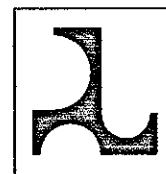




JAPAN INTERNATIONAL
COOPERATION AGENCY



DIRECTORATE GENERAL OF HIGHWAY
MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

ROAD LIGHTING



KATAHIRA & ENGINEERS INTERNATIONAL

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

PROJECT AND LOCATION :

 DETAILED DESIGN STUDY OF

 NORTH JAVA CORRIDOR FLYOVER PROJECT

 BALARAJA FLYOVER - CONTRACT PACKAGE 1

 (MERAK - BALARAJA)

 BANTEN PROVINCE

SCALE :

 N T S

 FULL SIZE A3

DRAWING TITLE :

 LEGEND AND NOTES





DRAWING NO :

 BRL - 001

 SHEET NO :

 01 / 13

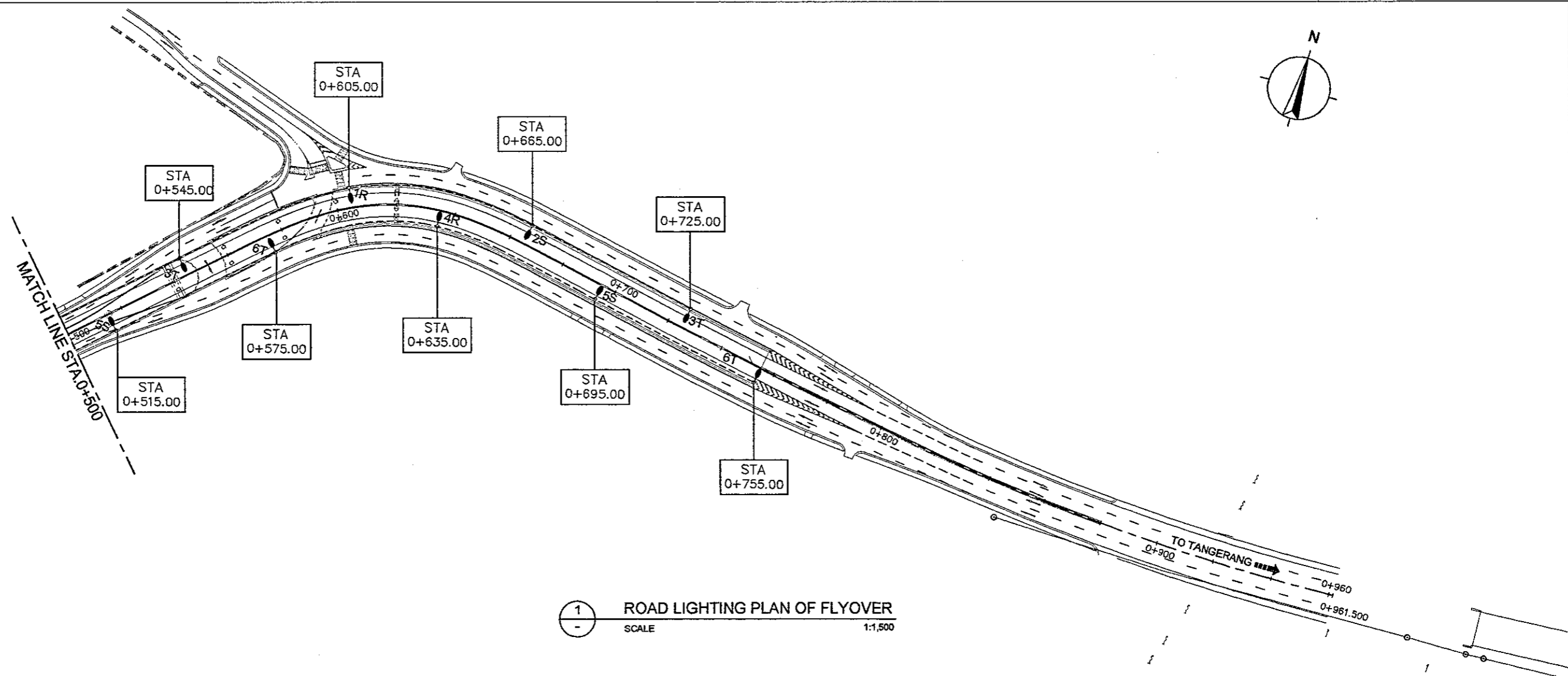
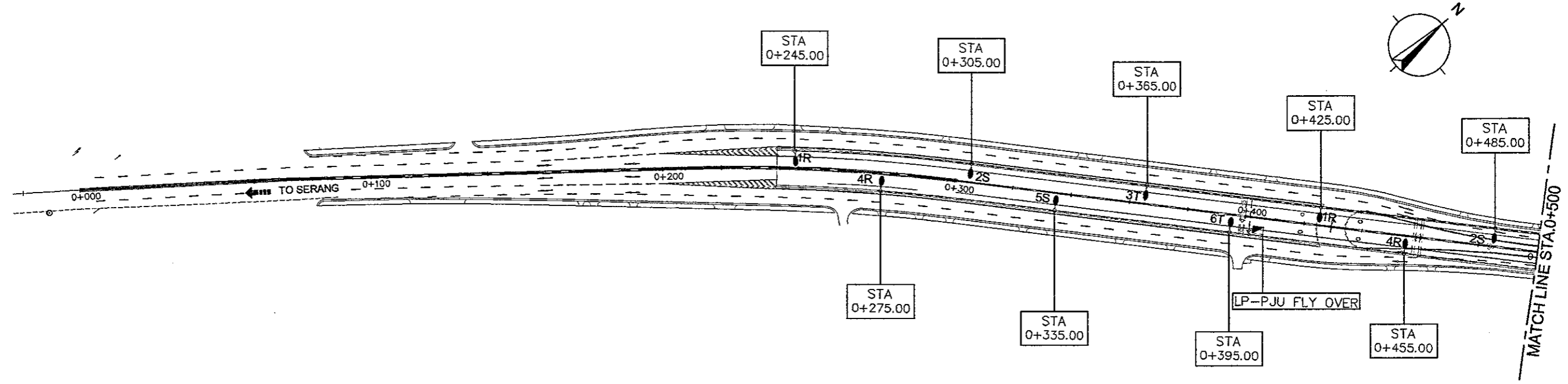
LEGEND

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

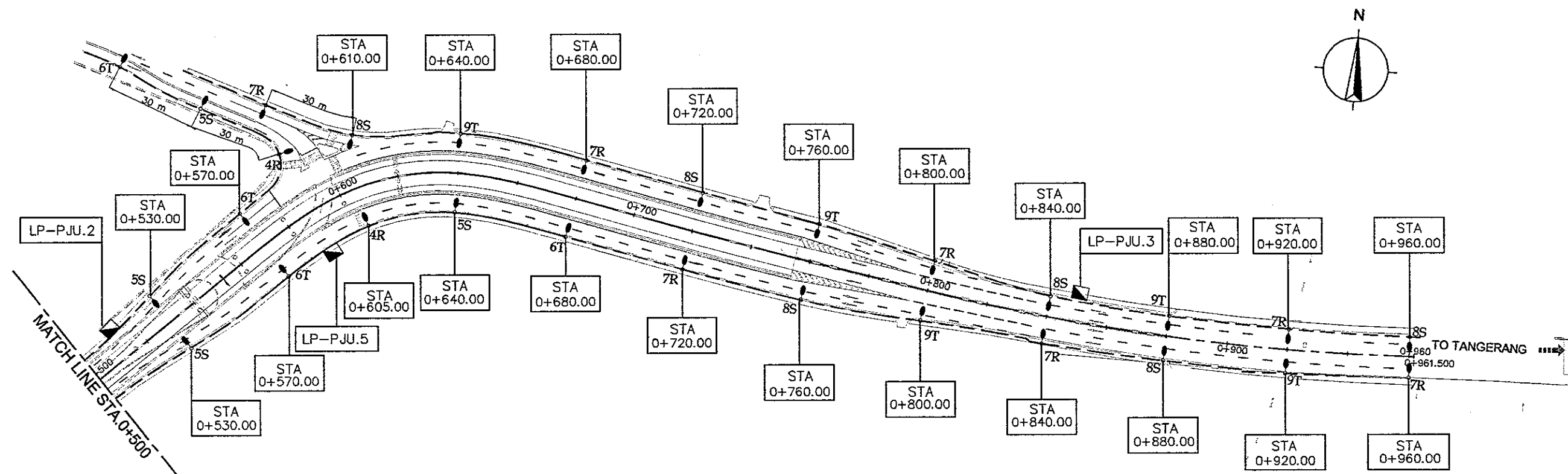
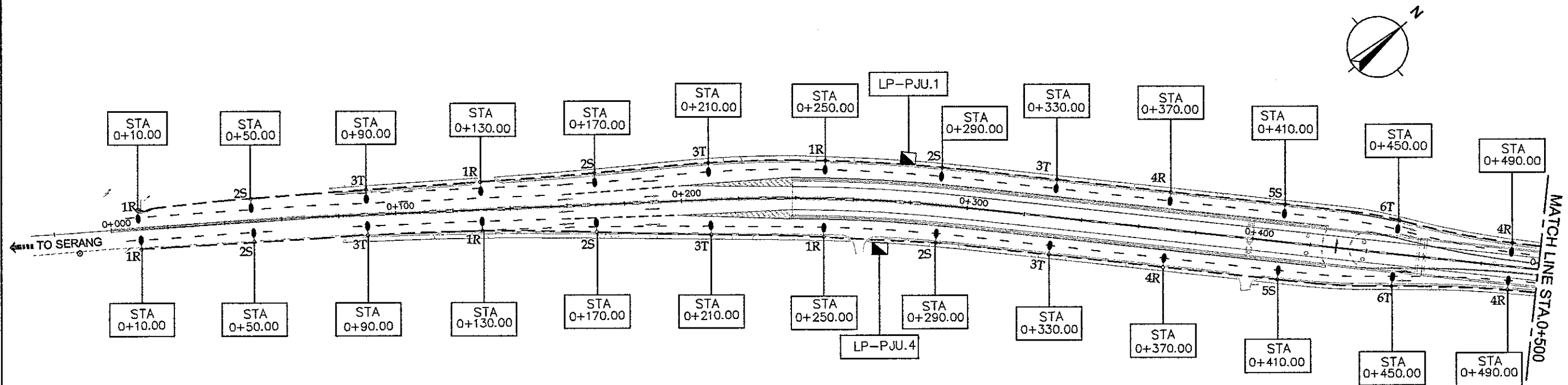
1. TYPE A : POLE IS 11 m HIGH OCTAGONAL GALVANIZED HOT.DIP TYPE STEEL POLE WITH SINGLE ARM, 250 HIGH PRESSURE SODIUM LAMP (SON - TP 250 W)
2. TYPE B : LIGHTING UNDER VIADUCT SURFACE MOUNTED,(SON - T 150 W)
3. CABLE : - NYFGbY PVC INSULATION FLAT STEEL WIRE ARMOURING AND PVC OUTER SHEATHING,SIZE ARE 10, 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	



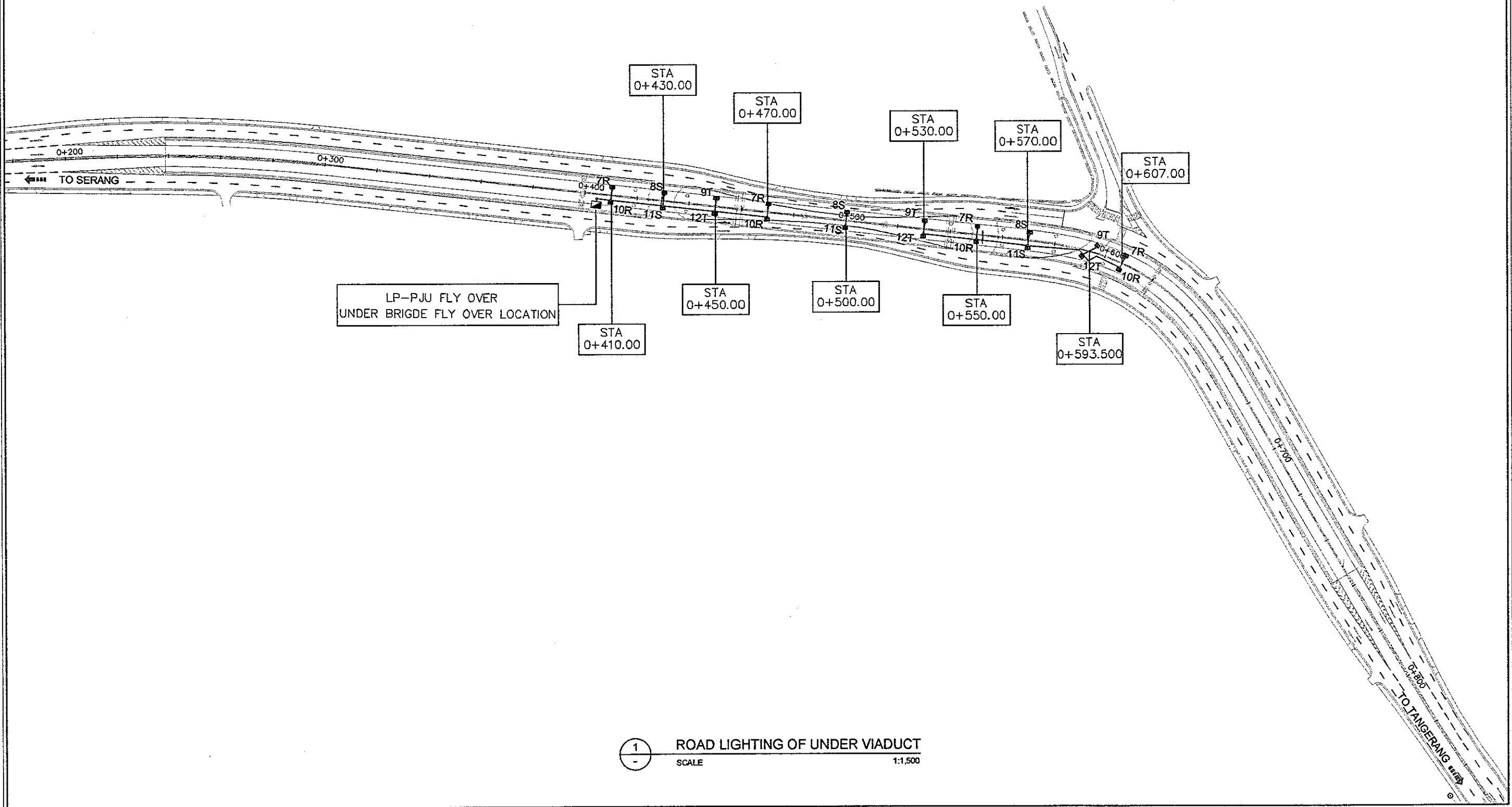
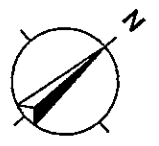
1 ROAD LIGHTING PLAN OF FLYOVER
 SCALE 1:1,500

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 SERVICE ROAD
 SCALE 1:1,500

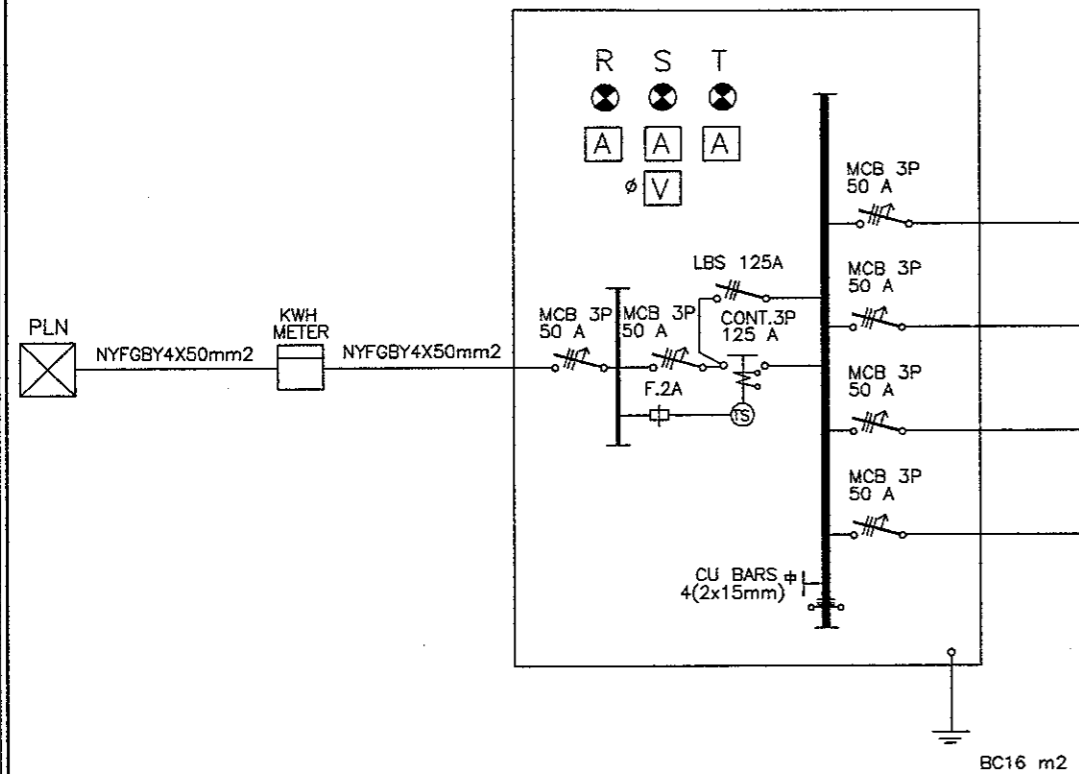
DESIGNED BY		CHECKED BY		SUBMITTED BY	
Name	R. UENO	Name	T. OKUMURA	Name	M. KIUCHI
Sign		Sign		Sign	
Date		Date		Date	



1 ROAD LIGHTING OF UNDER VIADUCT

 SCALE 1:1,500

LP-PJU FLYOVER



LIGHTING FLYOVER

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			
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	2,250 WATT	2,812.50 VA

LIGHTING FLYOVER

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			
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	2,250 WATT	2,812.50 VA

MATCH LINE

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

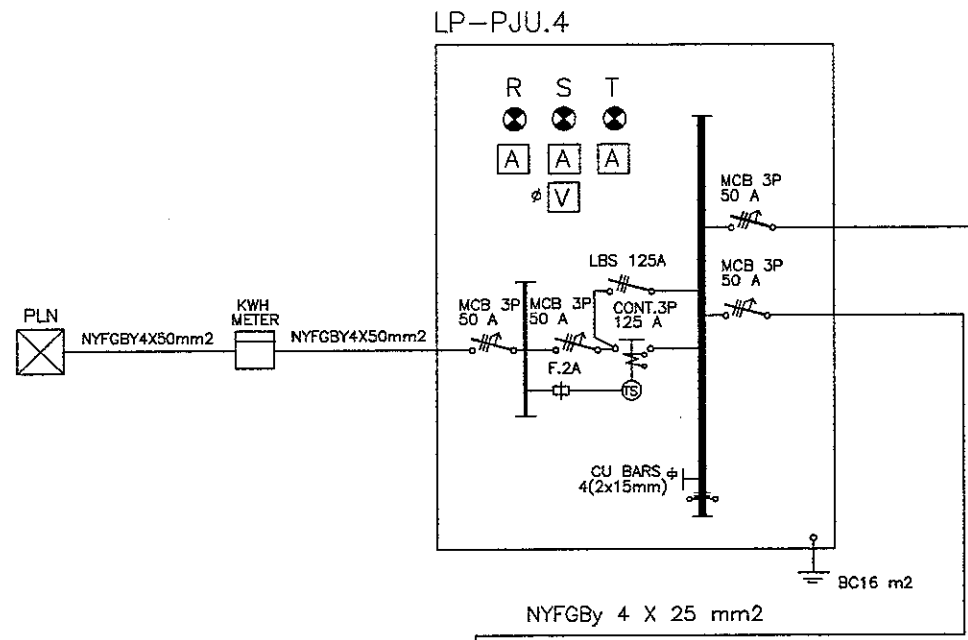
MATCH LINE

LIGHTING UNDER VIADUCT

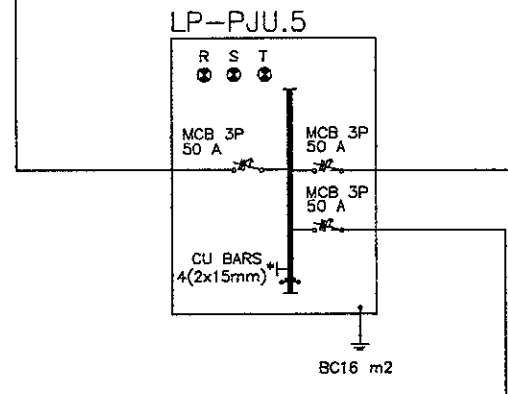
CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE SON 150 W	LOAD IN WATT		
						R	S	T
NYFGbY 4X10mm2	1	MCB.1P 2A	7R	NY2X2.5 mm2	1	150		
	2	MCB.1P 2A	8S	NY2X2.5 mm2	1		150	
	3	MCB.1P 2A	9T	NY2X2.5 mm2	1			150
	4	MCB.1P 2A	7R	NY2X2.5 mm2	1	150		
	5	MCB.1P 2A	8S	NY2X2.5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

LIGHTING UNDER VIADUCT

CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE SON 150 W	LOAD IN WATT		
						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
TOTAL						1,500 WATT		1,875 VA

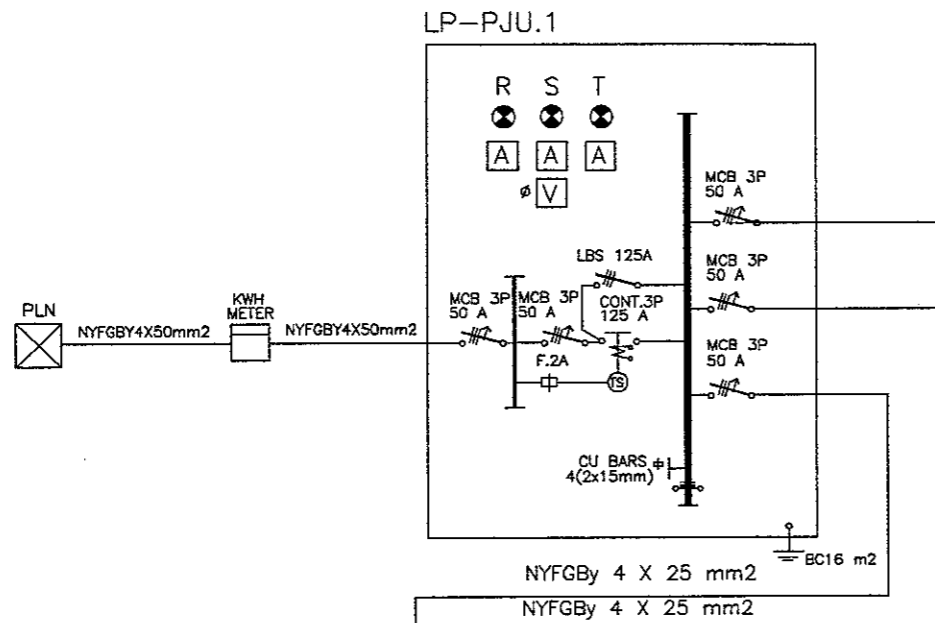


CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB.1P 2A	1R	NY2X2.5 mm2	1			250			
	2	MCB.1P 2A	2S	NY2X2.5 mm2	1				250		
	3	MCB.1P 2A	3T	NY2X2.5 mm2	1					250	
	4	MCB.1P 2A	1R	NY2X2.5 mm2	1			250			
	5	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

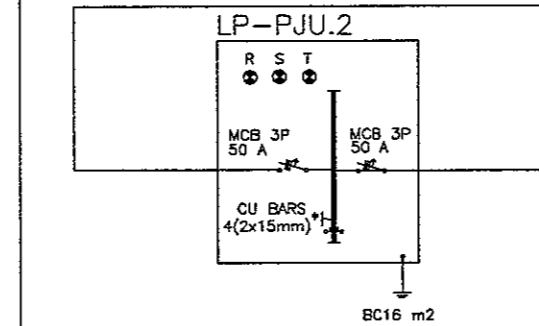


CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB.1P 2A	4R	NY2X2.5 mm2	1			250			
	2	MCB.1P 2A	5S	NY2X2.5 mm2	1				250		
	3	MCB.1P 2A	6T	NY2X2.5 mm2	1					250	
	4	MCB.1P 2A	4R	NY2X2.5 mm2	1			250			
	5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

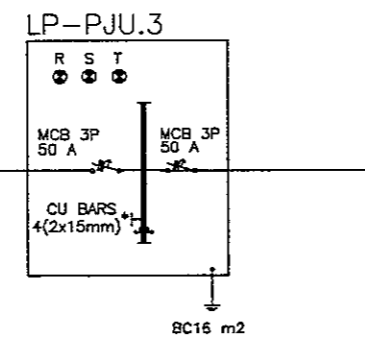
CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	GROUP	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB.1P 2A	7R	NY2X2.5 mm2	1			250			
	2	MCB.1P 2A	8S	NY2X2.5 mm2	1				250		
	3	MCB.1P 2A	9T	NY2X2.5 mm2	1					250	
	4	MCB.1P 2A	7R	NY2X2.5 mm2	1			250			
	5	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			
TOTAL								750	500	500	
TOTAL								1,750 WATT			2,187.50 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	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, 2 5 0 WATT			2, 8 1 2 . 5 0 VA

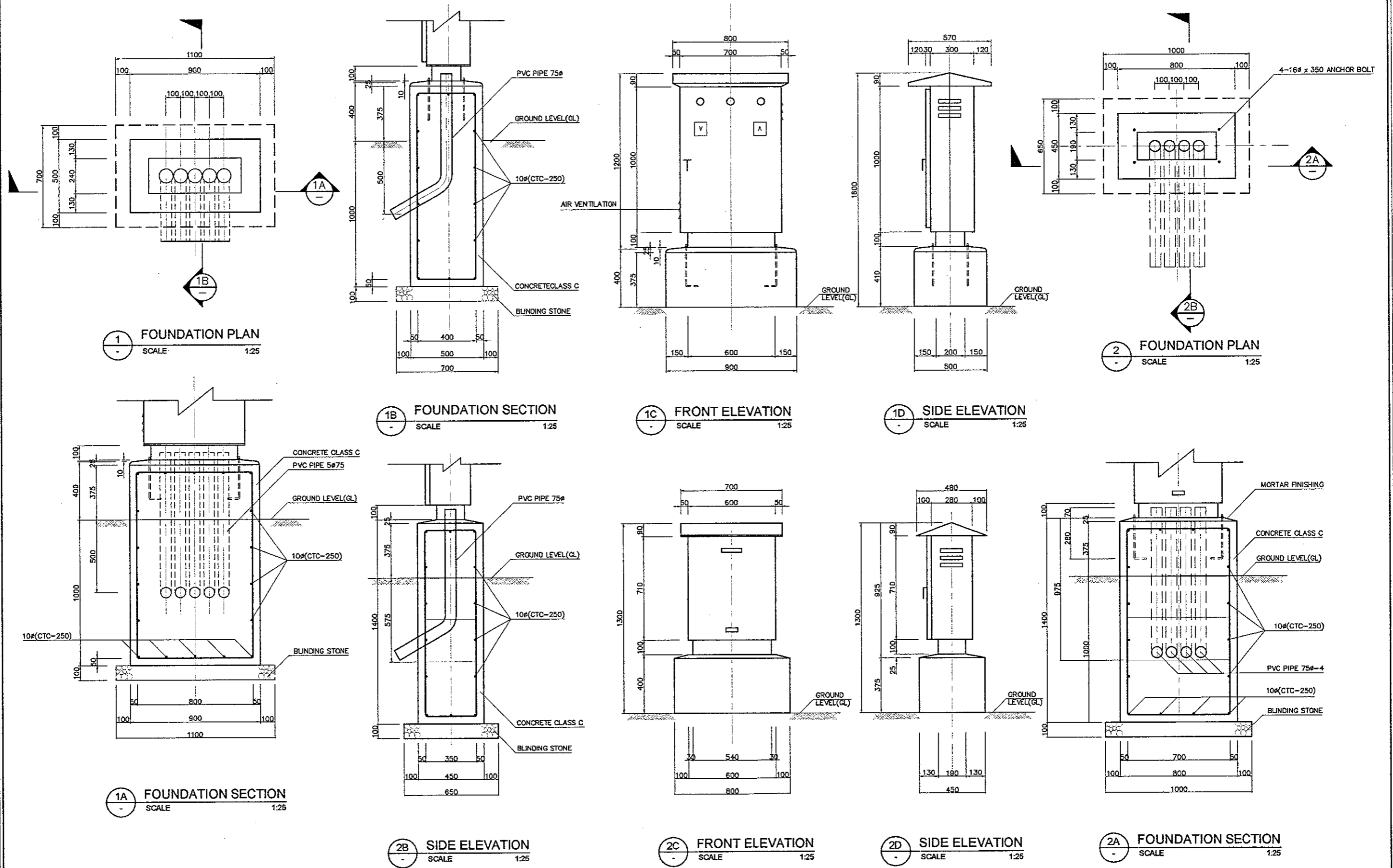


CABLE FEEDER	NUMBER OF POLE	MCB OF POLE	G R O U P	CABLE TO LIGHTING	LIGHTING HEAD TYPE			LOAD IN WATT			
					SON 250 W	R	S	T	R	S	T
NYFGbY 4X10mm2	1	MCB, 1P 2A	4R	NY2X2.5 mm2	1			250			
	2	MCB, 1P 2A	5S	NY2X2.5 mm2	1				250		
	3	MCB, 1P 2A	6T	NY2X2.5 mm2	1					250	
	4	MCB, 1P 2A	4R	NY2X2.5 mm2	1			250			
	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, 2 5 0 WATT			2, 8 1 2 . 5 0 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		
TOTAL								1000	1000	750	
TOTAL								2, 7 5 0 WATT			3, 4 3 7 . 5 0 VA

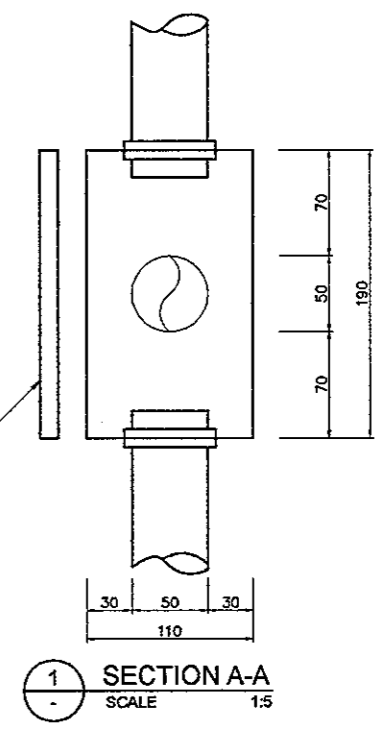
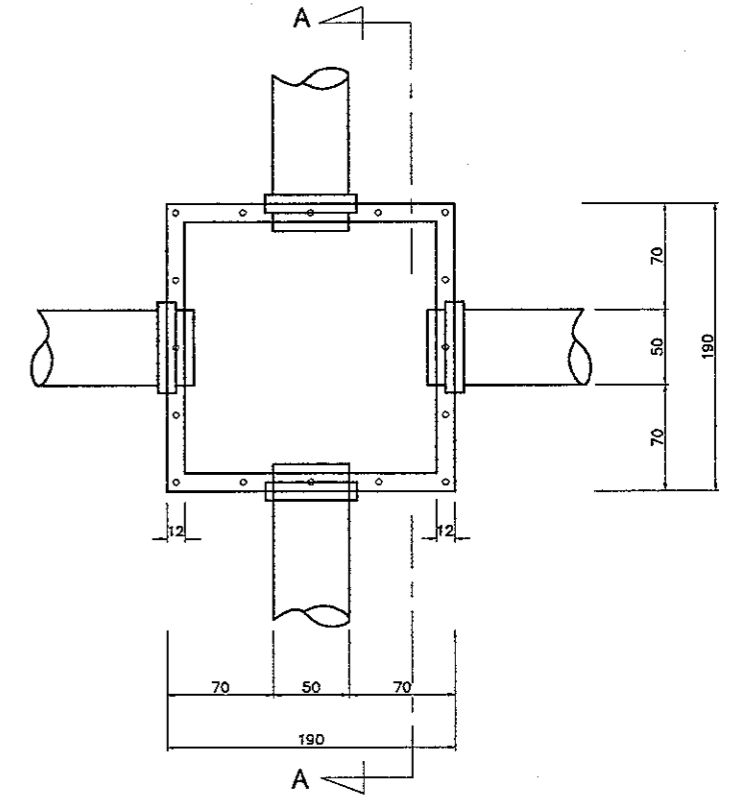
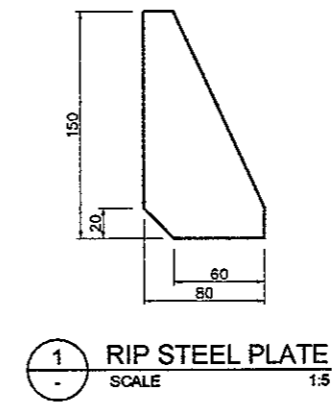
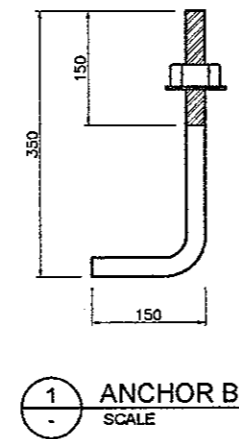
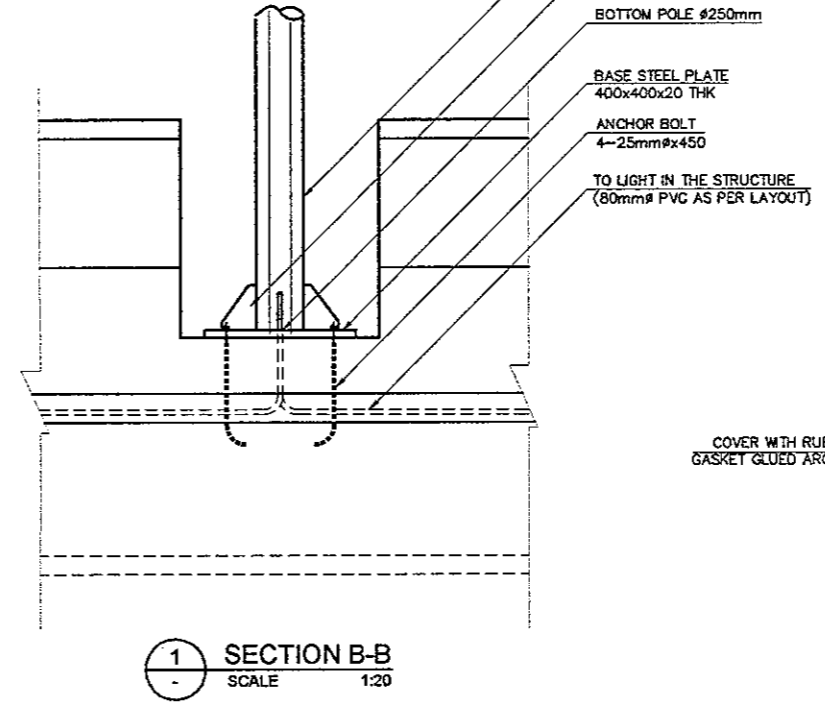
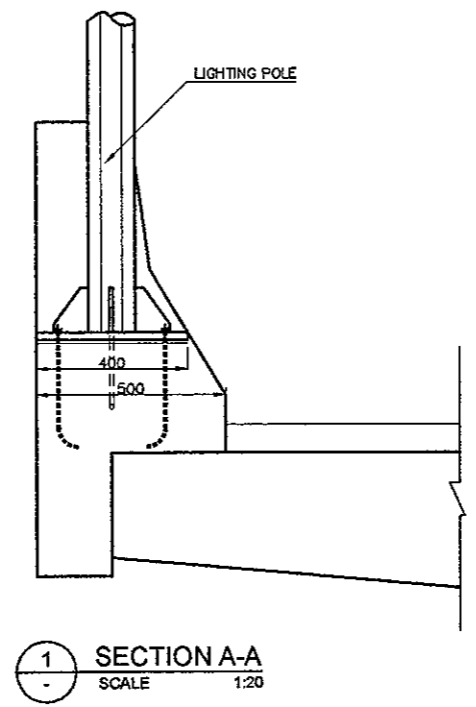
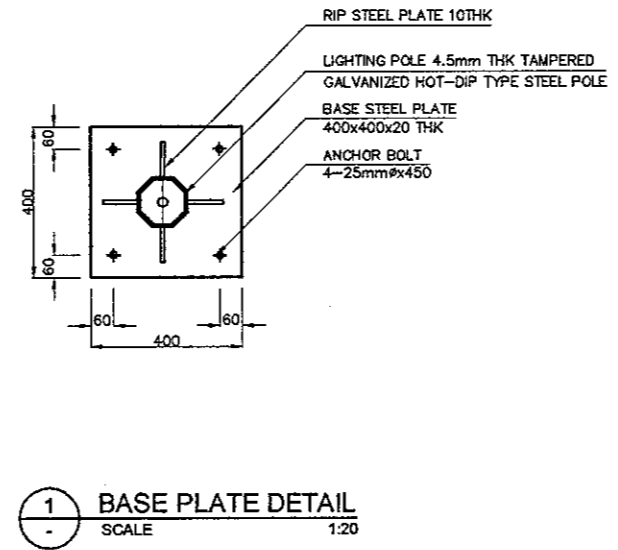
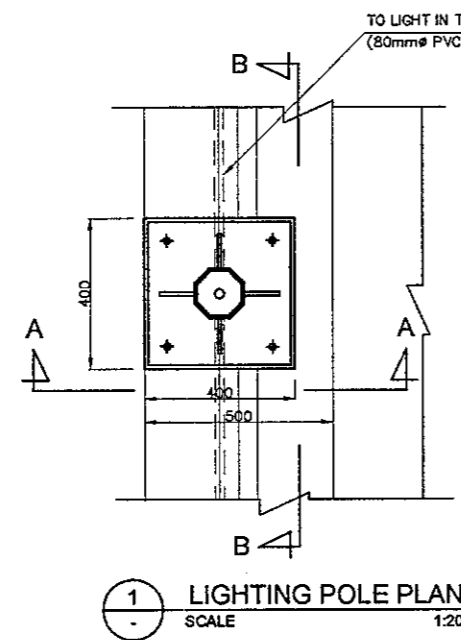
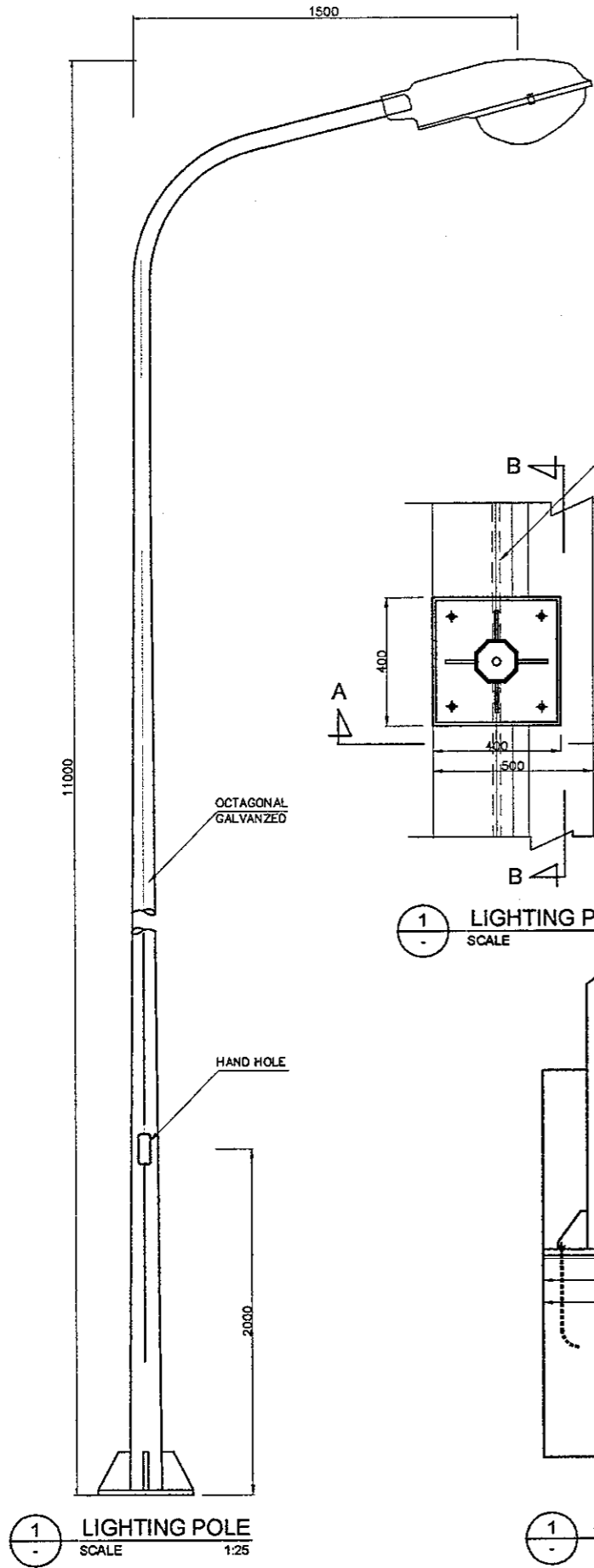
DESIGNED BY	CHECKED BY	SUBMITTED BY
Name: R. UENO	Name: T. OKUMURA	Name: M. KRUCHI
Sign: _____	Sign: _____	Sign: _____
Date: _____	Date: _____	Date: _____

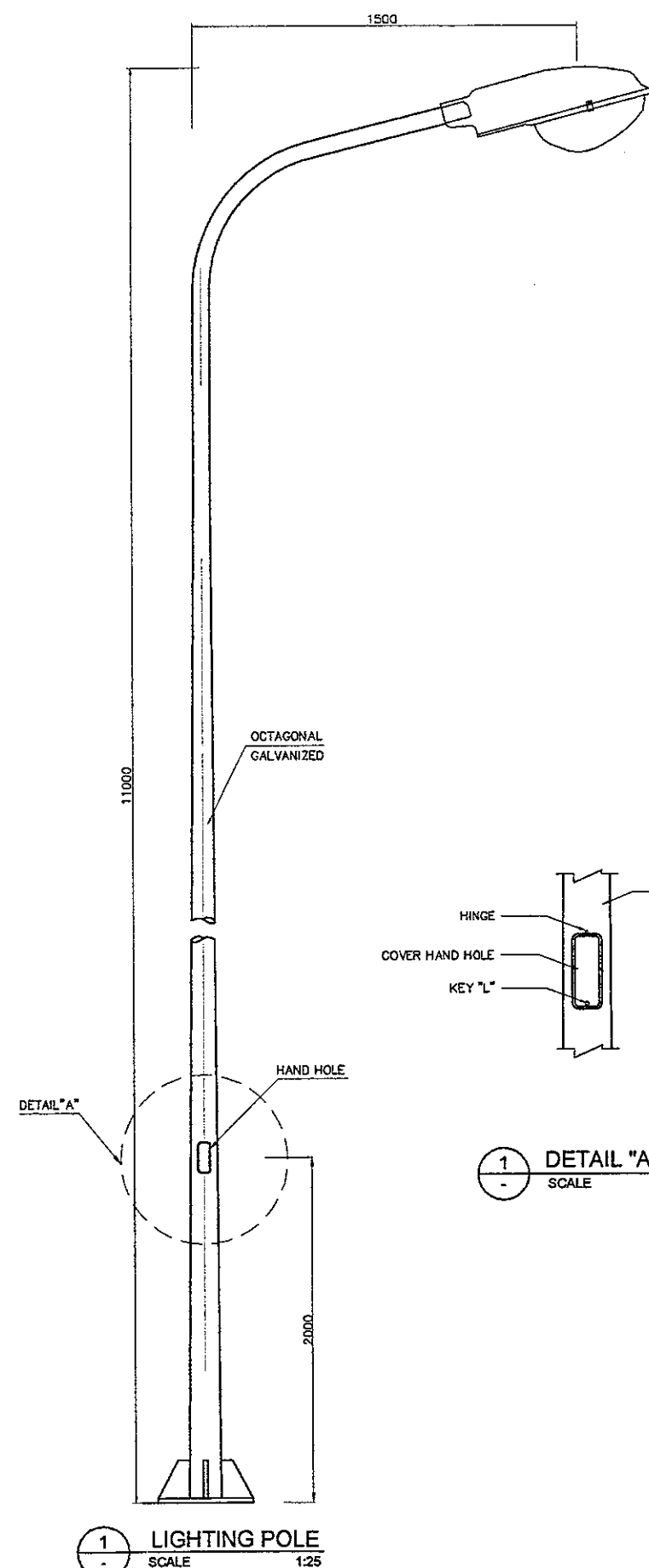


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Name: R. UENO	Name: T. OKUMURA	Name: M. KIUCHI
Sign: _____	Sign: _____	Sign: _____
Date: _____	Date: _____	Date: _____

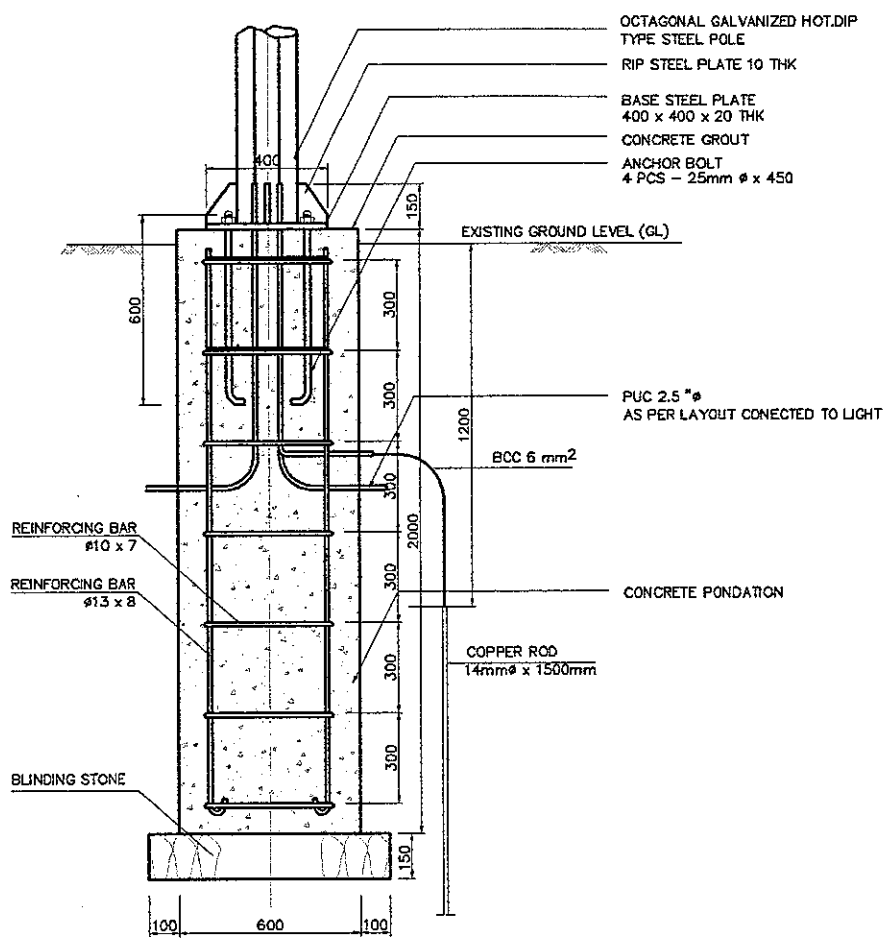
APPROVED BY: Ir. HERRY VAZA M,Eng.Sc
 NIP. : 110038400

SCALE :
 1 : 5
 1 : 10
 1 : 20
 1 : 25
 FULL SIZE A3

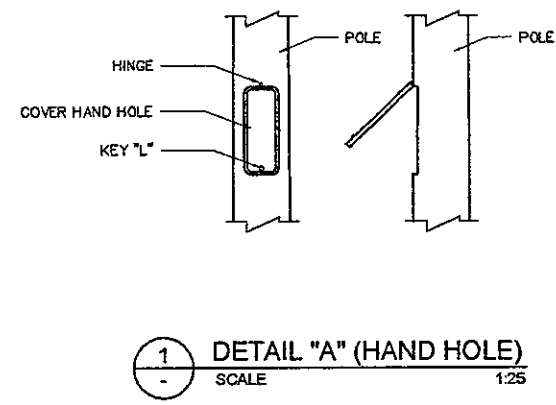




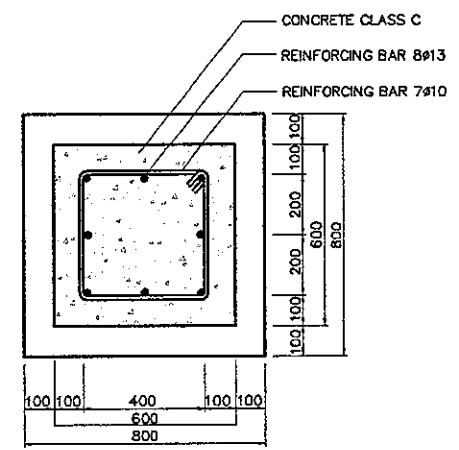
1 LIGHTING POLE
 SCALE 1:25



1 LIGHTING POLE FOUNDATION
 SCALE 1:25

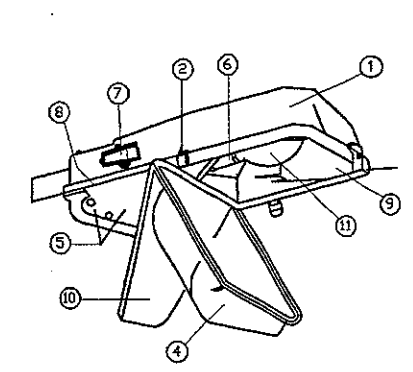


1 DETAIL "A" (HAND HOLE)
 SCALE 1:25



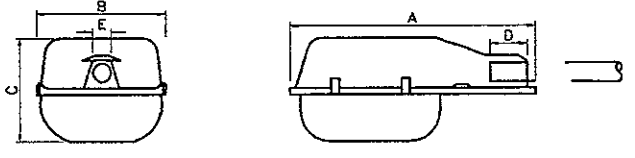
1 LIGHTING POLE FOUNDATION
 SCALE 1:25

- OCTAGONAL GALVANIZED HOT-DIP TYPE STEEL POLE
- RIP STEEL PLATE 10 THK
- BASE STEEL PLATE 400 x 400 x 20 THK
- CONCRETE GROUT
- ANCHOR BOLT 4 PCS - 25mm ϕ x 450
- EXISTING GROUND LEVEL (GL)
- PUC 2.5 * ϕ AS PER LAYOUT CONNECTED TO LIGHT
- BCC 6 mm²
- CONCRETE PONDATION
- COPPER ROD 14mm ϕ x 1500mm
- REINFORCING BAR #10 x 7
- REINFORCING BAR #13 x 8
- BLINDING STONE



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

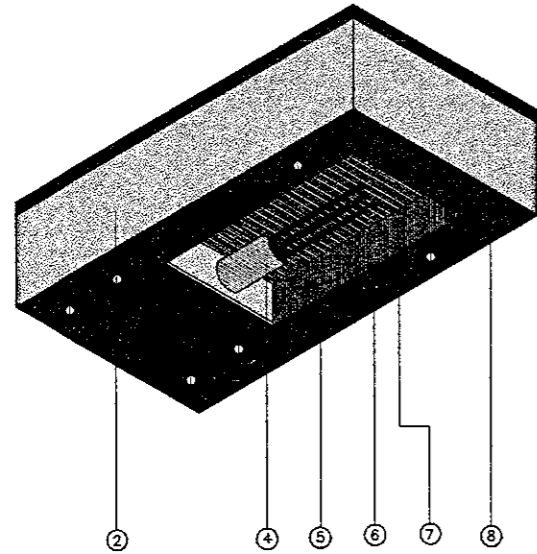
ELECTRICAL SPECIFICATION AND WEIGHT

LUM.TYP.	LAMP	BALLAST	IGNITOR	CAPA ($\mu F/V \pm 10\%$)	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)

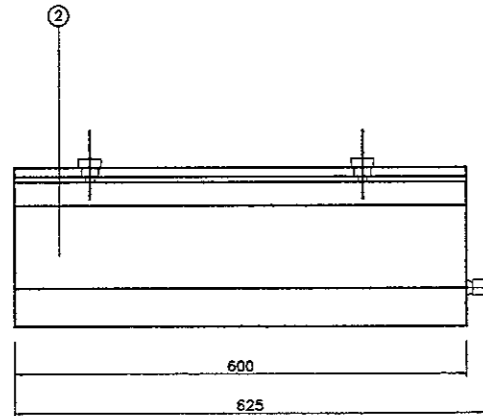
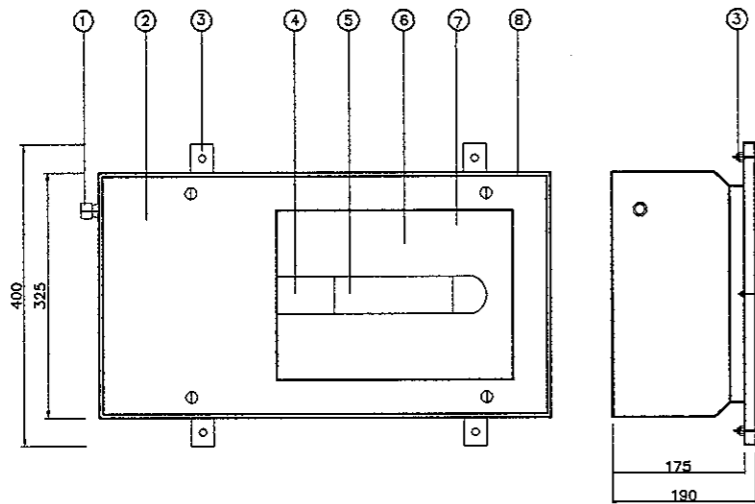
LUM.TYP.	A	B	C	D	E	F	FIG.Nº
SRC 510/100W	578	425	295	109	45	42	
SRC 510/150W	798	425	425	120	65	50	
SRC 510/250W	798	425	425	120	65	60	
SRC 510/400W	798	425	425	120	65	60	

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

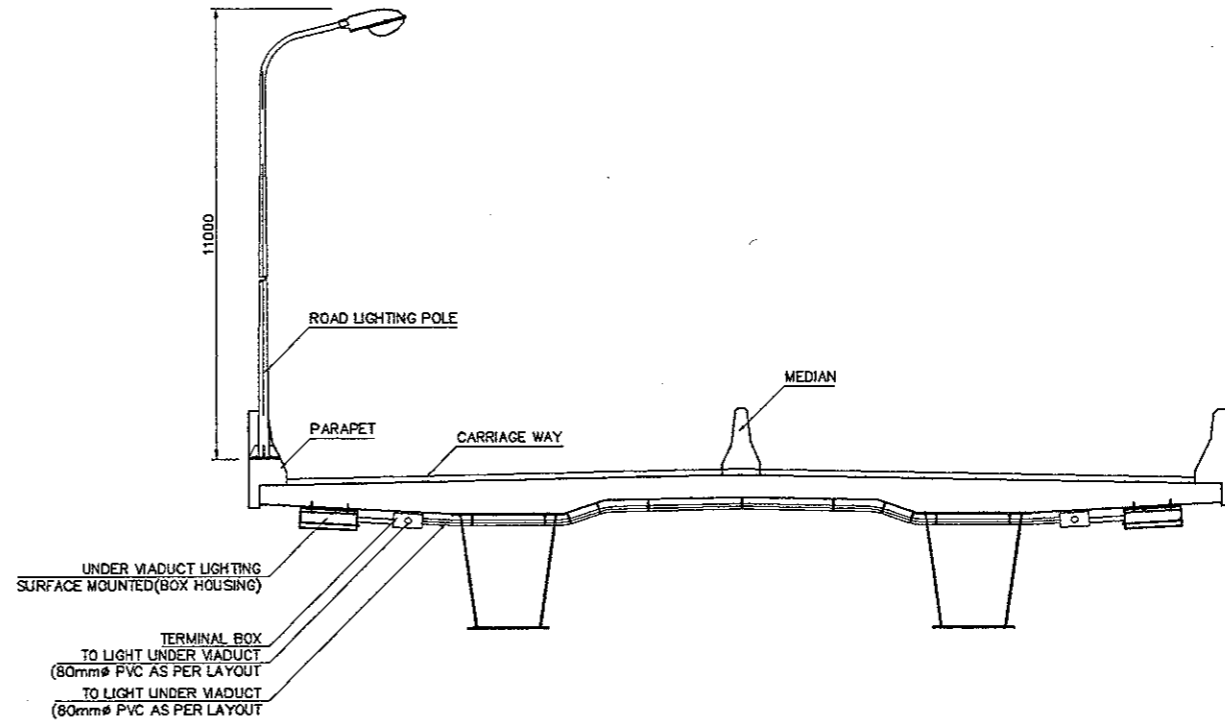


DETAILS DRAWING

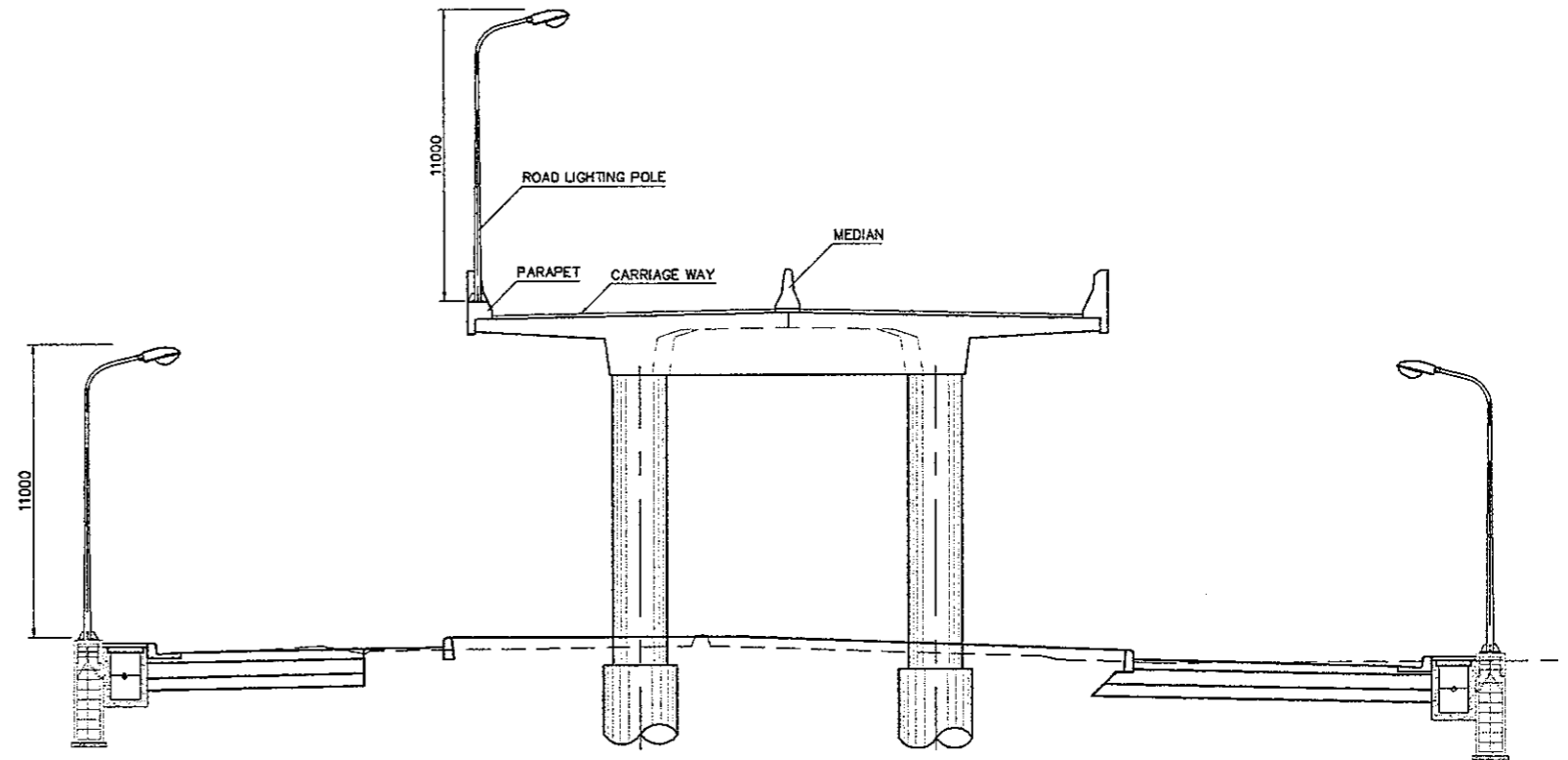
- ① SOCKET PLUG TERMINAL
- ② HOUSING
- ③ SCREW FIX POWER CONNECTION
- ④ LAMP HOLDER
- ⑤ LAMP BULB
- ⑥ REFLECTOR
- ⑦ GLASS COVER
- ⑧ INSIDE GEAR COMPARTMENT



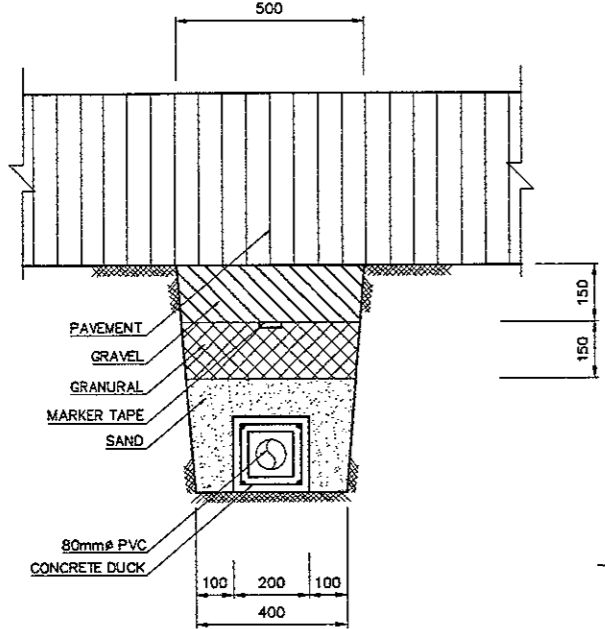
① ROAD LIGHTING UNDER VIADUCT
 SURFACE MOUNTED
 SCALE 1:10



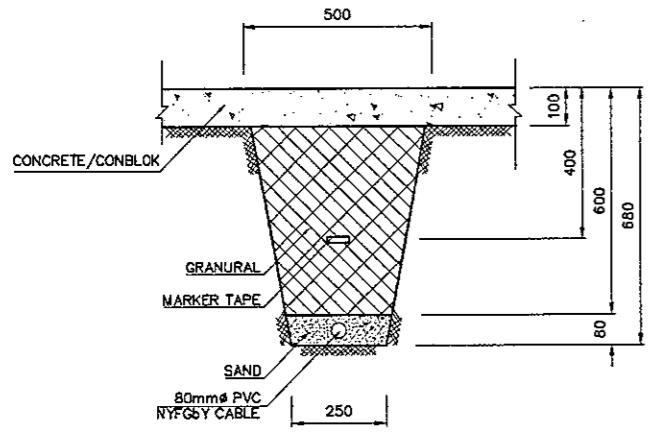
① LIGHTING SETTING UNDER VIADUCT
 SCALE 1:100



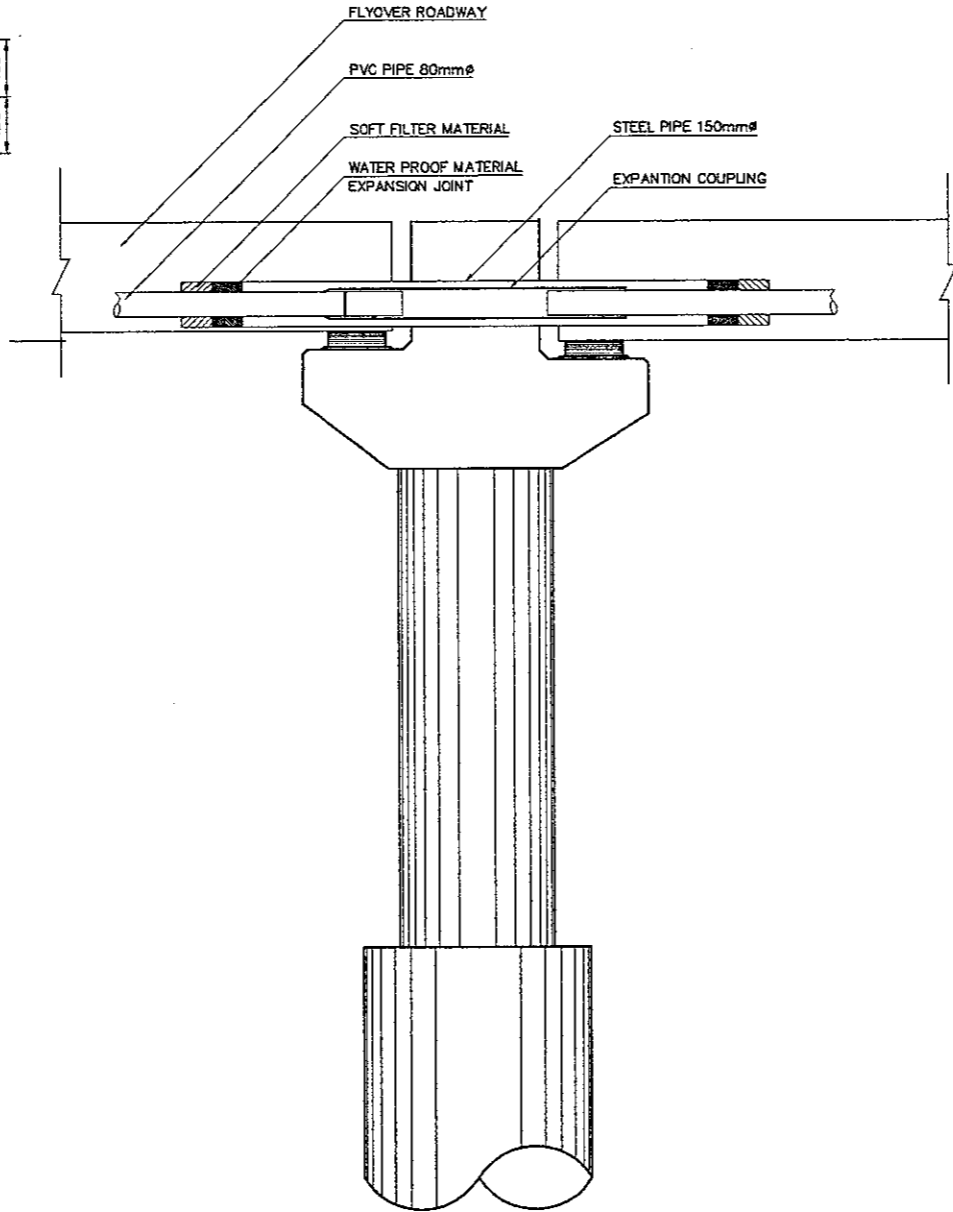
① TYPICAL ROAD CROSS SECTION
 SCALE 1:150



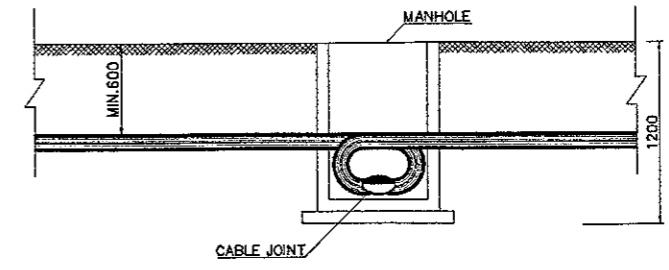
1
 CONDUIT IN THE DUCT UNDER ROAD
 SCALE 1:20



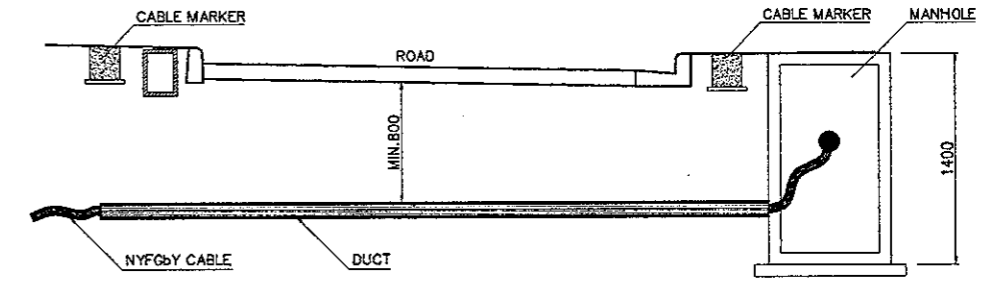
1
 CONDUIT RUN UNDER SIDEWALK
 SCALE 1:20



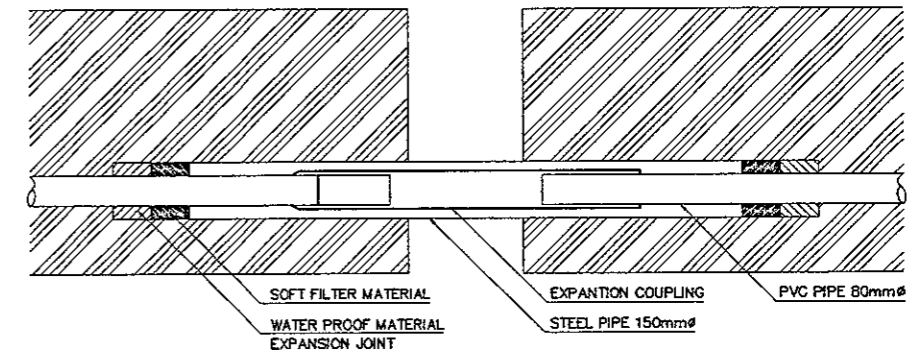
1
 CONDUIT EXPANTION JOINT FOR THE BRIDGE
 SCALE 1:25



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