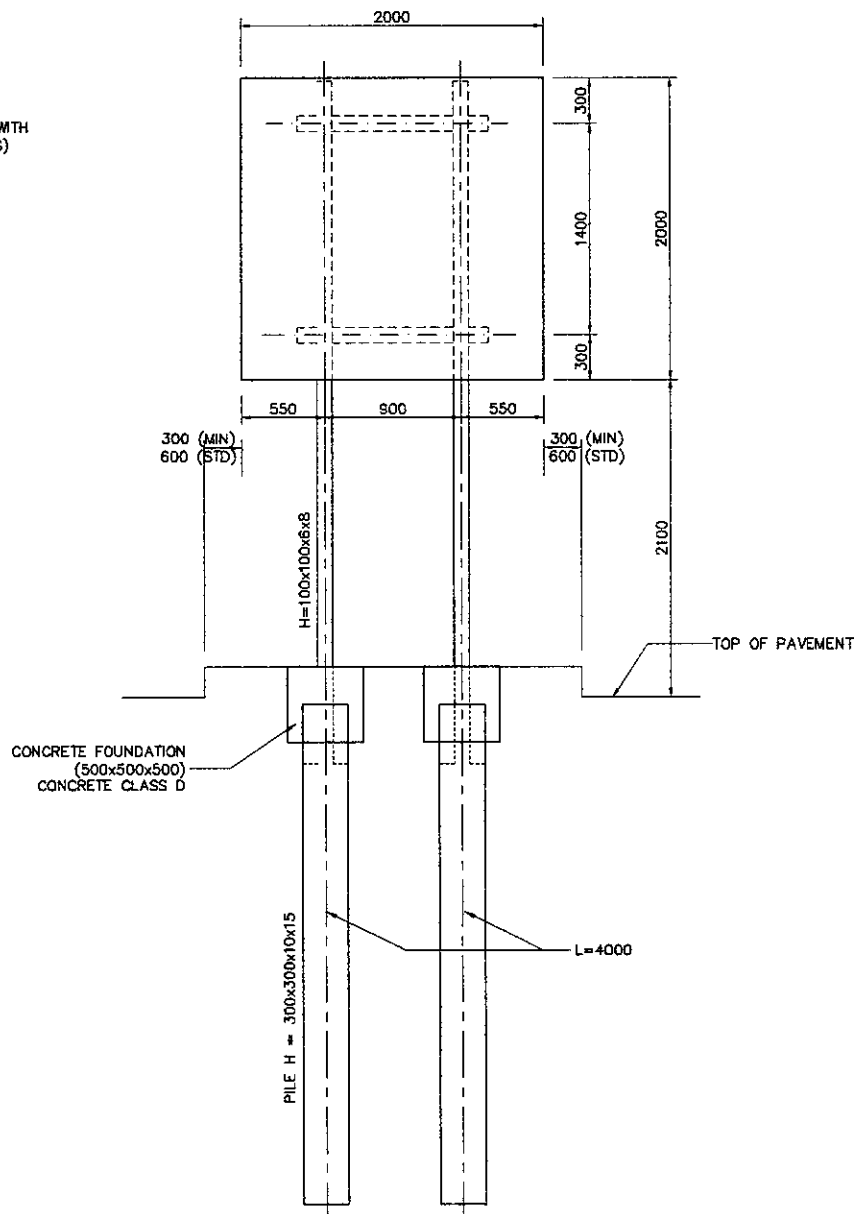
- NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
 2. ALL STEEL MATERIALS EXCEPT STAINLESS STEEL SHALL BE GALVANIZED
 3. "STK" INDICATES STEEL PIPE OR PILE.
 4. EACH TYPE OF GUIDE SIGN SHALL BE PROVIDED AS SHOWN IN THE PLAN OR AS INSTRUCTED BY THE ENGINEER.
 5. PILE FOUNDATION SHALL BE ADOPTED WHEN THE GUIDE SIGN IS INSTALLED ON THE EARTH WORK SECTION. PILE LENGTH ARE STANDARD AND MAY BE VARIED TO SITE CONDITIONS AS INSTRUCTED BY THE ENGINEER.
 6. GUIDE SIGN WITH FRAMES LOCATED ON BRIDGES SHALL BE INSTALLED ON PEDESTALS.

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



1 TYPE - E - 1

 SCALE 1:500

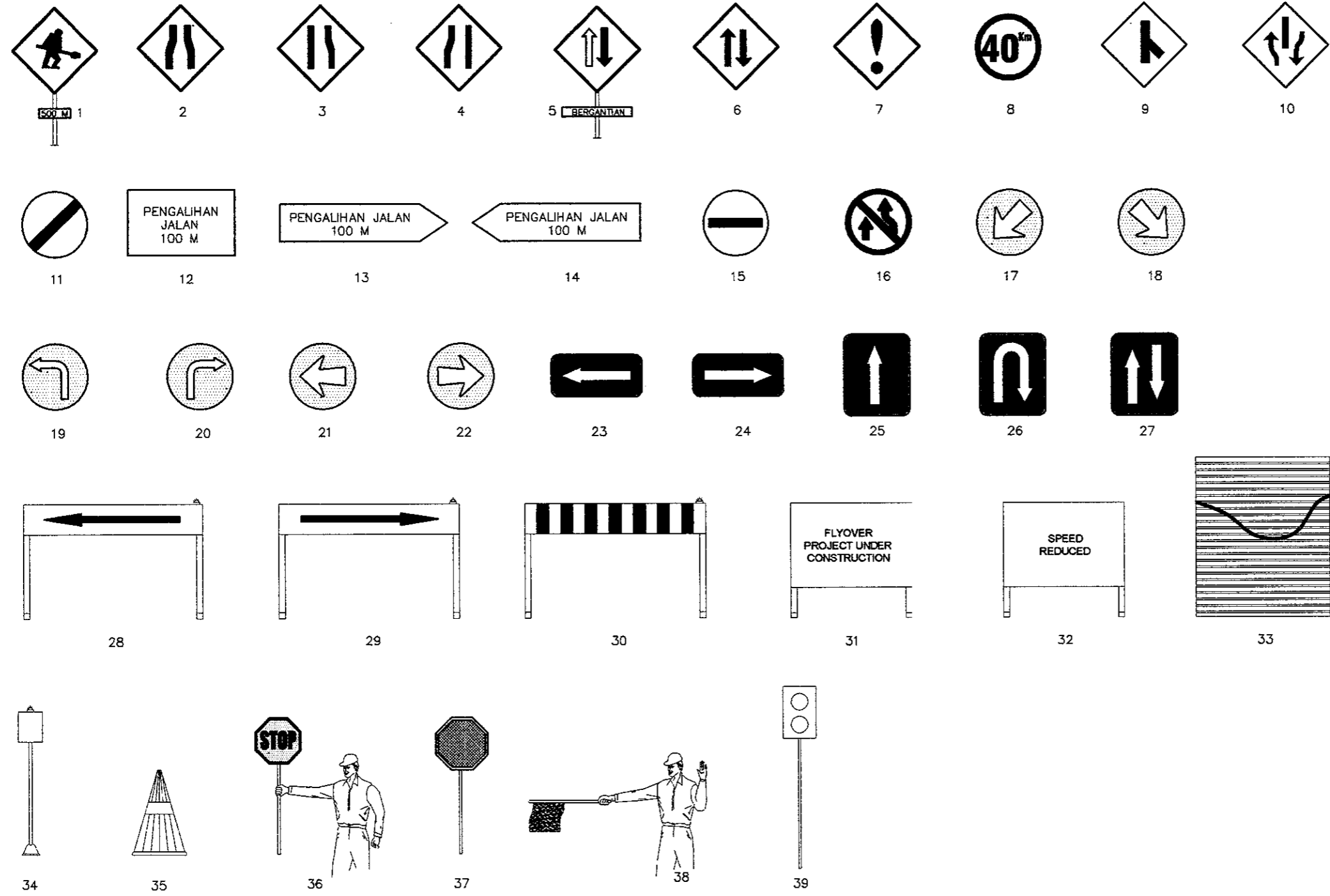


2 TYPE - F - 1

 SCALE 1:500

- NOTES :
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
 2. ALL STEEL MATERIALS EXCEPT STAINLESS STEEL SHALL BE GALVANIZED.
 3. "H" INDICATES STEEL H-BEAM.
 4. "STK" INDICATES STEEL PIPE OR PILE.
 5. EACH TYPE OF GUIDE SIGN SHALL BE INSTALLED AS SHOWN ON THE PLANS OR AS INSTRUCTED BY THE ENGINEER.
 6. PILE FOUNDATION SHALL BE ADOPTED WHEN THE GUIDE SIGN IS INSTALLED ON THE EARTH WORK SECTION. PILE LENGTH ARE STANDARD AND MAY BE VARIED TO SITE CONDITIONS AS INSTRUCTED BY THE ENGINEER.
 7. GUIDE SIGN WITH FRAMES LOCATED ON BRIDGES SHALL BE INSTALLED ON PEDESTALS.

**ROAD WORK
 (TEMPORARY SIGNS)**

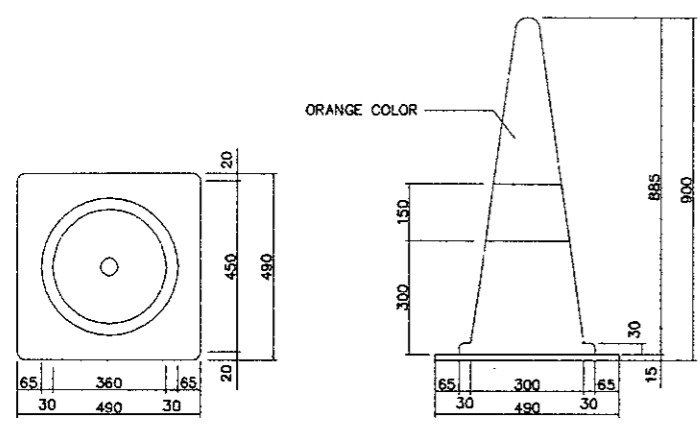


1. 500M ROADWORK
2. CHANGING OF ROAD WIDTH
3. LANE ENDS RIGHT
4. LANE ENDS LEFT
5. PRIORITY FOR VEHICLES
6. TWO WAY TRAFFIC
7. LOOK OUT
8. SPEED LIMIT MAX 40KM
9. INTERSECTION FROM BACK RIGHT DIRECTION TRAFFIC
10. BEGINNING OF SEPERATOR ONE TWO WAY TRAFFIC
11. END OF PROHIBITION AREA
12. 100M CHANGE TRAFFIC
13. 100M CHANGE TRAFFIC TO RIGHT
14. 100M CHANGE TRAFFIC TO LEFT
15. NO ENTRY FOR ALL VEHICLES
16. TWO TRAFFIC
17. MUST PASS THIS LANE
18. MUST PASS THIS LANE
19. TURNING INDICATION TO LEFT
20. TURNING INDICATION TO RIGHT
21. INDICATION OF DIRECTION TO LEFT
22. INDICATION OF DIRECTION TO RIGHT
23. ONE WAY LEFT
24. ONE WAY RIGHT
25. STRAIGHT ONE WAY
26. U TURN
27. PRIORITY GIVEN TO THE COMING TRAFFIC
28. CLOSED ROAD FOR CHANGE TRAFFIC TO LEFT
29. CLOSED ROAD FOR CHANGE TRAFFIC TO RIGHT
30. CLOSED TRAFFIC UNDER CONSTRUCTION
31. INFORMATION BOARD DURING CONSTRUCTION AHEAD
32. REDUCED SPEED WARNING BOARD
33. PROTECTION DURING CONSTRUCTION
34. PLAN LIGHT
35. CONE
36. CONTROL TRAFFIC GO / AHEAD
37. GO AHEAD
38. FLAGGER CONTROL
39. FLASHING WARNING LIGHT

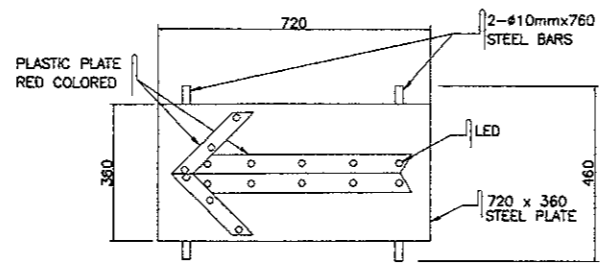
COLOR LEGEND :

	YELLOW
	RED
	BLACK
	BLUE

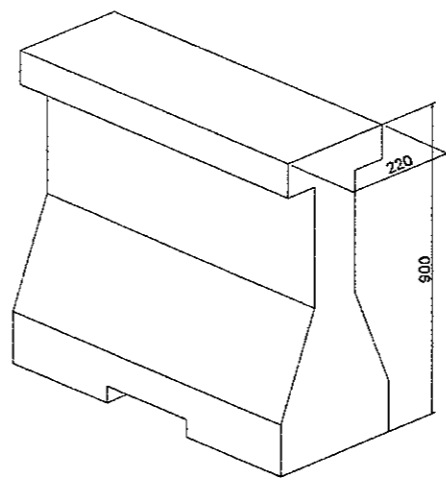
NOTE :
 STANDARD TRAFFIC WITH ROAD SIGNS
 SHOULD CONFORM WITH THE " "
 DINAS PERHUBUNGAN LALU LINTAS
 DAN ANGKUTAN JALAN SETEMPAT



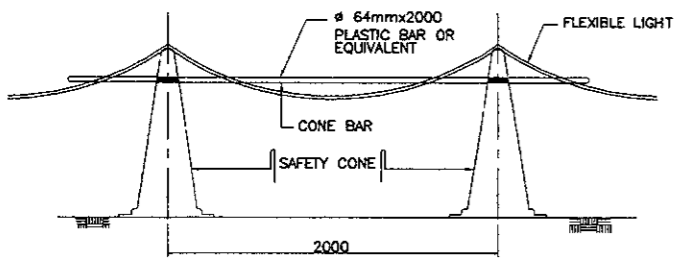
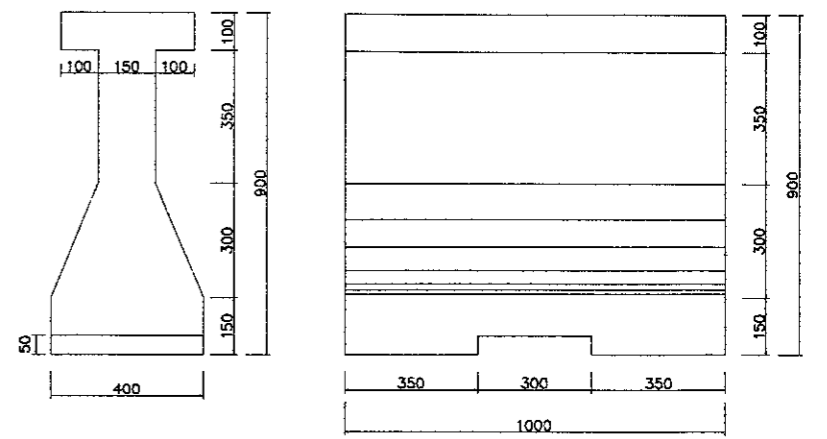
3 SAFETY CONE
 SCALE 1:20



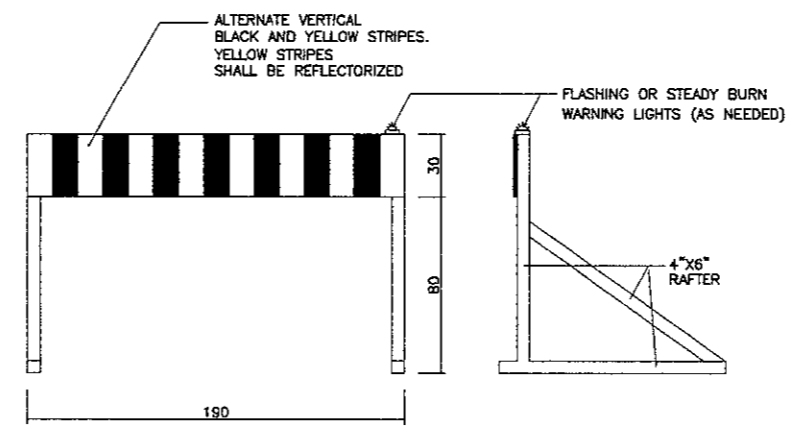
6 ARROW PLATE OF LED
 SCALE 1:20



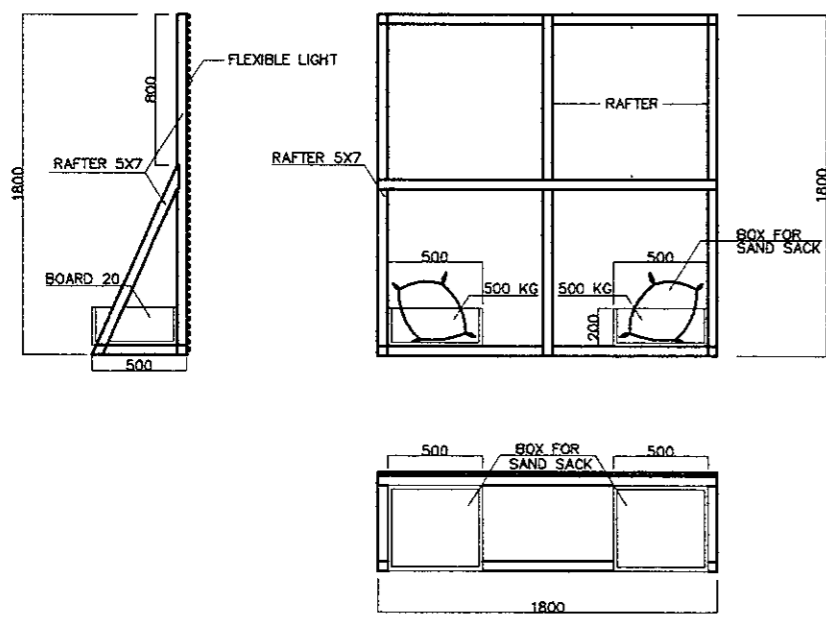
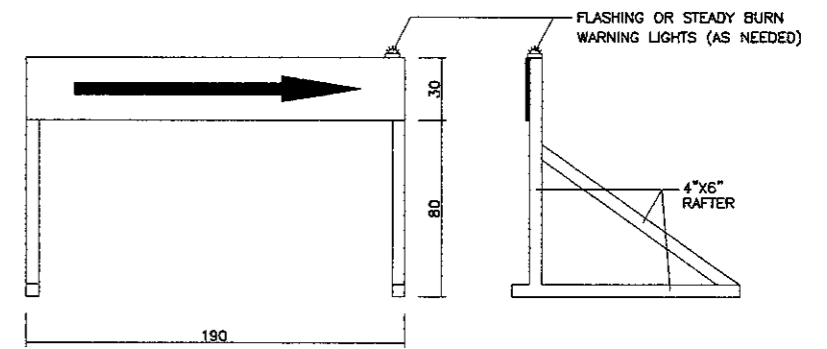
7 MOVABLE BARRIER
 SCALE 1:20



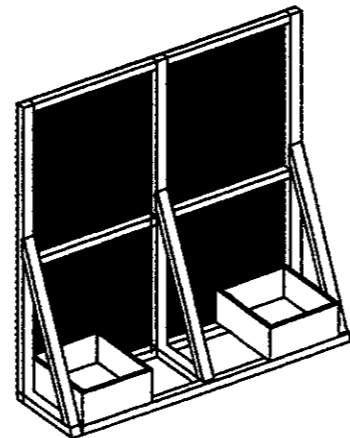
2 CONE BAR
 NOT TO SCALE



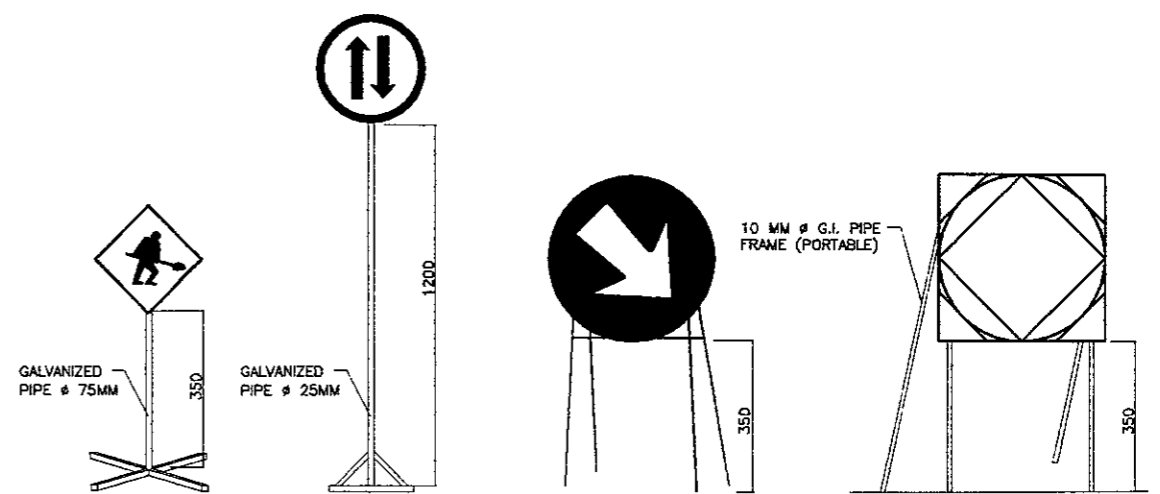
5 TEMPORARY SIGN BOARD SUPPORT
 SCALE 1:30



1 TEMPORARY FENCE DURING CONSTRUCTION
 SCALE 1:40



ISOMETRIC



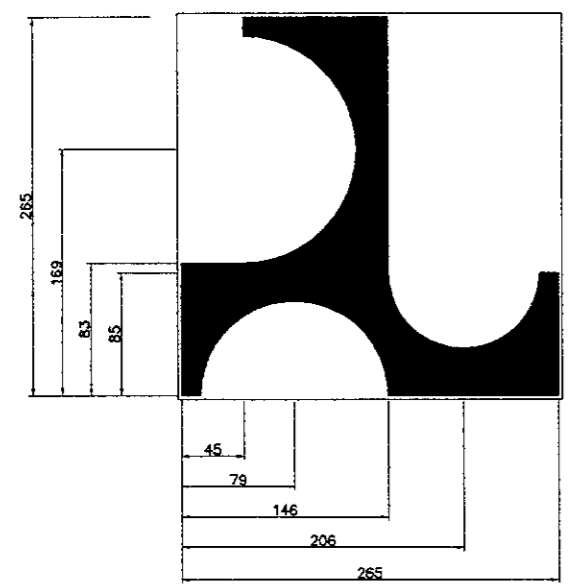
4 TEMPORARY SIGN SUPPORT DETAILS
 SCALE NOT TO SCALE

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



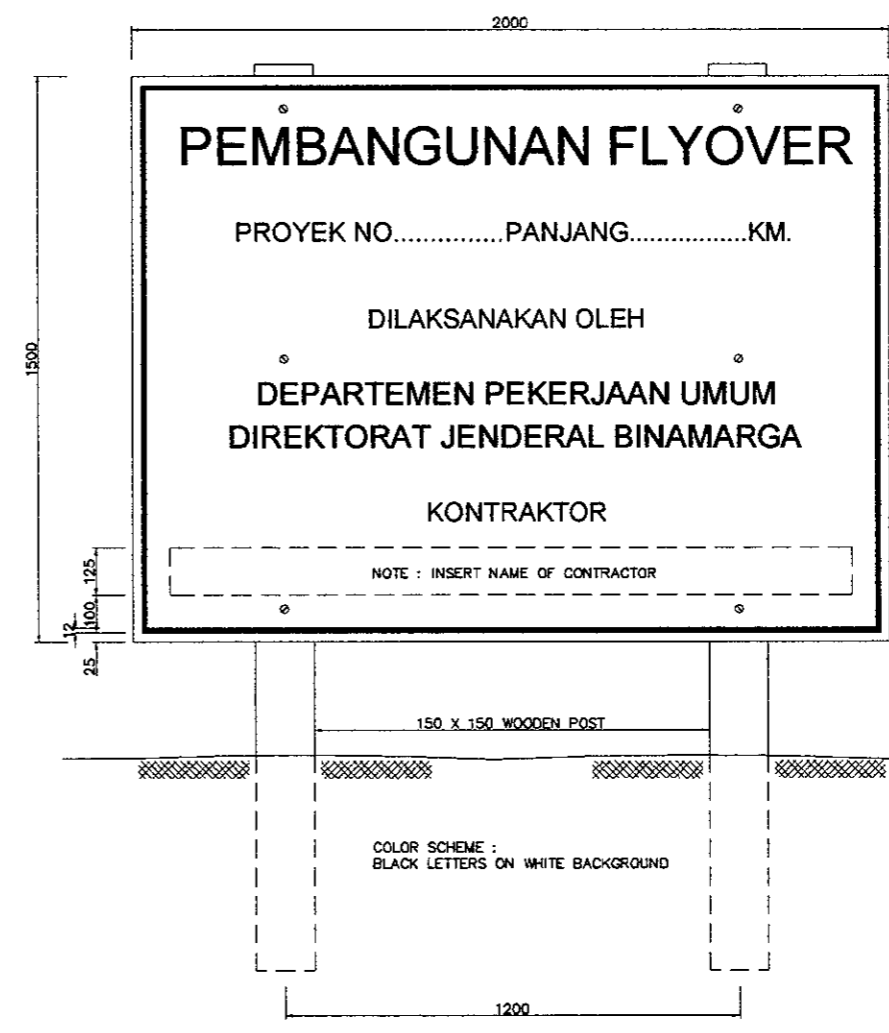
BASE COLOUR : OCEAN BLUE
 TEXT COLOUR : BLACK AND
 TEXT HEIGHT : 7.00 CM
 SYMBOL SEE DETAIL

BASE COLOUR : DARK YELLOW
 TEXT COLOUR : BLACK AND
 TEXT HEIGHT : 5.00 CM
 LINE COLOUR : BLACK AND
 LINE WIDTH : 0.50 CM

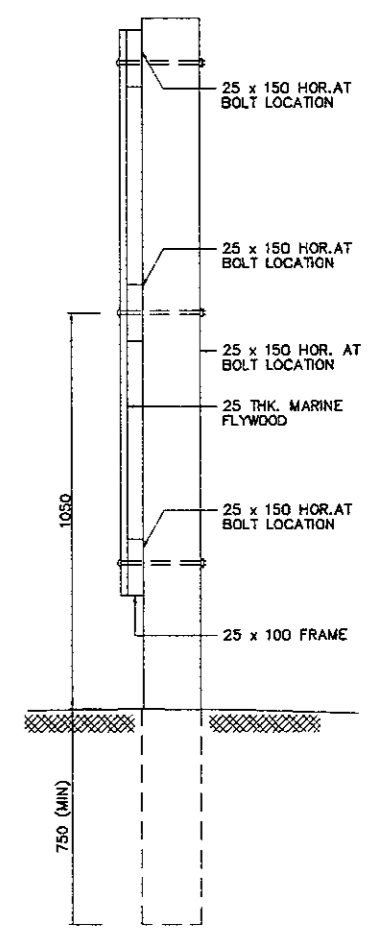


SYMBOL OF MINISTRY OF PUBLIC WORKS

SYMBOL OF THE MINISTRY OF SETTLEMENT AND REGIONAL INFRASTRUCTURE IS A PROPELLER WITH DIMENSION SHOWN ON THE DRAWING
 BASE COLOUR : DARK YELLOW
 OBJECT COLOUR : DARK BLUE



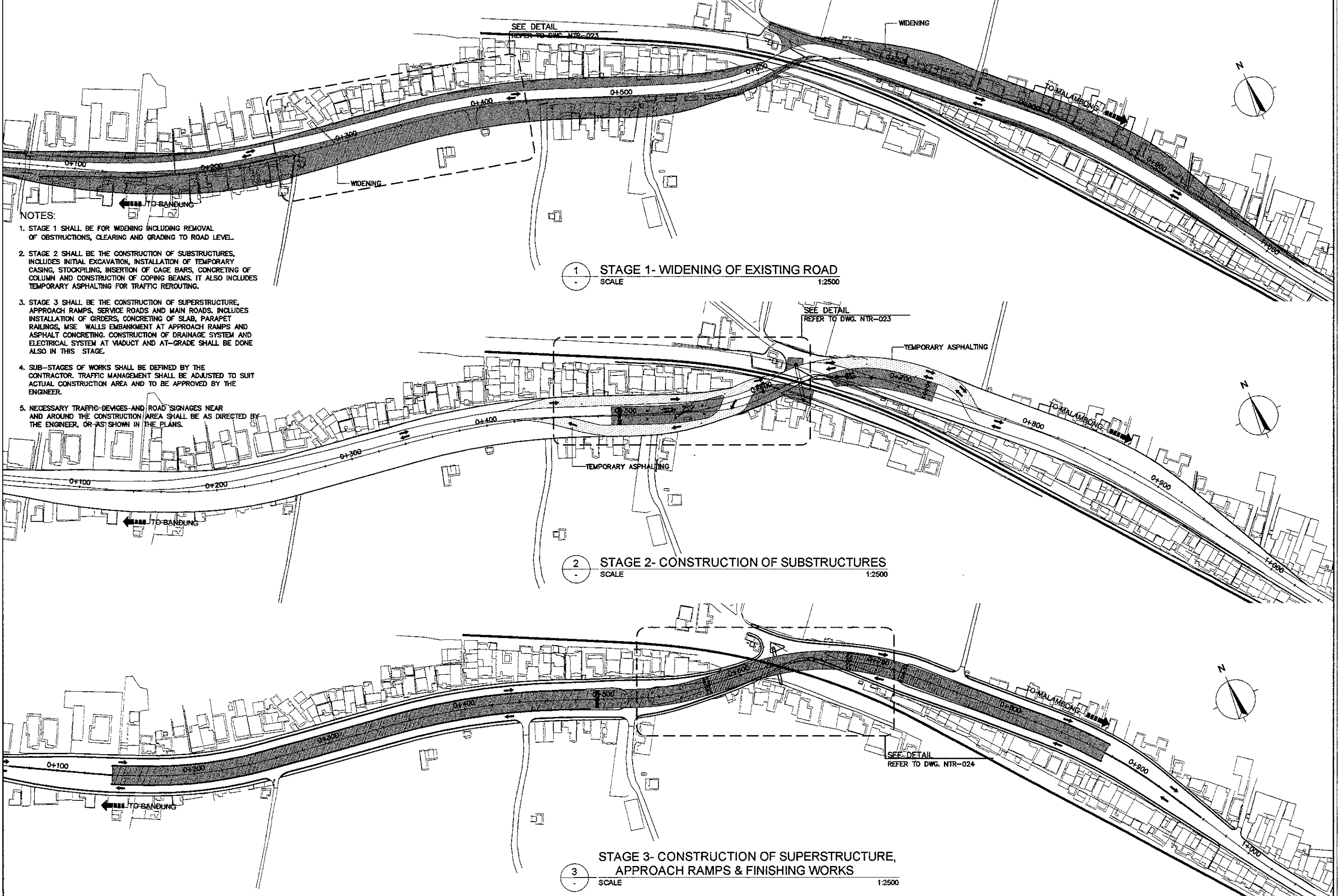
A FRONT ELEVATION
 SCALE 1 : 20



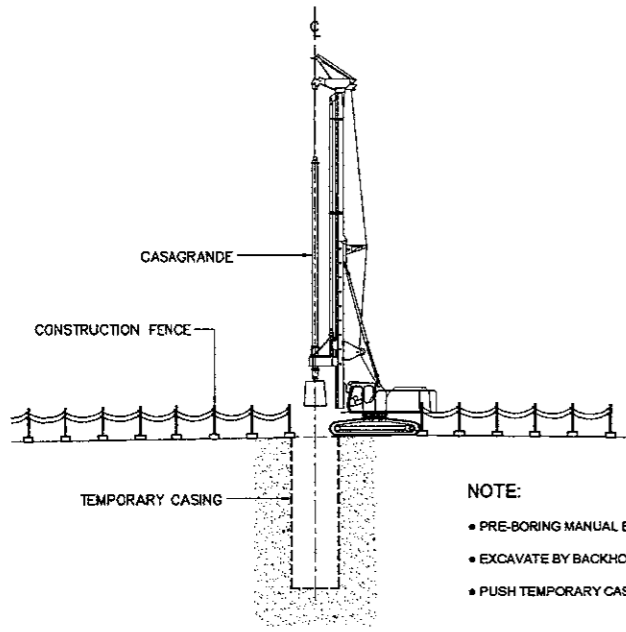
B SIDE ELEVATION
 SCALE 1 : 20

1 PROJECT DESCRIPTION SIGN BOARD DURING CONSTRUCTION
 1 : 20

DESIGNED BY	CHECKED BY	SUBMITTED BY
Name R. UENO	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date

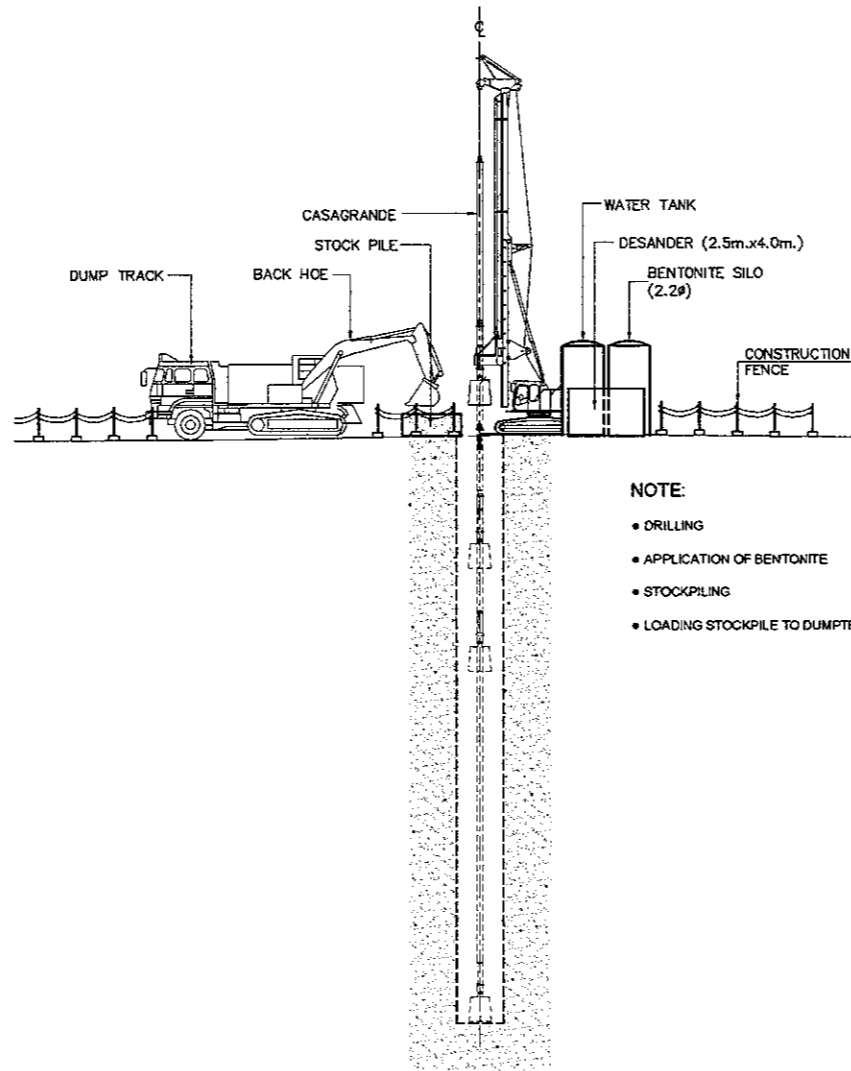


DESIGNED BY	CHECKED BY	SUBMITTED BY
Name: R. UENO	Name: T. OKOMURA	Name: M. KIUCHI
Sign: _____	Sign: _____	Sign: _____
Date: _____	Date: _____	Date: _____



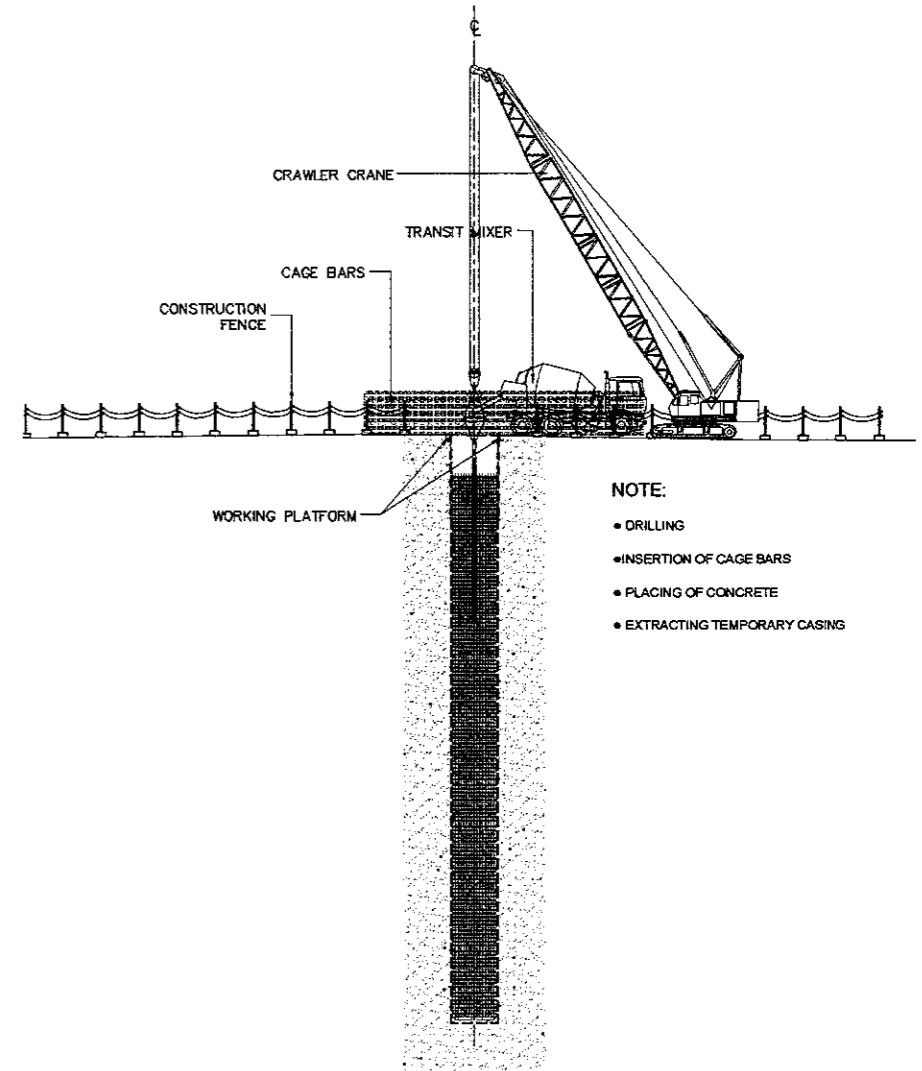
- NOTE:**
- PRE-BORING MANUAL EXCAVATION (MIN. 2.0m.)
 - EXCAVATE BY BACKHOE GREATER THAN 4.0m.
 - PUSH TEMPORARY CASING

A1 SEQUENCE - 1
 SCALE 1:400



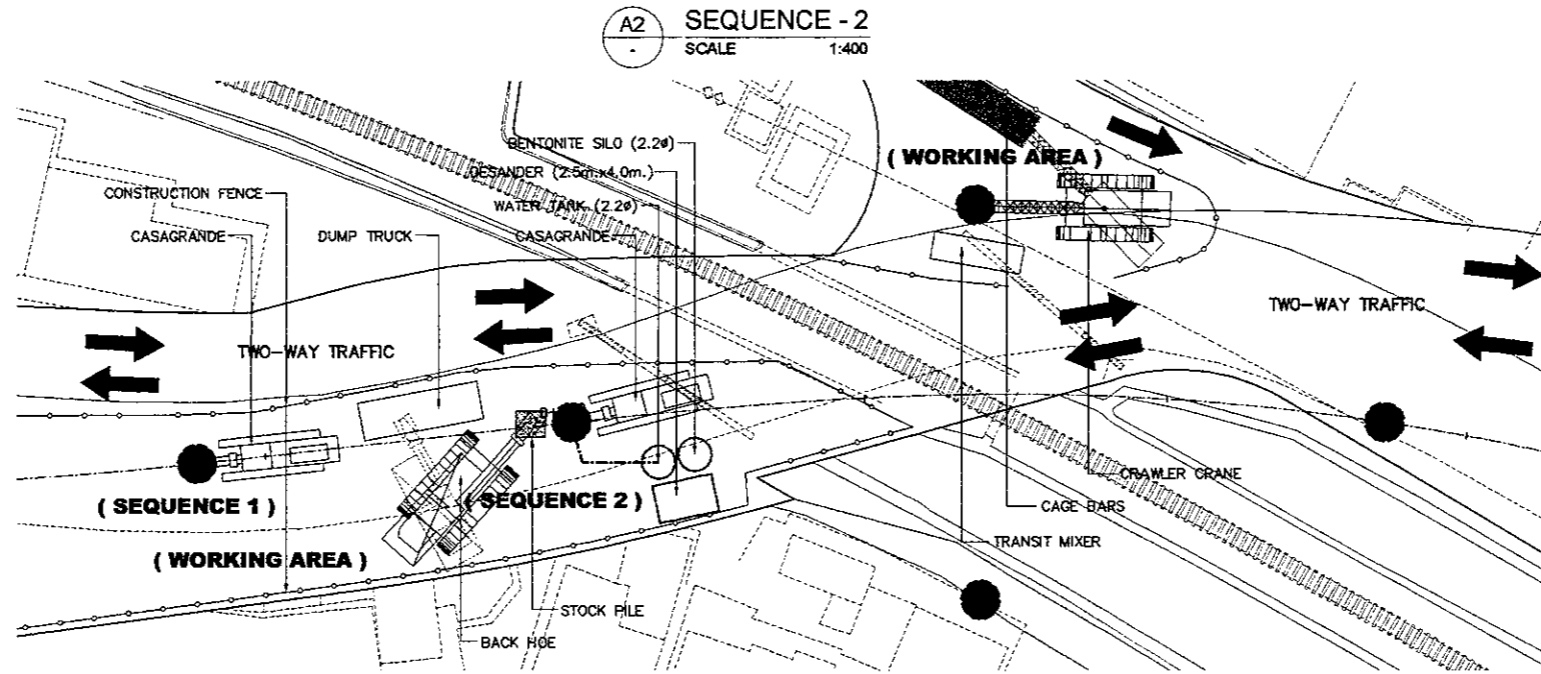
- NOTE:**
- DRILLING
 - APPLICATION OF BENTONITE
 - STOCKPILING
 - LOADING STOCKPILE TO DUMPTRUCK

A2 SEQUENCE - 2
 SCALE 1:400



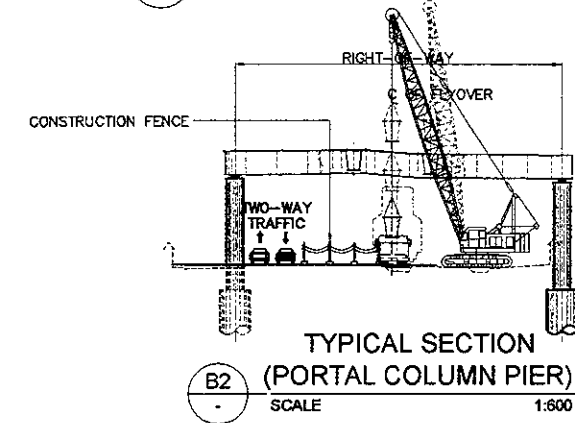
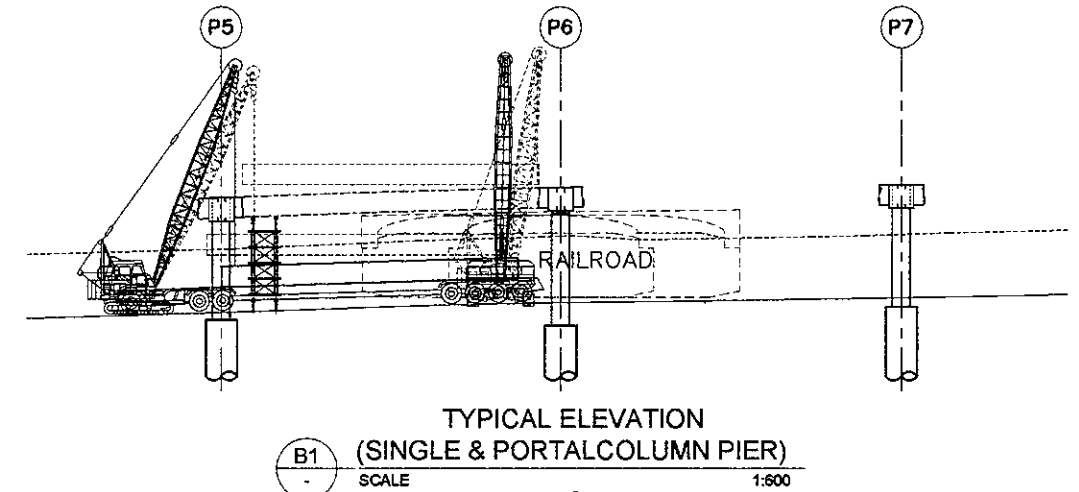
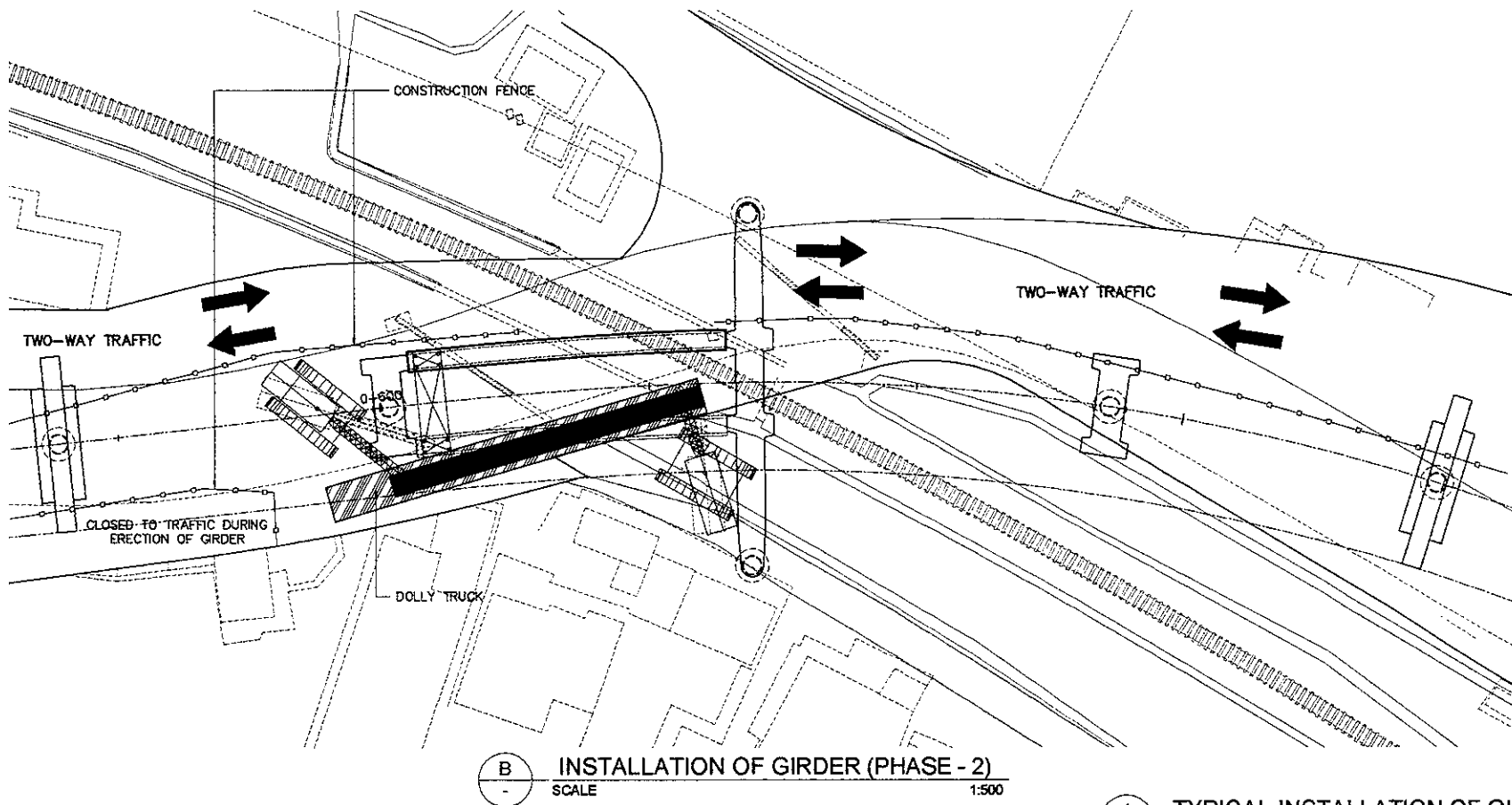
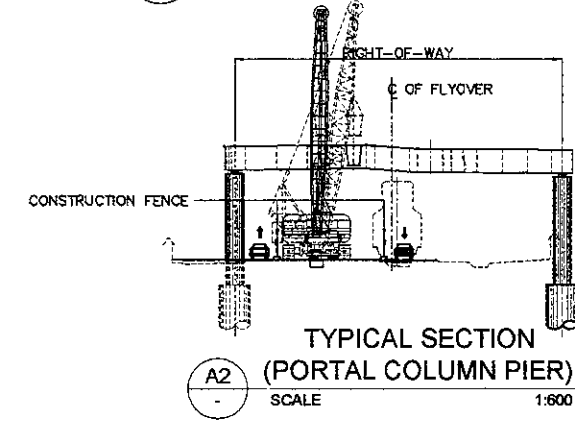
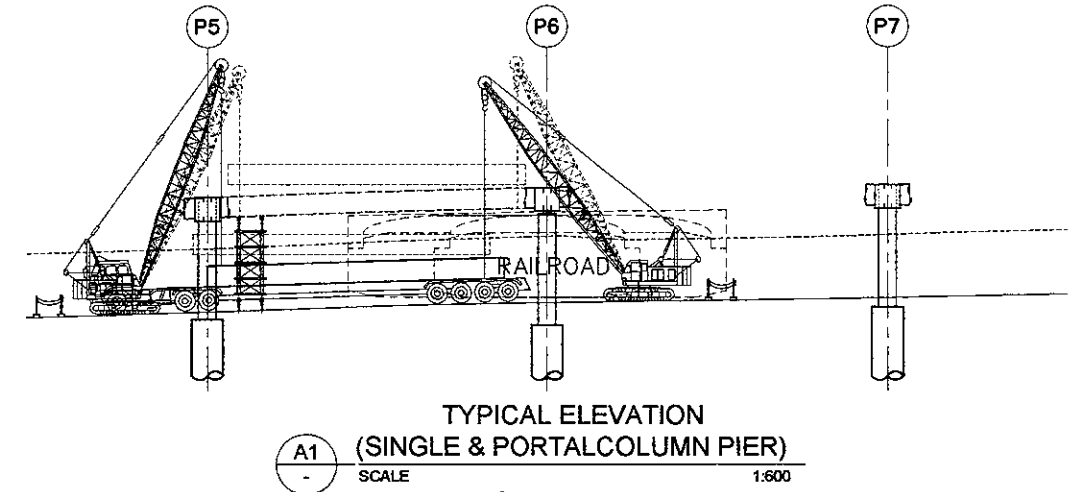
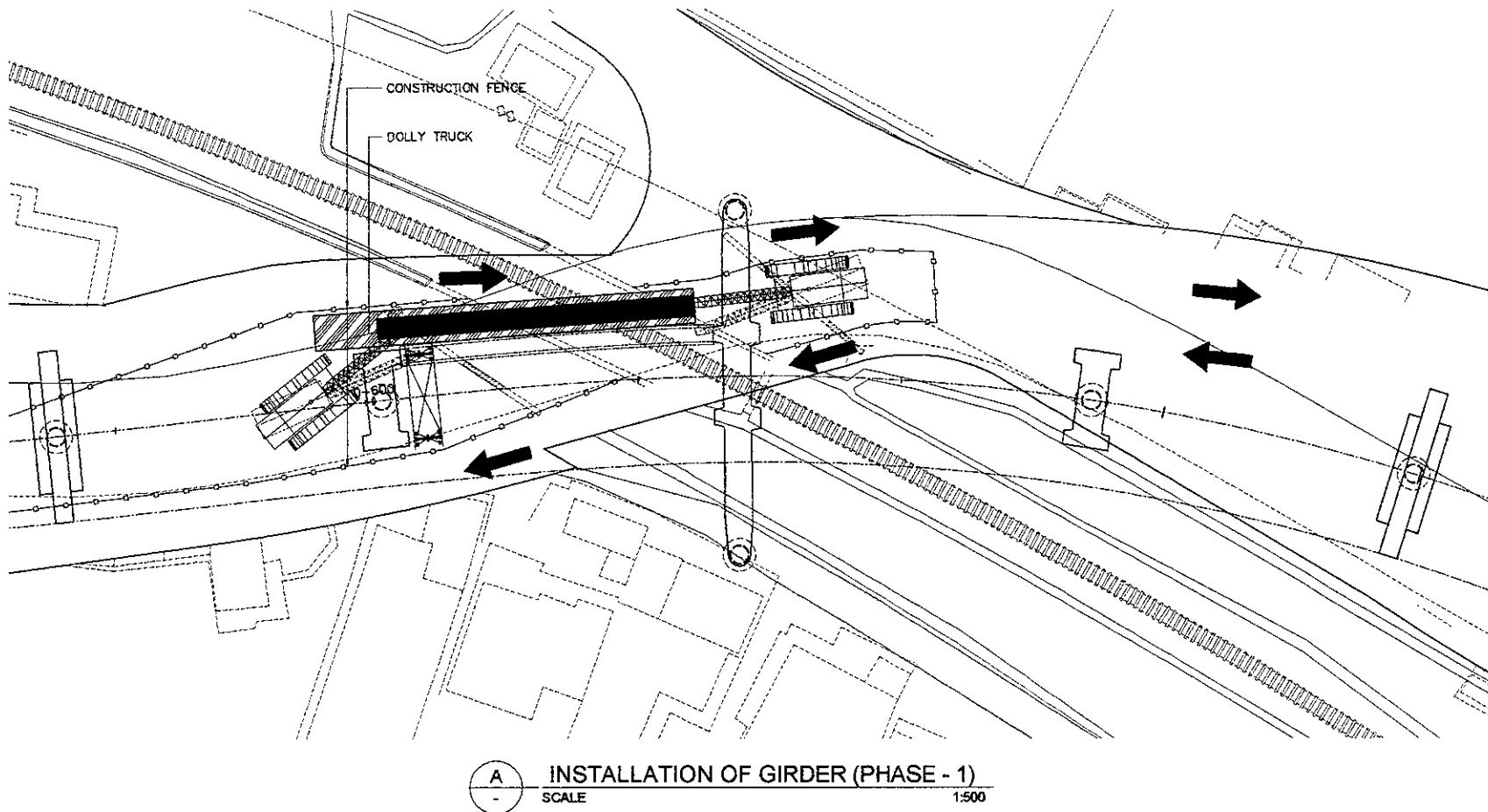
- NOTE:**
- DRILLING
 - INSERTION OF CAGE BARS
 - PLACING OF CONCRETE
 - EXTRACTING TEMPORARY CASING

A3 SEQUENCE - 3
 SCALE 1:400



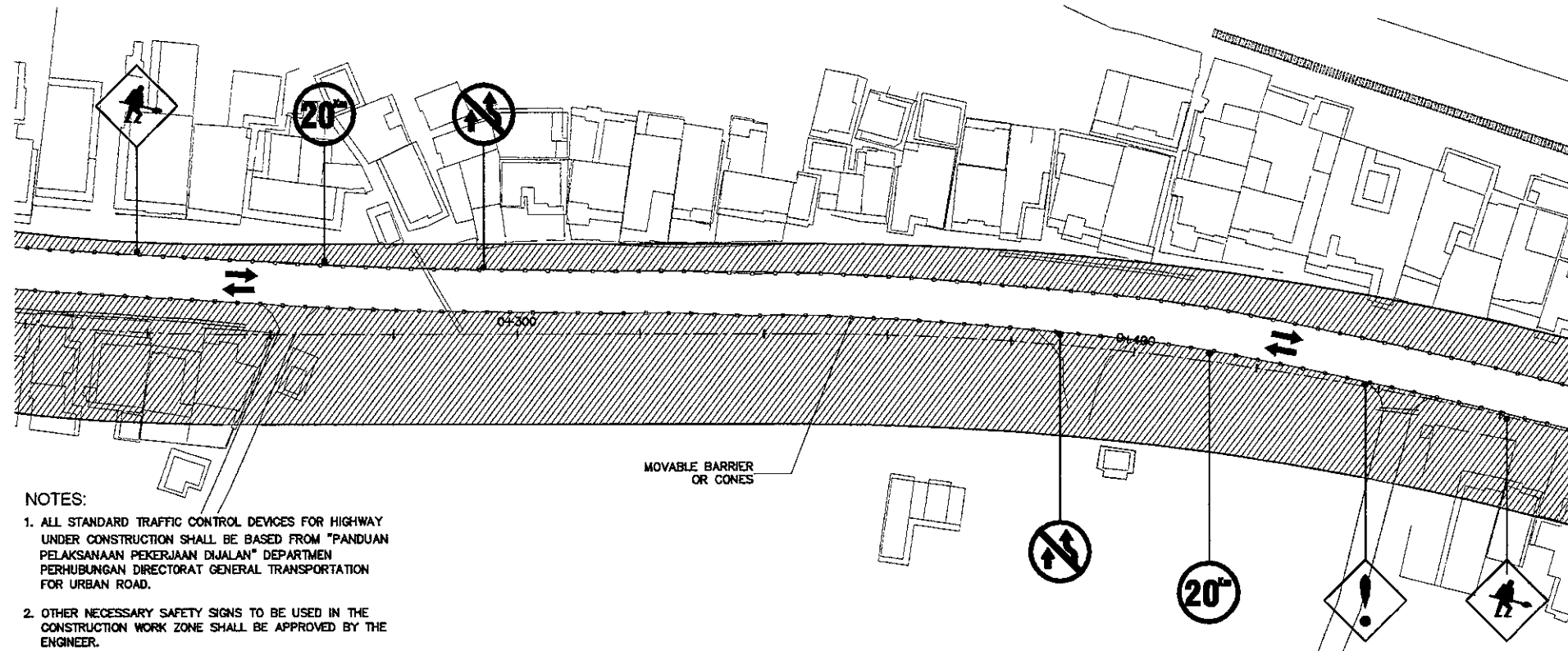
A SEQUENCE LAYOUT PLAN
 SCALE 1:500

DESIGNED BY	CHECKED BY	SUBMITTED BY
Name R. UENO	Name T. OKOMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



1 TYPICAL INSTALLATION OF GIRDER
 SCALE AS SHOWN

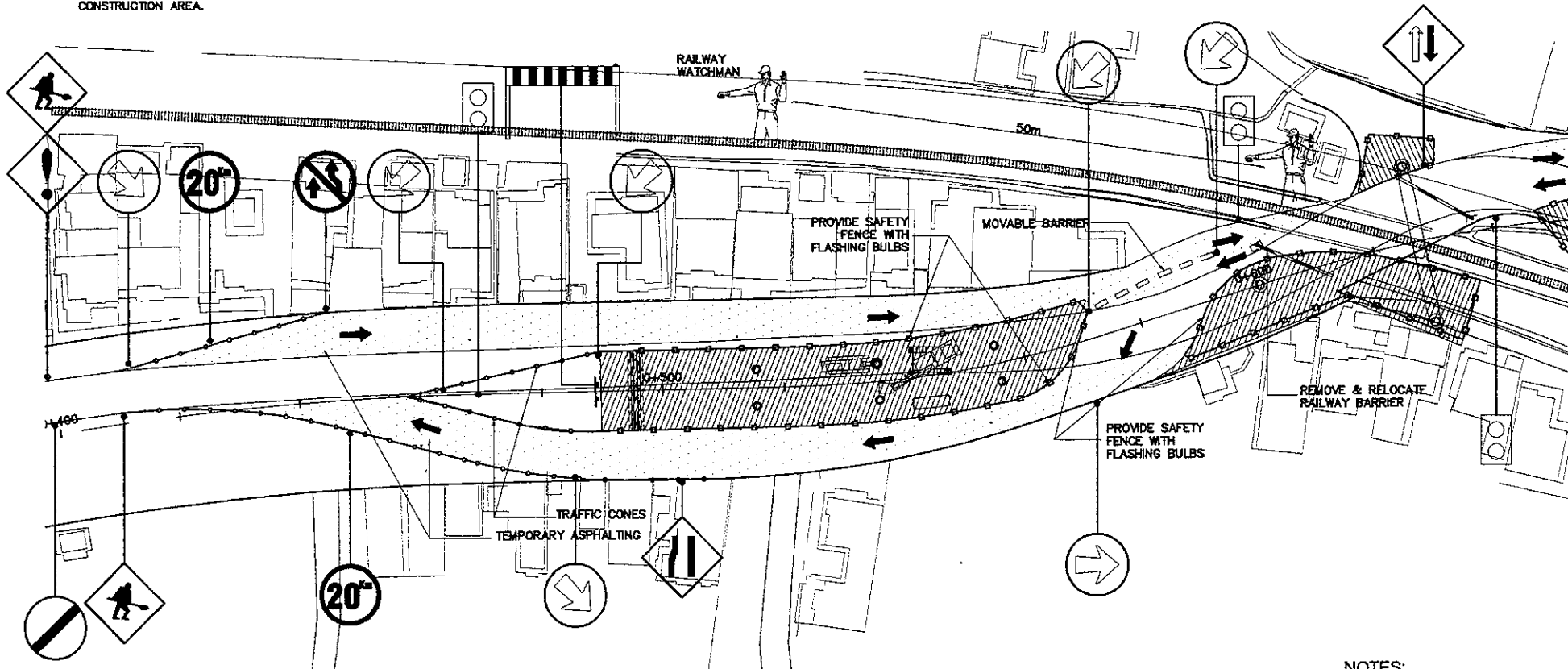
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name R. UENO	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



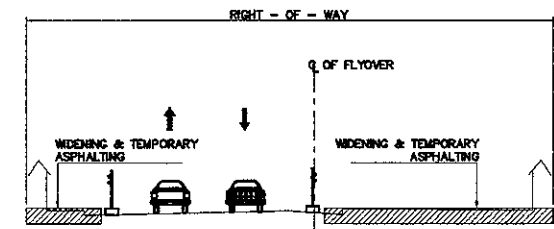
NOTES:

1. ALL STANDARD TRAFFIC CONTROL DEVICES FOR HIGHWAY UNDER CONSTRUCTION SHALL BE BASED FROM "PANDUAN PELAKSANAAN PEKERJAAN DIJALAN" DEPARTMEN PERHUBUNGAN DIRECTORAT GENERAL TRANSPORTATION FOR URBAN ROAD.
2. OTHER NECESSARY SAFETY SIGNS TO BE USED IN THE CONSTRUCTION WORK ZONE SHALL BE APPROVED BY THE ENGINEER.
3. FOR STANDARD WORK SIGNS, REFER TO DWG. NTR-017
4. INSTALL TWO (2) PROJECT SIGN BOARDS AS SHOWN IN THE STANDARD DRAWING AT EACH END OF PROJECT CONSTRUCTION AREA.

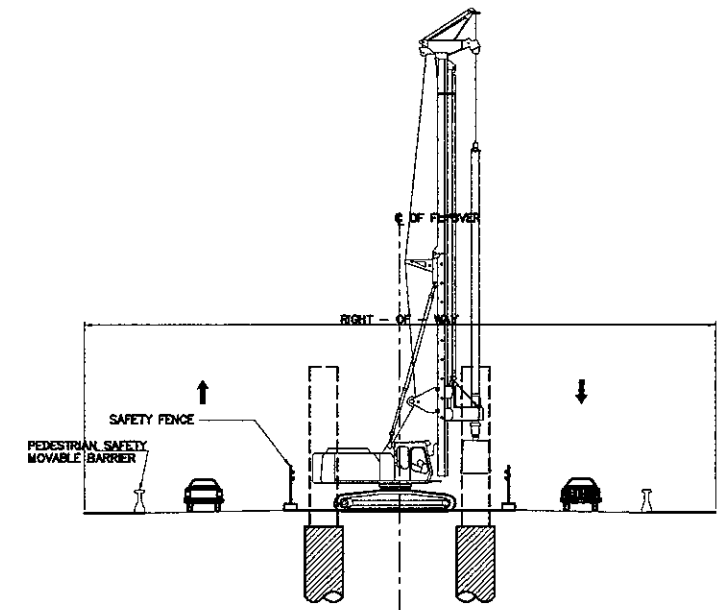
A AT WIDENING AREA
 SCALE 1:1000



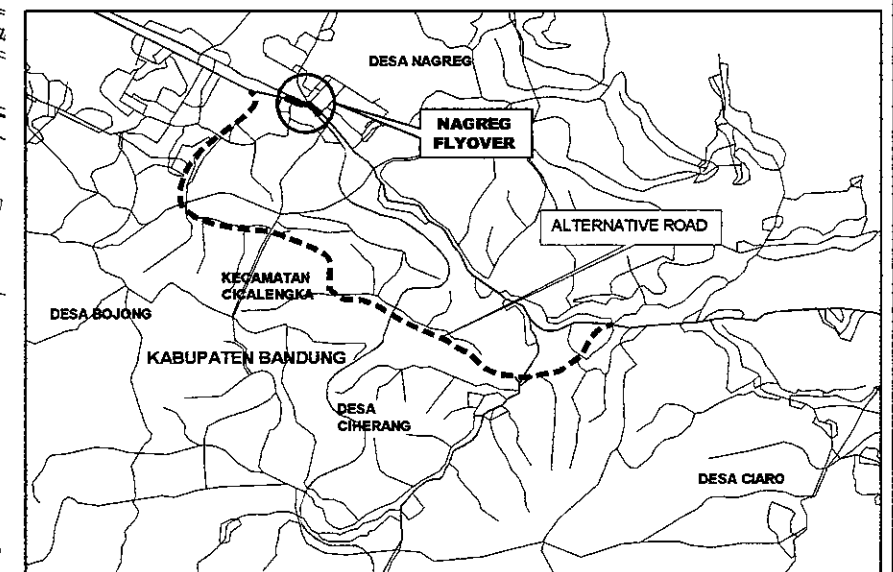
C AT CONSTRUCTION OF SUBSTRUCTURES
 SCALE 1:1000



B TYPICAL SECTION
 SCALE 1:300



D TYPICAL SECTION
 SCALE 1:300

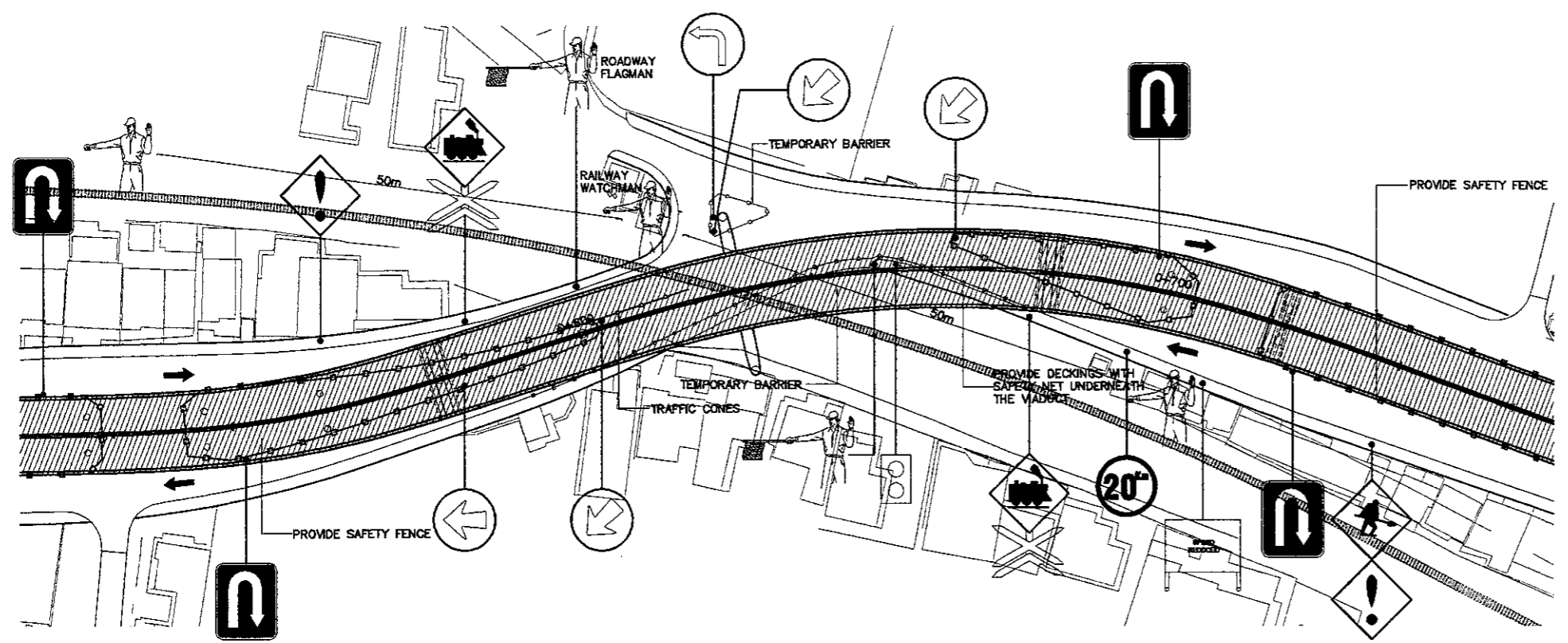


ALTERNATIVE ROAD DURING CONSTRUCTION
 NOT TO SCALE

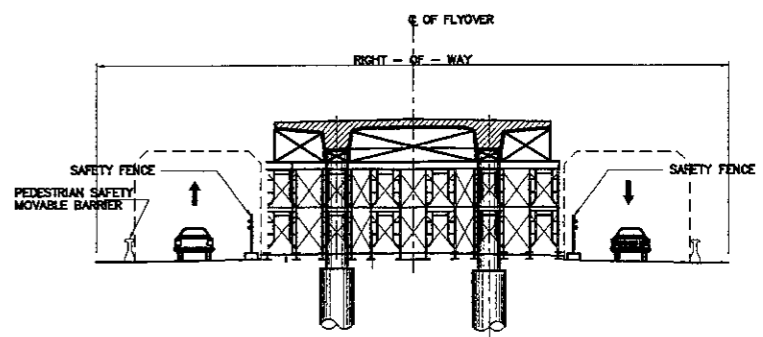
NOTES:

- ALTERNATIVE ROAD IS A PROPOSED ROAD (BY OTHERS) TO BE COMPLETED BY APRIL 2007.

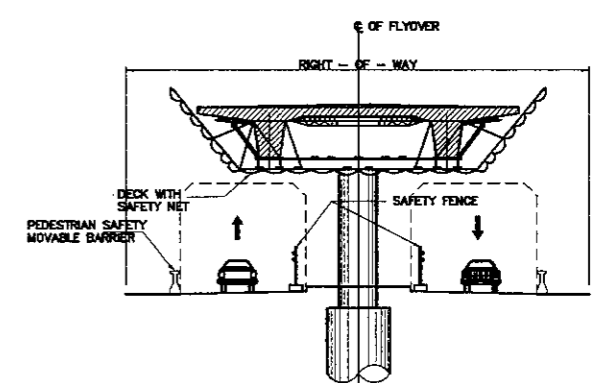
1 TRAFFIC MANAGEMENT LAYOUT
 SCALE 1:1000



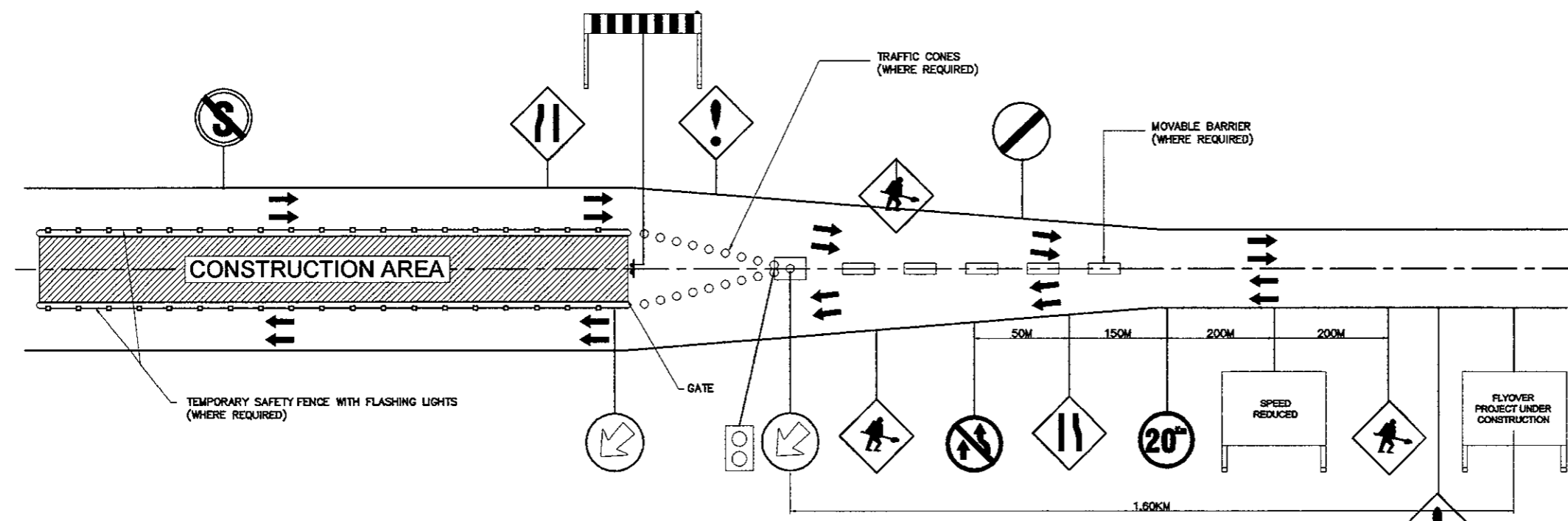
(A) AT CONSTRUCTION OF SUPERSTRUCTURES
SCALE 1:1000



(B) TYPICAL SECTION (TWO-COLUMN PIER)
SCALE 1:300



(C) TYPICAL SECTION (SINGLE COLUMN PIER)
SCALE 1:300



(D) APPROACHING CONSTRUCTION AREA
SCALE 1:1000

- NOTES:**
1. ALL STANDARD TRAFFIC CONTROL DEVICES FOR HIGHWAY UNDER CONSTRUCTION SHALL BE BASED FROM "PANDUAN PELAKSANAAN PEKERJAAN DIJALAN" DEPARTMEN PERHUBUNGAN DIRECTORAT GENERAL TRANSPORTATION FOR URBAN ROAD.
 2. OTHER NECESSARY SAFETY SIGNS TO BE USED IN THE CONSTRUCTION WORK ZONE SHALL BE APPROVED BY THE ENGINEER.
 3. FOR STANDARD WORK SIGNS, REFER TO DWG. NTR-017
 4. INSTALL TWO (2) PROJECT SIGN BOARDS AS SHOWN IN THE STANDARD DRAWING AT EACH END OF PROJECT CONSTRUCTION AREA.



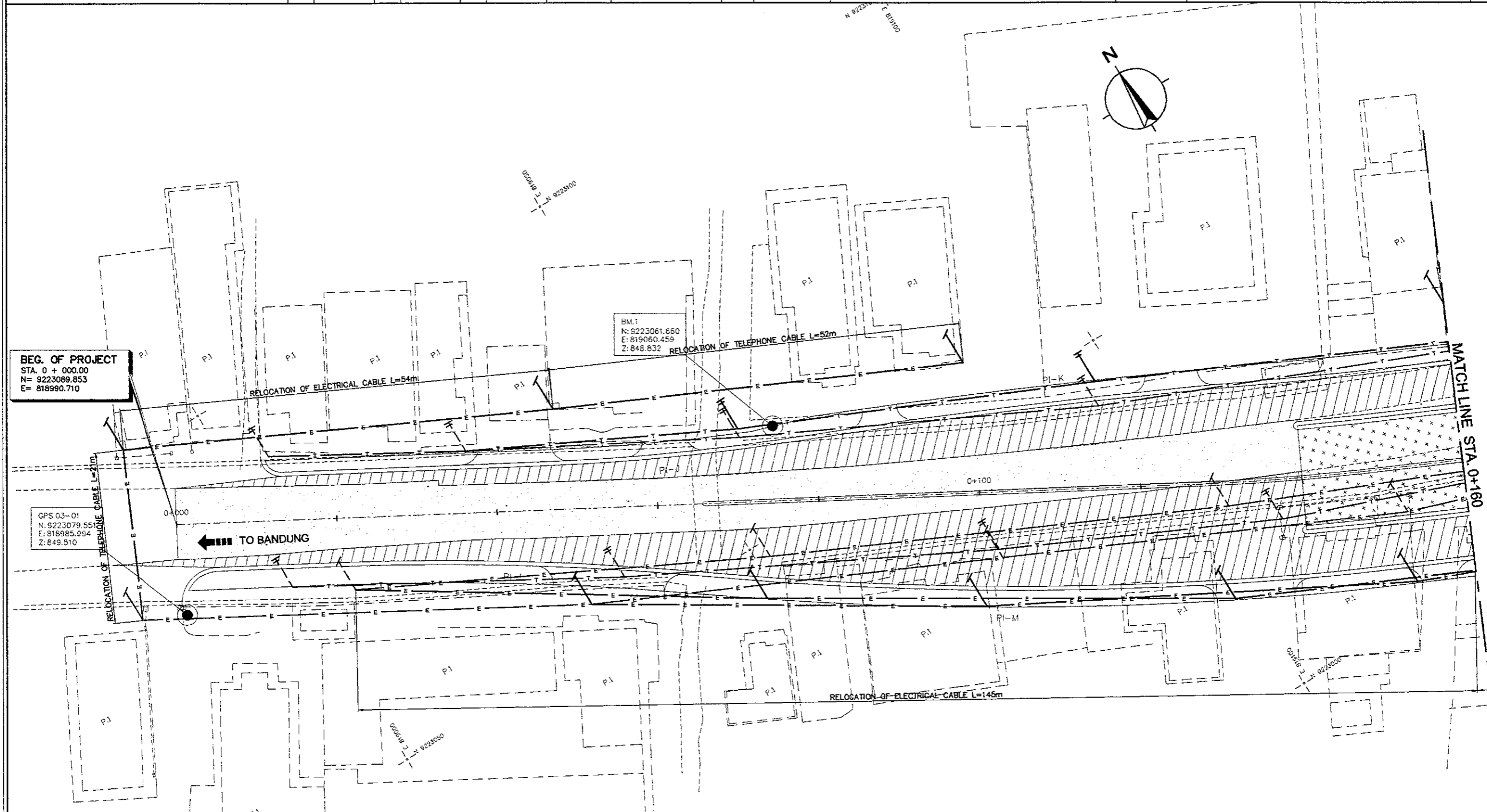
JAPAN INTERNATIONAL
COOPERATION AGENCY



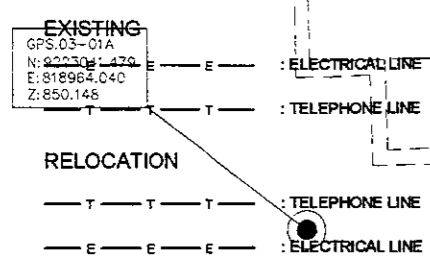
DIRECTORATE GENERAL OF HIGHWAY
MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

UTILITIES

 **KEI** KATAHIRA & ENGINEERS INTERNATIONAL



NOTATION :



SUMMARY OF PROPOSED UTILITIES RELOCATION

DESCRIPTION	TOTAL QUANTITY
1. ELECTRICAL POST RELOCATION	30 nos
2. ELECTRICAL CABLE RELOCATION LEFT SIDE	L = 1065 m
3. ELECTRICAL CABLE RELOCATION RIGHT SIDE	L = 625 m
4. DUCT BOX CROSSING	L = 30 m
5. TELEPHONE POST RELOCATION	27 nos
6. TELEPHONE CABLE RELOCATION	930 m

1 PUBLIC UTILITIES ABOVE GROUND EXISTING AND RELOCATION
 SCALE 1:500

NOTES :

- EXTENT, POSITION, SIZE AND TYPE OF PUBLIC UTILITIES SHOWN ON THIS DRAWING WERE BASED ON INFORMATION EXTRACTED FROM THE RECORDS OF THE VARIOUS PUBLIC UTILITY AUTHORITIES AND MUST BE REGARDED AS APPROXIMATE ONLY, NEITHER THE EMPLOYER NOR THE CONSULTANT GUARANTEE THE ACCURACY OF THE INFORMATION AND THE LOCATION OF UTILITIES AS SHOWN IN THE DRAWING.
- THE CONTRACTOR SHALL VERIFY THE POSITION, DEPTH, SIZE AND GRADIENT OF ALL AFFECTED EXISTING UTILITIES

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



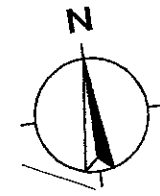
NOTATION :

EXISTING
 — E — E — E — : ELECTRICAL LINE
 — T — T — T — : TELEPHONE LINE

RELOCATION
 — T — T — T — : TELEPHONE LINE
 — E — E — E — : ELECTRICAL LINE

1 PUBLIC UTILITIES ABOVE GROUND EXISTING AND RELOCATION
 SCALE 1:500

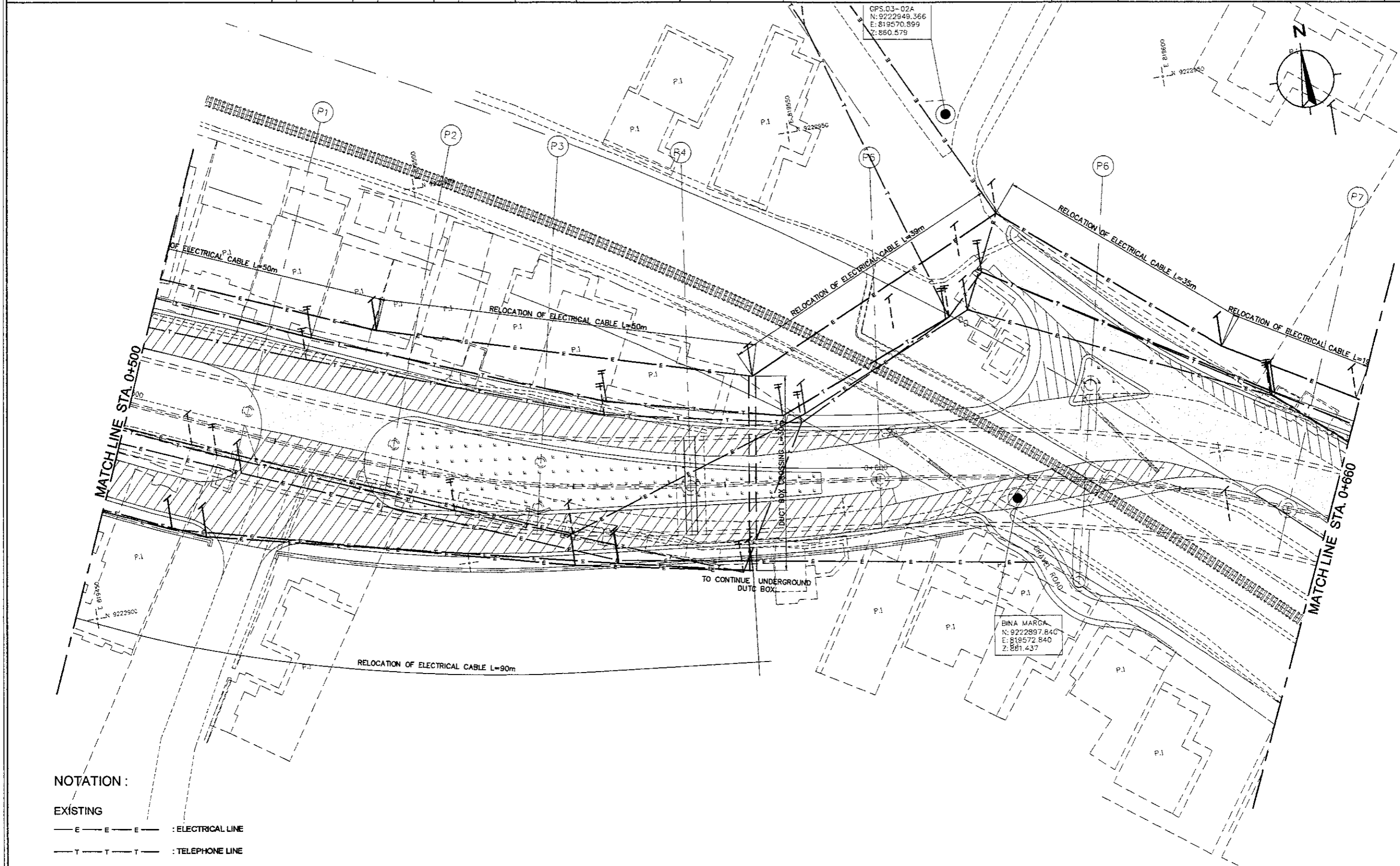
DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



NOTATION :

- EXISTING
- E — E — E — : ELECTRICAL LINE
 - T — T — T — : TELEPHONE LINE
- RELOCATION
- T — T — T — : TELEPHONE LINE
 - E — E — E — : ELECTRICAL LINE

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Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
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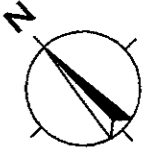
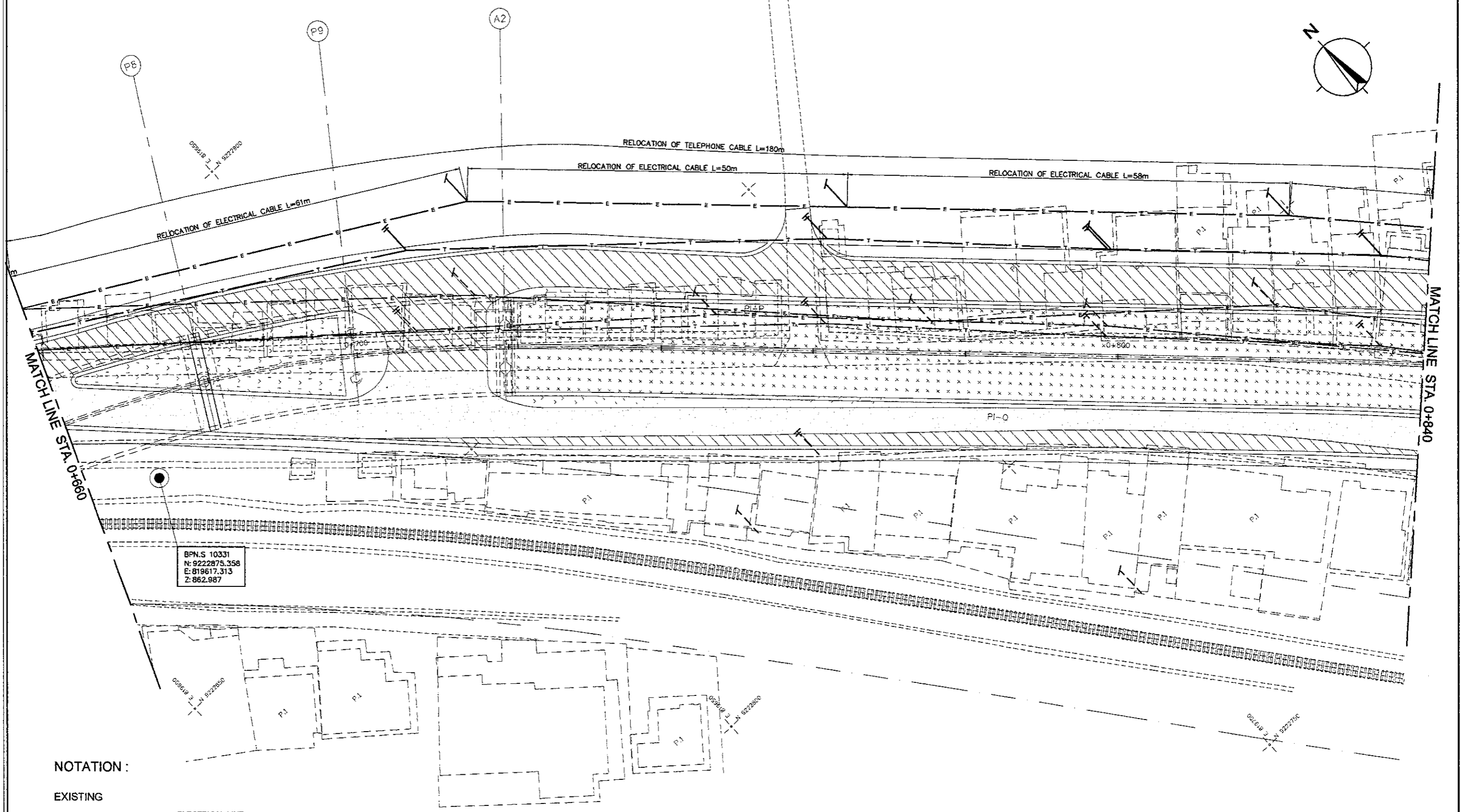
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RELOCATION
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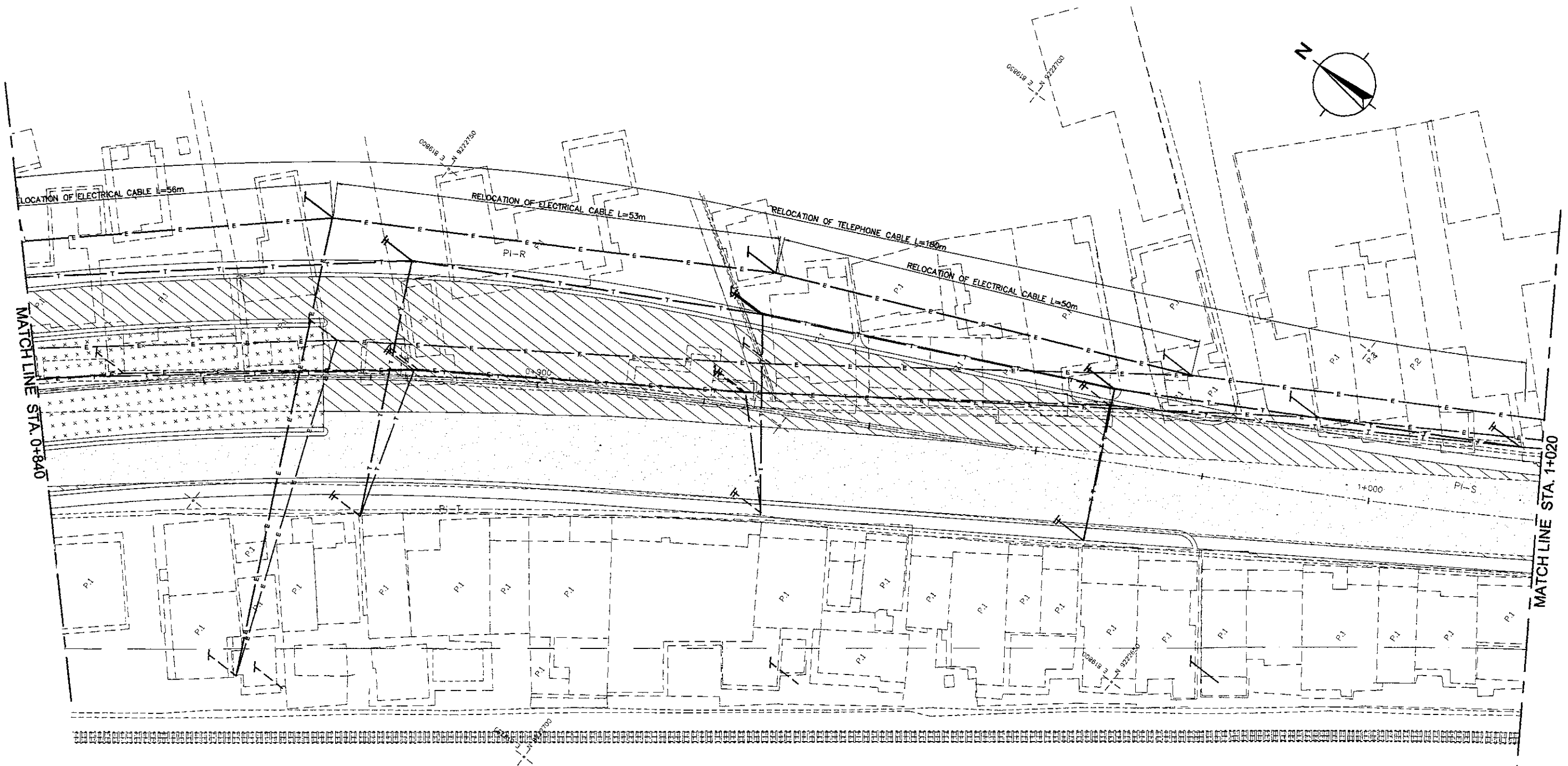
1 PUBLIC UTILITIES ABOVE GROUND EXISTING AND RELOCATION
 SCALE 1:500

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



- NOTATION :
- EXISTING
- E — E — E — : ELECTRICAL LINE
 - T — T — T — : TELEPHONE LINE
- RELOCATION
- T — T — T — : TELEPHONE LINE
 - E — E — E — : ELECTRICAL LINE

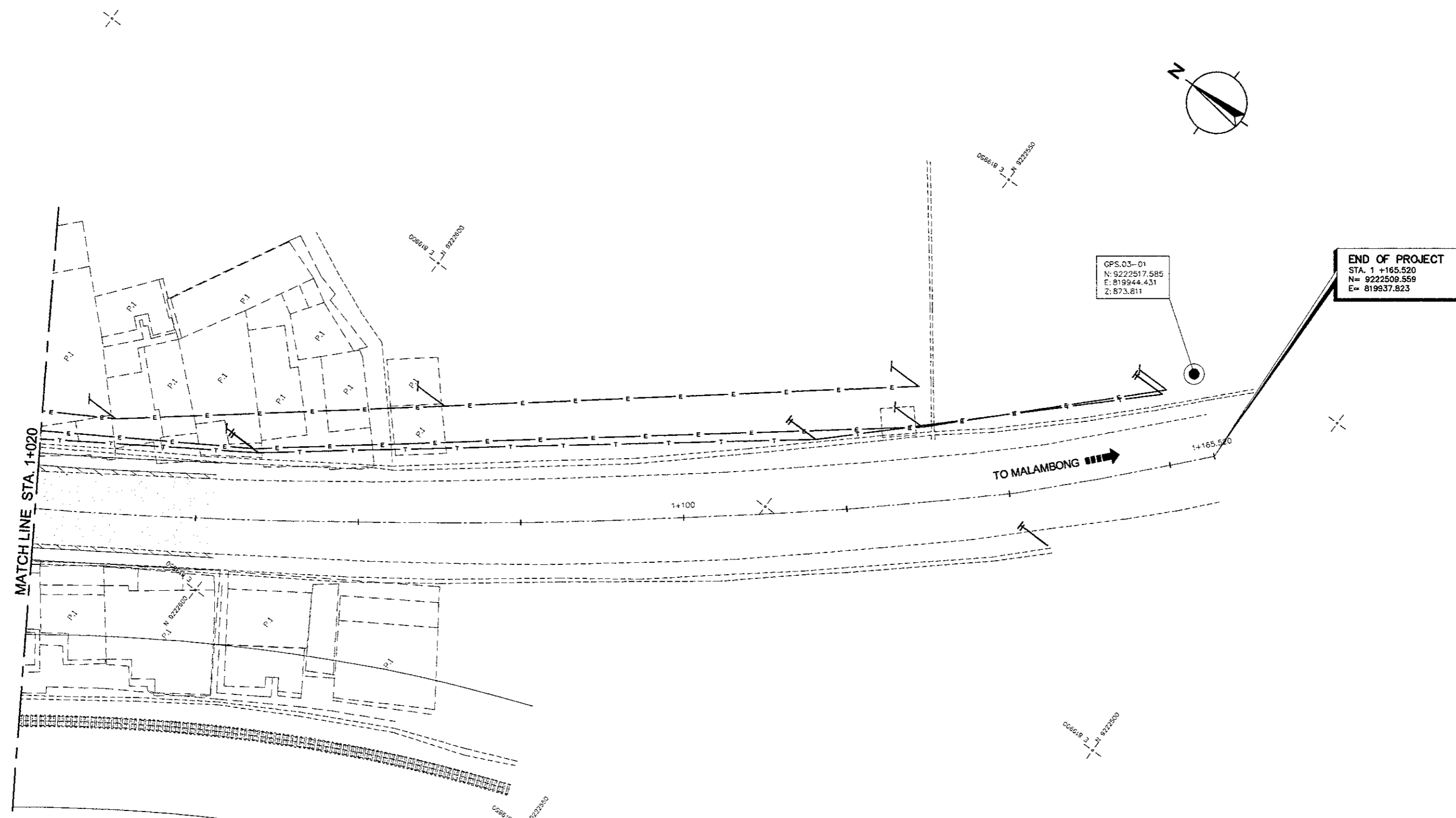
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Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



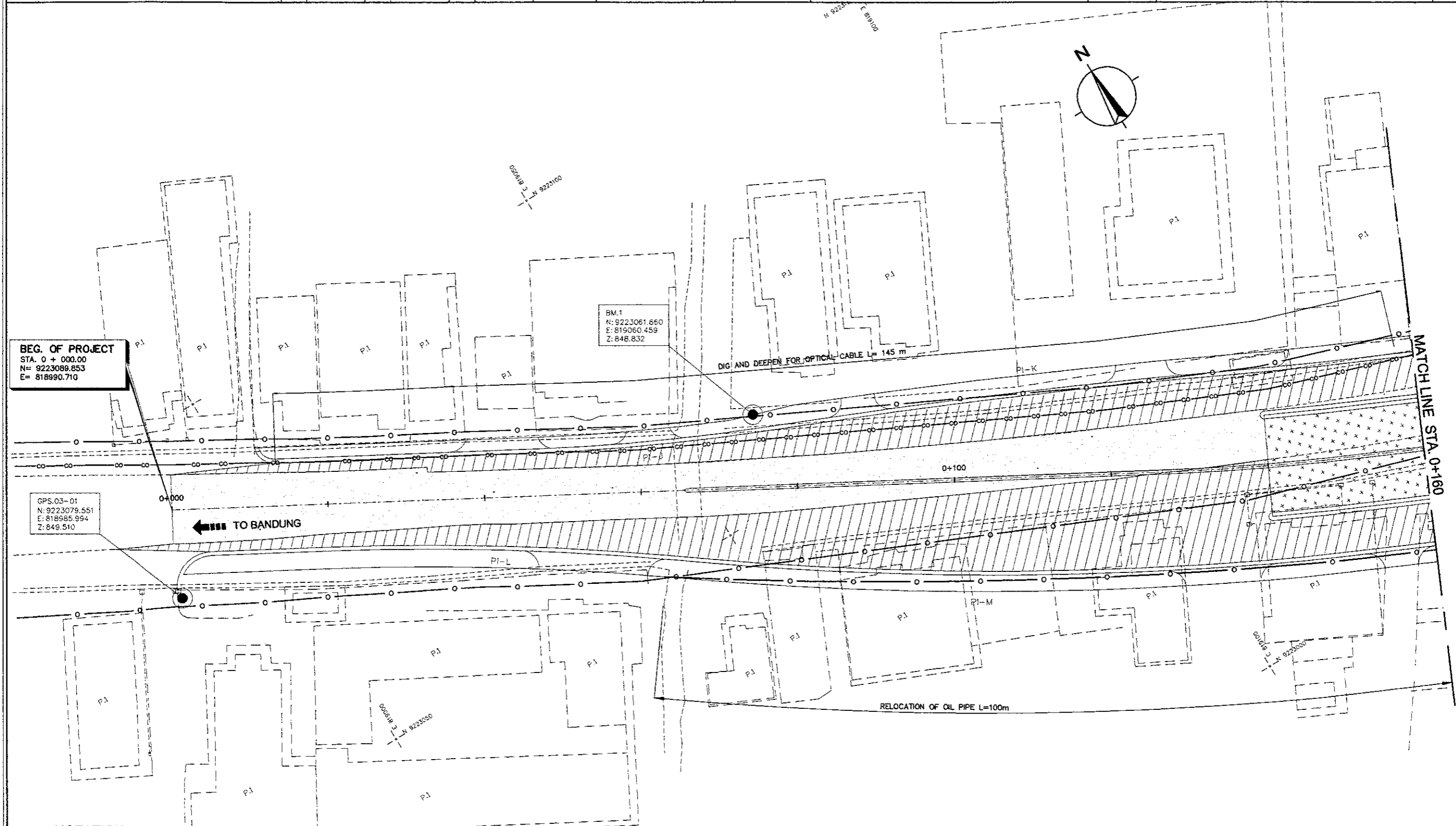
NOTATION :

- EXISTING
- E — E — E — : ELECTRICAL LINE
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- RELOCATION
- T — T — T — : TELEPHONE LINE
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Sign		Sign		Sign	
Date		Date		Date	



- NOTATION :
- EXISTING
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 - T — T — T — : TELEPHONE LINE
- RELOCATION
- T — T — T — : TELEPHONE LINE
 - E — E — E — : ELECTRICAL LINE

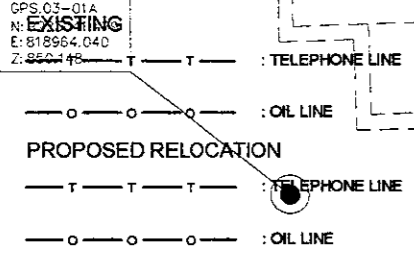


BEG. OF PROJECT
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 E= 818990.710

GPS.03-01
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 E: 818985.994
 Z: 849.510

BM.1
 N: 9223061.660
 E: 819060.459
 Z: 848.832

NOTATION :



SUMMARY OF PROPOSED UTILITIES RELOCATION

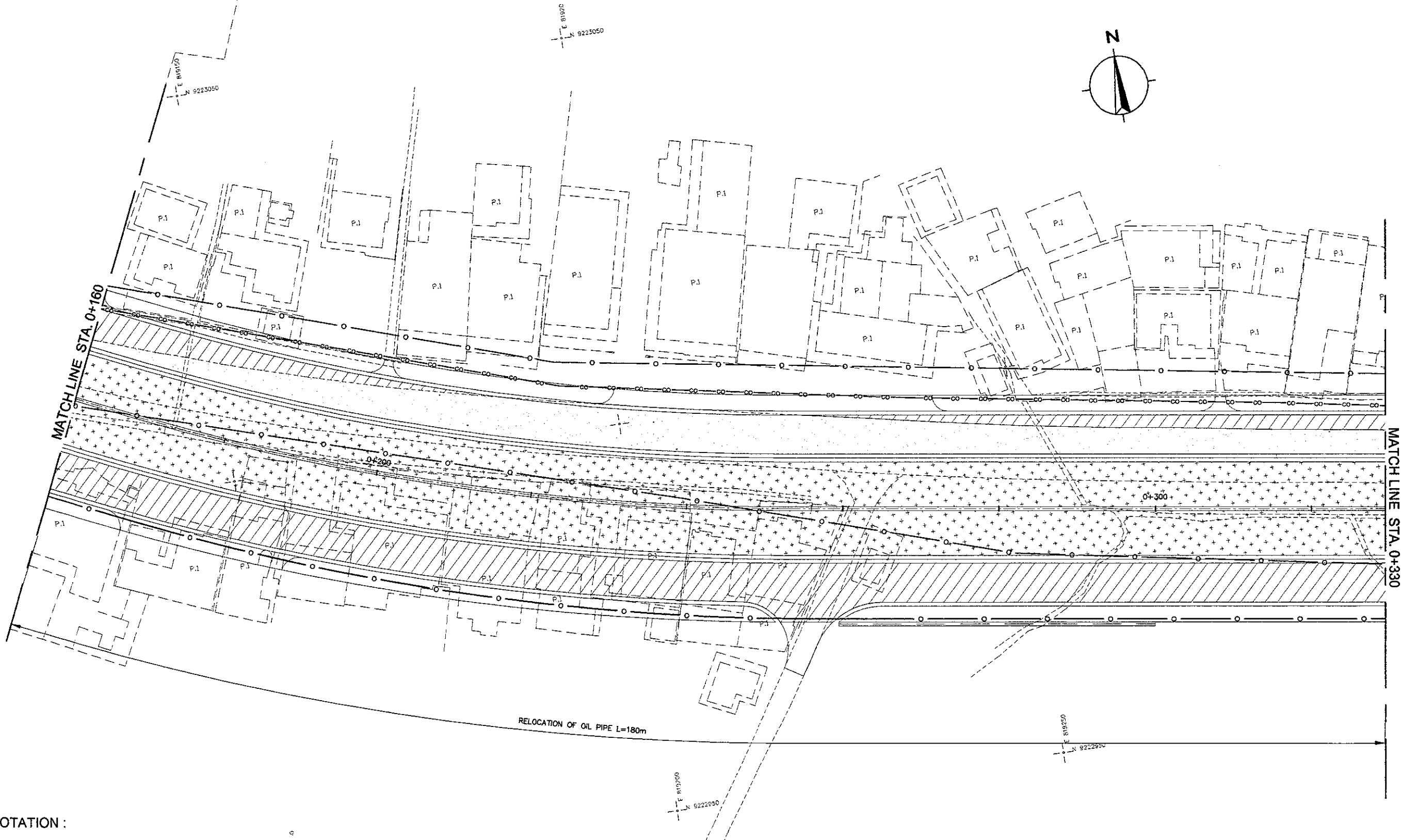
DESCRIPTION	TOTAL QUANTITY
1. OIL PIPE RIGHT SIDE Ø400 RELOCATION	L = 570m
2. OIL PIPE LEFT SIDE Ø250 PROTECTION	
TYPE A	L = 215m
TYPE D	L = 170m
3. OPTICAL CABLE DIG AND DEEPEN	L = 340m



NOTES :

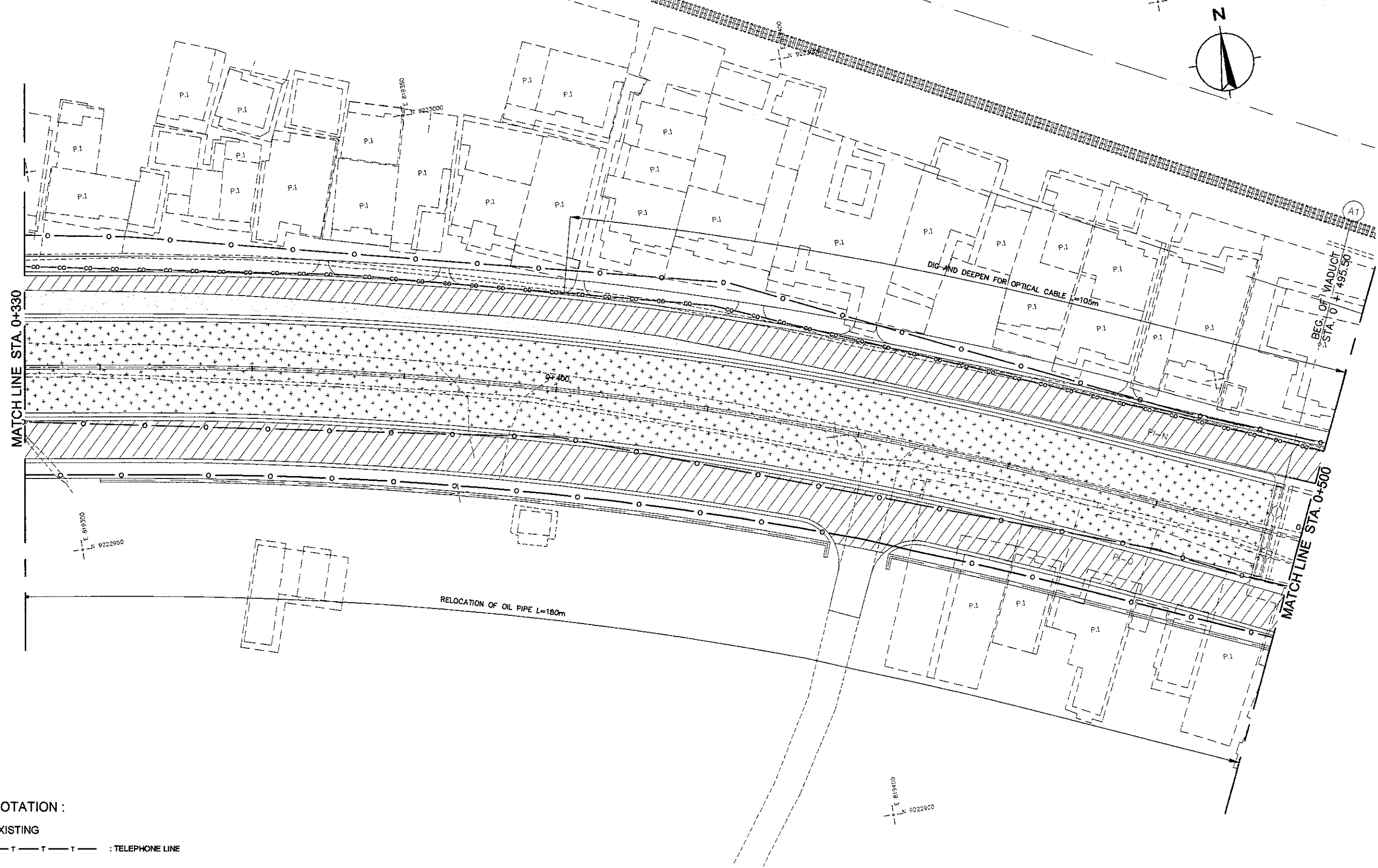
- EXTENT, POSITION, SIZE AND TYPE OF PUBLIC UTILITIES SHOWN ON THIS DRAWING WERE BASED ON INFORMATION EXTRACTED FROM THE RECORDS OF THE VARIOUS PUBLIC UTILITY AUTHORITIES AND MUST BE REGARDED AS APPROXIMATE ONLY, NEITHER THE EMPLOYER NOR THE CONSULTANT GUARANTEE THE ACCURACY OF THE INFORMATION AND THE LOCATION OF UTILITIES AS SHOWN IN THE DRAWING.
- THE CONTRACTOR SHALL VERIFY THE POSITION, DEPTH, SIZE AND GRADIENT OF ALL AFFECTED EXISTING UTILITIES

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Sign		Sign		Sign	
Date		Date		Date	



- NOTATION :
- EXISTING
- T — T — T — : TELEPHONE LINE
 - o — o — o — : OIL LINE
- PROPOSED RELOCATION
- T — T — T — : TELEPHONE LINE
 - o — o — o — : OIL LINE

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



NOTATION :

 EXISTING

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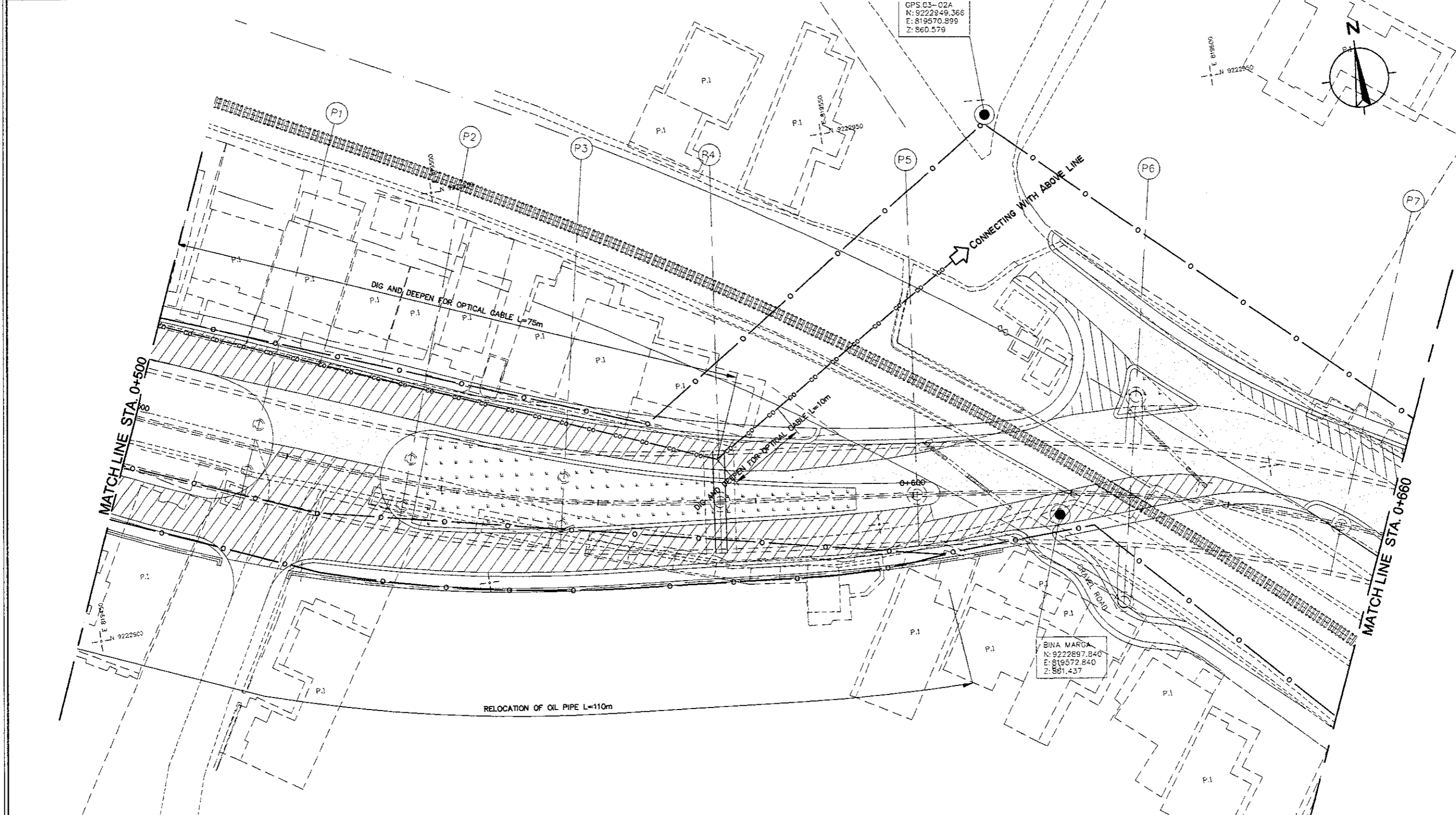
 — O — O — O — : OIL LINE

 PROPOSED RELOCATION

 — T — T — T — : TELEPHONE LINE

 — O — O — O — : OIL LINE

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



NOTATION :

EXISTING

 — T — T — T — : TELEPHONE LINE

 — O — O — O — : OIL LINE

PROPOSED RELOCATION

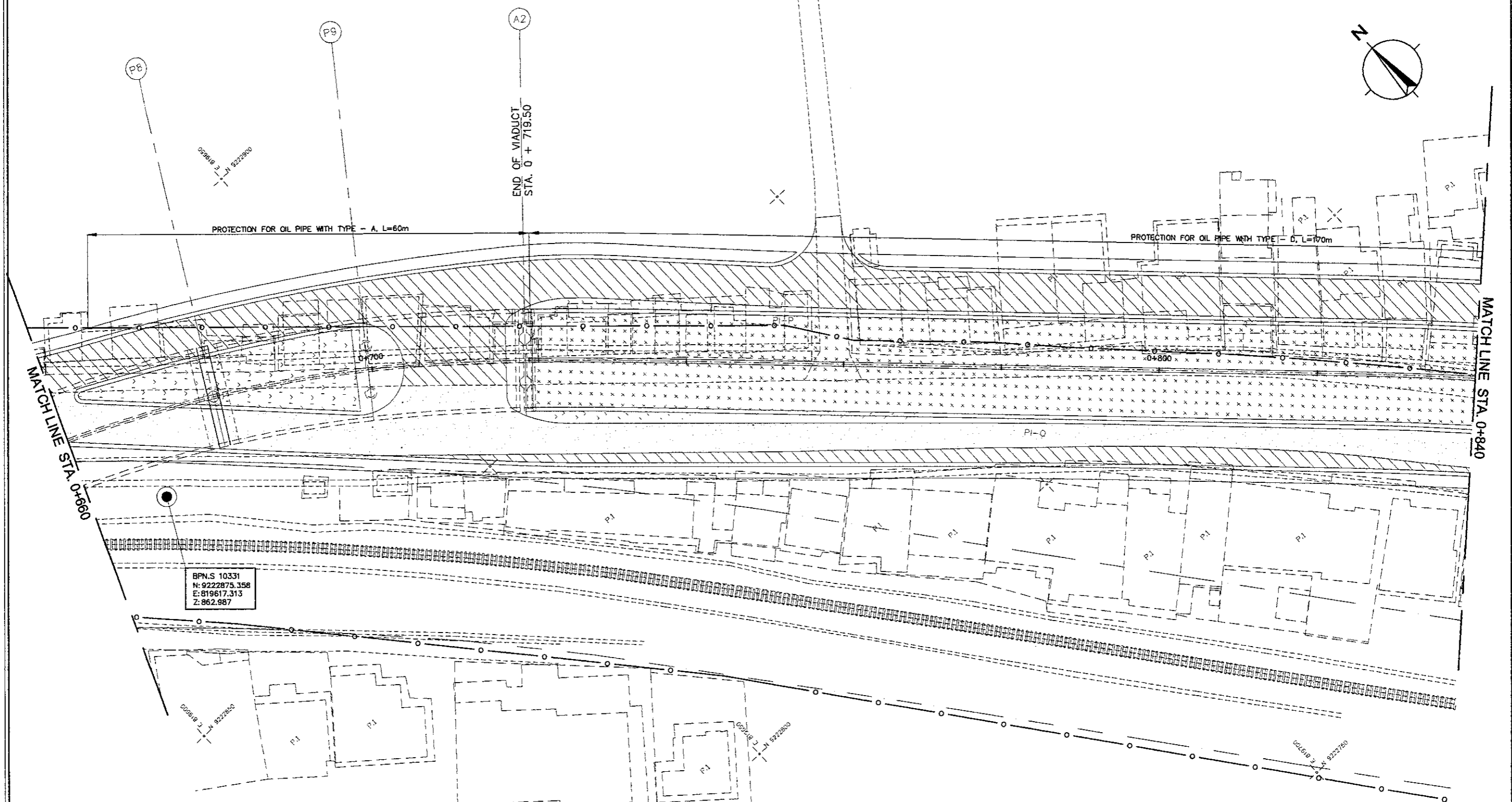
 — T — T — T — : TELEPHONE LINE

 — O — O — O — : OIL LINE


1 PUBLIC UTILITIES UNDER GROUND

 SCALE 1:500

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



- NOTATION :

 EXISTING

 — T — T — T — : TELEPHONE LINE

 — O — O — O — : OIL LINE

 PROPOSED RELOCATION

 — T — T — T — : TELEPHONE LINE

 — O — O — O — : OIL LINE

1 PUBLIC UTILITIES UNDER GROUND

 SCALE 1:500

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

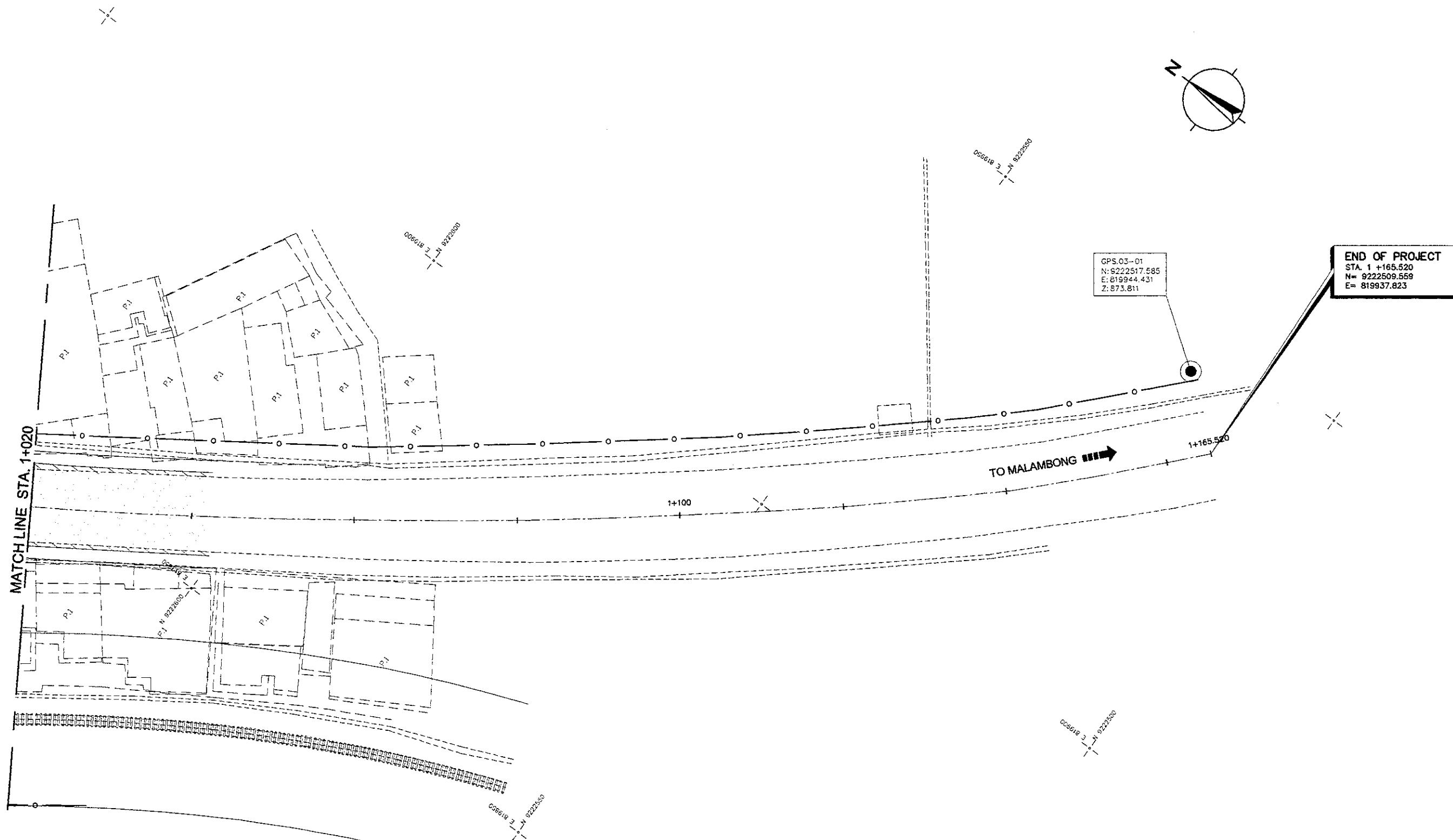


- NOTATION :
- EXISTING
- T — T — T — : TELEPHONE LINE
 - ○ — ○ — ○ — : OIL LINE
- PROPOSED RELOCATION
- T — T — T — : TELEPHONE LINE
 - ○ — ○ — ○ — : OIL LINE

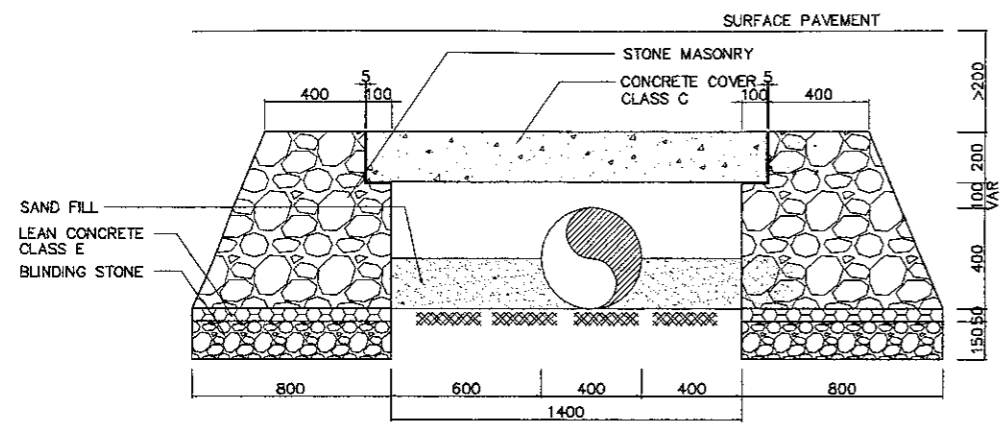

1 PUBLIC UTILITIES UNDER GROUND

 SCALE 1:500

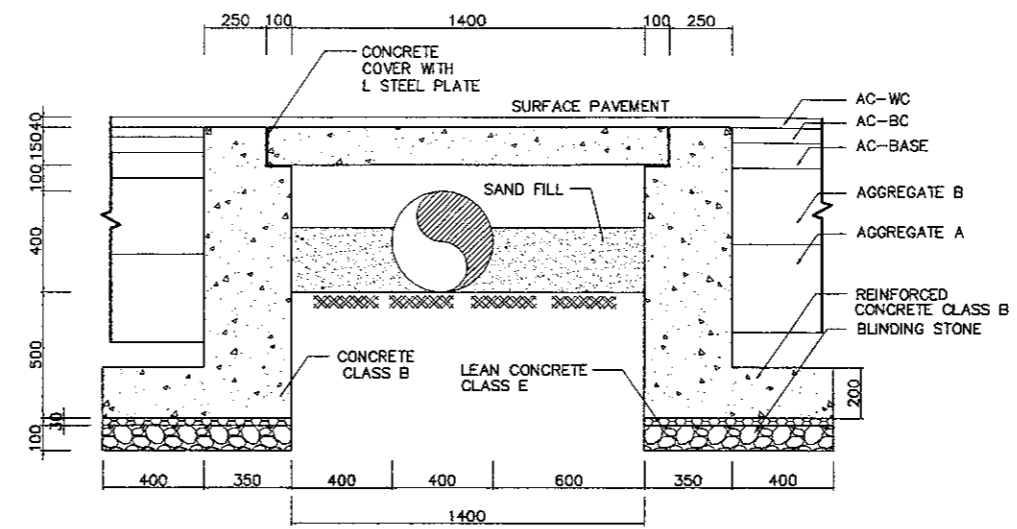
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Sign		Sign		Sign	
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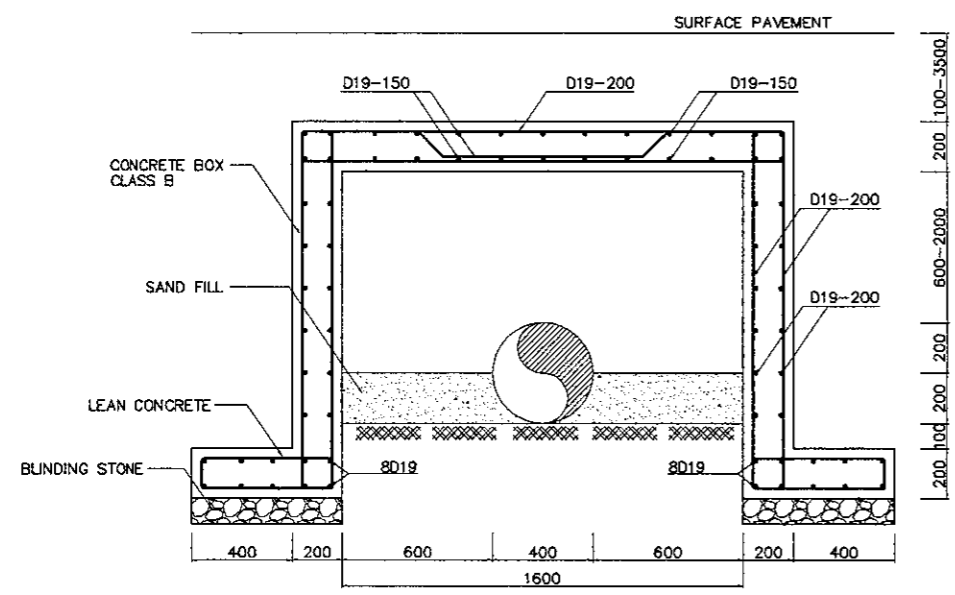
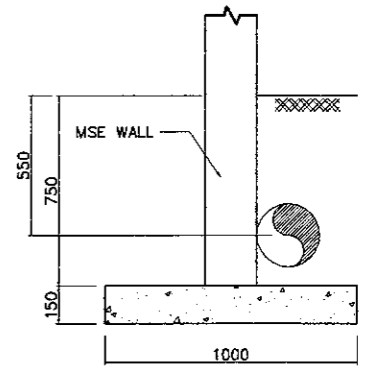
- NOTATION :
- EXISTING
- T — T — T — : TELEPHONE LINE
 - O — O — O — : OIL LINE
- PROPOSED RELOCATION
- T — T — T — : TELEPHONE LINE
 - O — O — O — : OIL LINE



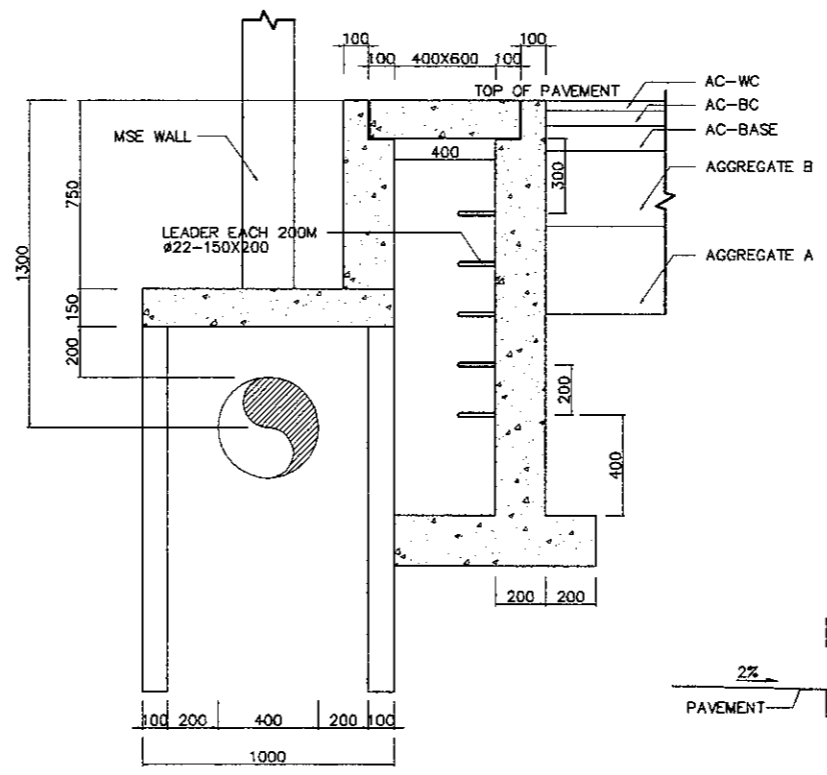
2 UNDER CARRIAGEWAY TYPE - B
 SCALE 1:30



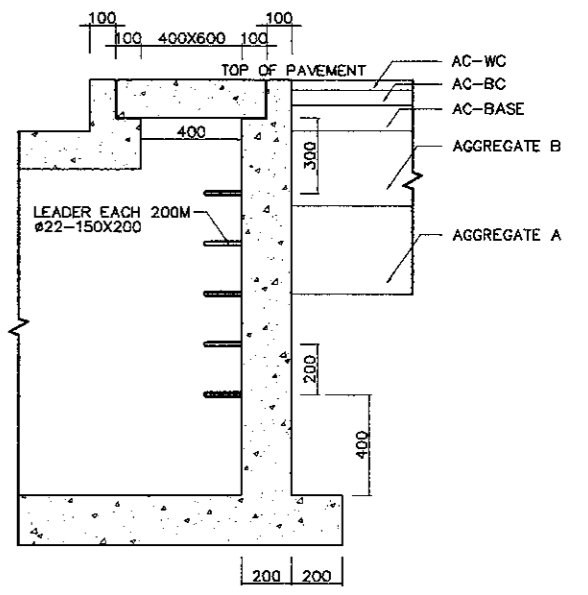
1 UNDER CARRIAGEWAY WITH LIMITED GROUND COVER TYPE - A
 SCALE 1:30



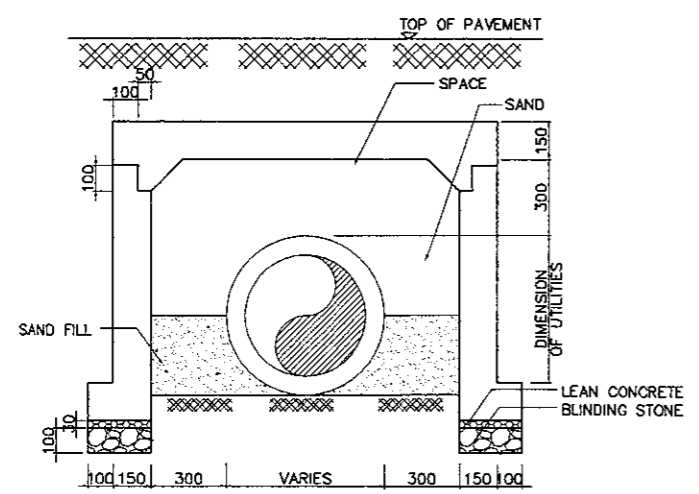
3 UNDER ABUTMENT TYPE - C
 SCALE 1:30



7 UNDER MSE WALL FOUNDATION TYPE - G
 SCALE 1:30



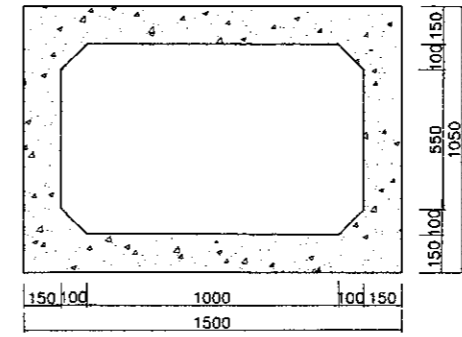
8 INSPECTION & MAINTENANCE OPENING
 SCALE 1:30



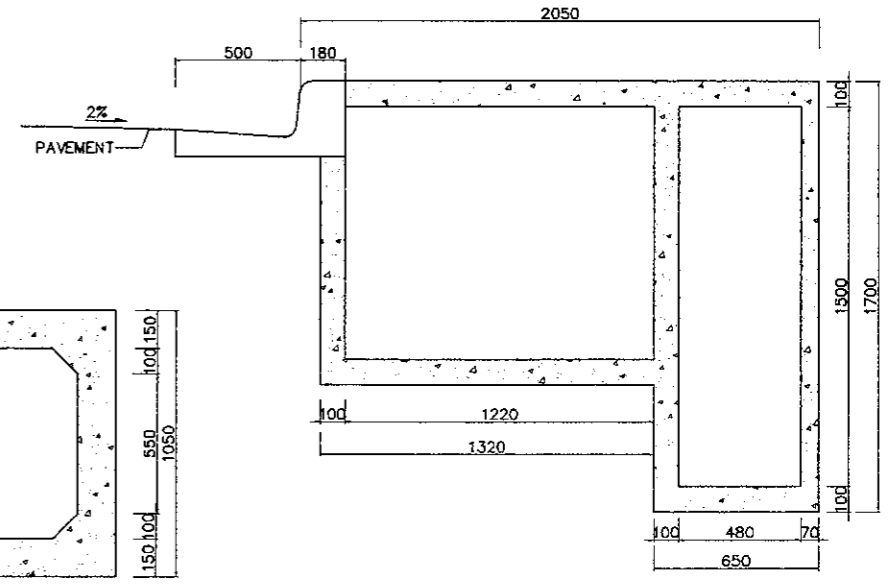
4 PROTECTION UNDER CARRIAGEWAY TYPE - D
 SCALE 1:30



6 PROTECTION DUCT BOX SPACE TYPE - F
 SCALE 1:30



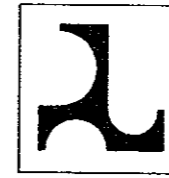
5 CROSSING BOX CULVERT UTILITIES TYPE - E
 SCALE 1:30



9 UTILITIES BOX SPACE
 SCALE 1:30



JAPAN INTERNATIONAL
COOPERATION AGENCY



DIRECTORATE GENERAL OF HIGHWAY
MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

ROAD LIGHTING

 **Kei** KATAHIRA & ENGINEERS INTERNATIONAL

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



APPROVED BY	Ir. HERRY VAZA M,Eng.Sc	Sign	
	NIP. : 110038400	Date	





PROJECT AND LOCATION :	DETAILED DESIGN STUDY OF NORTH JAVA CORRIDOR FLYOVER PROJECT NAGREG FLYOVER - CONTRACT PACKAGE 2 (NAGREG - GEBANG) WEST JAVA PROVINCE
------------------------	---

SCALE :	N T 5
	FULL SIZE A3

DRAWING TITLE :	LEGEND AND NOTES
-----------------	------------------

DRAWING NO :	NRL - 001
SHEET NO :	01 / 13

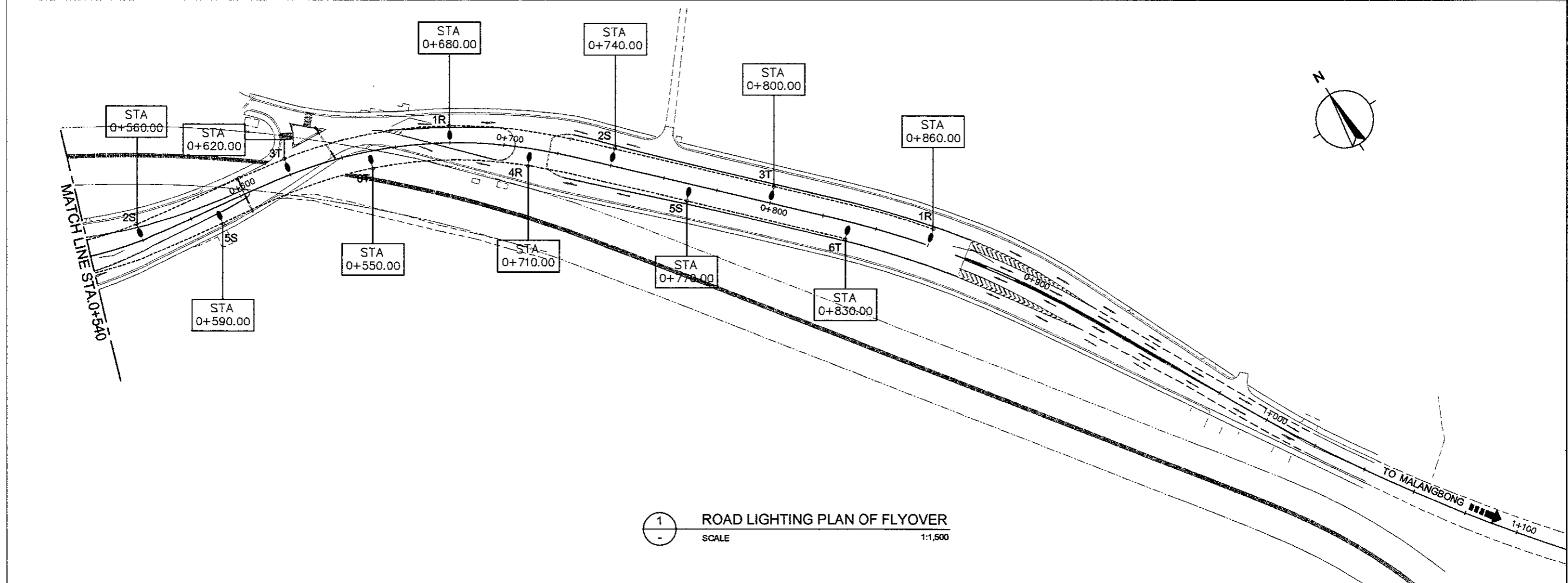
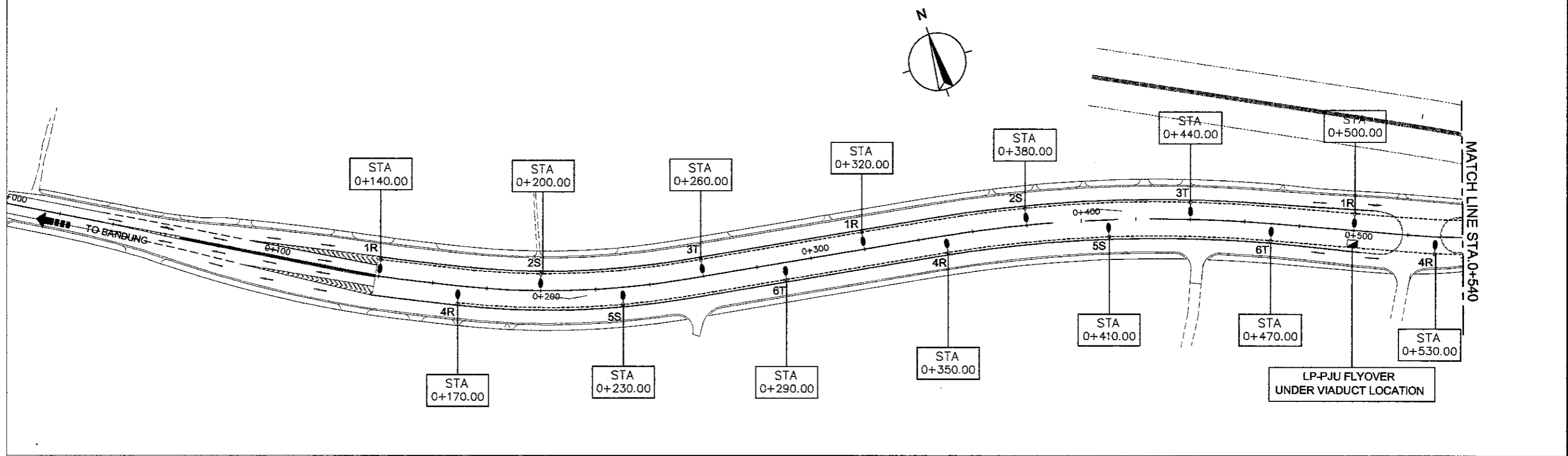
LEGEND

SYMBOL	DESCRIPTION	REMARKS
	ROAD LIGHTING POLE TYPE - A	SEE NOTES : 1
	LIGHTING UNDER VIADUCT TYPE - B	SEE NOTES : 2
	CABLE INSTALLATION	SEE NOTES : 3
	ROAD LIGHTING PANEL	

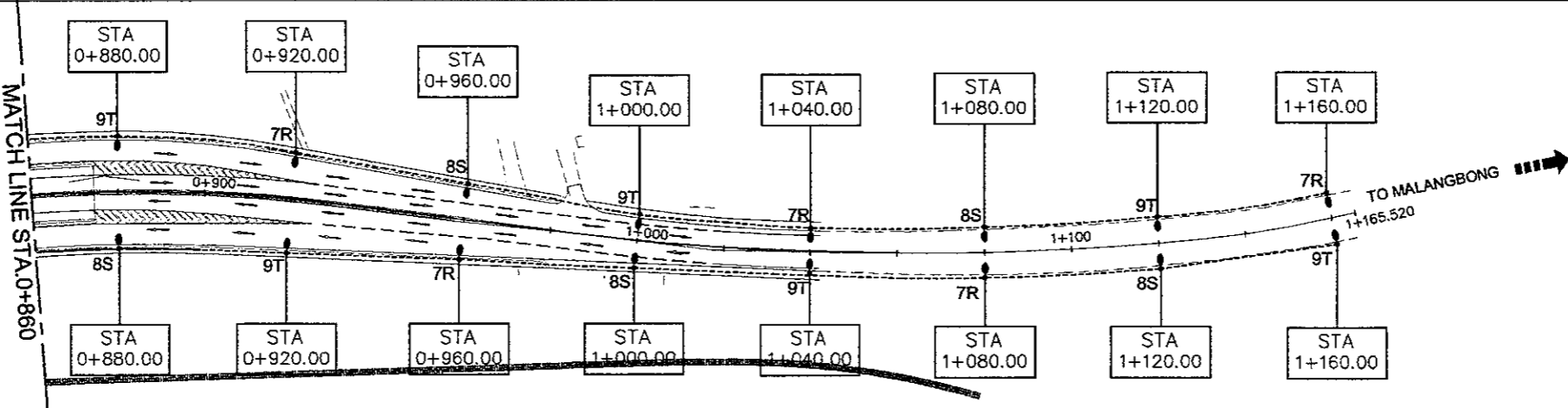
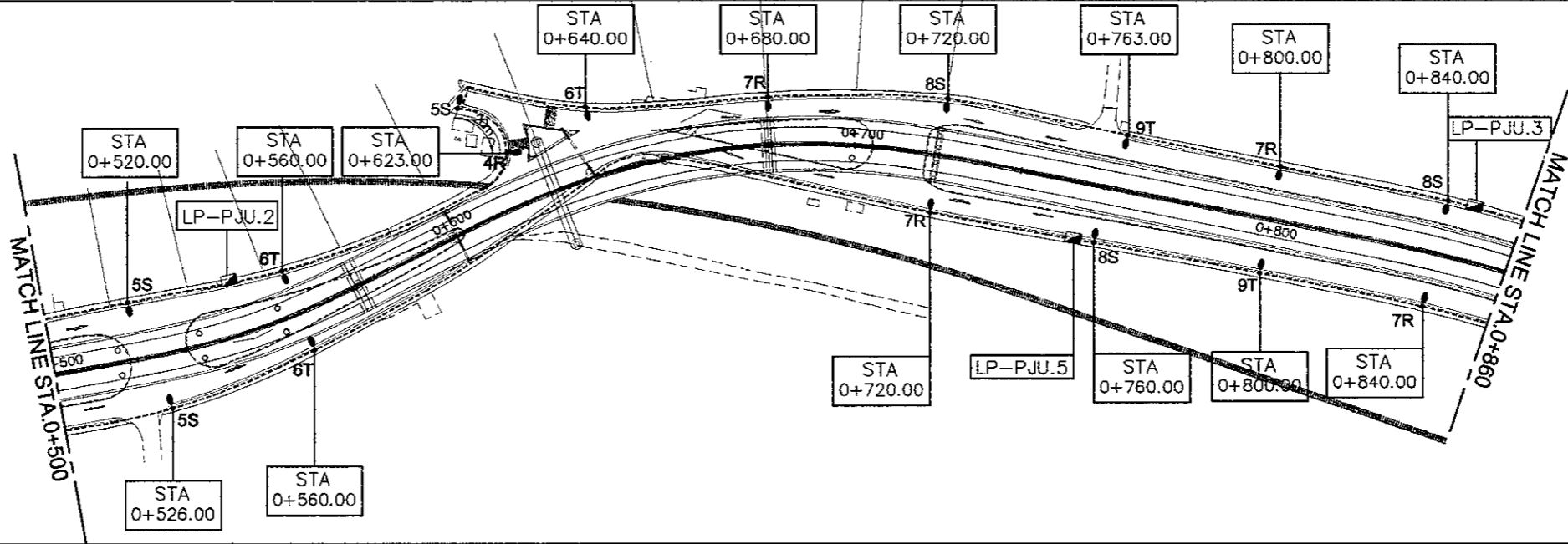
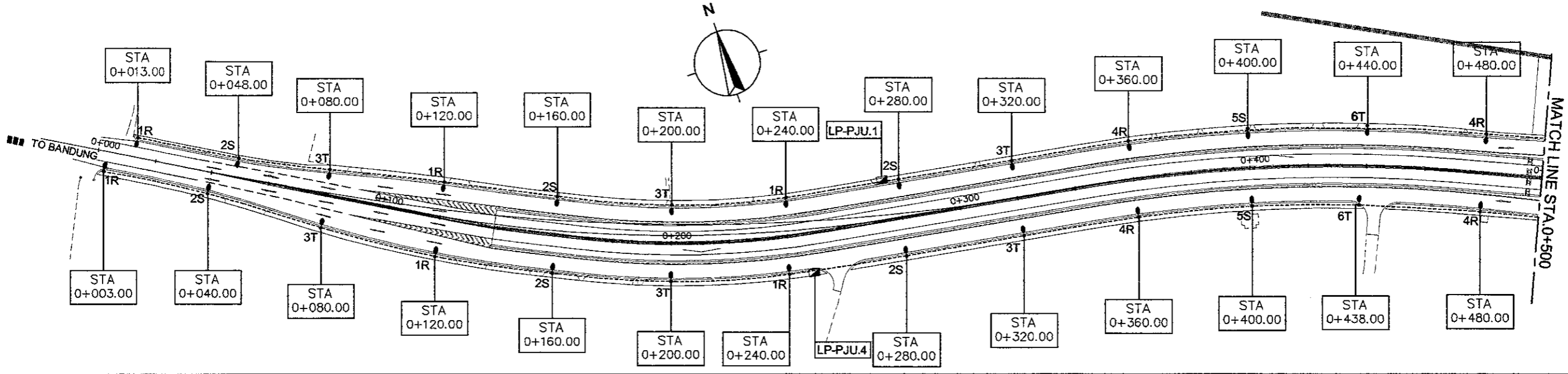
NOTES

1. TYPE A : POLE IS 11 m HIGH OCTAGONAL GALVANIZED HOT.DIP TYPE STEEL POLE WITH SINGLE ARM, 250 HIGH PRESSURE SODIUM LAMP (SON - TP 250 W)
2. TYPE B : LIGHTING UNDER VIADUCT SURFACE MOUNTED,(SON - T 150 W)
3. CABLE : - NYFGbY PVC INSULATION FLAT STEEL WIRE ARMOURING AND PVC OUTER SHEATHING,SIZE ARE 10, 25 AND 50 mm²
 - NYY PVC INSULATION AND SHEATHING SIZE ARE 2.5 mm²
4. GROUNDING :
 ELECTRODE : UNLESS INDICATED OTHERWISE,GROUNDING ELECTRODES SHALL BE PROVIDED TO EACH ROAD LIGHTING POLE,TRAFFIC SIGNAL POLE AND PANELS

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

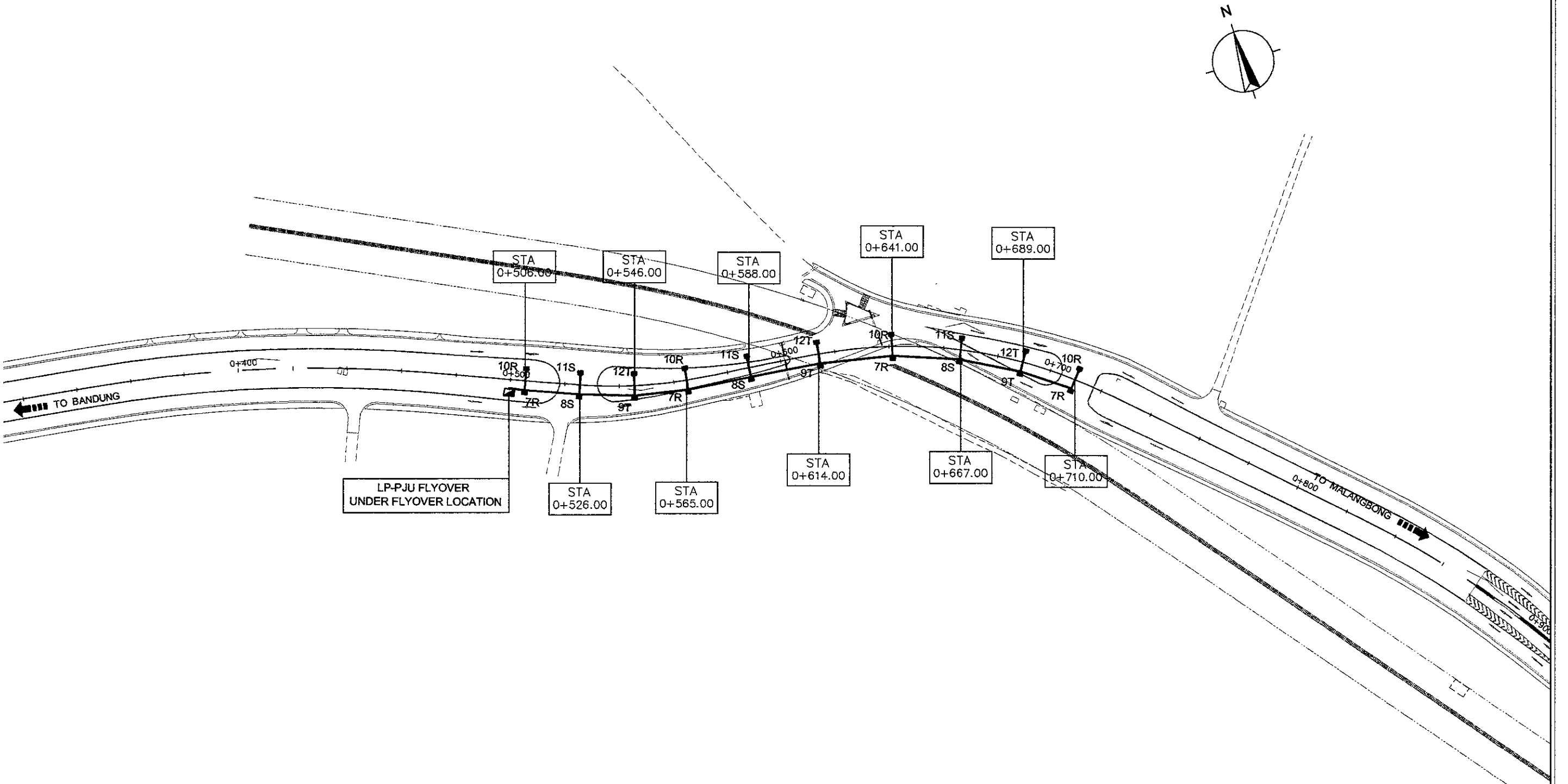


DESIGNED BY	CHECKED BY	SUBMITTED BY
Name R. UENO	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



1 ROAD LIGHTING PLAN OF SERVICE ROAD
 SCALE 1:1,500

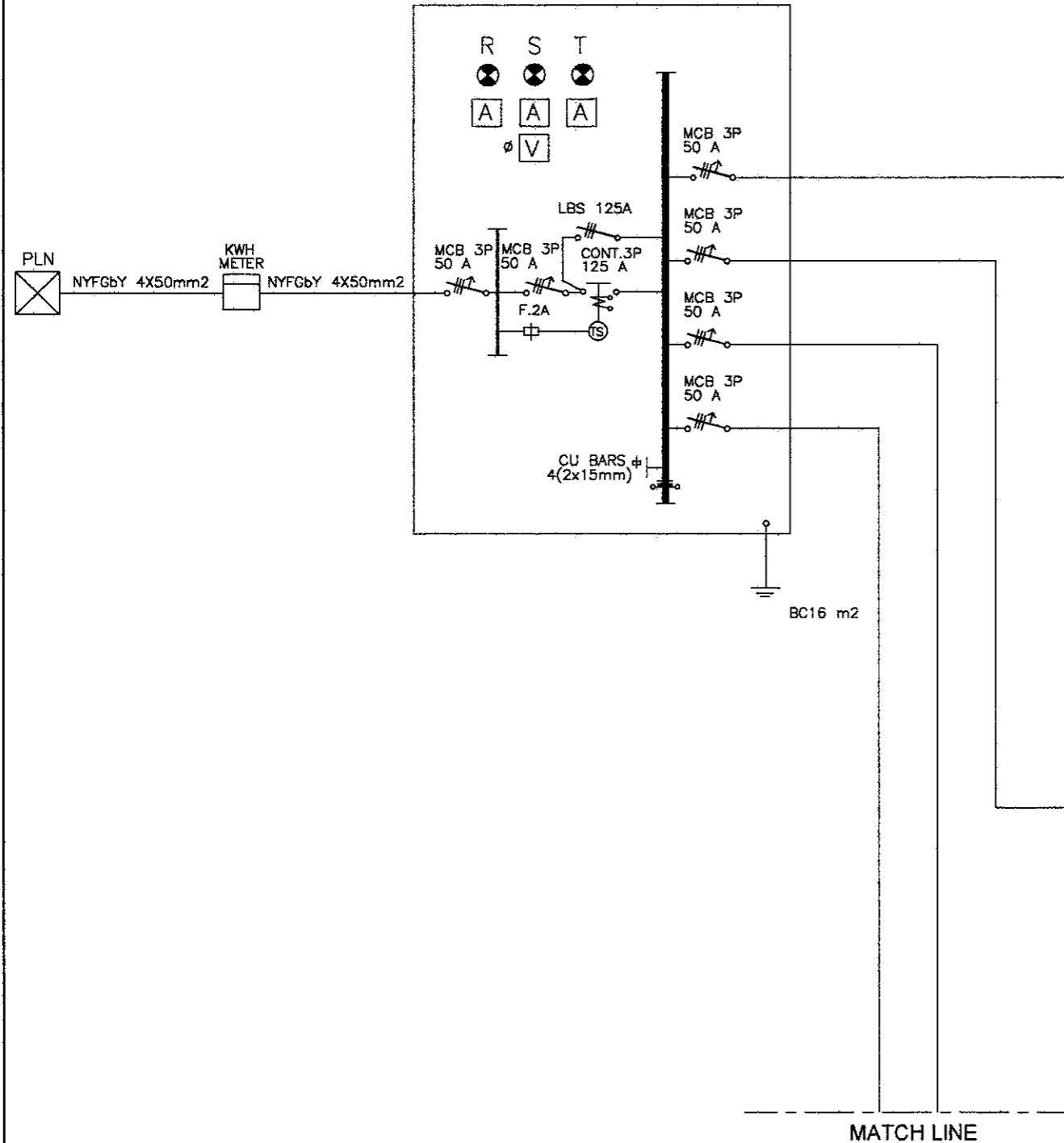
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name R. UENO	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



1 ROAD LIGHTING PLAN OF UNDER VIADUCT

 SCALE 1:1,500

LP-PJU FLYOVER
 (UNDER VIADUCT LOCATION)



LIGHTING FLYOVER

CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE SON 250 W	LOAD IN WATT			
						R	S	T	
NYFGbY 4X10mm2	1	MCB.1P 2A	1R	NY2X2.5 mm2	1	250			
	2	MCB.1P 2A	2S	NY2X2.5 mm2	1		250		
	3	MCB.1P 2A	3T	NY2X2.5 mm2	1			250	
	4	MCB.1P 2A	1R	NY2X2.5 mm2	1	250			
	5	MCB.1P 2A	2S	NY2X2.5 mm2	1		250		
	6	MCB.1P 2A	3T	NY2X2.5 mm2	1			250	
	7	MCB.1P 2A	1R	NY2X2.5 mm2	1	250			
	8	MCB.1P 2A	2S	NY2X2.5 mm2	1		250		
	9	MCB.1P 2A	3T	NY2X2.5 mm2	1			250	
	10	MCB.1P 2A	1R	NY2X2.5 mm2	1	250			
	11	MCB.1P 2A	2S	NY2X2.5 mm2	1		250		
	12	MCB.1P 2A	3T	NY2X2.5 mm2	1			250	
	13	MCB.1P 2A	1R	NY2X2.5 mm2	1	250			
TOTAL						1250	1000	1000	
TOTAL						3,250 WATT			4,062.50 VA

LIGHTING FLYOVER

CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE SON 250 W	LOAD IN WATT			
						R	S	T	
NYFGbY 4X10mm2	1	MCB.1P 2A	4R	NY2X2.5 mm2	1	250			
	2	MCB.1P 2A	5S	NY2X2.5 mm2	1		250		
	3	MCB.1P 2A	6T	NY2X2.5 mm2	1			250	
	4	MCB.1P 2A	4R	NY2X2.5 mm2	1	250			
	5	MCB.1P 2A	5S	NY2X2.5 mm2	1		250		
	6	MCB.1P 2A	6T	NY2X2.5 mm2	1			250	
	7	MCB.1P 2A	4R	NY2X2.5 mm2	1	250			
	8	MCB.1P 2A	5S	NY2X2.5 mm2	1		250		
	9	MCB.1P 2A	6T	NY2X2.5 mm2	1			250	
	10	MCB.1P 2A	4R	NY2X2.5 mm2	1	250			
	11	MCB.1P 2A	5S	NY2X2.5 mm2	1		250		
	12	MCB.1P 2A	6T	NY2X2.5 mm2	1			250	
TOTAL						1000	1000	1000	
TOTAL						3,000 WATT			3,750 VA

MATCH LINE

MATCH LINE

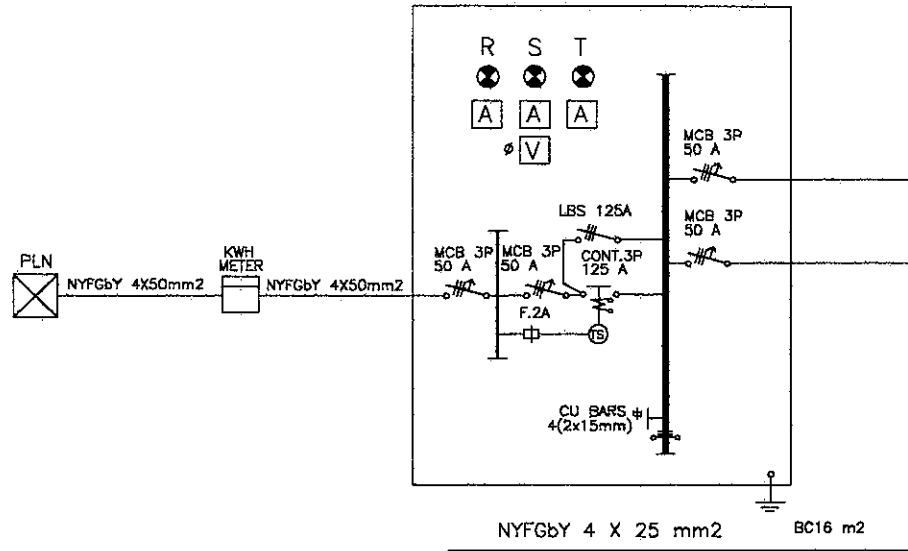
LIGHTING UNDER VIADUCT

CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	G R O U P	CABLE TO LIGHTING	LIGHTING HEAD TYPE		LOAD IN WATT				
					SON 150 W		R	S	T		
NYFGbY 4X10mm2	1	MCB.1P 2A	7R	NY2X2.5 mm2	1		150				
	2	MCB.1P 2A	8S	NY2X2.5 mm2	1			150			
	3	MCB.1P 2A	9T	NY2X2.5 mm2	1				150		
	4	MCB.1P 2A	7R	NY2X2.5 mm2	1		150				
	5	MCB.1P 2A	8S	NY2X2.5 mm2	1			150			
	6	MCB.1P 2A	9T	NY2X2.5 mm2	1				150		
	7	MCB.1P 2A	7R	NY2X2.5 mm2	1		150				
	8	MCB.1P 2A	8S	NY2X2.5 mm2	1			150			
	9	MCB.1P 2A	9T	NY2X2.5 mm2	1				150		
	10	MCB.1P 2A	7R	NY2X2.5 mm2	1		150				
TOTAL							600	450	450	1,500 WATT	1,875 VA

LIGHTING UNDER VIADUCT

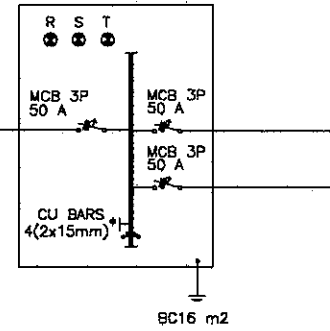
CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	G R O U P	CABLE TO LIGHTING	LIGHTING HEAD TYPE		LOAD IN WATT				
					SON 150 W		R	S	T		
NYFGbY 4X10mm2	1	MCB.1P 2A	10R	NY2X2.5 mm2	1		150				
	2	MCB.1P 2A	11S	NY2X2.5 mm2	1			150			
	3	MCB.1P 2A	12T	NY2X2.5 mm2	1				150		
	4	MCB.1P 2A	10R	NY2X2.5 mm2	1		150				
	5	MCB.1P 2A	11S	NY2X2.5 mm2	1			150			
	6	MCB.1P 2A	12T	NY2X2.5 mm2	1				150		
	7	MCB.1P 2A	10R	NY2X2.5 mm2	1		150				
	8	MCB.1P 2A	11S	NY2X2.5 mm2	1			150			
	9	MCB.1P 2A	12T	NY2X2.5 mm2	1				150		
	10	MCB.1P 2A	10R	NY2X2.5 mm2	1		150				
TOTAL							600	450	450	1,500 WATT	1,875 VA

LP-PJU.4 (SERVICE ROAD)



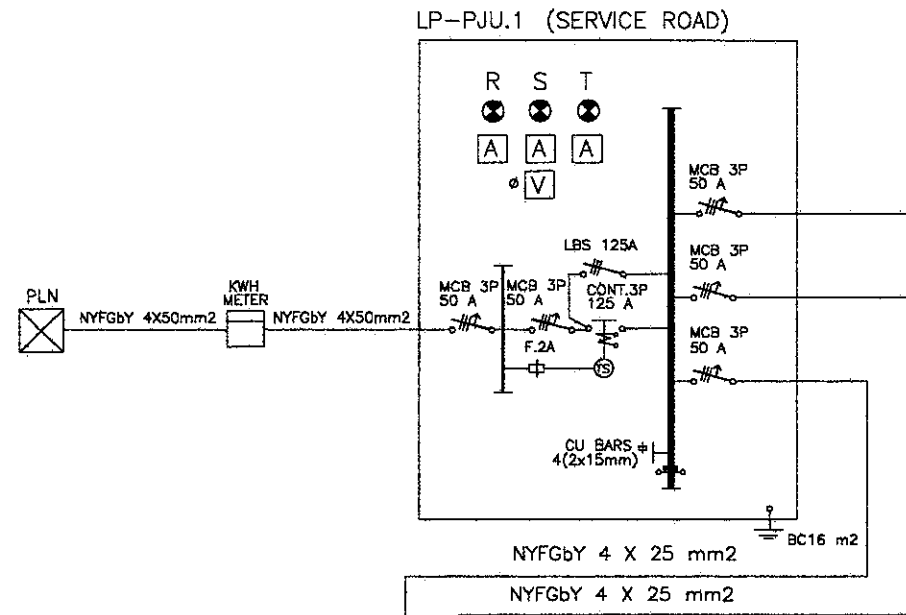
CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	G R O U P	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB 1P 2A	1R	NY2X2.5 mm2	1			250			
	2	MCB 1P 2A	2S	NY2X2.5 mm2	1				250		
	3	MCB 1P 2A	3T	NY2X2.5 mm2	1				250		
	4	MCB 1P 2A	1R	NY2X2.5 mm2	1			250			
	5	MCB 1P 2A	2S	NY2X2.5 mm2	1				250		
	6	MCB 1P 2A	3T	NY2X2.5 mm2	1				250		
	7	MCB 1P 2A	1R	NY2X2.5 mm2	1			250			
	8	MCB 1P 2A	2S	NY2X2.5 mm2	1				250		
	9	MCB 1P 2A	3T	NY2X2.5 mm2	1				250		
								750	750	750	
TOTAL								2,250 WATT			2,812.50 VA

LP-PJU.5

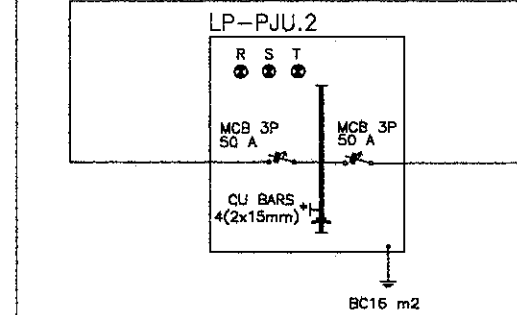


CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	G R O U P	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB 1P 2A	4R	NY2X2.5 mm2	1			250			
	2	MCB 1P 2A	5S	NY2X2.5 mm2	1				250		
	3	MCB 1P 2A	6T	NY2X2.5 mm2	1				250		
	4	MCB 1P 2A	4R	NY2X2.5 mm2	1			250			
	5	MCB 1P 2A	5S	NY2X2.5 mm2	1				250		
	6	MCB 1P 2A	6T	NY2X2.5 mm2	1				250		
								500	500	500	
TOTAL								1,500 WATT			1,875 VA

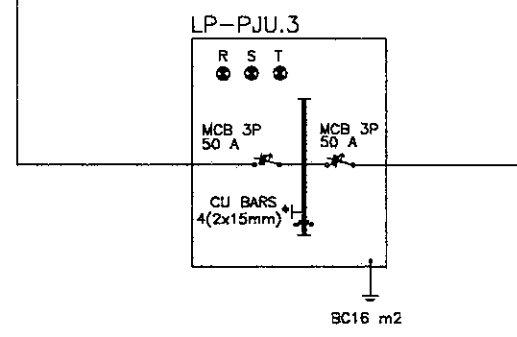
CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	G R O U P	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB 1P 2A	7R	NY2X2.5 mm2	1			250			
	2	MCB 1P 2A	8S	NY2X2.5 mm2	1				250		
	3	MCB 1P 2A	9T	NY2X2.5 mm2	1				250		
	4	MCB 1P 2A	7R	NY2X2.5 mm2	1			250			
	5	MCB 1P 2A	8S	NY2X2.5 mm2	1				250		
	6	MCB 1P 2A	9T	NY2X2.5 mm2	1				250		
	7	MCB 1P 2A	7R	NY2X2.5 mm2	1			250			
	8	MCB 1P 2A	8S	NY2X2.5 mm2	1				250		
	9	MCB 1P 2A	9T	NY2X2.5 mm2	1				250		
	10	MCB 1P 2A	7R	NY2X2.5 mm2	1			250			
	11	MCB 1P 2A	8S	NY2X2.5 mm2	1				250		
	12	MCB 1P 2A	9T	NY2X2.5 mm2	1				250		
								1000	1000	1000	
TOTAL								3,000 WATT			3,750 VA



CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB.1P 2A	1R	NY2X2.5 mm2	1			250			
	2	MCB.1P 2A	2S	NY2X2.5 mm2	1				250		
	3	MCB.1P 2A	3T	NY2X2.5 mm2	1					250	
	4	MCB.1P 2A	1R	NY2X2.5 mm2	1			250			
	5	MCB.1P 2A	2S	NY2X2.5 mm2	1				250		
	6	MCB.1P 2A	3T	NY2X2.5 mm2	1					250	
	7	MCB.1P 2A	1R	NY2X2.5 mm2	1			250			
	8	MCB.1P 2A	2S	NY2X2.5 mm2	1				250		
	9	MCB.1P 2A	3T	NY2X2.5 mm2	1					250	
TOTAL								750	750	750	
TOTAL								2,250 WATT			2,812.50 VA

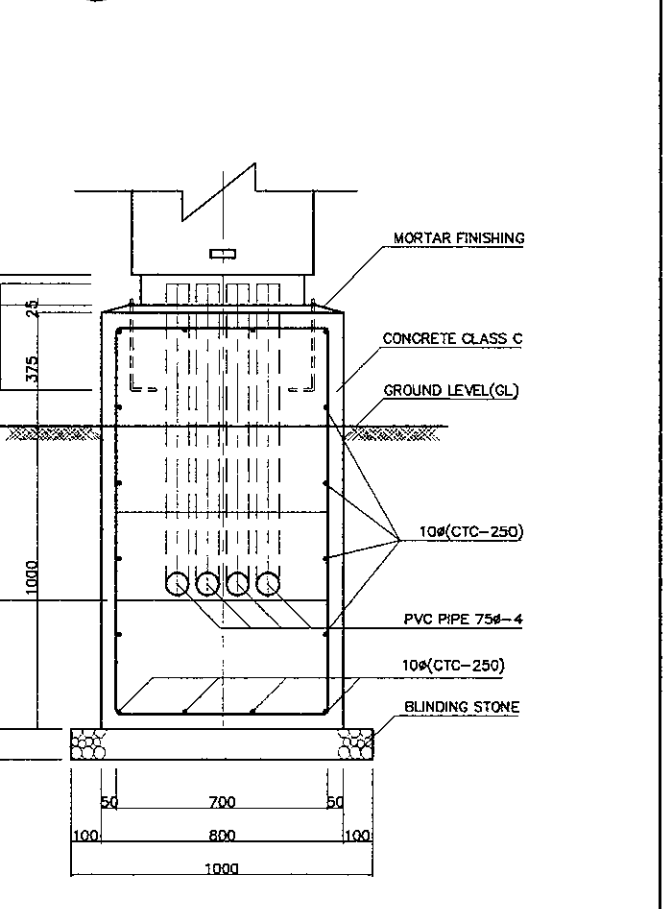
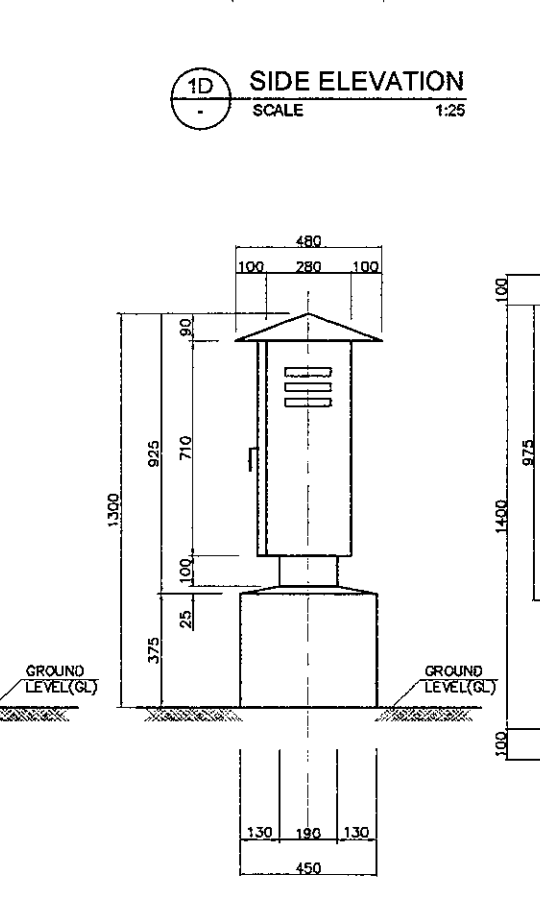
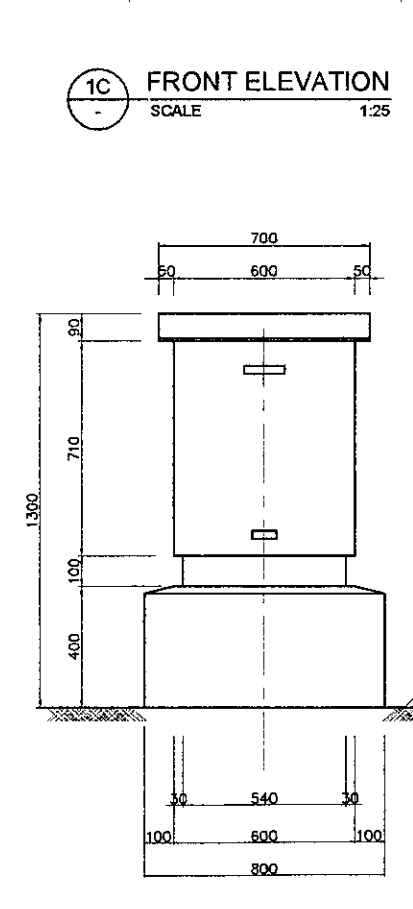
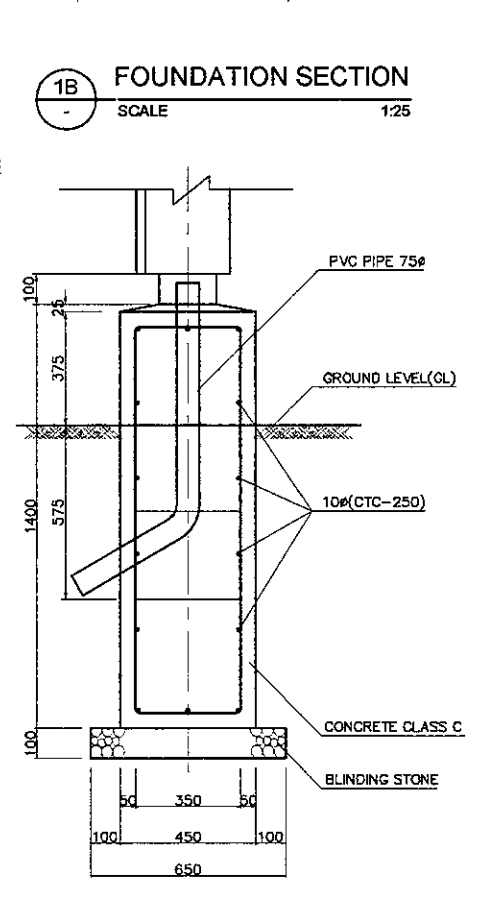
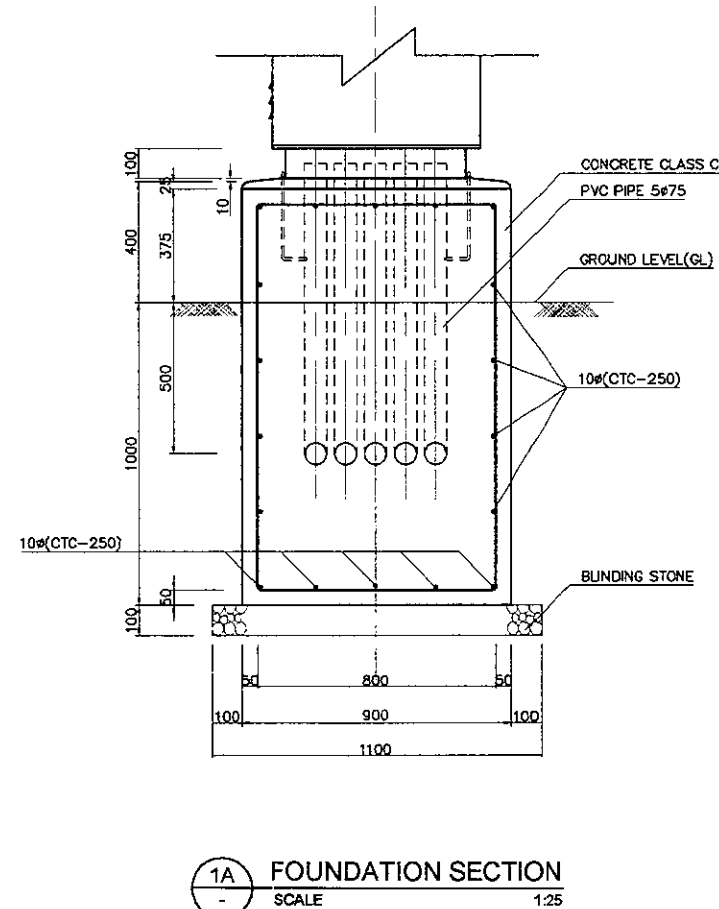
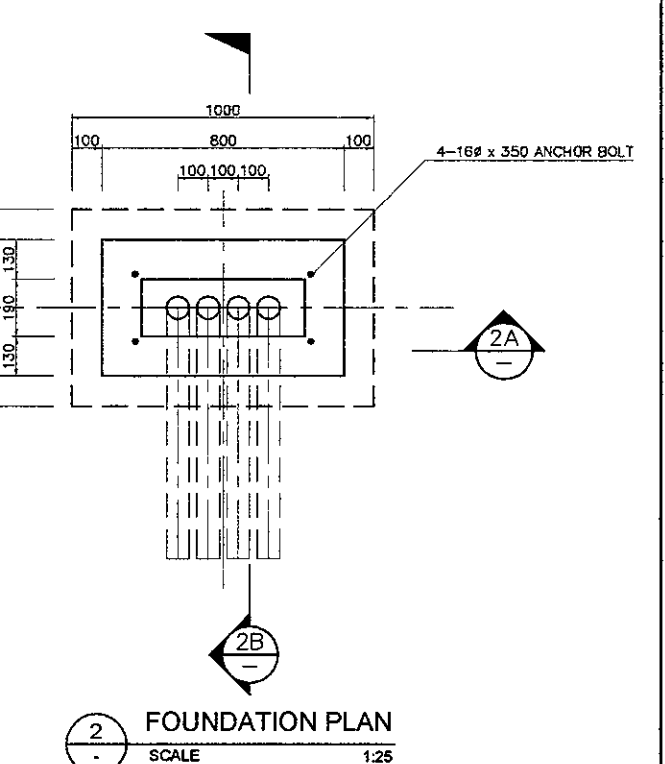
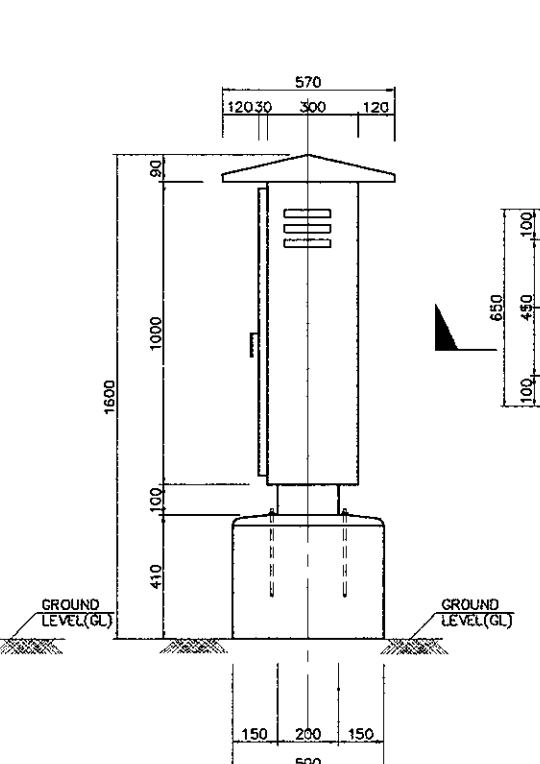
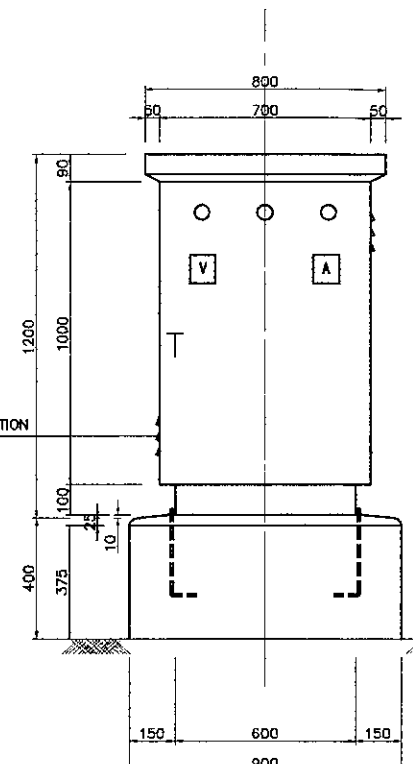
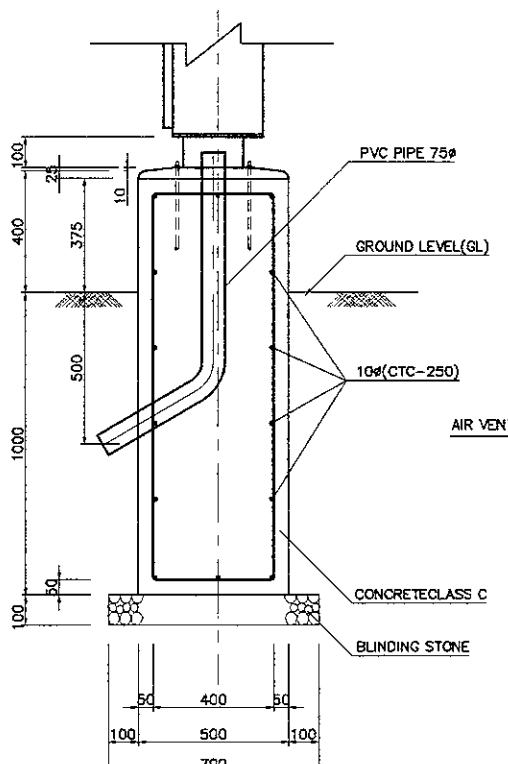
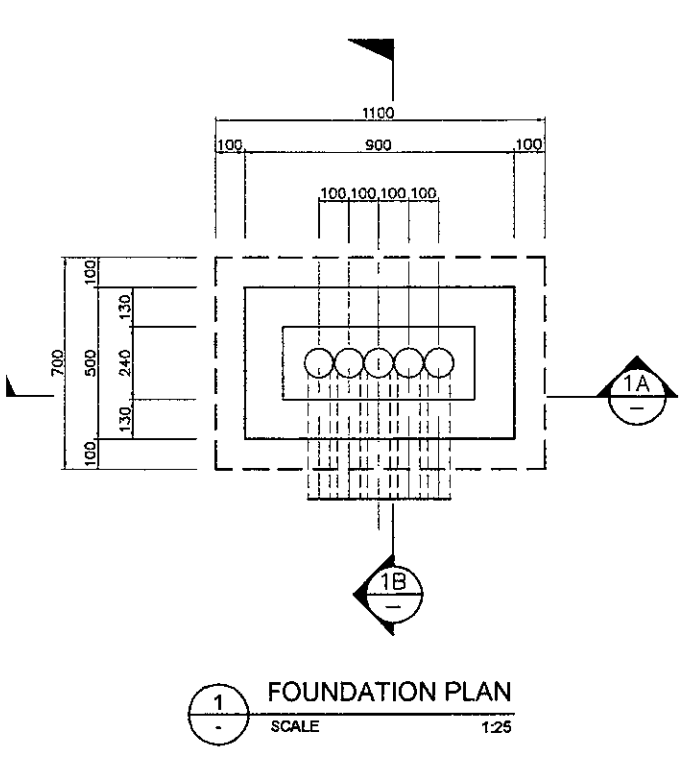


CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB.1P 2A	4R	NY2X2.5 mm2	1			250			
	2	MCB.1P 2A	5S	NY2X2.5 mm2	1				250		
	3	MCB.1P 2A	6T	NY2X2.5 mm2	1					250	
	4	MCB.1P 2A	4R	NY2X2.5 mm2	1			250			
	5	MCB.1P 2A	5S	NY2X2.5 mm2	1				250		
	6	MCB.1P 2A	6T	NY2X2.5 mm2	1					250	
	7	MCB.1P 2A	4R	NY2X2.5 mm2	1			250			
	8	MCB.1P 2A	5S	NY2X2.5 mm2	1				250		
	9	MCB.1P 2A	6T	NY2X2.5 mm2	1					250	
TOTAL								750	750	750	
TOTAL								2,250 WATT			2,812.50 VA

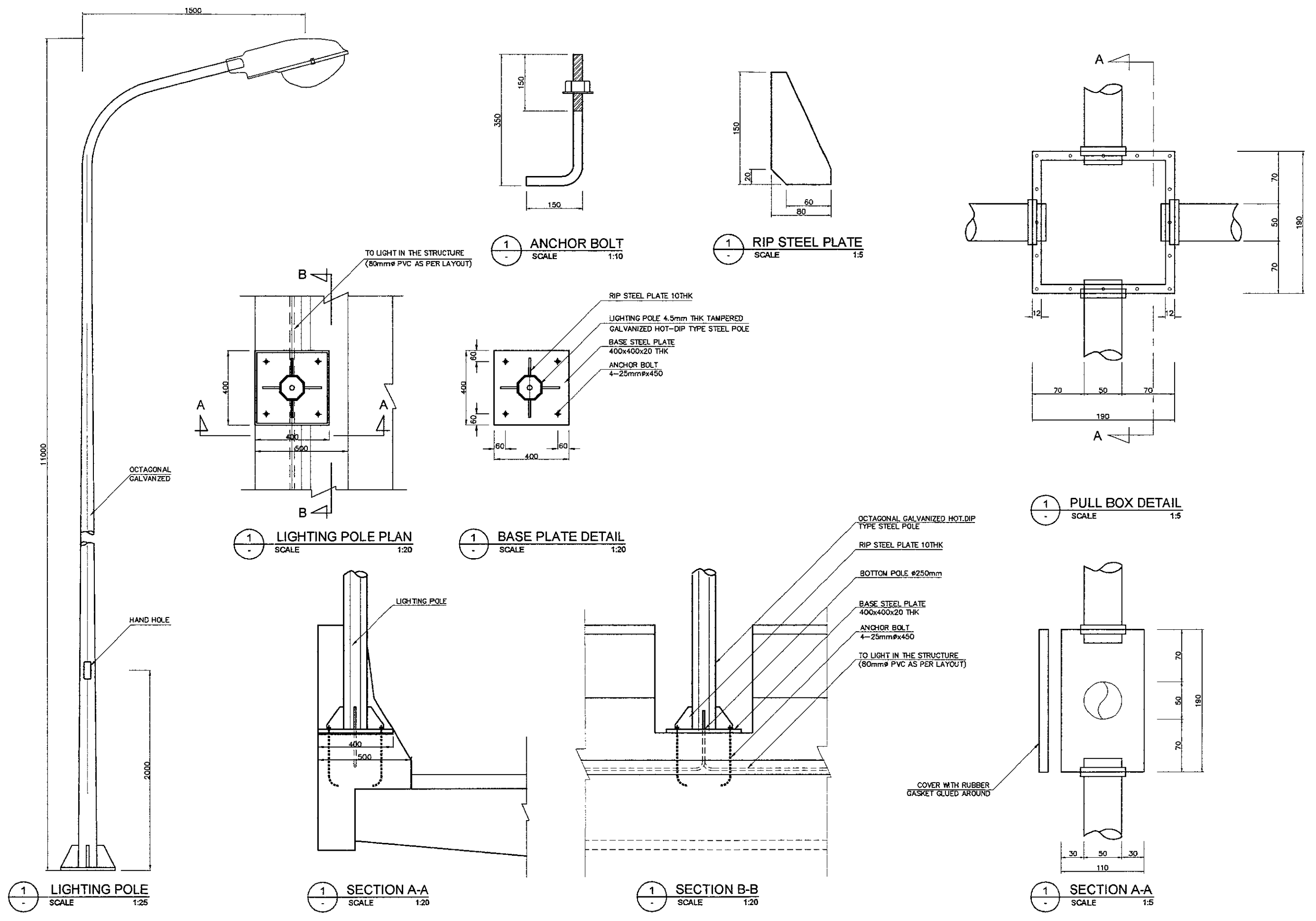


CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB.1P 2A	7R	NY2X2.5 mm2	1			250			
	2	MCB.1P 2A	8S	NY2X2.5 mm2	1				250		
	3	MCB.1P 2A	9T	NY2X2.5 mm2	1					250	
	4	MCB.1P 2A	7R	NY2X2.5 mm2	1			250			
	5	MCB.1P 2A	8S	NY2X2.5 mm2	1				250		
	6	MCB.1P 2A	9T	NY2X2.5 mm2	1					250	
	7	MCB.1P 2A	7R	NY2X2.5 mm2	1			250			
	8	MCB.1P 2A	8S	NY2X2.5 mm2	1				250		
	9	MCB.1P 2A	9T	NY2X2.5 mm2	1					250	
	10	MCB.1P 2A	7R	NY2X2.5 mm2	1			250			
	11	MCB.1P 2A	8S	NY2X2.5 mm2	1				250		
	12	MCB.1P 2A	9T	NY2X2.5 mm2	1					250	
	13	MCB.1P 2A	7R	NY2X2.5 mm2	1			250			
TOTAL								1250	1000	1000	
TOTAL								3,250 WATT			4,062.50 VA

1 DIAGRAM PANEL OF LEFT SERVICE ROAD
 NOT TO SCALE



DESIGNED BY	CHECKED BY	SUBMITTED BY
Name R. UENO	Name T. OKUMURA	Name M. KIUCHI
Sign	Sign	Sign
Date	Date	Date



1 LIGHTING POLE

 SCALE 1:25

1 LIGHTING POLE PLAN

 SCALE 1:20

1 BASE PLATE DETAIL

 SCALE 1:20

1 SECTION A-A

 SCALE 1:20

1 SECTION B-B

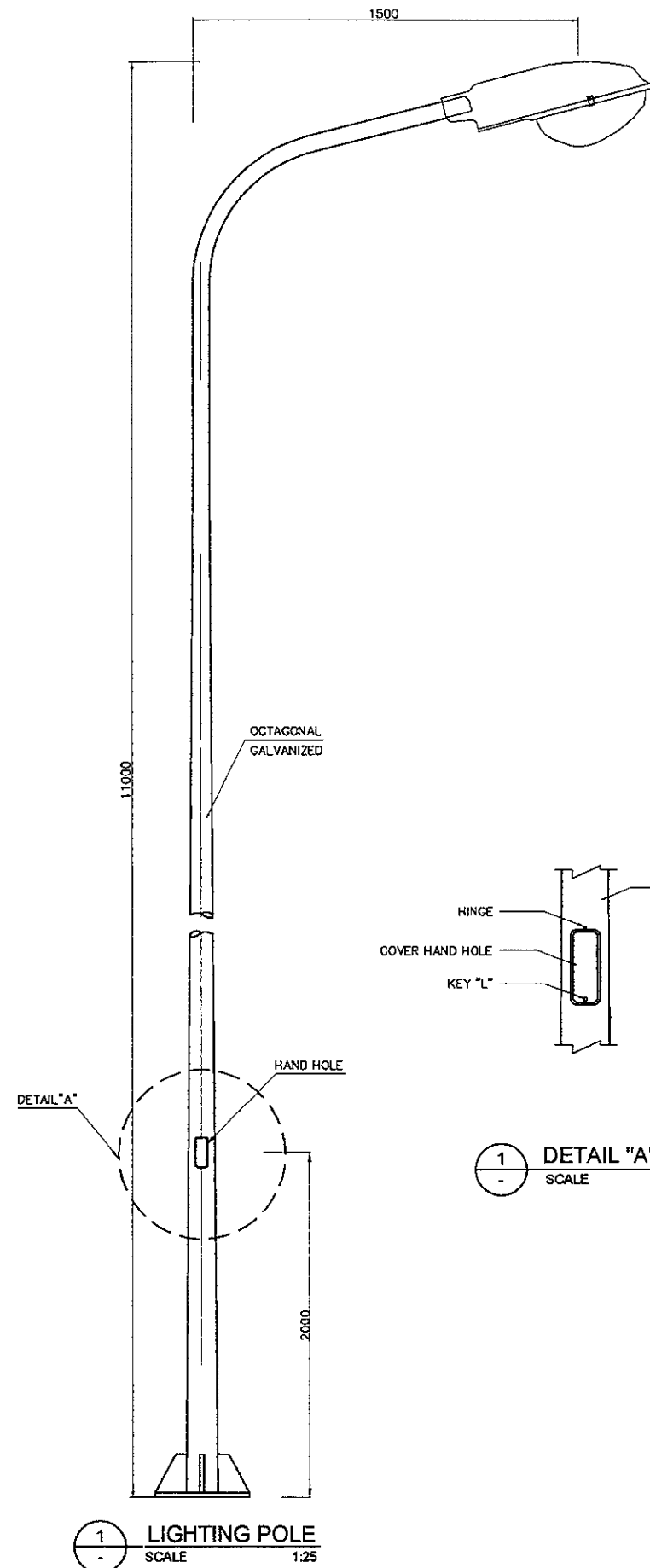
 SCALE 1:20

1 PULL BOX DETAIL

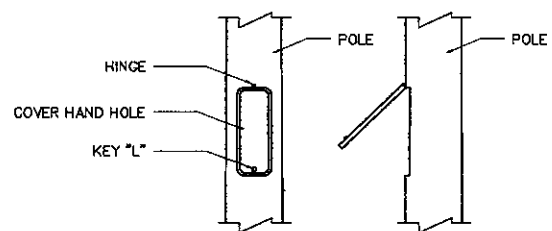
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1 SECTION A-A

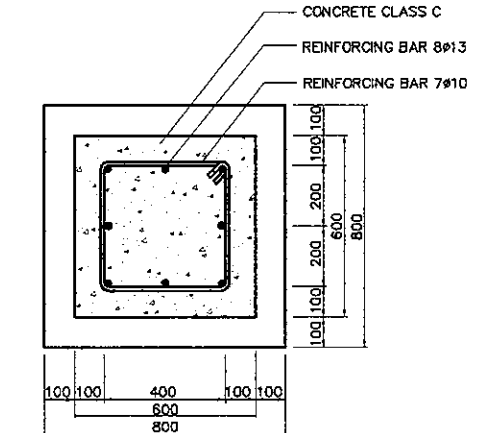
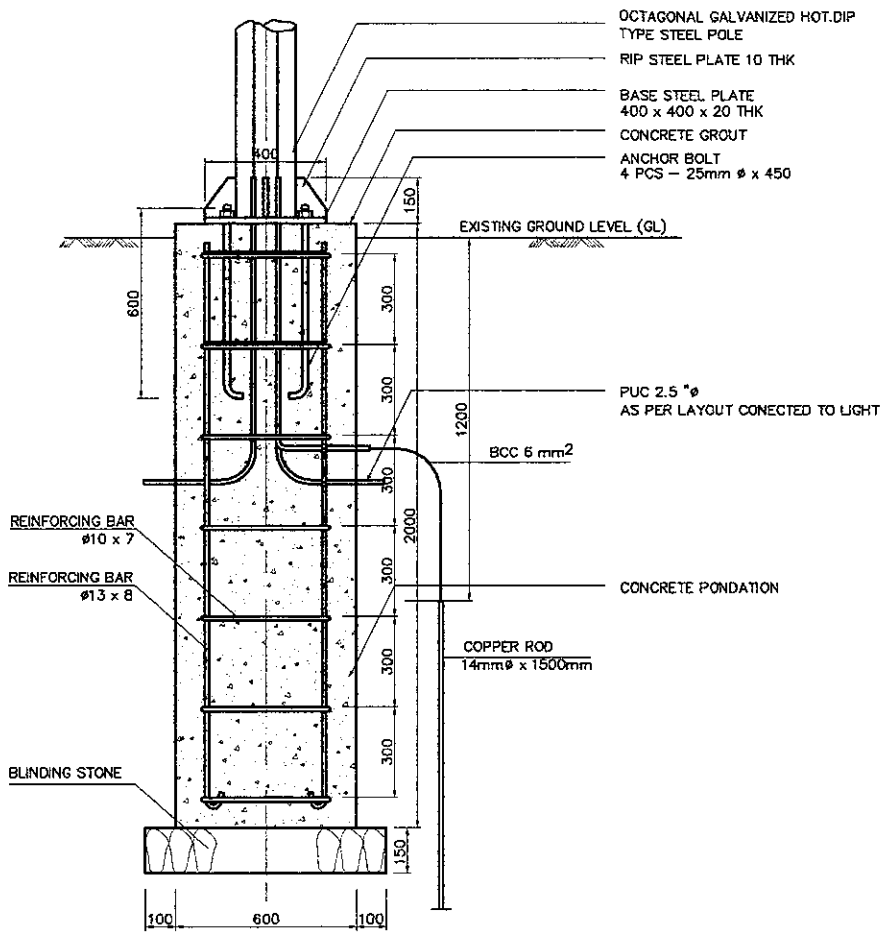
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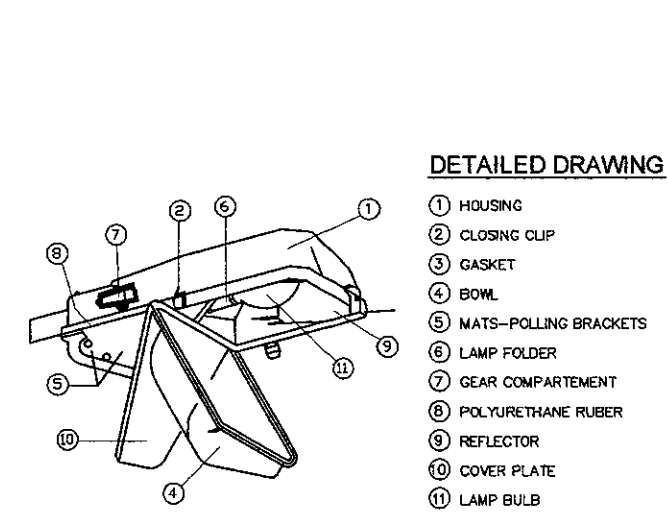
1 LIGHTING POLE
 SCALE 1:25



1 DETAIL "A" (HAND HOLE)
 SCALE 1:25

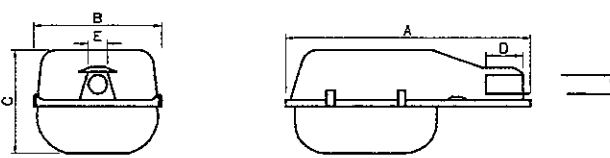


1 LIGHTING POLE FOUNDATION
 SCALE 1:25



DETAILED DRAWING

- ① HOUSING
- ② CLOSING CLIP
- ③ GASKET
- ④ BOWL
- ⑤ MATS-POLLING BRACKETS
- ⑥ LAMP FOLDER
- ⑦ GEAR COMPARTEMENT
- ⑧ POLYURETHANE RUBER
- ⑨ REFLECTOR
- ⑩ COVER PLATE
- ⑪ LAMP BULB



1 DETAIL ARMATURE SON 250 W
 SCALE 1:25

ELECTRICAL SPECIFICATION AND WEIGHT

LUM.TYP.	LAMP	BALLAST	IGNITOR	CAPA (µF/V ±10%)	VOLTAGE (V)	CURRENT (A)	WATTAGE (W)	WEIGHT (KG)
SRC 510/100W	SON 100W	BSN 100 L.08	SN 50	12/250	220	0.65	110	6
SRC 510/150W	SON 150W	BSN 150 L.08	SN 50	18/250	220	0.85	170	13.4
SRC 510/250W	SON 250W	BSN 250 L.08	SN 50	32/250	220	1.40	276	13.4
SRC 510/400W	SON 400W	BSN 400 L.08	SN 50	50/250	220	2.20	431	13.4

DIMENSIONS (mm)

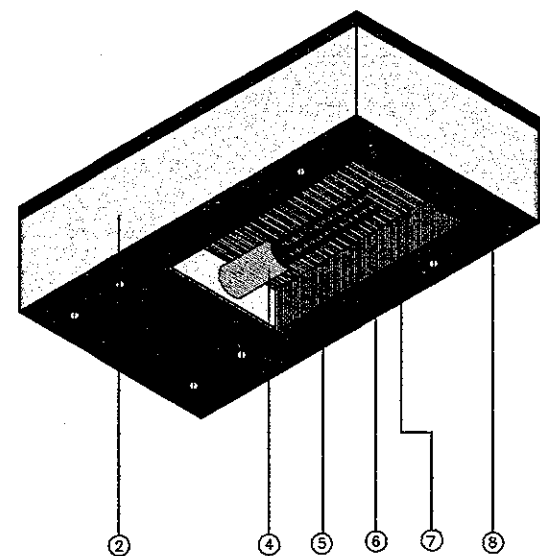
LUM.TYP.	A	B	C	D	E	F	FIG.Nº
SRC 510/100W	578	425	295	109	45	42	
SRC 510/150W	798	425	425	120	65	50	
SRC 510/250W	798	425	425	120	65	60	
SRC 510/400W	798	425	425	120	65	60	

DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	

SCALE :

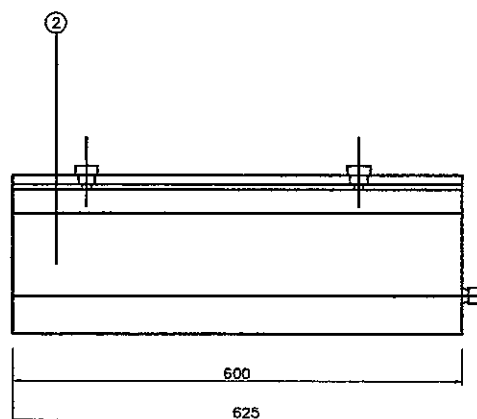
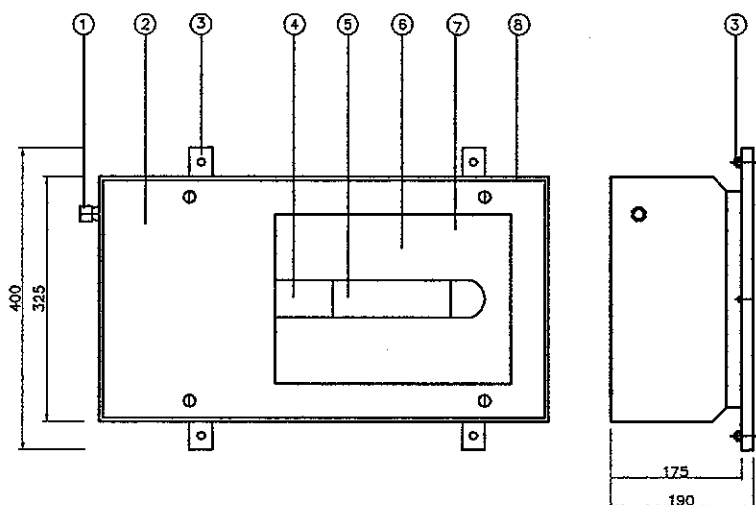
0 : 10
0 : 100
0 : 150

FULL SIZE A3



DETAILS DRAWING

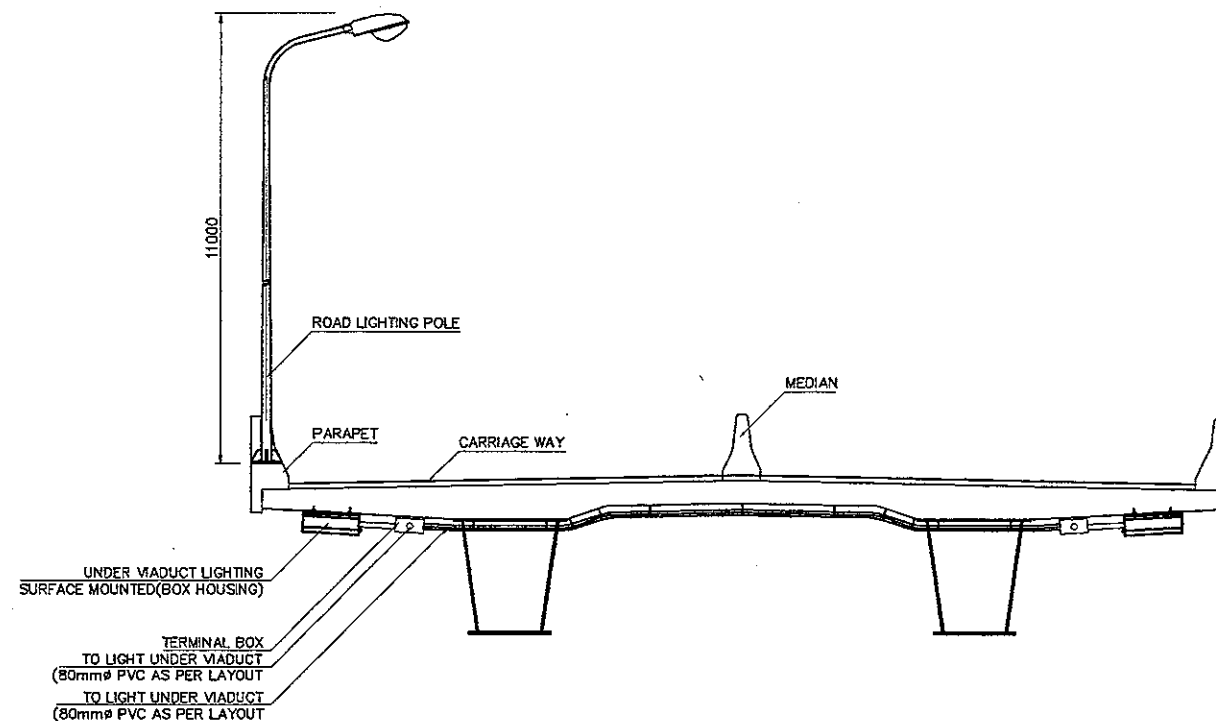
- ① SOCKET PLUG TERMINAL
- ② HOUSING
- ③ SCREW FIX POWER CONNECTION
- ④ LAMP HOLDER
- ⑤ LAMP BULB
- ⑥ REFLECTOR
- ⑦ GLASS COVER
- ⑧ INSIDE GEAR COMPARTMENT



① ROAD LIGHTING UNDER VIADUCT

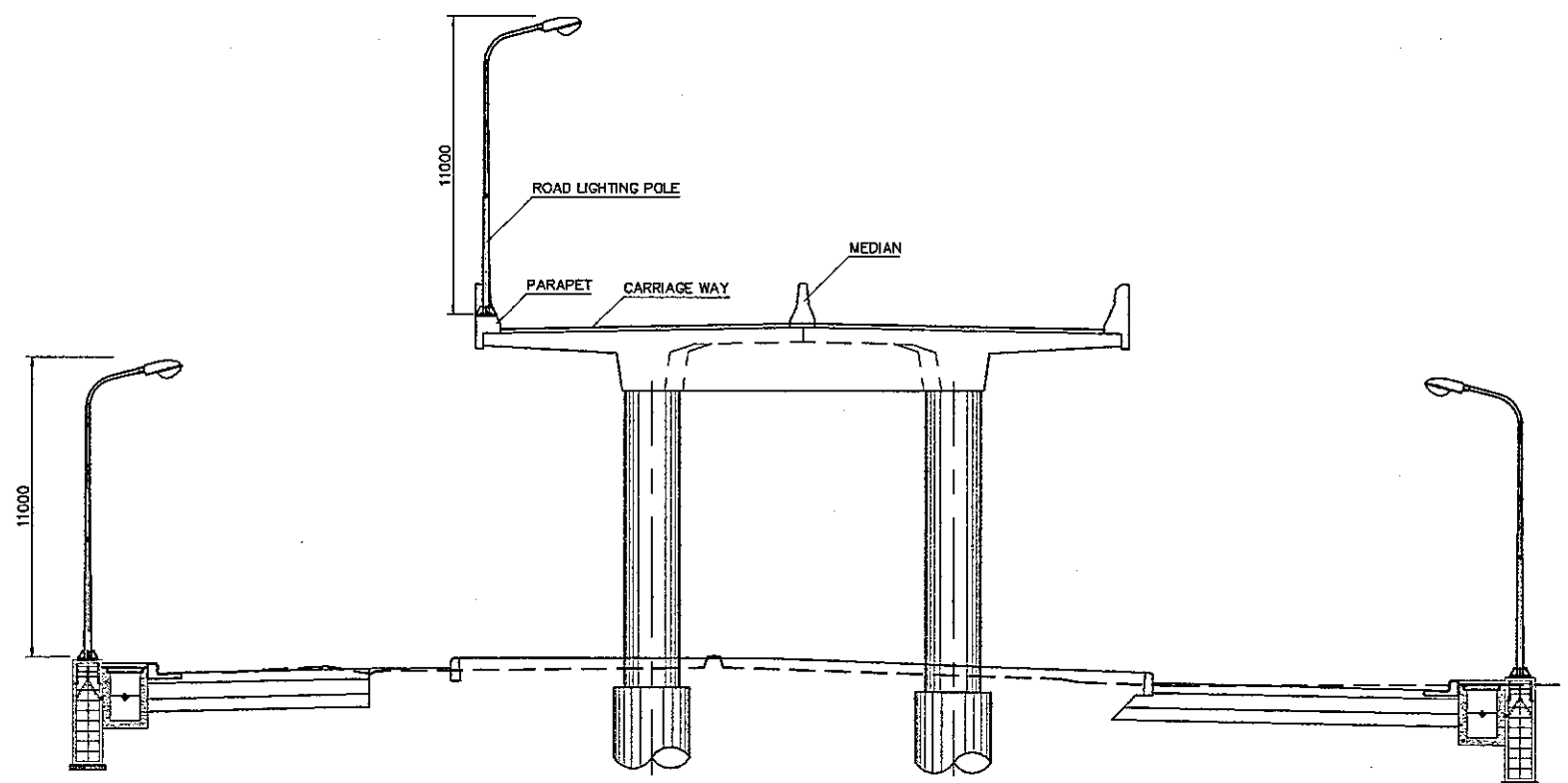
 SURFACE MOUNTED

 SCALE 1:10



① LIGHTING SETTING UNDER VIADUCT

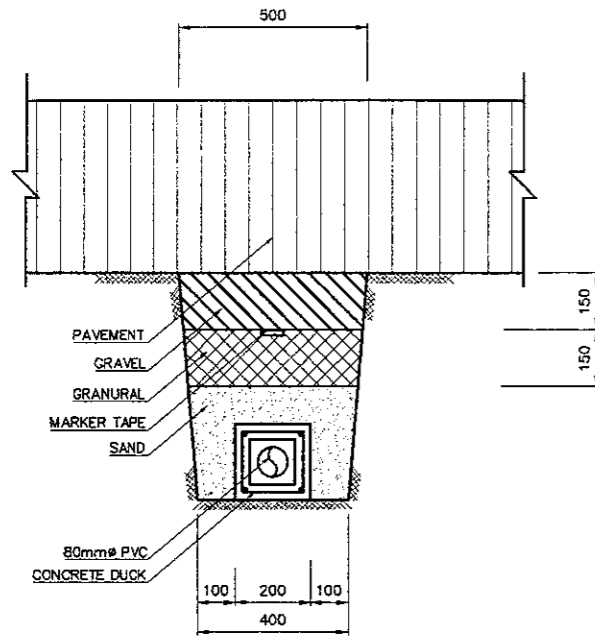
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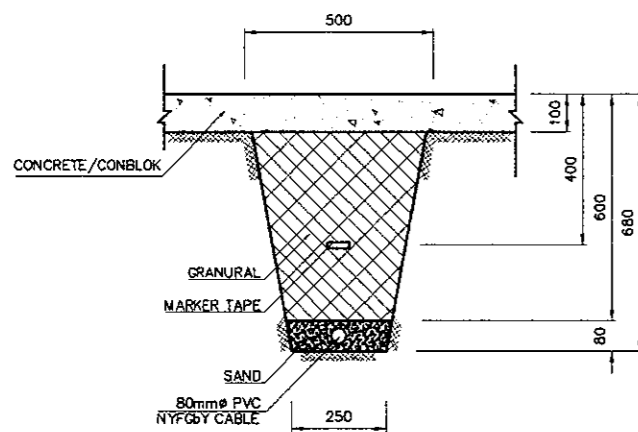
① TYPICAL ROAD CROSS SECTION

 SCALE 1:150

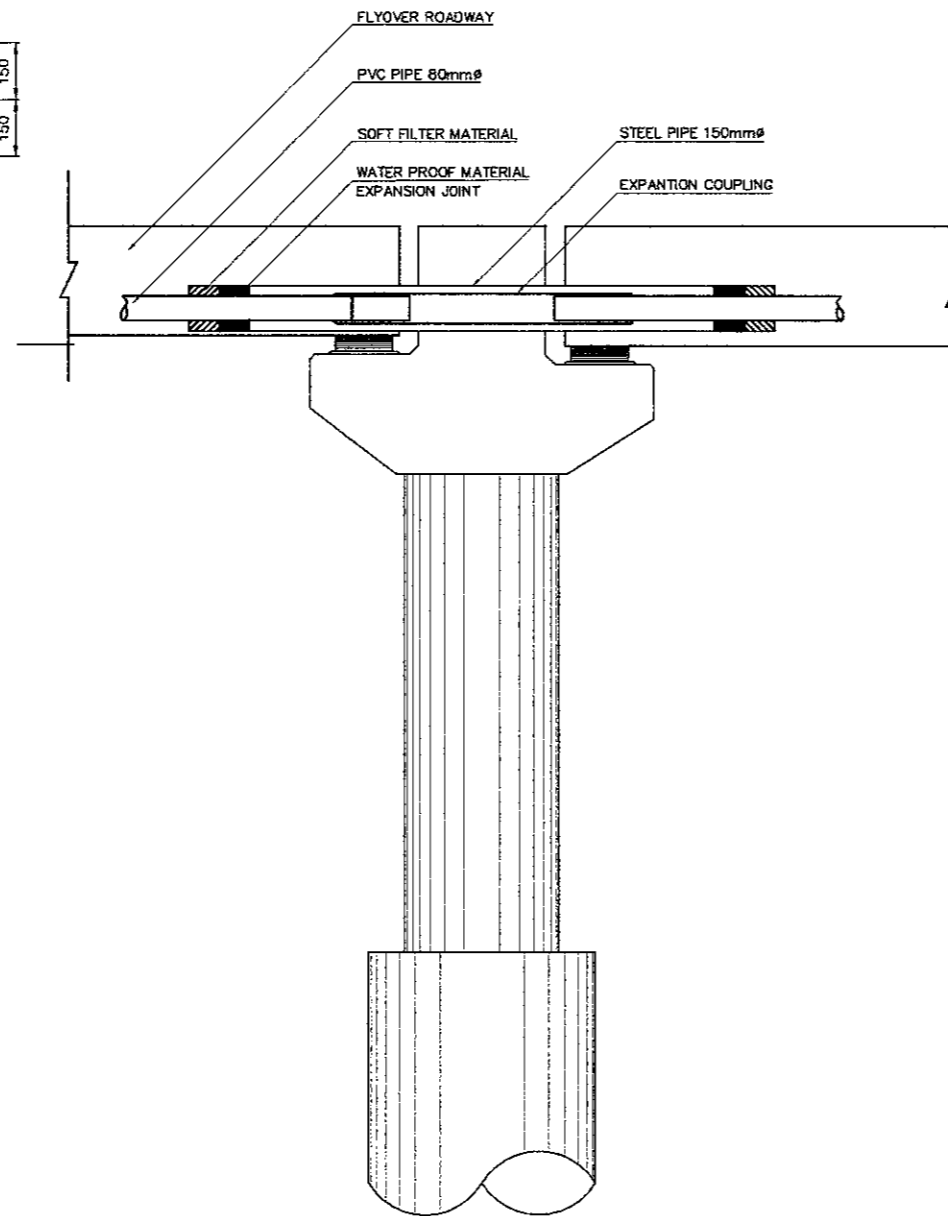
DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



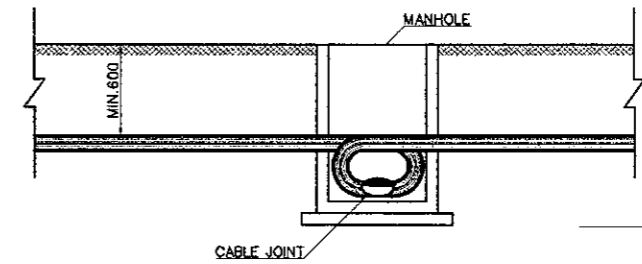
1
 CONDUIT IN THE DUCT UNDER ROAD
 SCALE 1:20



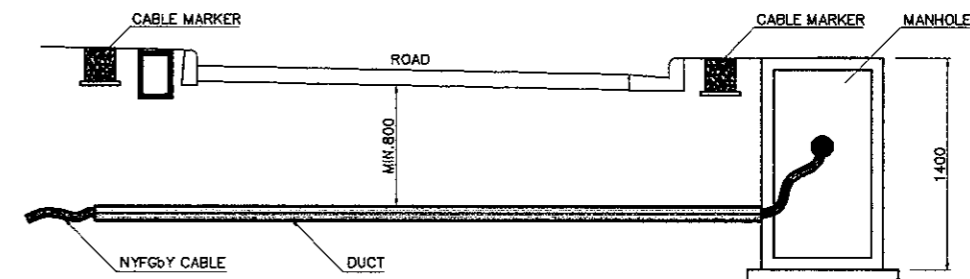
1
 CONDUIT RUN UNDER SIDEWALK
 SCALE 1:20



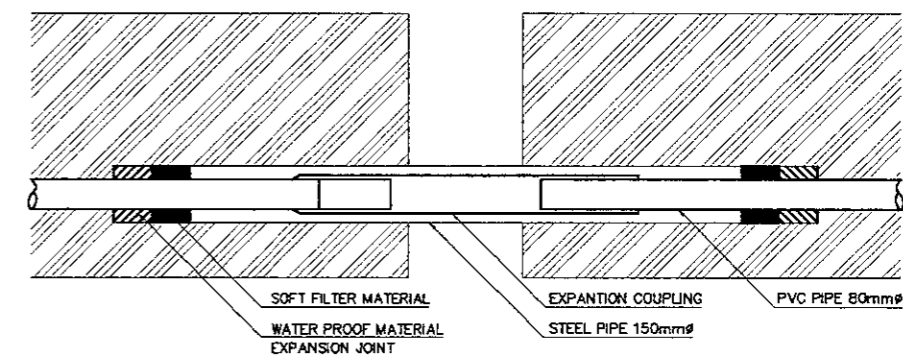
1
 CONDUIT EXPANTION JOINT FOR THE BRIDGE
 SCALE 1:25



1
 GENERAL INSTALLATION FOR CABLE
 SCALE 1:50



1
 CABLE INSTALLATION AT ROAD CROSSING POINT
 SCALE 1:50



1
 CONDUIT EXPANTION JOINT FOR THE BRIDGE
 SCALE 1:20