

**DEPARTMENT OF TRANSPORTATION
REPUBLIC OF THE PHILIPPINES**

**METRO MANILA SUBWAY PROJECT
PHASE 1**

BIDDING DOCUMENTS

FOR

THE PROCUREMENT OF

PACKAGE CP106: E&M SYSTEMS AND TRACK WORKS

Volume III of IV

PART 2 EMPLOYER'S REQUIREMENTS

December 2019

Employer:	Department of Transportation
Procuring Agent:	Procurement Service
Country:	Republic of the Philippines
Project:	Metro Manila Subway Project (MMSP) Valenzuela - Paranaque
Loan No.:	PH-P267

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DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
GENERAL ROUTE PLAN & LOCATION DRAWING

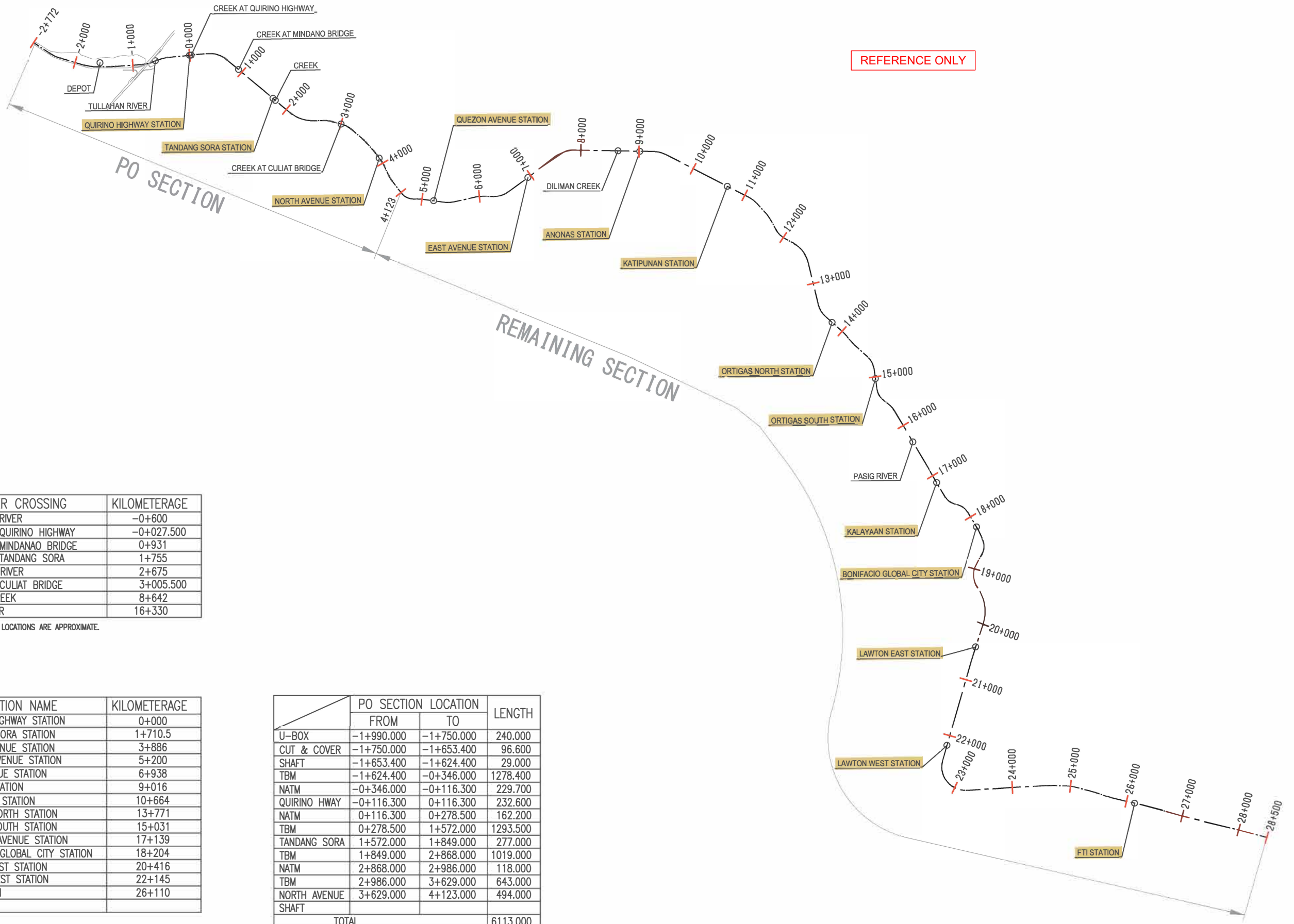
ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

Last modified by LUMBA_C6 / 04-Oct-2019
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VERSIONS	DATE	DESCRIPTION	GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : PARANAQUE TO VALENZUELA	DATE Nov 2019
0	31/03/19	FOR INFORMATION ONLY	 OCGlobal-JV Metro Manila Subway Project (MMSP)	TITLE	NAME	SIGNATURE	SCALE N.T.S.
				DESIGNER			SHEET No.
				CHECK			DRG No. PO-CE-GE-0000
				TEAM LEADER			DRG S.
			PR. MANAGER				REV 0
						GENERAL ROUTE PLAN & LOCATION COVER SHEET	



DEPARTMENT OF
TRANSPORTATION
(DOTr)



REFERENCE ONLY

RIVER CROSSING	KILOMETERAGE
TULLAHAN RIVER	-0+600
CREEK AT QUIRINO HIGHWAY	-0+027.500
CREEK AT MINDANAO BRIDGE	0+931
CREEK AT TANDANG SORA	1+755
SAN JUAN RIVER	2+675
CREEK AT CULIAT BRIDGE	3+005.500
DILIMAN CREEK	8+642
PASIG RIVER	16+330

KILOMETERAGE LOCATIONS ARE APPROXIMATE.

STATION NAME	KILOMETERAGE
QUIRINO HIGHWAY STATION	0+000
TANDANG SORA STATION	1+710.5
NORTH AVENUE STATION	3+886
QUEZON AVENUE STATION	5+200
EAST AVENUE STATION	6+938
ANONAS STATION	9+016
KATIPUNAN STATION	10+664
ORTIGAS NORTH STATION	13+771
ORTIGAS SOUTH STATION	15+031
KALAYAAN AVENUE STATION	17+139
BONIFACIO GLOBAL CITY STATION	18+204
LAWTON EAST STATION	20+416
LAWTON WEST STATION	22+145
FTI STATION	26+110
T3 STATION	

	PO SECTION LOCATION		LENGTH
	FROM	TO	
U-BOX	-1+990.000	-1+750.000	240.000
CUT & COVER	-1+750.000	-1+653.400	96.600
SHAFT	-1+653.400	-1+624.400	29.000
TBM	-1+624.400	-0+346.000	1278.400
NATM	-0+346.000	-0+116.300	229.700
QUIRINO HWAY	-0+116.300	0+116.300	232.600
NATM	0+116.300	0+278.500	162.200
TBM	0+278.500	1+572.000	1293.500
TANDANG SORA	1+572.000	1+849.000	277.000
TBM	1+849.000	2+868.000	1019.000
NATM	2+868.000	2+986.000	118.000
TBM	2+986.000	3+629.000	643.000
NORTH AVENUE	3+629.000	4+123.000	494.000
SHAFT			
TOTAL			6113.000

VERSIONS	DATE	DESCRIPTION
1	31/03/2019	REVISION FROM JANUARY SUBMISSION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

TOKYO METRO CO., LTD.

JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

ALMEC CORPORATION

KATAHIRA & ENGINEERS INTERNATIONAL

PACIFIC CONSULTANTS CO.,LTD.

TONICHI ENGINEERING CONSULTANTS, INC.

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP101

ROUTE PLAN

GENERAL ROUTE PLAN & LOCATION DRAWING

DATE	31 March 2019
SCALE	
SHEET No.	
DRG No.	PO-CE-GE-0001
DRG S.	REV



DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
ROLLING STOCK

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.


Last modified by LUMBA_C6 / 04-Oct-2019
Filename: C:\Users\lumba_c6\Desktop\For_TinhPham\POWER SYSTEM CAD With TBlock

VERSIONS	DATE	DESCRIPTION	GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : PARANAQUE TO VALENZUELA	DATE Nov 2019
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				DESIGNER			SHEET No.
				CHECK			DRG No. PO-CE-GE-0000
				TEAM LEADER			DRG S.
				PR. MANAGER			REV 0
			 DEPARTMENT OF TRANSPORTATION (DOTr)			ROLING STOCK COVER SHEET	

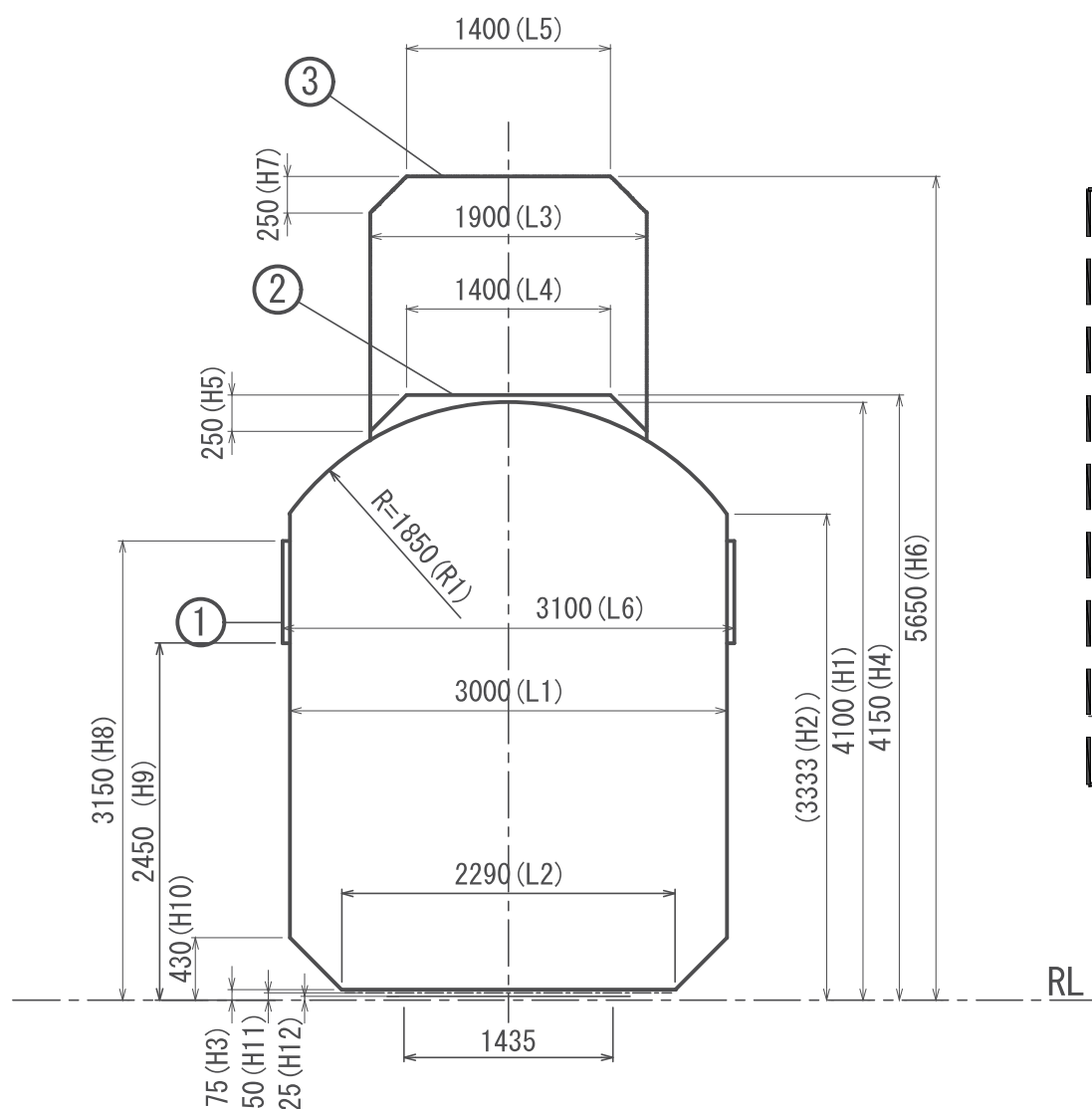
ROLLING STOCK DESIGN DRAWING INDEX

REFERENCE ONLY

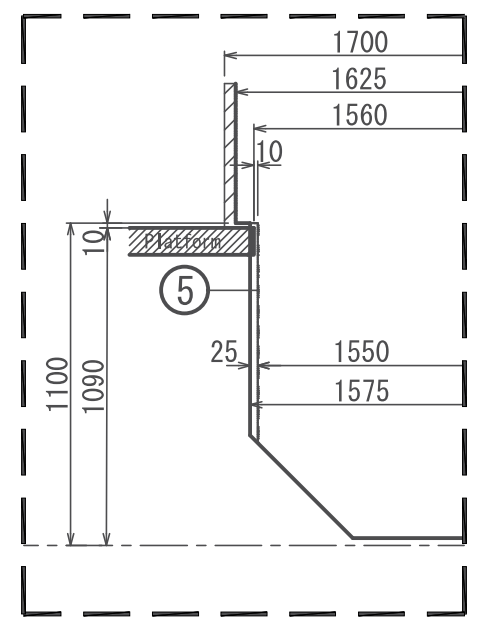
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PO-CE-GE-0001	ROLLING STOCK COVER PAGE
PO-CE-GE-002	ROLLING STOCK DRAWING INDEX
PO-CE-GE-0003	ROLLING STOCK GAUGE AND CONSTRUCTION GAUGE

VERSIONS	DATE	DESCRIPTION	CONSULTANT				METRO MANILA SUBWAY PROJECT PHASE1 : CP101	DATE 15 August 2019		
			JICA DESIGN TEAM 				TITLE	NAME	SIGNATURE	SCALE
							DESIGNER		SHEET No.	
							CHECK		DRG No. PO-CE-GE-0002	
							TEAM LEADER		DRG S.	
							PR. MANAGER		REV	

Rolling stock gauge

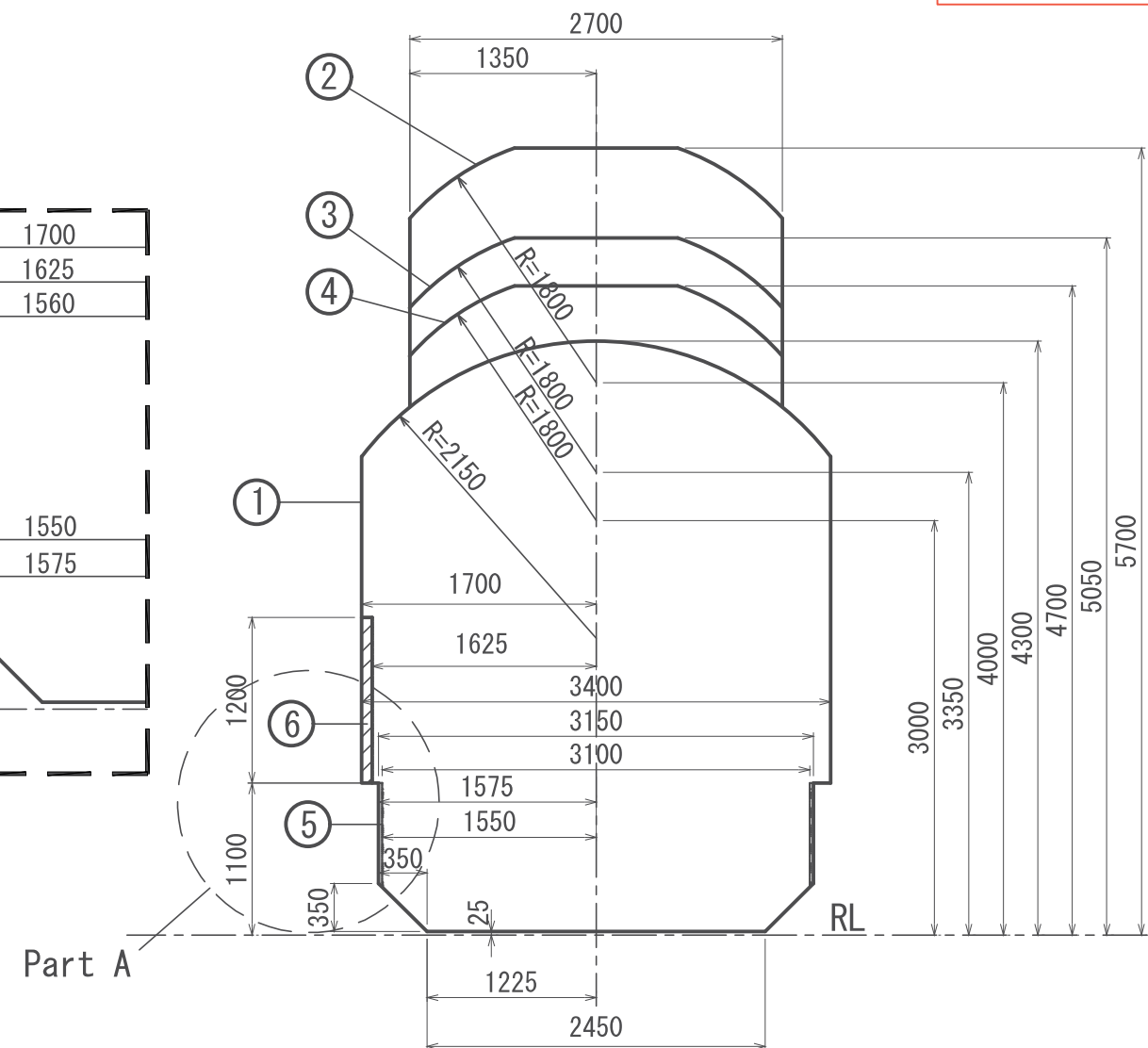


Part A



Construction gauge

REFERENCE ONLY



Gauge		
—	Basic	H1, H2, H3, H10, L1, L2, R1
②	Gauge when current collector is folded.	H4, H5, L3, L4
③	Gauge in relation to top of roof when current collector is operated.	H6, H7, L3, L5
①	Gauge in relation to signs, marker lamps, car side lamps.	H8, H9, L6
---	Gauge in relation to parts that do not move vertically due to action of bogie spring.	H11, L2
—	gauge in relation to sanding pipe, obstacle deflector, brake shoe and other parts that do not exceed the wheel rim width.	H12

Gauge		
①	—	Basic gauge for subway tunnel section
②	—	Gauge for track on which trains run receiving supply of direct current.
③	—	Gauge for tunnels, bridge, overpass, along track on which trains run receiving supply of direct current.
④	—	Gauge for tunnel section in case of using rigid overhead wire or safe supporting system.
⑤	—	Gauge for platform edge.
⑥	—	Gauge for platform screen door sensors.

VERSIONS	DATE	DESCRIPTION
01	31 st March 19	Revision of February Submission

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP101

Rolling Stock Gauge and Construction Gauge

DATE	31 st March 2019
SCALE	S=1:50
SHEET No.	
DRG No.	PO-CE-GE-0003
DRG S.	REV

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
TRACK DESIGN

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

DATE	Nov. 2019
SCALE	
SHEET No.	
DRG No.	MMSP-TK-0000-DD-0000
DRG S.	REV

TRACK DESIGN

DRAWING INDEX

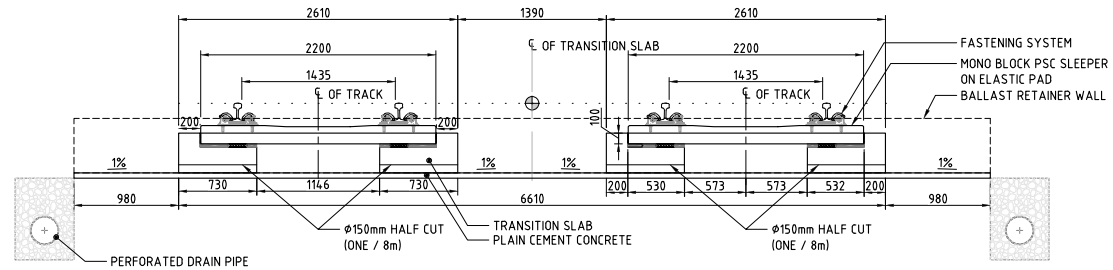
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MMSP-TRK-0000-DD-0000	TRACK DESIGN COVER SHEET
MMSP-TRK-0000-DD-0001	TRCK DESIGN DRAWING INDEX
MMSP-TRK-0000-DD-0104	TYPICAL CROSS SECTION IN TRANSITION ZONE BETWEEN NON-BALLASTED TRACK TO BALLASTED TRACK
MMSP-TRK-0000-DD-0105	TYPICAL CROSS SECTION FOR TURNOUT #8 IN DEPOT
MMSP-TRK-0000-DD-0106	TYPICAL CROSS SECTION FOR TURNOUT #6 IN DEPOT
MMSP-TRK-0000-DD-0107	TYPICAL CROSS SECTION FOR SCISSOR CROSSOVER #10 IN MAINLINE
MMSP-TRK-0000-DD-0108	TYPICAL CROSS SECTION FOR SCISSOR CROSSOVER # 8 IN DEPOT
MMSP-TRK-0000-DD-0109	TYPICAL CROSS SECTION OF BALLASTED TRACK (DEPOT) (TANGENT)
MMSP-TRK-0000-DD-0110	TYPICAL CROSS SECTION BALLASTED TRACK (DEPOT) (CURVED)
MMSP-TRK-0000-DD-0111	TYPICAL CROSS SECTION OF WORKSHOP TRACK (DEPOT) CLOSED PIT TRACK
MMSP-TRK-0000-DD-0112	TYPICAL CROSS SECTION OF WORKSHOP TRACK (DEPOT) EMBEDDED TRACK
MMSP-TRK-0000-DD-0113	TYPICAL CROSS SECTION OF OPEN PIT TRACKS WITH RC POLES IN DEPOT
MMSP-TRK-0000-DD-0114	TYPICAL CROSS SECTION OF CAR WASHING SHOP TRACK (DEPOT)
MMSP-TRK-0000-DD-0115	TYPICAL CROSS SECTION AT LEVEL CROSSING IN DEPOT

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MMSP-TRK-0000-DD-0203	TYPICAL TRACK ARRANGEMENT IN TRANSITION ZONE BALLASTLESS TRACK TO BALLASTED TRACK
MMSP-TRK-0000-DD-0251	TYPICAL TRACK ARRANGEMENT FOR BALLASTED TRACK (DEPOT) (TANGENT)
MMSP-TRK-0000-DD-0252	TYPICAL TRACK ARRANGEMENT FOR BALLASTED TRACK (DEPOT) (CURVED)
MMSP-TRK-0000-DD-0253	TYPICAL TRACK ARRANGEMENT FOR WORKSHOP TRACK (DEPOT) CLOSED PIT TRACK
MMSP-TRK-0000-DD-0254	TYPICAL TRACK ARRANGEMENT FOR WORKSHOP TRACK (DEPOT) EMBEDDED TRACK
MMSP-TRK-0000-DD-0255	TYPICAL TRACK ARRANGEMENT FOR OPEN PIT TRACKS WITH RC POLES IN DEPOT
MMSP-TRK-0000-DD-0256	TYPICAL TRACK ARRANGEMENT FOR WHEEL REPROFILING TRACK (DEPOT)
MMSP-TRK-0000-DD-0301	TYPICAL TRACK ARRANGEMENT FOR CAR WASHING SHOP TRACK (DEPOT)
MMSP-TRK-0000-DD-0302	TYPICAL TRACK ARRANGEMENT FOR LEVEL CROSSINGS IN DEPOT
MMSP-TRK-0000-DD-0351	TYPICAL DETAILS OF SEF SYSTEM ON TRACK BED
MMSP-TRK-0000-DD-0352	TYPICAL DETAILS FOR MONO-BLOCK PSC CONCRETE SLEEPER FOR BALLASTLESS TRACK
MMSP-TRK-0000-DD-0353	TYPICAL DETAILS FOR MONO-BLOCK PSC CONCRETE SLEEPER FOR BALLASTED TRACK
MMSP-TRK-0000-DD-0354	TYPICAL DETAILS OF FFU SLEEPER FOR TURNOUTS AND SCISSOR CROSSOVER (BALLASTLESS TRACK)
MMSP-TRK-0000-DD-0355	TYPICAL DETAILS OF FFU SLEEPER FOR TURNOUTS AND SCISSOR CROSSOVER (BALLASTED TRACK)
MMSP-TRK-0000-DD-0401	RAIL PROFILE AT ELEVATED AND EMBANKMENT SECTION (JIS 60KG RAIL)

DRAWING No.	CONTENTS
MMSP-TRK-0000-DD-0402	RAIL PROFILE AT DEPOT (JIS 50KG RAIL)
MMSP-TRK-0000-DD-0403	TYPICAL FASTENING SYSTEM FOR BALLASTLESS TRACK
MMSP-TRK-0000-DD-0404	FASTENING SYSTEM FOR BALLASTED TRACK
MMSP-TRK-0000-DD-0405	FASTENING SYSTEM FOR TURNOUT AND CROSSOVER
MMSP-TRK-0000-DD-0451	TYPICAL LAYOUT FOR #12 TURNOUT
MMSP-TRK-0000-DD-0452	TYPICAL LAYOUT FOR #10 TURNOUT
MMSP-TRK-0000-DD-0453	TYPICAL LAYOUT FOR #8 TURNOUT
MMSP-TRK-0000-DD-0454	TYPICAL LAYOUT FOR #6 TURNOUT
MMSP-TRK-0000-DD-0456	TYPICAL LAYOUT FOR #10 SCISSOR CROSSOVER (TRACK SPACING = 4600mm)
MMSP-TRK-0000-DD-0457	TYPICAL LAYOUT FOR #8 SCISSOR CROSSOVER
MMSP-TRK-0000-DD-0458	TYPICAL LAYOUT FOR #10 CROSSOVER
MMSP-TRK-0000-DD-0501	TYPICAL STOP BLOCK TYPE BUFFER STOP
MMSP-TRK-0000-DD-0502	FRICTION ELEMENT BUFFER STOP
MMSP-TRK-0000-DD-0551	TYPICAL COMPROMISE DETAIL
MMSP-TRK-0000-DD-0552	TYPICAL RAIL EXPANSION JOINT FOR BALLASTLESS TRACK
MMSP-TRK-0000-DD-0553	TYPICAL GLUED INSULATED RAIL JOINTS AND ACCESSORIES
MMSP-TRK-0000-DD-0554	TYPICAL NON-GLUED INSULATED RAIL JOINTS AND ACCESSORIES
MMSP-TRK-0000-DD-0555	TYPICAL RAILWAY SIGN POSTS

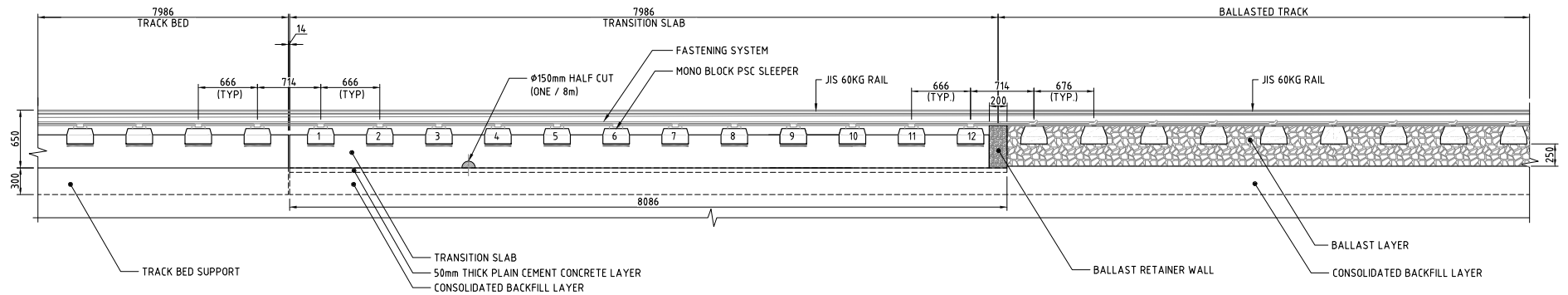
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								N.T.S.
								SHEET No.
								DRG No. MMSP-TRK-0000-DD-0001
								DRG S.
								REV

TRACK DESIGN
DRAWING INDEX



SECTION 01
SCALE 1: 50

(TYPICAL CROSS SECTION IN TRANSITION ZONE BETWEEN BALLASTED TRACK TO NON-BALLASTED TRACK)



SECTION 02
SCALE 1: 50

THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORKS CONTRACTOR FOR THE DRAINAGE LAYOUT.

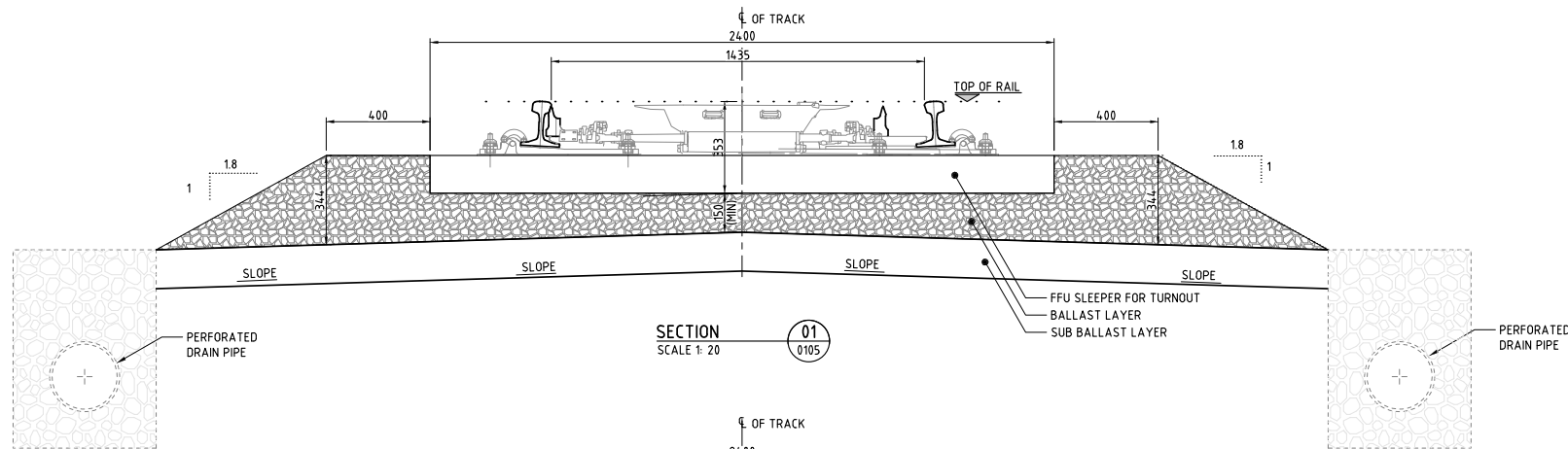
NOTES:

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2. FOR BALLASTED TRACK CROSS SECTION IN (DEPOT) REFER TO DRAWING NO. MMSP-TRK-0000-DD-0110
3. FOR DETAILS OF COMPROMISE RAIL REFER TO DRAWING NO MMSP-TRK-0000-DD-0551

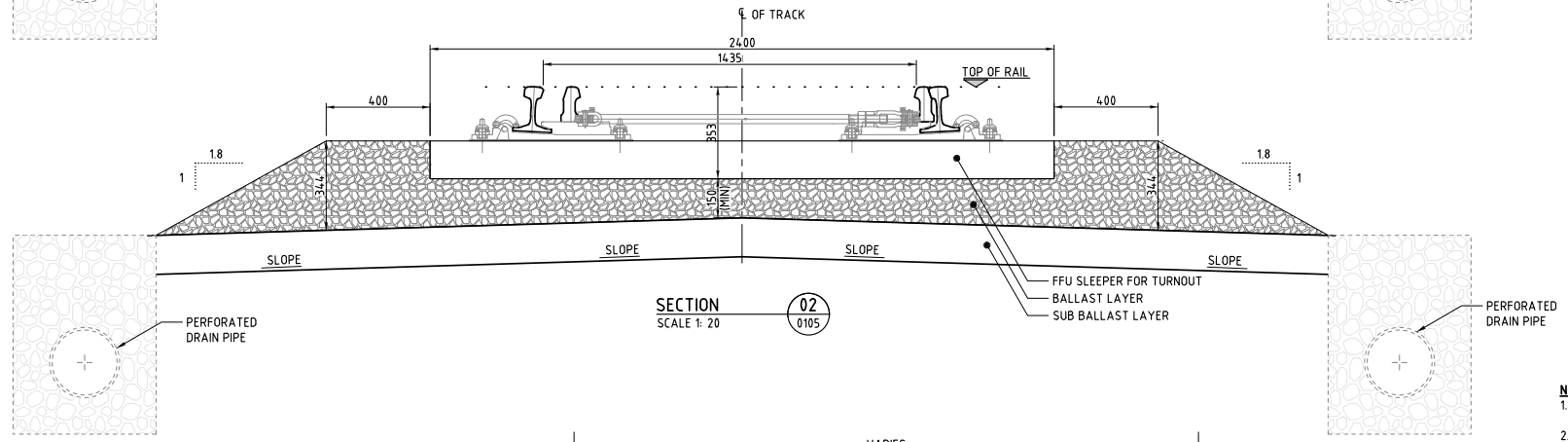


VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE	
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONCHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			TITLE	NAME	SIGNATURE	Jan. 2019
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						TEAM LEADER			SHEET No.
						PR. MANAGER			DRG No.
									MMSP-TRK-0000-DD-0104
									DRG S.
									REV

TYPICAL CROSS SECTION
IN TRANSITION ZONE BETWEEN
NON-BALLASTED TRACK TO BALLASTED TRACK



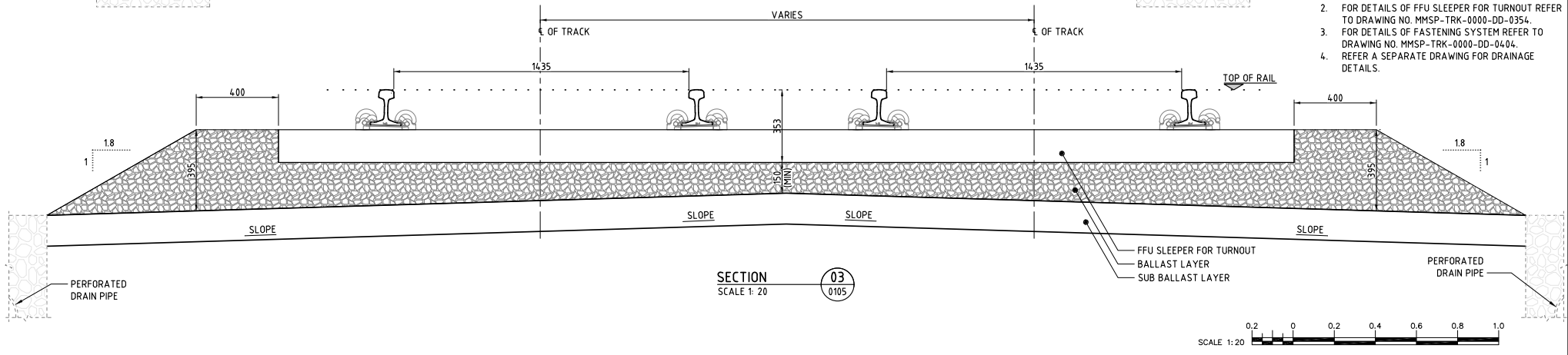
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SCALE 1: 20



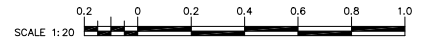
SECTION 02
SCALE 1: 20

THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORK CONTRACTOR FOR THE DRAINAGE LAYOUT.

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR DETAILS OF FFU SLEEPER FOR TURNOUT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0354.
 3. FOR DETAILS OF FASTENING SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0404.
 4. REFER A SEPARATE DRAWING FOR DRAINAGE DETAILS.



SECTION 03
SCALE 1: 20



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOT)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

TOKYO METRO CO., LTD.

JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

ALMEC CORPORATION

KATAHIRA & ENGINEERS INTERNATIONAL

PACIFIC CONSULTANTS CO.,LTD.

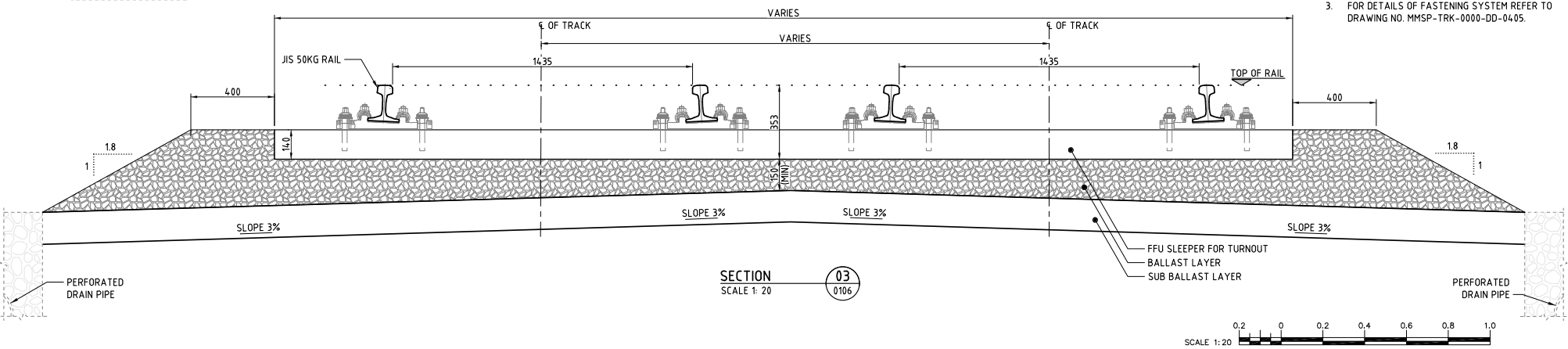
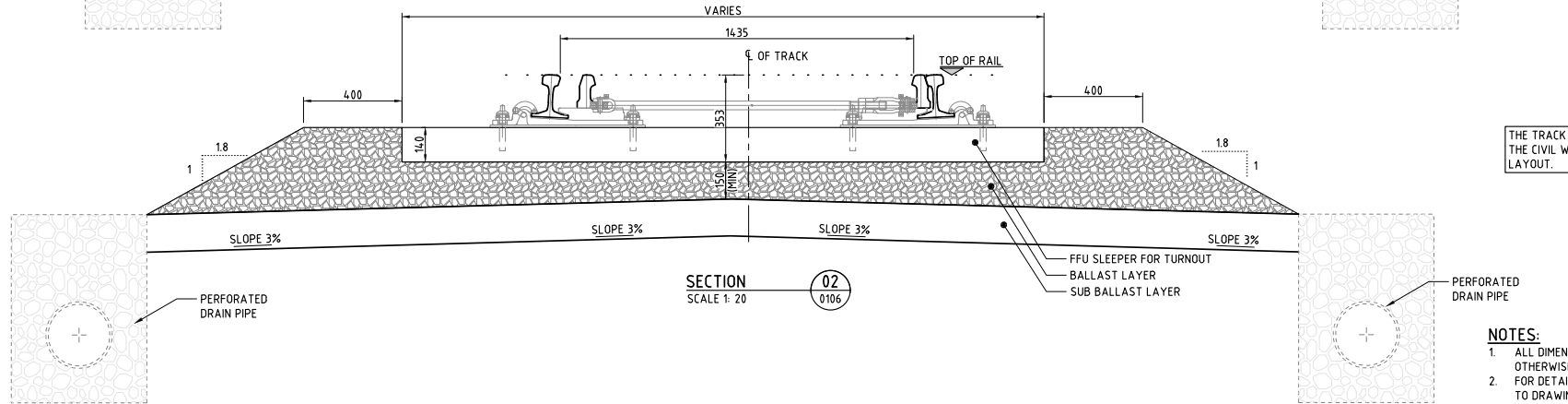
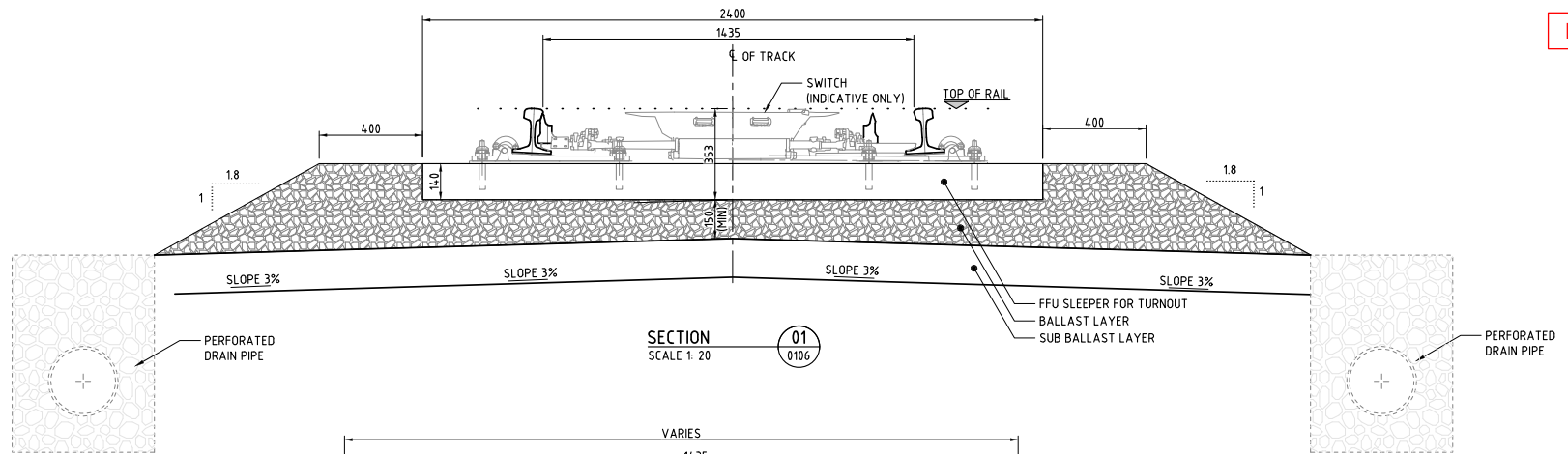
TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

TYPICAL CROSS SECTION FOR TURNOUT #8 IN DEPOT

DATE	Jan. 2019
SCALE	1:20
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0105
DRG S.	
REV	



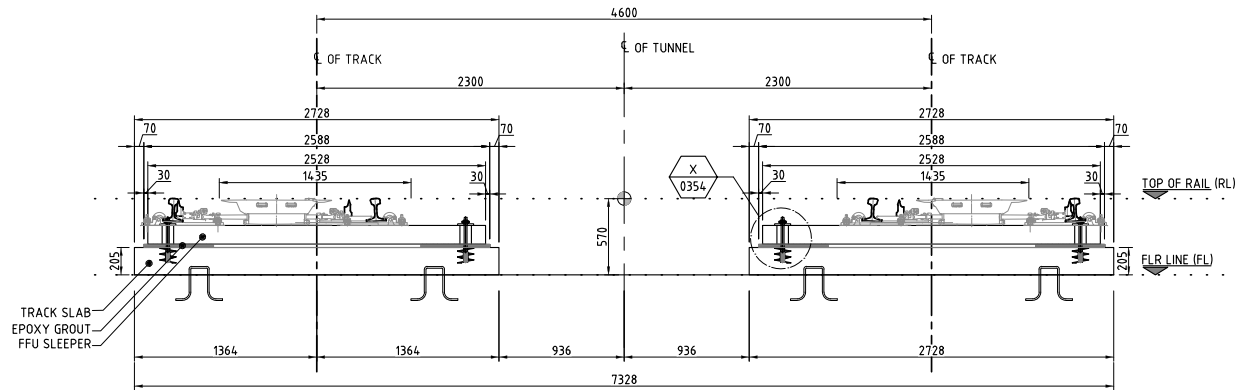
THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORKS CONTRACTOR FOR THE DRAINAGE LAYOUT.

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR DETAILS OF FFU SLEEPER FOR TURNOUT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0355.
 3. FOR DETAILS OF FASTENING SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0405.



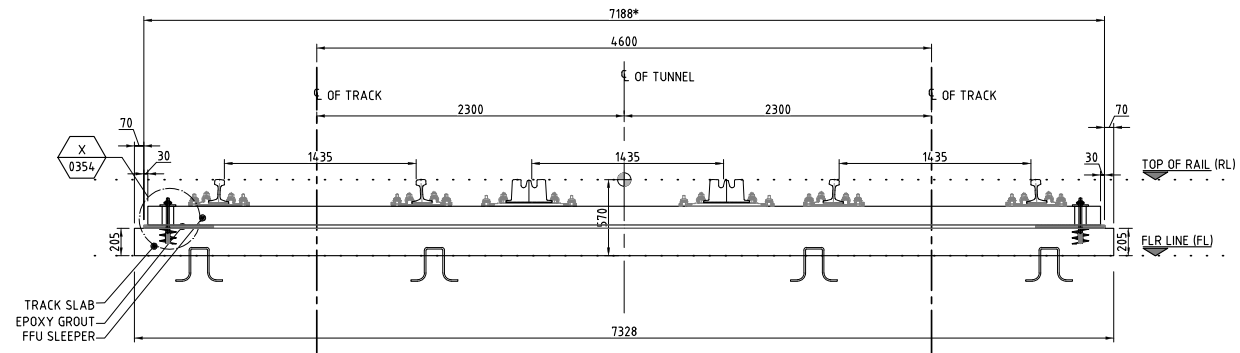
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			<p>JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			DESIGNER			SCALE
						CHECK			1:20
						TEAM LEADER			SHEET No.
						PR. MANAGER			DRG No.
									MMSP-TRK-0000-DD-0106
									DRG S.
									REV

TYPICAL CROSS SECTION FOR TURNOUT #6 IN DEPOT



SECTION 01
SCALE 1:40

TYPICAL CROSS SECTION FOR TRACK SLAB (SCISSOR CROSSOVER #10)



SECTION 02
SCALE 1:40

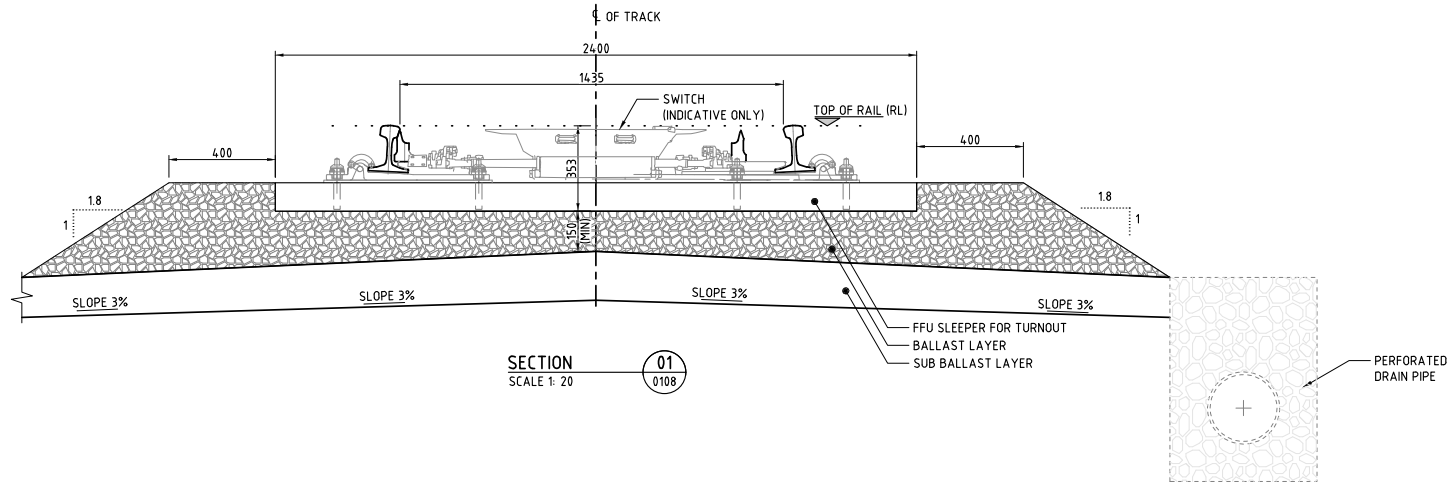
* DIMENSION TO BE COORDINATED WITH TURNOUT SUPPLIER.
THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORK CONTRACTOR TO PROVIDE DETAILS AND SPACING OF SHEAR CONNECTORS AND LAYOUT OF TRACK BED CONCRETE.

NOTES:

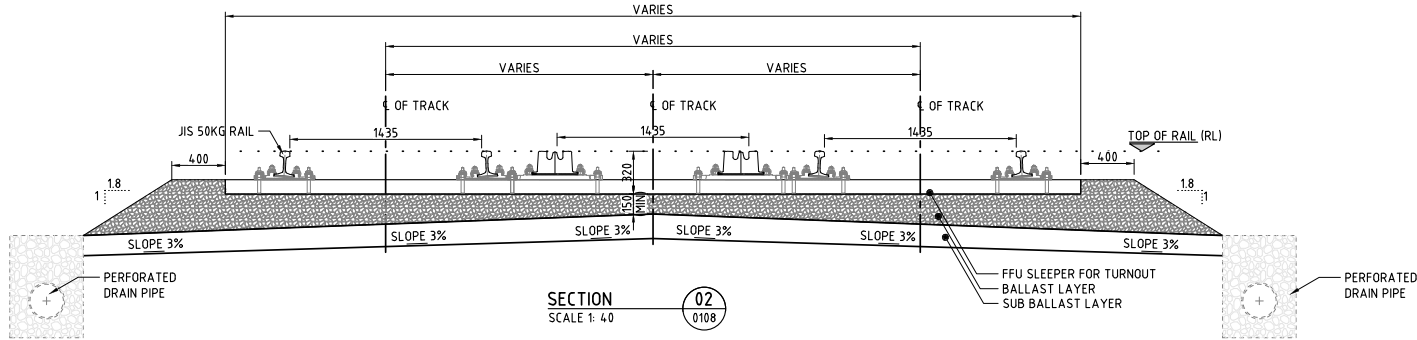
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF FFU SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0354.
3. FOR DETAILS OF SHEAR CONNECTOR REFER TO DRAWING NO. MMSP-TRK-0000-DD-0153.



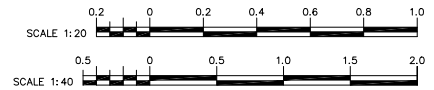
VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : CP106		DATE
			JICA DESIGN TEAM ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION					Jan. 2019
								SCALE 1:40
								SHEET No.
								DRG No. MMSP-TRK-0000-DD-0107
								DRG S. REV



THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORKS CONTRACTOR FOR THE DRAINAGE LAYOUT.

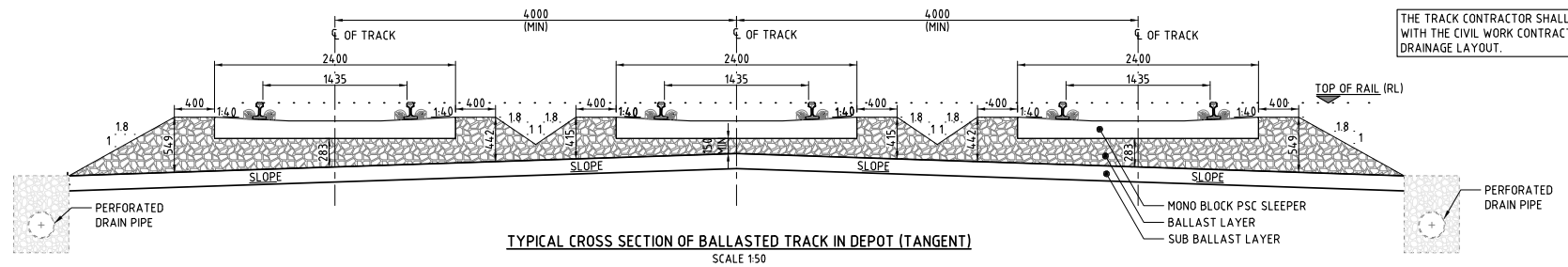
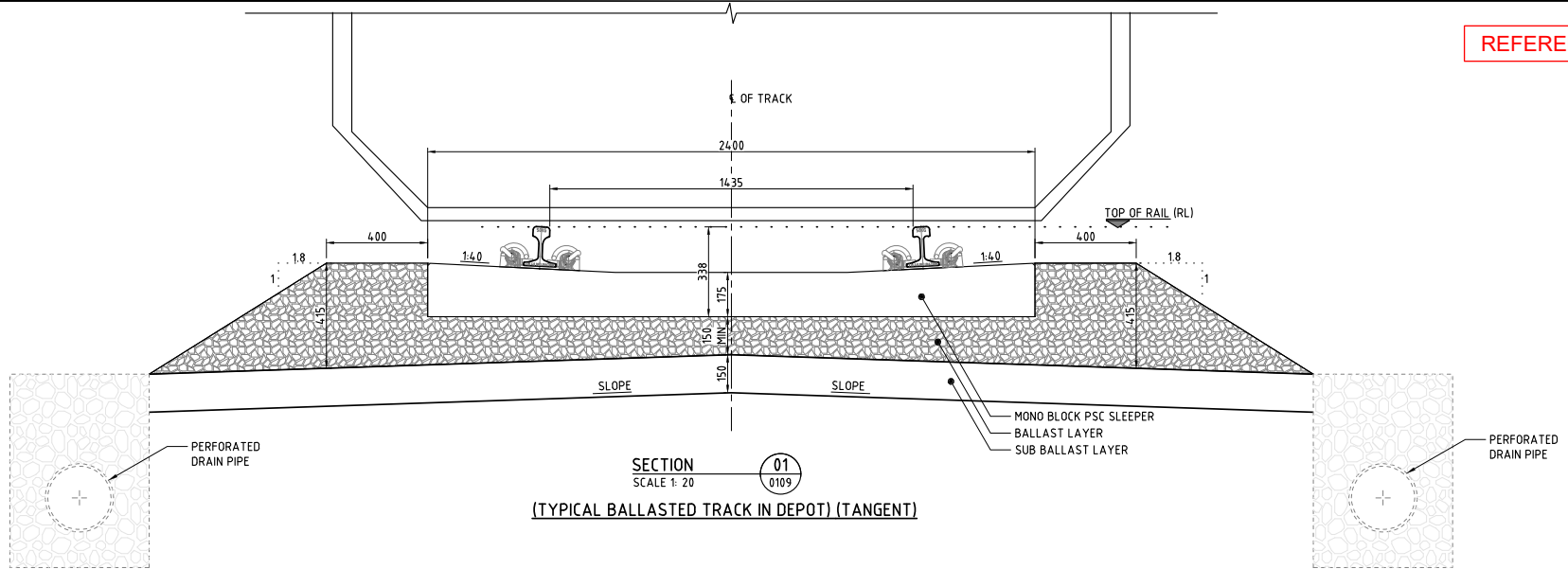


- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR DETAILS OF FFU SLEEPER FOR TURNOUT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0355.
 3. FOR DETAILS OF FASTENING SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0405.

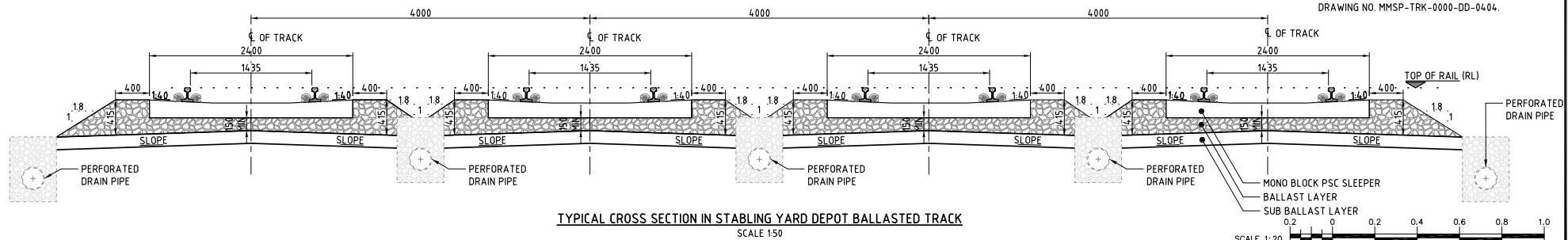


VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			JICA DESIGN TEAM			TITLE	NAME	Jan. 2019
						DESIGNER		SCALE 1:20, 1:40
						CHECK		SHEET No.
						TEAM LEADER		DRG No. MMSP-TRK-0000-DD-0108
						PR. MANAGER		DRG S.
								REV

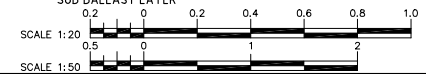
TYPICAL CROSS SECTION
FOR SCISSOR CROSSOVER #8 IN DEPOT



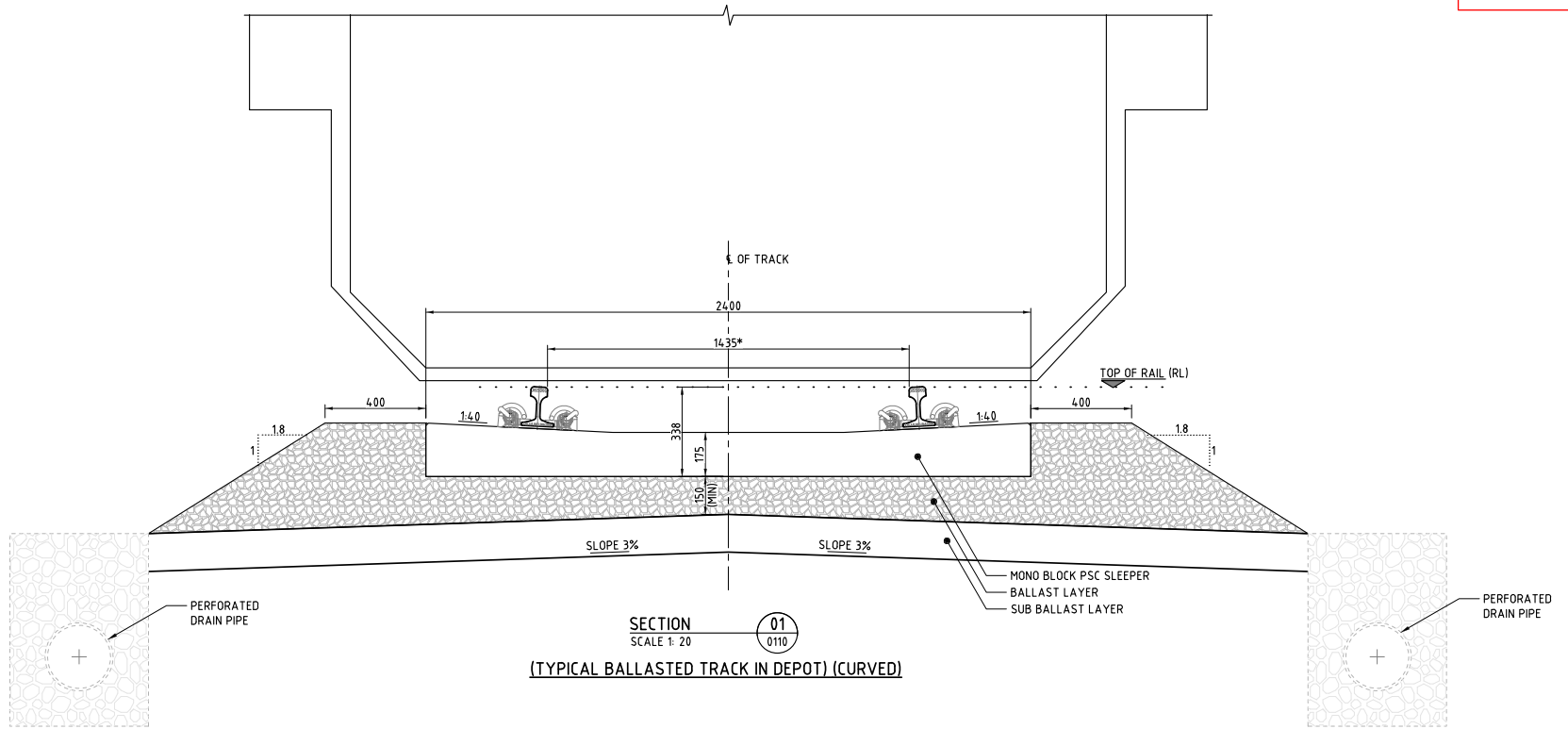
THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORK CONTRACTOR FOR THE DRAINAGE LAYOUT.



- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR DETAILS OF MONO BLOCK PSC SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0353.
 3. FOR DETAILS OF FASTENING SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0404.



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			JICA DESIGN TEAM ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION					Jan. 2019
			DEPARTMENT OF TRANSPORTATION (DOTr) JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			DESIGNER CHECK TEAM LEADER PR. MANAGER		SCALE 1:20, 1:50
						TYPICAL CROSS SECTION OF BALLASTED TRACK (DEPOT)(TANGENT)		SHEET No. DRG No. MMSP-TRK-0000-DD-0109 DRG S.
								REV

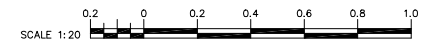


* ACCORDING TO ARTICLE 16 OF JAPANESE TECHNICAL REGULATORY STANDARD - MODEL SPECIFICATION IT IS RECOMMENDED THAT 5mm GAUGE WIDENING IS ADOPTED FOR RADII <math>< 200</math>. THE SLEEPER SHALL BE MODIFIED ACCORDINGLY.

THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORKS CONTRACTOR FOR THE DRAINAGE LAYOUT.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF MONO BLOCK PSC SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0353.
3. FOR DETAILS OF FASTENING SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0404.

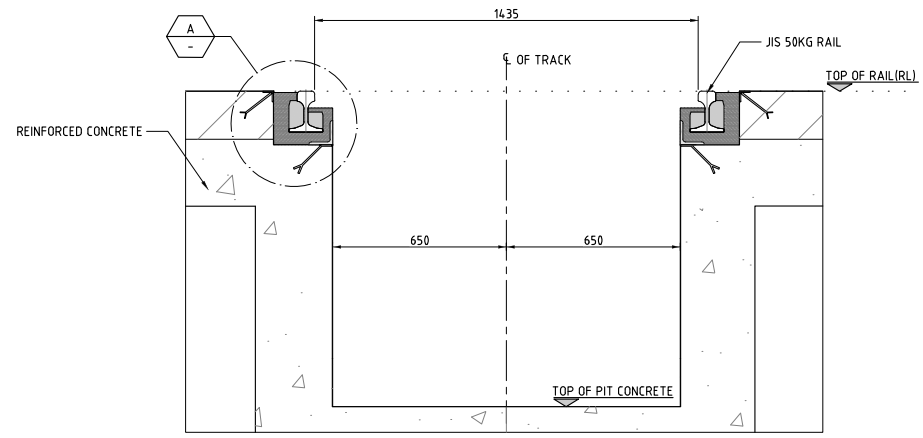


VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : CP106		DATE
			JICA DESIGN TEAM ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION					Jan. 2019
								SCALE 1:20
								SHEET No.
								DRG No. MMSP-TRK-0000-DD-0110
								DRG S. REV

DEPARTMENT OF TRANSPORTATION (DOTr)
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

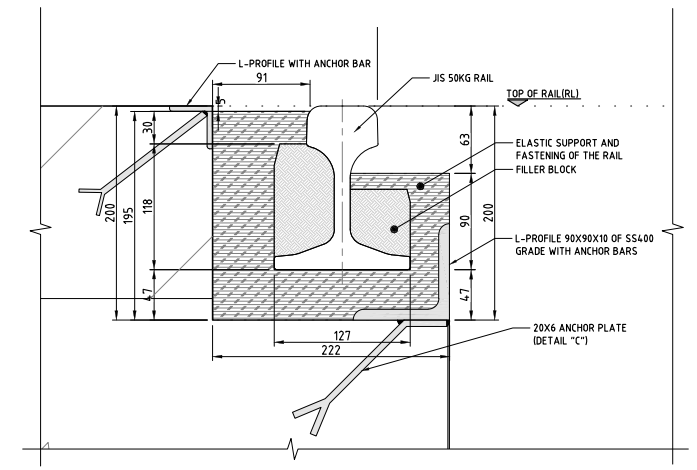
TYPICAL CROSS SECTION OF BALLASTED TRACK (DEPOT)(CURVED)

REFERENCE ONLY



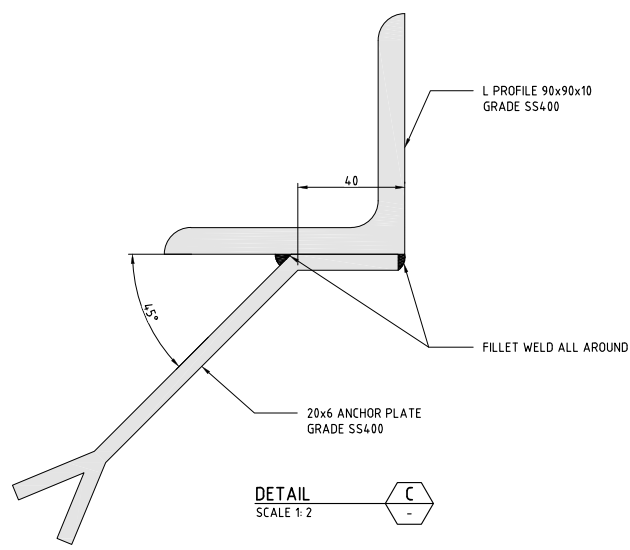
SECTION 01
SCALE 1:20 0111

(TYPICAL CROSS SECTION OF WORKSHOP CLOSED PIT TRACK)

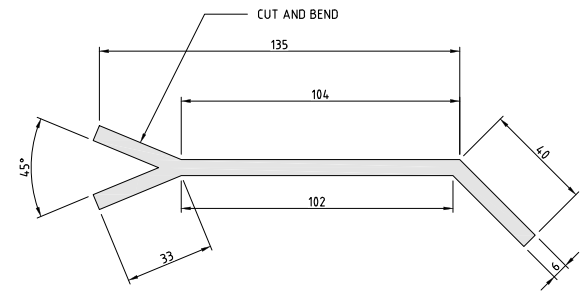


DETAIL A
SCALE 1:5

DIMENSIONAL DETAIL



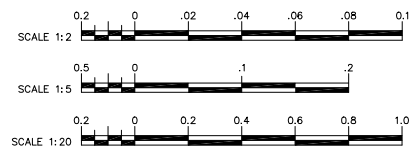
DETAIL C
SCALE 1:2



20x6 ANCHOR PLATE GRADE SS400
SCALE 1:2

NO RAIL CANT IS PROVIDED
SYSTEM FOR CLOSED PIT TRACK SHALL BE EDILON (I) SEDRA OR EQUIVALENT.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

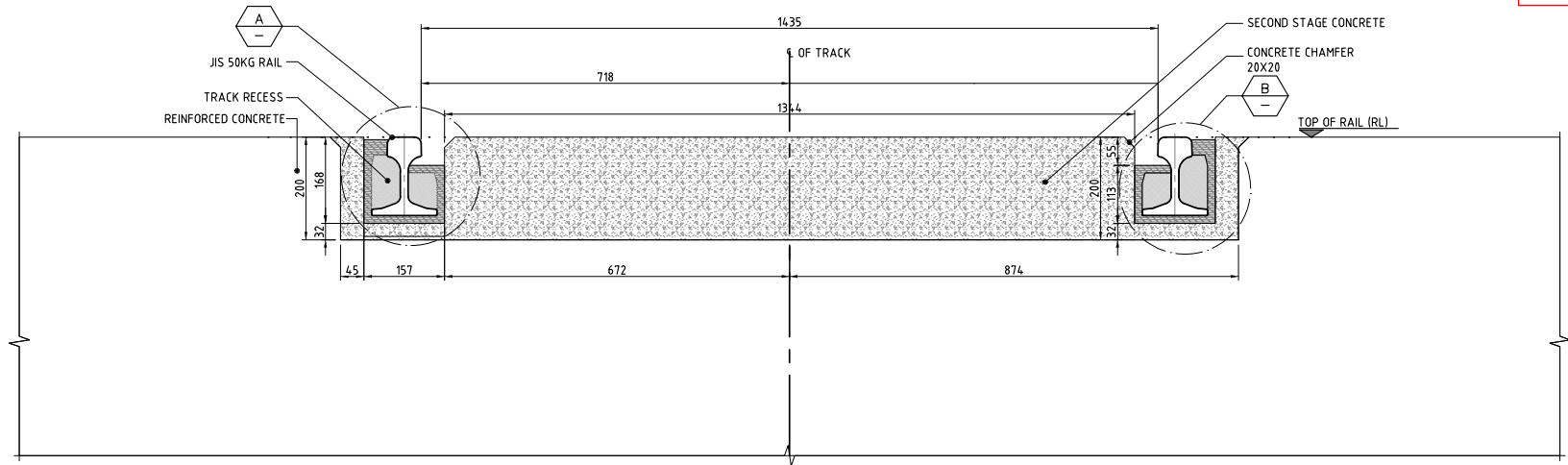
	ORIENTAL CONSULTANTS GLOBAL CO.,LTD.		KATAHIRA & ENGINEERS INTERNATIONAL
	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

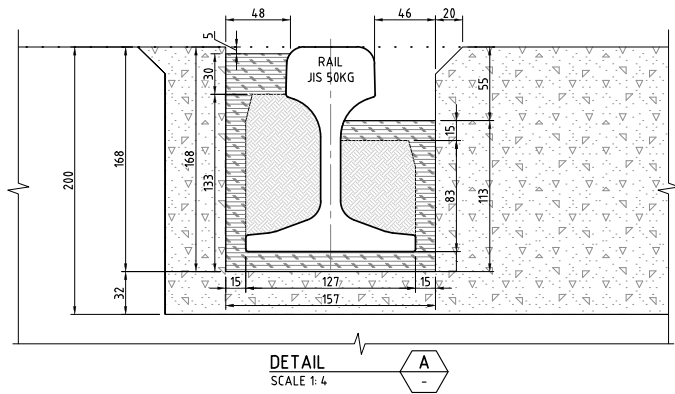
TYPICAL CROSS SECTION OF WORKSHOP TRACK (DEPOT) CLOSED PIT TRACK

DATE	Jan. 2019
SCALE	1:2, 1:5, 1:20
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0111
DRG S.	REV

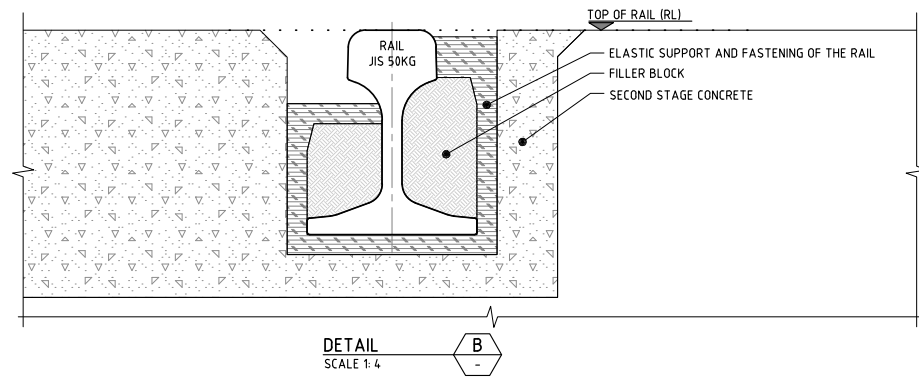


SECTION 1
SCALE 1: 10 0112

TYPICAL CROSS SECTION OF EMBEDDED TRACK IN DEPOT



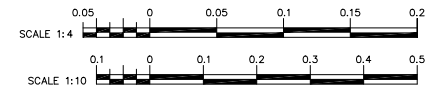
DETAIL A
SCALE 1: 4



DETAIL B
SCALE 1: 4

NO RAIL CANT IS PROVIDED
SYSTEM FOR EMBEDDED TRACK SHALL BE EDILON II SEDRA OR EQUIVALENT.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION

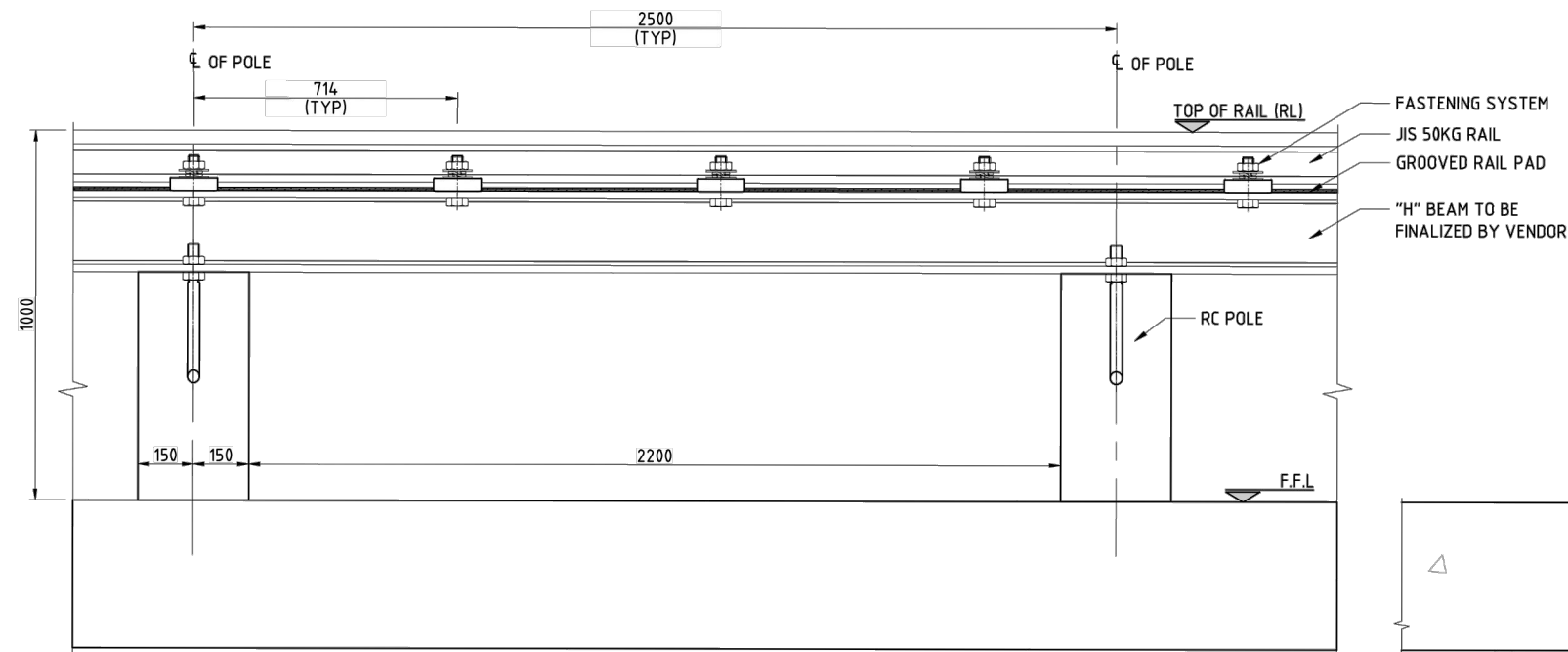


CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT PHASE 1 : CP106	
TYPICAL CROSS SECTION OF WORKSHOP TRACK (DEPOT) EMBEDDED TRACK	

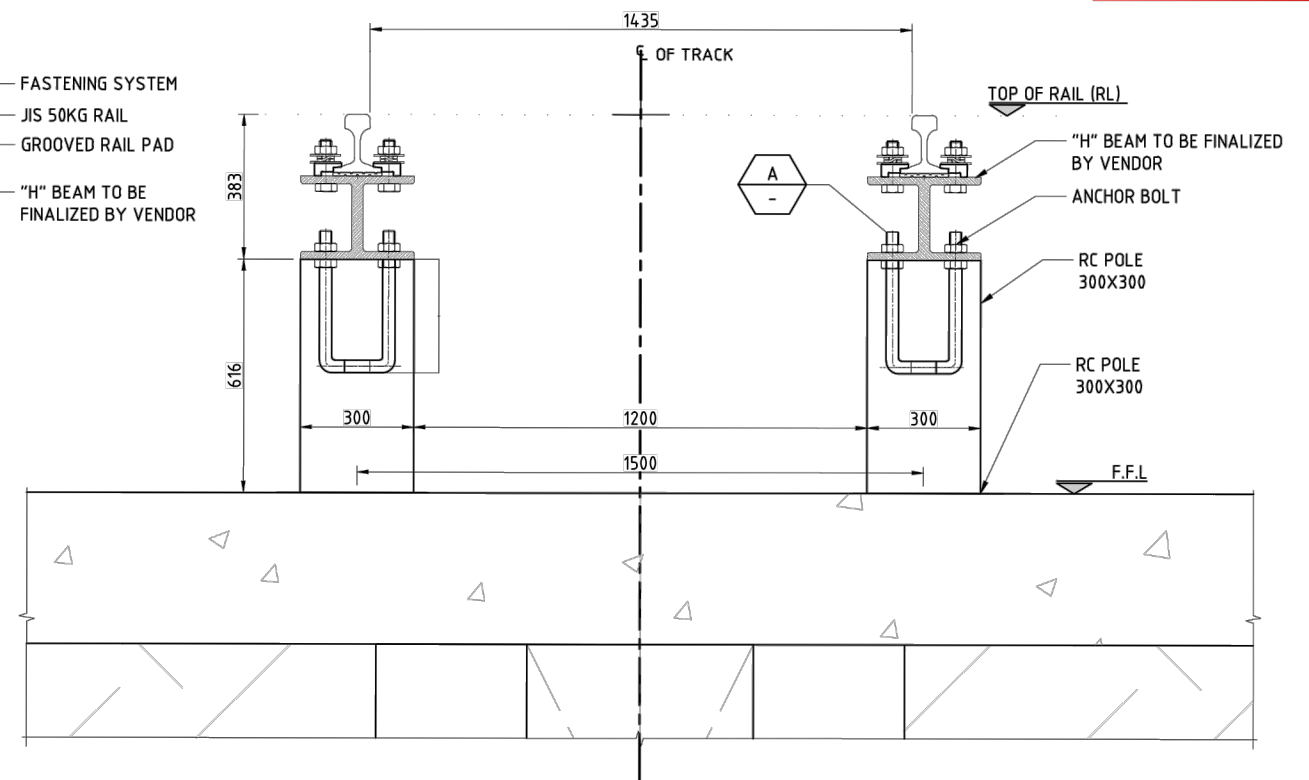
DATE	
	Jan. 2019
	SCALE 1:4, 1:10
	SHEET No.
	DRG No. MMSP-TRK-0000-DD-0112
	DRG S. REV

REFERENCE ONLY

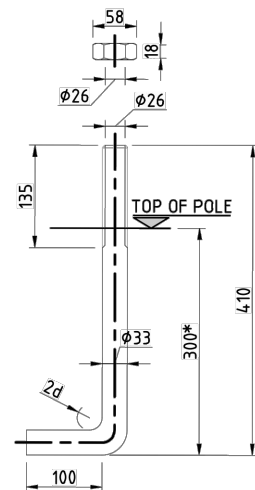


SECTION 01
SCALE 1: 20
0113

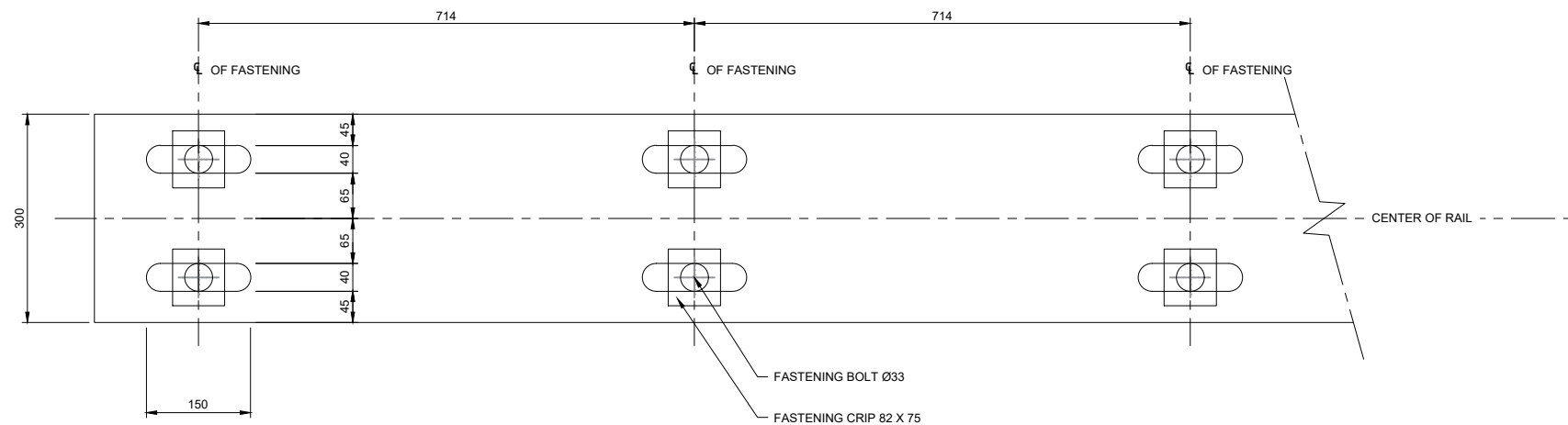
TYPICAL CROSS SECTION OF OPEN PITS WITH RC POLES



SECTION 02
SCALE 1: 20
0113



DETAIL A
SCALE 1: 10
(ANCHOR BOLT)

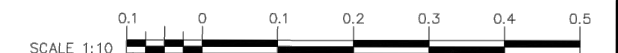


UPPER PLATE OF H BEAM

SECTION 03
SCALE 1: 10
0113

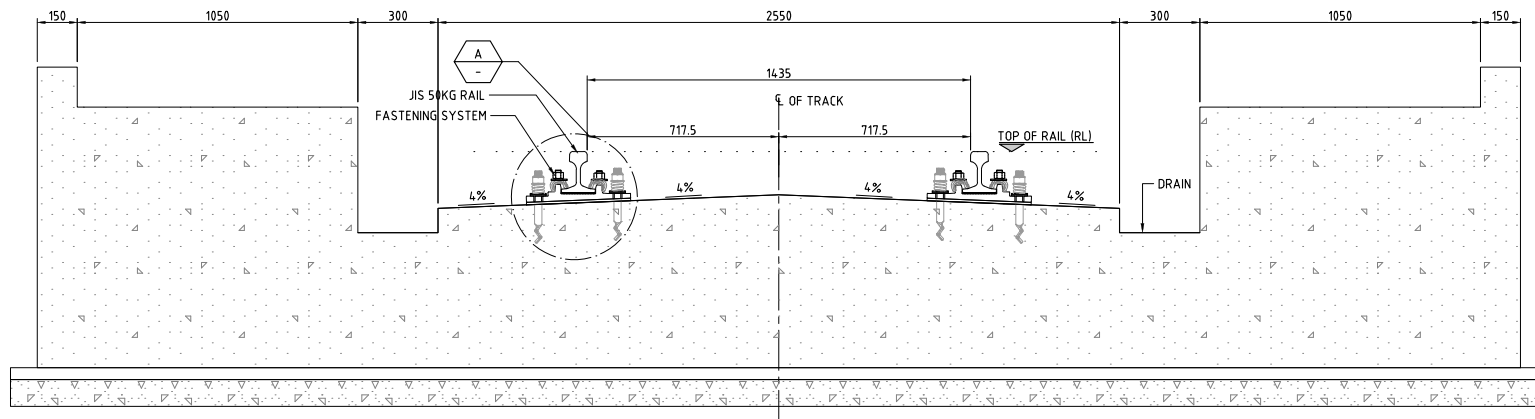
NO RAIL CANT IS PROVIDED.
THE DEPTH OF EMBEDDED OF ANCHOR BOLT SHALL BE CALCULATED FORCES ON RAIL AND THEN COORDINATED WITH CIVIL CONTRACTOR.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.



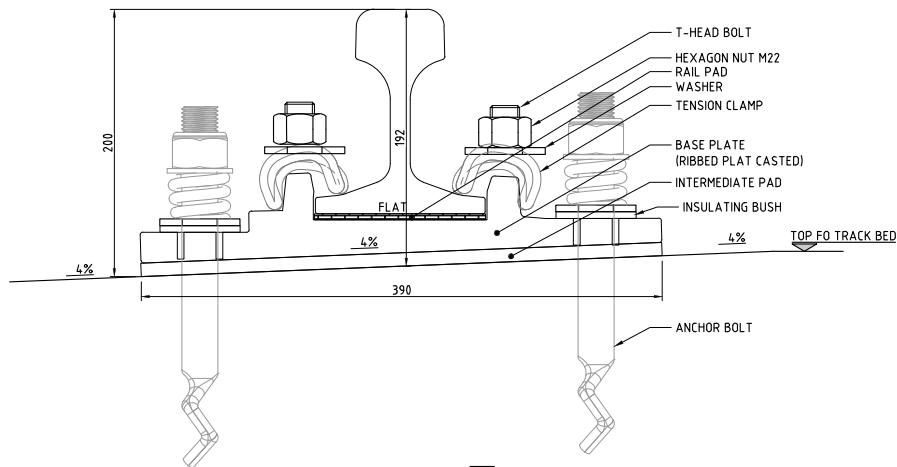
Ctrl. 11

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Nov. 2019															
			JICA DESIGN TEAM 				SCALE (A1) 1:10, (A3) 1:20															
			<table border="1"> <thead> <tr> <th>TITLE</th> <th>NAME</th> <th>SIGNATURE</th> </tr> </thead> <tbody> <tr> <td>DESIGNER</td> <td></td> <td></td> </tr> <tr> <td>CHECK</td> <td></td> <td></td> </tr> <tr> <td>TEAM LEADER</td> <td></td> <td></td> </tr> <tr> <td>PR. MANAGER</td> <td></td> <td></td> </tr> </tbody> </table>			TITLE	NAME	SIGNATURE	DESIGNER			CHECK			TEAM LEADER			PR. MANAGER				SHEET No.
TITLE	NAME	SIGNATURE																				
DESIGNER																						
CHECK																						
TEAM LEADER																						
PR. MANAGER																						
			TYPICAL CROSS SECTION OF OPEN PIT TRACKS WITH RC POLES IN DEPOT			DRG No. MMSP-TRK-0000-DD-0113																
						DRG S.	REV -															



SECTION 01
SCALE 1: 20

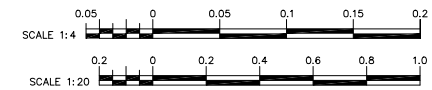
(TYPICAL CROSS SECTION OF CAR WASHING SHOP TRACK (DEPOT))



DETAIL A
SCALE 1: 4

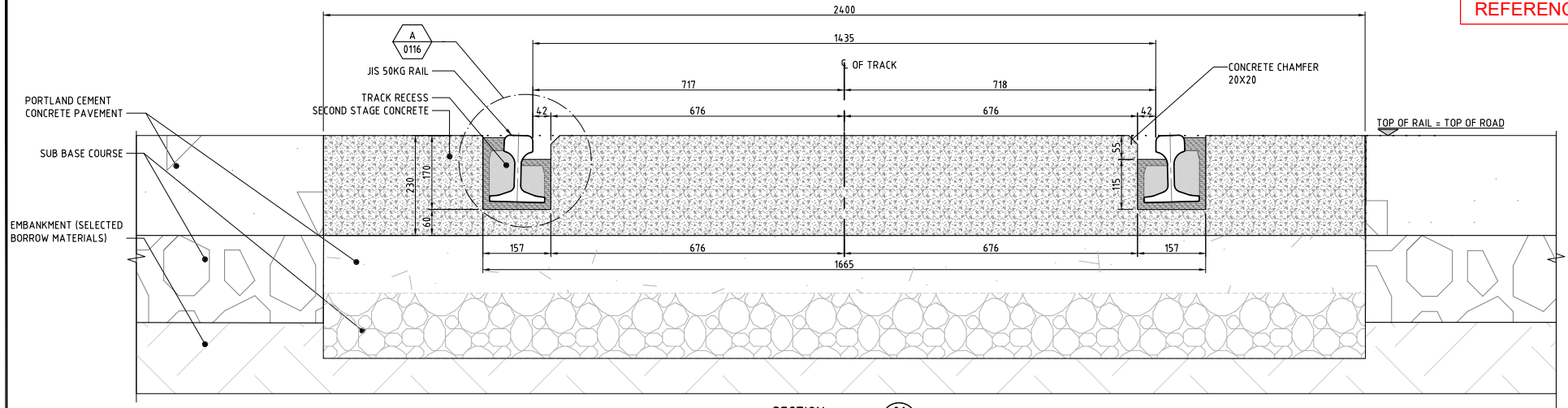
NO RAIL CANT IS PROVIDED

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE MENTIONED.



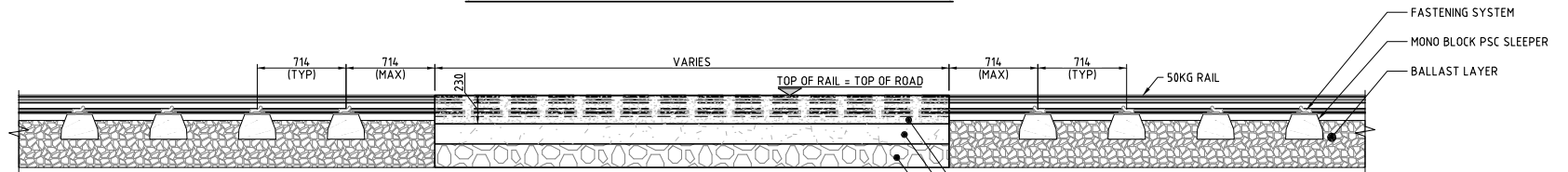
VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			JICA DESIGN TEAM ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION					Jan. 2019
			DEPARTMENT OF TRANSPORTATION (DOTr) JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)					SCALE 1:4, 1:20
								SHEET No.
								DRG No. MMSP-TRK-0000-DD-0114
								DRG S. REV
						TYPICAL CROSS SECTION OF CAR WASHING SHOP TRACK (DEPOT)		

REFERENCE ONLY

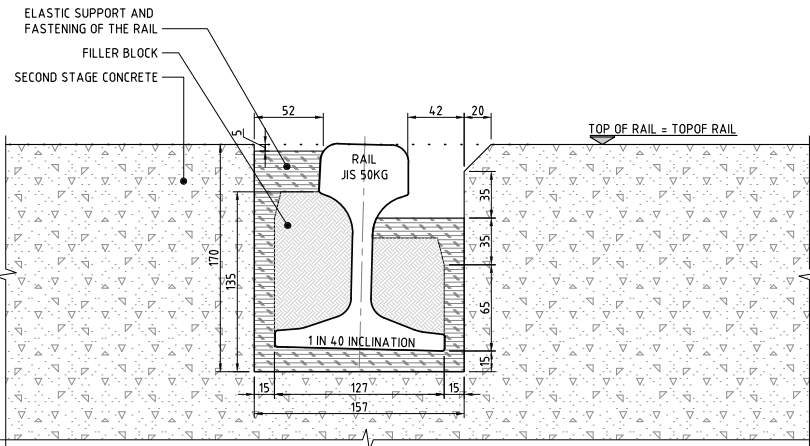


SECTION 01
SCALE 1: 10

(TYPICAL TRACK ARRANGEMENT FOR LEVEL CROSSINGS IN DEPOT)



SECTION 02
SCALE 1: 40

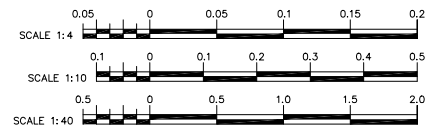


DETAIL A
SCALE 1: 4

ALL DEPICTED TOLERANCES ORIGINATE FROM THE REQUIREMENTS ON INSTALLATION, ELECTRICAL INSULATION AND/OR MECHANICAL DURABILITY FOR THIS SPECIFIC DESIGN OF EDILON/SEDRA ERS OR EQUIVALENT.

FASTENING SYSTEM FOR LEVEL CROSSING TRACK SHALL BE EDILON II SEDRA OR EQUIVALENT.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA DESIGN TEAM

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

TOKYO METRO CO., LTD.

JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

ALMEC CORPORATION

KATAHIRA & ENGINEERS INTERNATIONAL

PACIFIC CONSULTANTS CO.,LTD.

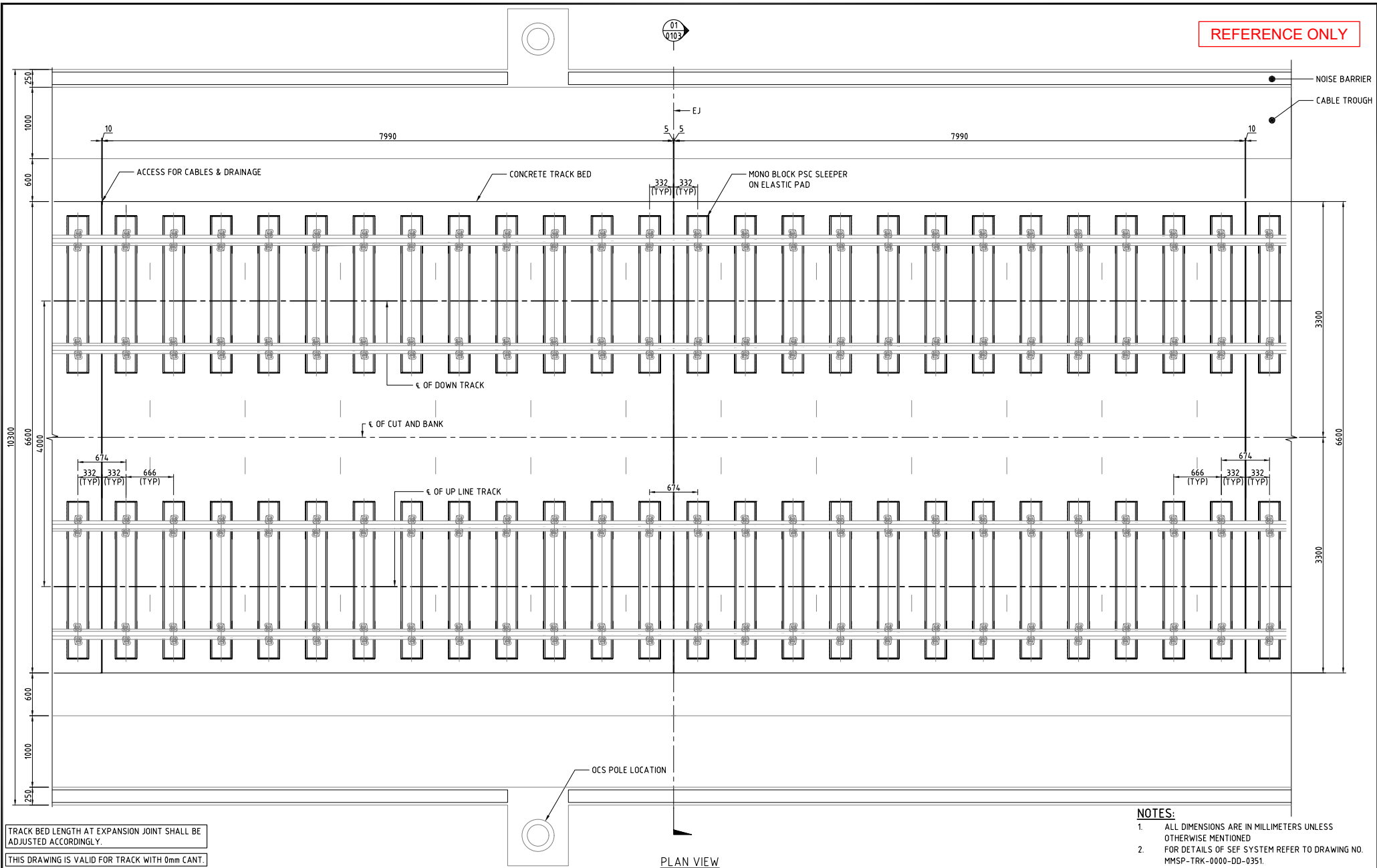
TONICHI ENGINEERING CONSULTANTS, INC.

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

TYPICAL CROSS SECTION
AT LEVEL CROSSINGS IN DEPOT

DATE
Jan. 2019
SCALE
1:4, 1:10, 1:40
SHEET No.
DRG No.
MMSP-TRK-0000-DD-0115
DRG S.
REV



TRACK BED LENGTH AT EXPANSION JOINT SHALL BE ADJUSTED ACCORDINGLY.

THIS DRAWING IS VALID FOR TRACK WITH 0mm CANT.

DRAINAGE OF WATER FROM THE TRACK BED SHALL BE COORDINATED WITH THE RRR WALL DRAINAGE.

- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED
 - FOR DETAILS OF SEF SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0351.



TYPICAL TRACK ARRANGEMENT ON CUT AND BANK SECTION (TANGENT TRACK)
SCALE 1:50

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

 KATAHIRA & ENGINEERS INTERNATIONAL

 TOKYO METRO CO., LTD.

 PACIFIC CONSULTANTS CO.,LTD.

 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

 TONICHI ENGINEERING CONSULTANTS, INC.

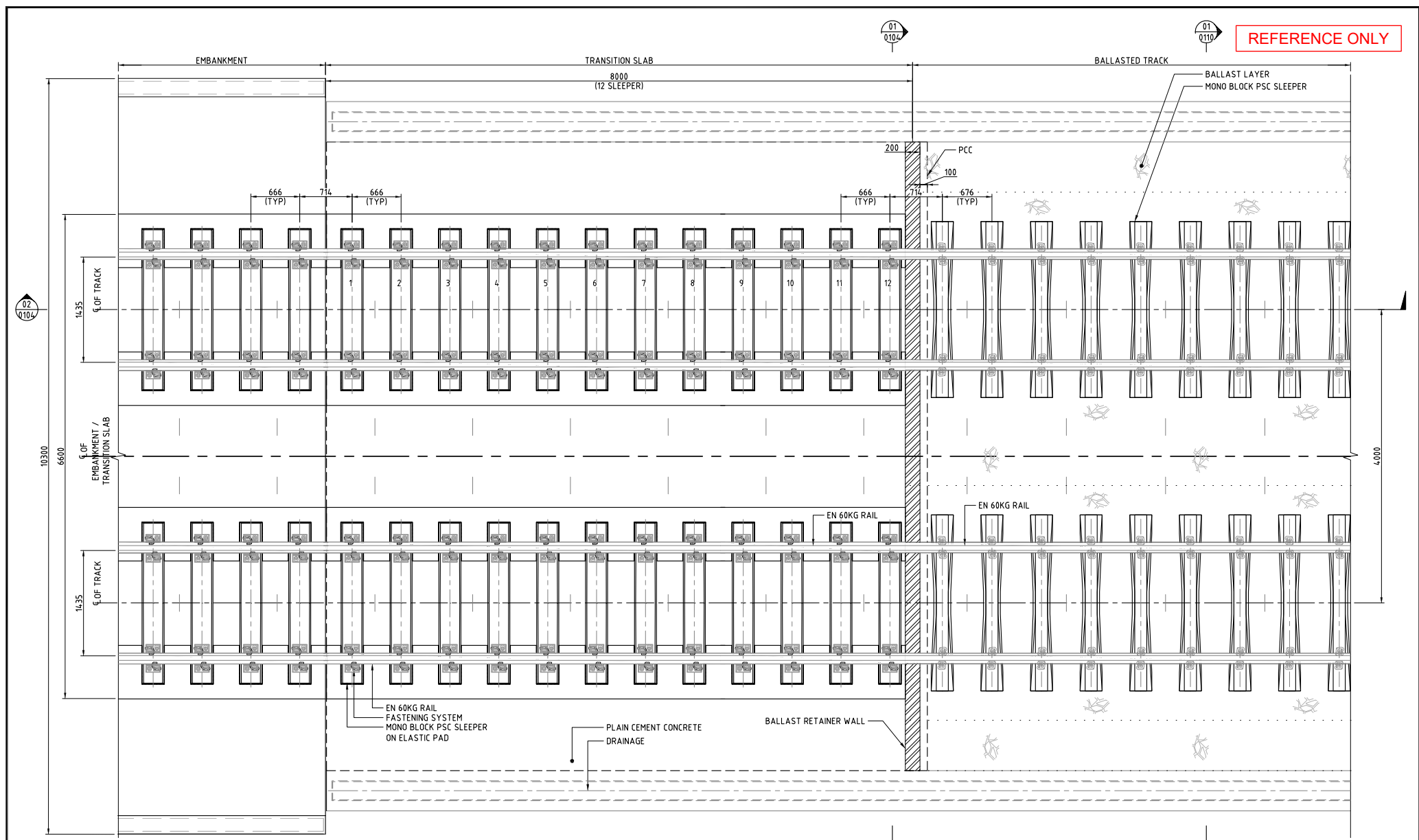
 ALMEC CORPORATION

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
TYPICAL TRACK ARRANGEMENT ON CUT AND BANK SECTION (TANGENT)

DATE	Jan. 2019
SCALE	1:50
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0201
DRG S.	
REV	

01 0110 REFERENCE ONLY



TYPICAL TRACK ARRANGEMENT IN TRANSITION ZONE (BALLASTED TRACK TO NON-BALLASTED TRACK)
SCALE 1:50

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR TRACK ARRANGEMENT ON EMBANKMENT SECTION REFER TO DRAWING NO. MMSP-TRK-0000-DD-201.
 3. FOR BALLASTED TRACK ARRANGEMENT IN DEPOT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0251.



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

	ORIENTAL CONSULTANTS GLOBAL CO.,LTD.		KATAHIRA & ENGINEERS INTERNATIONAL
	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

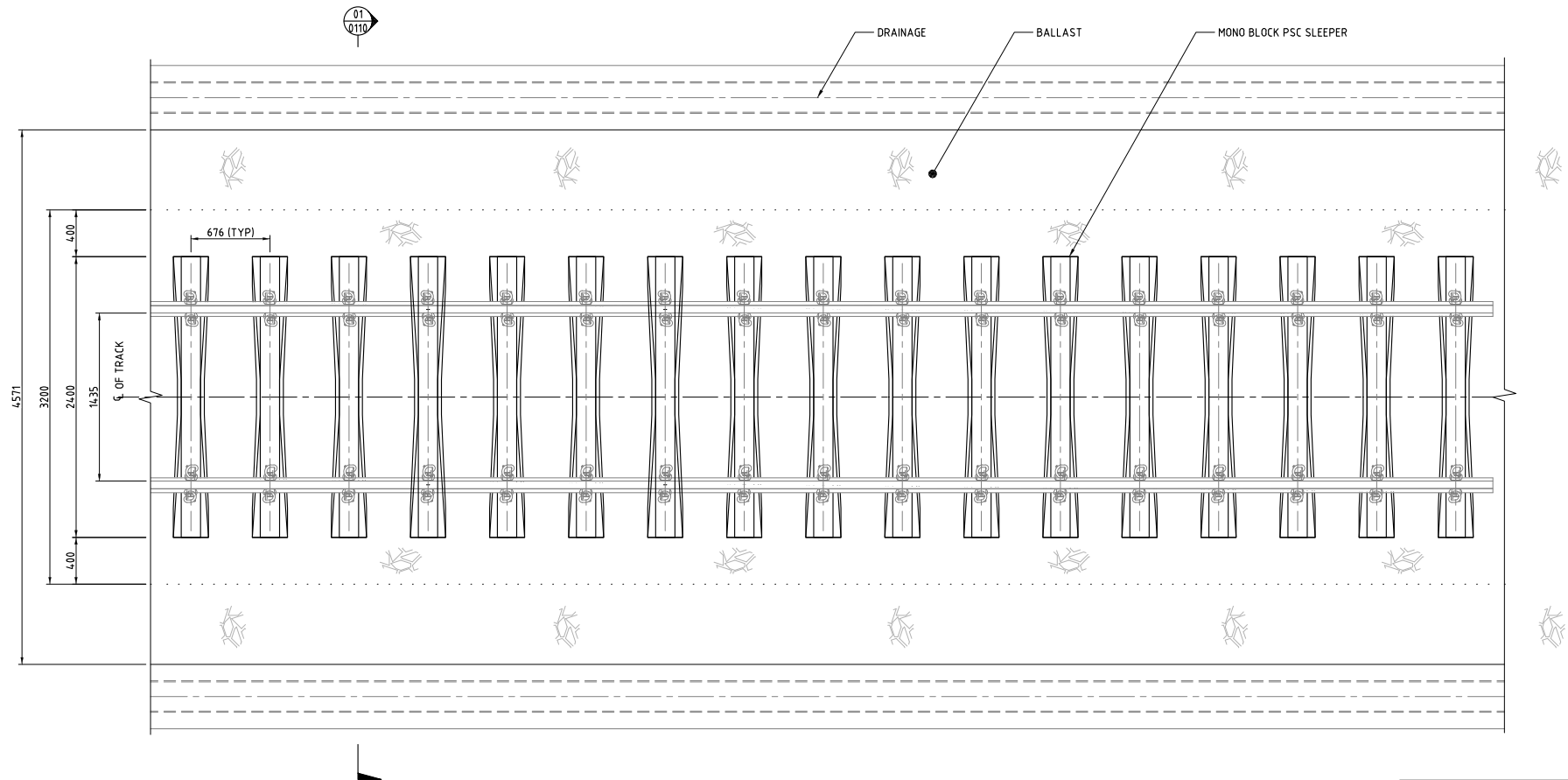
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

TYPICAL TRACK ARRANGEMENT IN TRANSITION ZONE BALLASTLESS TRACK TO BALLASTED TRACK

DATE	Jan. 2019
SCALE	1:50
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0203
DRG S.	
REV	

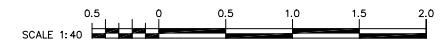


TYPICAL TRACK ARRANGEMENT FOR BALLASTED TRACK (DEPOT) - (TANGENT)

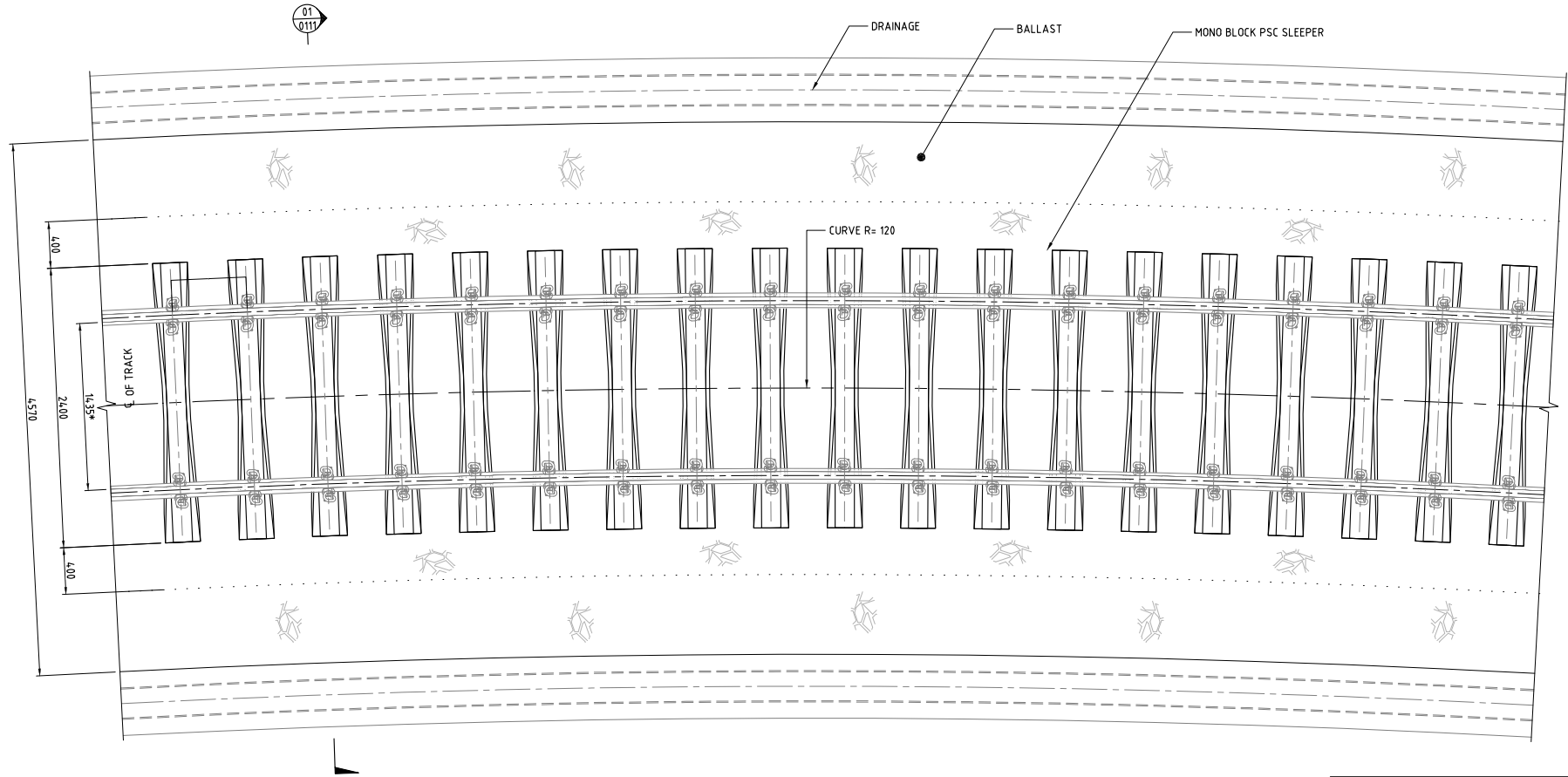
SCALE 1:40

THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORKS CONTRACTOR FOR THE DRAINAGE LAYOUT.

- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 - FOR DETAILS OF PSC SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0353.
 - FOR DETAILS OF FASTENING SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0404.



VERSIONS	DATE	DESCRIPTION				<p>CONSULTANT</p> <p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>		<p>METRO MANILA SUBWAY PROJECT</p> <p>PHASE1 : CP106</p>		<p>DATE</p> <p>Jan. 2019</p>	
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>					<p>TYPICAL TRACK ARRANGEMENT FOR BALLASTED TRACK (DEPOT) (TANGENT)</p>		<p>SCALE</p> <p>1:40</p>	
										<p>SHEET No.</p>	
										<p>DRG No.</p> <p>MMSP-TRK-0000-DD-0251</p>	
										<p>DRG S.</p> <p>REV</p>	



TYPICAL TRACK ARRANGEMENT FOR BALLASTED TRACK (DEPOT) - (CURVED)
SCALE 1:40

* ACCORDING TO ARTICLE 16 OF JAPANESE TECHNICAL REGULATORY STANDARD - MODEL SPECIFICATION IT IS RECOMMENDED THAT 5mm GAUGE WIDENING IS ADOPTED FOR RADI <math>< 200</math>. THE SLEEPER SHALL BE MODIFIED ACCORDINGLY.

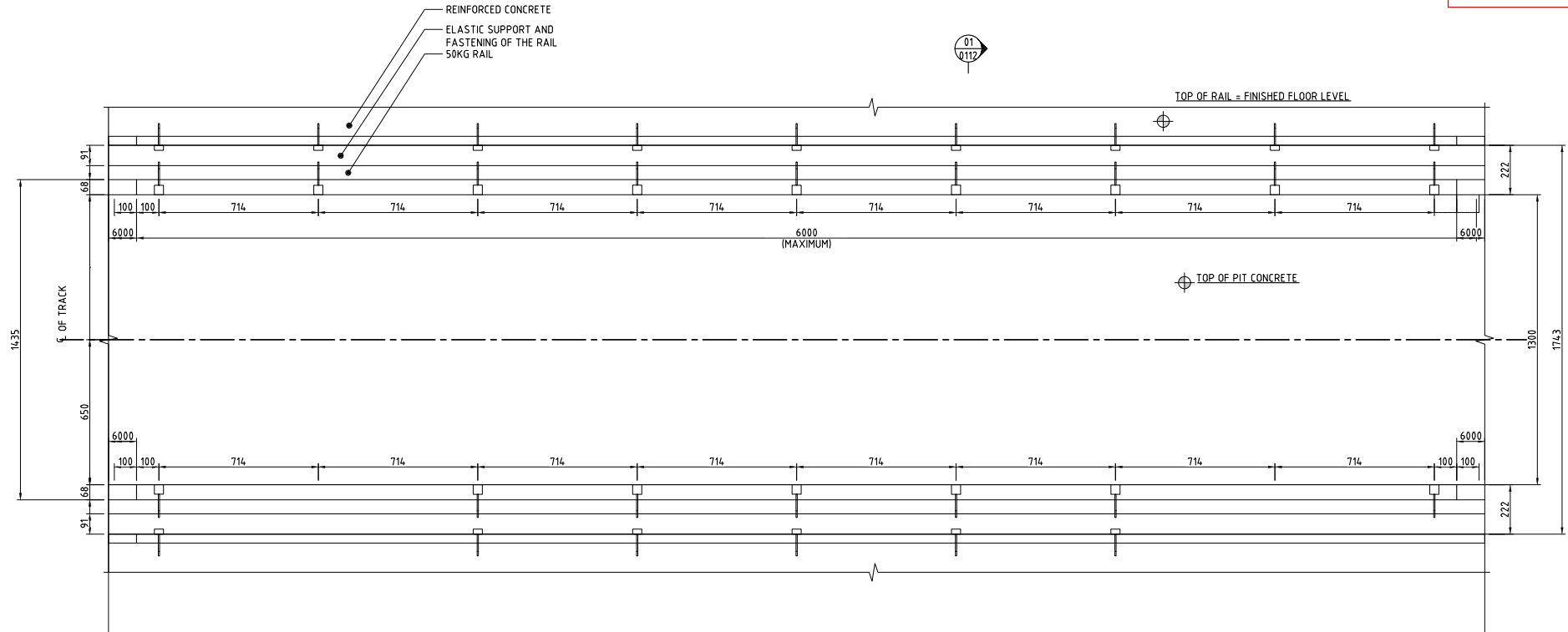
THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORKS CONTRACTOR FOR THE DRAINAGE LAYOUT.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF PSC SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0353.
3. FOR DETAILS OF FASTENING SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0404.



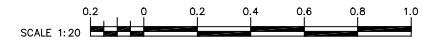
VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : CP106	DATE Jan. 2019
			JICA DESIGN TEAM ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION				SCALE 1:40
			DEPARTMENT OF TRANSPORTATION (DOTr) JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			TYPICAL TRACK ARRANGEMENT FOR BALLASTED TRACK (DEPOT) (CURVED)	SHEET No.
							DRG No. MMSP-TRK-0000-DD-0252
							DRG S. REV



TYPICAL PLAN VIEW OF EMBEDDED TRACK IN DEPOT
SCALE 1:20

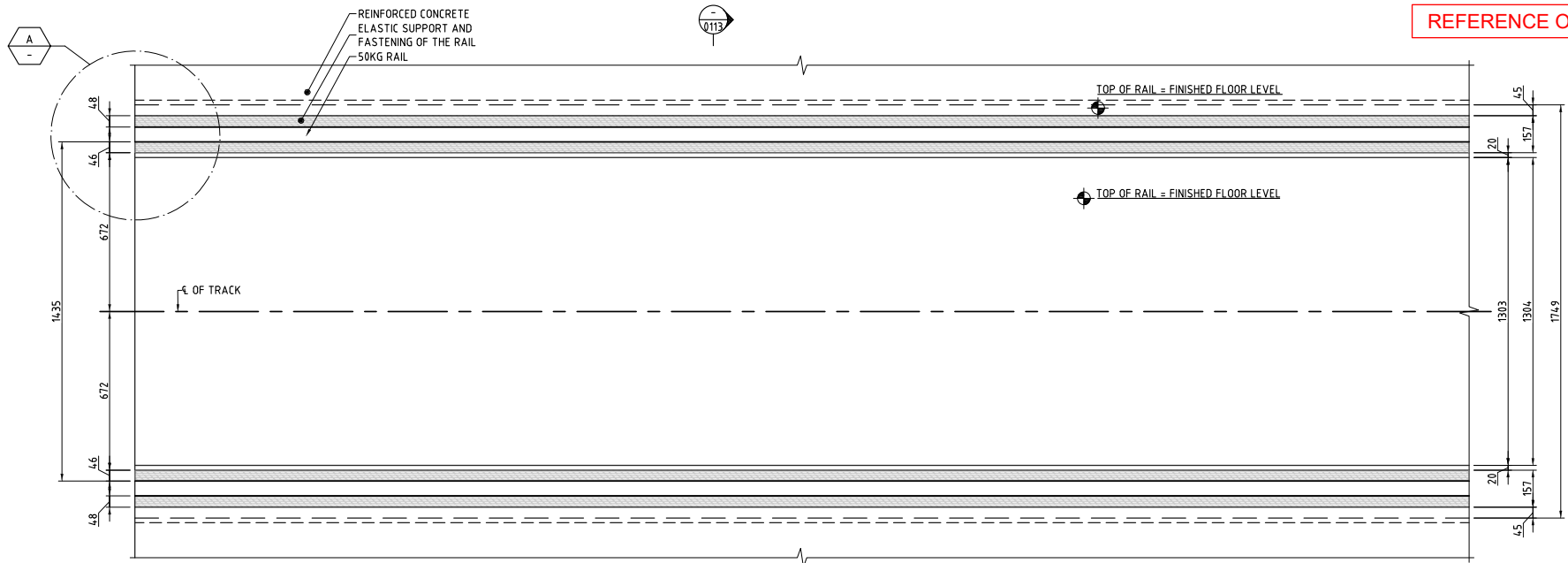
NO RAIL CANT IS PROVIDED
SYSTEM FOR CLOSED PIT TRACK SHALL BE EDILON (I) SEDRA OR EQUIVALENT.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE MENTIONED.

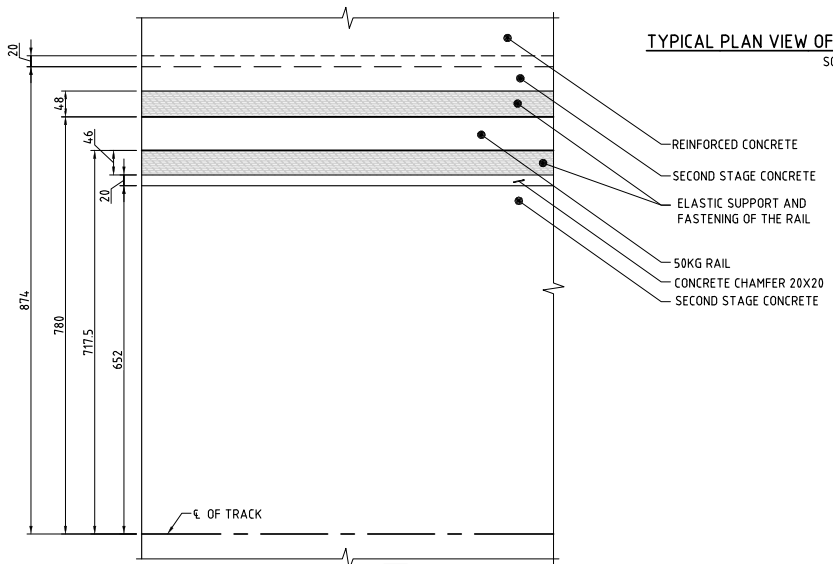


VERSIONS	DATE	DESCRIPTION				CONSULTANT METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE Jan. 2019
			DEPARTMENT OF TRANSPORTATION (DOTr) JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			TITLE NAME SIGNATURE		SCALE 1:20
						DESIGNER CHECK TEAM LEADER PR. MANAGER		SHEET No. DRG No. MMSP-TRK-0000-DD-0253 DRG S.
						TYPICAL TRACK ARRANGEMENT FOR WORKSHOP TRACK (DEPOT) CLOSED PIT TRACK		REV

REFERENCE ONLY



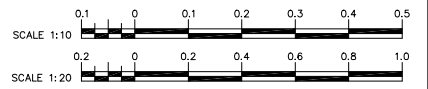
TYPICAL PLAN VIEW OF EMBEDDED TRACK IN DEPOT
SCALE 1:20





DETAIL
SCALE 1:10

TOLERANCES:
 1. ALL DEPICTED TOLERANCES ORIGINATE FROM THE REQUIREMENTS ON INSTALLATION, ELECTRICAL INSULATION AND/OR MECHANICAL DURABILITY FOR THIS SPECIFIC DESIGN OF EDILON/SEDRA ERS OR EQUIVALENT.
 2. TOLERANCE OF RECESS IS $\pm 20\text{mm}$.








NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE MENTIONED.
 2. FOR RAIL PROFILE REFER TO DRAWING NO. MMSP-TRK-0000-DD-04.02.



VERSIONS	DATE	DESCRIPTION


DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

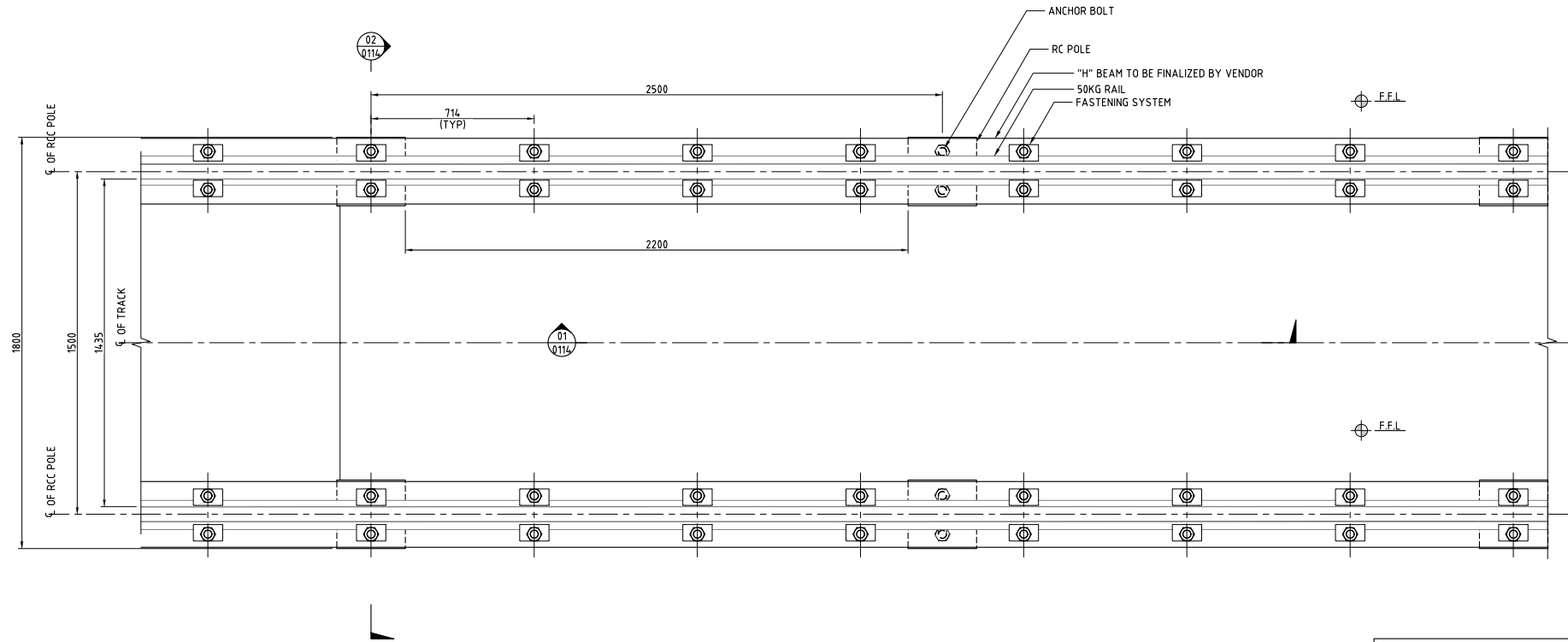
JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.	 KATAHIRA & ENGINEERS INTERNATIONAL
 TOKYO METRO CO., LTD.	 PACIFIC CONSULTANTS CO.,LTD.
 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.	 TONICHI ENGINEERING CONSULTANTS, INC.
 ALMEC CORPORATION	

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106
TYPICAL TRACK ARRANGEMENT FOR WORKSHOP TRACK (DEPOT) EMBEDDED TRACK

DATE	Jan. 2019
SCALE	1:10, 1:20
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0254
DRG S.	
REV	



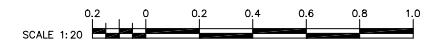
FOR LEVELS (F.F.L) REFER TO RESPECTIVE ARCHITECTURAL DRAWING

TYPICAL TRACK ARRANGEMENT FOR OPEN PIT TRACK WITH RC POLES

SCALE 1:20

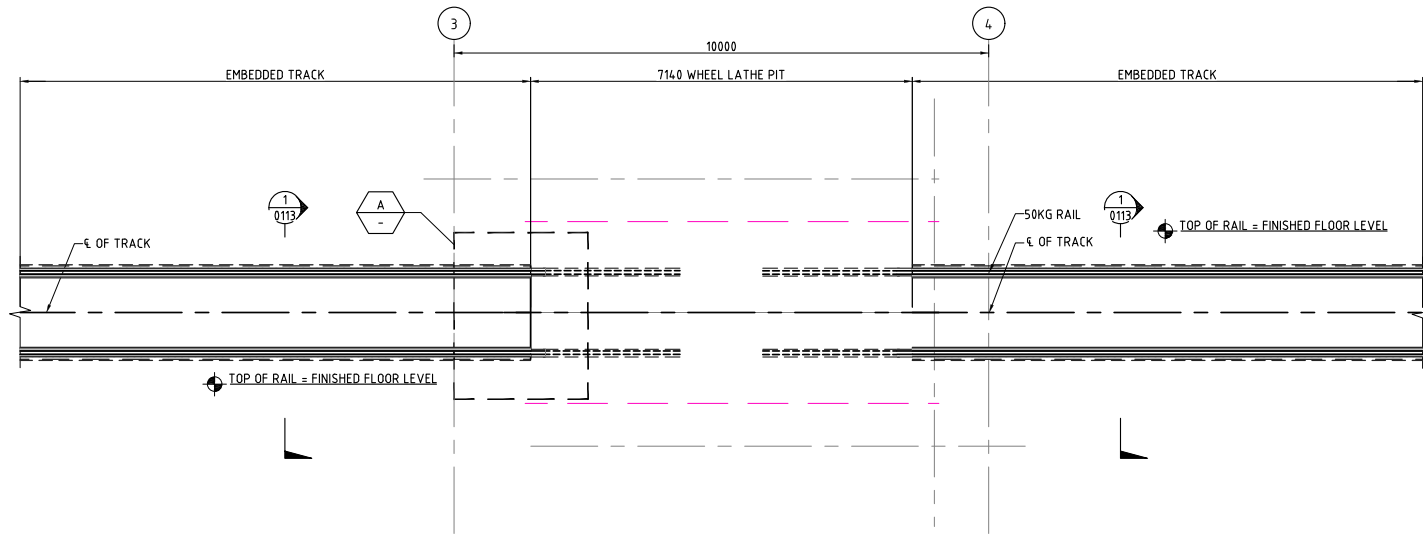
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF ANCHOR BOLT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0114.

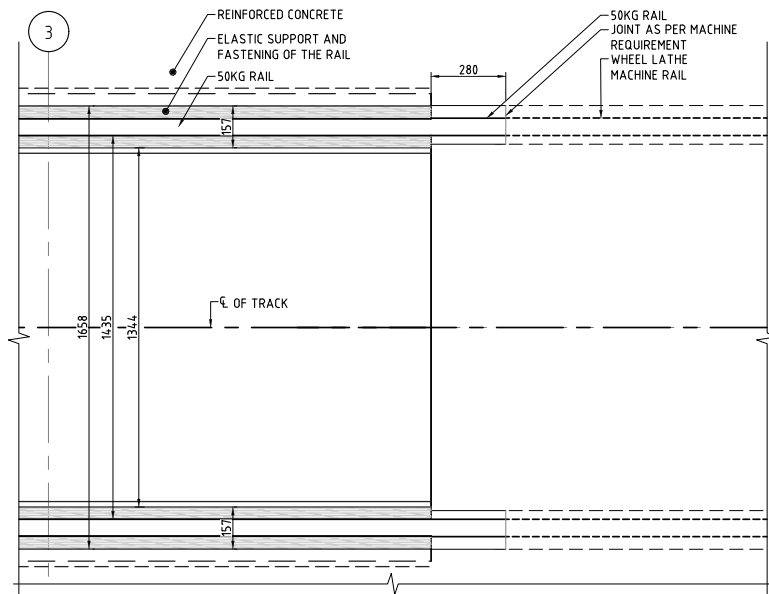


VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE	
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			TITLE	NAME	SIGNATURE	Jan. 2019
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			DESIGNER			SCALE
						CHECK			1:20
						TEAM LEADER			SHEET No.
						PR. MANAGER			DRG No.
									MMSP-TRK-0000-DD-0255
									DRG S.
									REV

TYPICAL TRACK ARRANGEMENT FOR OPEN PIT TRACKS WITH RC POLES IN DEPOT

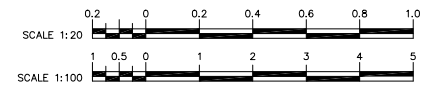


TYPICAL TRACK ARRANGEMENT FOR WHEEL RE-PROFILING TRACK (DEPOT)
SCALE 1:100

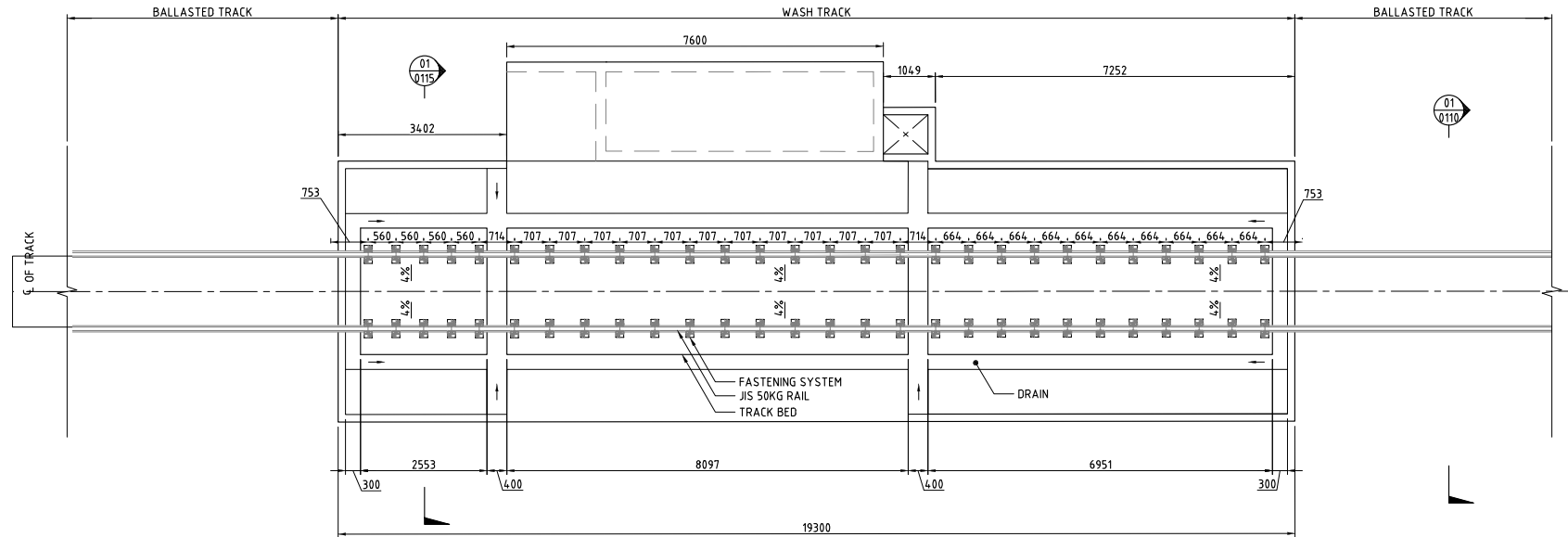


DETAIL A
SCALE 1: 20

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019
			JICA DESIGN TEAM ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION				SCALE 1:20, 1:100
			DEPARTMENT OF TRANSPORTATION (DOTr) JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)				SHEET No.
			TITLE NAME SIGNATURE DESIGNER CHECK TEAM LEADER PR. MANAGER				DRG No. MMSP-TRK-0000-DD-0256
			TYPICAL TRACK ARRANGEMENT FOR WHEEL RE-PROFILING TRACK (DEPOT)				DRG S. REV



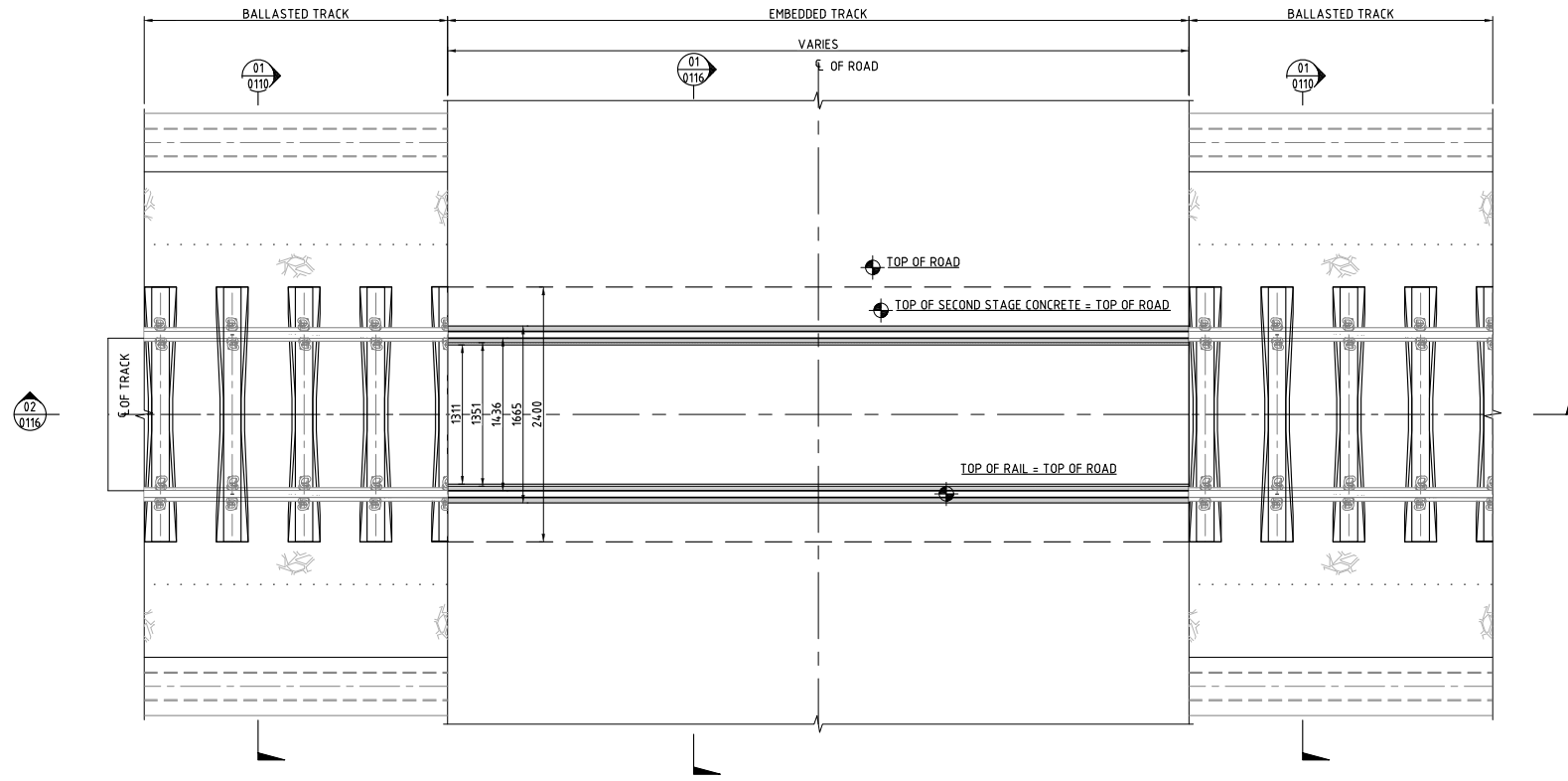
TYPICAL TRACK ARRANGEMENT FOR CAR WASHING SHOP TRACK IN DEPOT
SCALE 1:100

NO RAIL CANT IS PROVIDED

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			<p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>		Jan. 2019
		<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>						SCALE
								1:100
								SHEET No.
								DRG No.
								MMSP-TRK-0000-DD-0301
								DRG S.
								REV

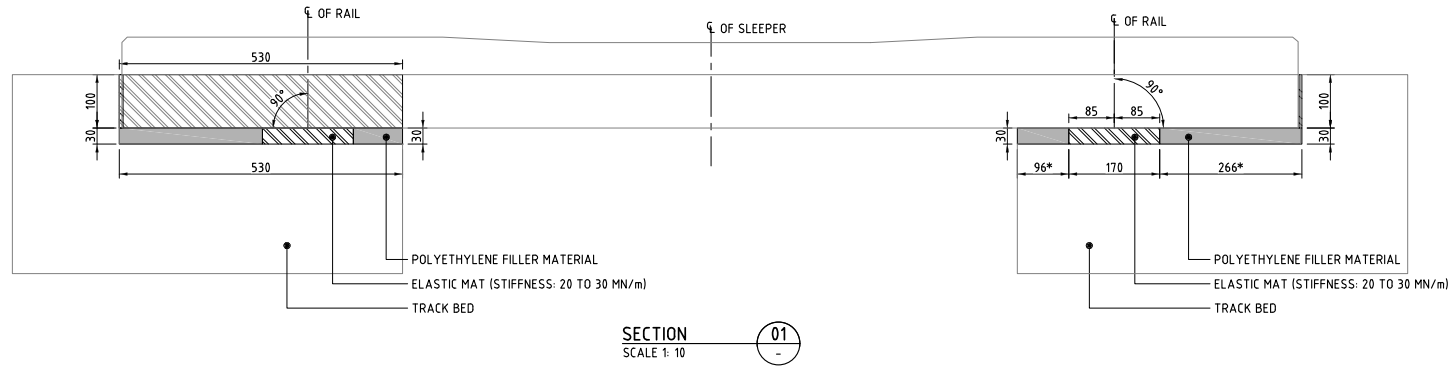


TYPICAL TRACK ARRANGEMENT FOR LEVEL CROSSINGS IN DEPOT
SCALE 1:50

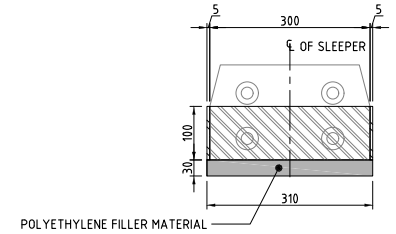
- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE MENTIONED.
 2. FOR DETAILS OF EMBEDDED TRACK ARRANGEMENT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0254.
 3. FOR DETAIL OF BALLASTED TRACK ARRANGEMENT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0251.



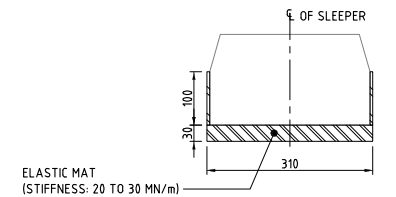
VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>				SCALE 1:50
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>				SHEET No.
			<p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>				DRG No. MMSP-TRK-0000-DD-0302
			<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>				DRG S. REV
			<p>TYPICAL TRACK ARRANGEMENT FOR LEVEL CROSSINGS IN DEPOT</p>				



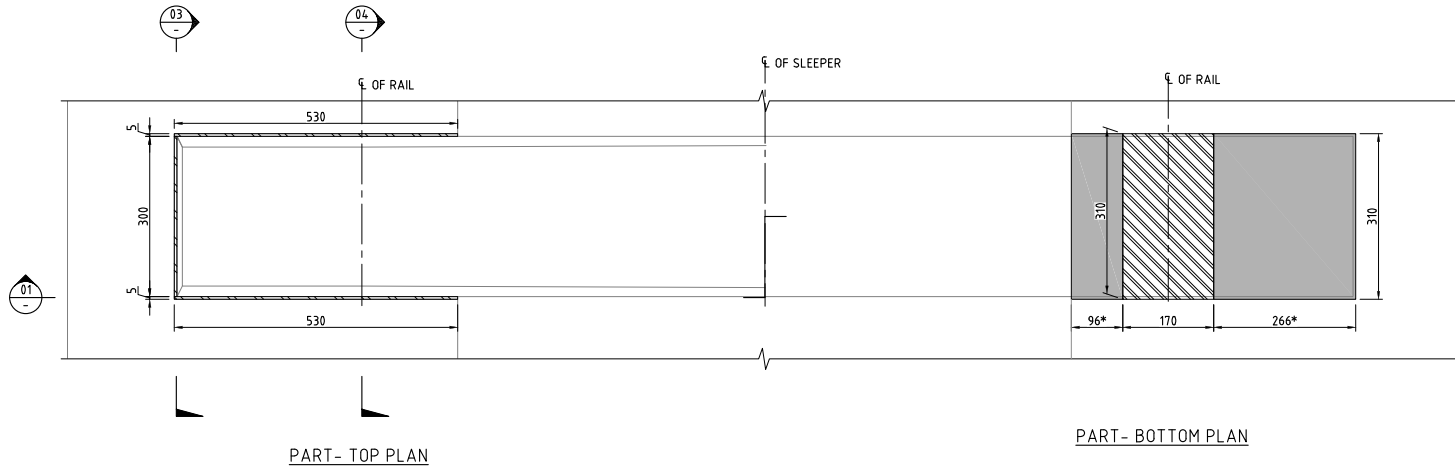
SECTION 01
SCALE 1: 10



SECTION 03
SCALE 1: 10



SECTION 04
SCALE 1: 10



PART - TOP PLAN

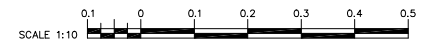
PART - BOTTOM PLAN

PLAN - SEF SYSTEM ON FOR MAIN LINE TRACK
SCALE 1:10

* VALUES SHOWN ARE INDICATIVE. THESE DIMENSIONS SHOULD BE WORKED OUT BASED ON ACTUAL CANT APPLIED.
THE ARRANGEMENTS HAS BEEN SHOWN IN PART-PLAN TO ACCOMMODATE DETAILS OF BOTH (TOP & BOTTOM) IN ONE DRAWING.

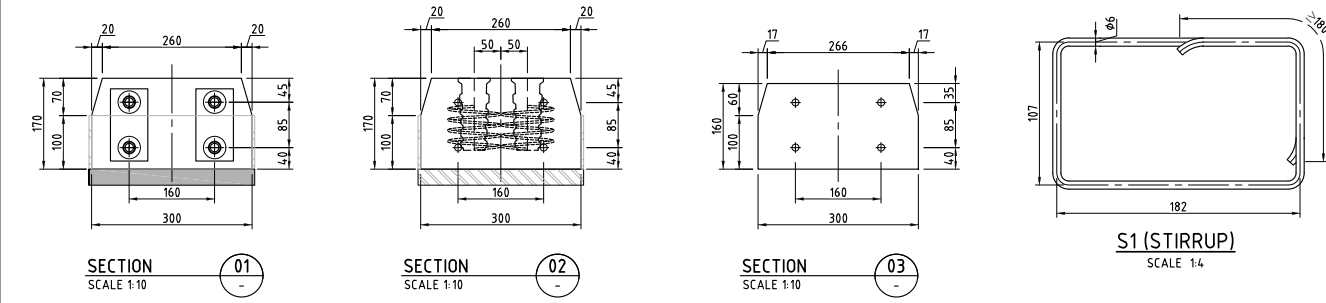
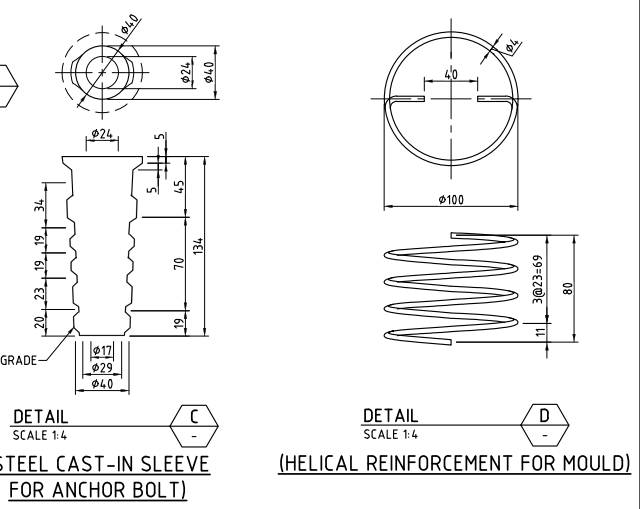
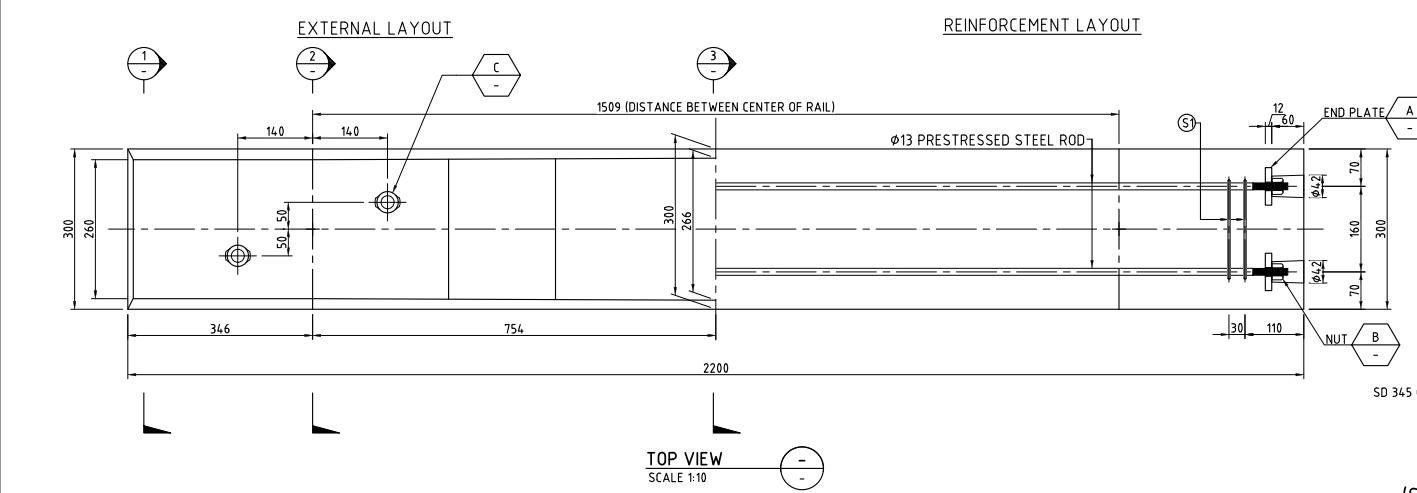
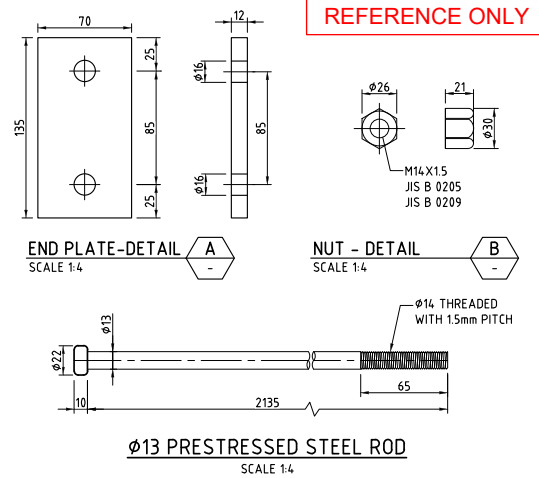
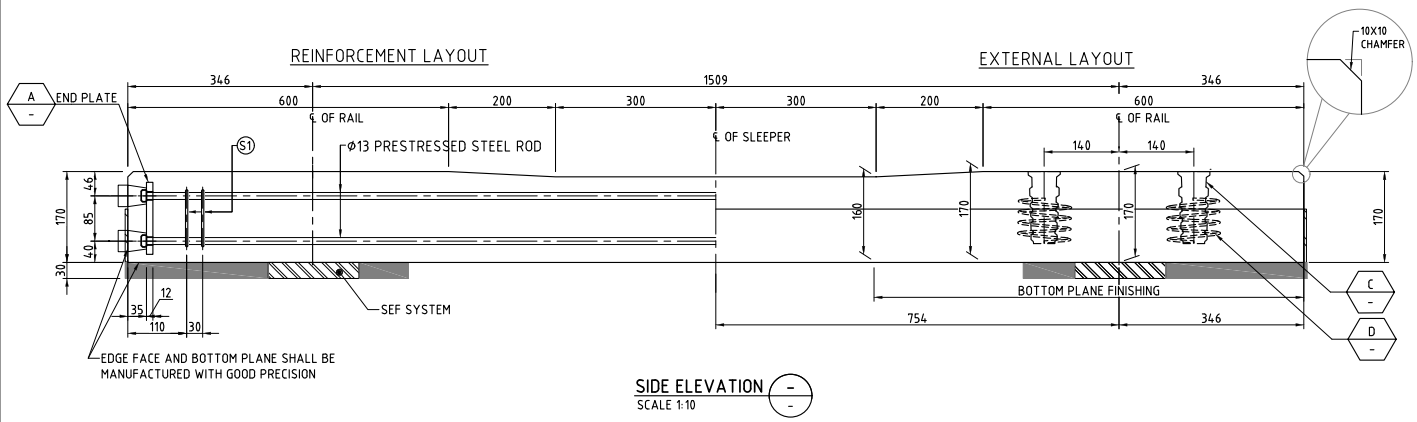
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF PSC SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0352.

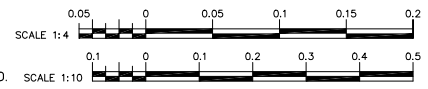


VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : CP106	DATE Jan. 2019
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			<p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>	<p>SCALE 1:10</p>
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>	<p>SHEET No.</p> <p>DRG No. MMSP-TRK-0000-DD-0351</p> <p>DRG S.</p>
<p>TYPICAL DETAILS OF SEF SYSTEM ON TRACK BED</p>						<p>REV</p>	

REFERENCE ONLY



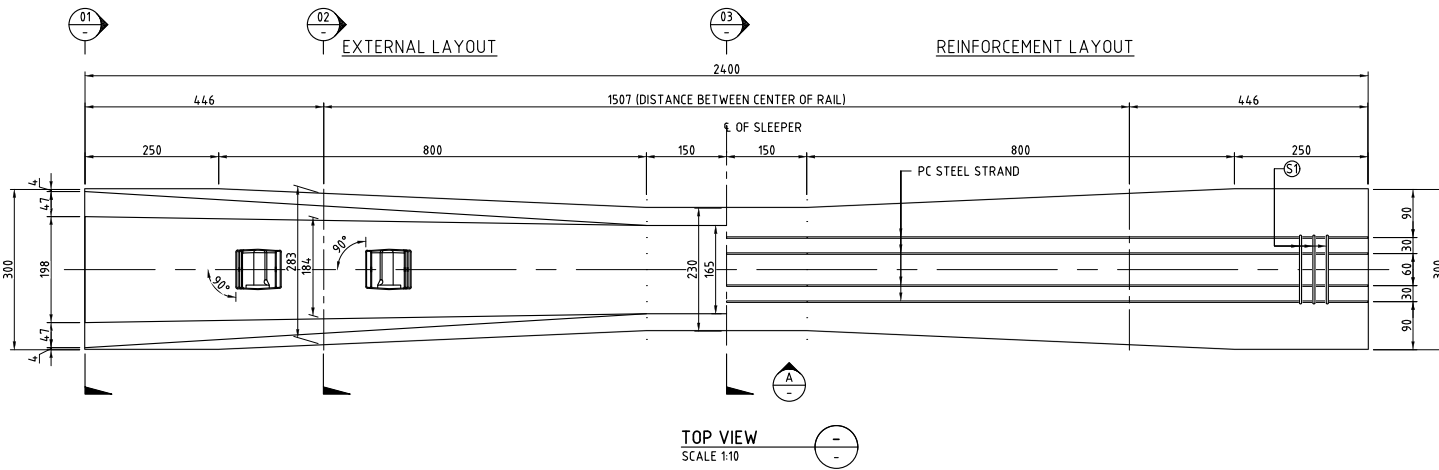
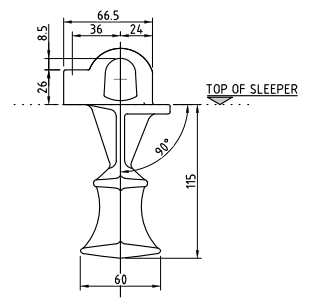
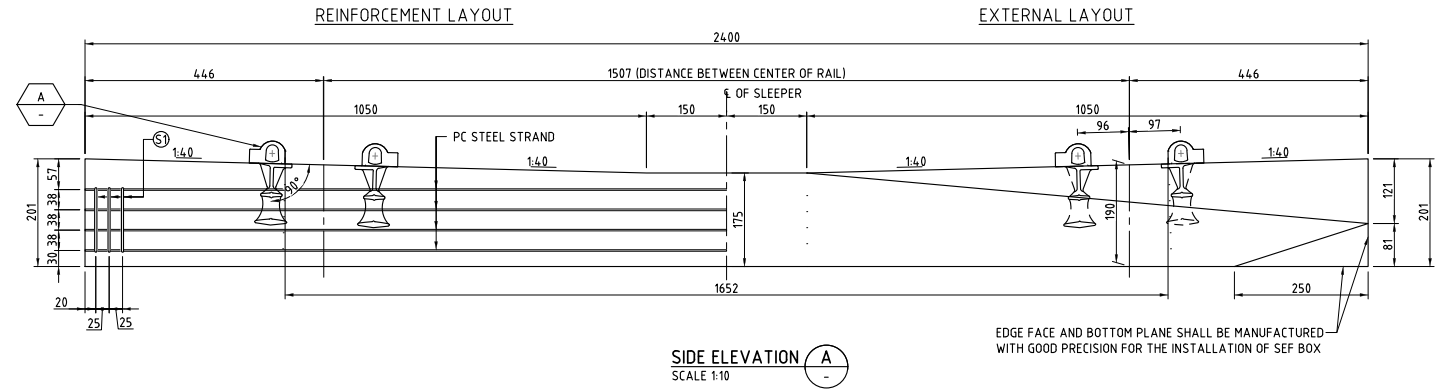
"COMPRESSIVE STRENGTH OF CONCRETE (COLUMNAR TEST PIECE)"	DESIGN STANDARD STRENGTH WHEN INTRODUCING PRESTRESSED CONCRETE	> 49.1 N/mm ² > 39.2 N/mm ²
PC STEEL ROD	TENSION LOAD	> 181.4 kN
	LOAD OF THE 0.2% PERMANENT ELONGATION	> 161.8 kN
STEEL TENSILE FORCE	ACCELERATED CURING AT HIGH TEMPERATURE	122.6 kN/TENDON
	WET CURING AT NORMAL TEMPERATURE	98.1 kN / TENDON



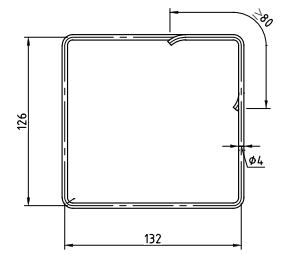
NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR SEF SYSTEM REFER TO DRAWING NO. MMSP-TRK-0000-DD-0351.

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			JICA DESIGN TEAM ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION			DESIGNER CHECK TEAM LEADER PR. MANAGER		Jan. 2019 SCALE 1:4, 1:10 SHEET No. DRG No. MMSP-TRK-0000-DD-0352 DRG S.
			TYPICAL DETAILS FOR MONO-BLOCK PSC CONCRETE SLEEPER FOR BALLASTLESS TRACK					REV

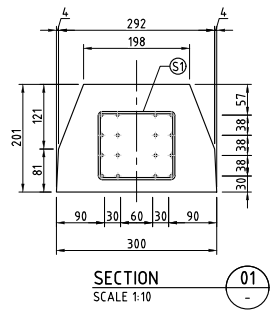
REFERENCE ONLY



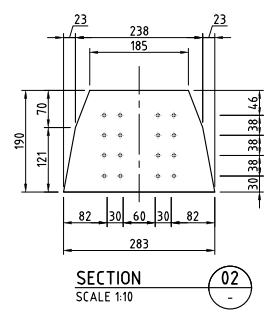
DETAIL A
SCALE 1:4
(STEEL CAST-IN SHOULDER DETAIL)



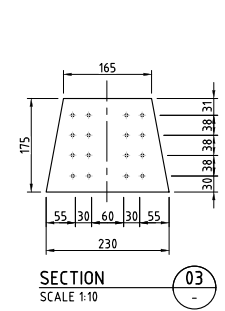
S1 (STIRRUP)
SCALE 1:4



SECTION 01
SCALE 1:10



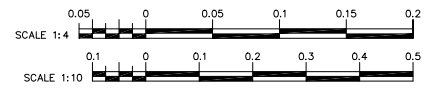
SECTION 02
SCALE 1:10



SECTION 03
SCALE 1:10

"COMPRESSIVE STRENGTH OF CONCRETE (COLUMNAR TEST PIECE)"	DESIGN STANDARD STRENGTH WHEN INTRODUCING PRESTRESSED CONCRETE	> 49.1 N/mm ² > 39.2 N/mm ²
PC STEEL STRAND	TENSION LOAD	> 38.3 KN
	LOAD OF THE 0.2% PERMANENT ELONGATION	> 33.8 KN
STEEL TENSILE FORCE	ACCELERATED CURING AT HIGH TEMPERATURE	31.8 KN/TENDON
	WET CURING AT NORMAL TEMPERATURE	30.3 KN/TENDON

NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

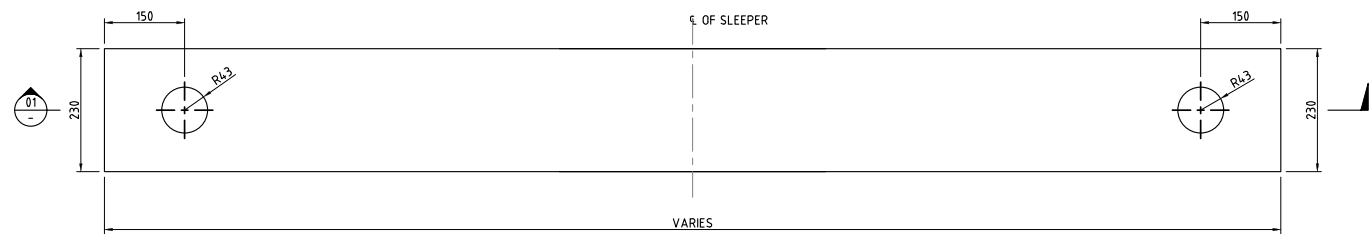
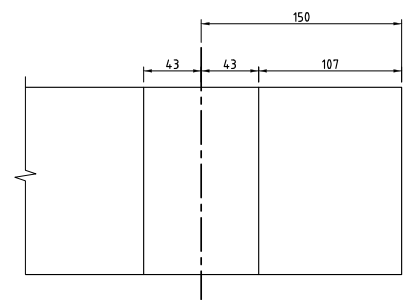
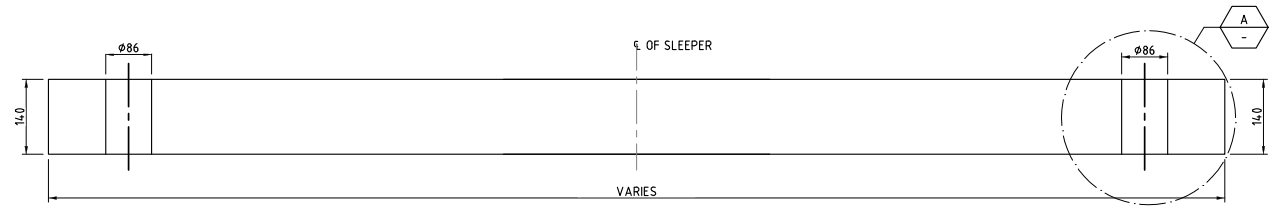
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

TYPICAL DETAILS FOR MONO-BLOCK PSC CONCRETE SLEEPER FOR BALLASTED TRACK

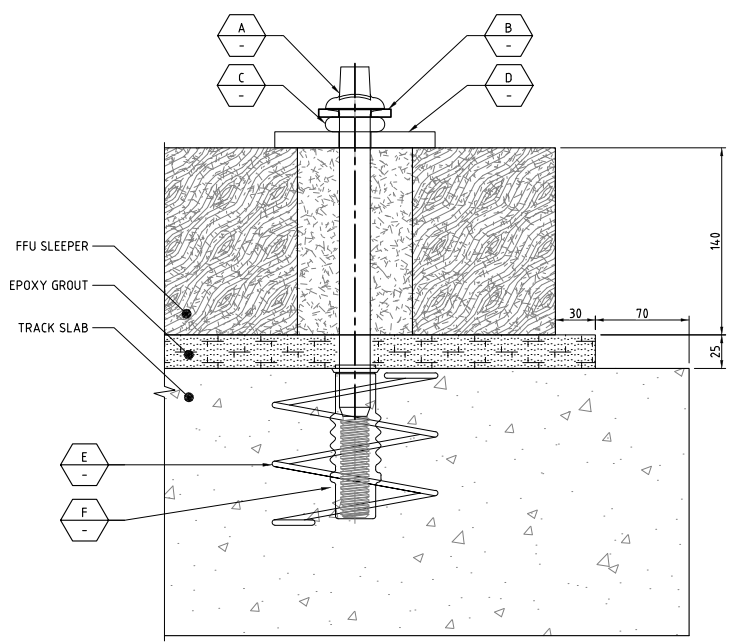
DATE	Jan. 2019
SCALE	1:4, 1:10
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0353
DRG S.	
REV	

REFERENCE ONLY

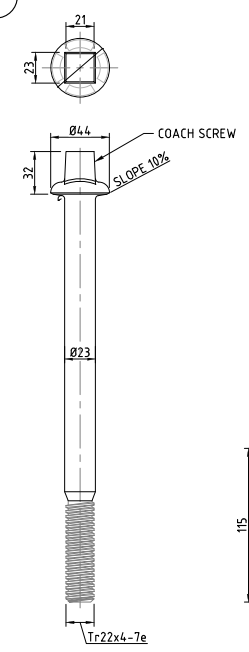


SECTION 01
SCALE 1: 10

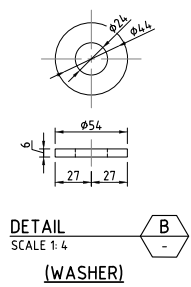
TOP VIEW 01
SCALE 1: 10



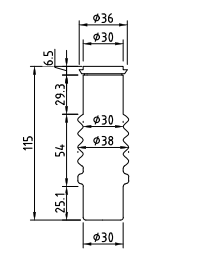
DETAIL X
SCALE 1: 4
(FIXING ARRANGEMENT)



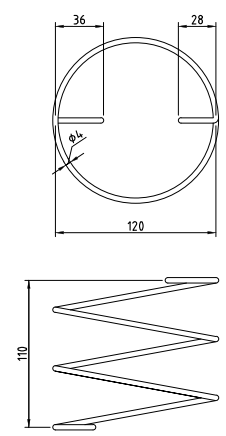
DETAIL A
SCALE 1: 4
(COACH SCREW)



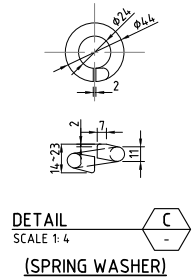
DETAIL B
SCALE 1: 4
(WASHER)



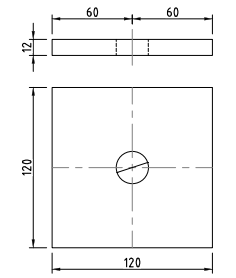
DETAIL F
SCALE 1: 4
(CAST IN SLEEVE FOR COACH SCREW)



DETAIL E
SCALE 1: 4
(HELICAL REINFORCEMENT)

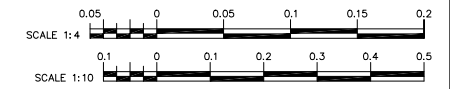


DETAIL C
SCALE 1: 4
(SPRING WASHER)










DETAIL D
SCALE 1: 4
(STEEL PLATE)

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION

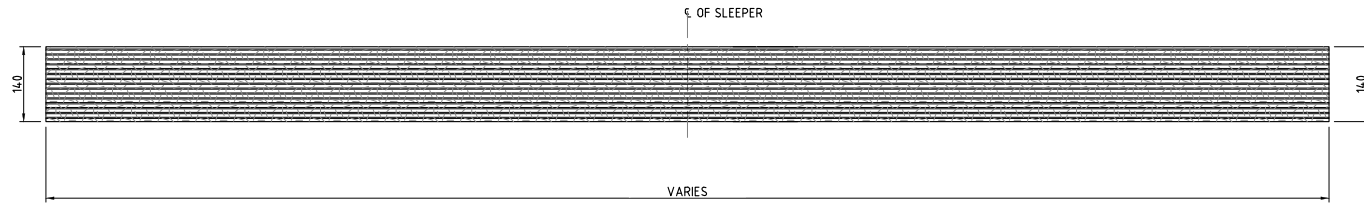
 DEPARTMENT OF TRANSPORTATION (DOTr)
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM
 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
 TOKYO METRO CO., LTD.
 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
 ALMEC CORPORATION
 KATAHIRA & ENGINEERS INTERNATIONAL
 PACIFIC CONSULTANTS CO.,LTD.
 TONICHI ENGINEERING CONSULTANTS, INC.

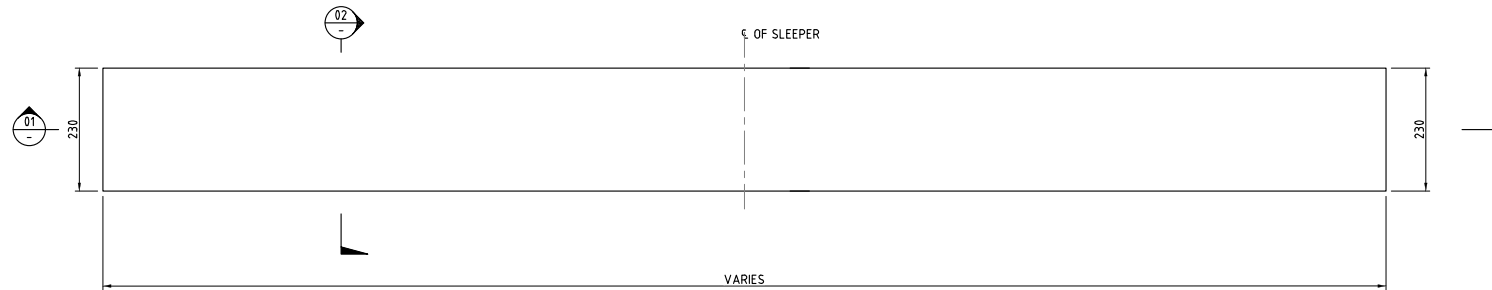
CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
TYPICAL DETAILS OF FFU SLEEPER FOR TURNOUTS AND SCISSOR CROSSOVER (BALLASTLESS TRACK)

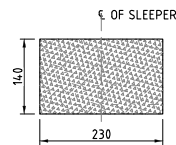
DATE	
	Jan. 2019
SCALE	
	1:4, 1:10
SHEET No.	
DRG No.	
	MMSP-TRK-0000-DD-0354
DRG S.	
REV	



SECTION 01
SCALE 1: 10



FIBER-REINFORCED FOAMED URETHANE SLEEPER FOR TURNOUT LOCATION
SCALE 1:10

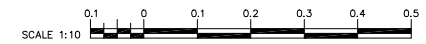


SECTION 02
SCALE 1: 10

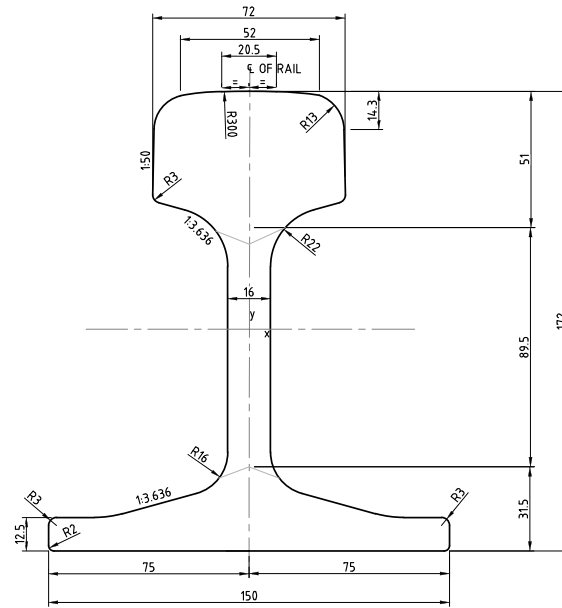
THE TRACK WORK CONTRACTOR SHALL COORDINATE THE LENGTH OF SLEEPER AND FASTENER LOCATION WITH THE TURNOUT SUPPLIER.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.

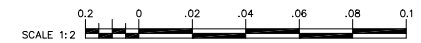


VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			TITLE	Jan. 2019
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			NAME	SCALE 1:10
						SIGNATURE	SHEET No.
						DESIGNER	DRG No. MMSP-TRK-0000-DD-0355
						CHECK	DRG S.
						TEAM LEADER	REV
						PR. MANAGER	
						TYPICAL DETAILS OF FFU SLEEPER FOR TURNOUTS AND SCISSOR CROSSOVER (BALLASTED TRACK)	

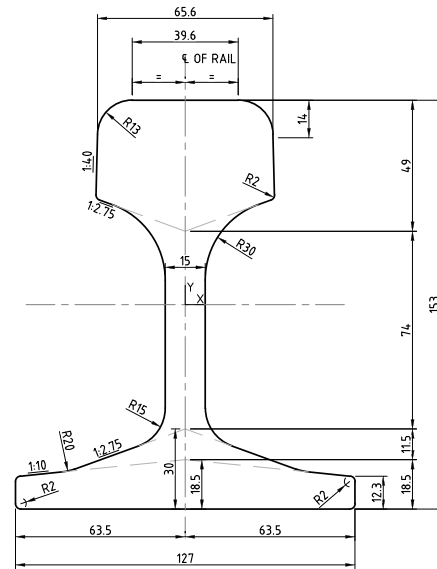


EN 60KG RAIL PROFILE FOR ELEVATED AND EMBANKMENT SECTION
SCALE 1:2

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.

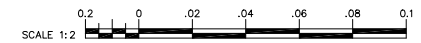




VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019	
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			TITLE	NAME	SIGNATURE
		<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>	DESIGNER			<p>RAIL PROFILE AT ELEVATED AND EMBANKMENT SECTION EN 60KG RAIL</p>	SCALE 1:2	
			CHECK				SHEET No.	
			TEAM LEADER				DRG No. MMSP-TRK-0000-DD-0401	
			PR. MANAGER				DRG S. REV	

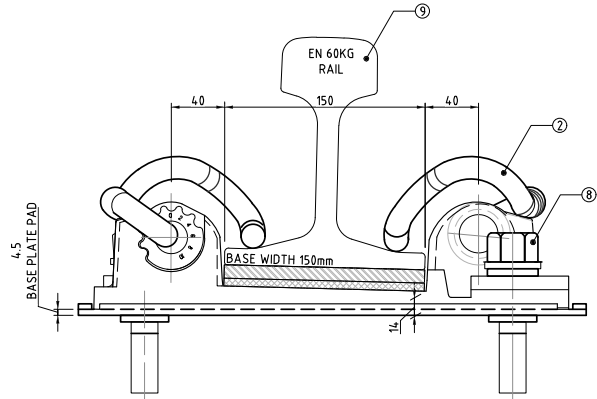


JIS 50KG RAIL PROFILE FOR SPECIAL TRACK AND BALLASTED TRACK IN DEPOT
SCALE 1:2

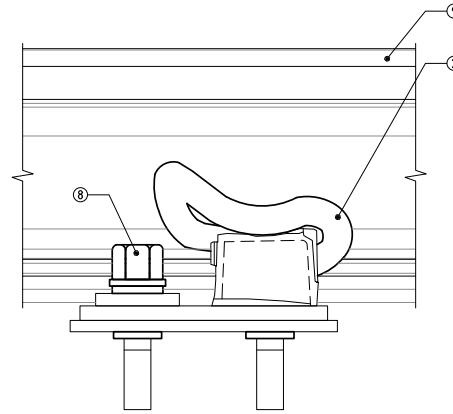
NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019	
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			TITLE	NAME	SIGNATURE
		 <p>DEPARTMENT OF TRANSPORTATION (DOTr)</p>  <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>					SCALE 1:2	
							SHEET No.	
							DRG No. MMSP-TRK-0000-DD-0402	
							DRG S. REV	
						<p>RAIL PROFILE AT DEPOT JIS 50KG RAIL</p>		

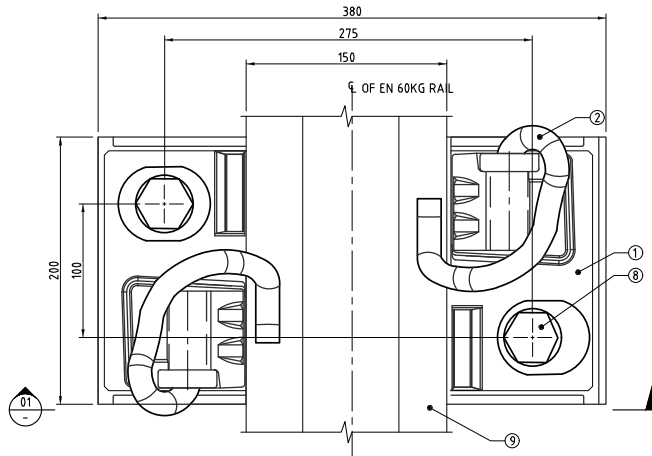


SECTION 01
SCALE 1: 4

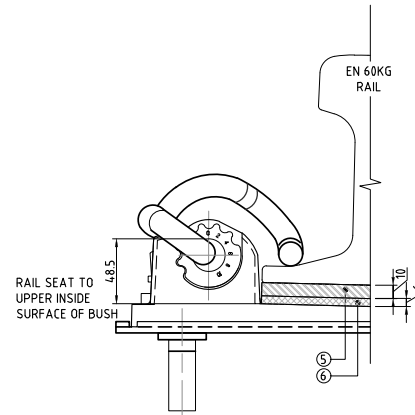


SIDE VIEW 02
SCALE 1: 4

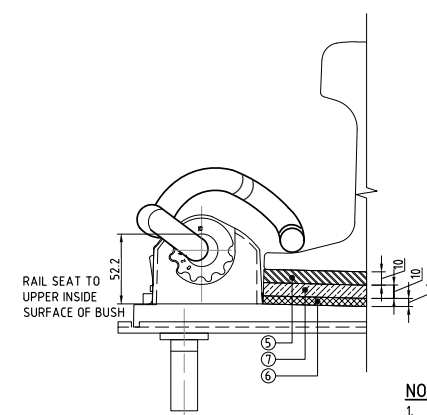
SL. NO	DESCRIPTION	QTY.
1	CAST BASE PLATE	1
2	e l 883 RAIL CLIP	2
3	BASEPLATE PAD	1
4	SHOULDER BUSH	2
5	RAIL PAD - 10mm INSTALLED THICKNESS	1
6	INITIAL PACKING - 6mm THK	1
7	ADDITIONAL PACKING - 10mm THK	A/R
8	STANDARD JAPANESE HOLD DOWN BOLT ASSEMBLY	2
9	RAIL 60KG	A/R



FASTENING SYSTEM FOR BALLASTED TRACKS
(PANDROL 13028)
SCALE 1:4



0mm ADJUSTMENT
SCALE 1:4



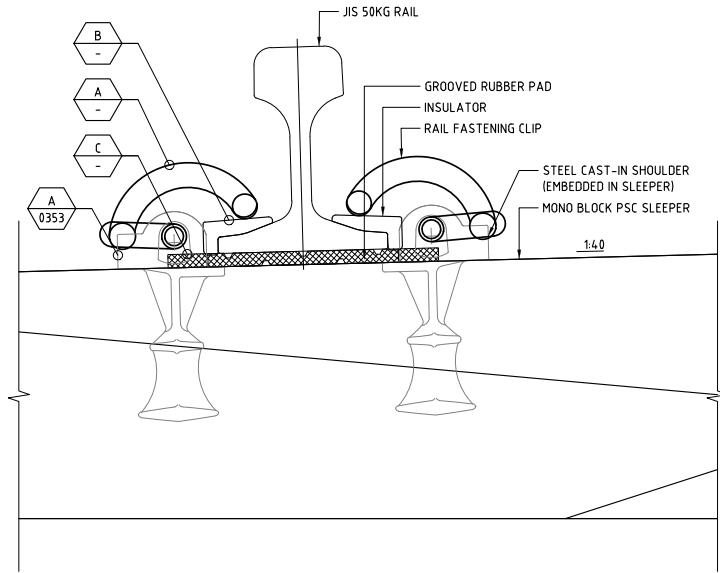
10mm ADJUSTMENT
SCALE 1:4

NOTE:

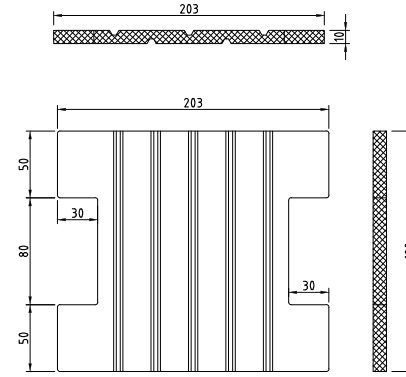
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
- AN INCLINATION OF 1:40 IS TO BE PROVIDED IN THE BASE PLATE.
- FOR DETAILS OF SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0353.
- FOR RAIL PROFILE REFER TO DRAWING NO. MMSP-TRK-0000-DD-0401 & MMSP-TRK-0000-DD-0402.



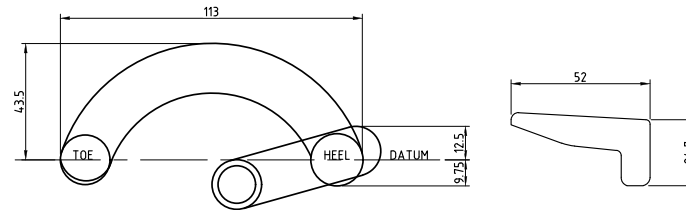
VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : CP106		DATE	
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMECVI ALMEC CORPORATION</p>			TITLE	NAME	SIGNATURE	Jan. 2019
			DESIGNER					SCALE	1:4
			CHECK					SHEET No.	
			TEAM LEADER					DRG No.	MMSP-TRK-0000-DD-0403
			PR. MANAGER					DRG S.	REV
<p>TYPICAL FASTENING SYSTEM FOR BALLASTLESS TRACKS</p>									



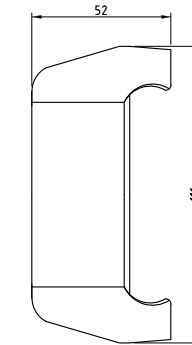
SECTION 01
SCALE 1: 4



DETAIL C
SCALE 1: 2
(GROOVED RUBBER PAD)



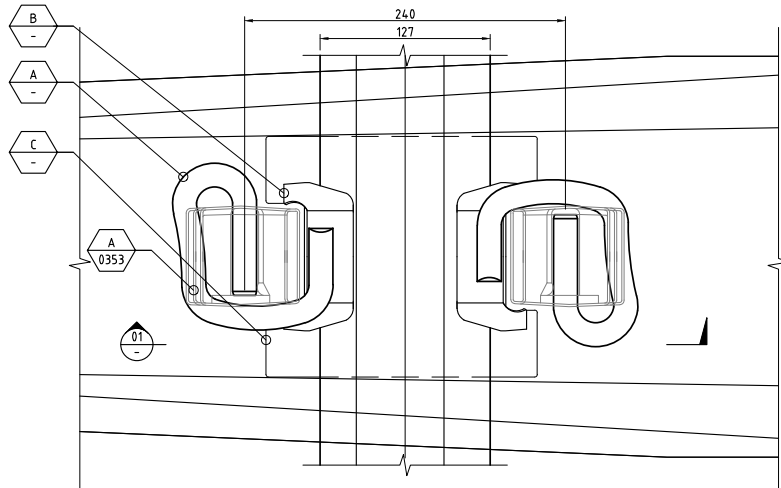
DETAIL A
SCALE 1: 2
(RAIL FASTENING CLIP FOR ROUND TOE)



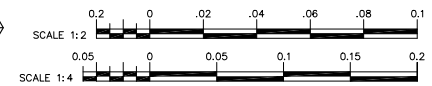
DETAIL B
SCALE 1: 2
(INSULATOR)

ALL THE DIMENSIONS SHOWN ARE INDICATIVE, THE FINAL DIMENSIONS SHALL BE CONFIRMED WITH THE VENDOR.

- NOTE:**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR DETAILS OF SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0353.
 3. FOR RAIL PROFILE REFER TO DRAWING NO. MMSP-TRK-0000-DD-0402.



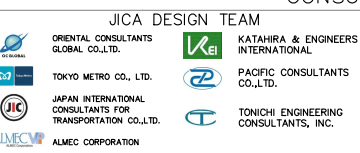
PLANT - FASTENING SYSTEM FOR BALLASTED TRACKS
SCALE 1:4



VERSIONS	DATE	DESCRIPTION

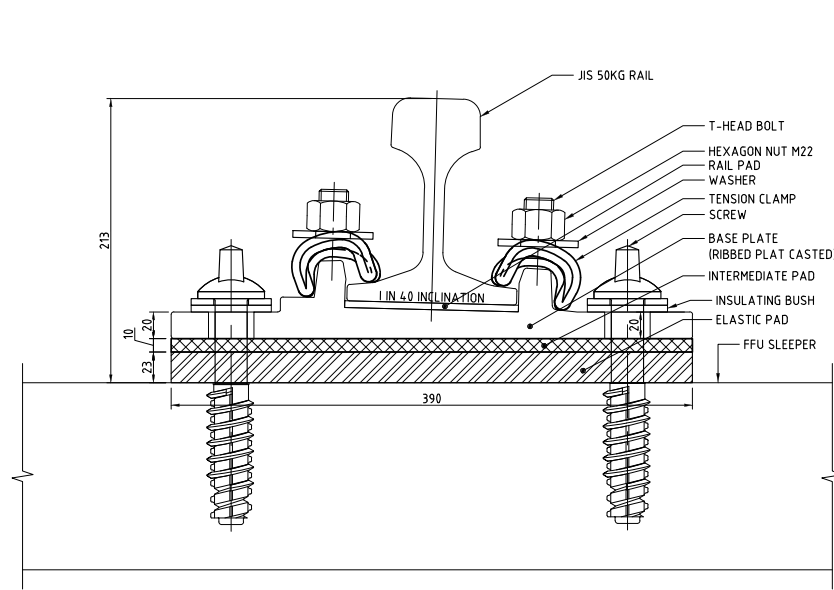


CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

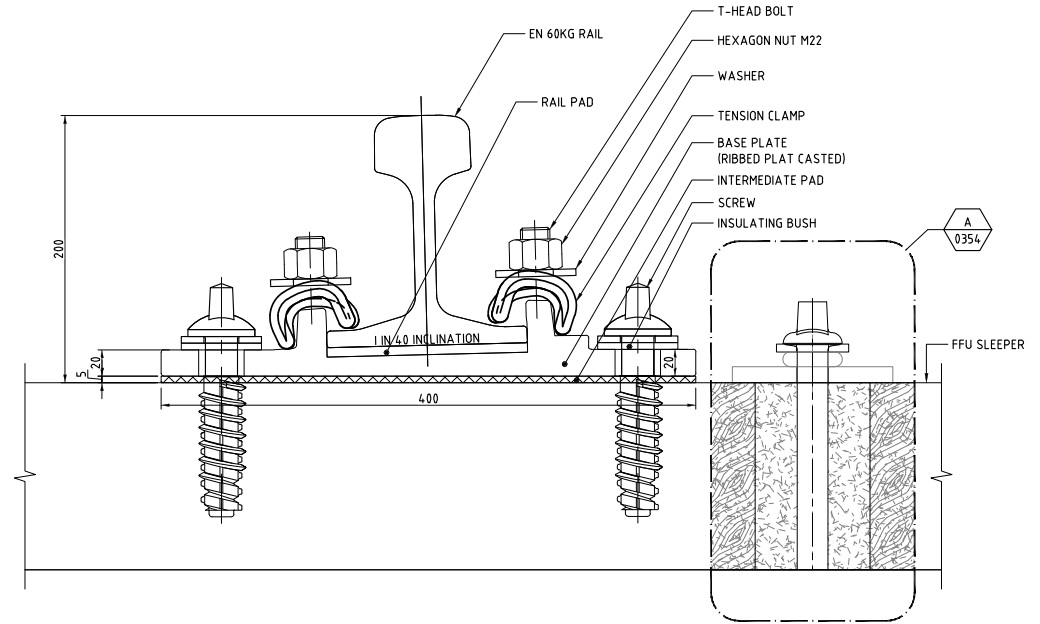


METRO MANILA SUBWAY PROJECT PHASE1 : CP106	
FASTENING SYSTEM FOR BALLASTED TRACKS	

DATE	Jan. 2019
SCALE	1:2, 1:4
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0404
DRG S.	REV



FASTENING SYSTEM (TURNOUT AND CROSSOVER) FOR BALLASTED TRACK IN DEPOT
SCALE 1:4



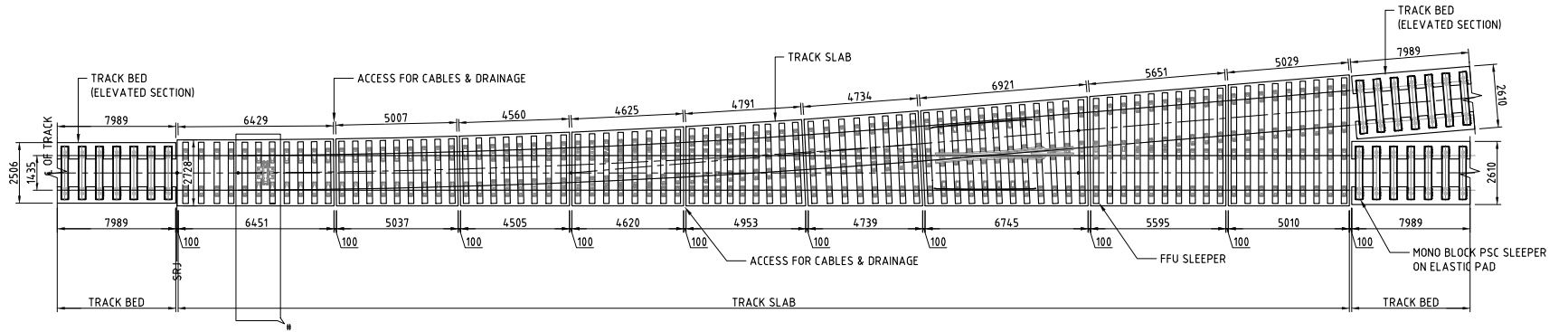
FASTENING SYSTEM (TURNOUT AND CROSSOVER) FOR BALLASTLESS TRACK IN MAIN LINE
SCALE 1:4

NOTE:

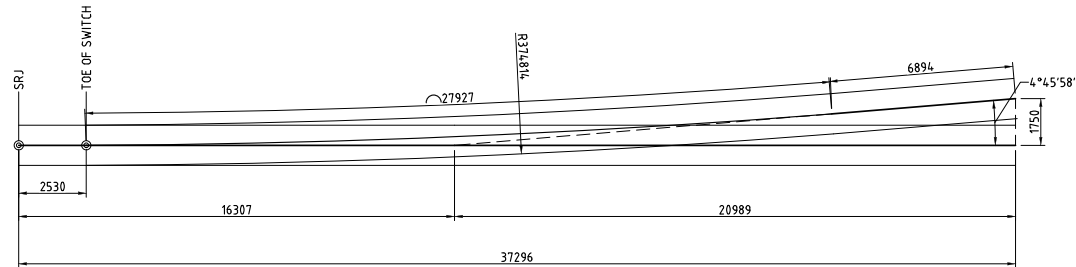
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS FFU SLEEPER REFER TO DRAWING NO. MMSP-TK-0355.
3. FOR RAIL PROFILE REFER TO DRAWING NO.
MMSP-DWG-TRK-0000-DD-0401 (EN 60KG - BALLASTLESS TRACK).
MMSP-DWG-TRK-0000-DD-0402 (JIS 50KG - BALLASTED TRACK).



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>		<p>Jan. 2019</p> <p>SCALE 1:4</p> <p>SHEET No.</p> <p>DRG No. MMSP-TRK-0000-DD-0405</p> <p>DRG S. REV</p>
<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			<p>TYPICAL FASTENING SYSTEM FOR TURNOUT AND CROSSOVER</p>					



PLAN - TYPICAL LAYOUT OF #12 TURNOUT
SCALE 1:200
(RAIL PROFILE NOT SHOWN FOR CLARITY)



GEOMETRIC LAYOUT OF #12 TURNOUT
SCALE 1:200

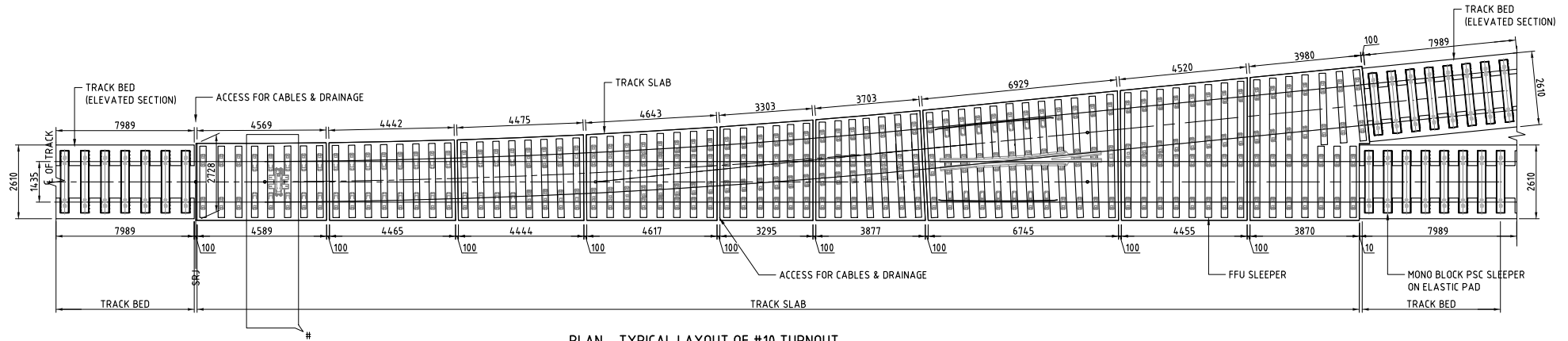
- IN THE TURNOUT LINE THE TRAIN SPEED SHALL BE RESTRICTED TO 45km/h
- SHEAR CONNECTORS TO BE INSTALLED IN THE VIADUCT/EMBANKMENT (SUPPORTING STRUCTURE) SHALL BE COORDINATED WITH THE CIVIL CONTRACTOR.
- THE TRACK WORK CONTRACTOR IN COORDINATION WITH THE CIVIL CONTRACTOR AND TURNOUT SUPPLIER SHALL ENSURE THAT NO GAP SHALL BE PROVIDED IN TRACK BED AT THE CROSSING OR SWITCH LOCATION.
- THE TRACK WORK CONTRACTOR SHALL COORDINATE THE SPACING OF FASTENERS WITH THE TURNOUT SUPPLIER.
- # AT THE LOCATION OF SWITCHES / POINT MACHINES THE TRACK BED DEPTH SHALL BE MODIFIED AS PER THE TURNOUT SUPPLIER SPECIFICATION.
- ALL LENGTH OF TRACK BED SEGMENT SHOWN ARE INDICATIVE ONLY. THE FINAL LAYOUT AND DIMENSIONS OF TRACK BED SEGMENTS SHALL BE ARRIVED IN COORDINATION WITH THE TURNOUT SUPPLIER.

LEGEND:
SRJ - STOCK RAIL JOINT

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR DETAILS OF TRACK BED IN ELEVATED SECTIONS REFER MMSP-TRK-0000-DD-0103.
 3. FOR DETAILS OF FFU SLEEPER REFER MMSP-TRK-0000-DD-0354.



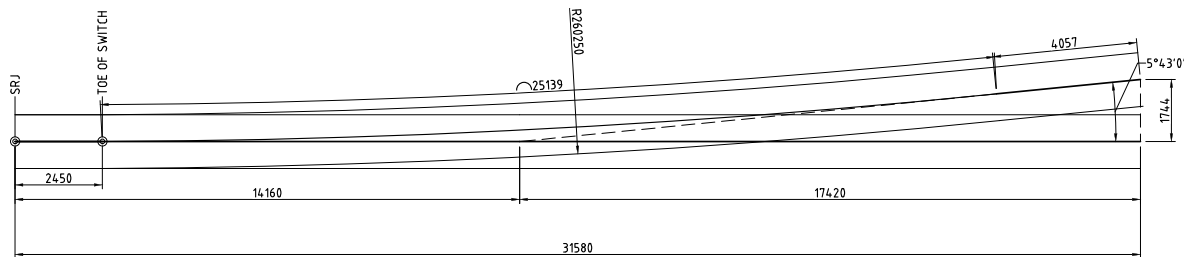
VERSIONS	DATE	DESCRIPTION	CONSULTANT			TITLE	NAME	SIGNATURE	DATE
						METRO MANILA SUBWAY PROJECT PHASE 1 : CP106			Jan. 2019
			DEPARTMENT OF TRANSPORTATION (DOTr) JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)						SCALE 1:200
									SHEET No.
									DRG No. MMSP-TRK-0000-DD-0451
									DRG S.
									REV
						TYPICAL LAYOUT FOR #12 TURNOUT			



PLAN - TYPICAL LAYOUT OF #10 TURNOUT

SCALE 1:150

(RAIL PROFILE NOT SHOWN FOR CLARITY)



GEOMETRIC LAYOUT OF #10 TURNOUT

SCALE 1:150

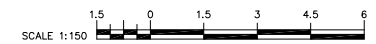
- IN THE TURNOUT LINE THE TRAIN SPEED SHALL BE RESTRICTED TO 45km/h
- SHEAR CONNECTORS TO BE INSTALLED IN THE VIADUCT/EMBANKMENT (SUPPORTING STRUCTURE) SHALL BE COORDINATED WITH THE CIVIL CONTRACTOR.
- THE TRACK WORK CONTRACTOR IN COORDINATION WITH THE CIVIL CONTRACTOR AND TURNOUT SUPPLIER SHALL ENSURE THAT NO GAP SHALL BE PROVIDED IN TRACK BED AT THE CROSSING OR SWITCH LOCATION.
- THE TRACK WORK CONTRACTOR SHALL COORDINATE THE SPACING OF FASTENERS WITH THE TURNOUT SUPPLIER.
- # AT THE LOCATION OF SWITCHES / POINT MACHINES THE TRACK BED DEPTH SHALL BE MODIFIED AS PER THE TURNOUT SUPPLIER SPECIFICATION.
- ALL LENGTH OF TRACK BED SEGMENT SHOWN ARE INDICATIVE ONLY. THE FINAL LAYOUT AND DIMENSIONS OF TRACK BED SEGMENTS SHALL BE ARRIVED IN COORDINATION WITH THE TURNOUT SUPPLIER.

LEGEND:

SRJ - STOCK RAIL JOINT

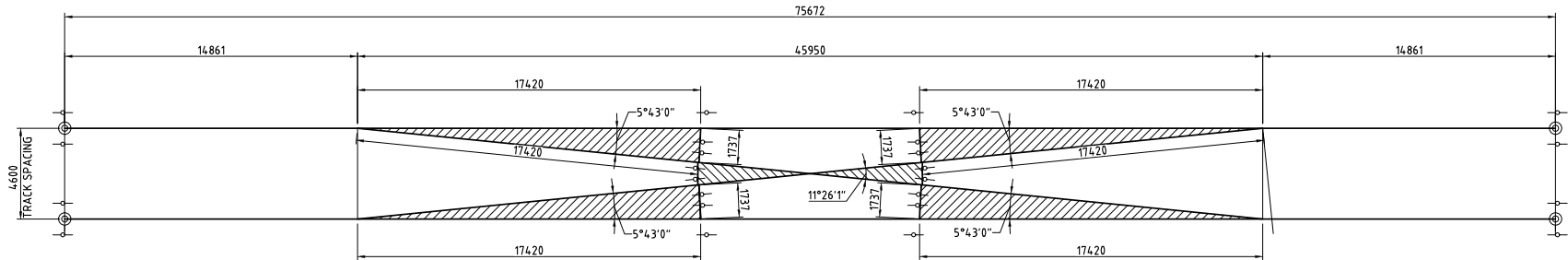
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF TRACK BED IN ELEVATED SECTIONS REFER MMSP-TRK-0000-DD-0103.
3. FOR DETAILS OF FFU SLEEPER REFER MMSP-TRK-0000-DD-0354.



VERSIONS	DATE	DESCRIPTION	CONSULTANT				METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019
			 DEPARTMENT OF TRANSPORTATION (DOTr)	 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.	 KATAHIRA & ENGINEERS INTERNATIONAL	 PACIFIC CONSULTANTS CO.,LTD.	 TONICHI ENGINEERING CONSULTANTS, INC.	SCALE 1:150
			 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	 TOKYO METRO CO., LTD.	 JICA DESIGN TEAM	 ALMEC CORPORATION	SHEET No.	DRG No. MMSP-TRK-0000-DD-0452
							TYPICAL LAYOUT FOR #10 TURNOUT	DRG S.
								REV

60KG RAIL, TRACK SPACING = 4600mm, GAUGE 1435mm



GEOMETRIC LAYOUT OF #10 SCISSOR CROSSOVER (TRACK SPACING = 4600mm)
SCALE 1:250

IN THE TURNOUT LINE THE TRAIN SPEED SHALL BE RESTRICTED TO 45km/h

SHEAR CONNECTORS TO BE INSTALLED IN THE VIADUCT/EMBANKMENT (SUPPORTING STRUCTURE) SHALL BE COORDINATED WITH THE CIVIL CONTRACTOR.

THE TRACK WORK CONTRACTOR IN COORDINATION WITH THE CIVIL CONTRACTOR AND TURNOUT SUPPLIER SHALL ENSURE THAT NO GAP SHALL BE PROVIDED IN TRACK BED AT THE CROSSING OR SWITCH LOCATION.

THE TRACK WORK CONTRACTOR SHALL COORDINATE THE SPACING OF FASTENERS WITH THE TURNOUT SUPPLIER.

AT THE LOCATION OF SWITCHES / POINT MACHINES THE TRACK BED DEPTH SHALL BE MODIFIED AS PER THE TURNOUT SUPPLIER SPECIFICATION.

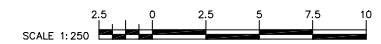
ALL LENGTH OF TRACK BED SEGMENT SHOWN ARE INDICATIVE ONLY. THE FINAL LAYOUT AND DIMENSIONS OF TRACK BED SEGMENTS SHALL BE ARRIVED IN COORDINATION WITH THE TURNOUT SUPPLIER.

LEGEND:

SRJ - STOCK RAIL JOINT

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
- FOR DETAILS OF TRACK BED IN ELEVATED SECTIONS REFER TO DRAWING NO. MMSP-TRK-0000-DD-0103.
- FOR DETAILS OF FFU SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0354.



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CONSULTANT

JICA DESIGN TEAM

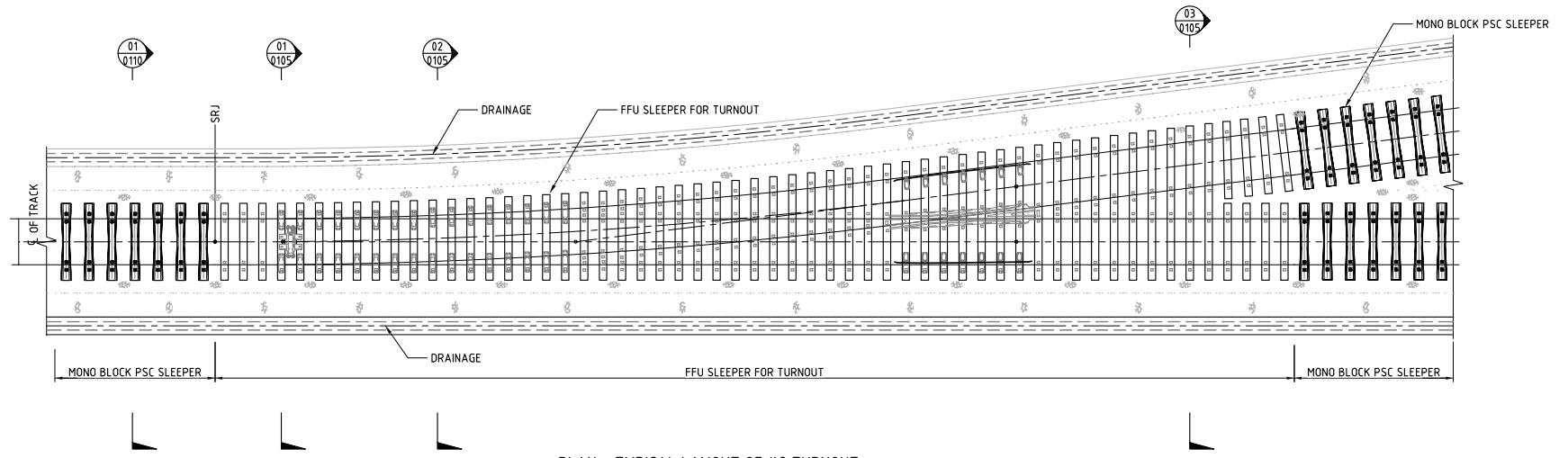
	ORIENTAL CONSULTANTS GLOBAL CO.,LTD.		KATAHIRA & ENGINEERS INTERNATIONAL
	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

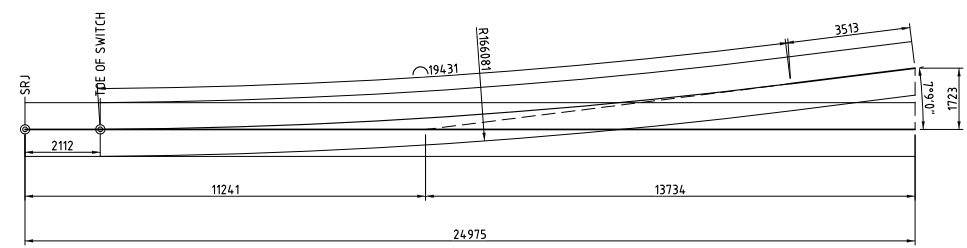
METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

TYPICAL LAYOUT FOR #10 SCISSOR CROSSOVER (TRACK SPACING = 4600mm)

DATE	Jan. 2019
SCALE	1:250
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0456
DRG S.	
REV	



PLAN - TYPICAL LAYOUT OF #8 TURNOUT
SCALE 1:150
(RAIL PROFILE NOT SHOWN FOR CLARITY)

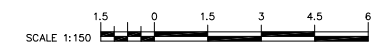


GEOMETRIC LAYOUT OF #8 TURNOUT
SCALE 1:150

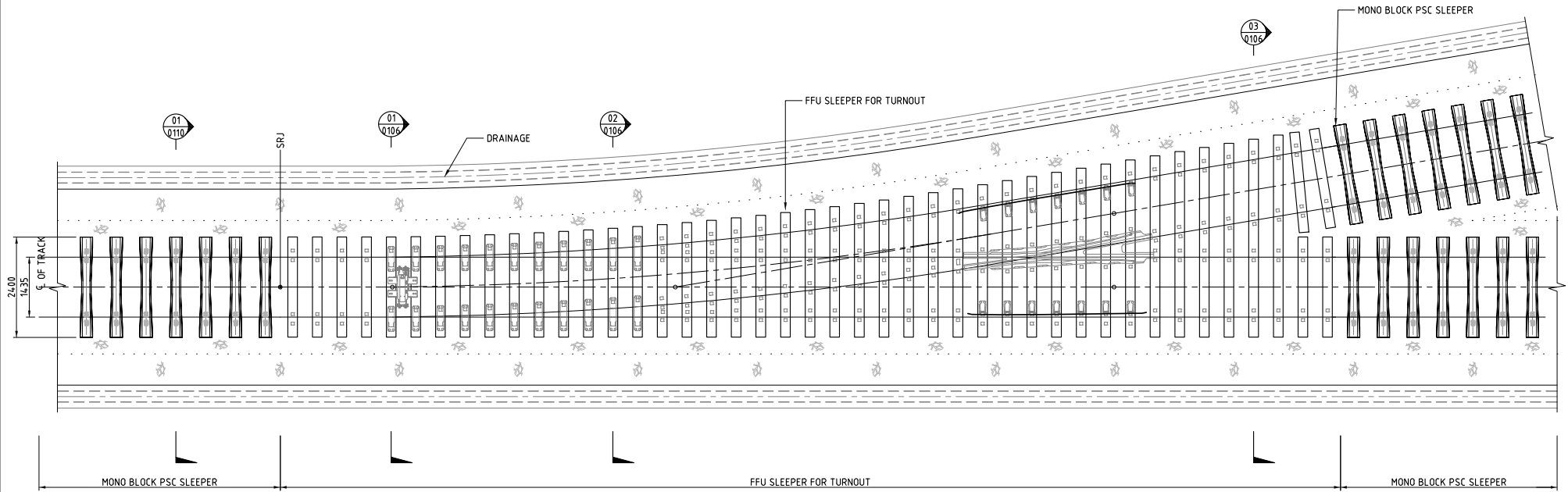
IN THE TURNOUT LINE THE TRAIN SPEED SHALL BE RESTRICTED TO 25km/h
THE TRACK WORK CONTRACTOR SHALL COORDINATE THE SPACING OF SLEEPER WITH THE TURNOUT SUPPLIER.
THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORK CONTRACTOR FOR THE DRAINAGE LAYOUT.

LEGEND:
SRJ - STOCK RAIL JOINT

- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 - FOR DETAILS OF FFU SLEEPER FOR TURNOUT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0355.
 - FOR DETAILS TRACK ARRANGEMENT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0251.

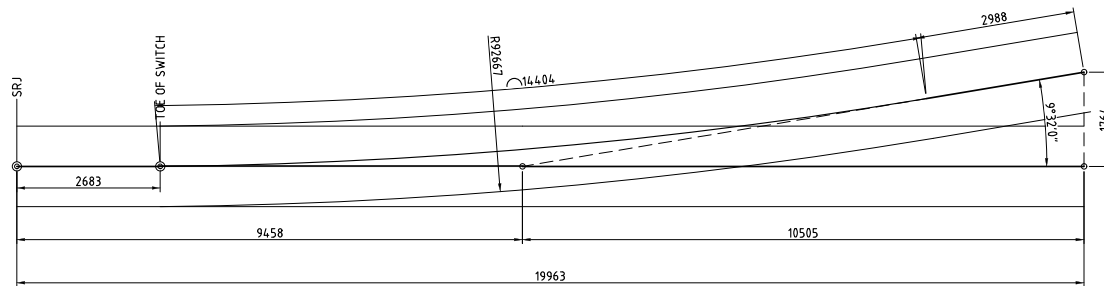


VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION</p>			<p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>		Jan. 2019
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>		SCALE 1:150
						<p>TYPICAL LAYOUT FOR #8 TURNOUT</p>		SHEET No.
								DRG No. MMSP-TRK-0000-DD-0453
								DRG S. REV



PLAN - TYPICAL LAYOUT OF #6 TURNOUT

SCALE 1:100
(RAIL PROFILE NOT SHOWN FOR CLARITY)



GEOMETRIC LAYOUT OF #6 TURNOUT

SCALE 1:100

IN THE TURNOUT LINE THE TRAIN SPEED SHALL BE RESTRICTED TO 25km/h

THE TRACK WORK CONTRACTOR SHALL COORDINATE THE LENGTH AND SPACING OF SLEEPER WITH THE TURNOUT SUPPLIER.

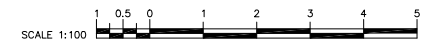
THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL WORKS CONTRACTOR FOR THE DRAINAGE LAYOUT.

LEGEND:

SRJ - STOCK RAIL JOINT

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
- FOR DETAILS OF FFU SLEEPER FOR TURNOUT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0355.
- FOR DETAILS TRACK ARRANGEMENT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0251.










VERSIONS	DATE	DESCRIPTION


DEPARTMENT OF TRANSPORTATION (DOTR)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

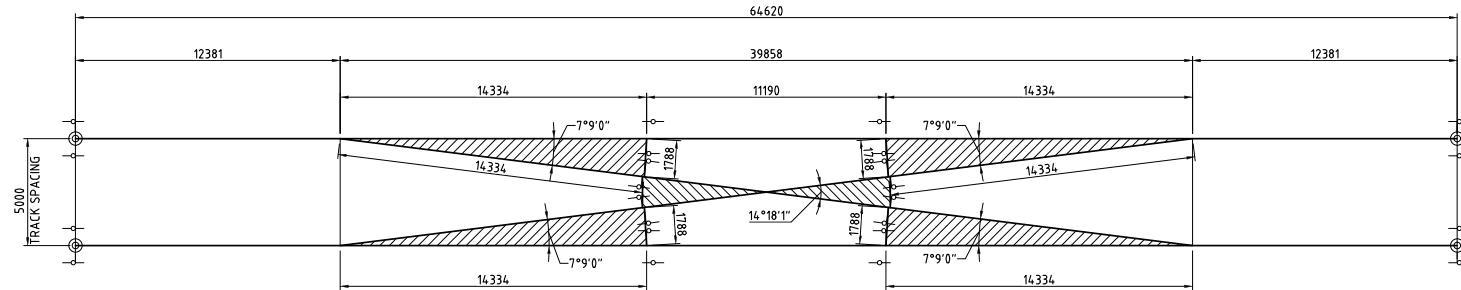
CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

JICA DESIGN TEAM
 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
 TOKYO METRO CO., LTD.
 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
 ALMEC CORPORATION
 KATAHIRA & ENGINEERS INTERNATIONAL
 PACIFIC CONSULTANTS CO.,LTD.
 TONCHI ENGINEERING CONSULTANTS, INC.

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
TYPICAL LAYOUT FOR #6 TURNOUT AND EMBANKMENT SECTION

DATE	Jan. 2019
SCALE	1:100
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0454
DRG S.	
REV	

60KG RAIL, TRACK SPACING = 5000mm, GAUGE 1435mm



GEOMETRIC LAYOUT OF #8 SCISSOR CROSSOVER
SCALE 1:250

IN THE TURNOUT LINE THE TRAIN SPEED SHALL BE RESTRICTED TO 45km/h

SHEAR CONNECTORS TO BE INSTALLED IN THE VIADUCT/EMBANKMENT (SUPPORTING STRUCTURE) SHALL BE COORDINATED WITH THE CIVIL CONTRACTOR.

THE TRACK WORK CONTRACTOR IN COORDINATION WITH THE CIVIL CONTRACTOR AND TURNOUT SUPPLIER SHALL ENSURE THAT NO GAP SHALL BE PROVIDED IN TRACK BED AT THE CROSSING OR SWITCH LOCATION.

THE TRACK WORK CONTRACTOR SHALL COORDINATE THE SPACING OF FASTENERS WITH THE TURNOUT SUPPLIER.

AT THE LOCATION OF SWITCHES / POINT MACHINES THE TRACK BED DEPTH SHALL BE MODIFIED AS PER THE TURNOUT SUPPLIER SPECIFICATION.

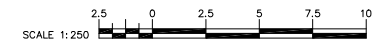
ALL LENGTH OF TRACK BED SEGMENT SHOWN ARE INDICATIVE ONLY. THE FINAL LAYOUT AND DIMENSIONS OF TRACK BED SEGMENTS SHALL BE ARRIVED IN COORDINATION WITH THE TURNOUT SUPPLIER.

LEGEND:

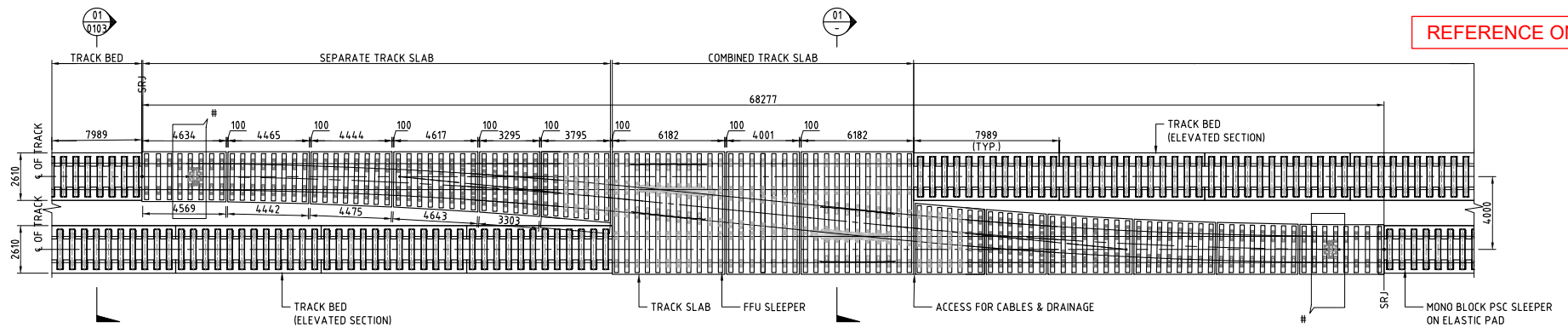
SRJ - STOCK RAIL JOINT

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
- FOR DETAILS OF TRACK BED IN ELEVATED SECTIONS REFER TO DRAWING NO. MMSP-TRK-0000-DD-0103.
- FOR DETAILS OF FFU SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0354.



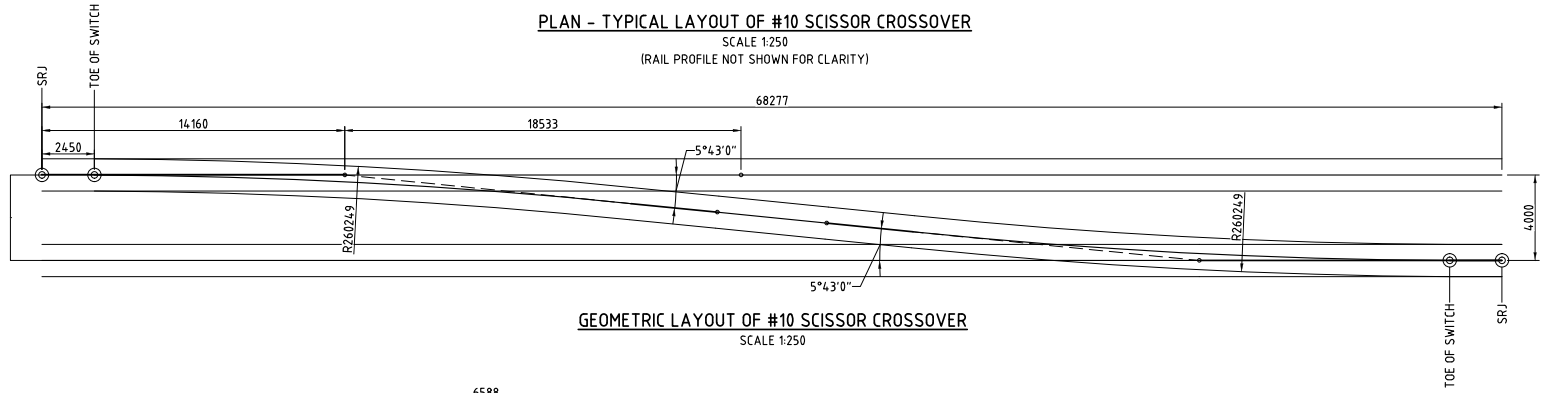
VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>				SCALE 1:250
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>				SHEET No.
			<p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>				DRG No. MMSP-TRK-0000-DD-0457
			<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>				DRG S. REV
			<p>TYPICAL LAYOUT FOR #8 SCISSOR CROSSOVER</p>				



PLAN - TYPICAL LAYOUT OF #10 SCISSOR CROSSOVER

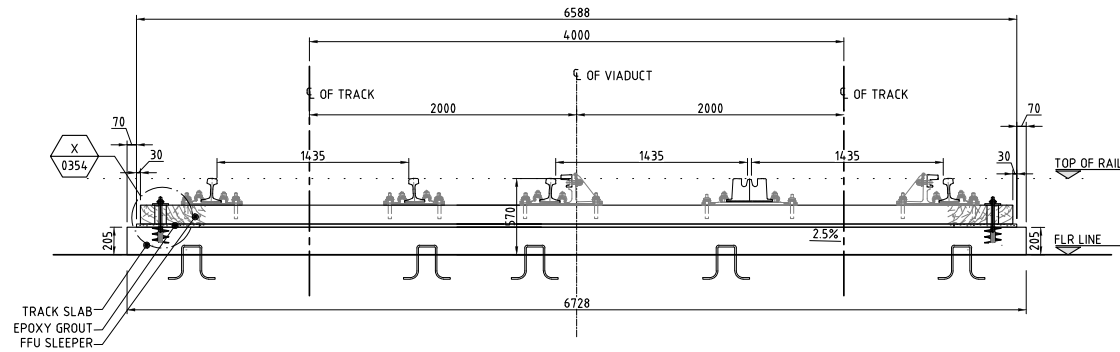
SCALE 1:250

(RAIL PROFILE NOT SHOWN FOR CLARITY)



GEOMETRIC LAYOUT OF #10 SCISSOR CROSSOVER

SCALE 1:250

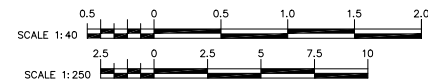


SECTION SCALE 1:40

02

LEGEND:

SRJ - STOCK RAIL JOINT



IN THE TURNOUT LINE THE TRAIN SPEED SHALL BE RESTRICTED TO 45km/h

THE TRACK CONTRACTOR SHALL COORDINATE WITH THE CIVIL CONTRACTOR FOR THE DRAINAGE.

SHEAR CONNECTORS TO BE INSTALLED IN THE VIADUCT/EMBANKMENT (SUPPORTING STRUCTURE) SHALL BE COORDINATED WITH THE CIVIL CONTRACTOR.

THE TRACK WORK CONTRACTOR IN COORDINATION WITH THE CIVIL CONTRACTOR AND TURNOUT SUPPLIER SHALL ENSURE THAT NO GAP SHALL BE PROVIDED IN TRACK BED AT THE CROSSING OR SWITCH LOCATION.

THE TRACK WORK CONTRACTOR SHALL COORDINATE THE SPACING OF FASTENERS WITH THE TURNOUT SUPPLIER.

AT THE LOCATION OF SWITCHES / POINT MACHINES THE TRACK BED DEPTH SHALL BE MODIFIED AS PER THE TURNOUT SUPPLIER SPECIFICATION.

ALL LENGTH OF TRACK BED SEGMENT SHOWN ARE INDICATIVE ONLY. THE FINAL LAYOUT AND DIMENSIONS OF TRACK BED SEGMENTS SHALL BE ARRIVED IN COORDINATION WITH THE TURNOUT SUPPLIER.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF TRACK BED ARRANGEMENT IN ELEVATED SECTIONS REFER TO DRAWING NO. MMSP-TRK-0000-DD-0151.
3. FOR DETAILS OF FFU SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0354.
4. FOR DETAILS OF FASTENING SYSTEM FOR TURNOUT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0405.

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOT)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

	ORIENTAL CONSULTANTS GLOBAL CO.,LTD.		KATAHIRA & ENGINEERS INTERNATIONAL
	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONCHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

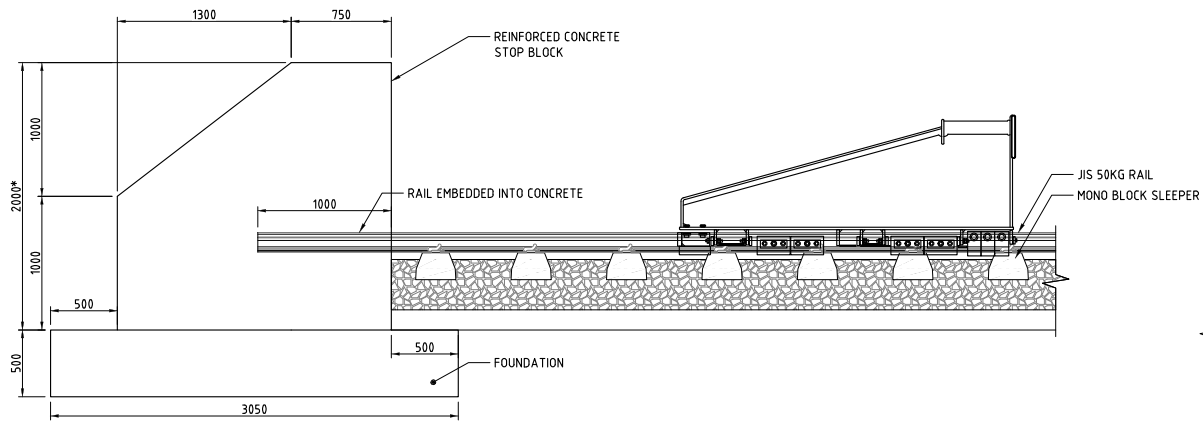
CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

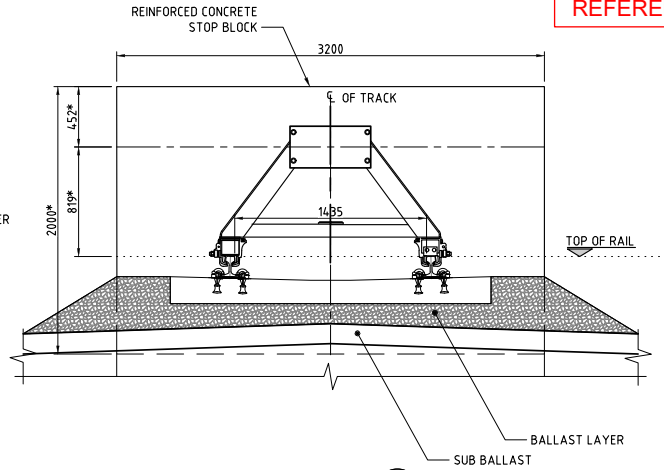
TYPICAL LAYOUT FOR #10 CROSSOVER

DATE	Jan. 2019
SCALE	1:40, 1:250
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0458
DRG S.	
REV	

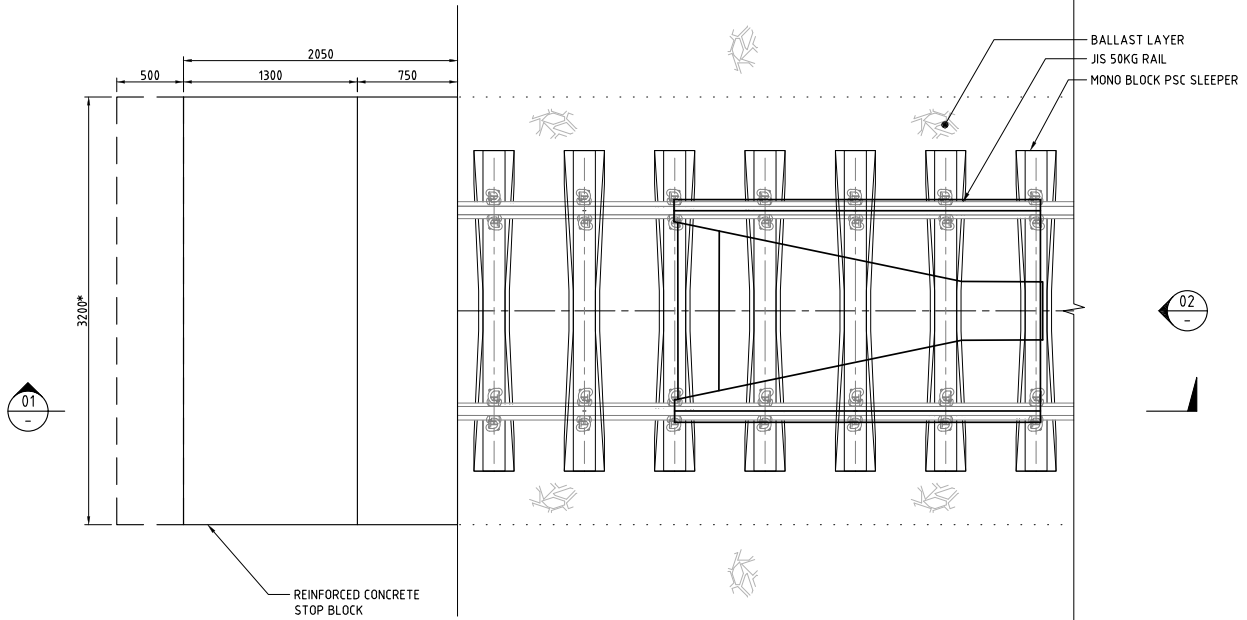
REFERENCE ONLY



SECTION 01
SCALE 1: 40



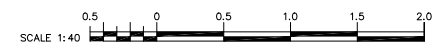
FRONT VIEW 02
SCALE 1: 40



PLAN - STOP BLOCK TYPE BUFFER STOP
SCALE 1:40

*THESE DIMENSIONS SHALL BE CONFIRMED WITH ROLLING STOCK SUPPLIER

- NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 2. FOR DETAILS OF BALLASTED TRACK ARRANGEMENT REFER TO DRAWING NO.MMSP-TRK-0000-DD-0251.



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

TOKYO METRO CO., LTD.

JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

ALMEC CORPORATION

KATAHIRA & ENGINEERS INTERNATIONAL

PACIFIC CONSULTANTS CO.,LTD.

TONICHI ENGINEERING CONSULTANTS, INC.

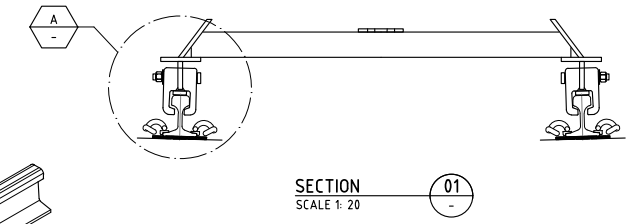
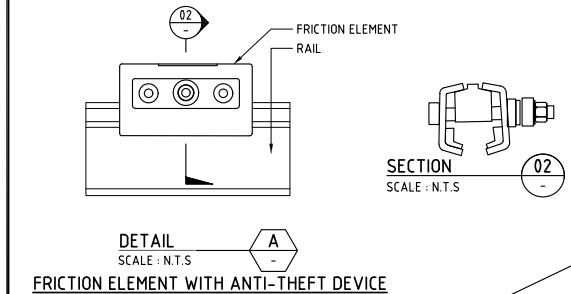
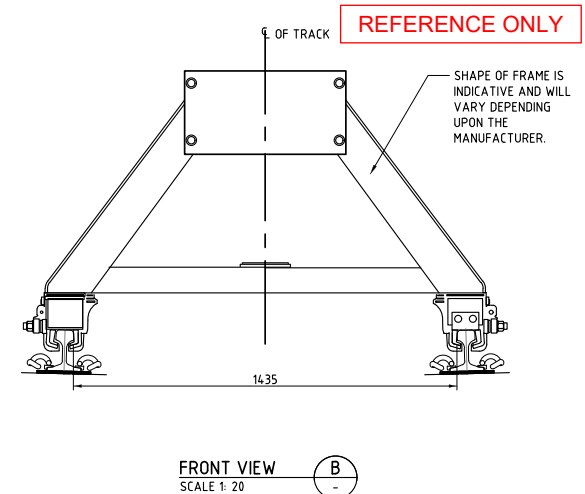
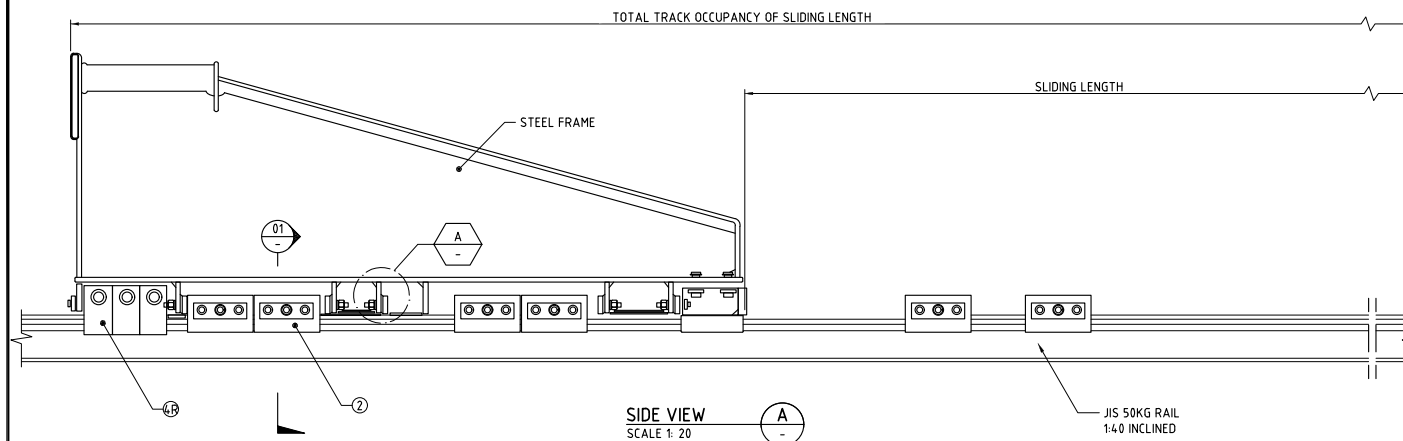
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

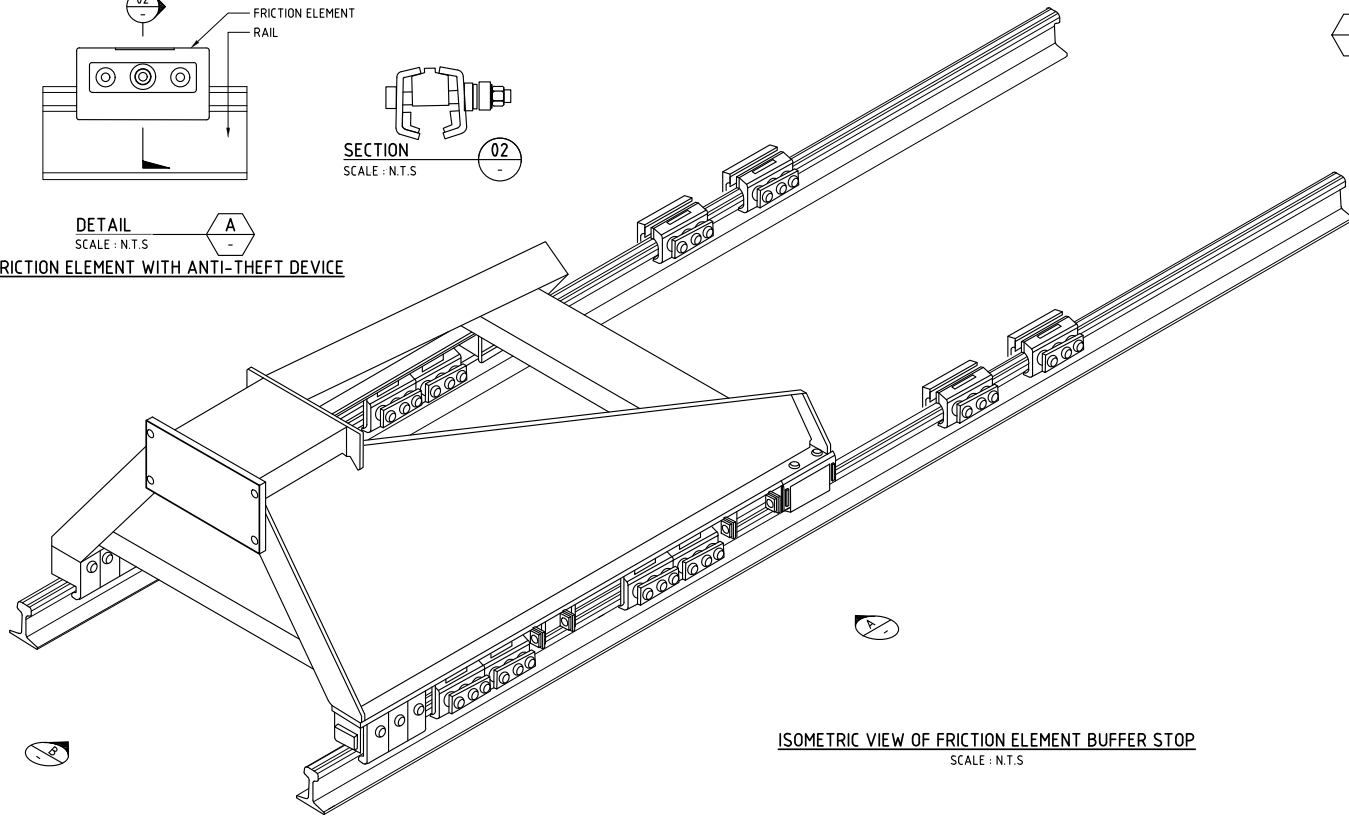
METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

TYPICAL STOP BLOCK TYPE BUFFER STOP

DATE	Jan. 2019
SCALE	1:40
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0501
DRG S.	REV



ALL DIMENSION SHOWN ARE INDICATIVE AND NEEDS TO BE CONFIRMED BY DESIGN CALCULATIONS FROM SUPPLIER.



- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
 - PROTECTION AGAINST CORROSION : ALL STEEL PARTS HOT DIP GALVANIZED (MIN 80µm)
IMPACT LOAD :
IMPACT SPEED



VERSIONS	DATE	DESCRIPTION

JICA DESIGN TEAM

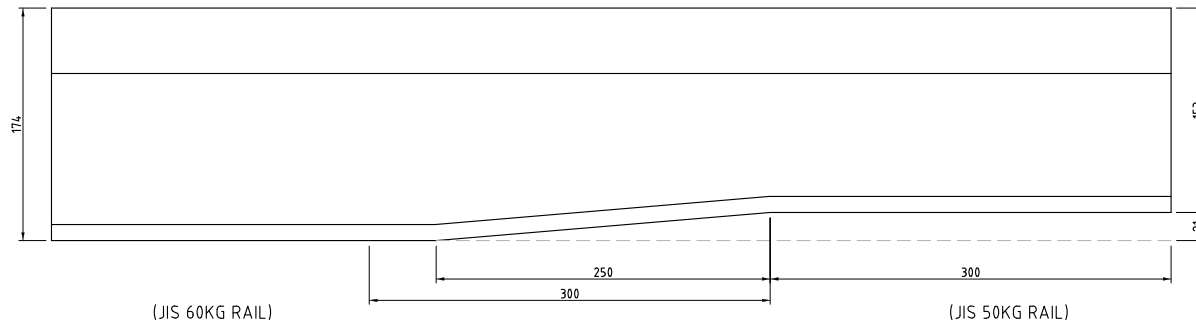
	ORIENTAL CONSULTANTS GLOBAL CO.,LTD.		KATAHIRA & ENGINEERS INTERNATIONAL
	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

FRICION ELEMENT BUFFER STOP AND EMBANKMENT SECTION

DATE	Jan. 2019
SCALE	1:20
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0502
DRG S.	
REV	

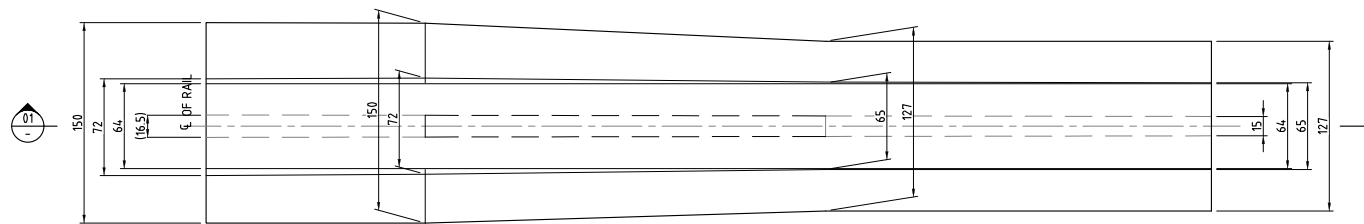


(JIS 60KG RAIL)

(JIS 50KG RAIL)

SECTION 01
SCALE 1: 4

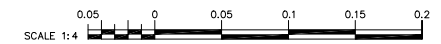
THIS COMPROMISE RAIL SECTION SHALL BE USED IN LOCATIONS WHERE 60KG RAIL PROFILE TRANSITIONS IN TO 50KG RAIL PROFILE.



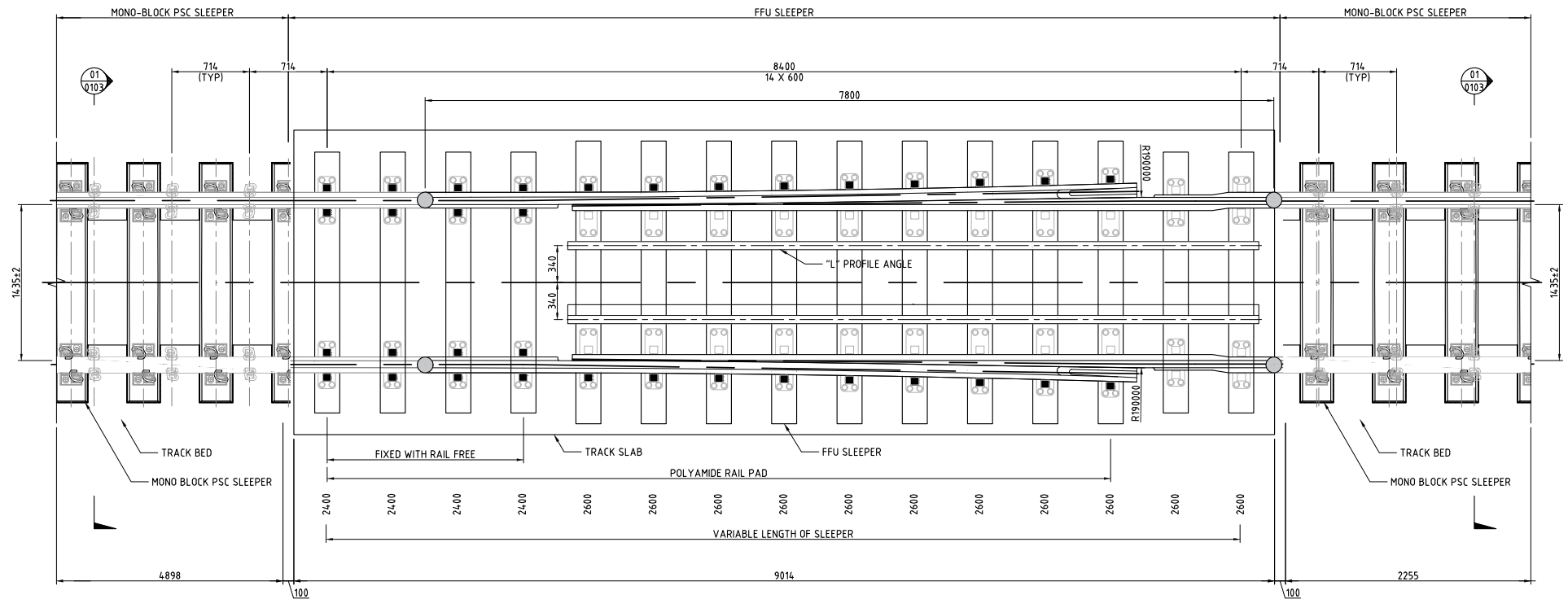
COMPROMISE RAIL
SCALE 1:4

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
- FOR 60KG RAIL PROFILE REFER TO DRAWING NO. MMSP-TRK-0000-DD-0401.
- FOR 50KG RAIL PROFILE REFER TO DRAWING NO. MMSP-TRK-0000-DD-0402.



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			<p>TYPICAL COMPROMISE RAIL</p>		<p>Jan. 2019</p>
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>		<p>SCALE 1:4</p>
								<p>SHEET No.</p> <p>DRG No. MMSP-TRK-0000-DD-0551</p> <p>DRG S. REV</p>



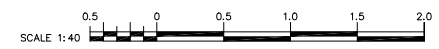
RAIL EXPANSION JOINT FOR BALLASTLESS TRACK
SCALE 1:40

LEGENDS:

- WELDED JOINT
- FULL TOE LOAD CLIP
- RAIL FREE CLIP

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.
2. FOR DETAILS OF TRACK ARRANGEMENT REFER TO DRAWING NO. MMSP-TRK-0000-DD-0151.
3. FOR DETAILS OF MONO-BLOCK PSC SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0352.
4. FOR DETAILS OF FFU SLEEPER REFER TO DRAWING NO. MMSP-TRK-0000-DD-0354.



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

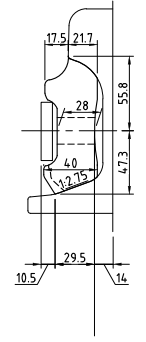
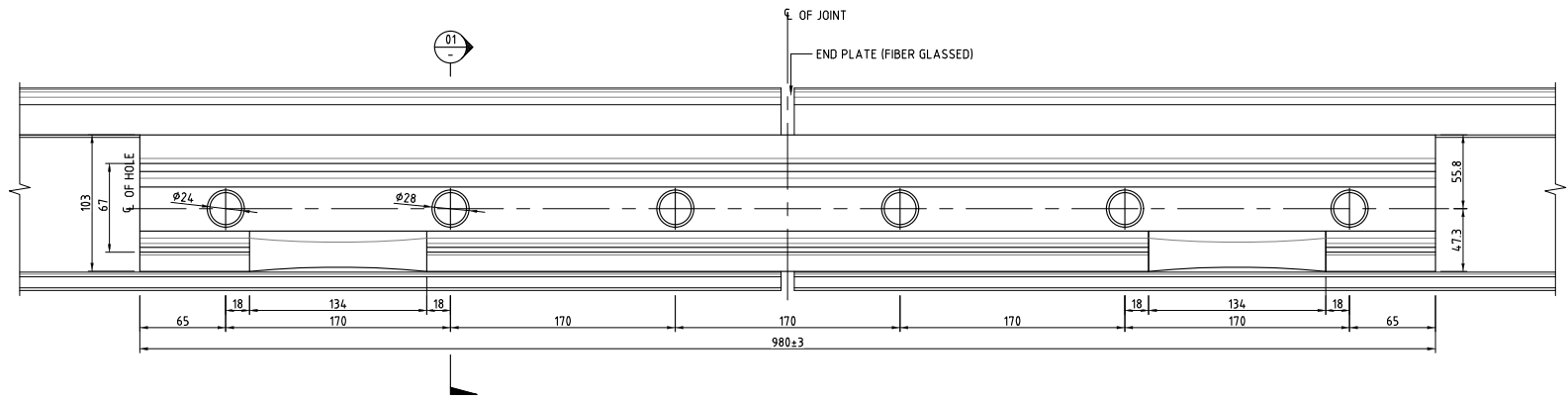
ORIENTAL CONSULTANTS GLOBAL CO.,LTD.	KATAHIRA & ENGINEERS INTERNATIONAL
TOKYO METRO CO., LTD.	PACIFIC CONSULTANTS CO.,LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.	TONICHI ENGINEERING CONSULTANTS, INC.
ALMEC CORPORATION	

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

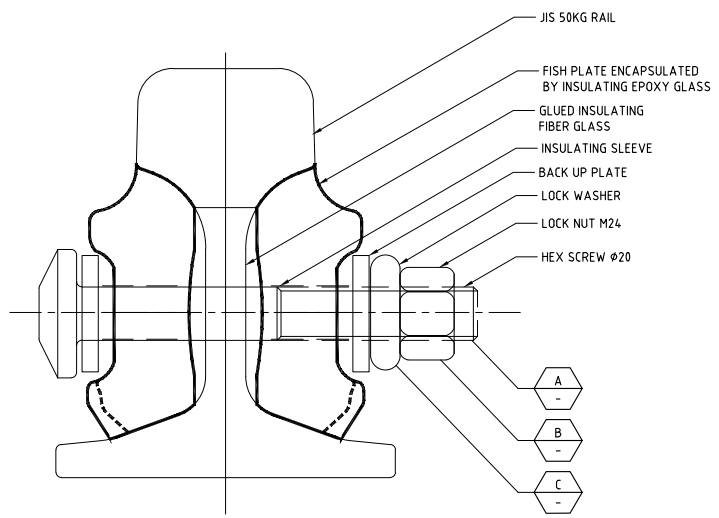
METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
TYPICAL RAIL EXPANSION JOINT FOR BALLASTLESS TRACK

DATE	Jan. 2019
SCALE	1:40
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0552
DRG S.	REV

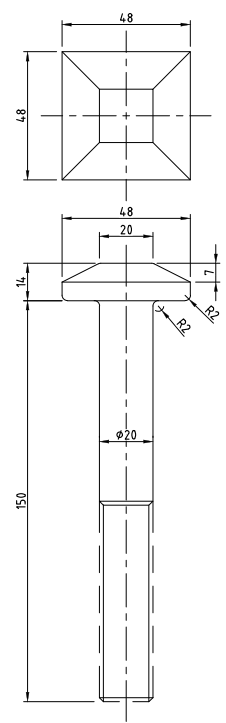
REFERENCE ONLY



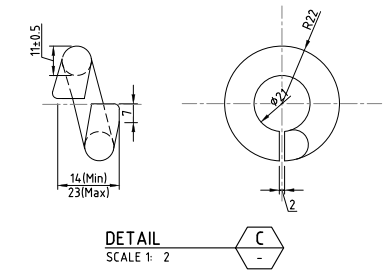
SIDE VIEW - GLUED INSULATED RAIL JOINTS AND ACCESSORIES
SCALE 1:4



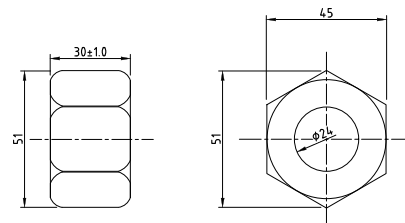
SECTION 01
SCALE 1: 2



DETAIL A
SCALE 1: 2



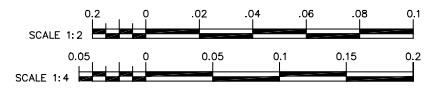
DETAIL C
SCALE 1: 2



DETAIL B
SCALE 1: 2

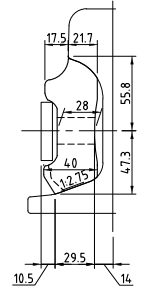
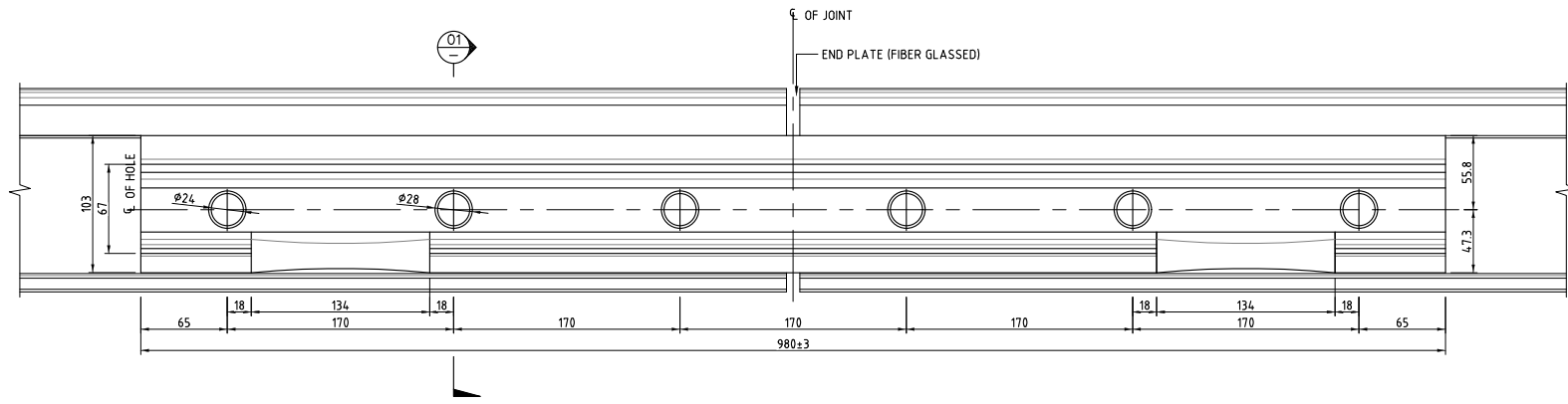
LOCATION OF INSULATED RAIL JOINT SHALL BE COORDINATED WITH SIGNALING CONTRACTOR.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.

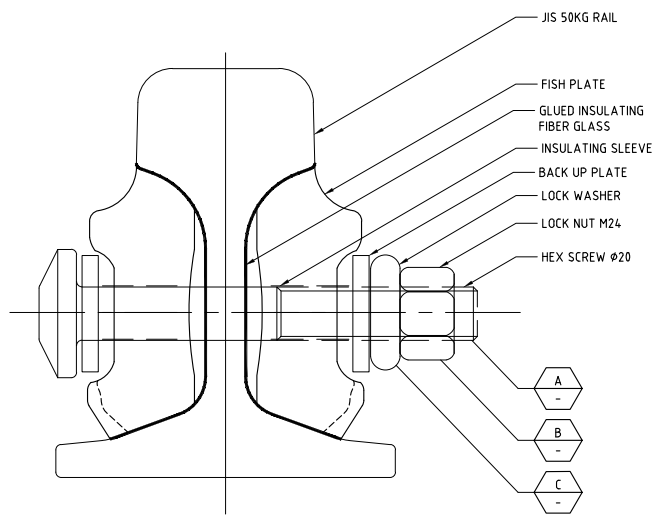


VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONCHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			<p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>	<p>SCALE 1:2, 1:4</p>
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>	<p>SHEET No.</p> <p>DRG No. MMSP-TRK-0000-DD-0553</p> <p>DRG S. REV</p>
			<p>TYPICAL GLUED INSULATED RAIL JOINTS AND ACCESSORIES</p>				

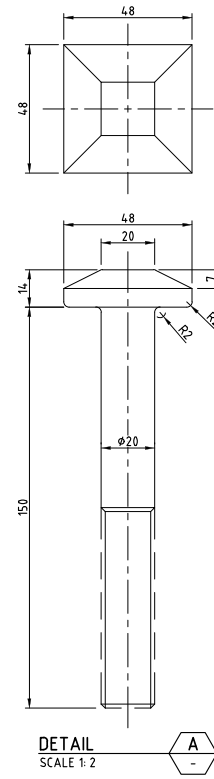
REFERENCE ONLY



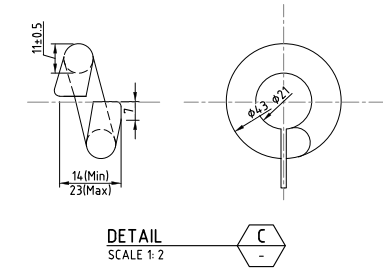
SIDE VIEW - NON GLUED INSULATED RAIL JOINTS AND ACCESSORIES
SCALE 1:4



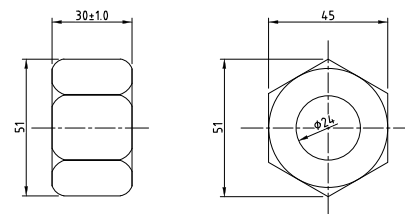
SECTION 01
SCALE 1: 2



DETAIL A
SCALE 1: 2



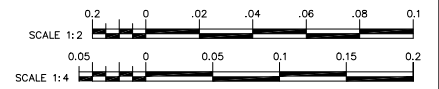
DETAIL C
SCALE 1: 2



DETAIL B
SCALE 1: 2

LOCATION OF INSULATED RAIL JOINT SHALL BE COORDINATED WITH SIGNALING CONTRACTOR.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA DESIGN TEAM

	ORIENTAL CONSULTANTS GLOBAL CO.,LTD.		KATAHIRA & ENGINEERS INTERNATIONAL
	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

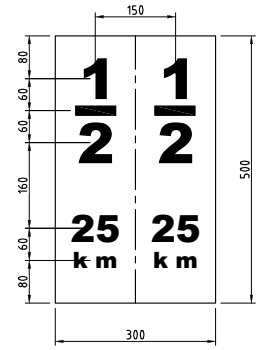
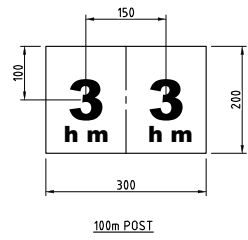
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

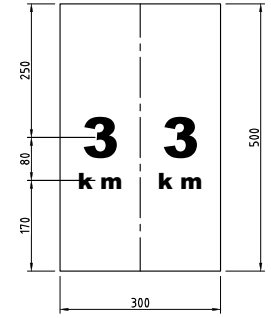
METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

TYPICAL NON-GLUED INSULATED RAIL JOINTS AND ACCESSORIES

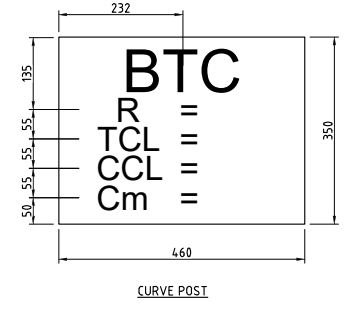
DATE	Jan. 2019
SCALE	1:2, 1:4
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0554
DRG S.	
REV	



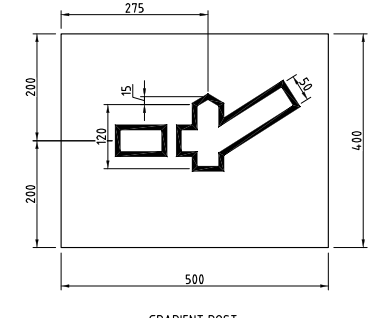
HALF KILOMETER POST



KILOMETER POST

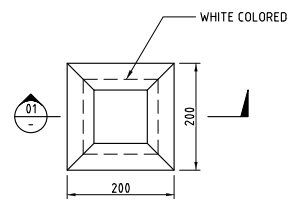


CURVE POST

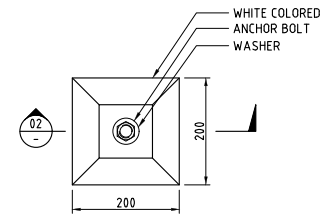


GRADIENT POST

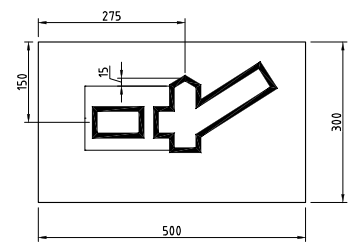
TYPICAL RAILWAY SIGN POSTS FOR MAIN LINE
SCALE 1:10



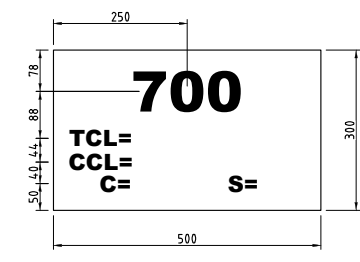
PLAN - FOULING MARK
SCALE 1:10
(FOR BALLASTED TRACK)



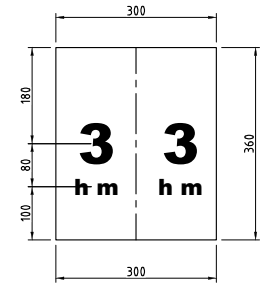
PLAN - FOULING MARK
SCALE 1:10
(FOR BALLASTLESS TRACK)



GRADIENT POST

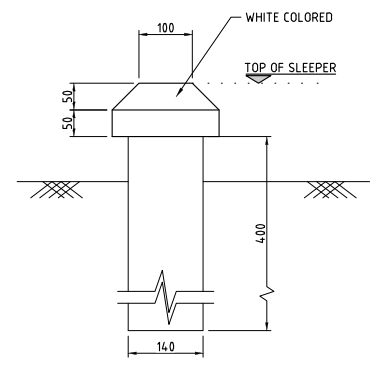


CURVE POST

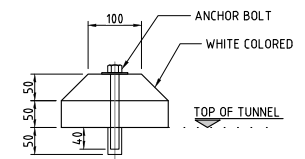


100m POST

TYPICAL RAILWAY SIGN POSTS FOR DEPOT
SCALE 1:10



SECTION 01
SCALE 1: 10



SECTION 02
SCALE 1: 10








NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE MENTIONED.



VERSIONS	DATE	DESCRIPTION

 DEPARTMENT OF TRANSPORTATION (DOT)
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.	 KATAHIRA & ENGINEERS INTERNATIONAL
 TOKYO METRO CO., LTD.	 PACIFIC CONSULTANTS CO.,LTD.
 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.	 TONICHI ENGINEERING CONSULTANTS, INC.
 ALMEC CORPORATION	

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
TYPICAL RAILWAY SIGN POSTS

DATE	Jan. 2019
SCALE	1:10
SHEET No.	
DRG No.	MMSP-TRK-0000-DD-0555
DRG S.	REV

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES


DRAWINGS
SIGNALING SYSTEM

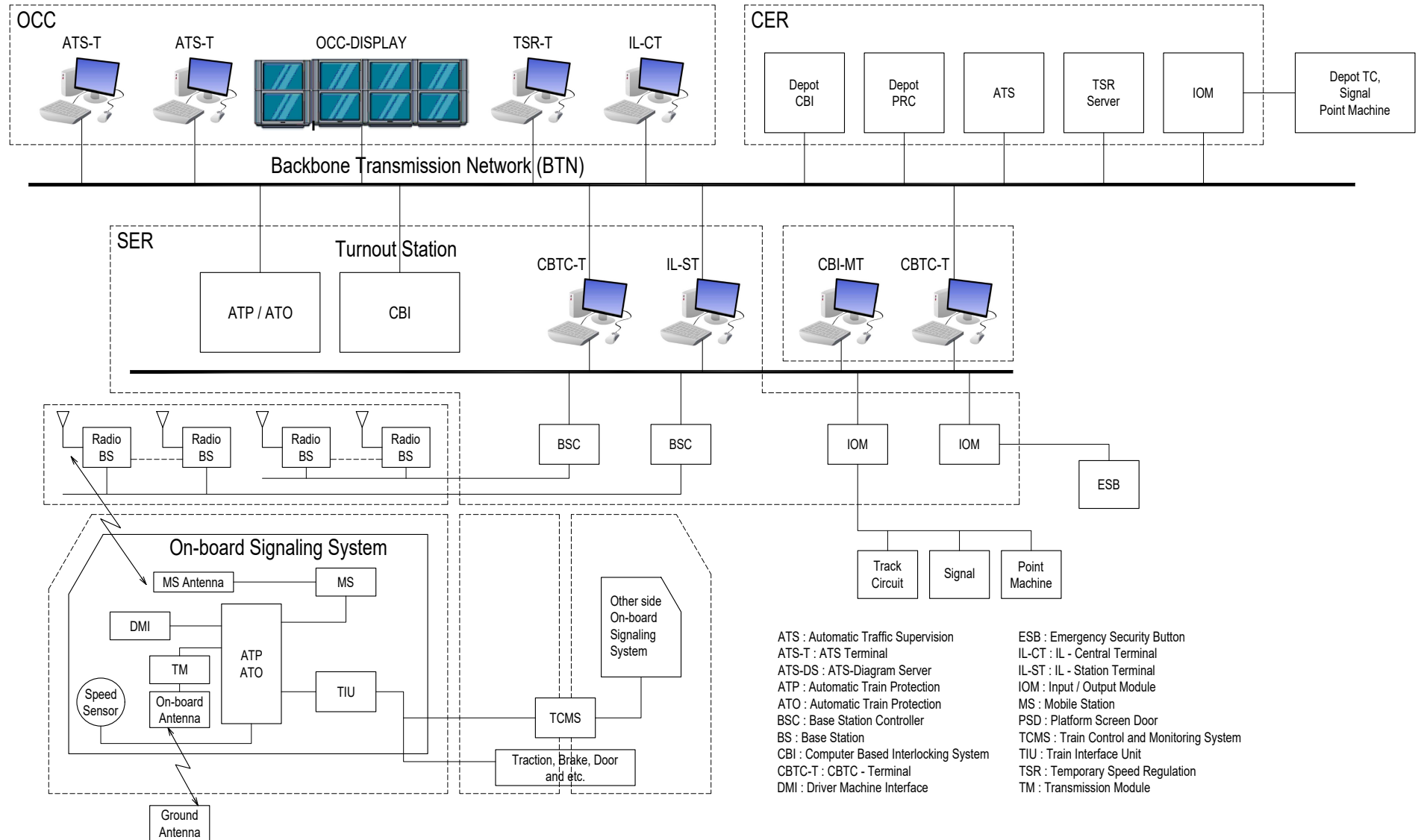
ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

DATE	Nov. 2019
SCALE	
SHEET No.	
DRG No.	MMSP-SIG-0000-DD-0000
DRG S.	REV

SIGNALING SYSTEM DRAWING INDEX

DRAWING No.	CONTENTS
MMSp-SIG-0000-DD-0000	SIGNALING SYSTEM COVER SHEET
MMSp-SIG-0000-DD-0001	SIGNALING SYSTEM DRAWING INDEX
MMSp-SIG-0000-DD-0101	SIGNALING SYSTEM CONFIGURATION 1 / 2
MMSp-SIG-0000-DD-0102	SIGNALING SYSTEM CONFIGURATION 2 / 2
MMSp-SIG-0000-DD-0201	MAIN LINE LAYOUT OF SIGNALING SYSTEM
MMSp-SIG-0000-DD-0301	TRACK LAYOUT AND ROUTE TABLE FOR QUIRINO HIGHWAY STATION
MMSp-SIG-0000-DD-0302	TRACK LAYOUT AND ROUTE TABLE FOR TANDANG SORA STATION
MMSp-SIG-0000-DD-0303	TRACK LAYOUT AND ROUTE TABLE FOR NORTH AVENUE STATION
MMSp-SIG-0000-DD-0304	TRACK LAYOUT AND ROUTE TABLE FOR ORTIGAS NORTH STATION
MMSp-SIG-0000-DD-0305	TRACK LAYOUT AND ROUTE TABLE FOR BONIFACIO GLOBAL CITY STATION
MMSp-SIG-0000-DD-0306	TRACK LAYOUT AND ROUTE TABLE FOR LAWTON EAST STATION
MMSp-SIG-0000-DD-0307	TRACK LAYOUT AND ROUTE TABLE FOR LAWTON WEST STATION
MMSp-SIG-0000-DD-0308	TRACK LAYOUT AND ROUTE TABLE FOR NAIA T3 STATION
MMSp-SIG-0000-DD-0309	TRACK LAYOUT AND ROUTE TABLE FOR FTI STATION
MMSp-SIG-0000-DD-0310	TRACK LAYOUT AND ROUTE TABLE FOR BICUTAN STATION
MMSp-SIG-0000-DD-0401	SIGNALING LAYOUT IN DEPOT
MMSp-SIG-0000-DD-0402	SIGNALING LAYOUT IN PRI
MMSp-SIG-0000-DD-0501	POWER SUPPLY FOR SIGNALING SYSTEM

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019	
			JICA DESIGN TEAM 			TITLE	NAME	SIGNATURE
							SCALE N.T.S.	
							SHEET No.	
							DRG No. MMSp-SIG-0000-DD-0001	
						SIGNALING SYSTEM DRAWING INDEX	DRG S.	
							REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

 KATAHIRA & ENGINEERS INTERNATIONAL

 TOKYO METRO CO., LTD.

 PACIFIC CONSULTANTS CO.,LTD.

 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

 TONCHI ENGINEERING CONSULTANTS, INC.

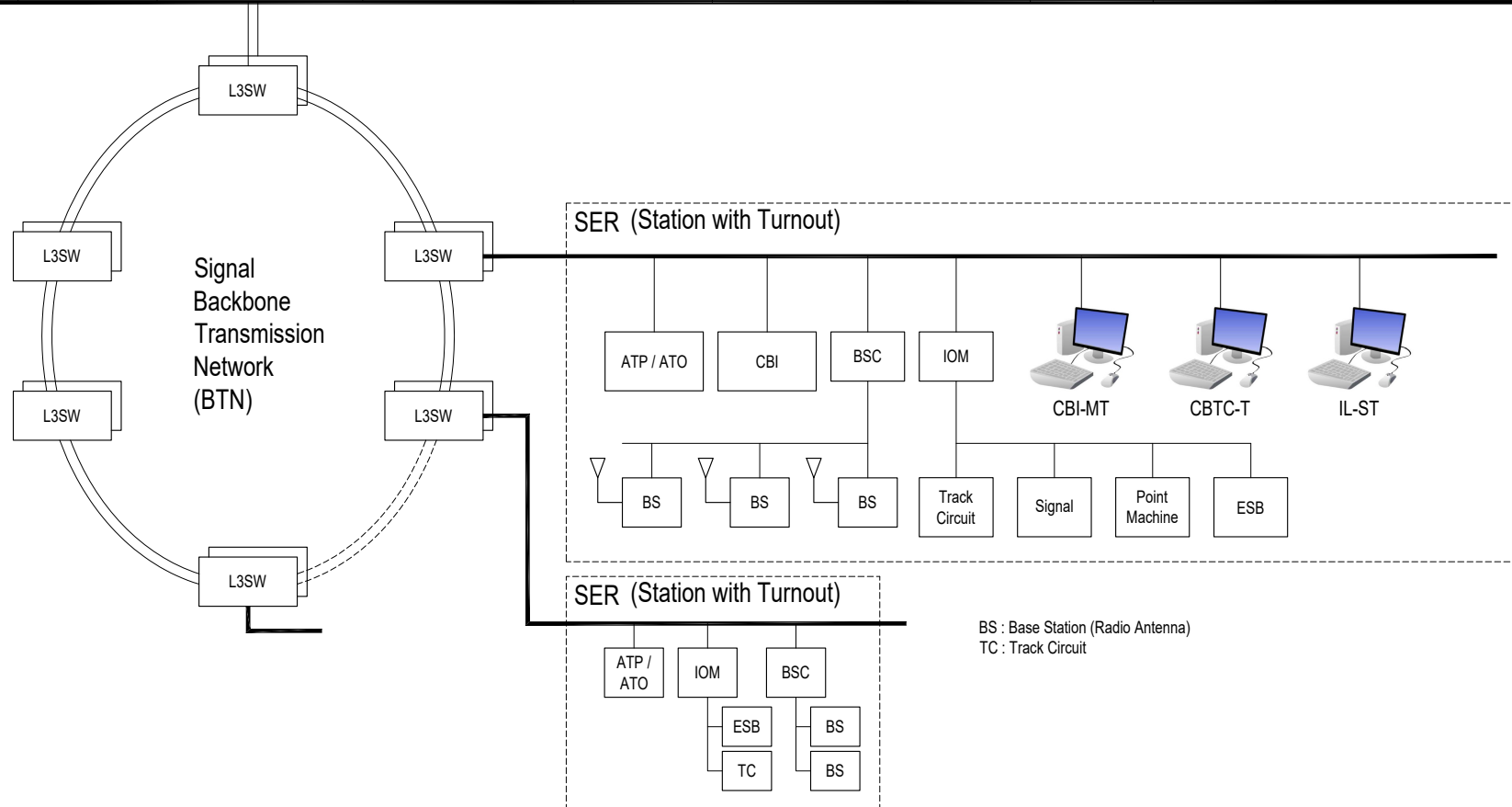
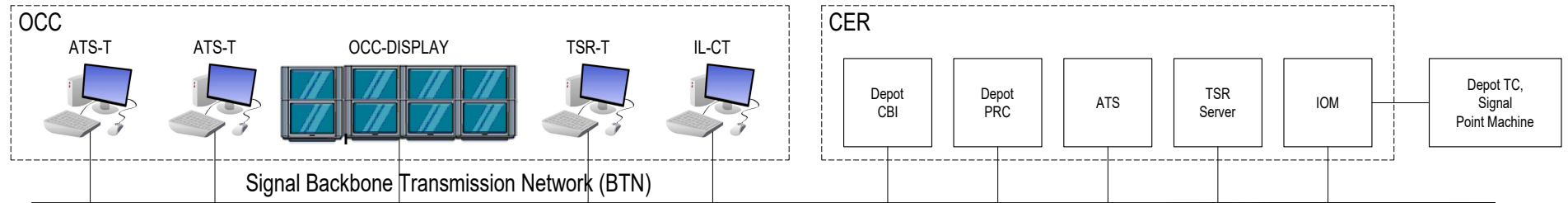
 ALMEC CORPORATION

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106

SIGNALING SYSTEM CONFIGURATION 1/2

DATE	Jan. 2019
SCALE	N.T.S.
SHEET No.	1/2
DRG No.	MMSP-SIG-0000-DD-0101
DRG S.	REV



BS : Base Station (Radio Antenna)
TC : Track Circuit

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

 TOKYO METRO CO., LTD.

 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

 ALMEC CORPORATION

 KATAHIRA & ENGINEERS INTERNATIONAL

 PACIFIC CONSULTANTS CO.,LTD.

 TONCHI ENGINEERING CONSULTANTS, INC.

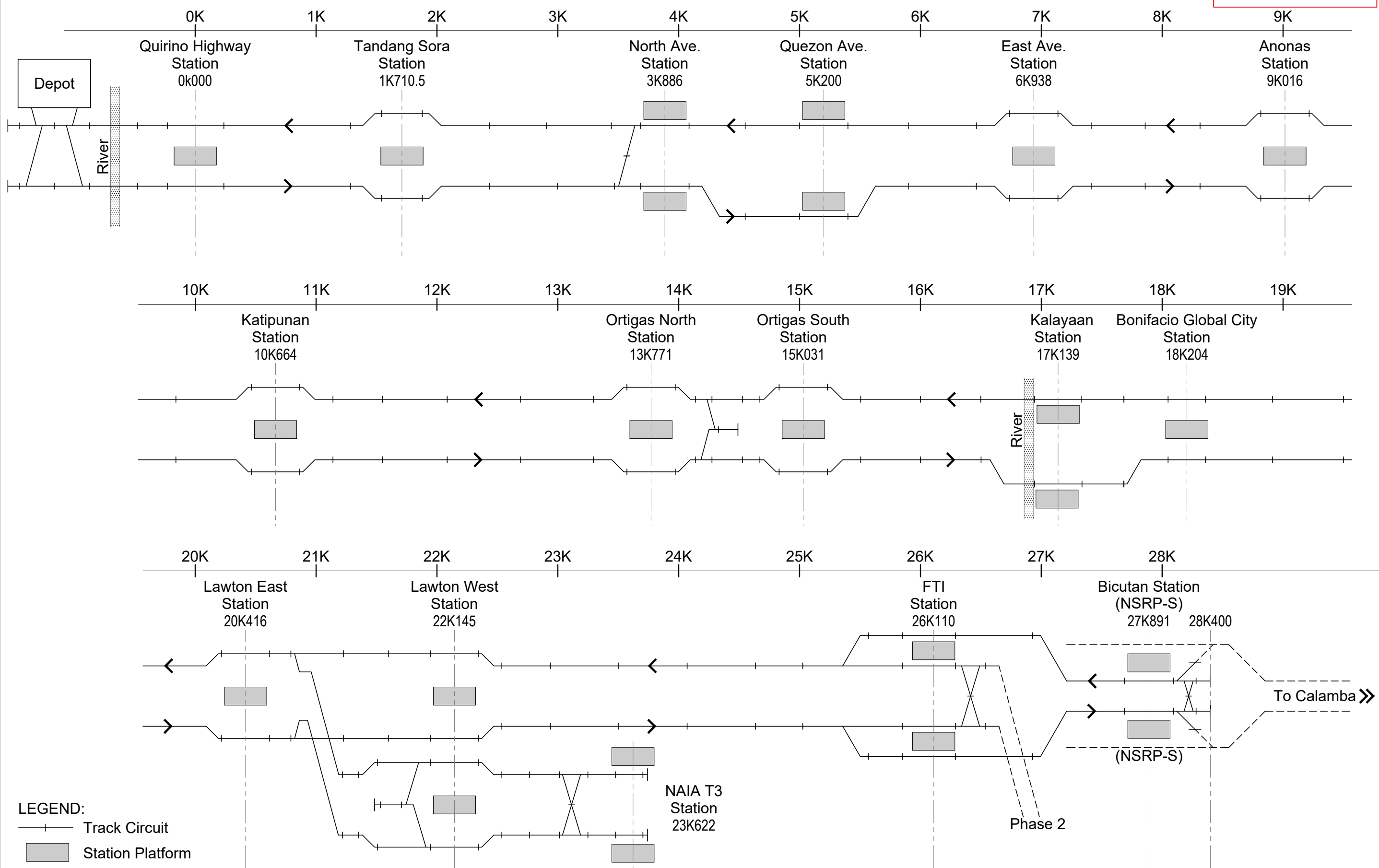
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
SIGNALING SYSTEM CONFIGURATION 2/2

DATE	Jan. 2019
SCALE	N.T.S.
SHEET No.	2/2
DRG No.	MMSP-SIG-0000-DD-0102
DRG S.	REV

REFERENCE ONLY



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

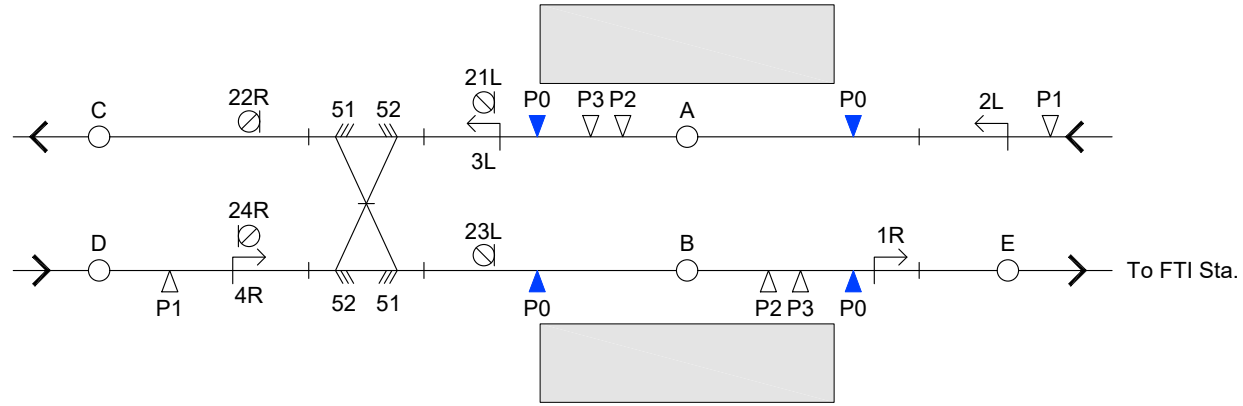
CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

MAIN LINE LAYOUT OF SIGNALING SYSTEM

DATE	July 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-SIG-0000-DD-0201
DRG S.	
REV	

Quirino Highway Station (0K000)



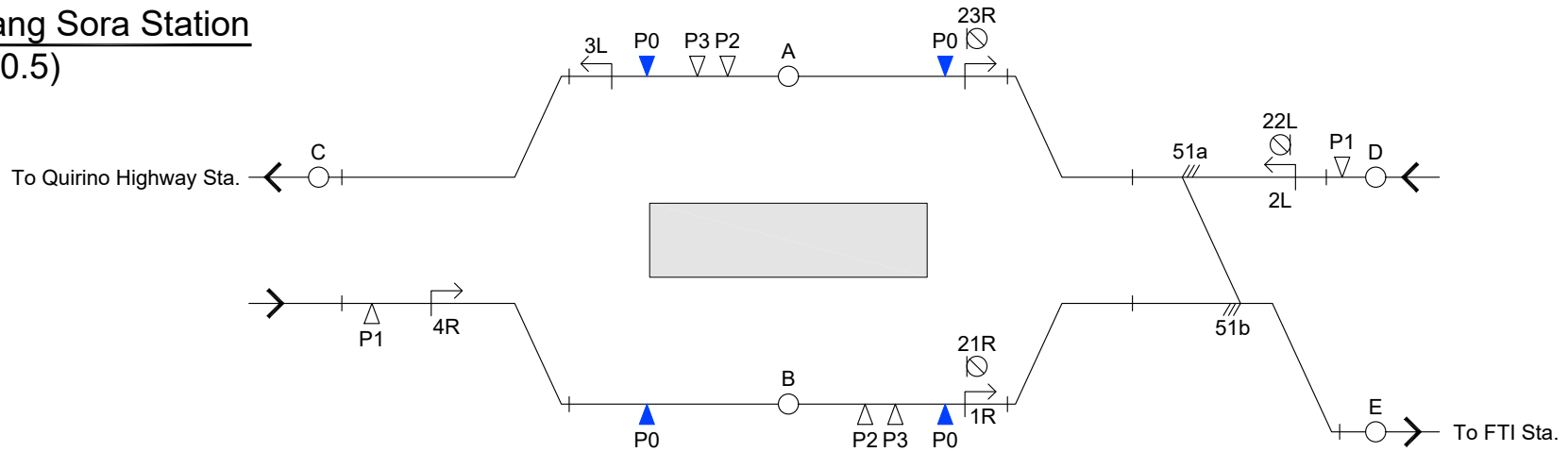
LEGEND:

- Beginning Point of Entrance and Departure Route
- Beginning Point of Shunting Signal
- Electronic Point Machine
- Track Circuit
- Block Section Between with Turnout Stations
- One Stop Sign Marker
- Buffer Stop
- End Point of Route
- Transponder for ORP
- Transponder for TASC with Power
- Transponder for Location Correction

Route Table

Route	Point Machine	
Entrance Route	2LA	-
	4RB	52 51
Shunting Route	21LC	52 51
	21LD	52 51
	23LC	51 52
	22RB	51 52
	24RA	52 51
	24RB	51 52
Departure Route	1RE	-
	3LC	51 52

Tandang Sora Station (1K710.5)



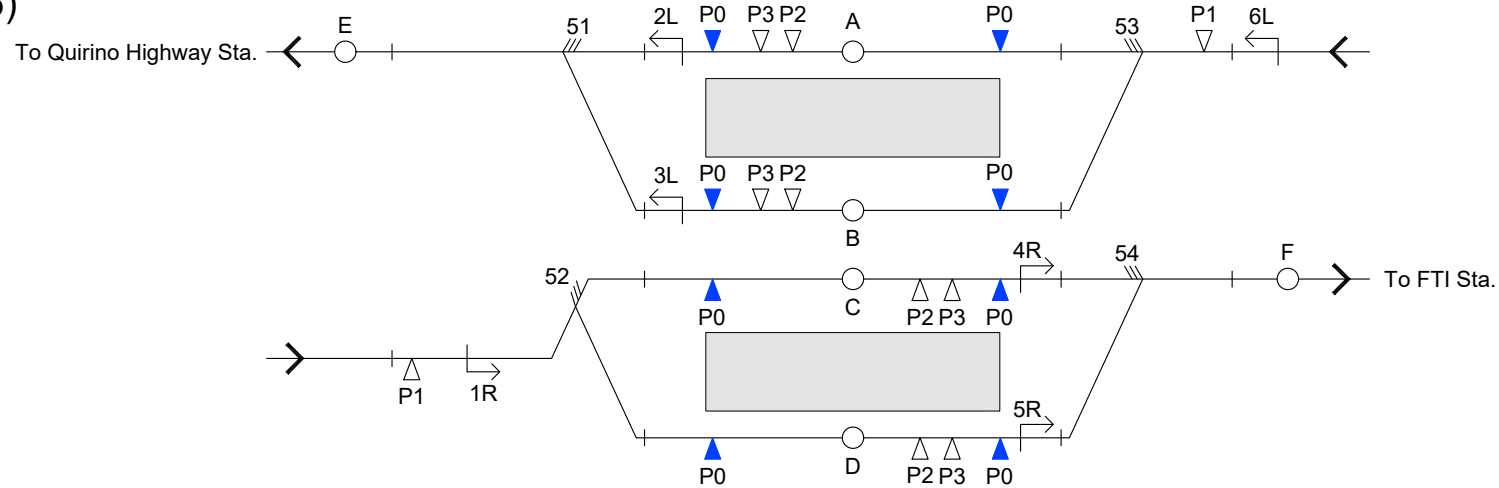
LEGEND:

- Beginning Point of Entrance and Departure Route
- Beginning Point of Shunting Signal
- Electronic Point Machine
- Track Circuit
- Block Section Between with Turnout Stations
- One Stop Sign Marker
- Buffer Stop
- End Point of Route
- Transponder for ORP
- Transponder for TASC with Power
- Transponder for Location Correction

Route Table

Route	Point Machine
Entrance Route	2LA
	4RB
Shunting Route	21RD
	23RD
	23RE
	21RE
	22LA
Departure Route	1RE
	3LC

North Avenue Station (3K886)



LEGEND:

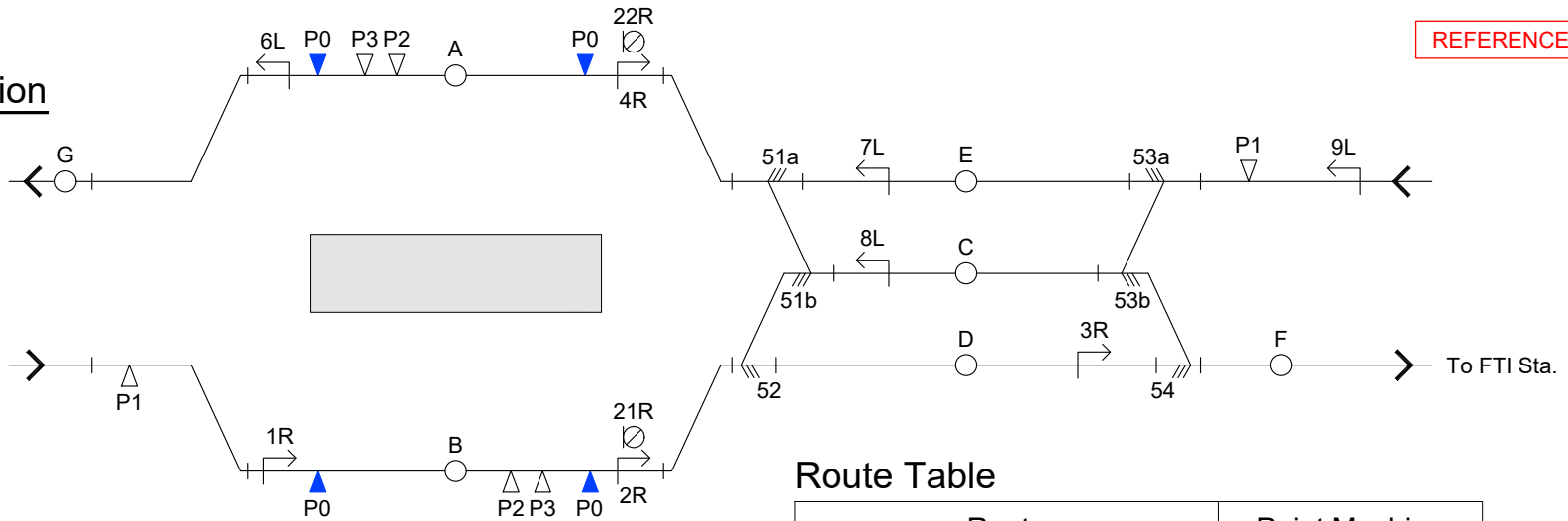
- Beginning Point of Entrance and Departure Route
- Beginning Point of Shunting Signal
- Electronic Point Machine
- Track Circuit
- Block Section Between with Turnout Stations
- One Stop Sign Marker
- Buffer Stop
- End Point of Route
- Transponder for ORP
- Transponder for TASC with Power
- Transponder for Location Correction

Route Table

Route	Point Machine	
Entrance Route	1RC	52
	1RD	52
	6LA	53
	6LB	53
Departure Route	2LE	51
	3LE	51
	4RF	54
	5RF	54

Ortigas North Station (13K771)

To Quirino Highway Sta. ←



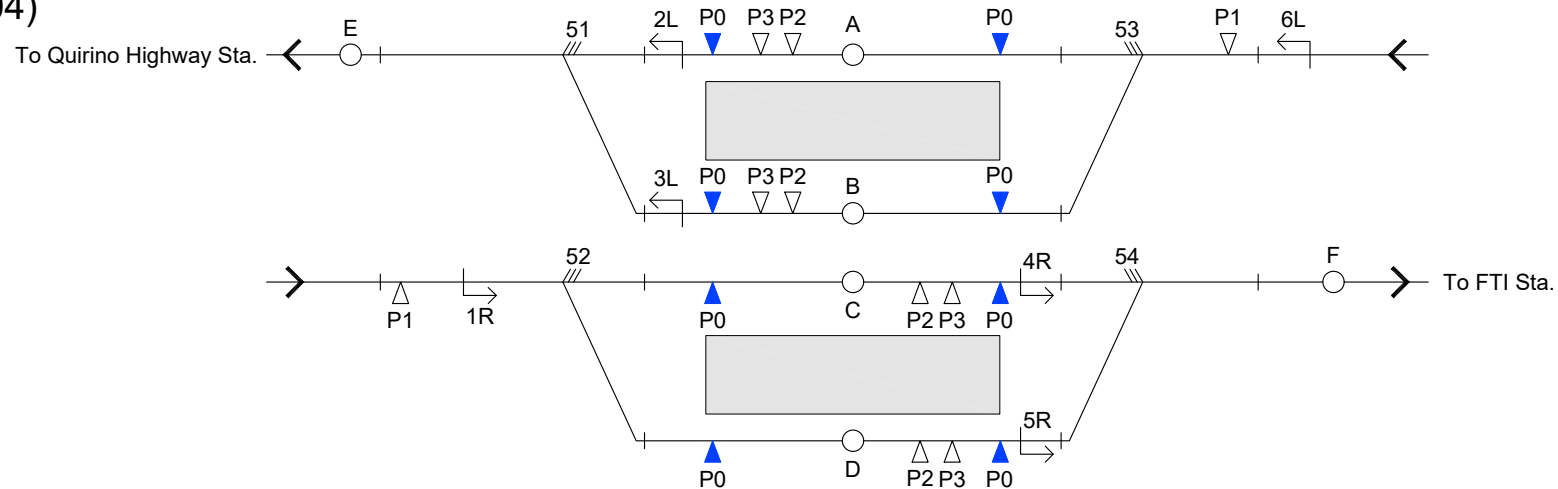
LEGEND:

- Beginning Point of Entrance and Departure Route
- Beginning Point of Shunting Signal
- Electronic Point Machine
- Track Circuit
- Block Section Between with Turnout Stations
- One Stop Sign Marker
- Buffer Stop
- End Point of Route
- Transponder for ORP
- Transponder for TASC with Power
- Transponder for Location Correction

Route Table

Route	Point Machine	
Entrance Route	1RB	-
	7LA	51
	9LE	53
	9LC	53 54
	8LA	51 52
	8LB	52 51
Shunting Route	21RC	52 51
	21RD	52
	22RE	51 52
	22RC	51 52
Departure Route	2RC	52 51
	2RD	52
	3RF	54
	6LG	-

Bonifacio Global City Station (18K204)



LEGEND:

- Beginning Point of Entrance and Departure Route
- Beginning Point of Shunting Signal
- Electronic Point Machine
- Track Circuit
- Block Section Between with Turnout Stations
- One Stop Sign Marker
- Buffer Stop
- End Point of Route
- Transponder for ORP
- Transponder for TASC with Power
- Transponder for Location Correction

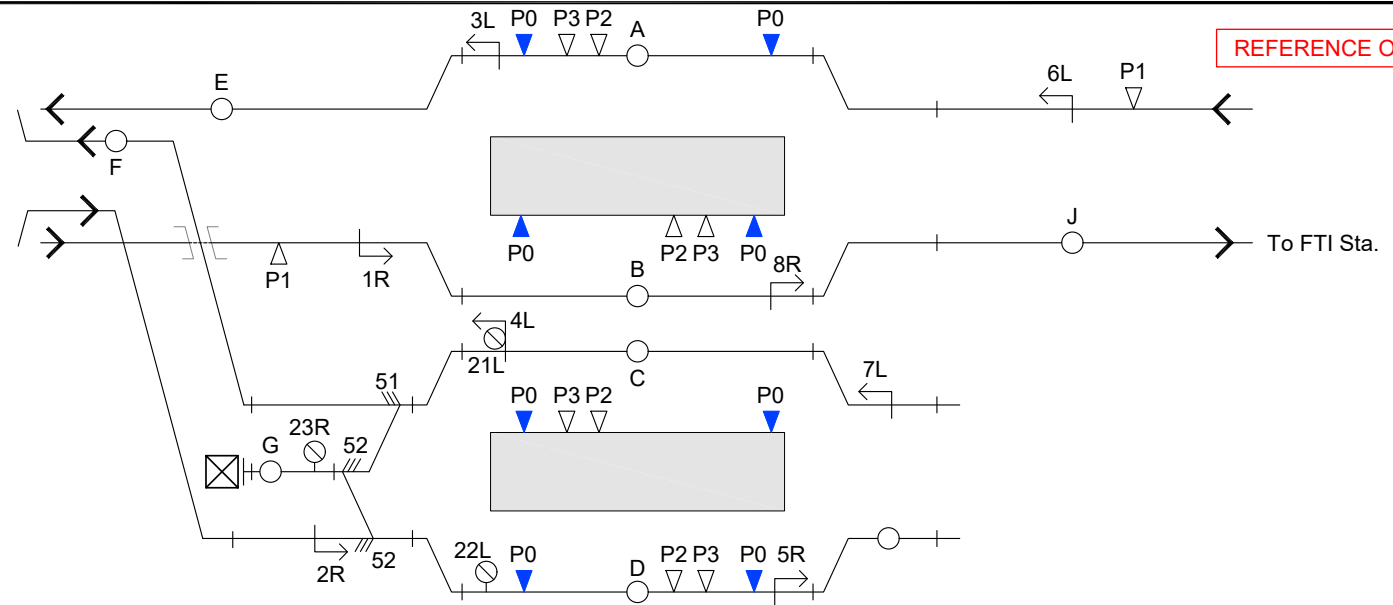
Route Table

Route	Point Machine	
Entrance Route	1RC	52
	1RD	52
	6LA	53
	6LB	53
Departure Route	2LE	51
	3LE	51
	4RF	54
	5RF	54
	5RF	54

Lawton West Station (22K145)

To Quirino Highway Sta.

REFERENCE ONLY



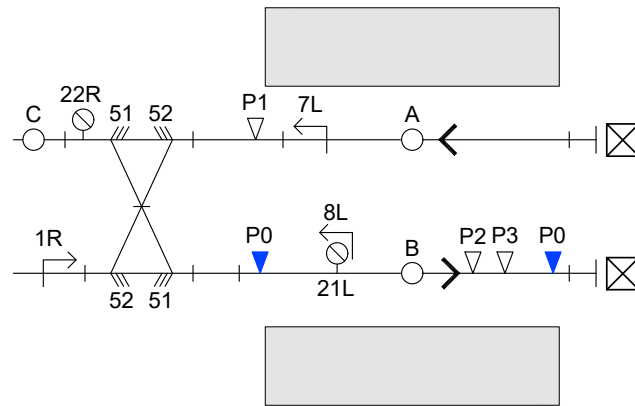
LEGEND:

- ↳ Beginning Point of Entrance and Departure Route
- ⊗ Beginning Point of Shunting Signal
- ↳ Electronic Point Machine
- +— Track Circuit
- +— Block Section Between with Turnout Stations
- ⊞ One Stop Sign Marker
- ⊗ Buffer Stop
- End Point of Route
- ▲ Transponder for ORP
- ▲ Transponder for TASC with Power
- △ Transponder for Location Correction

Route Table

Route	Point Machine	
Entrance Route	1RB	-
	2RD	52
	6LA	-
	7LC	-
Departure Route	3LE	-
	4LF	51
	5RI	-
	8RJ	-
Shunting Route	21LG	51
	22LG	52 51
	23RC	52 51
	23RD	52 52

NAIA T3 Station (23K622)



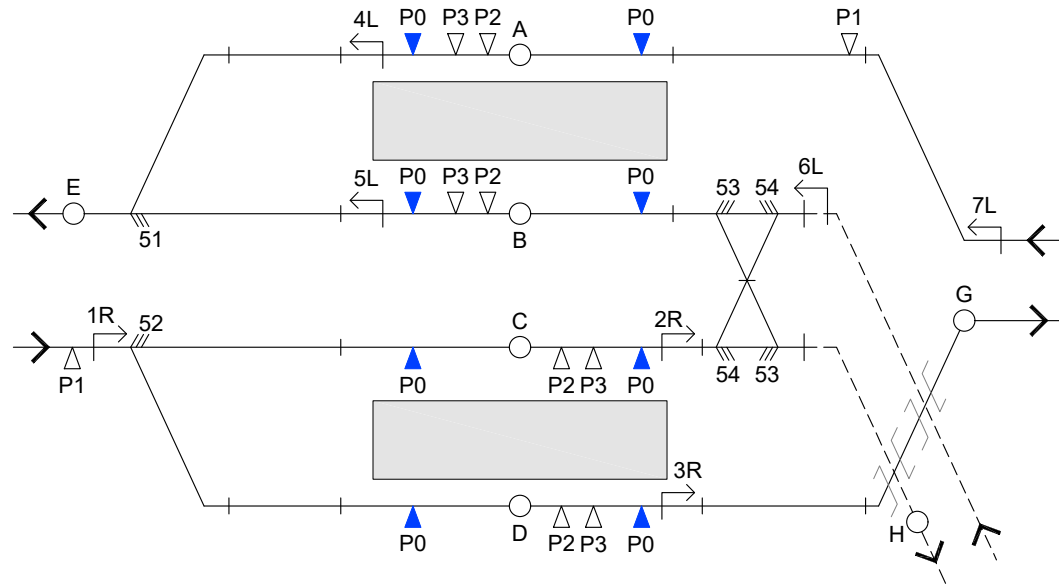
LEGEND:

- Beginning Point of Entrance and Departure Route
- Beginning Point of Shunting Signal
- Electronic Point Machine
- Track Circuit
- Block Section Between with Turnout Stations
- One Stop Sign Marker
- Buffer Stop
- End Point of Route
- Transponder for ORP
- Transponder for TASC with Power
- Transponder for Location Correction

Route Table

Route	Point Machine
Entrance Route	1RB 51 52
	1RA 51 (52)
Departure Route	7LC 51 52
	8LC (51) 52
Shunting Route	21LC (51) 52
	22RA 51 52

FTI Station (26K110)



LEGEND:

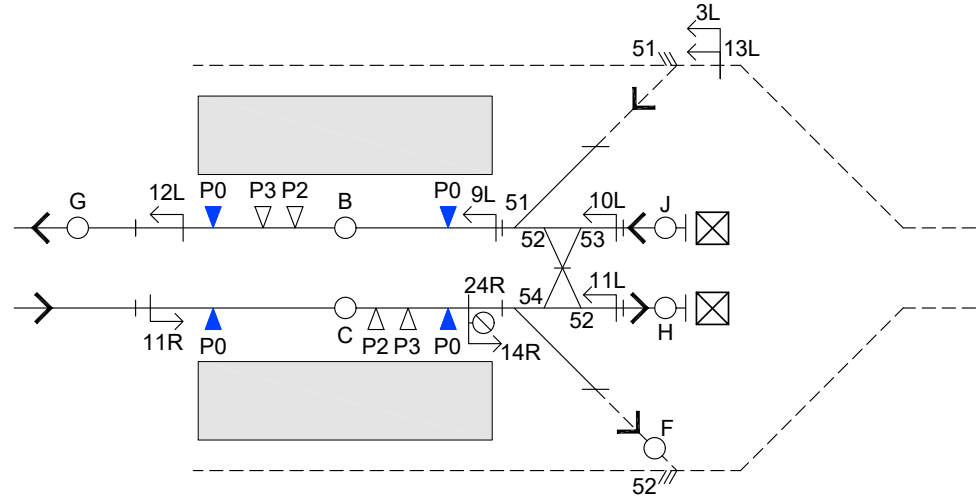
- Beginning Point of Entrance and Departure Route
- Beginning Point of Shunting Signal
- Electronic Point Machine
- Track Circuit
- Block Section Between with Turnout Stations
- One Stop Sign Marker
- Buffer Stop
- End Point of Route
- Transponder for ORP
- Transponder for TASC with Power
- Transponder for Location Correction

Route Table

Route	Point Machine	
Entrance Route	1RD	52
	1RC	52
	7LA	-
	6LB	53 54
Departure Route	4LE	52
	5LE	52
	2RH	53 54
	3RG	-

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE March 2019
			<p>JICA DESIGN TEAM</p>			SCALE N.T.S.	
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p>			SHEET No.	
			<p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			DRG No. MMSP-SIG-0000-DD-0309	
			<p>TRACK LAYOUT AND ROUTE TABLE FOR FTI STATION</p>			DRG S. REV	

Bicutan Station (27K891)



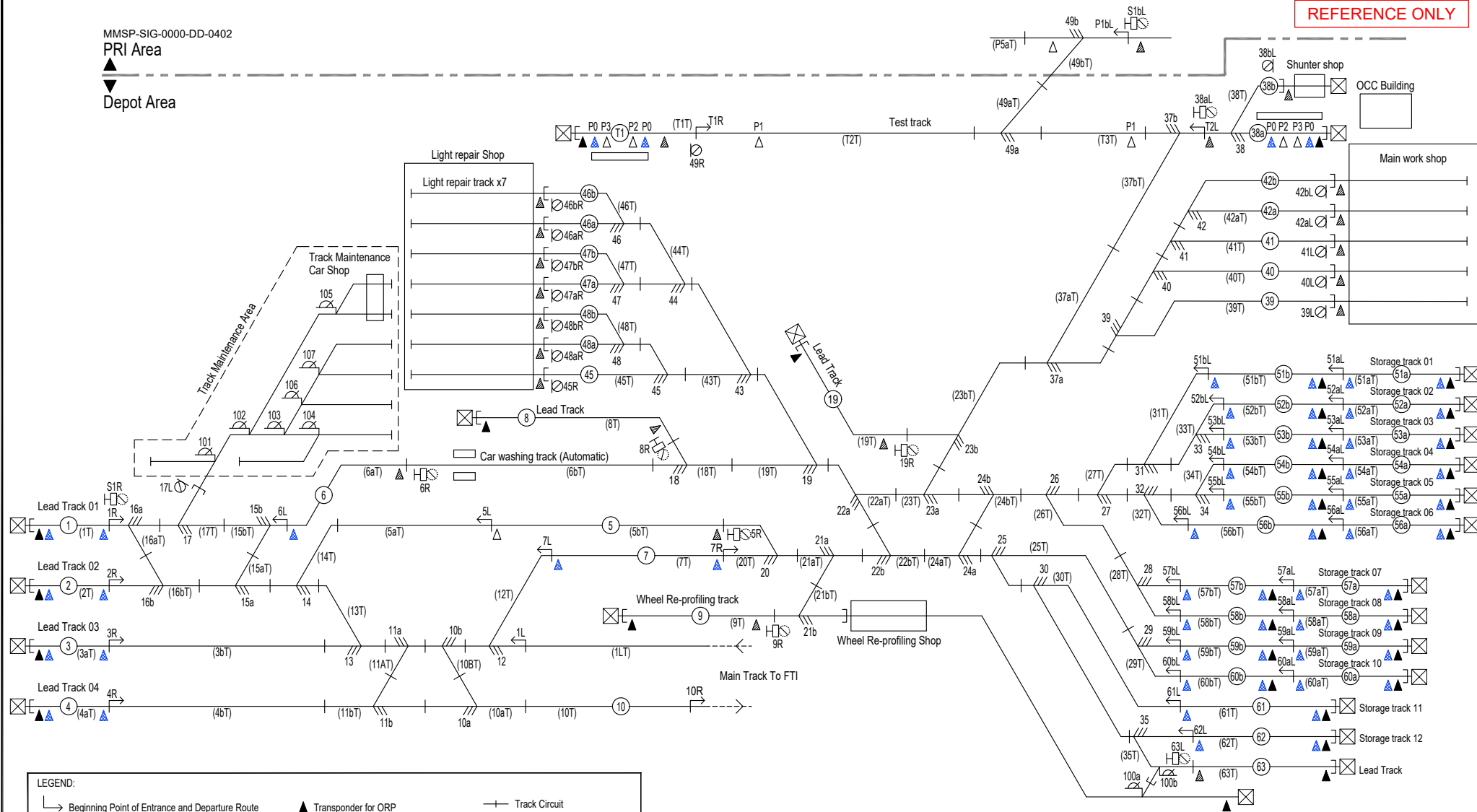
LEGEND:

- Beginning Point of Entrance and Departure Route
- Beginning Point of Shunting Signal
- Electronic Point Machine
- Track Circuit
- Block Section Between with Turnout Stations
- One Stop Sign Marker
- Buffer Stop
- End Point of Route
- Transponder for ORP
- Transponder for TASC with Power
- Transponder for Location Correction

Route Table

Route	Point Machine	
Entrance Route	11RC	-
	9LB	-
	13LB	51
Departure Route	12LG	-
	14RF	54
Shunting Route	24RJ	52 53
	10LB	52 53 51
	24RH	54 53 52
	11LB	52 53 51

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			<p>JICA DESIGN TEAM</p>			<p>March 2019</p>		
			<p>DESIGNER</p>			<p>SCALE</p> <p>N.T.S.</p>		
			<p>CHECK</p>			<p>SHEET No.</p>		
			<p>TEAM LEADER</p>			<p>DRG No.</p> <p>MMSP-SIG-0000-DD-0310</p>		
			<p>PR. MANAGER</p>			<p>DRG S.</p>		REV
						<p>TRACK LAYOUT AND ROUTE TABLE FOR BICUTAN STATION</p>		



LEGEND:

↳ Beginning Point of Entrance and Departure Route	▲ Transponder for ORP	—+— Track Circuit
⊗ Beginning Point of Shunting Signal	▲ Transponder for TASC with Power	—+— One Stop Sign Marker
H Route Indicator	△ Transponder for Location Correction	⊠ Buffer Stop
→ Electronic Point Machine	▲ Transponder for Stop Control	○ End Point of Route
↗ Point with Lever		

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

	ORIENTAL CONSULTANTS GLOBAL CO.,LTD.		KATAHIRA & ENGINEERS INTERNATIONAL
	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

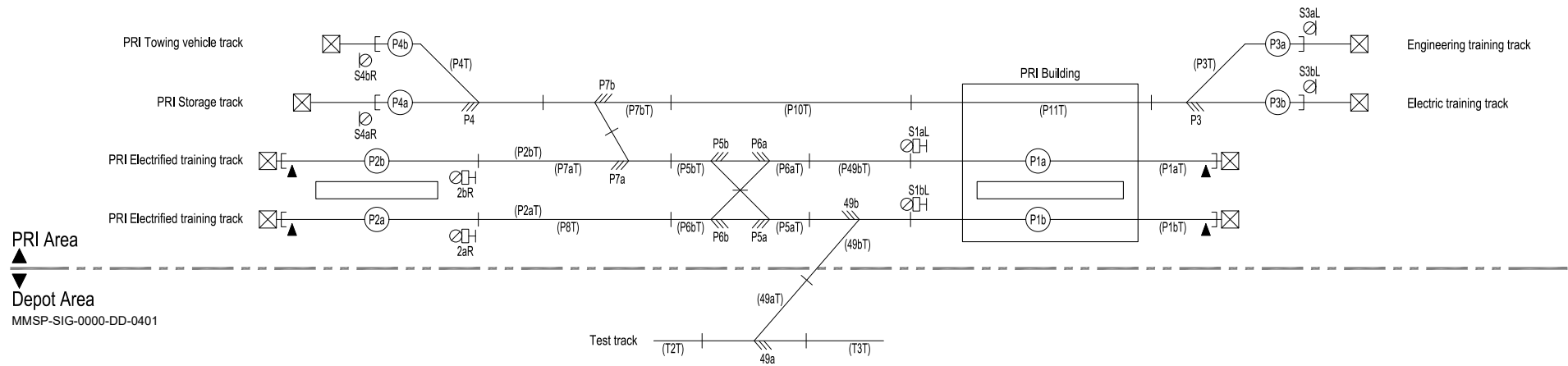
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP106

SIGNALING LAYOUT IN DEPOT

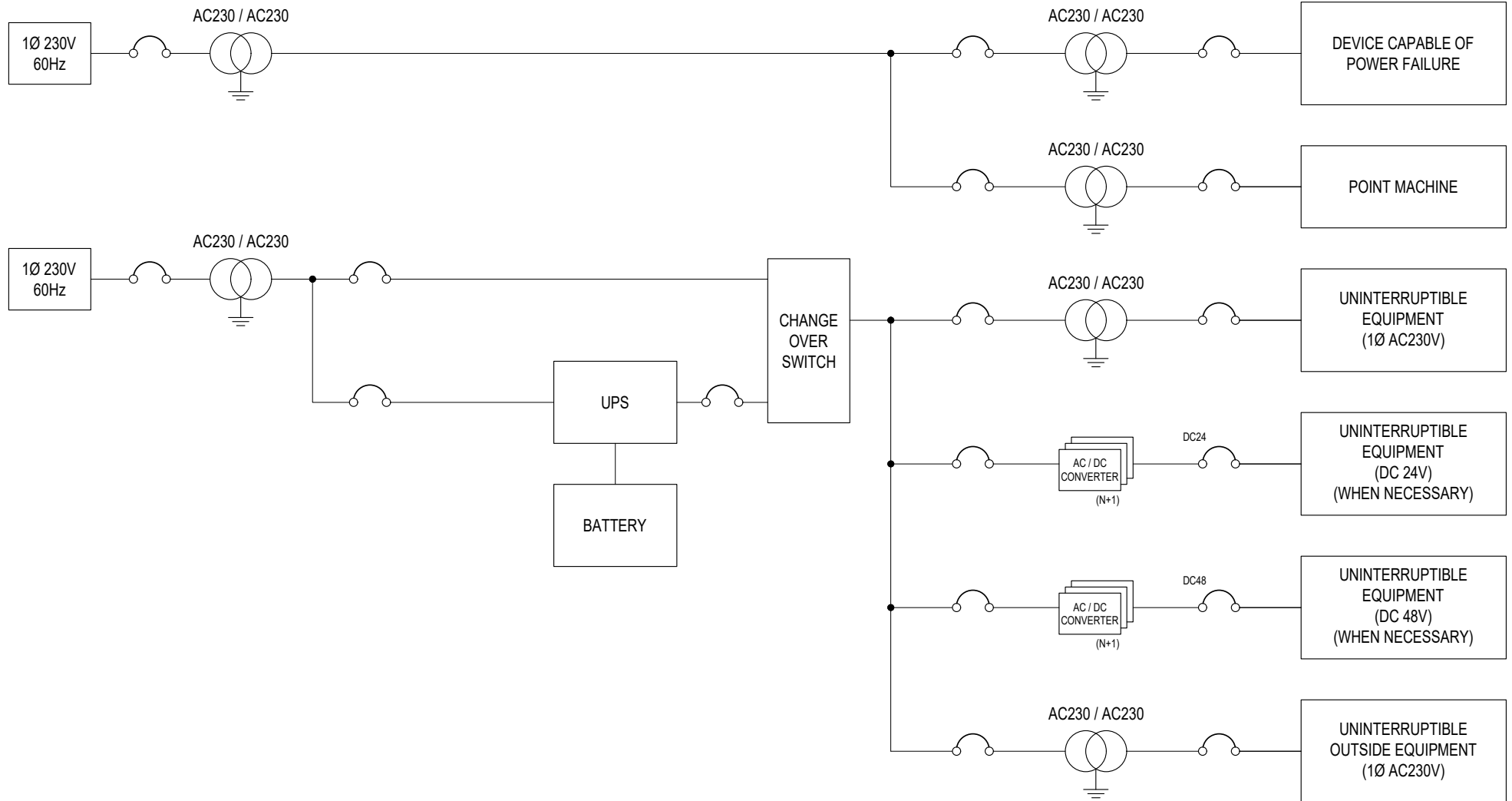
DATE	April 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	M MSP-SIG-0000-DD-0401
DRG S.	REV



LEGEND:

Beginning Point of Entrance and Departure Route	Transponder for ORP	Track Circuit
Beginning Point of Shunting Signal	Transponder for TASC with Power	One Stop Sign Marker
Route Indicator	Transponder for Location Correction	Buffer Stop
Electronic Point Machine	Transponder for Stop Control	End Point of Route
Point with Lever		

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : CP106	DATE April 2019
			<p>JICA DESIGN TEAM</p>			<p>SIGNALING LAYOUT IN PRI</p>	SCALE N.T.S.
							SHEET No.
							DRG No. MMSP-SIG-0000-DD-0402
							DRG S. REV



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

 TOKYO METRO CO., LTD.

 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

 ALMEC CORPORATION

 KATAHIRA & ENGINEERS INTERNATIONAL

 PACIFIC CONSULTANTS CO.,LTD.

 TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
POWER SUPPLY FOR SIGNALING SYSTEM

DATE	Jan. 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-SIG-0000-DD-0501
DRG S.	REV

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
TELECOMMUNICATION SYSTEM

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

DATE	Nov. 2019
SCALE	
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0000
DRG S.	REV

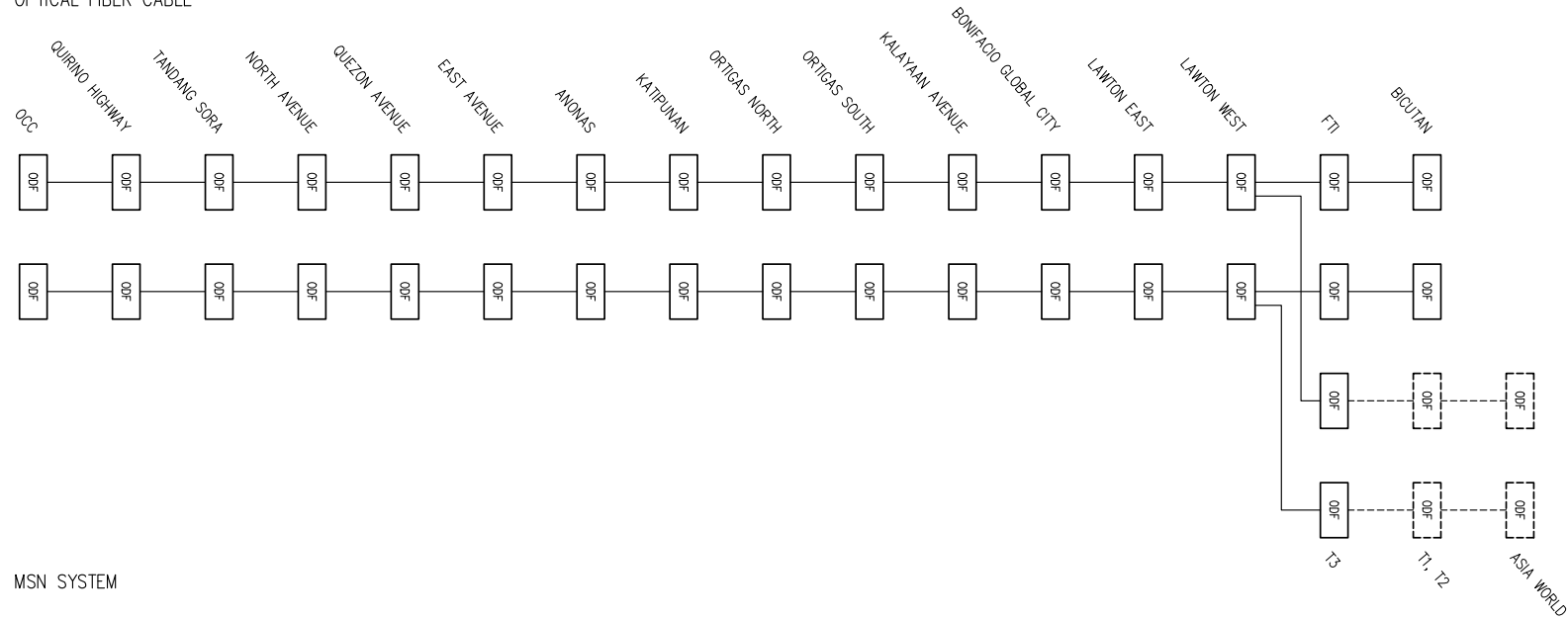
TELECOMMUNICATION SYSTEM

DRAWING INDEX

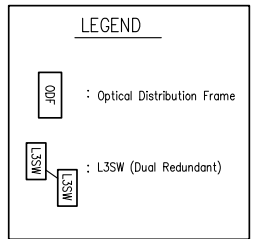
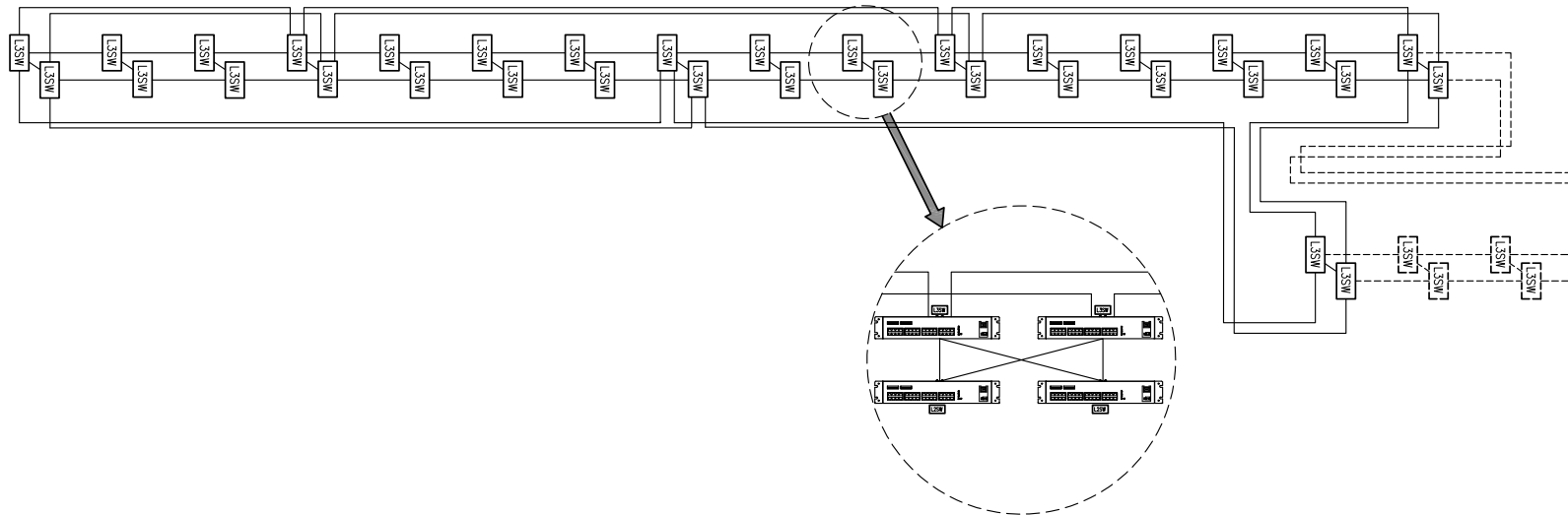
DRAWING No.	CONTENTS
MMSP-COM-0000-DD-0000	TELECOMMUNICATION SYSTEM COVER SHEET
MMSP-COM-0000-DD-0001	TELECOMMUNICATION SYSTEM DRAWING INDEX
MMSP-COM-0000-DD-0101	MSN SYSTEM
MMSP-COM-0000-DD-0102	RADIO SYSTEM
MMSP-COM-0000-DD-0103	TELEPHONE SYSTEM
MMSP-COM-0000-DD-0104	CCTV AND VIDEO TRANSMITTING SYSTEM
MMSP-COM-0000-DD-0105	PASSENGER INFORMATION DISPLAY SYSTEM
MMSP-COM-0000-DD-0106	PUBLIC ADDRESS SYSTEM
MMSP-COM-0000-DD-0107	CLOCK SYSTEM
MMSP-COM-0009	DISASTER PREVENTION SYSTEM
MMSP-COM-0000-DD-0109	TELECOMMUNICATION EQUIPMENT MONITORING SYSTEM

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE
			JICA DESIGN TEAM				Jan. 2019
			DEPARTMENT OF TRANSPORTATION (DOTr)				N.T.S.
			JICA				SHEET No.
			JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			TELECOMMUNICATION SYSTEM DRAWING INDEX	DRG No. MMSP-COM-0000-DD-0001
			ORIENTAL CONSULTANTS GLOBAL CO.,LTD.			TITLE	DRG S.
			KATAHIRA & ENGINEERS INTERNATIONAL			DESIGNER	REV
			TOKYO METRO CO., LTD.			NAME	
			PACIFIC CONSULTANTS CO.,LTD.			SIGNATURE	
			JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.			CHECK	
			TONICHI ENGINEERING CONSULTANTS, INC.			TEAM LEADER	
			ALMEC CORPORATION			PR. MANAGER	

OPTICAL FIBER CABLE



MSN SYSTEM



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CONSULTANT

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.	 KATAHIRA & ENGINEERS INTERNATIONAL
 TOKYO METRO CO., LTD.	 PACIFIC CONSULTANTS CO.,LTD.
 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.	 TONICHI ENGINEERING CONSULTANTS, INC.
 ALMEC CORPORATION	

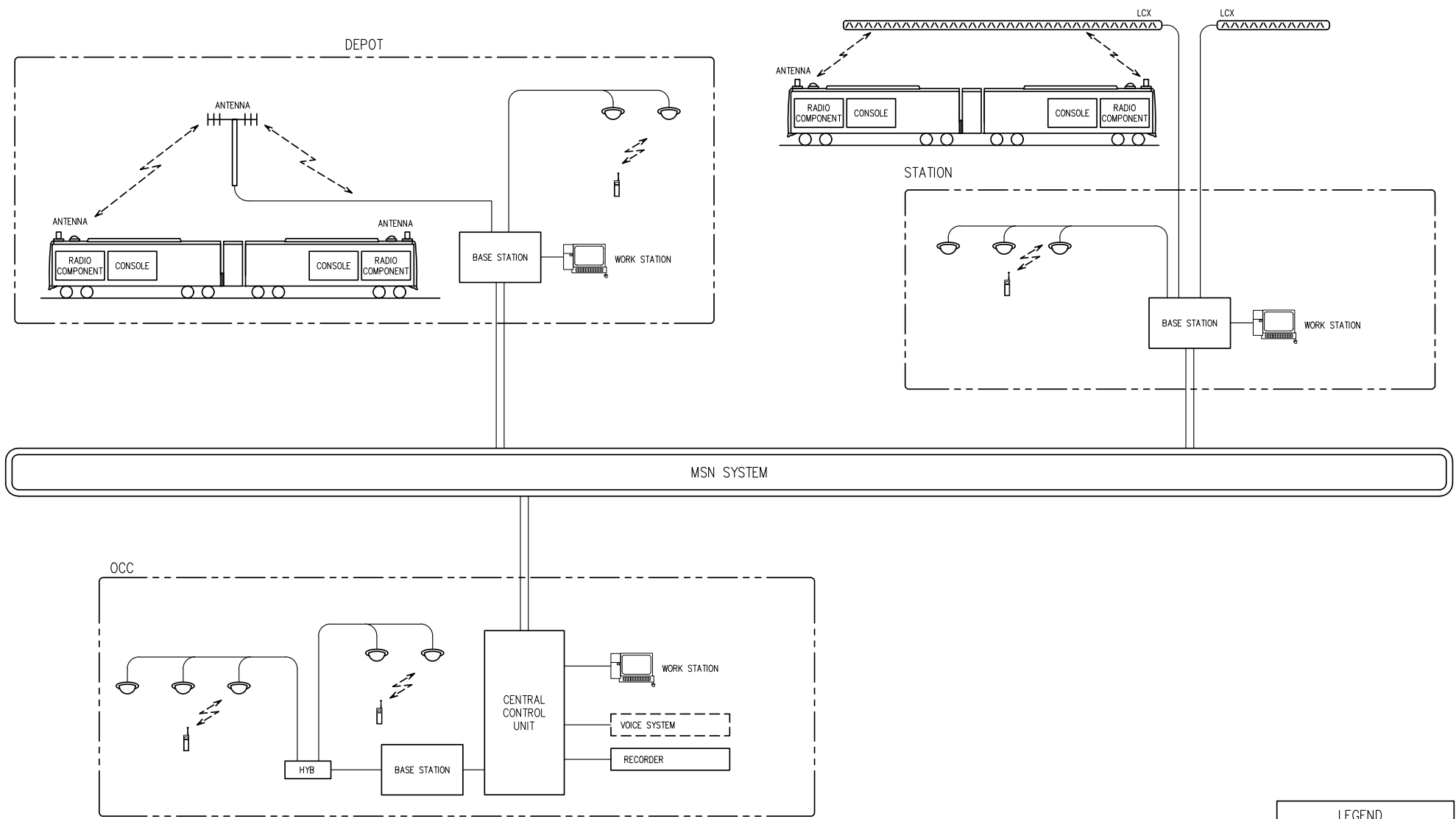
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106

MSN SYSTEM

DATE	Jan. 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0101
DRG S.	REV

REFERENCE ONLY



LEGEND

- : Portable Radio
- : Leaky Coaxial Cable
- : Antenna (indoor)

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- KATAHIRA & ENGINEERS INTERNATIONAL
- TOKYO METRO CO., LTD.
- PACIFIC CONSULTANTS CO.,LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.
- ALMEC CORPORATION

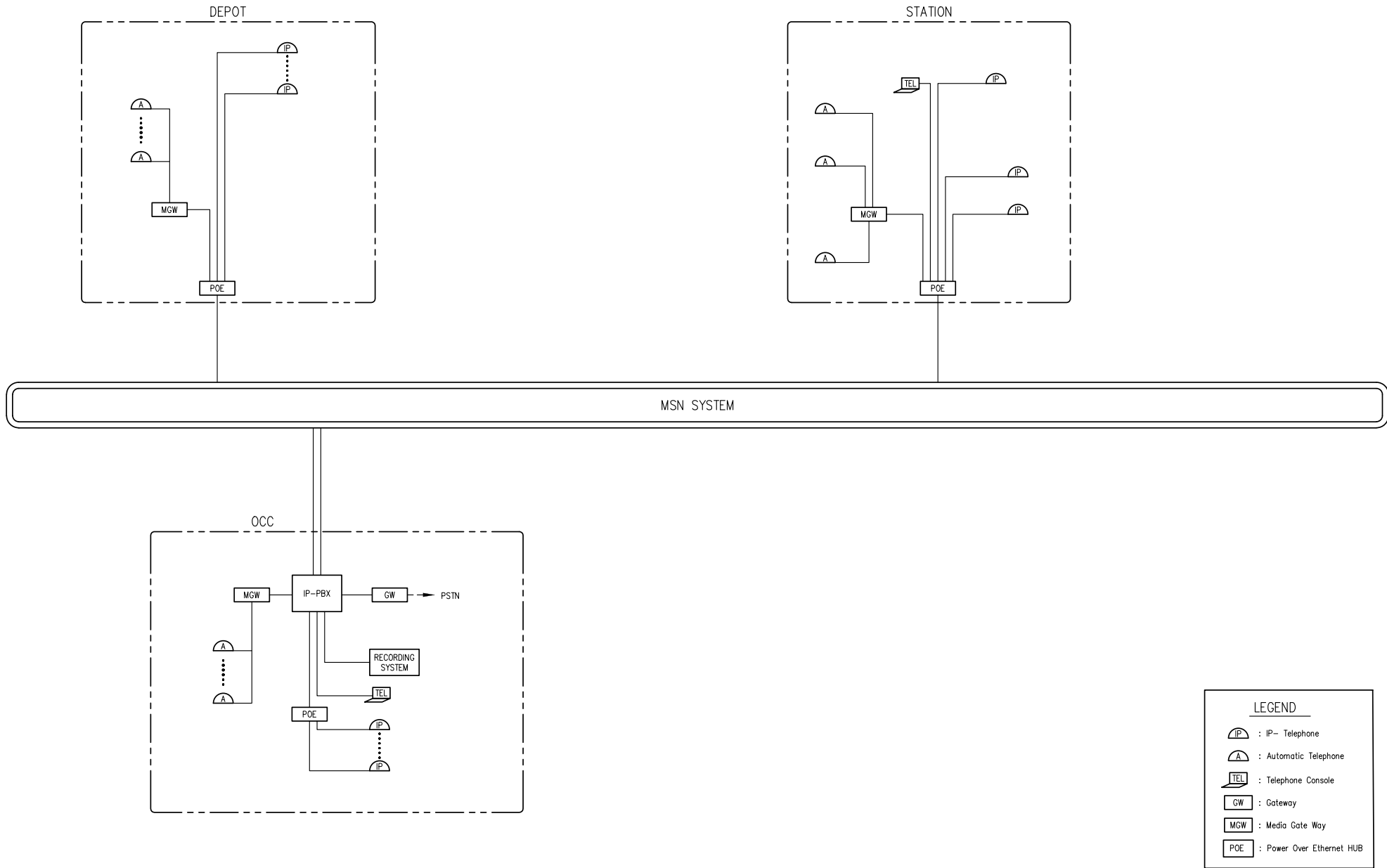
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP106

RADIO SYSTEM

DATE	Jan. 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0102
DRG S.	REV



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOT)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

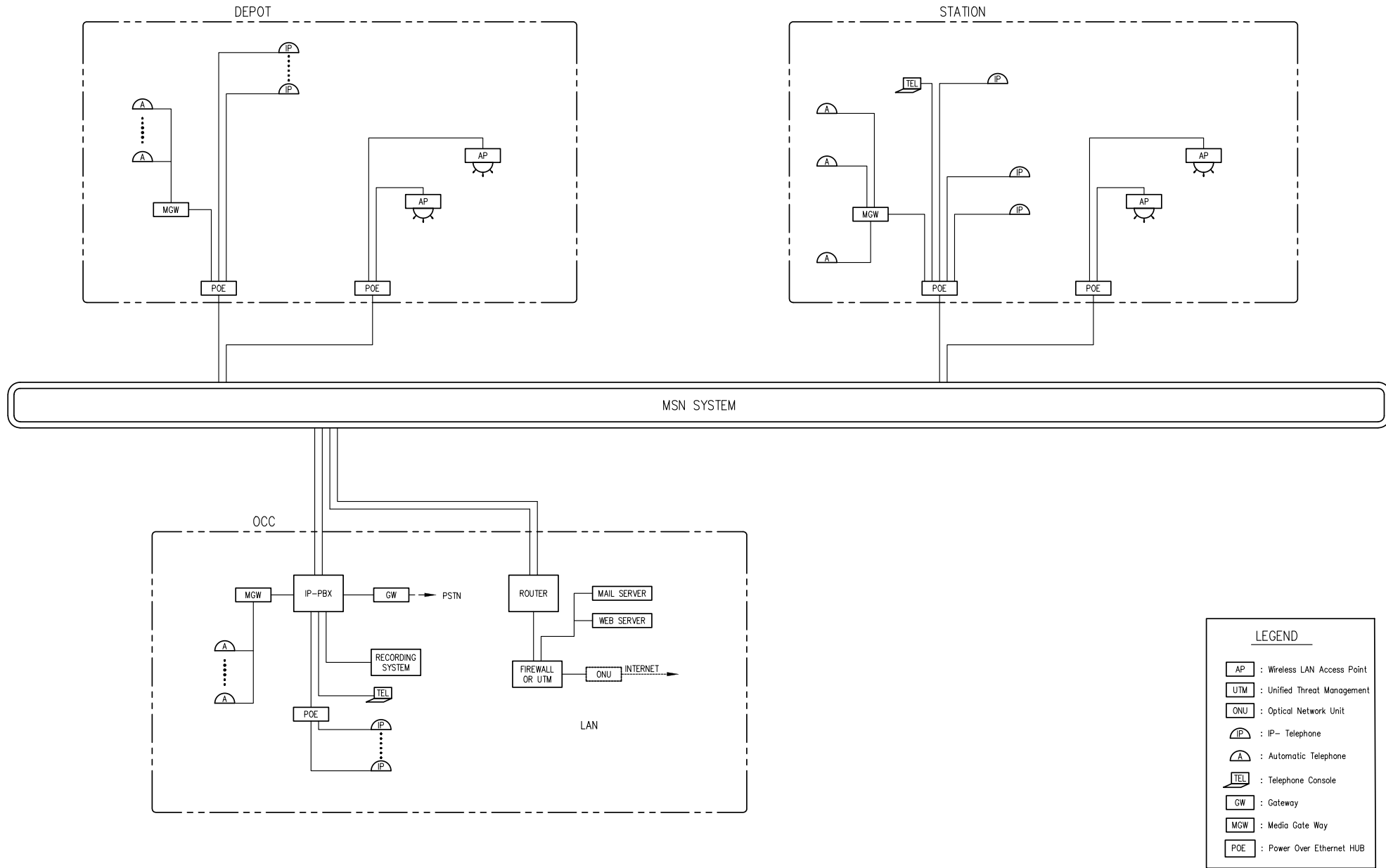
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	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

**TELEPHONE SYSTEM
(SHEET 1 OF 2)**

DATE	
	Jan. 2019
SCALE	
	N.T.S.
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0103
DRG S.	
	REV



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

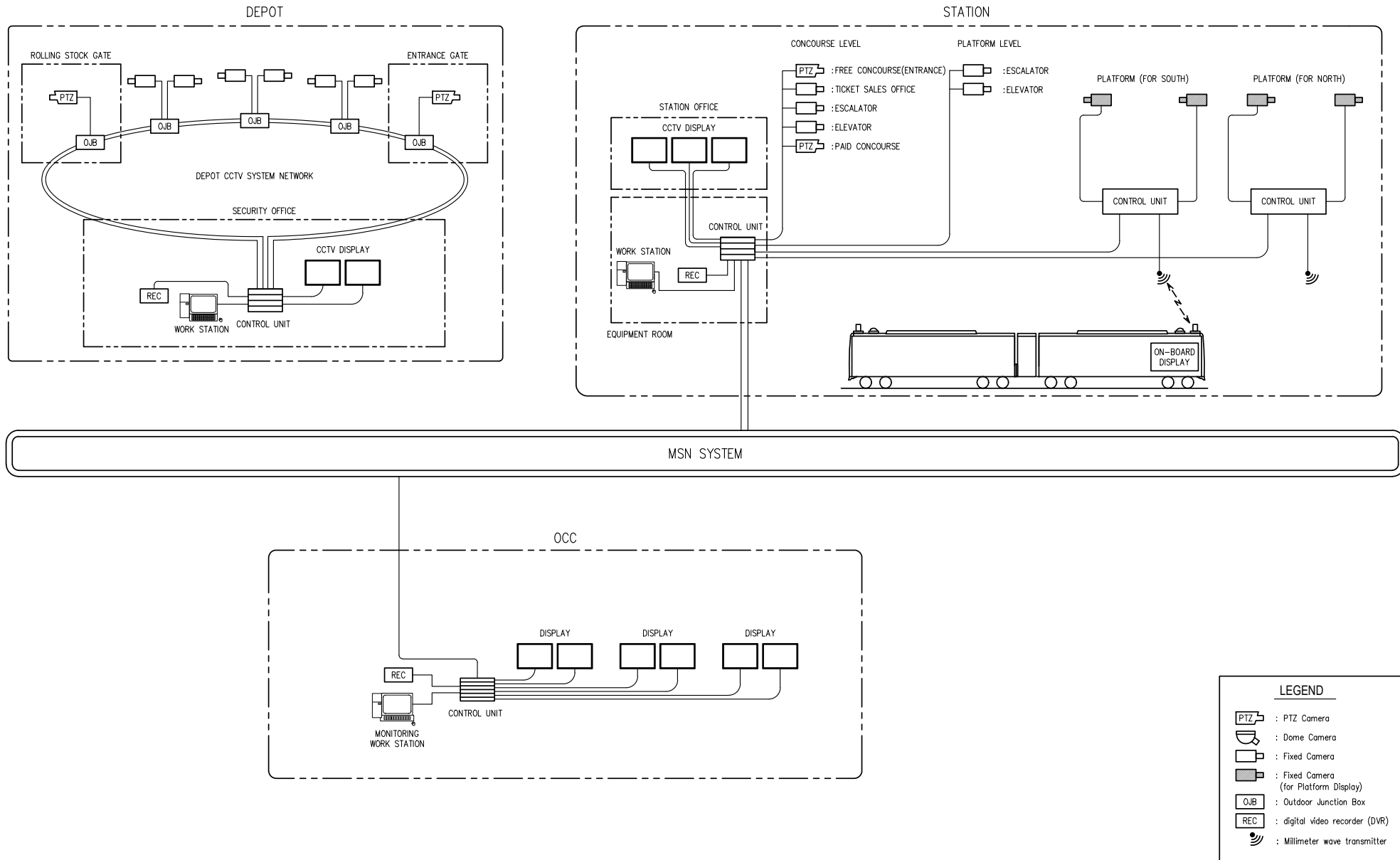
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- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

**TELEPHONE SYSTEM
(SHEET 2 OF 2)**

DATE	
	Jan. 2019
SCALE	
	N.T.S.
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0103
DRG S.	
	REV



LEGEND	
	: PTZ Camera
	: Dome Camera
	: Fixed Camera
	: Fixed Camera (for Platform Display)
	: Outdoor Junction Box
	: digital video recorder (DVR)
	: Millimeter wave transmitter

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

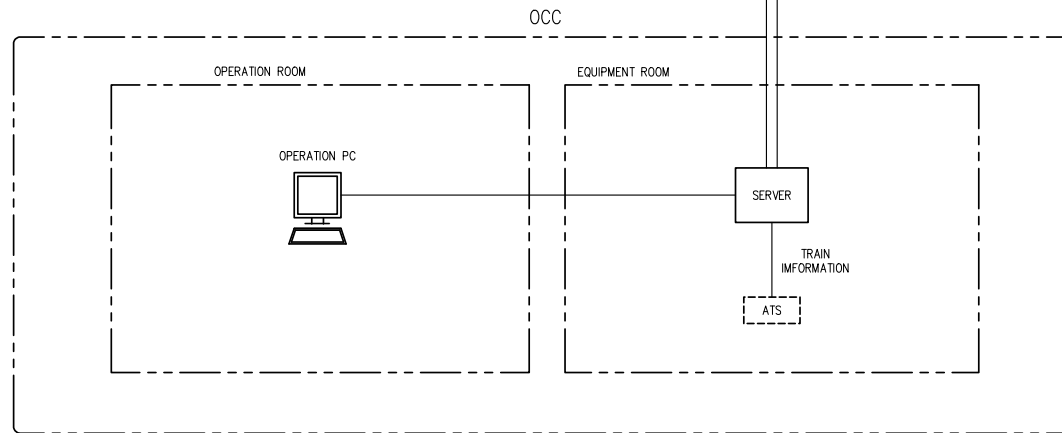
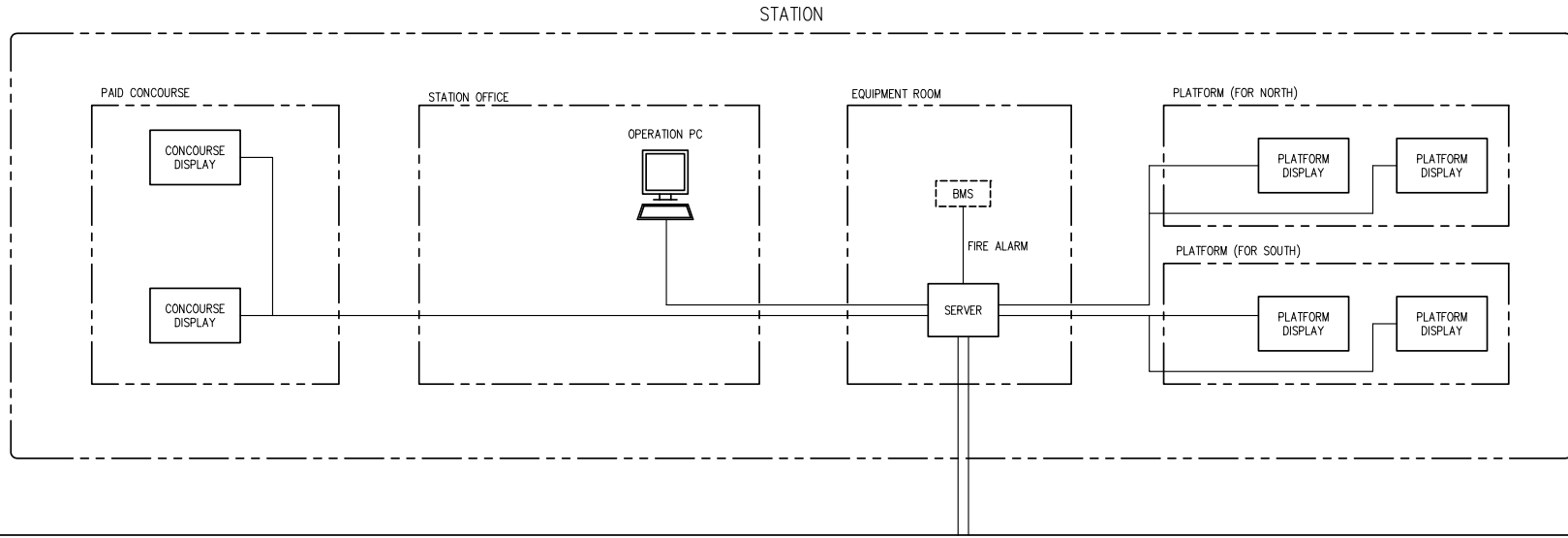
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	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

CCTV SYSTEM AND VIDEO TRANSMITTING SYSTEM

DATE	
	Jan. 2019
SCALE	
	N.T.S.
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0104
DRG S.	
	REV



LEGEND

BMS	: BUILDING MANAGEMENT SYSTEM
ATS	: AUTOMATIC TRAIN SUPERVISION

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

	ORIENTAL CONSULTANTS GLOBAL CO.,LTD.		KATAHIRA & ENGINEERS INTERNATIONAL
	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

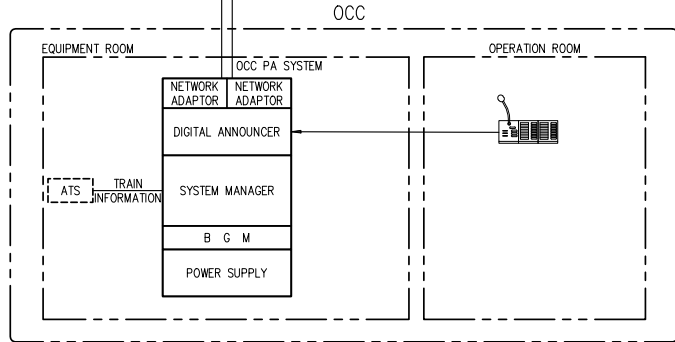
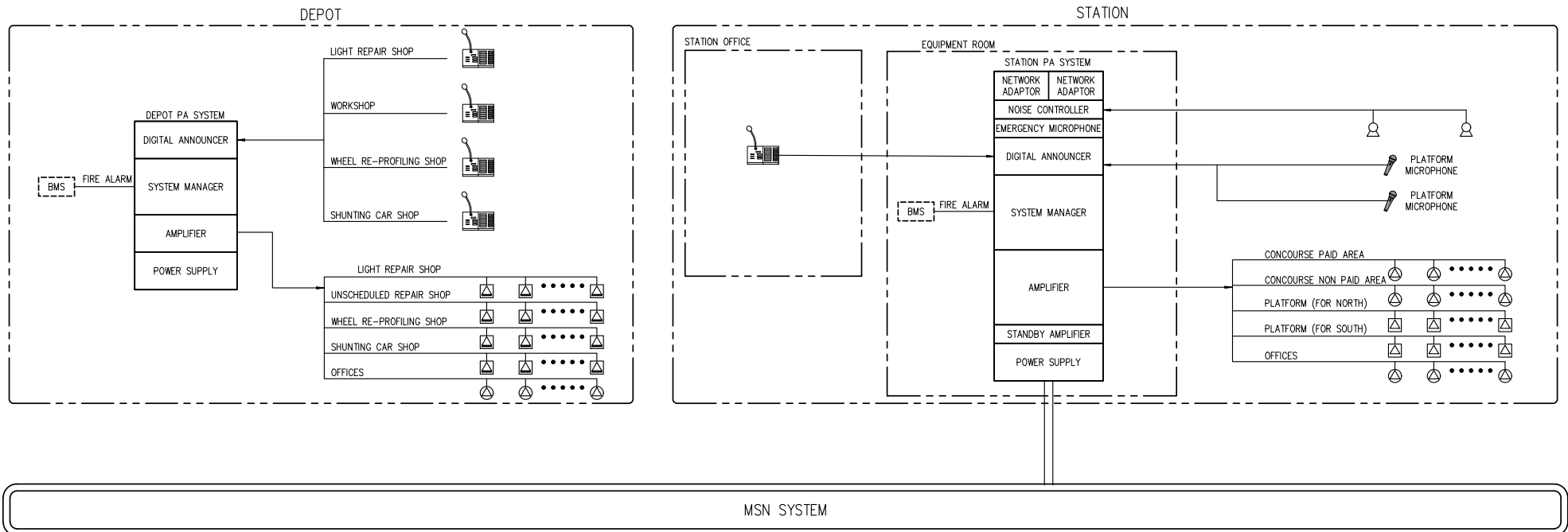
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106

PASSENGER INFORMATION DISPLAY SYSTEM

DATE	Jan. 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0105
DRG S.	
REV	



LEGEND

- : NOISE SENSOR
- : CEILING SPEAKER
- : PROJECTION SPEAKER
- : HORN SPEAKER
- : MIC CONSOLE
- : MIC CONSOLE WITH EXTENSION
- : BUILDING MANAGEMENT SYSTEM
- : AUTOMATIC TRAIN SUPERVISION

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

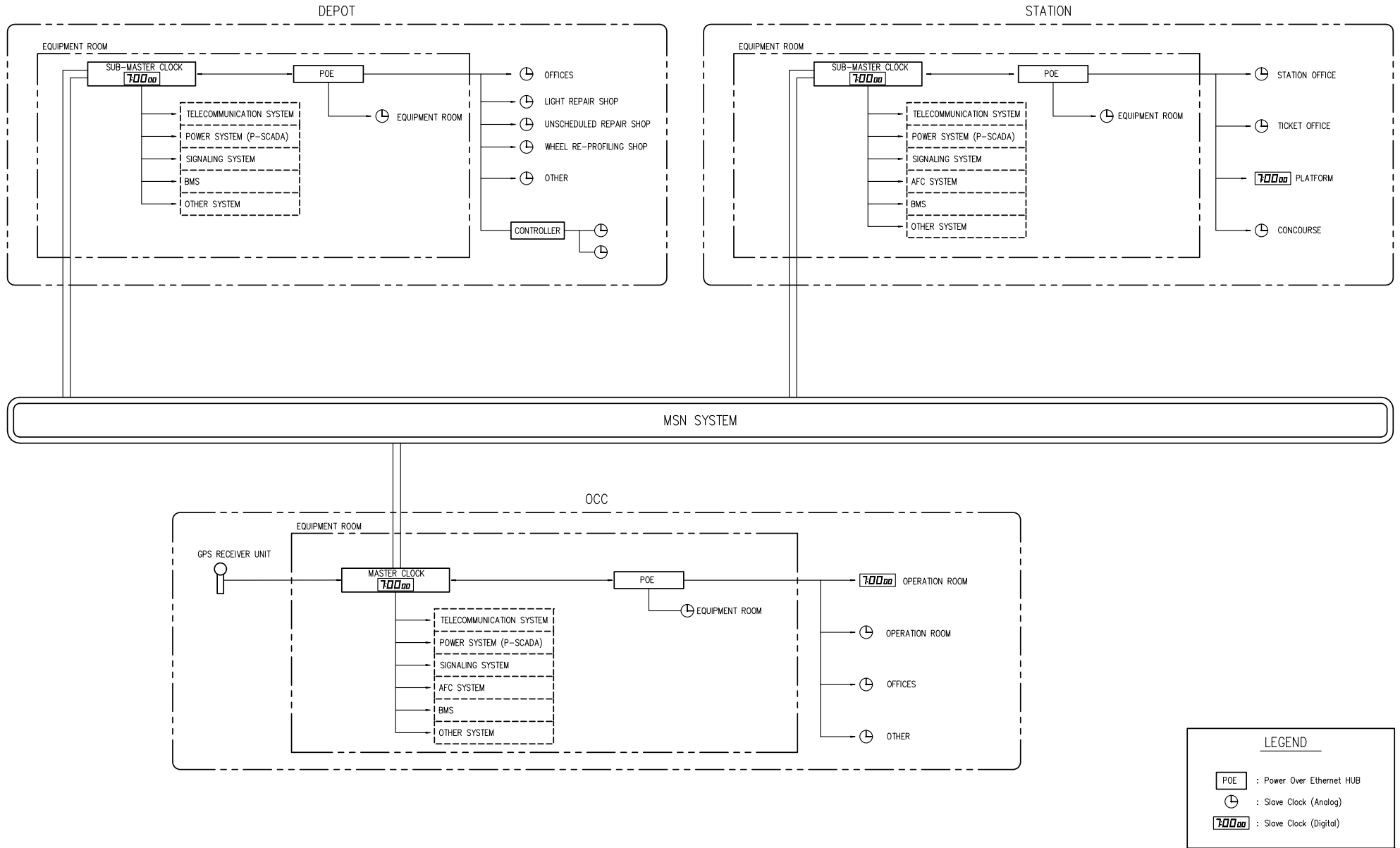
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

PUBLIC ADDRESS SYSTEM

DATE	Jan. 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0106
DRG S.	
REV	










VERSIONS	DATE	DESCRIPTION


DEPARTMENT OF TRANSPORTATION (DOTR)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.	 KATAHIRA & ENGINEERS INTERNATIONAL
 TOKYO METRO CO., LTD.	 PACIFIC CONSULTANTS CO.,LTD.
 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.	 TONICHI ENGINEERING CONSULTANTS, INC.
 ALMEC CORPORATION	

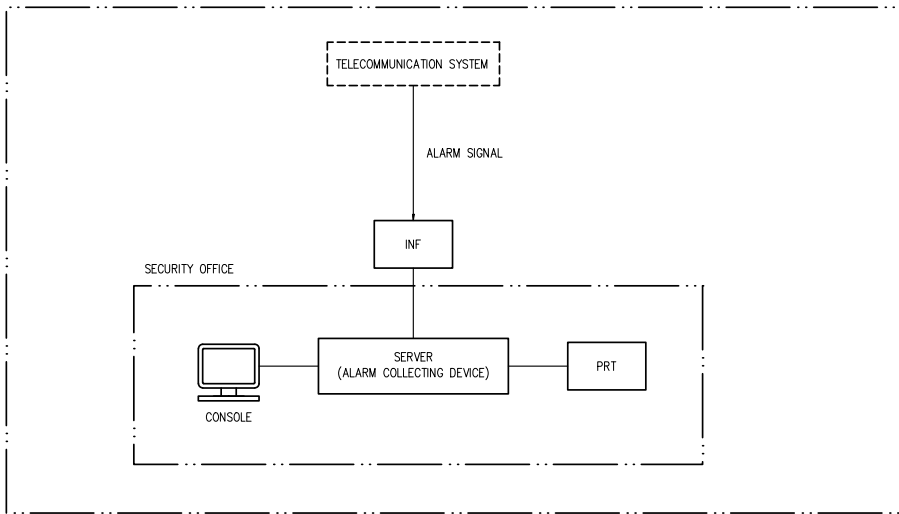
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TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106

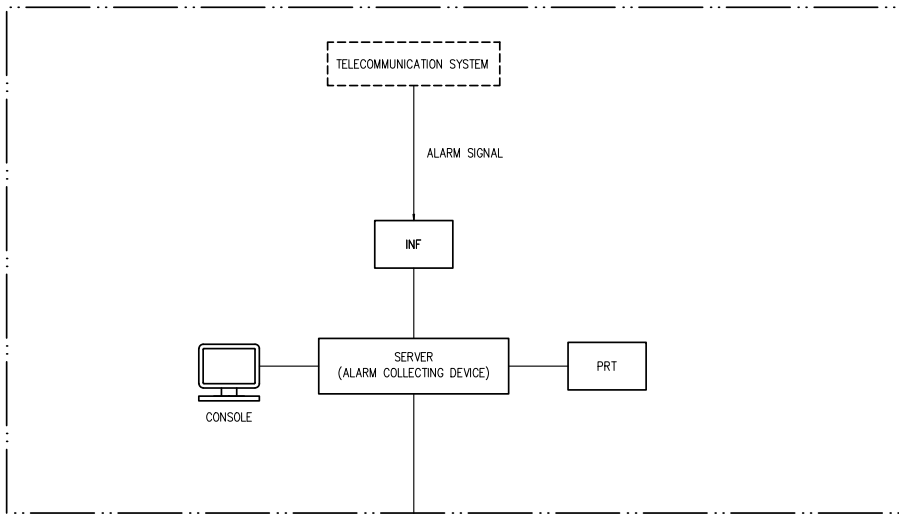
CLOCK SYSTEM

DATE	
	Jan. 2019
SCALE	
	N.T.S.
SHEET No.	
DRG No.	
	MMSP-COM-0000-DD-0107
DRG S.	
	REV

DEPOT

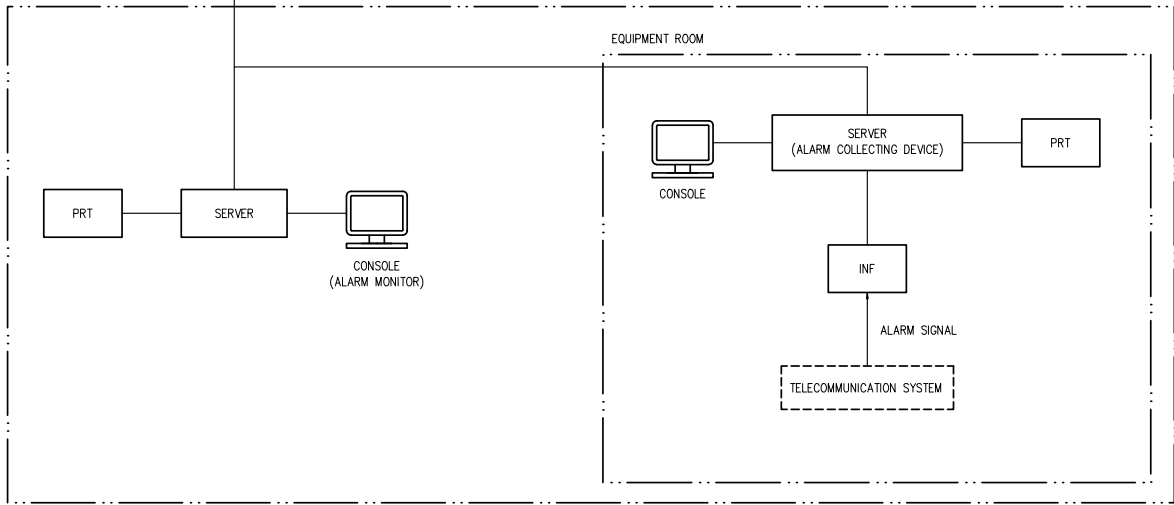


STATION



MSN SYSTEM

OCC



LEGEND

- INF : Interface Converter (Ethernet, Relay Contact, Serial Data, etc.)
- PRT : Printer

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOT)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

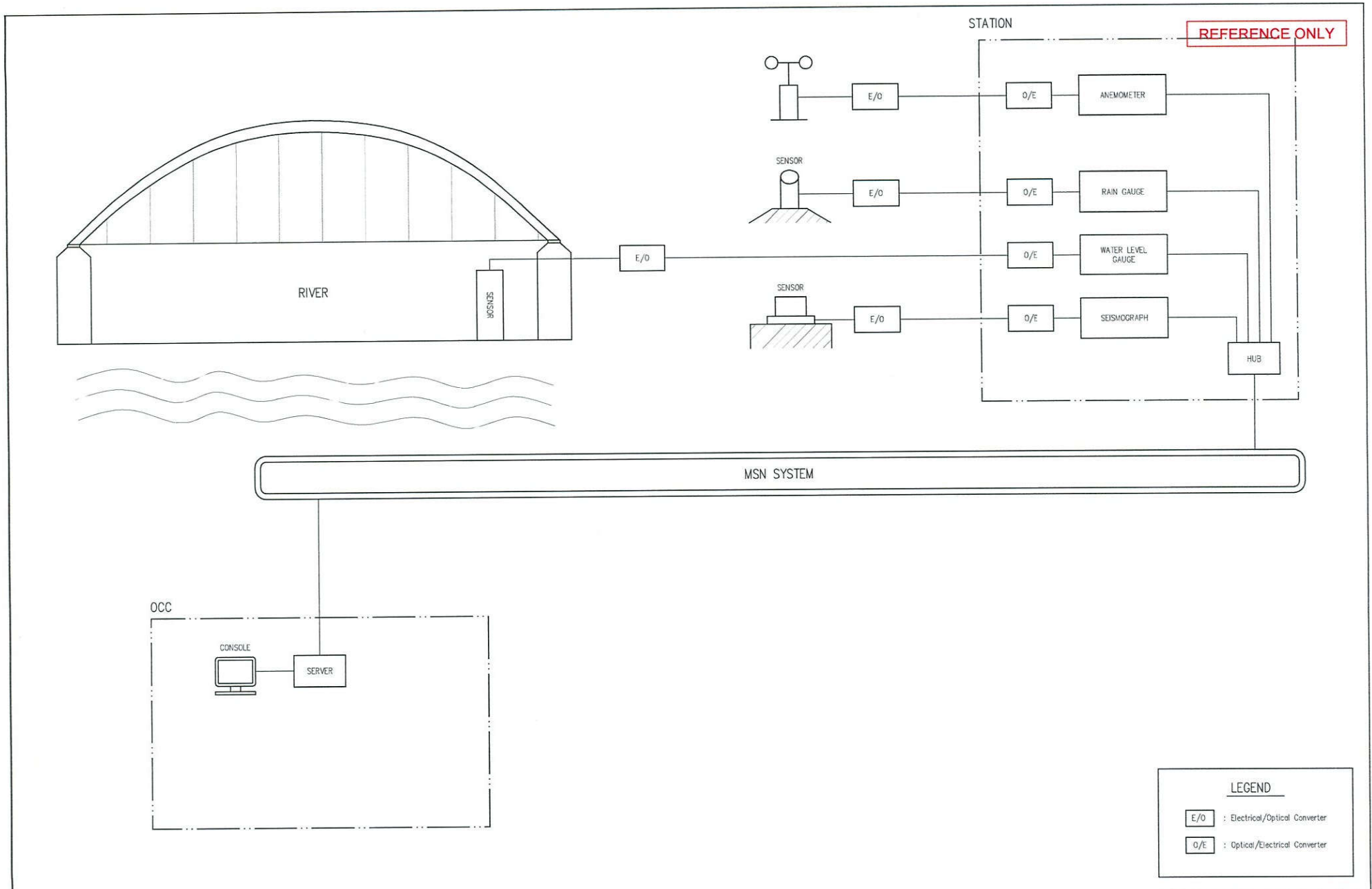
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	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106










TELECOMMUNICATION EQUIPMENT MONITORING SYSTEM

DATE	Jan. 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-COM-0000-DD-0109
DRG S.	REV



LEGEND

E/O	: Electrical/Optical Converter
O/E	: Optical/Electrical Converter

VERSIONS	DATE	DESCRIPTION	 DEPARTMENT OF TRANSPORTATION (DOT)	 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	JICA DESIGN TEAM  ORIENTAL CONSULTANTS GLOBAL CO.,LTD.  TOKYO METRO CO., LTD.  JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.  ALMEC CORPORATION				CONSULTANT  KATAHIRA & ENGINEERS INTERNATIONAL  PACIFIC CONSULTANTS CO.,LTD.  TONICHI ENGINEERING CONSULTANTS, INC.			METRO MANILA SUBWAY PROJECT PHASE 1 - CP101		DATE Sept. 2018
							TITLE NAME SIGNATURE			SCALE N.T.S.				
					DESIGNER CHECK TEAM LEADER PR. MANAGER			SHEET No. DRG No. MMSP-COM-0009 DRG S.						
DISASTER PREVENTION SYSTEM									REV					

FOR INFORMATION ONLY

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
POWER SUPPLY SYSTEM

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

DATE	Nov. 2019
SCALE	
SHEET No.	
DRG No.	MMSP-ELEC-DD-0000
DRG S.	REV

FOR INFORMATION ONLY

POWER SUPPLY SYSTEM

DRAWING INDEX

DRAWING No.	CONTENTS
MMSP-ELEC-DD-0000	POWER SUPPLY SYSTEM COVER PAGE
MMSP-ELEC-DD-0001	POWER SUPPLY SYSTEM DRAWING INDEX
MMSP-ELEC-DD-0002	P.O. SECTION FEEDING LINE DIAGRAM - OPTION 1A
MMSP-ELEC-DD-0003	P.O. SECTION FEEDING LINE DIAGRAM - OPTION 1B
MMSP-ELEC-DD-0004	TRACTION FEEDING LINE DIAGRAM - OPTION 2A
MMSP-ELEC-DD-0005	TRACTION FEEDING LINE DIAGRAM - OPTION 2B
MMSP-ELEC-DD-0006	NON-TRACTION (DISTRIBUTION) FEEDING LINE DIAGRAM
MMSP-BSS-0001	DEPOT BULK SUBSTATION (BSS 1) - PROPOSED LOCATION
MMSP-BSS-0002	LAWTON WEST BULK SUB. (BSS 2) - PROPOSED LOCATION
MMSP-ELEC-DD-0008	DEPOT 34.5kV HV CABLE ROUTE LAYOUT

Last modified by LUMBA_C6 / 15 Aug 2019
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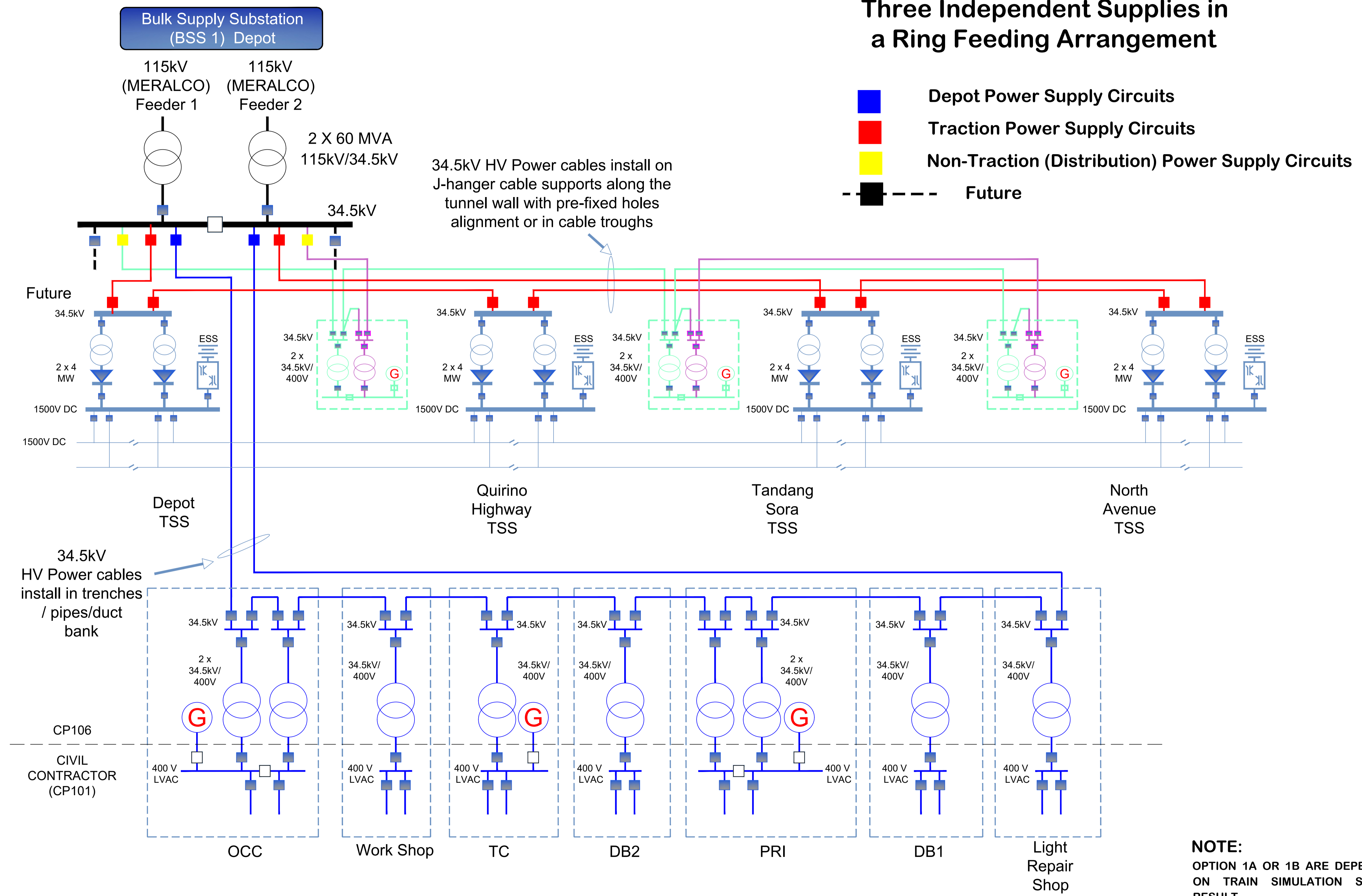
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			 OCGlobal-JV	TITLE	NAME	SIGNATURE	SCALE N.T.S.
				DESIGNER			SHEET No.
				CHECK			DRG No. MMSP-ELEC-DD-0001
				TEAM LEADER			DRG S.
				PR. MANAGER			REV
			POWER SUPPLY SYSTEM DRAWING INDEX				



DEPARTMENT OF
TRANSPORTATION
(DOTr)

FOR INFORMATION ONLY

Three Independent Supplies in a Ring Feeding Arrangement



NOTE:
OPTION 1A OR 1B ARE DEPENDENT ON TRAIN SIMULATION STUDIES RESULT

Last modified by LUMBA_C6 / 04 Oct 2019
Filename: C:\Users\lumba_c6\Desktop\For_TinhPhan\POWER SYSTEM CAD With TBLOCK

VERSIONS	DATE	DESCRIPTION
0	24/10/19	FOR INFORMATION ONLY



GENERAL CONSULTANT

OCGlobal-JV

TITLE	NAME	SIGNATURE
DESIGNER	T Phan	
CHECK		
TEAM LEADER		
PR. MANAGER		

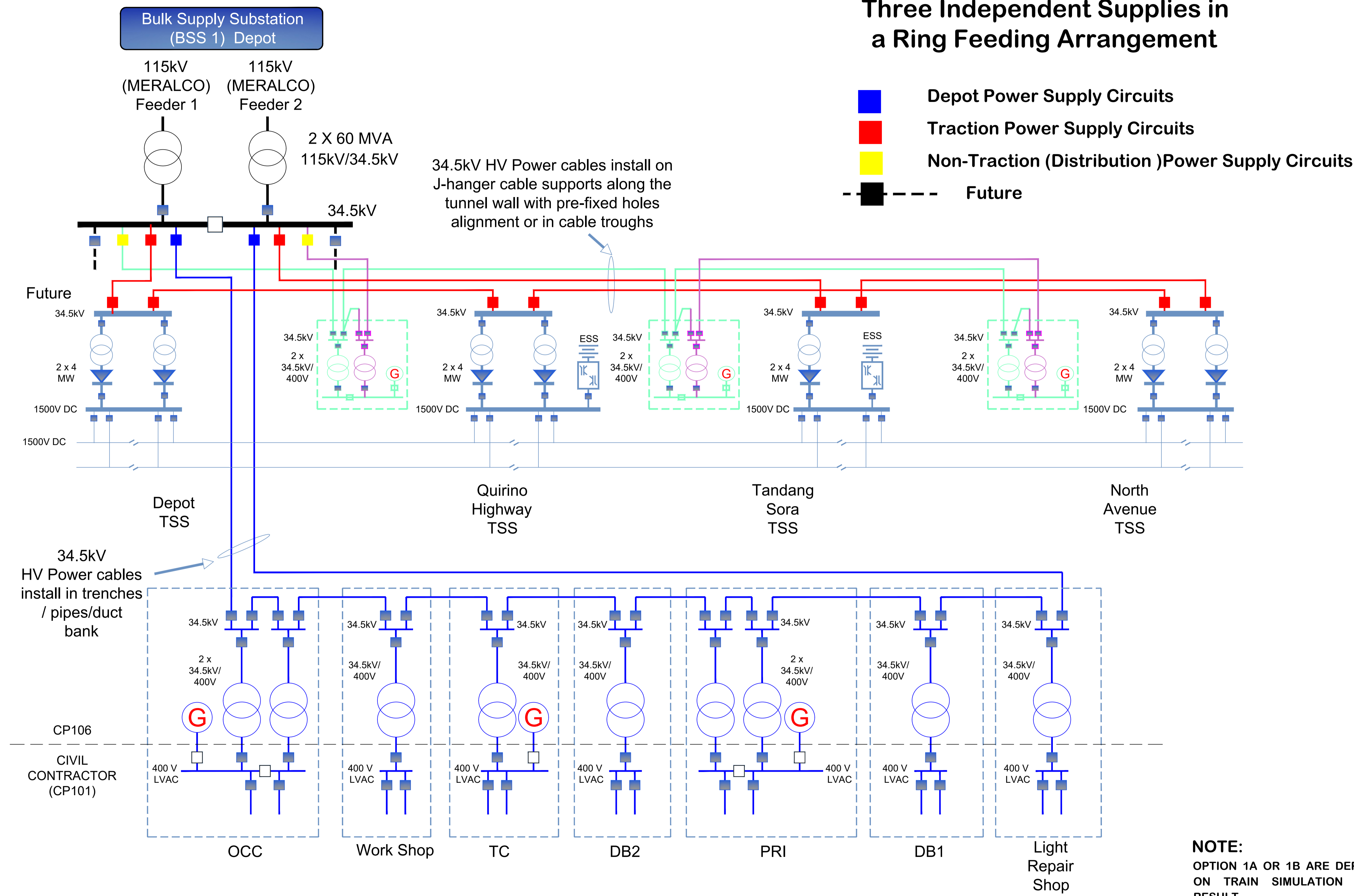
METRO MANILA SUBWAY PROJECT
PHASE1 : PARANAQUE TO VALENZUELA

**P.O. SECTION
FEEDING LINE DIAGRAM
(OPTION 01A)**

DATE	24 October 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-ELEC-DD-0002
DRG S.	REV 0

FOR INFORMATION ONLY

Three Independent Supplies in a Ring Feeding Arrangement



Last modified by LUMBA_C6 / 04-Oct-2019
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VERSIONS	DATE	DESCRIPTION
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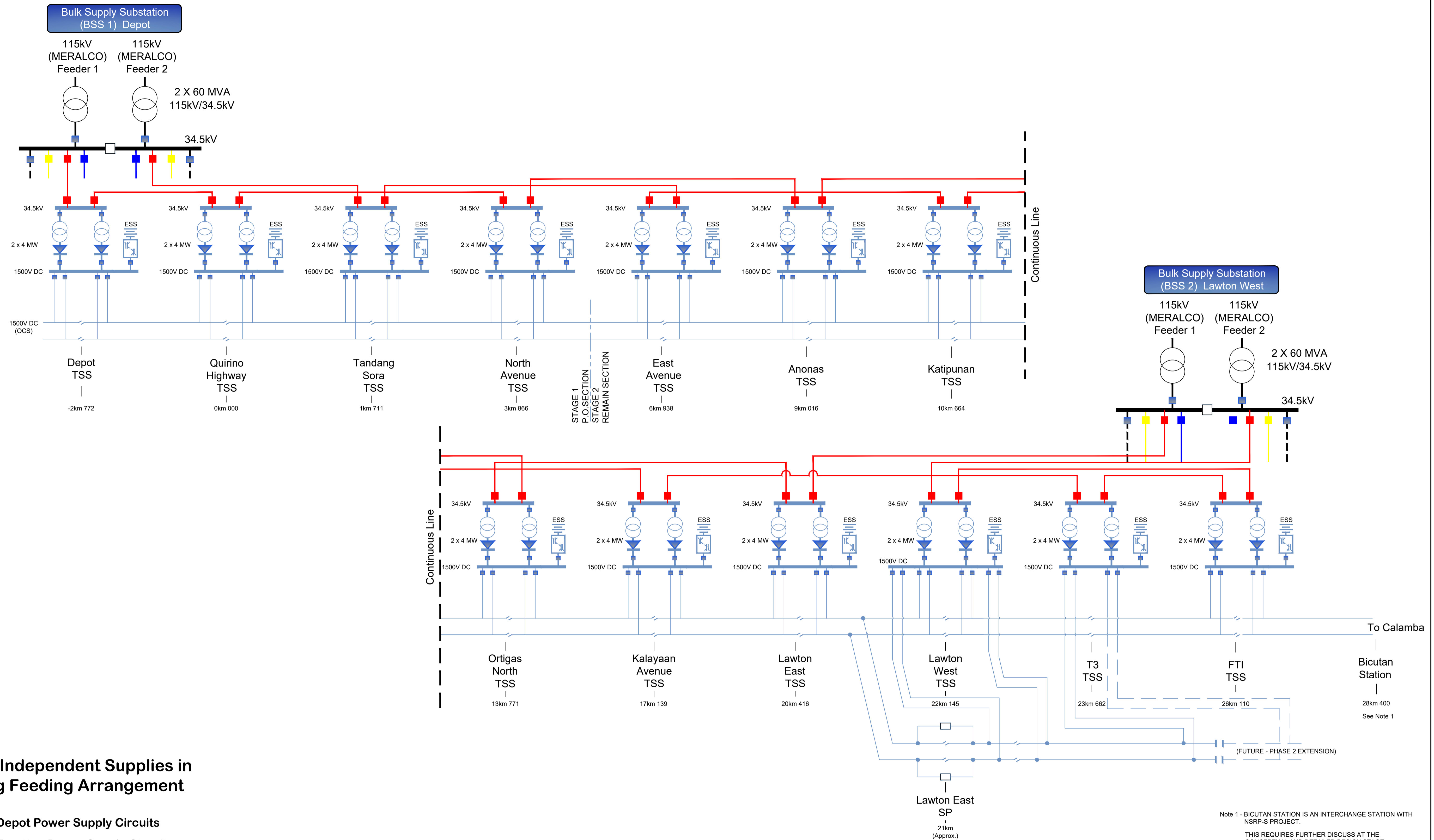
GENERAL CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER	T Phan	
CHECK		
TEAM LEADER		
PR. MANAGER		



METRO MANILA SUBWAY PROJECT PHASE1 : PARANAQUE TO VALENZUELA	DATE 24 October 2019
	SCALE N.T.S.
	SHEET No.
	DRG No. MMSP-ELEC-DD-0003
	DRG S. REV 0

P.O. SECTION FEEDING LINE DIAGRAM (OPTION 1B)

FOR INFORMATION ONLY



Three Independent Supplies in a Ring Feeding Arrangement

- Depot Power Supply Circuits
- Traction Power Supply Circuits
- Non-Traction (Distribution) Power Supply Circuits
- Future

NOTE:
OPTION 2A OR 2B ARE DEPENDENT ON TRAIN SIMULATION STUDIES RESULT

Last modified by LUMBA_c6 / 04-Oct-2019
 Filename: C:\Users\lumba_c6\Desktop\For_TinhPhan\POWER SYSTEM CAD With TBLOCK

VERSIONS	DATE	DESCRIPTION
0	24/10/19	FOR INFORMATION ONLY
1	26/11/19	REVISED TO ADD BICUTAN STATION FOR INFORMATION ONLY



DEPARTMENT OF TRANSPORTATION (DOTr)



OCGlobal-JV

GENERAL CONSULTANT

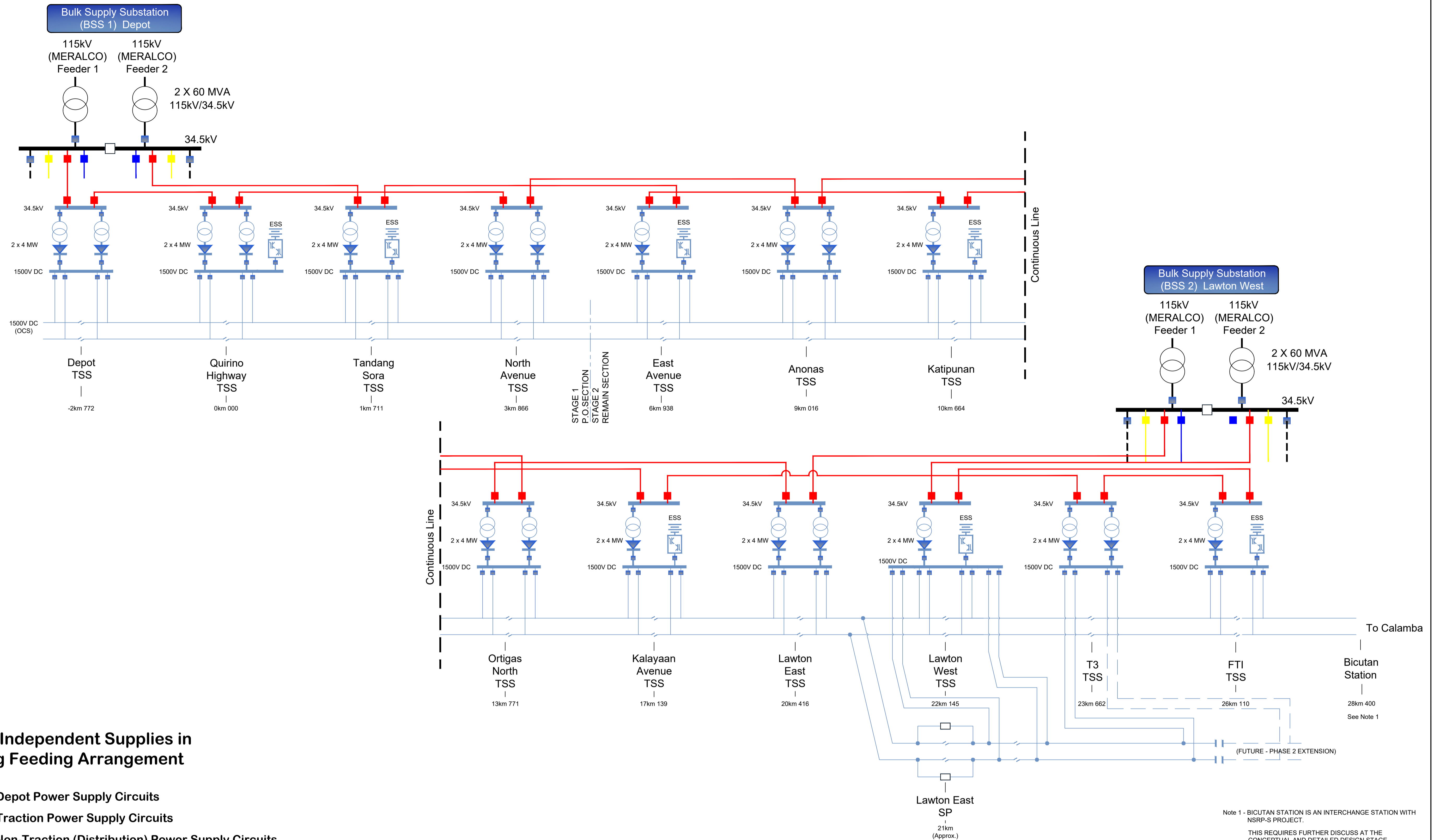
TITLE	NAME	SIGNATURE
DESIGNER	T Phan	
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : PARANAQUE TO VALENZUELA

TRACTION FEEDING LINE DIAGRAM (OPTION 02A)

DATE	26 Nov 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-ELEC-0000-DD-0004
DRG S.	REV 1

FOR INFORMATION ONLY



Three Independent Supplies in a Ring Feeding Arrangement

- Depot Power Supply Circuits
- Traction Power Supply Circuits
- Non-Traction (Distribution) Power Supply Circuits
- Future

NOTE:
OPTION 2A OR 2B ARE DEPENDENT ON TRAIN SIMULATION STUDIES RESULT

Last modified by LUMBA_c6 / 04-Oct-2019
Filename: C:\Users\lumba_c6\Desktop\For_TinhPhan\POWER SYSTEM CAD With TBLOCK

VERSIONS	DATE	DESCRIPTION
0	24/10/19	FOR INFORMATION ONLY
1	26/11/19	REVISED TO ADD BICUTAN STATION FOR INFORMATION ONLY



DEPARTMENT OF TRANSPORTATION (DOTr)



OCGlobal-JV

GENERAL CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER	T Phan	
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : PARANAQUE TO VALENZUELA

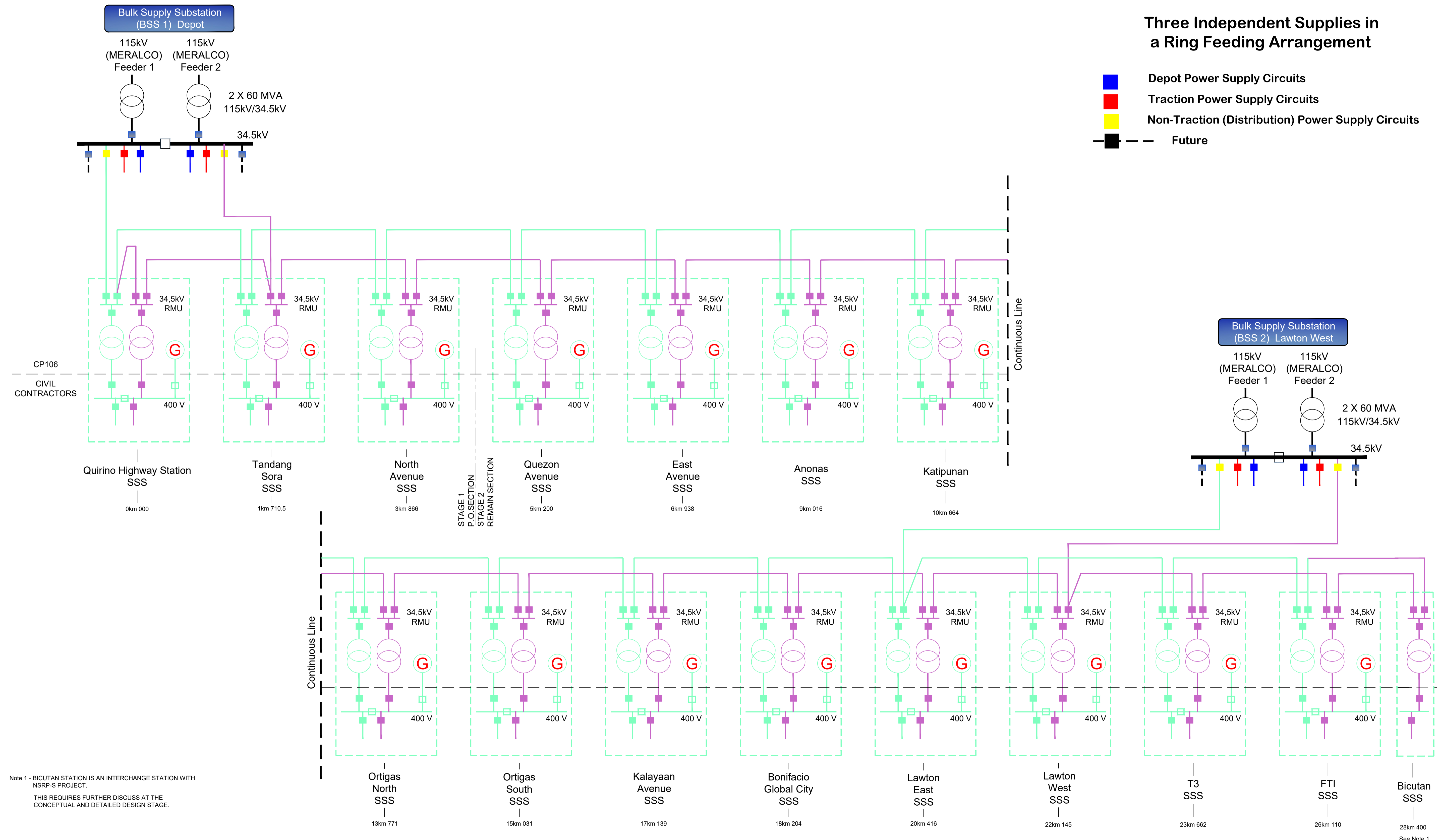
TRACTION FEEDING LINE DIAGRAM (OPTION 02B)

DATE	26 Nov 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-ELEC-0000-DD-0005
DRG S.	REV 1

FOR INFORMATION ONLY

Three Independent Supplies in a Ring Feeding Arrangement

- Depot Power Supply Circuits
- Traction Power Supply Circuits
- Non-Traction (Distribution) Power Supply Circuits
- Future



Note 1 - BICUTAN STATION IS AN INTERCHANGE STATION WITH NSRP-S PROJECT. THIS REQUIRES FURTHER DISCUSS AT THE CONCEPTUAL AND DETAILED DESIGN STAGE.

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Filename: C:\Users\lumba_c6\Desktop\For_TinhPhan\POWER SYSTEM CAD With TBLOCK

VERSIONS	DATE	DESCRIPTION
0	24/10/19	FOR INFORMATION ONLY
1	26/11/19	REVISED TO ADD BICUTAN STATION FOR INFORMATION ONLY



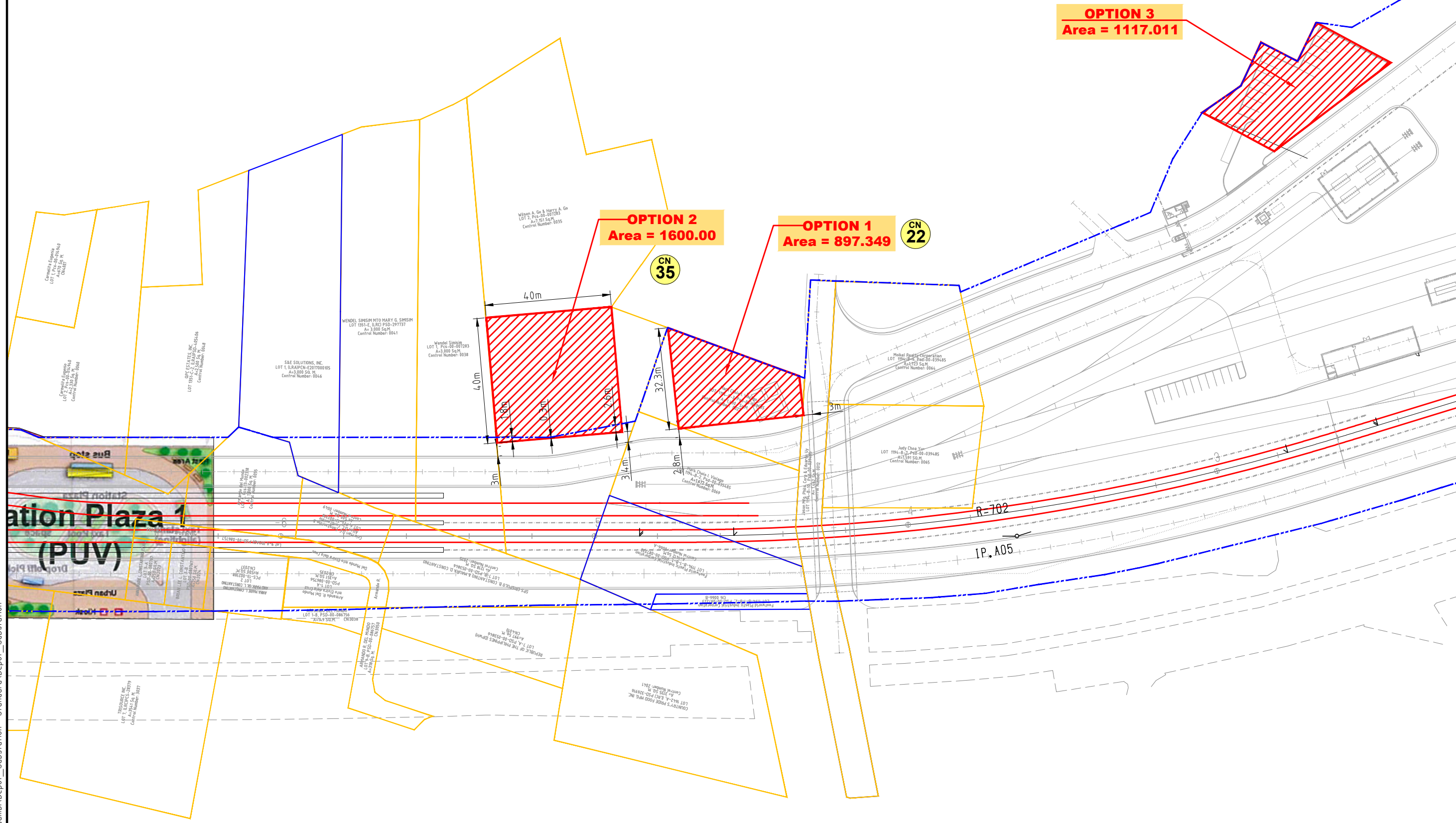
GENERAL CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER	T Phan	
CHECK		
TEAM LEADER		
PR. MANAGER		





METRO MANILA SUBWAY PROJECT PHASE 1 : PARANAQUE TO VALENZUELA	
NON-TRACTION (DISTRIBUTION) FEEDING LINE DIAGRAM	

DATE	26 Nov 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-ELEC-0000-DD-0006
DRG S.	REV 1

FOR INFORMATION ONLY

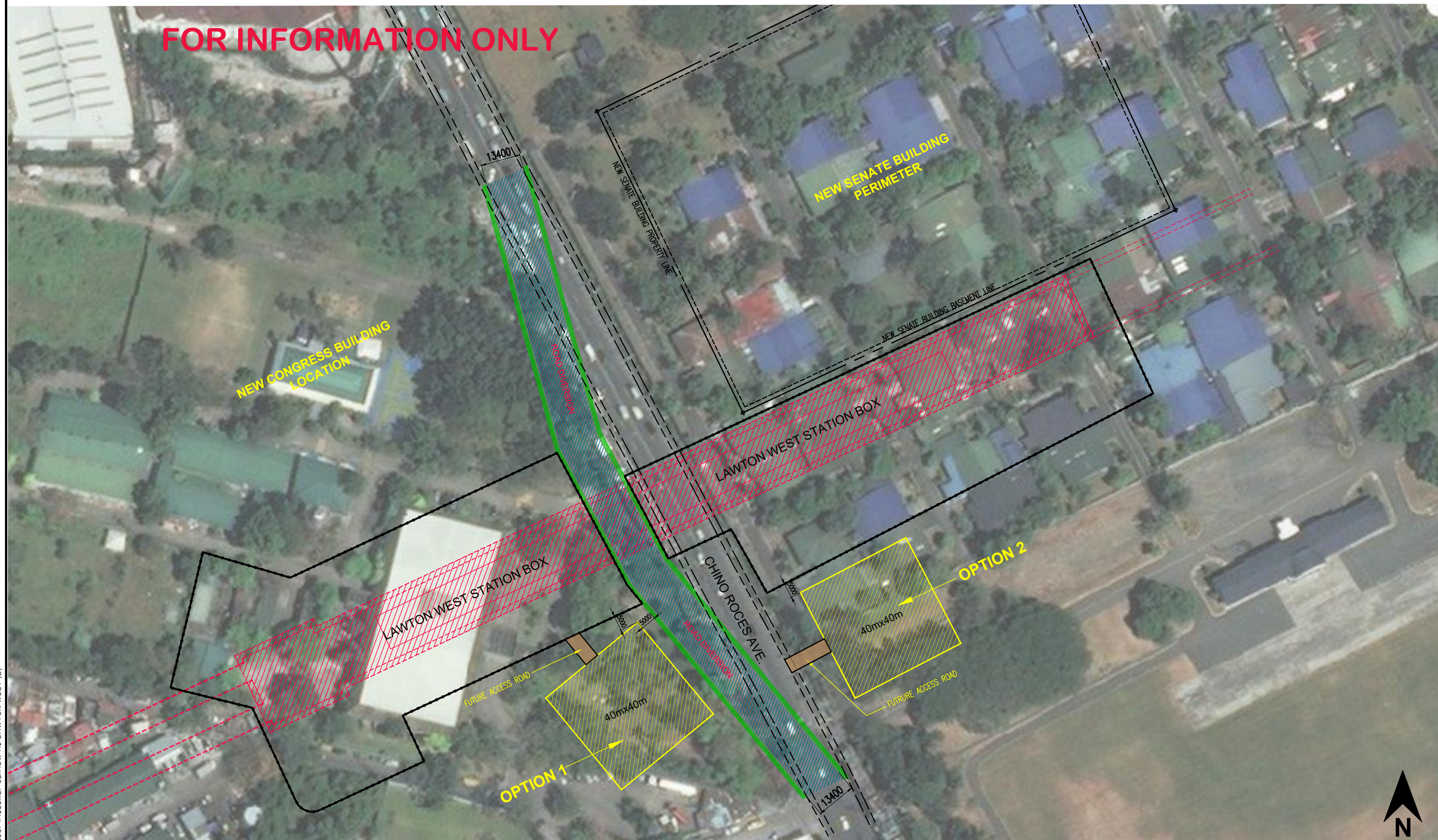


LAND REQUIRED FOR BULK SUPPLY SUBSTATION

VERSIONS	DATE	DESCRIPTION	EMPLOYER	GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : VALENZUELA TO PARANAQUE		DATE
			 DEPARTMENT OF TRANSPORTATION (DOTr)	 OCGlobal-JV Metro Manila Subway Project (MMSP)	TITLE	NAME	SIGNATURE	DETAILED DESIGN DEPOT BULK SUPPLY SUBSTATION PROPOSED LOCATION	SEPT.25,2019
					DESIGNER				SCALE
					CHECK			SHEET No.	
					TEAM LEADER			DRG No.	MMSP-BSS-0001
					PR. MANAGER			DRG S.	REV

Last modified by LUMBA_C6 / 07 Oct 2019
Filename: C:\Users\Lumba_c6\Desktop\For_Mudambi\Depot_Substation - Standard\Depot_Substation



FOR INFORMATION ONLY



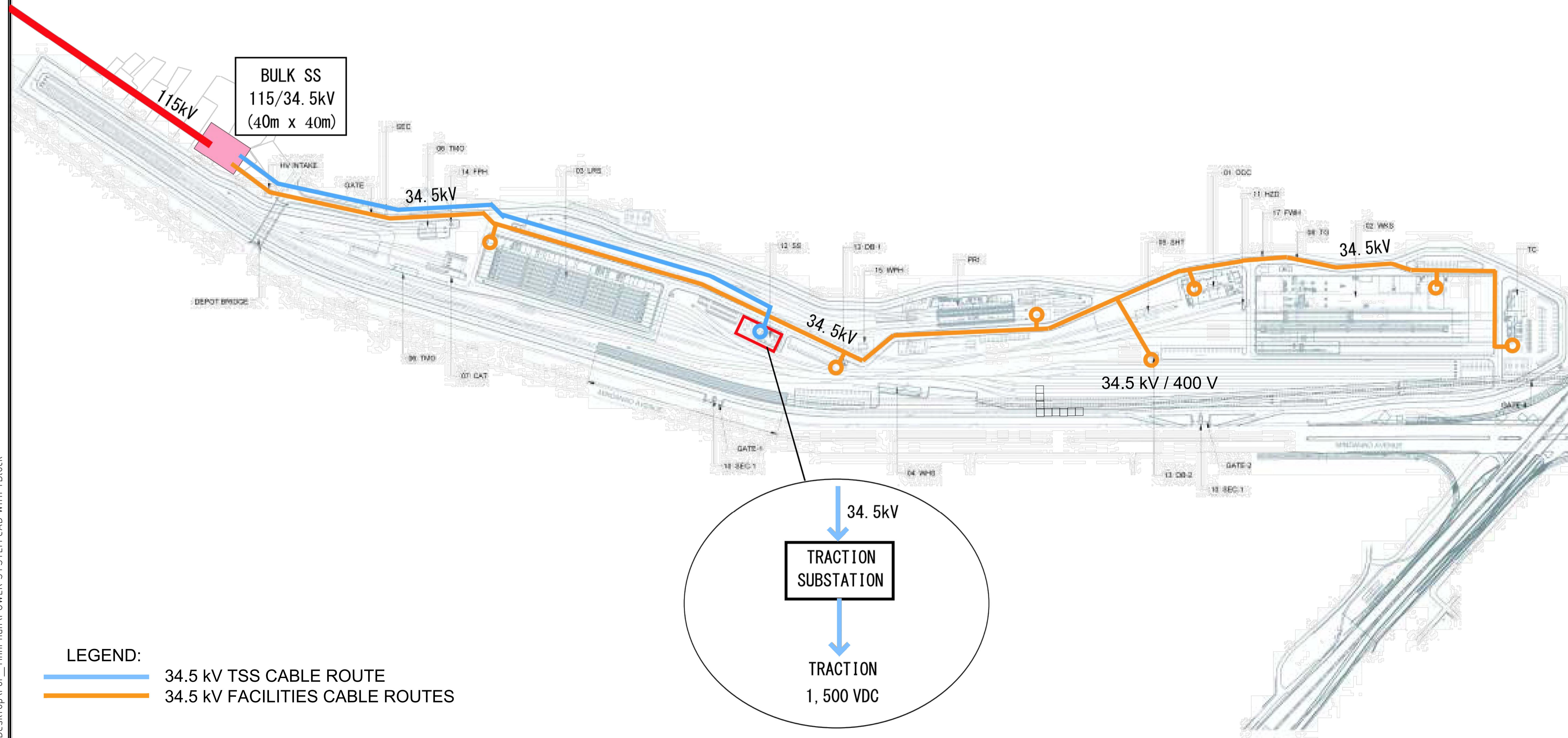
BULK SUPPLY SUBSTATION PROPOSED LOCATIONS



Last modified by BAYAU_C7 / 07 Oct 2019
Filename: C:\01 MMSP Working Folder\02 Job Request\Mudambi-san\W12 LAWTON WEST (B)

VERSIONS	DATE	DESCRIPTION	EMPLOYER	GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : VALENZUELA TO PARANAQUE	DATE October 7, 2019
			 DEPARTMENT OF TRANSPORTATION (DOTr)	 OCGlobal-JV Metro Manila Subway Project (MMSP)	TITLE	NAME	SIGNATURE	SCALE
					DESIGNER			DETAILED DESIGN
					CHECK			DRG No. MMSP-BSS-0002
					TEAM LEADER			DRG S.
					PR. MANAGER			REV
							LAWTON WEST BULK SUPPLY SUBSTATION PROPOSED LOCATIONS	

FOR INFORMATION ONLY



Last modified by LUMBA_c6 / 07.Oct.2019
Filename: C:\Users\lumba_c6\Desktop\For_TinhPhan\POWER SYSTEM CAD With TBLOCK

VERSIONS	DATE	DESCRIPTION
0	24/10/19	FOR INFORMATION ONLY



DEPARTMENT OF
TRANSPORTATION
(DOTr)



OCGlobal-JV

GENERAL CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : PARANAQUE TO VALENZUELA

DEPOT
34.5kV HV CABLE ROUTE
LAYOUT

DATE	24 October 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-ELEC-DD-0008
DRG S.	REV 0

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
OVERHEAD CATENARY SYSTEM

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

DATE	Nov. 2019
SCALE	
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0000
DRG S.	REV

OVERHEAD CATENARY SYSTEM

DRAWING INDEX

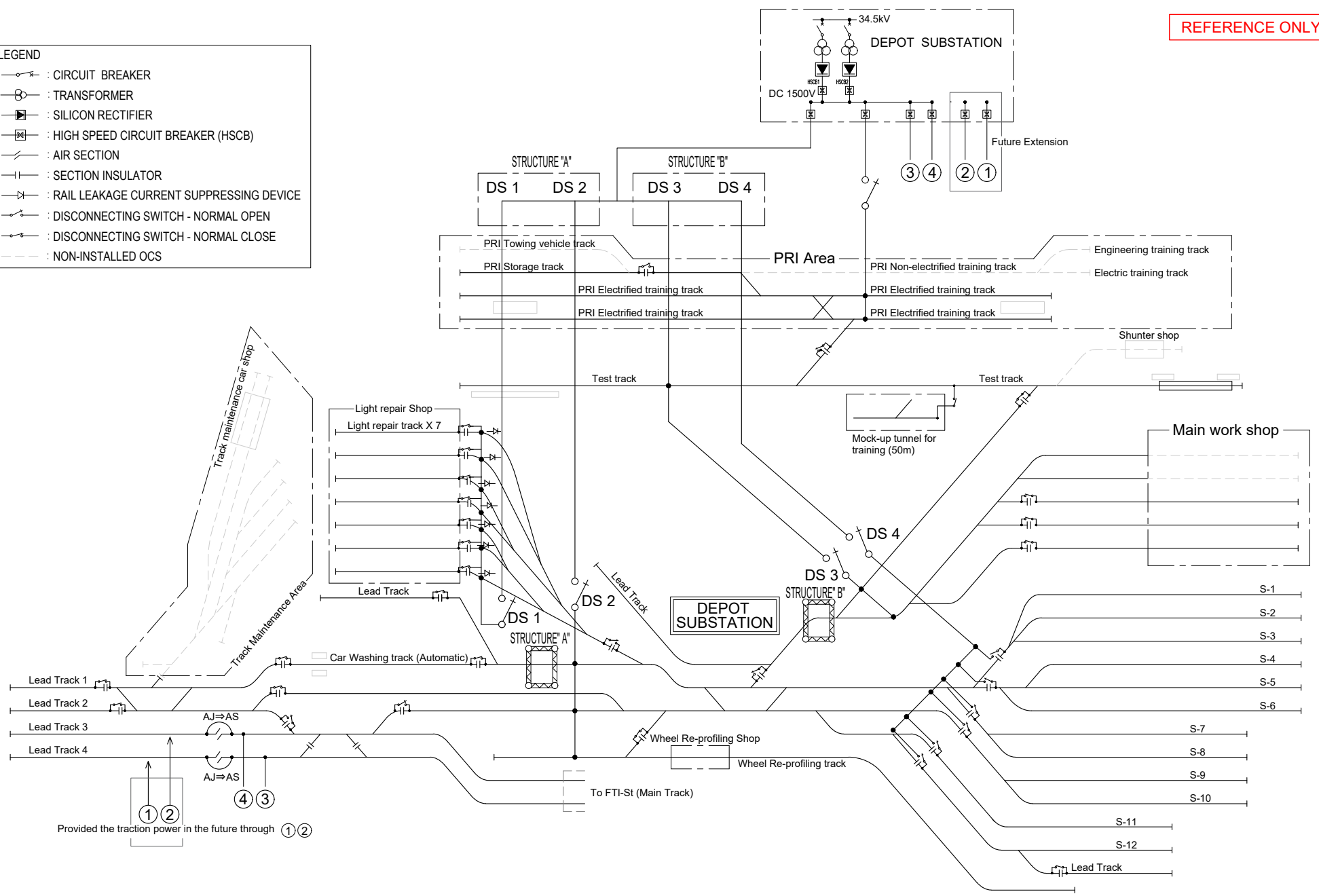
DRAWING No.	CONTENTS
MMS-PCS-0000-DD-0000	OVERHEAD CATENARY SYSTEM COVER SHEET
MMS-PCS-0000-DD-0001	OVERHEAD CATENARY SYSTEM DRAWING INDEX
MMS-PCS-0000-DD-0101	FEEDING NETWORK FOR DEPOT
MMS-PCS-0000-DD-0102	FEEDING NETWORK FOR MAIN LINE
MMS-PCS-0000-DD-0201	OCS STANDARD MOUNTINGS FOR DEPOT
MMS-PCS-0000-DD-0202	OCS STANDARD MOUNTINGS FOR MAIN LINE
MMS-PCS-0000-DD-0301	ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 1 / 6
MMS-PCS-0000-DD-0302	ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 2 / 6
MMS-PCS-0000-DD-0303	ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 3 / 6
MMS-PCS-0000-DD-0304	ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 4 / 6
MMS-PCS-0000-DD-0305	ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 5 / 6
MMS-PCS-0000-DD-0306	ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 6 / 6
MMS-PCS-0000-DD-0401	OCS PLAN IN MAIN LINE KM-2+000-KM-0+500
MMS-PCS-0000-DD-0402	OCS PLAN IN MAIN LINE KM-0+500-KM 1+500
MMS-PCS-0000-DD-0403	OCS PLAN IN MAIN LINE KM 1+500-KM 3+500
MMS-PCS-0000-DD-0404	OCS PLAN IN MAIN LINE KM 3+500-KM 5+500
MMS-PCS-0000-DD-0405	OCS PLAN IN MAIN LINE KM 5+500-KM 7+500
MMS-PCS-0000-DD-0406	OCS PLAN IN MAIN LINE KM 7+500-KM 9+500
MMS-PCS-0000-DD-0407	OCS PLAN IN MAIN LINE KM 9+500-KM 11+500
MMS-PCS-0000-DD-0408	OCS PLAN IN MAIN LINE KM 11+500-KM 13+500
MMS-PCS-0000-DD-0409	OCS PLAN IN MAIN LINE KM 13+500-KM 15+500
MMS-PCS-0000-DD-0410	OCS PLAN IN MAIN LINE KM 15+500-KM 17+500
MMS-PCS-0000-DD-0411	OCS PLAN IN MAIN LINE KM 17+500-KM 19+500
MMS-PCS-0000-DD-0412	OCS PLAN IN MAIN LINE KM 19+500-KM 21+500
MMS-PCS-0000-DD-0413	OCS PLAN IN MAIN LINE KM 21+500-KM 23+500
MMS-PCS-0000-DD-0414	OCS PLAN IN MAIN LINE KM 23+500-KM 25+500
MMS-PCS-0000-DD-0415	OCS PLAN IN MAIN LINE KM 25+500-KM 27+500

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE March 2019																
						N.T.S.	SHEET No.																
			<table border="1"> <thead> <tr> <th style="text-align: center;">TITLE</th> <th style="text-align: center;">NAME</th> <th style="text-align: center;">SIGNATURE</th> </tr> </thead> <tbody> <tr> <td>DESIGNER</td> <td></td> <td></td> </tr> <tr> <td>CHECK</td> <td></td> <td></td> </tr> <tr> <td>TEAM LEADER</td> <td></td> <td></td> </tr> <tr> <td>PR. MANAGER</td> <td></td> <td></td> </tr> </tbody> </table>			TITLE	NAME	SIGNATURE	DESIGNER			CHECK			TEAM LEADER			PR. MANAGER			OVERHEAD CATENARY SYSTEM DRAWING INDEX	DRG No. MMS-PCS-0000-DD-0001	REV
TITLE	NAME	SIGNATURE																					
DESIGNER																							
CHECK																							
TEAM LEADER																							
PR. MANAGER																							

REFERENCE ONLY

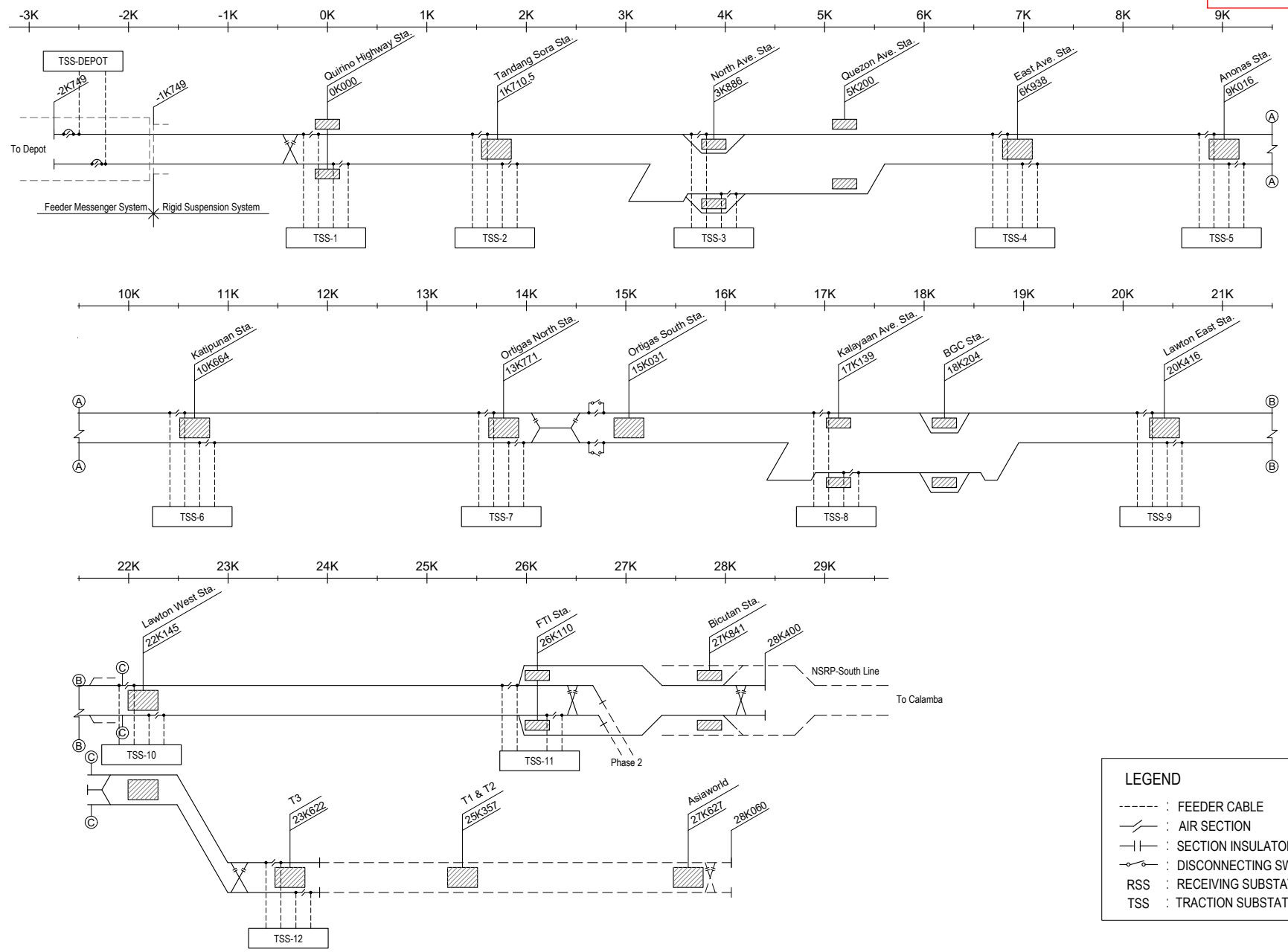
LEGEND

- : CIRCUIT BREAKER
- : TRANSFORMER
- : SILICON RECTIFIER
- : HIGH SPEED CIRCUIT BREAKER (HSCB)
- : AIR SECTION
- : SECTION INSULATOR
- : RAIL LEAKAGE CURRENT SUPPRESSING DEVICE
- : DISCONNECTING SWITCH - NORMAL OPEN
- : DISCONNECTING SWITCH - NORMAL CLOSE
- : NON-INSTALLED OCS



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : CP106		DATE
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			<p>OCS FEEDING NETWORK FOR DEPOT</p>		<p>March 2019</p>
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			<p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>		<p>SCALE</p> <p>N.T.S.</p>
						<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>		<p>SHEET No.</p> <p>DRG No. MMSP-OCS-0000-DD-0101</p> <p>DRG S.</p>





REFERENCE ONLY



VERSIONS	DATE	DESCRIPTION


DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

TOKYO METRO CO., LTD.

JAPANESE INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

ALMEC CORPORATION

CONSULTANT

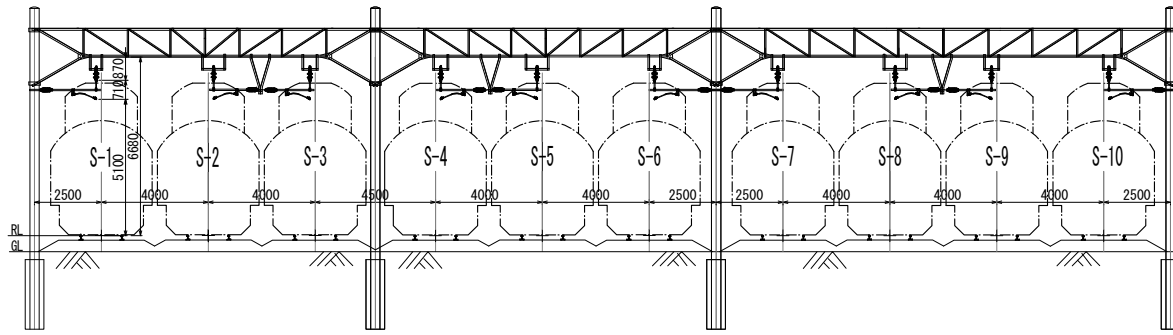
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106
OCS FEEDING NETWORK FOR MAIN LINE

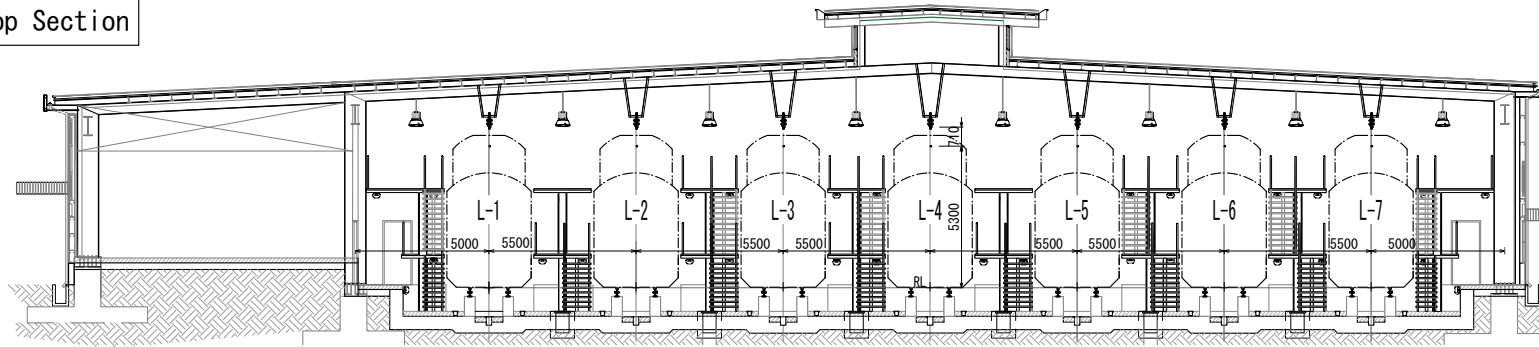
DATE	March 2019
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0102
DRG S.	
REV	

Stabling Yard Section

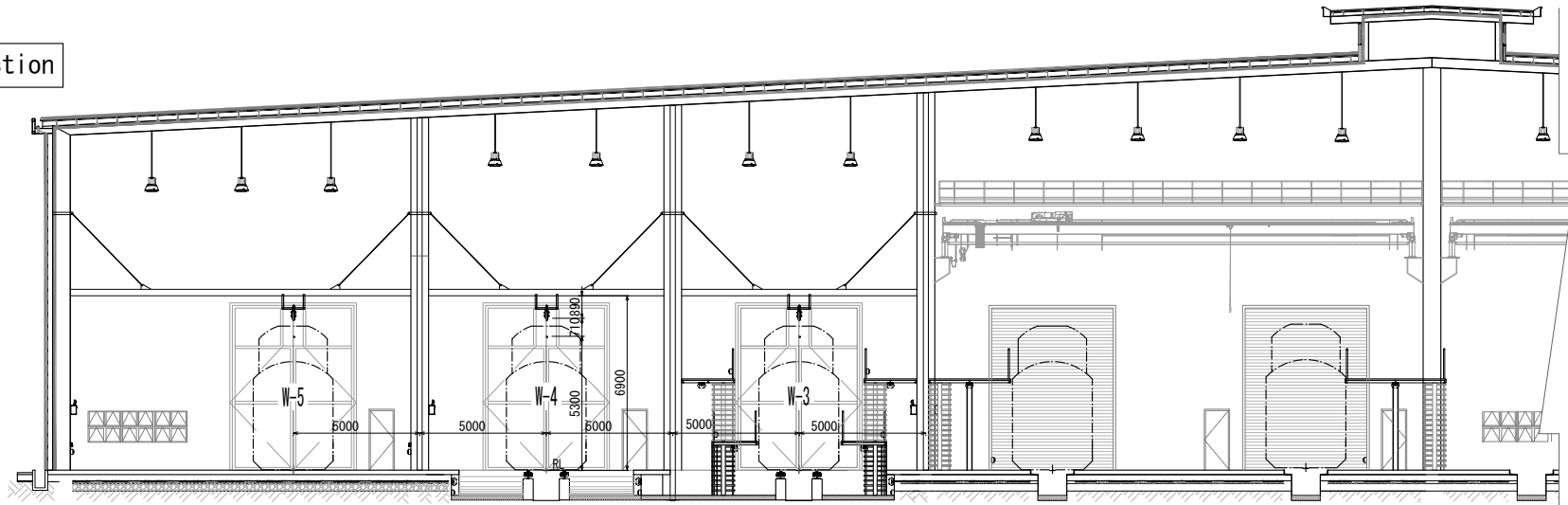
REFERENCE ONLY



Light Repair Shop Section



Work Shop Section



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

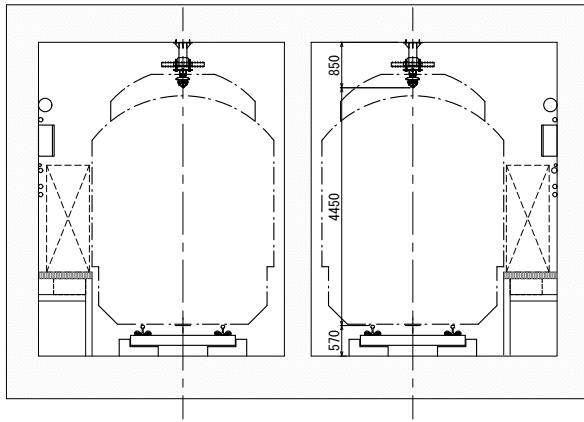
JICA DESIGN TEAM
 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
 TOKYO METRO CO., LTD.
 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
 ALMEC CORPORATION
 KATAHIRA & ENGINEERS INTERNATIONAL
 PACIFIC CONSULTANTS CO.,LTD.
 TONCHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

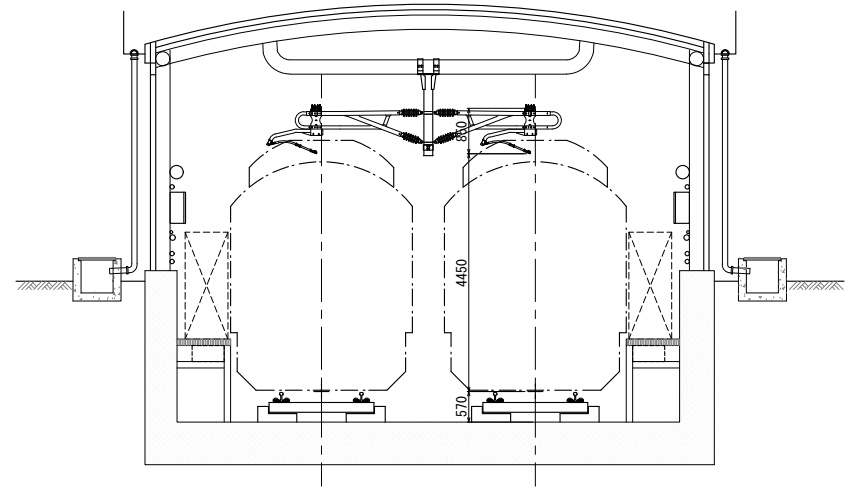
METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
OCS STANDARD MOUNTINGS FOR DEPOT

DATE	March 2019
SCALE	1:200
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0201
DRG S.	
REV	

Cut and Cover Section (Straight Section)

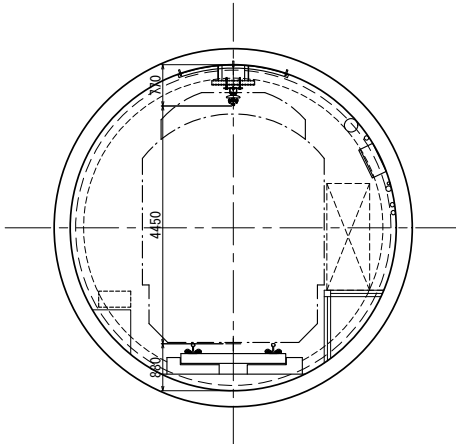


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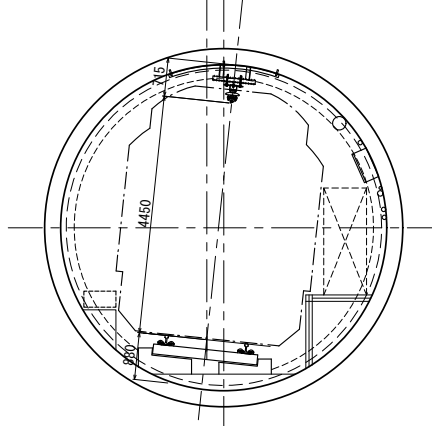


Shield Tunnel Section

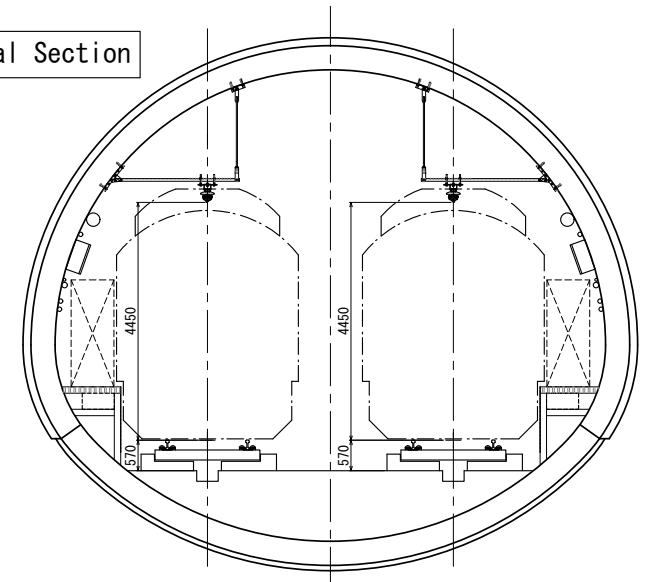
(Straight)



(Right)



NATM Typical Section



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

 TOKYO METRO CO., LTD.

 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

 ALMEC CORPORATION

 KATAHIRA & ENGINEERS INTERNATIONAL

 PACIFIC CONSULTANTS CO.,LTD.

 TONICHI ENGINEERING CONSULTANTS, INC.

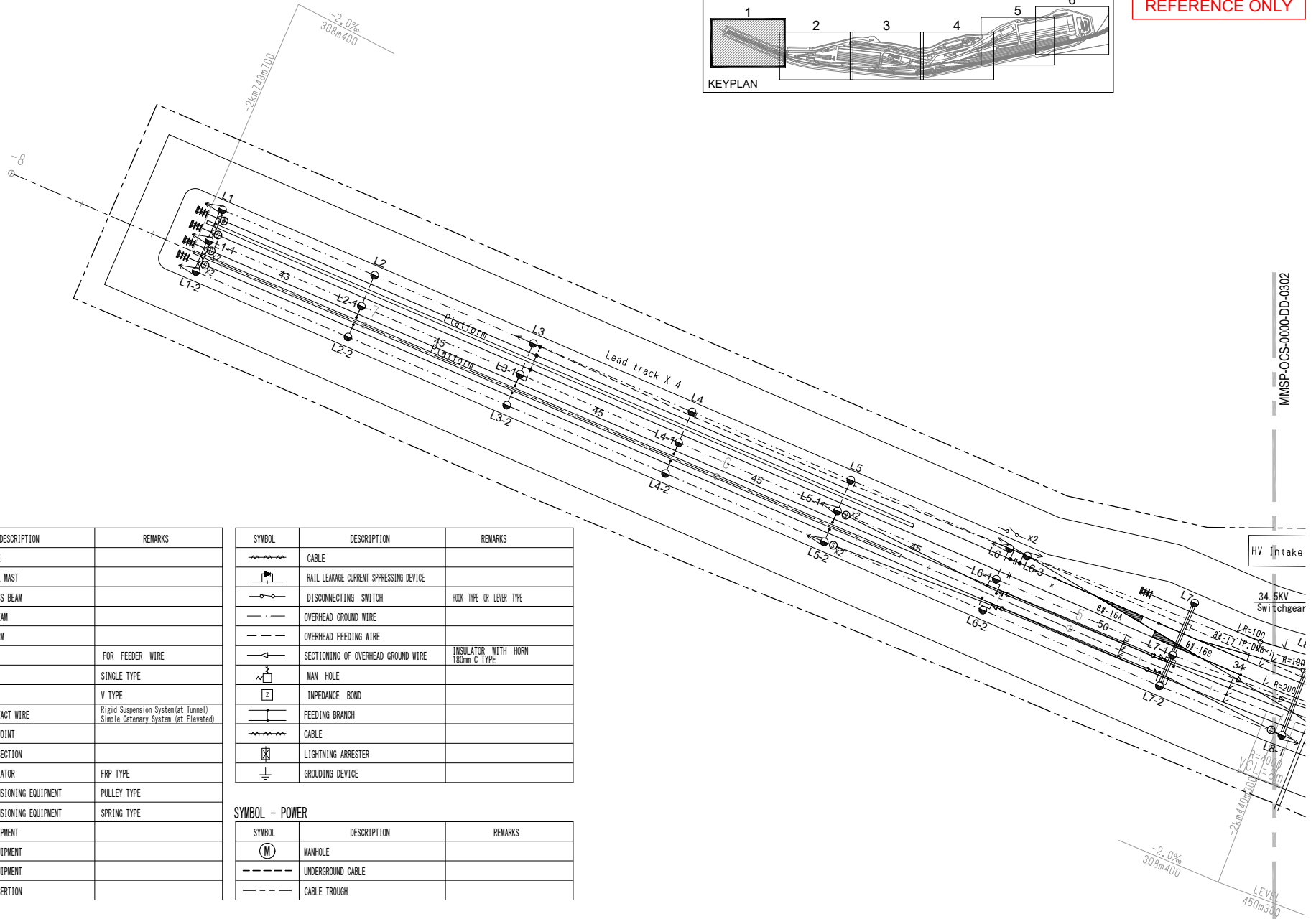
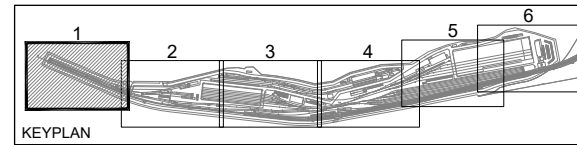
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP106

OCS STANDARD MOUNTINGS
FOR MAIN LINE

DATE	March 2019
SCALE	1:100
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0202
DRG S.	
REV	



SYMBOL - OCS

SYMBOL	DESCRIPTION	REMARKS
	CONCRETE POLE	
	CHANNEL STEEL MAST	
	WARREN - TRUSS BEAM	
	STEEL TUBE BEAM	
	SUPPORTING ARM	
	ANGLE FRAM	FOR FEEDER WIRE
	GUY	SINGLE TYPE
	GUY	V TYPE
	OVERHEAD CONTACT WIRE	Rigid Suspension System (at Tunnel) Simple Catenary System (at Elevated)
	OVERLAP AIR JOINT	
	OVERLAP AIR SECTION	
	SECTION INSULATOR	FRP TYPE
	AUTOMATIC TENSIONING EQUIPMENT	PULLEY TYPE
	AUTOMATIC TENSIONING EQUIPMENT	SPRING TYPE
	PULL-OFF EQUIPMENT	
	STEADYING EQUIPMENT	
	CROSSOVER EQUIPMENT	
	INSULATOR INSERTION	

SYMBOL	DESCRIPTION	REMARKS
	CABLE	
	RAIL LEAKAGE CURRENT SUPPRESSING DEVICE	
	DISCONNECTING SWITCH	HOOK TYPE OR LEVER TYPE
	OVERHEAD GROUND WIRE	
	OVERHEAD FEEDING WIRE	
	SECTIONING OF OVERHEAD GROUND WIRE	INSULATOR WITH HORN 180mm C TYPE
	MAN HOLE	
	IMPEDANCE BOND	
	FEEDING BRANCH	
	CABLE	
	LIGHTNING ARRESTER	
	GROUNDING DEVICE	

SYMBOL - POWER

SYMBOL	DESCRIPTION	REMARKS
	MANHOLE	
	UNDERGROUND CABLE	
	CABLE TROUGH	

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOT)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

TOKYO METRO CO., LTD.

JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

ALMEC CORPORATION

KATAHIRA & ENGINEERS INTERNATIONAL

PACIFIC CONSULTANTS CO.,LTD.

TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

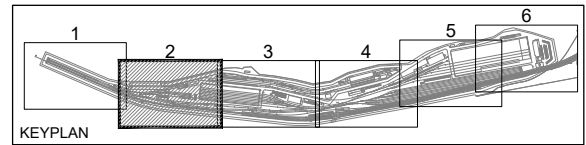
METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 1/6

DATE	March 2019
SCALE	1:1000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0301
DRG S.	
REV	

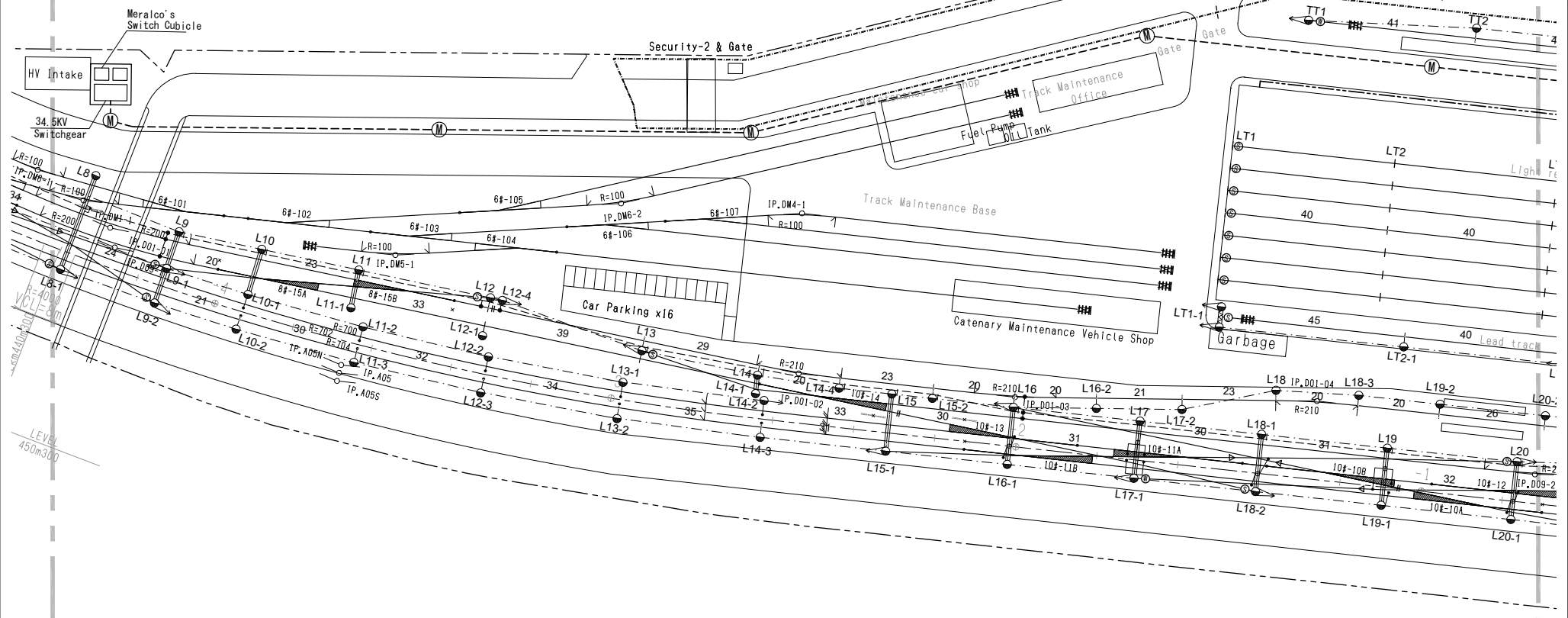
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REFERENCE ONLY




MMSP-OCS-0000-DD-0301








MMSP-OCS-0000-DD-0303



VERSIONS	DATE	DESCRIPTION


 DEPARTMENT OF TRANSPORTATION (DOT)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

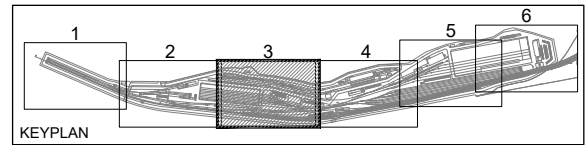
JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

 TOKYO METRO CO., LTD.

 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

 ALMEC CORPORATION

 KATAHIRA & ENGINEERS INTERNATIONAL

 PACIFIC CONSULTANTS CO.,LTD.

 TONCHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106

ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 2/6

DATE	
	March 2019
SCALE	
	1:1000
SHEET No.	
DRG No.	
	MMSP-OCS-0000-DD-0302
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOT)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

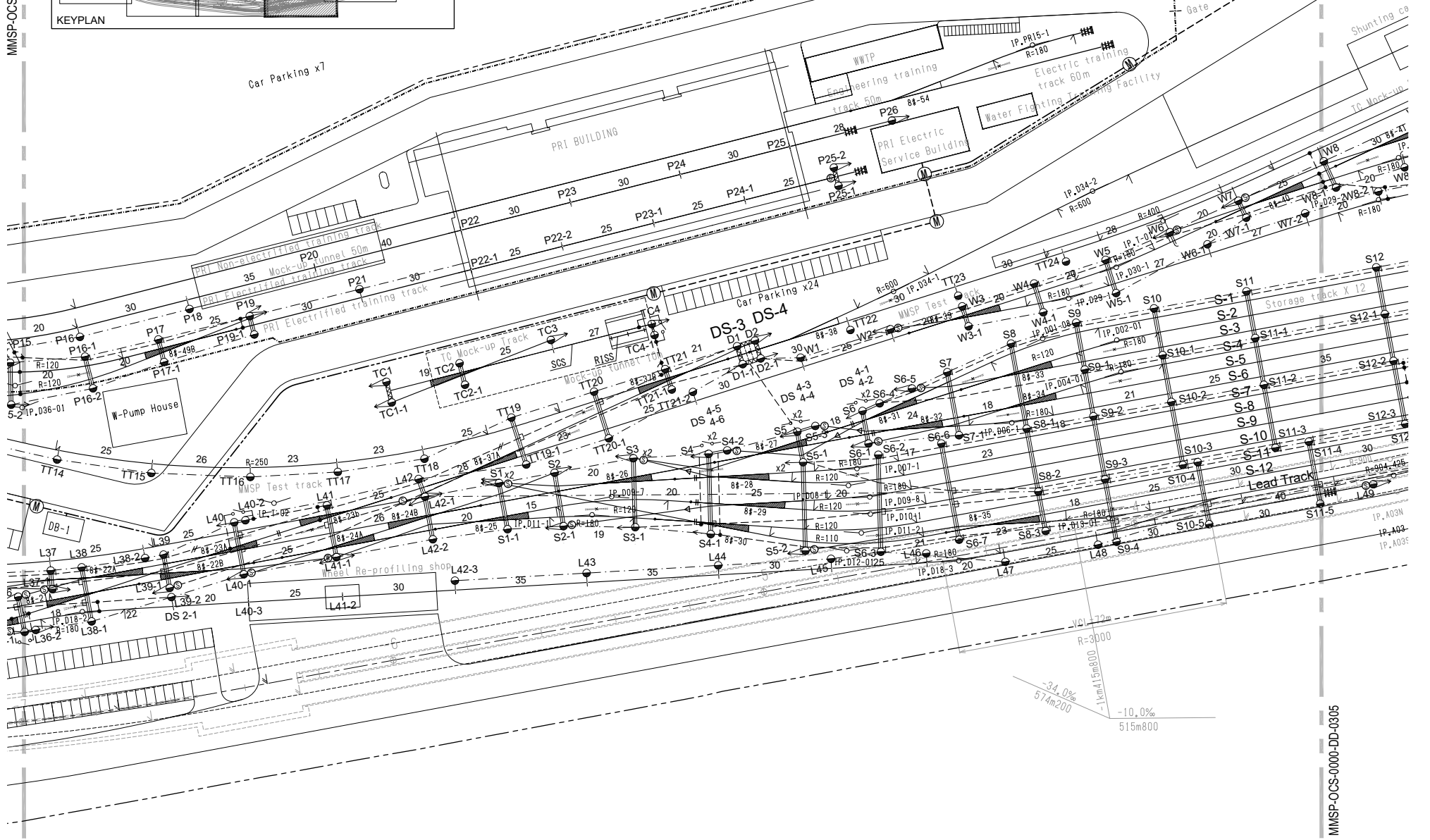
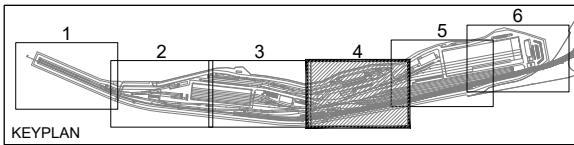
METRO MANILA SUBWAY PROJECT
PHASE 1: CP106

ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 3/6

DATE	March 2019
SCALE	1:1000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0303
DRG S.	
REV	

MMSP-OCS-0000-DD-0302

MMSP-OCS-0000-DD-0304



MMSF-OCS-0000-DD-0305

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOT)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- KATAHIRA & ENGINEERS INTERNATIONAL
- TOKYO METRO CO., LTD.
- PACIFIC CONSULTANTS CO.,LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- TONCHI ENGINEERING CONSULTANTS, INC.
- ALMEC CORPORATION

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106

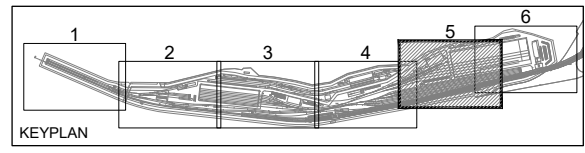
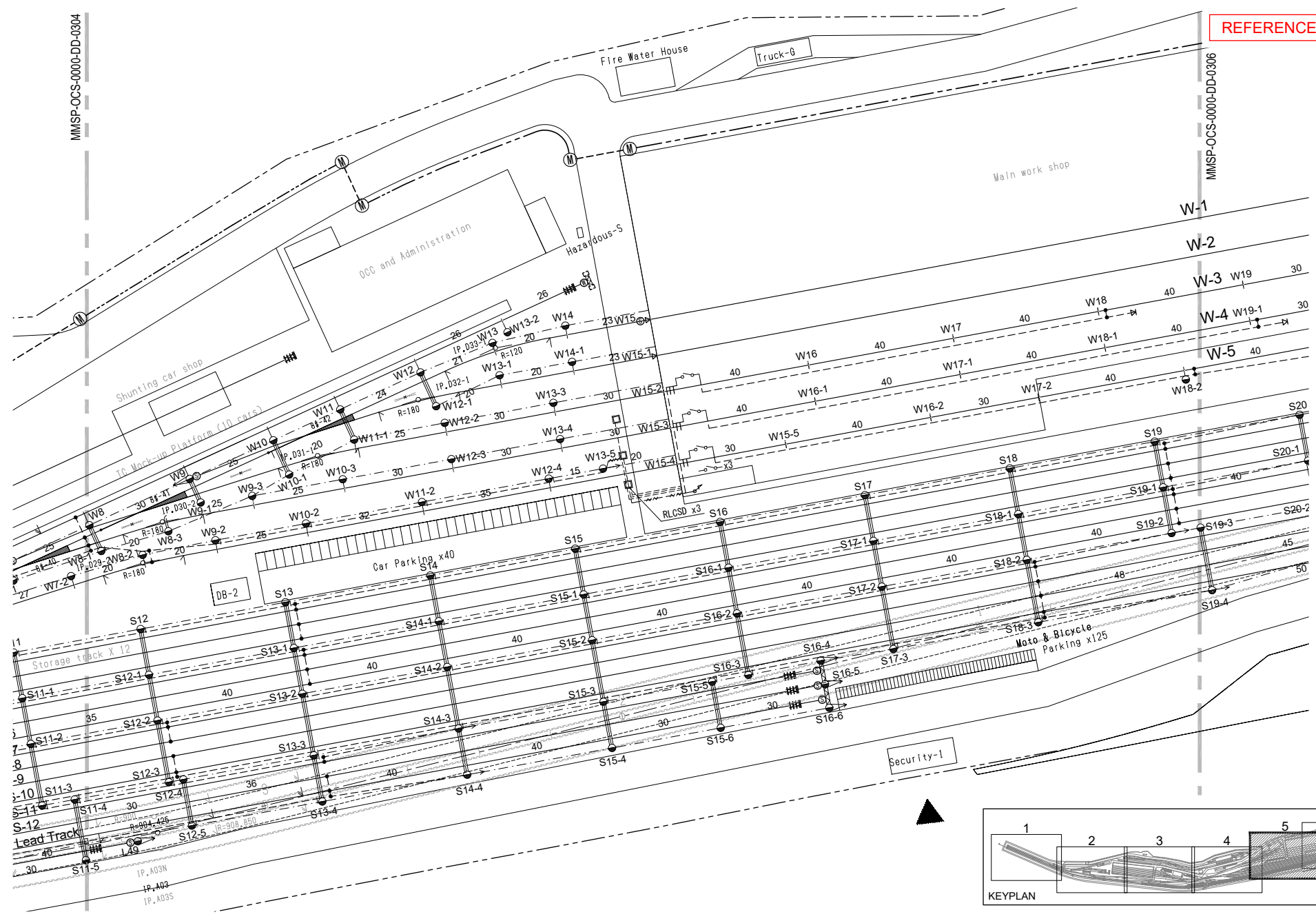
ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 4/6

DATE	March 2019
SCALE	1:1000
SHEET No.	
DRG No.	MMSF-OCS-0000-DD-0304
DRG S.	
REV	

REFERENCE ONLY

MMSP-OCS-0000-DD-0304

MMSP-OCS-0000-DD-0306



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

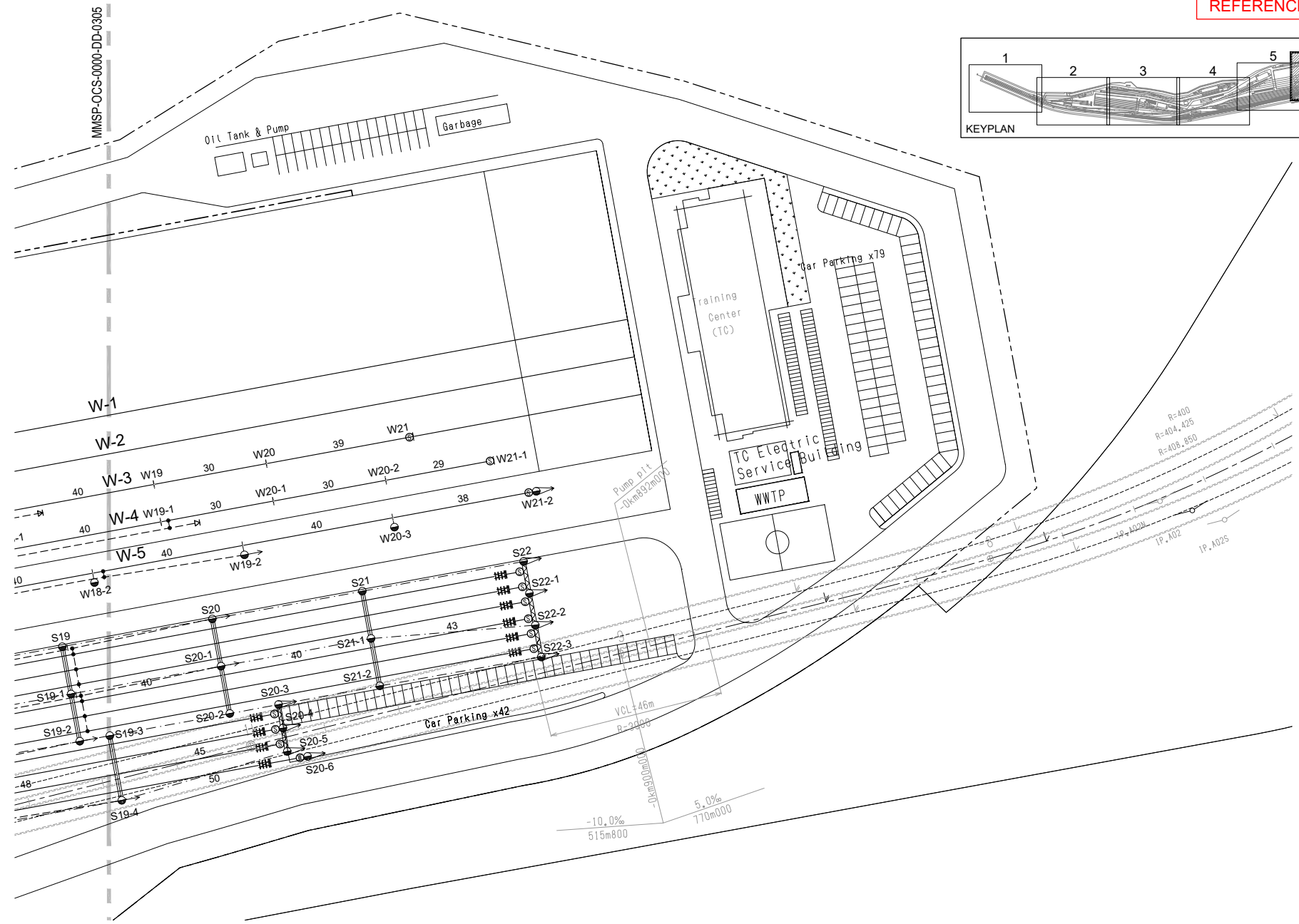
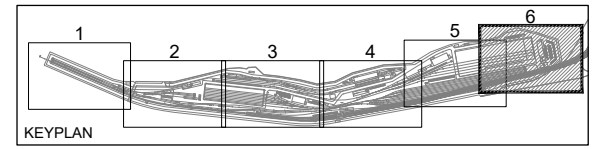
- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP106

ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 5/6

DATE	March 2019
SCALE	1:1000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0305
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

JICA DESIGN TEAM

- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

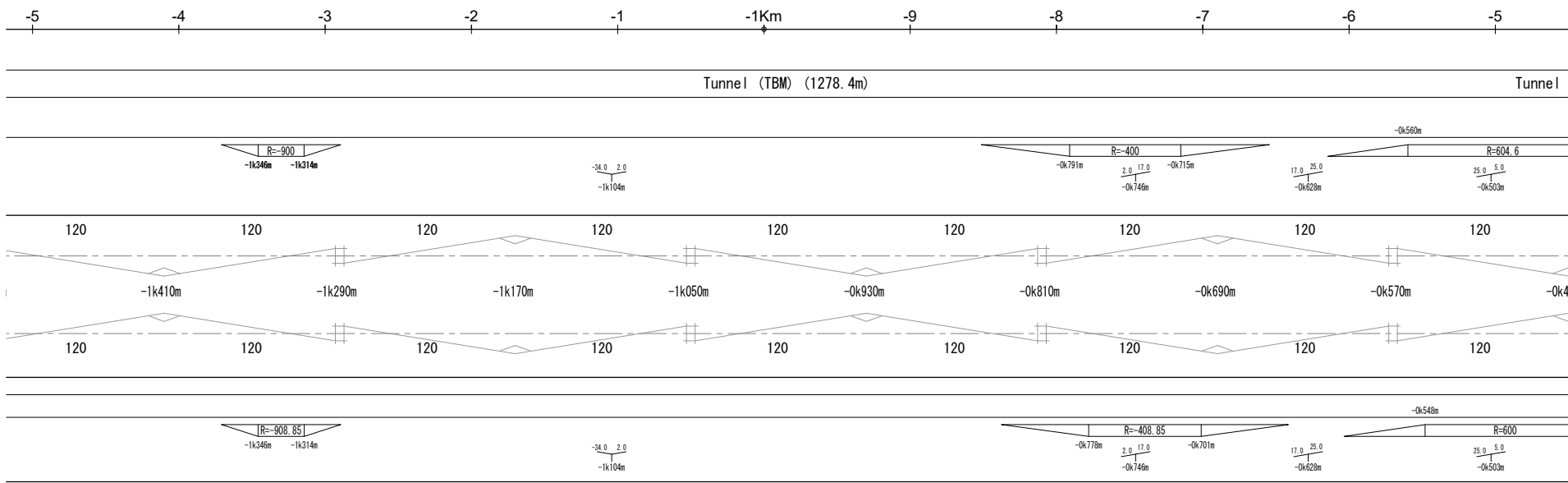
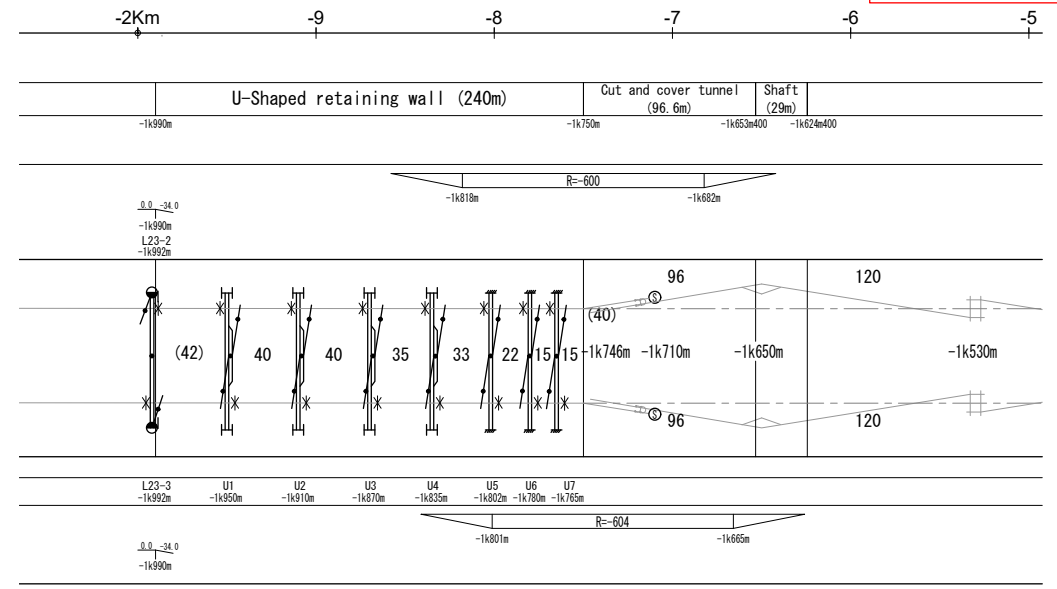
ALIGNMENT OF LAYOUT OF SUPPORTING POINT IN DEPOT 6/6

DATE	March 2019
SCALE	1:1000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0306
DRG S.	
REV	

SYMBOL FOR MAIN LINE

SYMBOL	DESCRIPTION	REMARKS
	CONCRETE POLE OR STEEL TUBE MAST	
	STEEL TUBE BEAM	
	STEEL TUBE CANTILEVER	
	ANCHOR RING	
	EXPANSION JOINT	
	AIR SECTION IN TUNNEL	Rigid Suspension System (in Tunnel)
	GUY	SINGLE TYPE
	GUY	V TYPE
	OVERHEAD CONTACT WIRE	Rigid Suspension System (in Tunnel) Simple Contact System (in Elevated)
	OVERLAP AIR JOINT	
	OVERLAP AIR SECTION	
	SECTION INSULATOR	FRP TYPE
	AUTOMATIC TENSIONING EQUIPMENT	PULLEY TYPE
	AUTOMATIC TENSIONING EQUIPMENT	SPRING TYPE
	PULL-OFF EQUIPMENT	
	STEADYING EQUIPMENT	MOVABLE TYPE
	CROSSOVER EQUIPMENT	
	INSULATOR INSERTION	
	FEEDING BRANCH	
	FEEDER OR RETURN CABLE	
	LIGHTNING ARRESTER	
	GROUNDING DEVICE	
	DISCONNECTING SWITCH	
	OVERHEAD GROUND WIRE	
	OVERHEAD FEEDING WIRE	
	SECTIONING OF OVERHEAD GROUND WIRE	INSULATOR WITH PEAN 180mm C TYPE
	SUPPORTING ARM	
	ANGLE FRAME	FOR FEEDER WIRE

	KILO POST
	STATION NAME LOCATION
NORTH BOUND	THE KINDS OF TUNNEL STRUCTURE
	STATION PLATFORM
TRACTION SUBSTATION (TSS)	
RADIUS OF CURVATURE (m)	
TRACK GRADIENT (Per mill)	
SUPPORTING POLE No LOCATION	
SUPPORTING POLE, ANCHORING	
TRACK CENTER, EXPANSION-JOINT	
ANCHORING	
SOUTH BOUND	ANCHORING
	TRACK CENTER, EXPANSION-JOINT
ANCHORING SUPPORTING POLE	
TYPE OF POLES & MASTS	
SUPPORTING POLE No LOCATION	
RADIUS OF CURVATURE (m)	
TRACK GRADIENT (Per mill)	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

TOKYO METRO CO., LTD.

JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

ALMEC CORPORATION

KATAHIRA & ENGINEERS INTERNATIONAL

PACIFIC CONSULTANTS CO.,LTD.

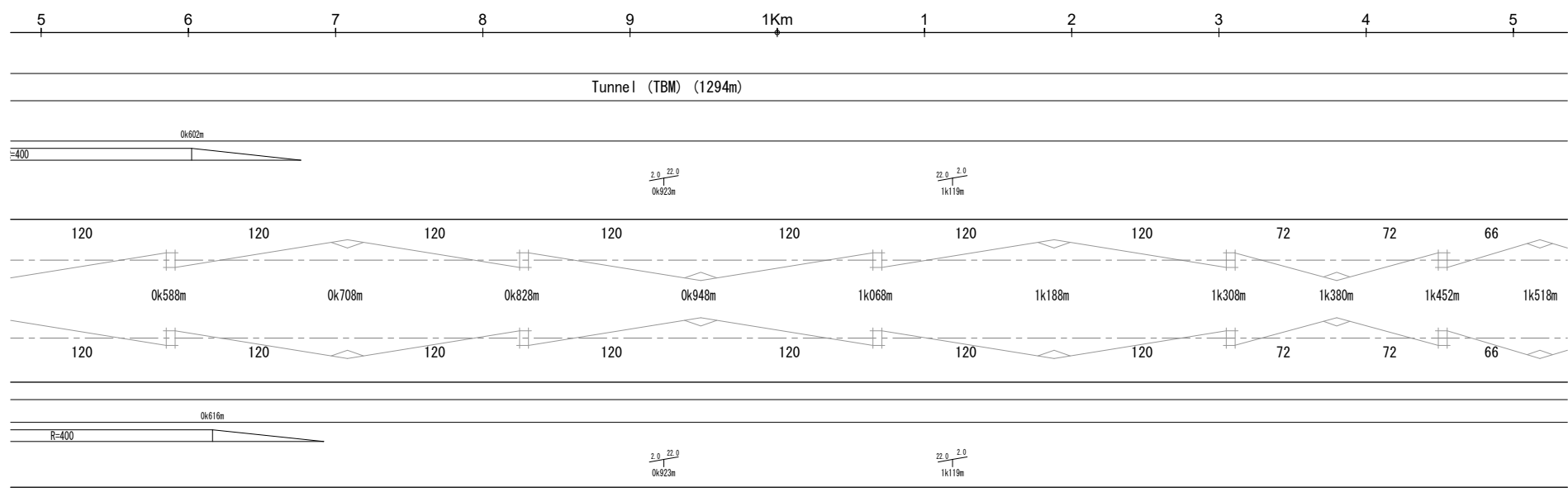
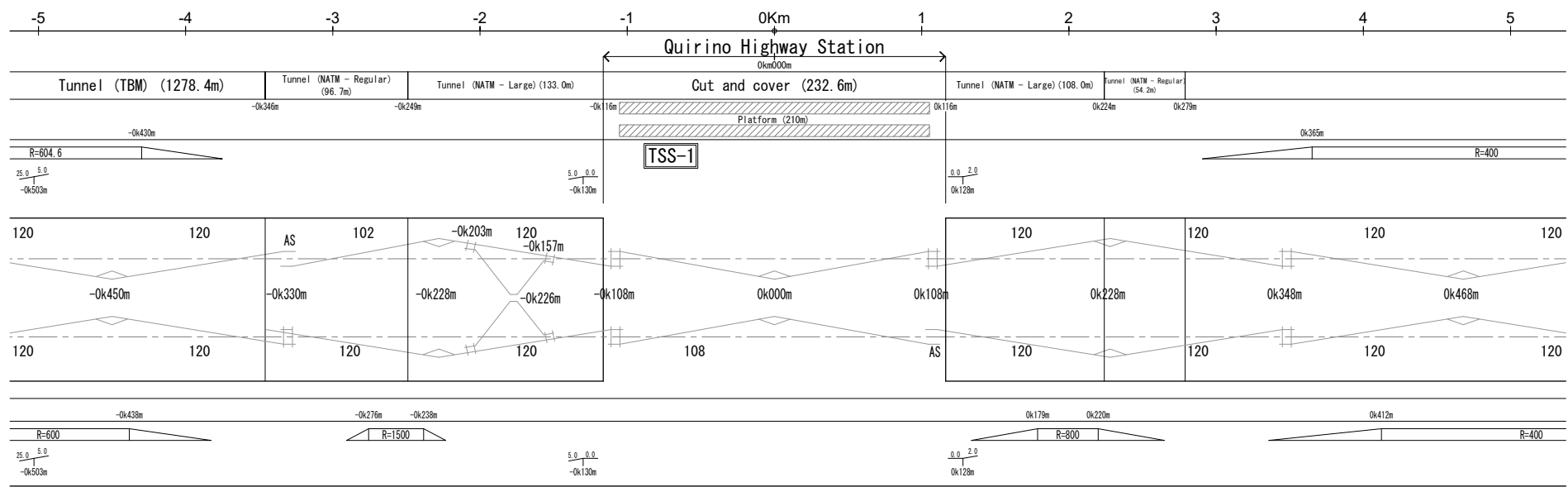
TONICHI ENGINEERING CONSULTANTS, INC.

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP106

**OCS PLAN IN MAIN LINE
KM -2+000 - KM -0+500**

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0401
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

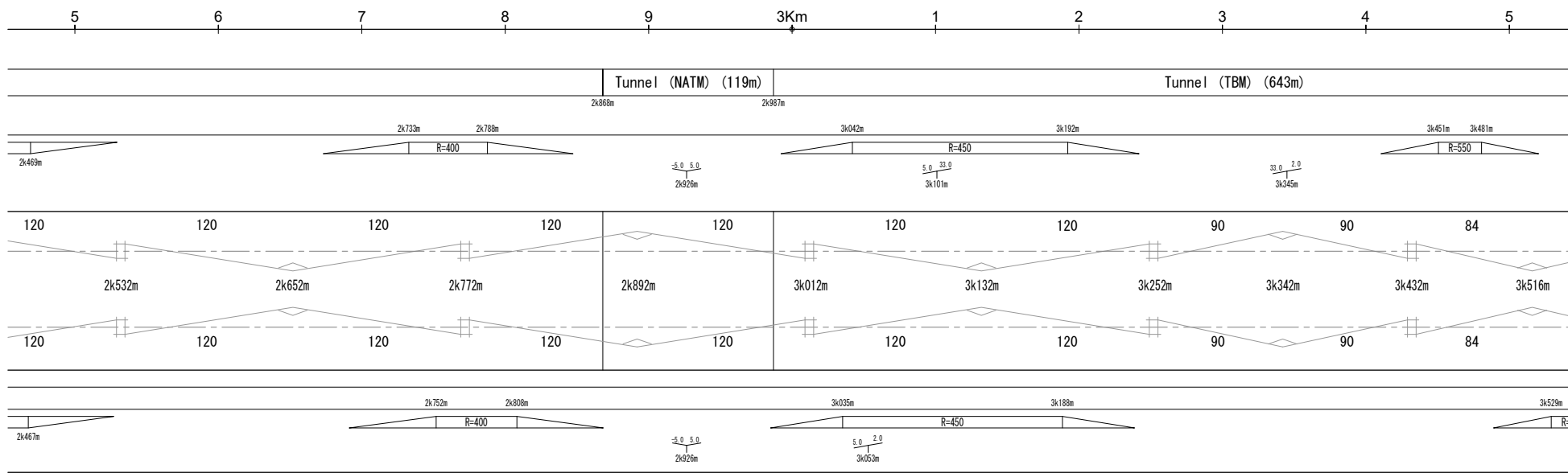
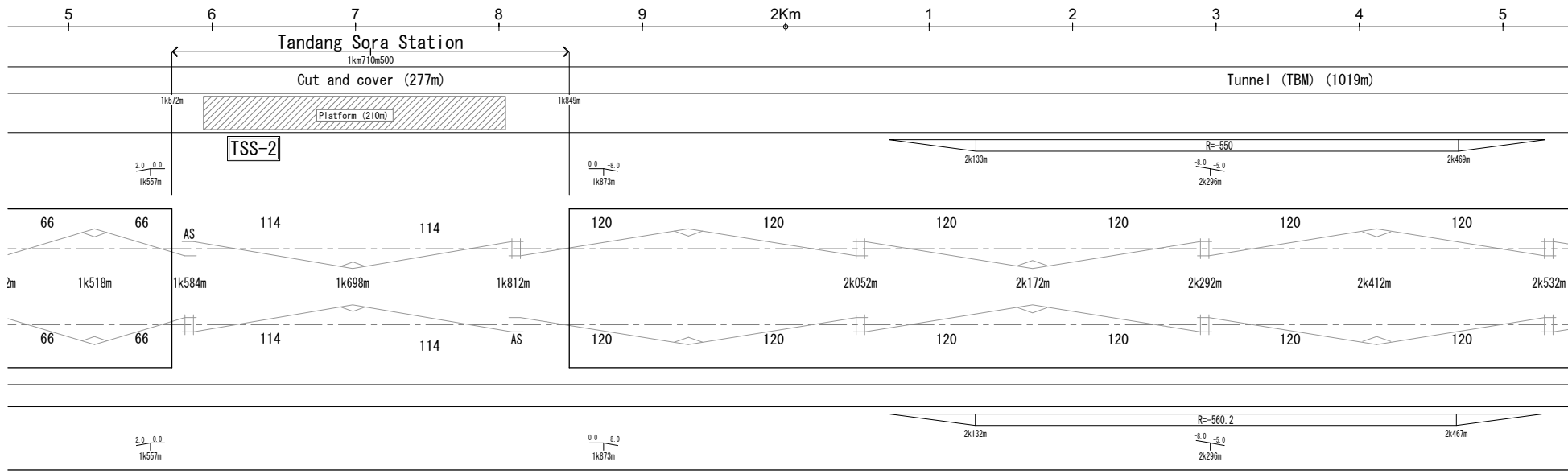
- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- KATAHIRA & ENGINEERS INTERNATIONAL
- TOKYO METRO CO., LTD.
- PACIFIC CONSULTANTS CO.,LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- TONCHI ENGINEERING CONSULTANTS, INC.
- ALMEC CORPORATION

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106

OCS PLAN IN MAIN LINE
KM -0+500 - KM 1+500

DATE	
	April 2019
SCALE	
	1:3000
SHEET No.	
DRG No.	
	MMSP-OCS-0000-DD-0402
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

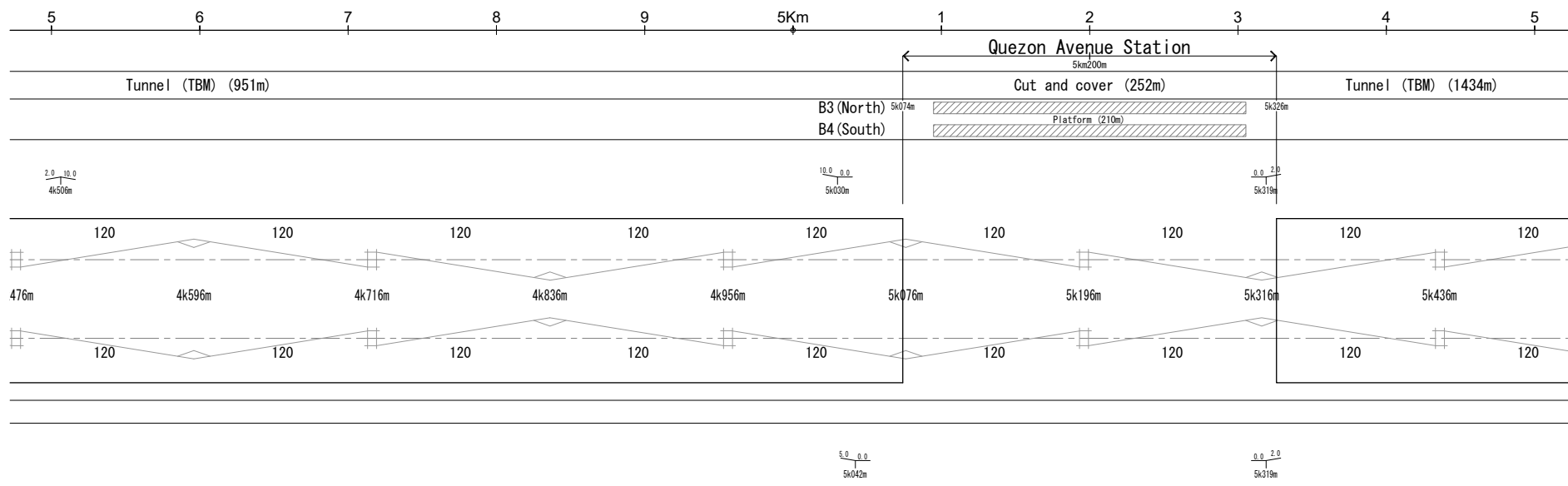
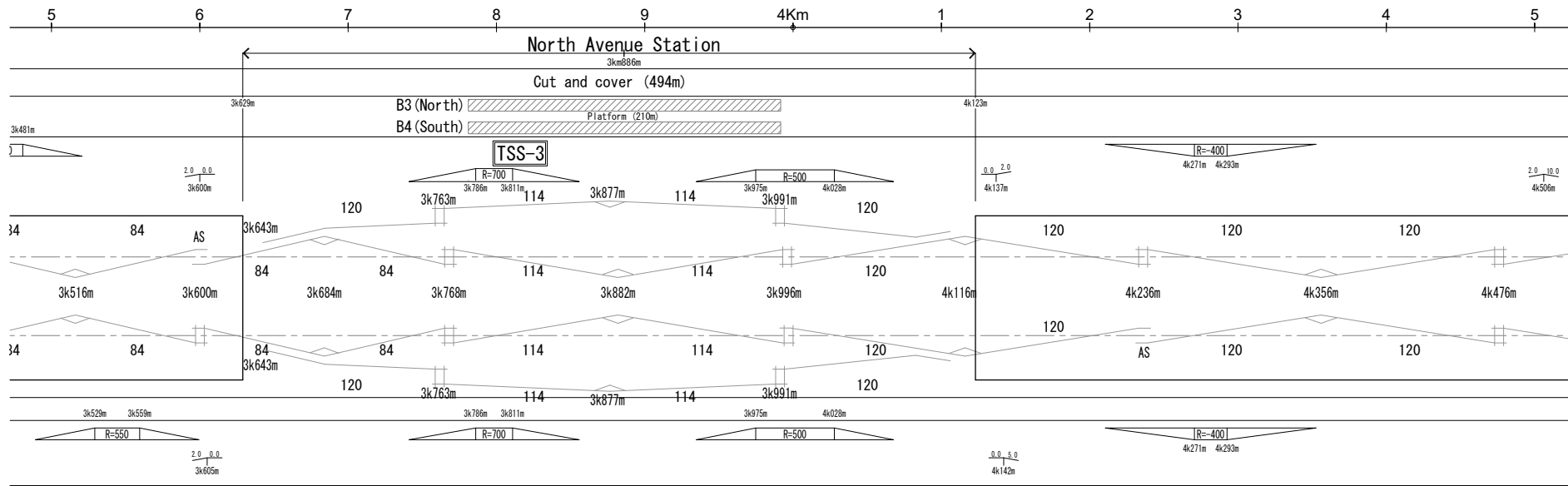
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- KATAHIRA & ENGINEERS INTERNATIONAL
- TOKYO METRO CO., LTD.
- PACIFIC CONSULTANTS CO.,LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.
- ALMEC CORPORATION

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106

OCS PLAN IN MAIN LINE
KM 1+500 - KM 3+500

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0403
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

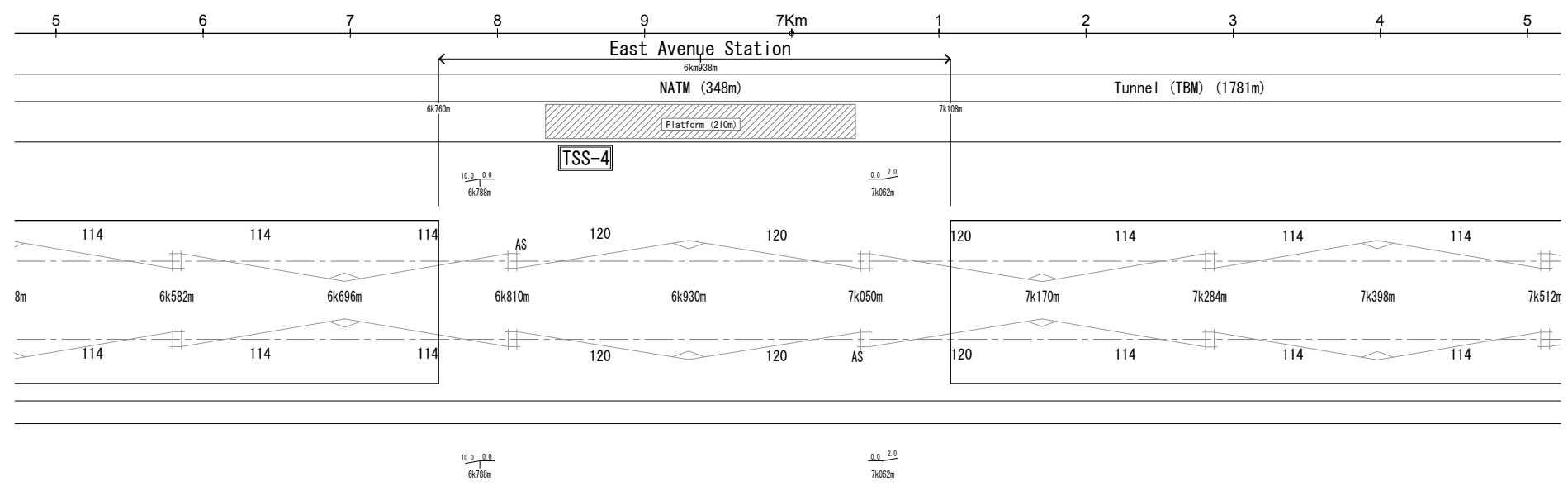
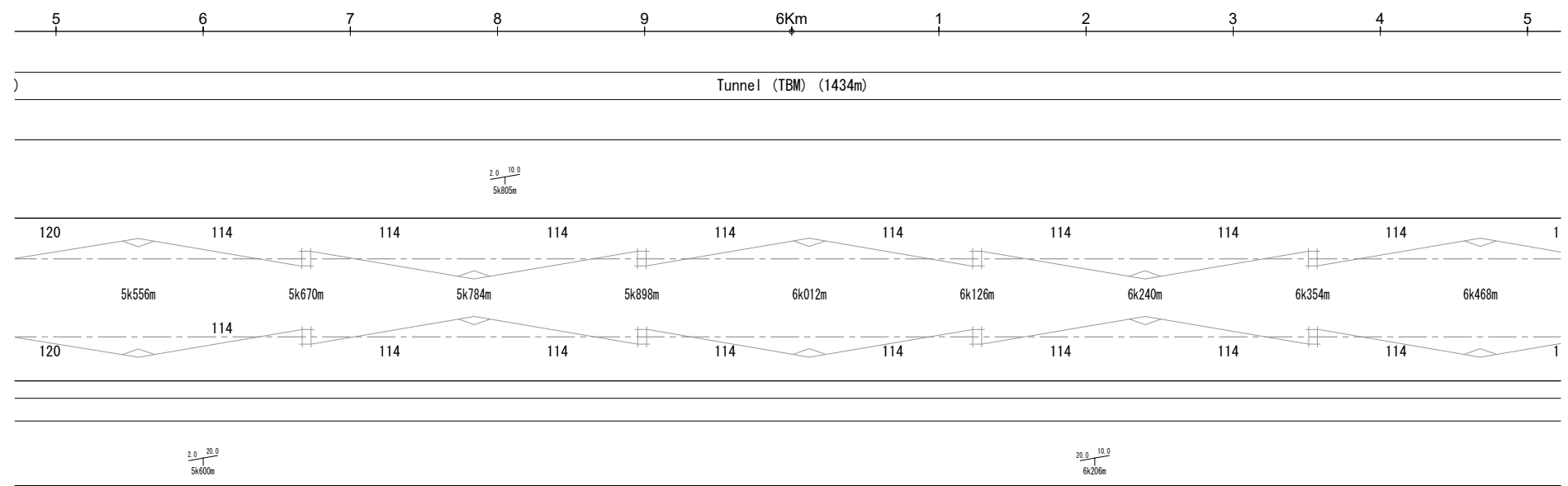
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- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

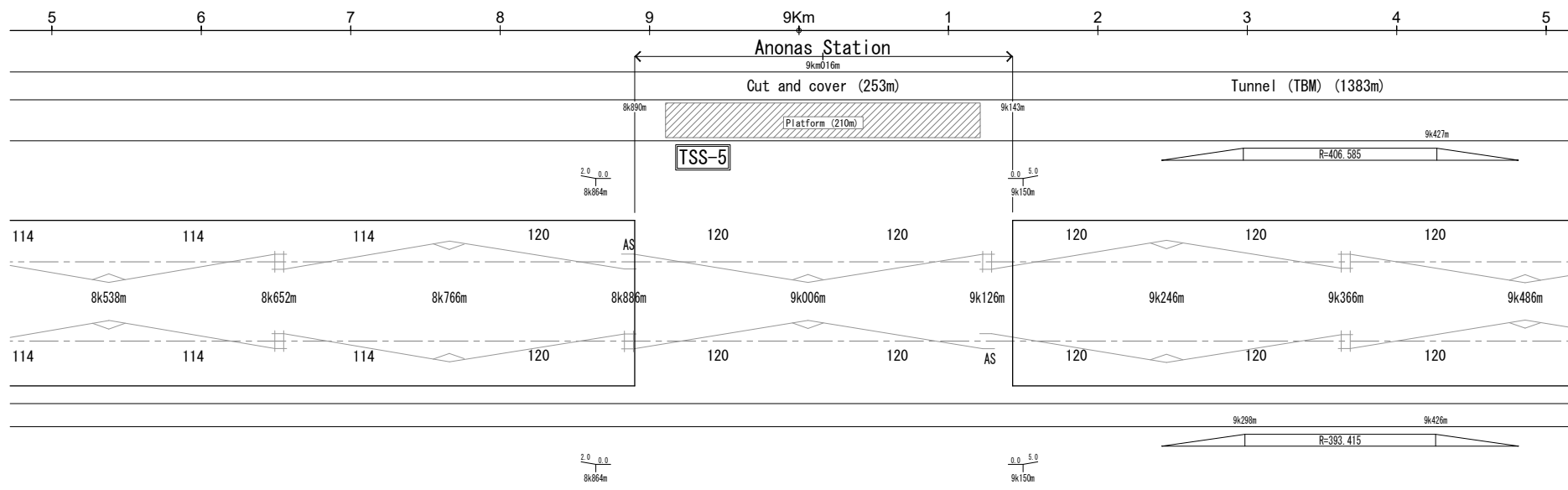
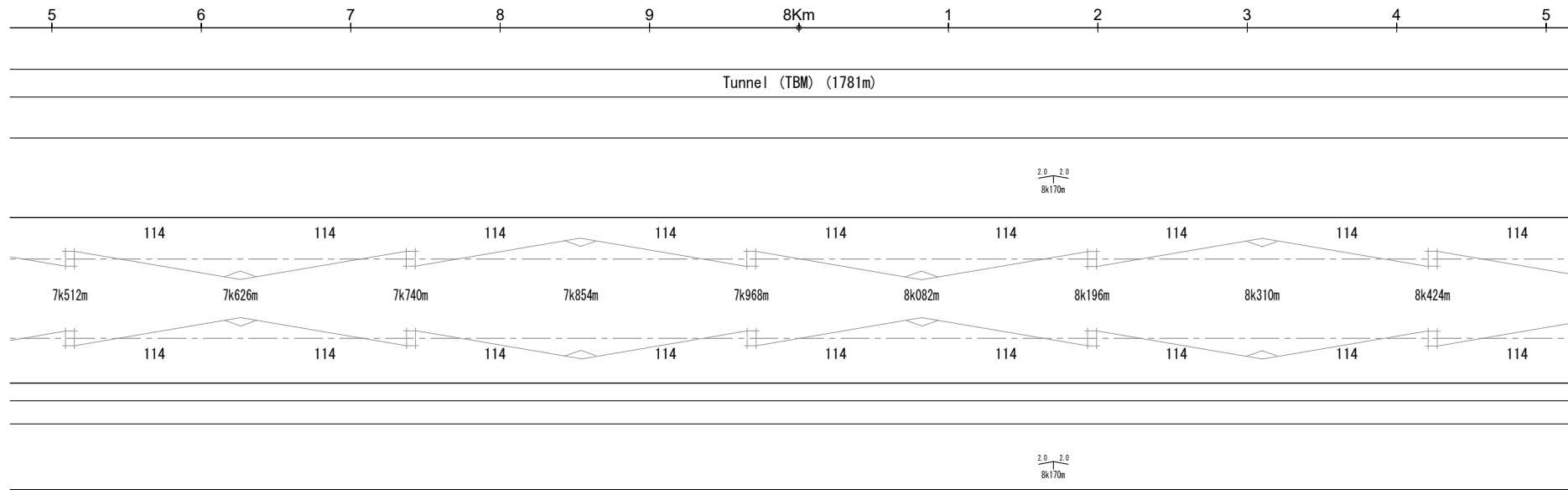
METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106

**OCS PLAN IN MAIN LINE
 KM 3+500 - KM 5+500**

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0404
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106		DATE
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD.</p> <p>JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC.</p> <p>ALMEC CORPORATION</p>			<p>TITLE</p> <p>NAME</p> <p>SIGNATURE</p>		April 2019
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			<p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>		1:3000
						<p>OCS PLAN IN MAIN LINE</p> <p>KM 5+500 - KM 7+500</p>		DRG No. MMSP-OCS-0000-DD-0405
								DRG S. REV



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

TOKYO METRO CO., LTD.

JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

ALMEC CORPORATION

KATAHIRA & ENGINEERS INTERNATIONAL

PACIFIC CONSULTANTS CO.,LTD.

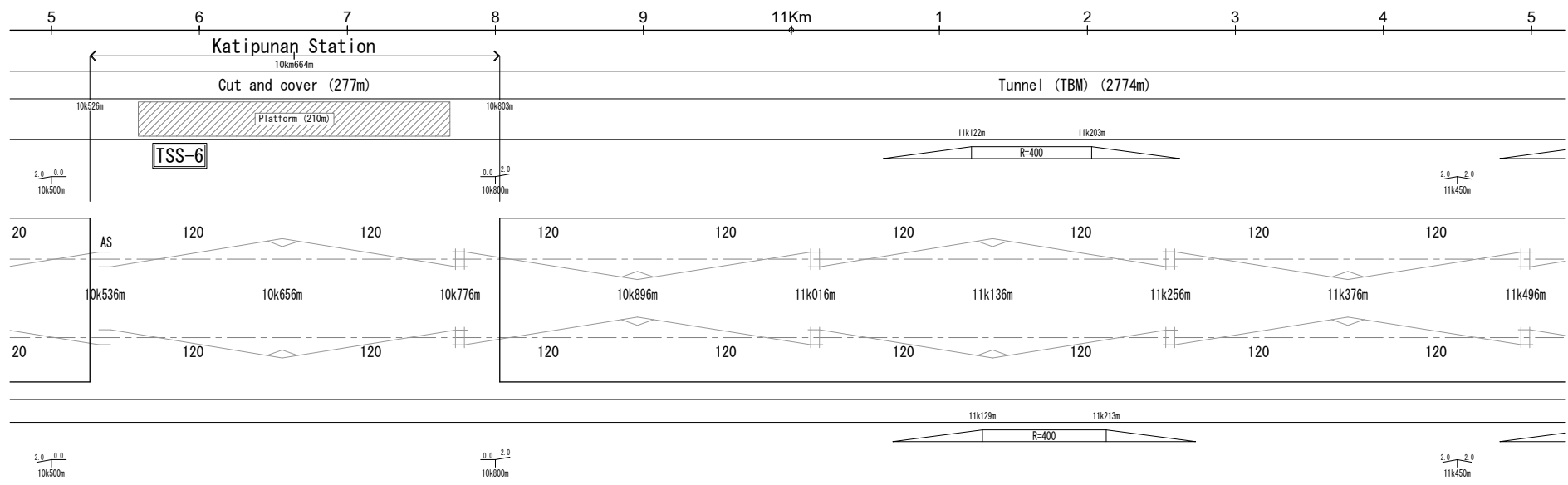
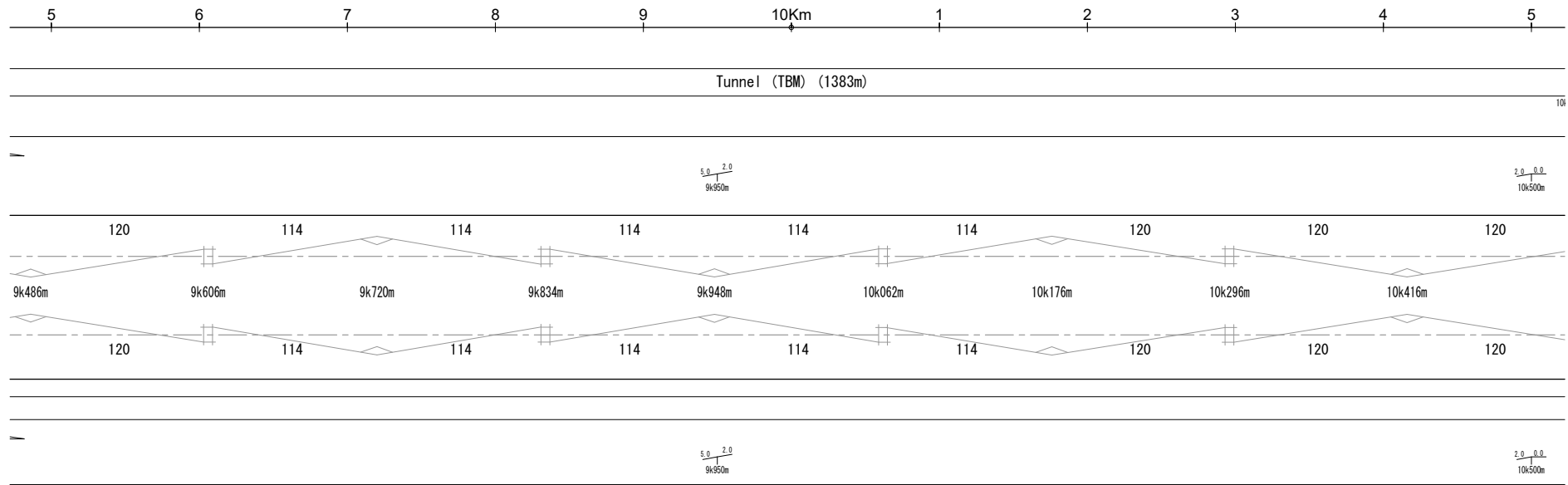
TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106

OCS PLAN IN MAIN LINE
KM 7+500 - KM 9+500

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0406
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

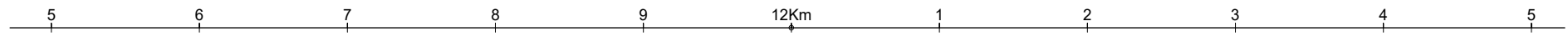
- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

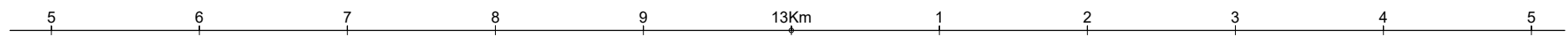
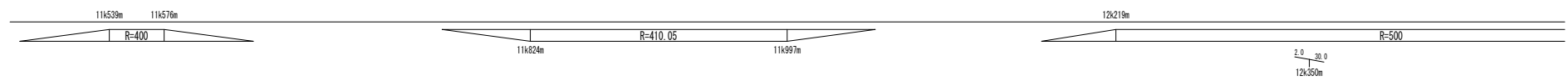
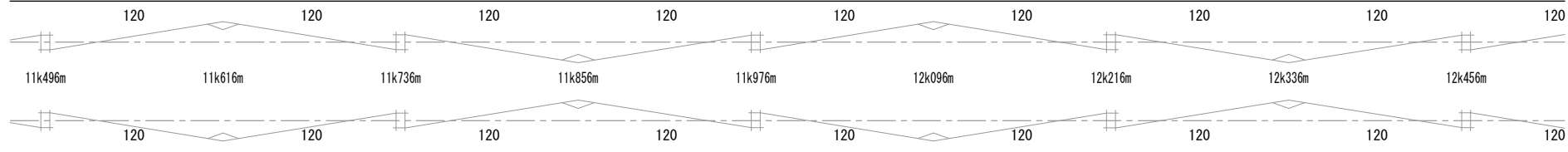
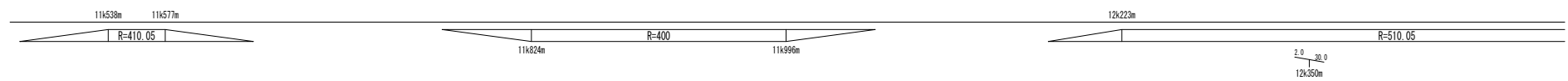
METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

**OCS PLAN IN MAIN LINE
KM 9+500 - KM 11+500**

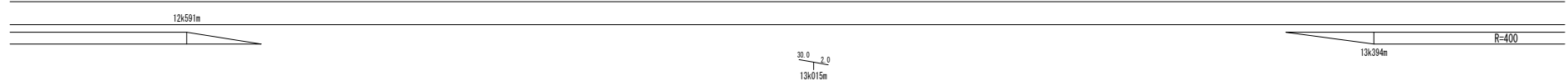
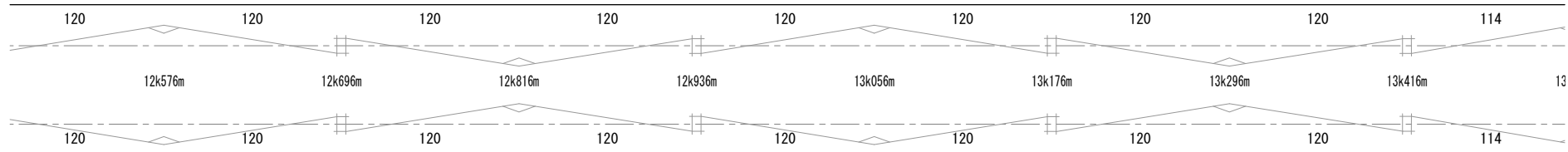
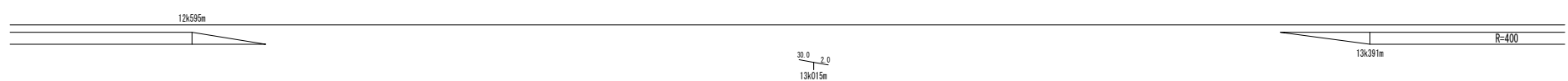
DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0407
DRG S.	
REV	



Tunnel (TBM) (2774m)



Tunnel (TBM) (2774m)



VERSIONS	DATE	DESCRIPTION

JICA DESIGN TEAM

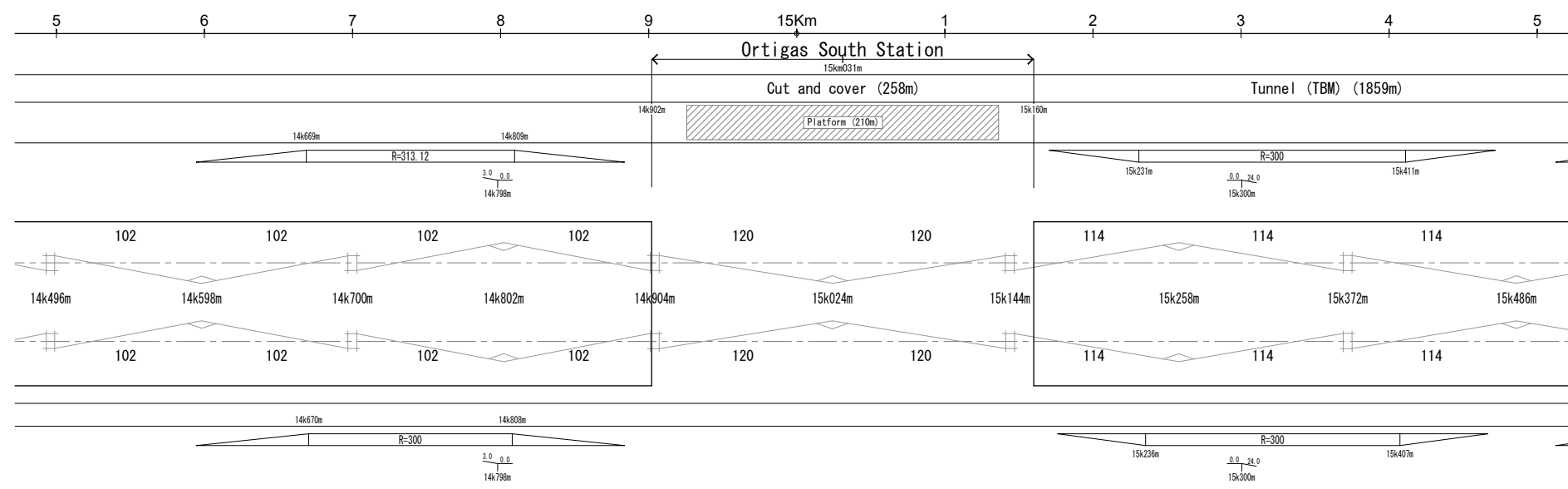
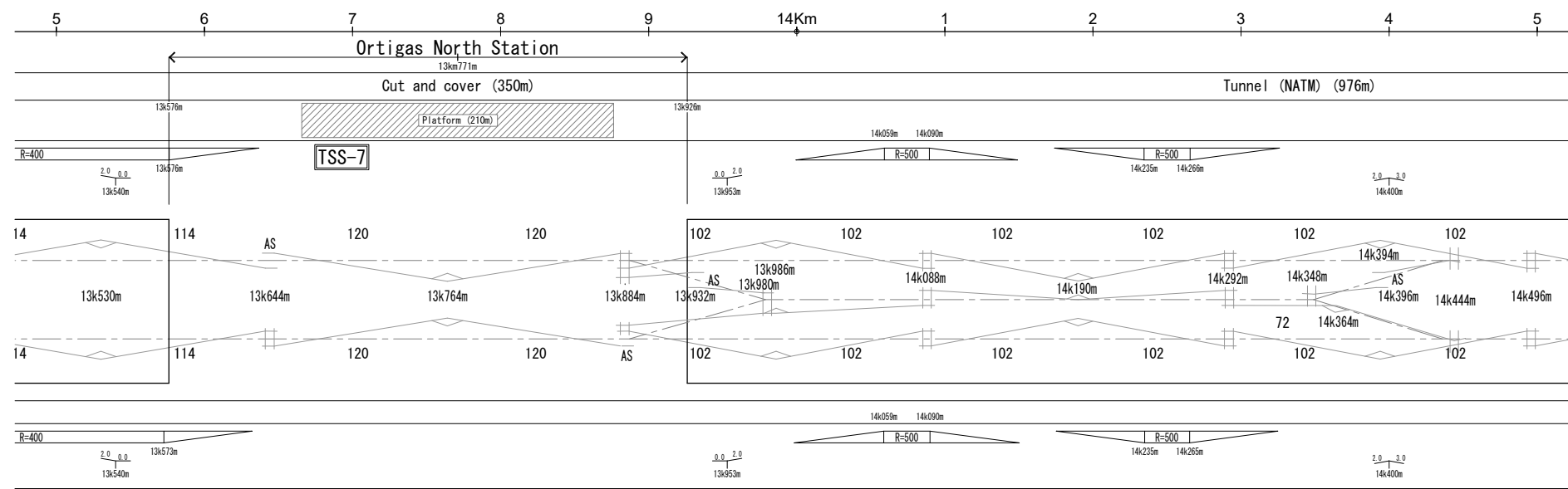
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- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP106

**OCS PLAN IN MAIN LINE
KM 11+500 - KM 13+500**

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0408
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

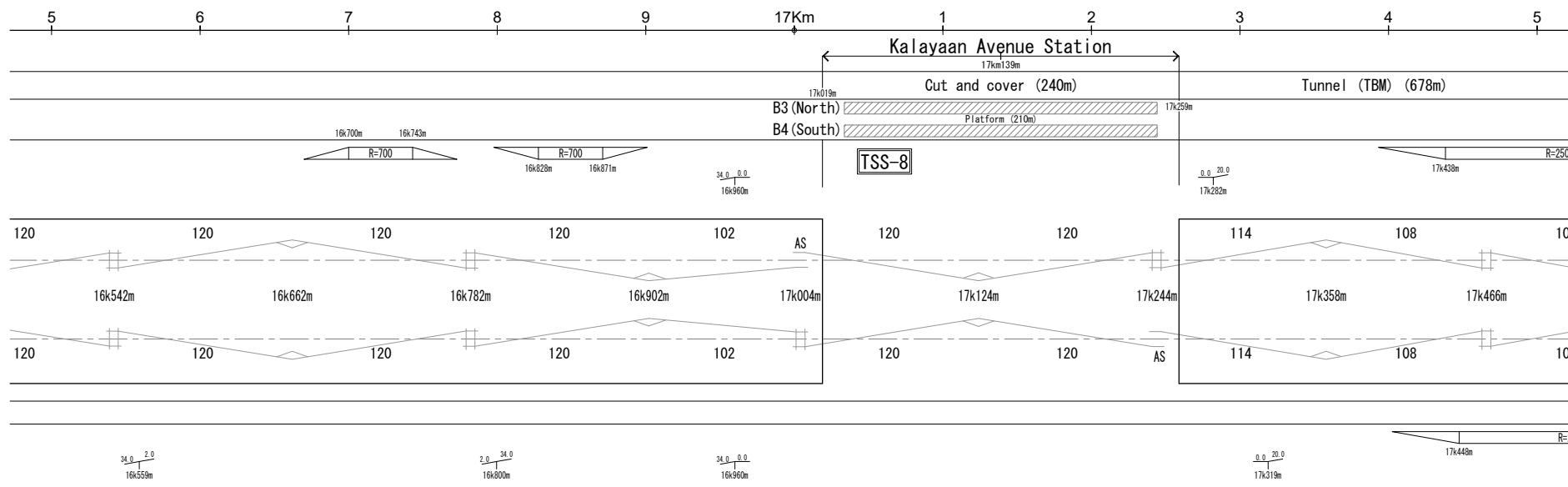
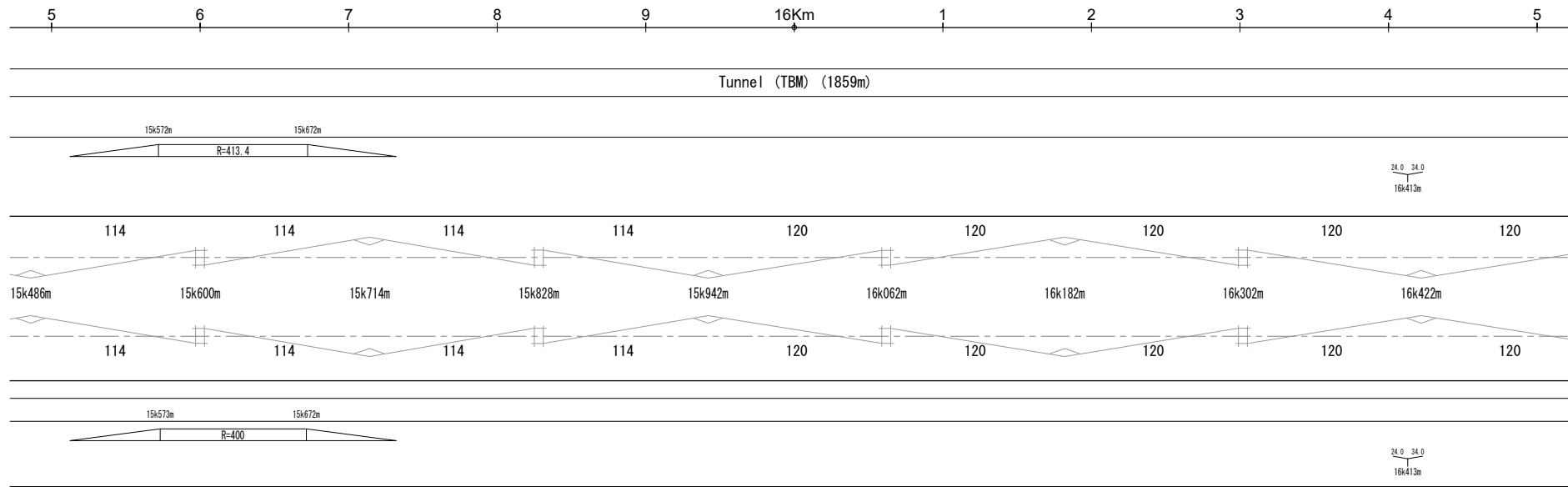
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- KATAHIRA & ENGINEERS INTERNATIONAL
- TOKYO METRO CO., LTD.
- PACIFIC CONSULTANTS CO.,LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.
- ALMEC CORPORATION

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106

OCS PLAN IN MAIN LINE
KM 13+500 - KM 15+500

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0409
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CONSULTANT

JICA DESIGN TEAM

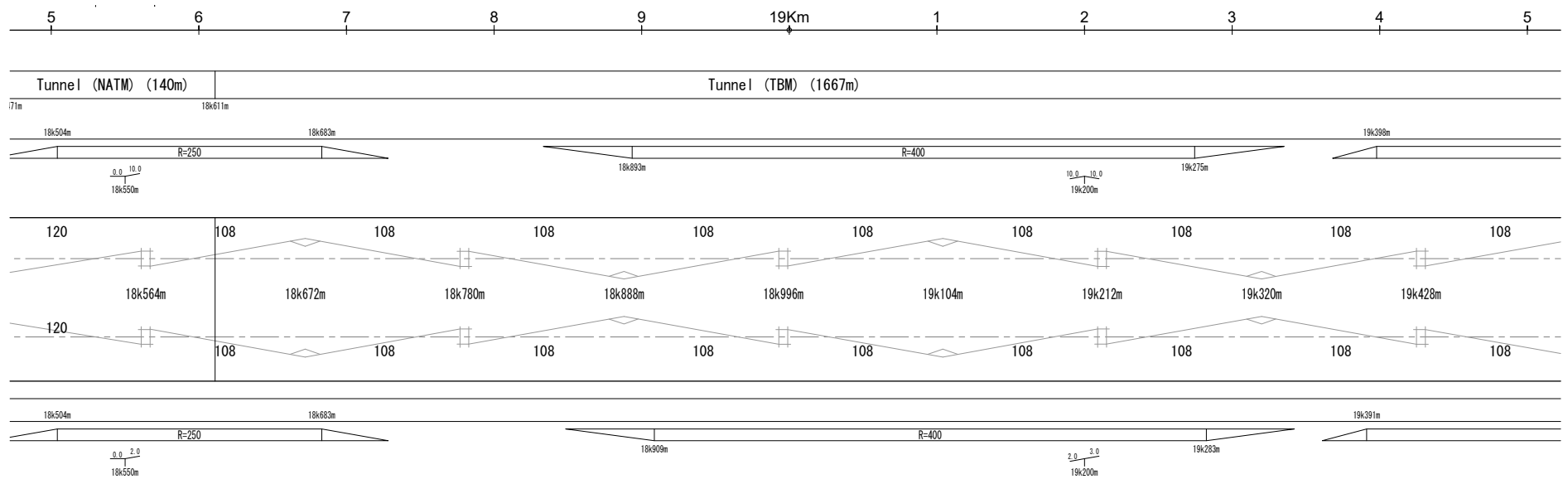
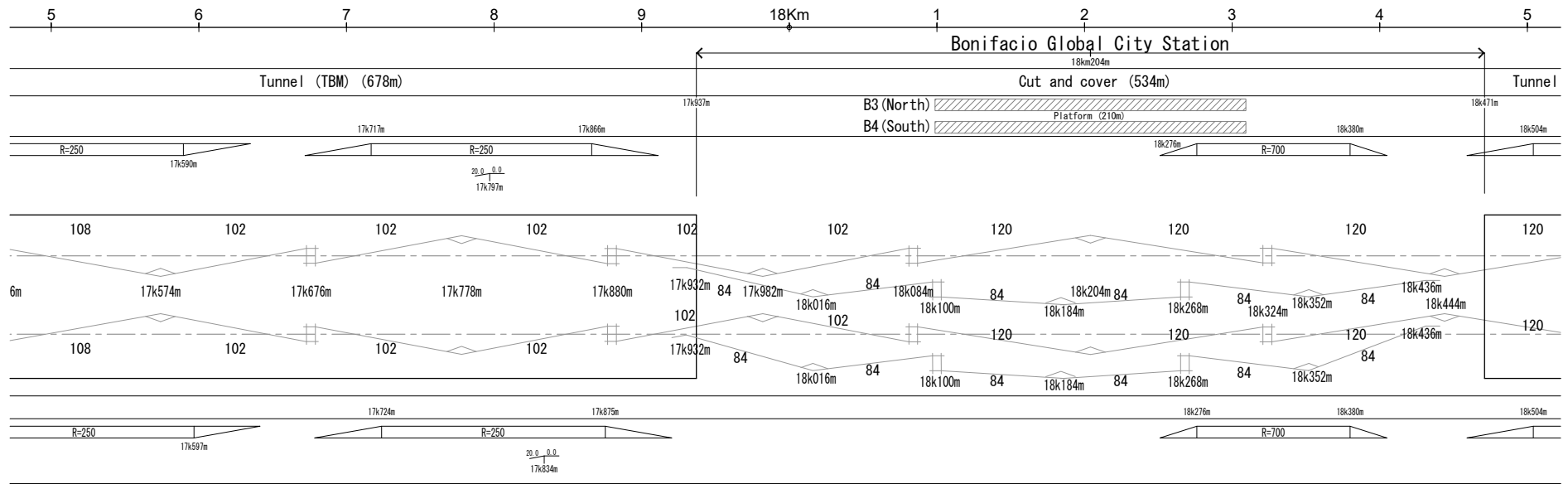
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	TOKYO METRO CO., LTD.		PACIFIC CONSULTANTS CO.,LTD.
	JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.		TONICHI ENGINEERING CONSULTANTS, INC.
	ALMEC CORPORATION		

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

**OCS PLAN IN MAIN LINE
KM 15+500 - KM 17+500**

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0410
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- KATAHIRA & ENGINEERS INTERNATIONAL
- TOKYO METRO CO., LTD.
- PACIFIC CONSULTANTS CO.,LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.
- ALMEC CORPORATION

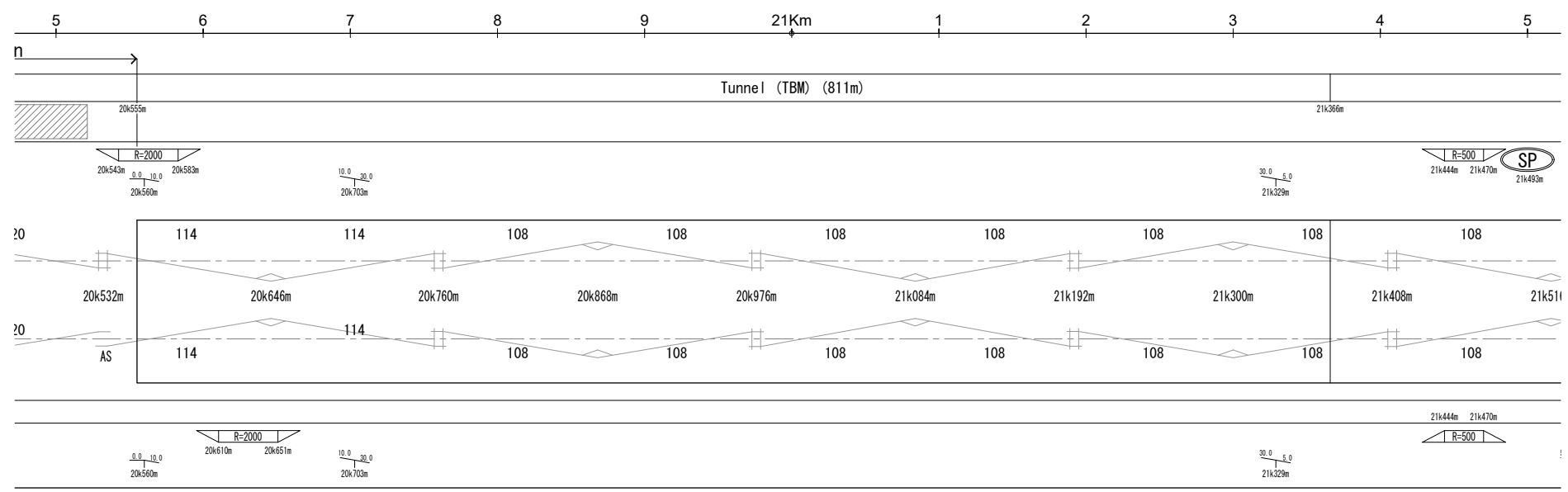
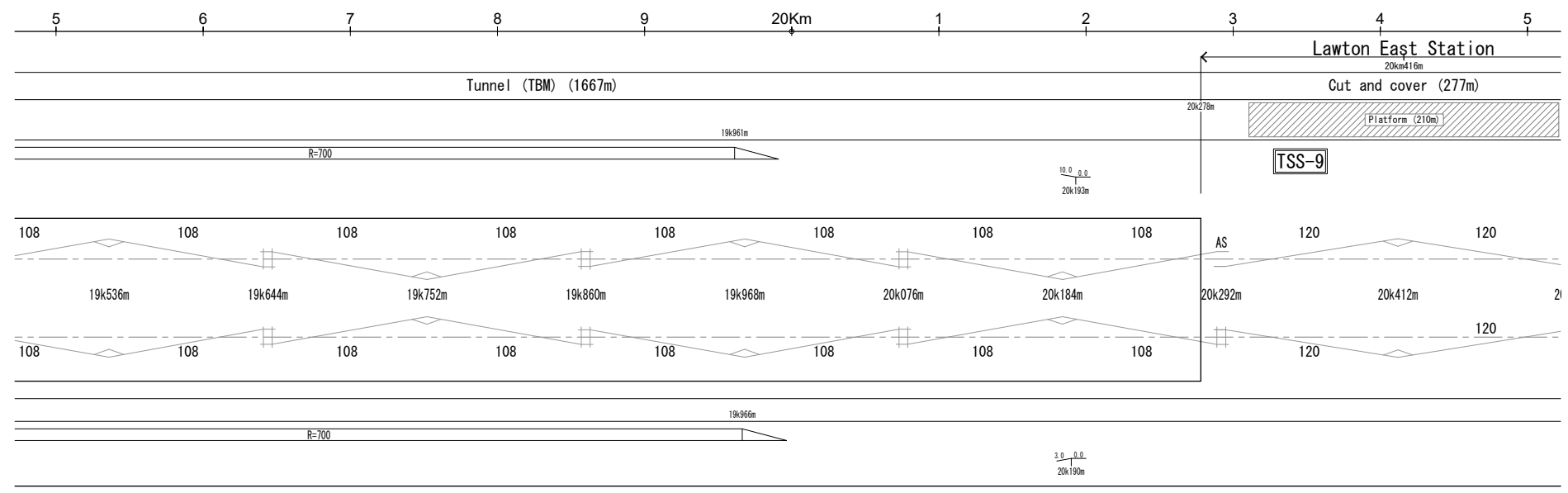
CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106

OCS PLAN IN MAIN LINE
KM 17+500 - KM 19+500

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0411
DRG S.	
REV	

REFERENCE ONLY



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

 TOKYO METRO CO., LTD.

 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

 ALMEC CORPORATION

 KATAHIRA & ENGINEERS INTERNATIONAL

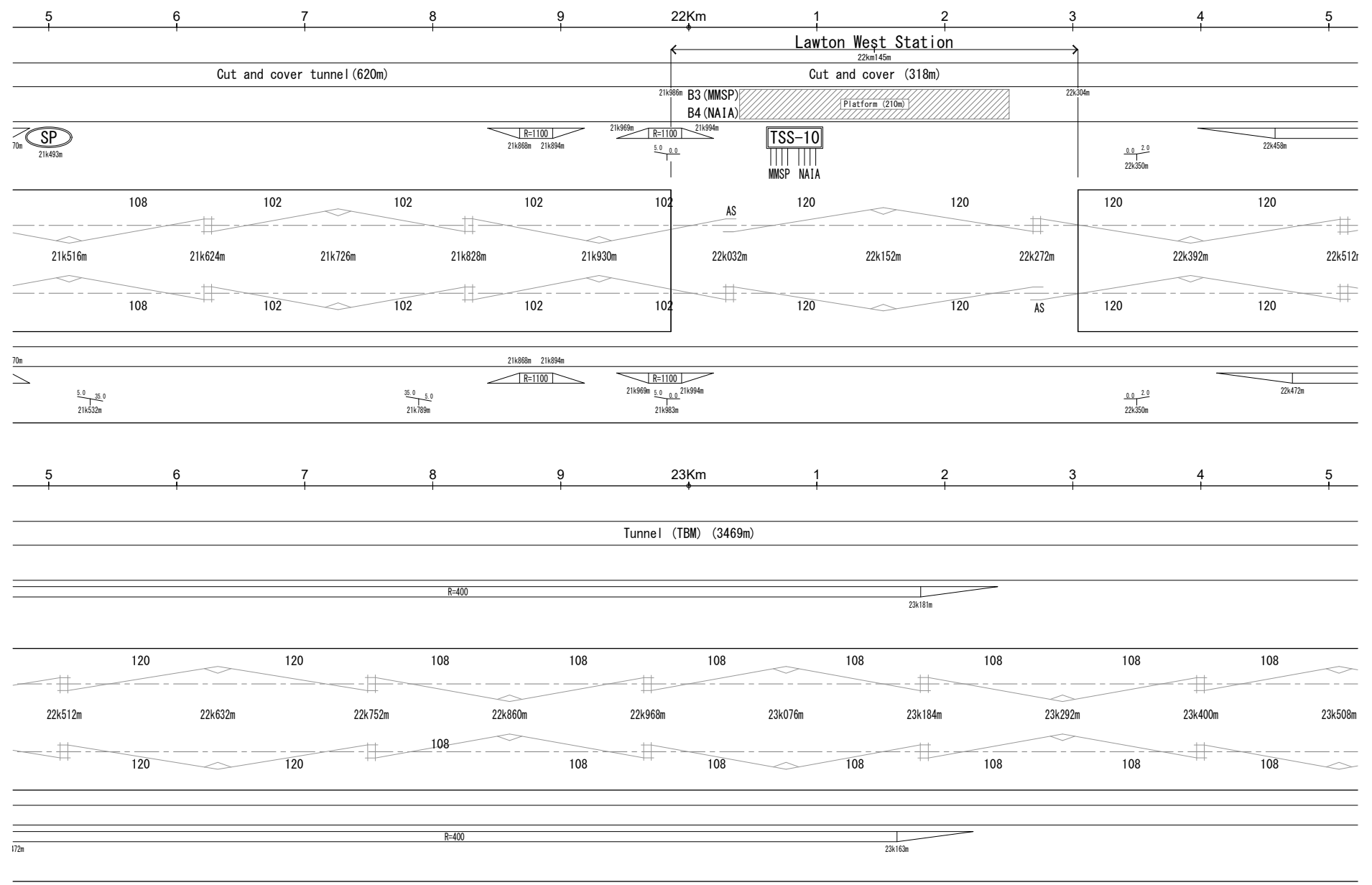
 PACIFIC CONSULTANTS CO.,LTD.

 TONICHI ENGINEERING CONSULTANTS, INC.



TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
OCS PLAN IN MAIN LINE
KM 19+500 - KM 21+500








DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0412
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION


DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

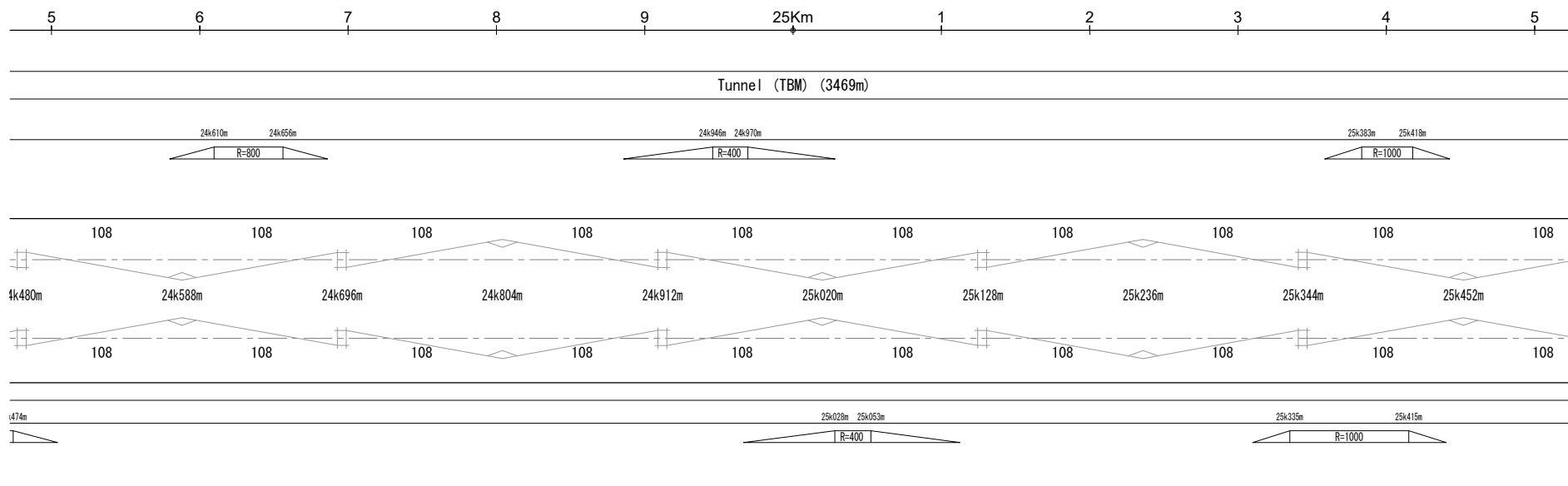
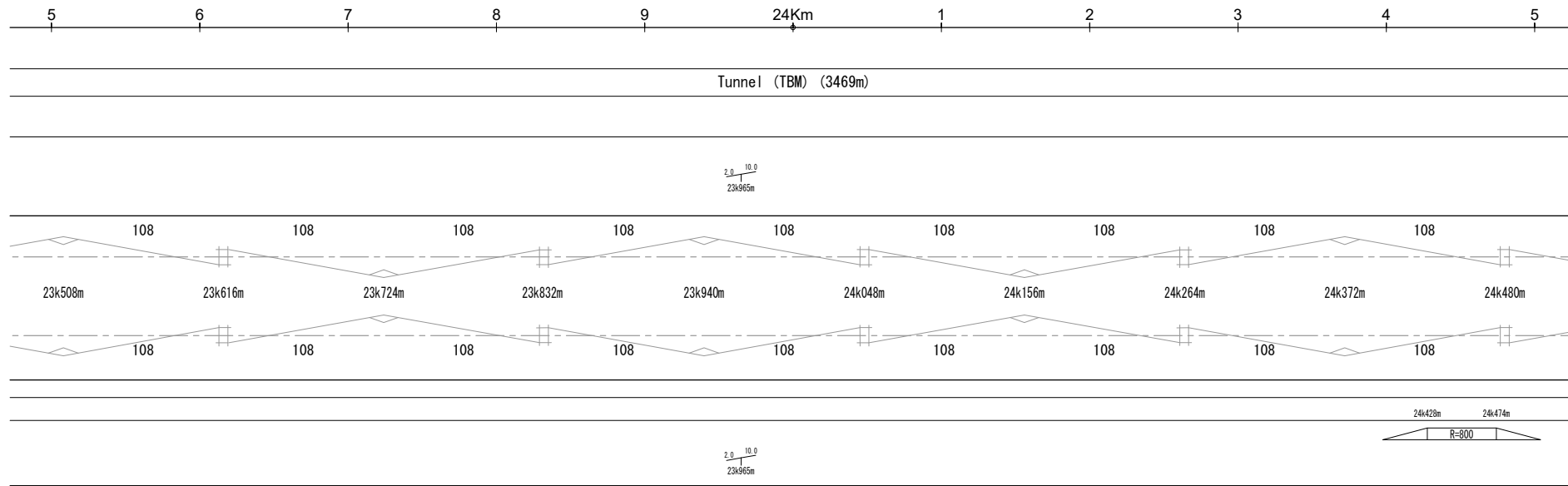
-  **ORIENTAL CONSULTANTS GLOBAL CO.,LTD.**
-  **TOKYO METRO CO., LTD.**
-  **JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.**
-  **ALMEC CORPORATION**
-  **KATAHIRA & ENGINEERS INTERNATIONAL**
-  **PACIFIC CONSULTANTS CO.,LTD.**
-  **TONCHI ENGINEERING CONSULTANTS, INC.**

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106

OCS PLAN IN MAIN LINE
KM 21+500 - KM 23+500

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0413
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

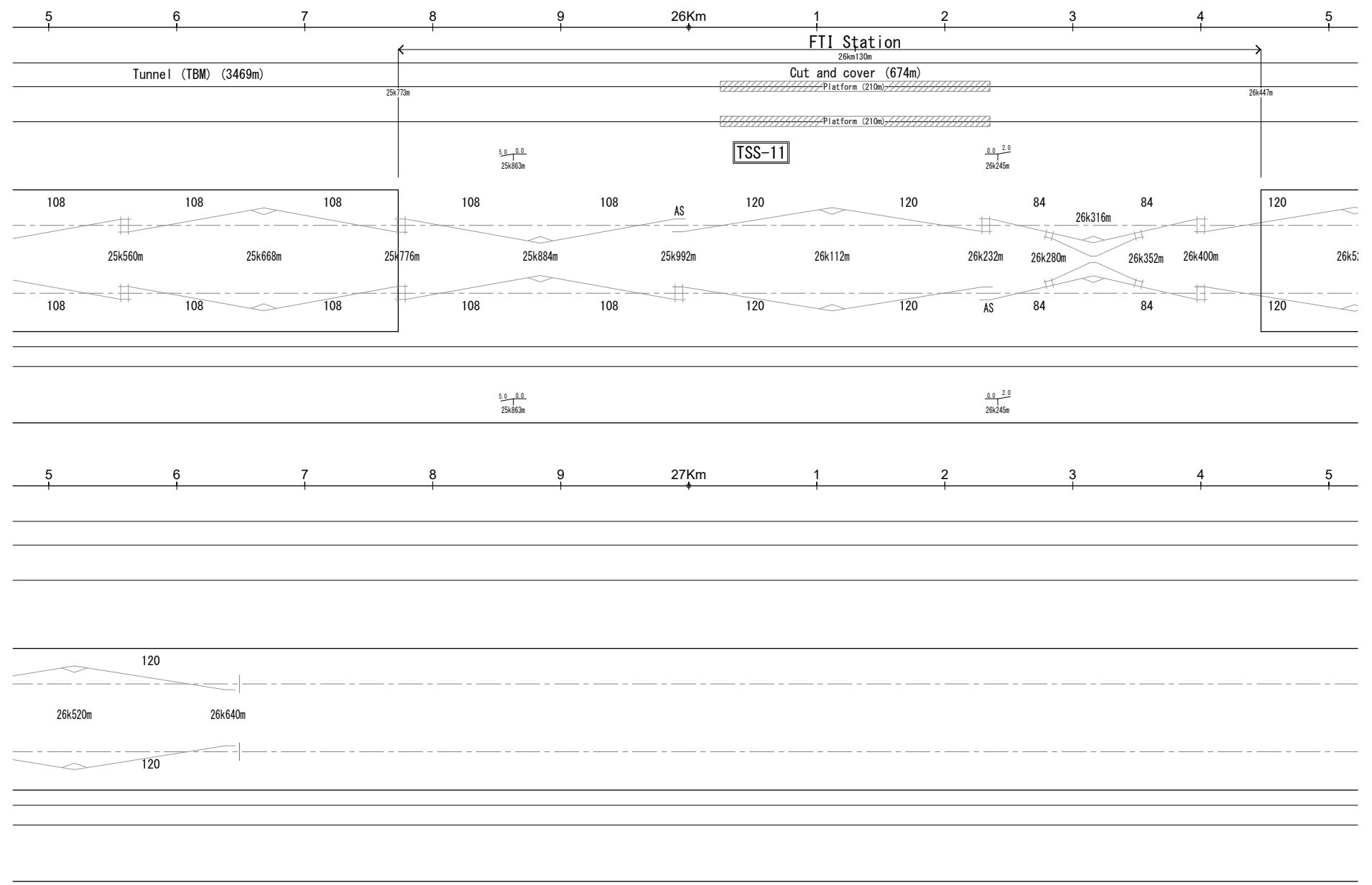
- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 - CP106

OCS PLAN IN MAIN LINE
KM 23+500 - KM 25+500

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0414
DRG S.	
REV	



VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CONSULTANT
JICA DESIGN TEAM
 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
 TOKYO METRO CO., LTD.
 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
 ALMEC CORPORATION
 KATAHIRA & ENGINEERS INTERNATIONAL
 PACIFIC CONSULTANTS CO.,LTD.
 TONICHI ENGINEERING CONSULTANTS, INC.

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1 : CP106
OCS PLAN IN MAIN LINE
KM 25+500 - KM 27+500

DATE	April 2019
SCALE	1:3000
SHEET No.	
DRG No.	MMSP-OCS-0000-DD-0415
DRG S.	
REV	

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES


REFERENCE ONLY

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
AUTOMATION FARE COLLECTOR

ORIENTAL CONSULIANIS GLOBAL CO., LID.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

Last modified by LUMBA_C6 / 04-Oct-2019
Filename: C:\Users\lumba_c6\Desktop\For_TinhPham\POWER SYSTEM CAD With TBlock

VERSIONS	DATE	DESCRIPTION	GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : PARANAQUE TO VALENZUELA	DATE Nov. 2019
0	Jan 19	FOR INFORMATION ONLY	 OCGlobal-JV Metro Manila Subway Project (MMSP)	TITLE	NAME	SIGNATURE	SCALE N.T.S.
				DESIGNER			SHEET No.
				CHECK			DRG No. MMSP-AFC-0000-DD-0000
				TEAM LEADER			DRG S.
			PR. MANAGER				REV 0
						AUTOMATIC FARE COLLECTOR COVER SHEET	




DEPARTMENT OF
TRANSPORTATION
(DOTr)

AUTOMATIC FARE COLLECTOR (AFC)

DRAWING INDEX

DRAWING No.	CONTENTS
MMSp-AFC-0000-DD-0000	AUTOMATIC FARE COLLECTOR (AFC) COVER SHEET
MMSp-AFC-0000-DD-0001	AUTOMATIC FARE COLLECTOR (AFC) DRAWING INDEX
MMSp-AFC-0000-DD-0002	AFC SYSEM

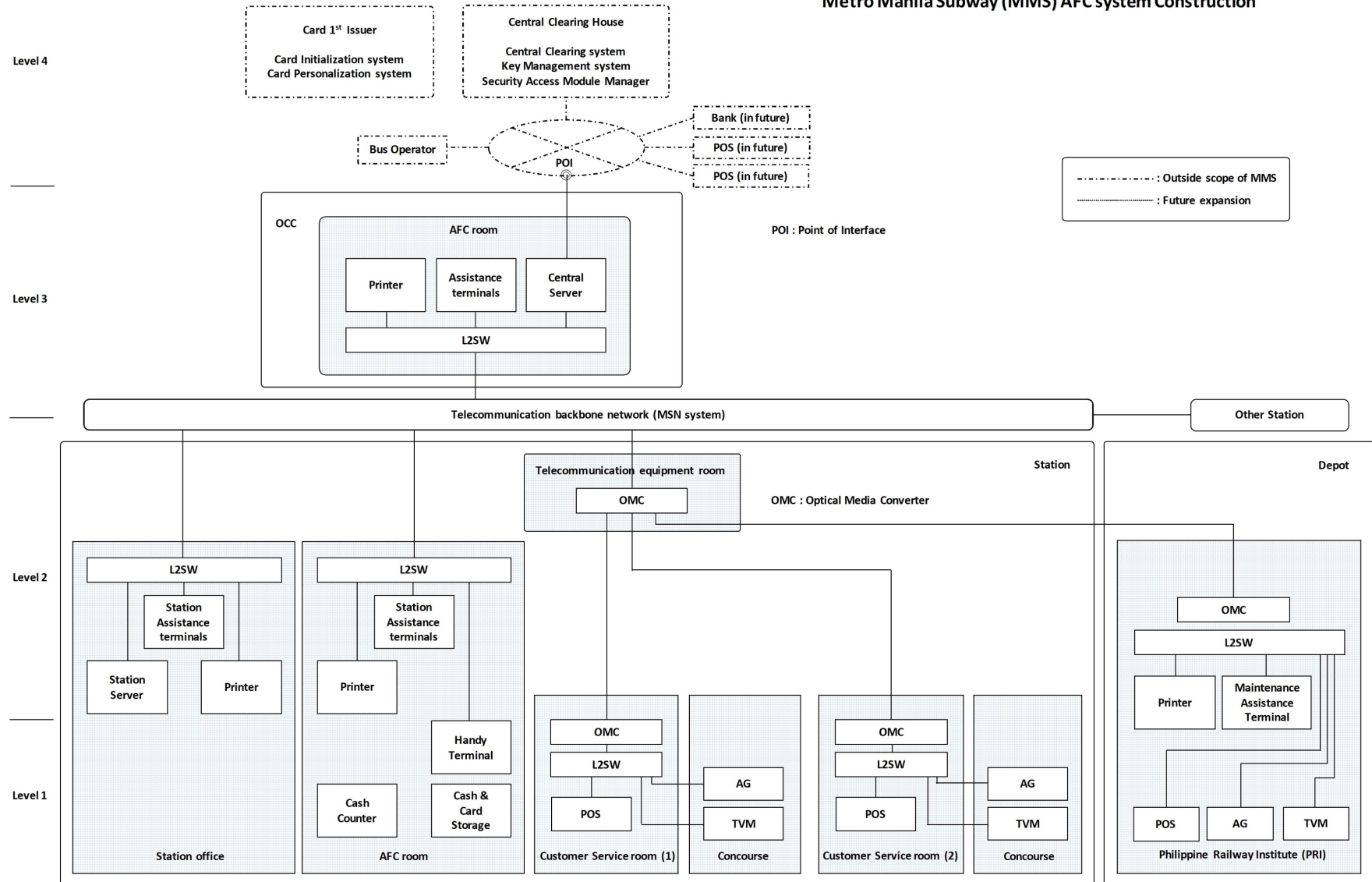
Last modified by LUMBA_C6 / 04-Oct-2019
 Filename: C:\Users\lumba_c6\Desktop\For_TinhPhan\POWER SYSTEM CAD With TBlock

VERSIONS	DATE	DESCRIPTION	GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : PARANAQUE TO VALENZUELA	DATE	
0	Jan 19	FOR INFORMATION ONLY	 OCGlobal-JV Metro Manila Subway Project (MMSp)	TITLE	NAME	SIGNATURE	Jan. 2019	
				DESIGNER			SCALE	N.T.S.
				CHECK			SHEET No.	
				TEAM LEADER			DRG No.	MMSp-AFC-0000-DD-0001
			PR. MANAGER			DRG S.	REV	
AUTOMATIC FARE COLLECTOR DRAWING INDEX							0	



DEPARTMENT OF
TRANSPORTATION
(DOTr)

Metro Manila Subway (MMS) AFC system Construction



VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Jan. 2019
			JICA DESIGN TEAM 			SCALE N.T.S.	
			DEPARTMENT OF TRANSPORTATION (DOT) 			SHEET No.	
			JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			DRG No. MMSP-AFC-0000-DD-0002	
			AFC SYSTEM			DRG S. REV	

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES













DRAWINGS
PLATFORM SCREEN DOOR

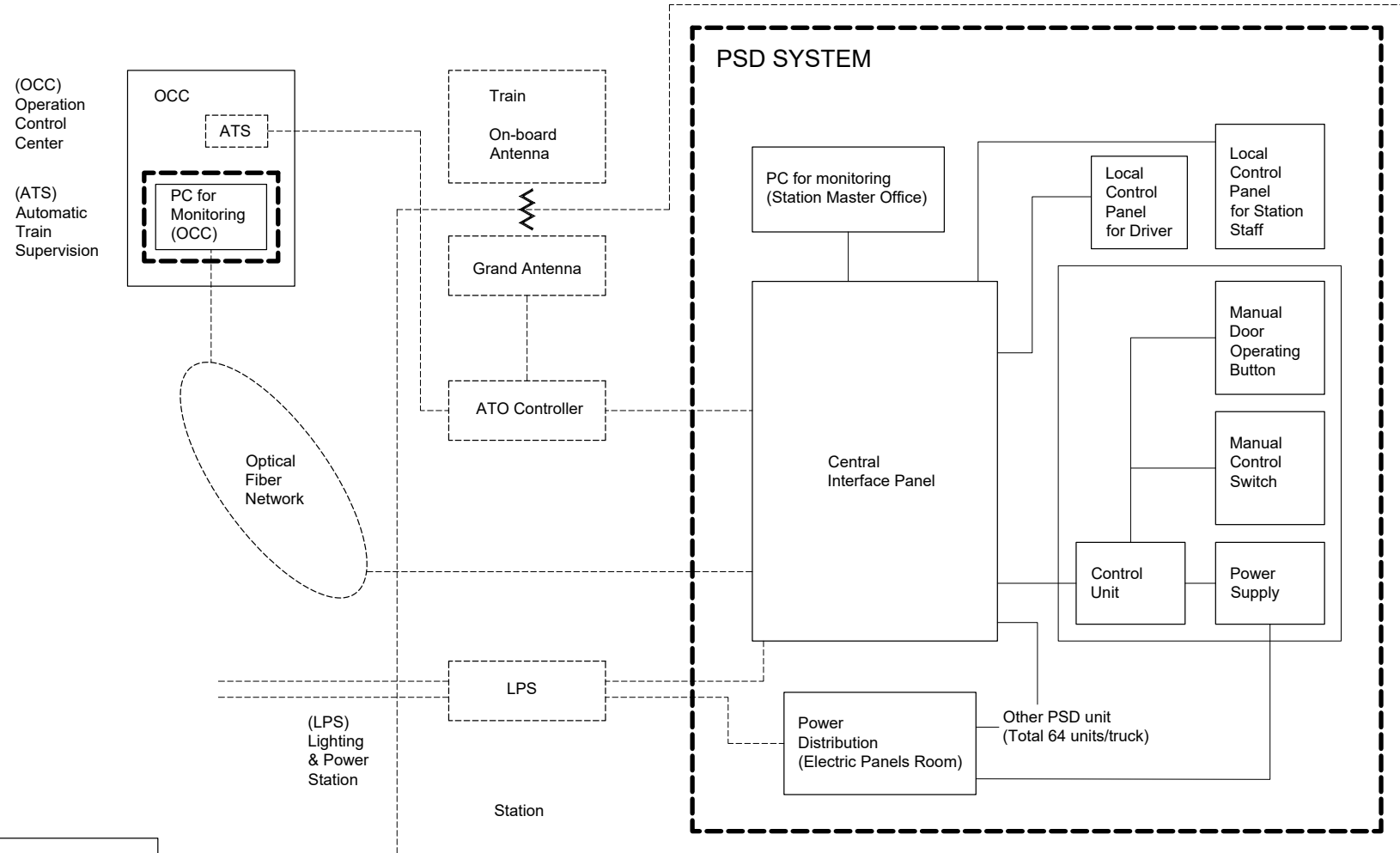
ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

DATE	Nov. 2019
SCALE	
SHEET No.	
DRG No.	MMSP-PSD-0000-DD-0000
DRG S.	REV

PLATFORM SCREEN DOOR DRAWING INDEX

DRAWING No.	CONTENTS
MMS-PSD-0000-DD-0000	PLATFORM SCREEN DOOR COVER SHEET
MMS-PSD-0000-DD-0001	PLATFORM SCREEN DOOR DRAWING INDEX
MMS-PSD-0000-DD-0101	SYSTEM OUTLINE OF PLATFORM SCREEN DOOR
MMS-PSD-0000-DD-0102	CROSS SECTION OF PLATFORM SCREEN DOOR
MMS-PSD-0000-DD-0201	PLATFORM SCREEN DOOR LAYOUT PLAN - QUIRINO HIGHWAY STATION
MMS-PSD-0000-DD-0202	PLATFORM SCREEN DOOR LAYOUT PLAN - TANDANG SORA STATION
MMS-PSD-0000-DD-0203	PLATFORM SCREEN DOOR LAYOUT PLAN - NORTH AVENUE STATION (B3F)
MMS-PSD-0000-DD-0204	PLATFORM SCREEN DOOR LAYOUT PLAN - NORTH AVENUE STATION (B4F)

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : CP106	DATE Dec. 2018		
			 DEPARTMENT OF TRANSPORTATION (DOTr)	 JICA DESIGN TEAM	 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.	 KATAHIRA & ENGINEERS INTERNATIONAL	TITLE NAME SIGNATURE	SCALE N.T.S.	
			 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	 TOKYO METRO CO., LTD.	 PACIFIC CONSULTANTS CO.,LTD.	 TONICHI ENGINEERING CONSULTANTS, INC.	DESIGNER CHECK TEAM LEADER PR. MANAGER	SHEET No. DRG No. MMS-PSD-0000-DD-0001 DRG S.	
				 JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	 ALMEC CORPORATION	 JICA JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.	 TONICHI ENGINEERING CONSULTANTS, INC.	REV	PLATFORM SCREEN DOOR DRAWING INDEX



LEGEND:

- PSD System
- Other System

VERSIONS	DATE	DESCRIPTION
R0	17/10/18	

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

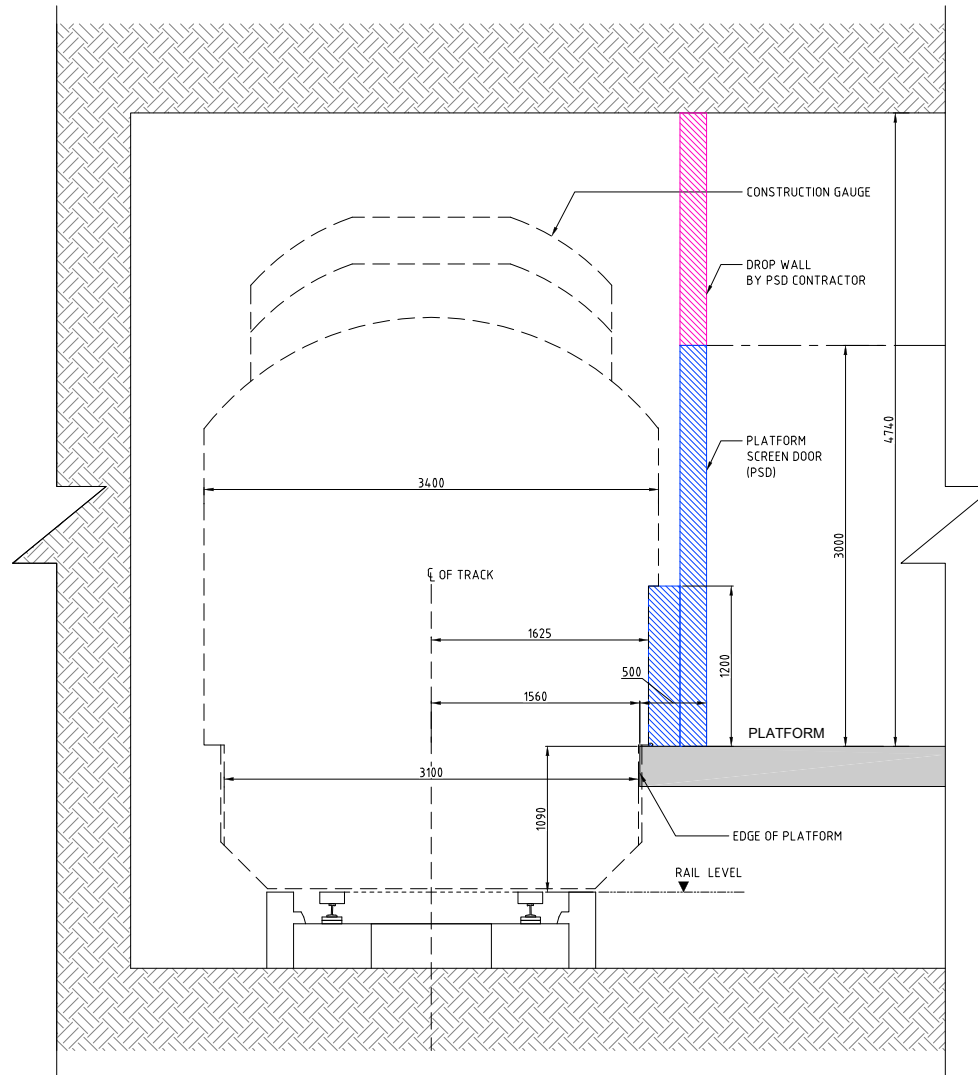
- ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
- KATAHIRA & ENGINEERS INTERNATIONAL
- TOKYO METRO CO., LTD.
- PACIFIC CONSULTANTS CO.,LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.
- ALMEC CORPORATION

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP106

**SYSTEM OUTLINE OF
PLATFORM SCREEN DOOR**

DATE	Dec. 2018
SCALE	N.T.S.
SHEET No.	
DRG No.	MMSP-PSD-0000-DD-0101
DRG S.	REV



CROSS SECTION - PSD
(A3) 1:40

VERSIONS	DATE	DESCRIPTION
R0	17/10/18	



DEPARTMENT OF TRANSPORTATION (DOTr)



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)



ORIENTAL CONSULTANTS GLOBAL CO.,LTD.



TOKYO METRO CO., LTD.



JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.



ALMEC CORPORATION



KATAHIRA & ENGINEERS INTERNATIONAL



PACIFIC CONSULTANTS CO.,LTD.



TONICHI ENGINEERING CONSULTANTS, INC.

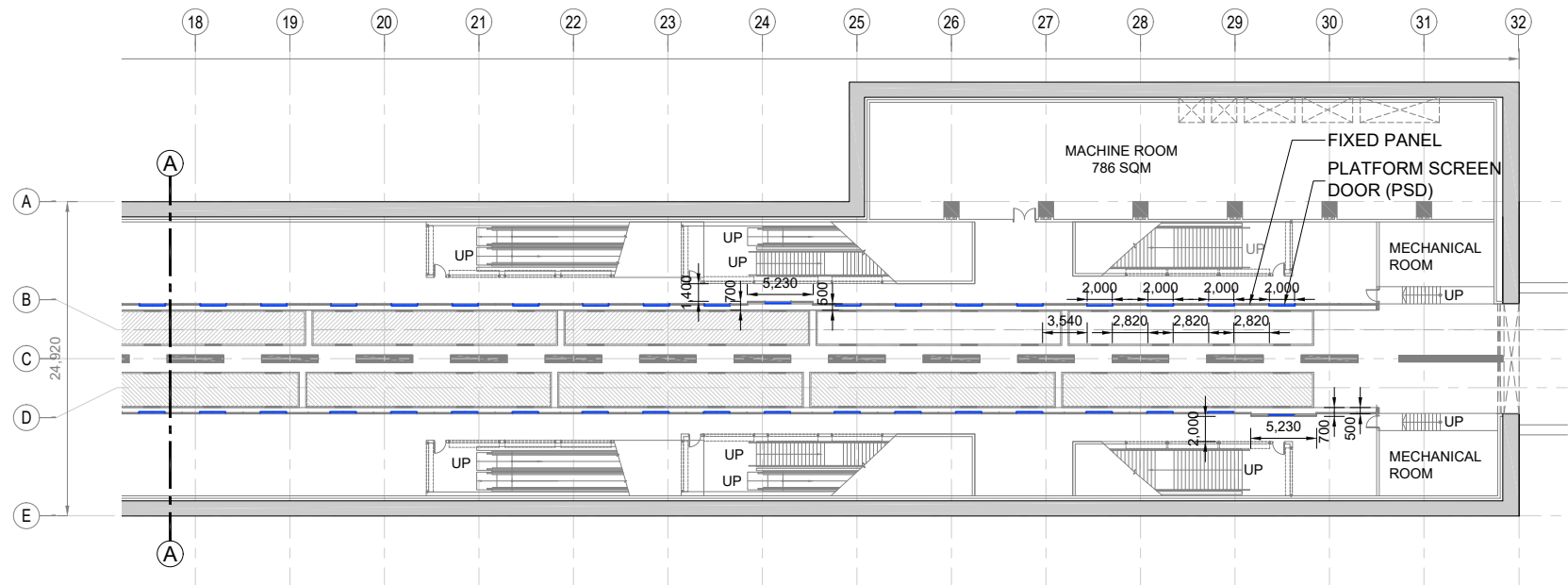
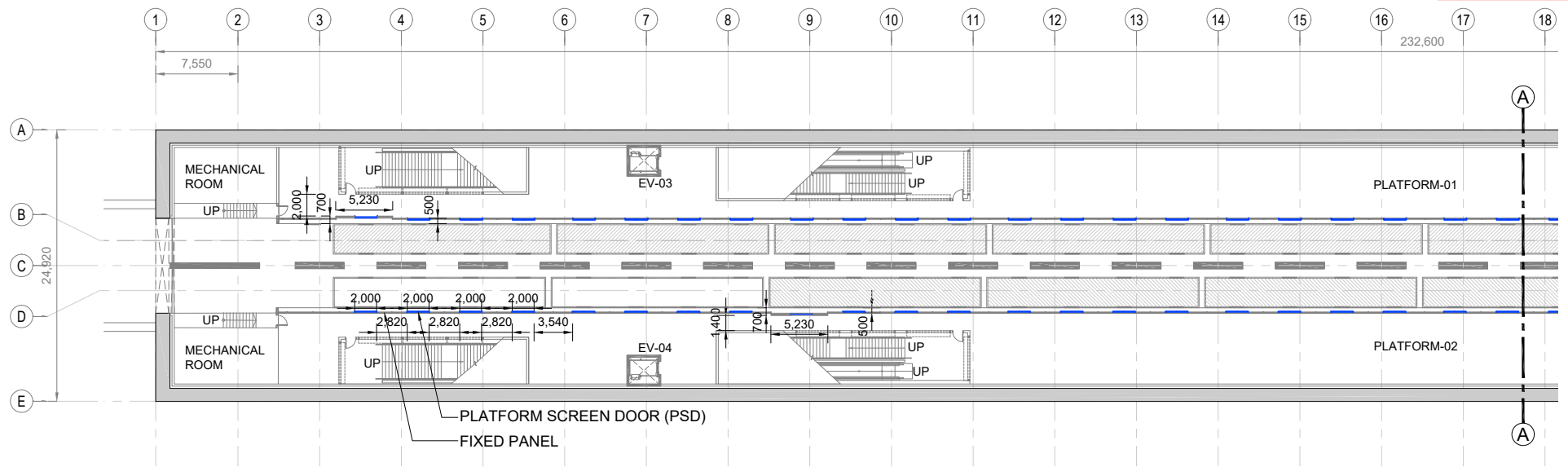
CONSULTANT

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE1 : CP106

CROSS SECTION OF
PLATFORM SCREEN DOOR

DATE	Jan. 2019
SCALE	1:40
SHEET No.	
DRG No.	MMSP-PSD-0000-DD-0102
DRG S.	REV



B4 PLATFORM LEVEL PLAN
(A3) 1:400

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

 ORIENTAL CONSULTANTS GLOBAL CO.,LTD.

 TOKYO METRO CO., LTD.

 JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.

 ALMEC CORPORATION

 KATAHIRA & ENGINEERS INTERNATIONAL

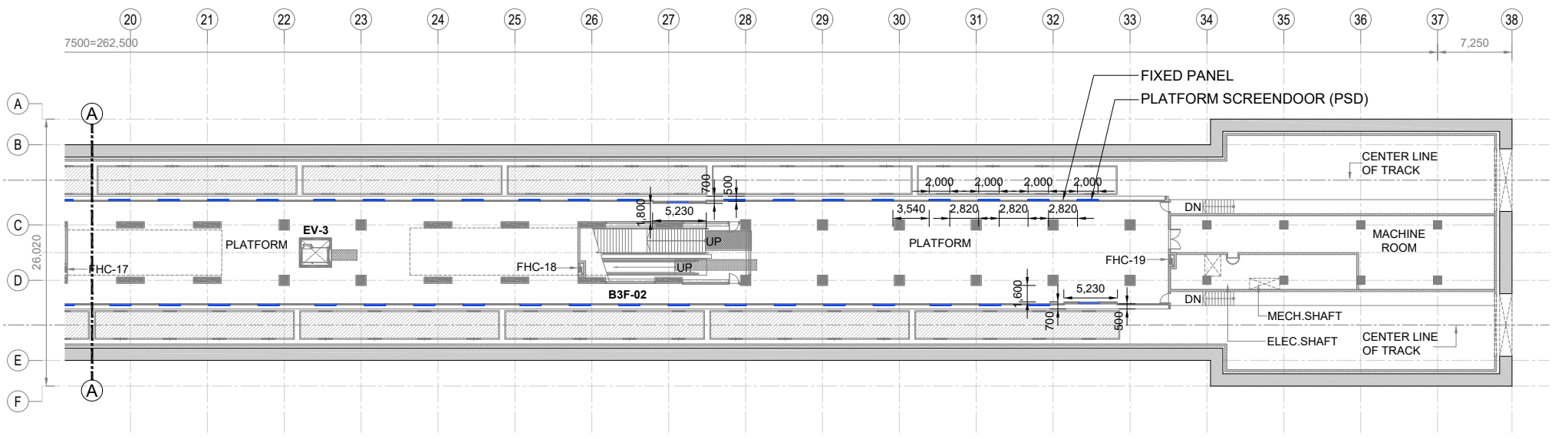
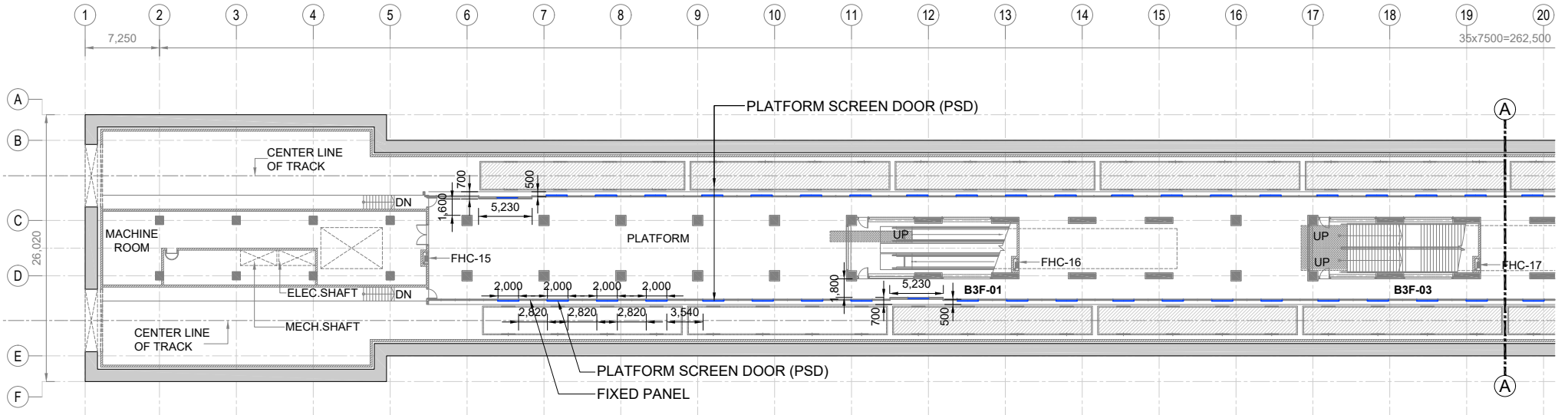
 PACIFIC CONSULTANTS CO.,LTD.

 TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

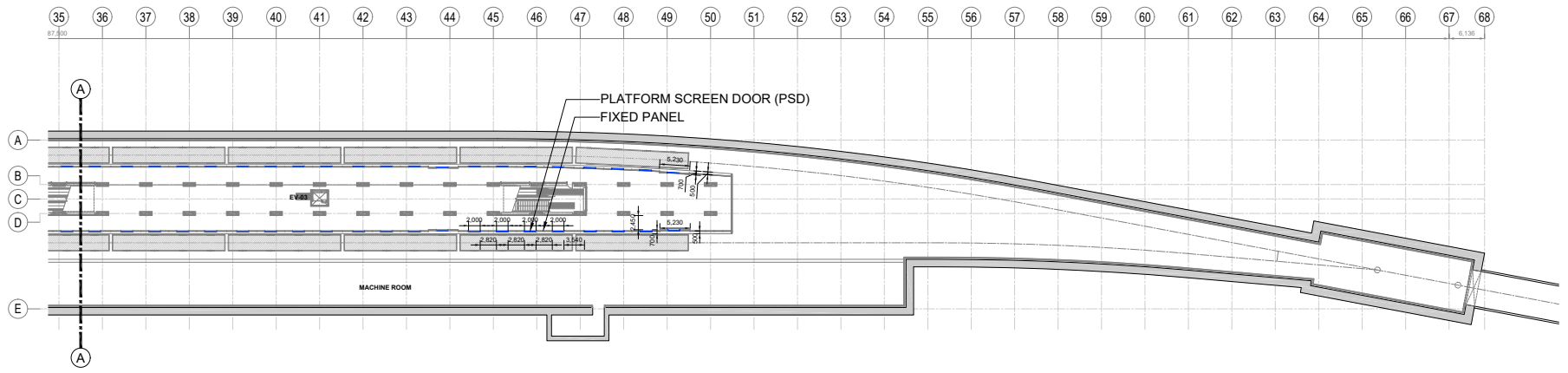
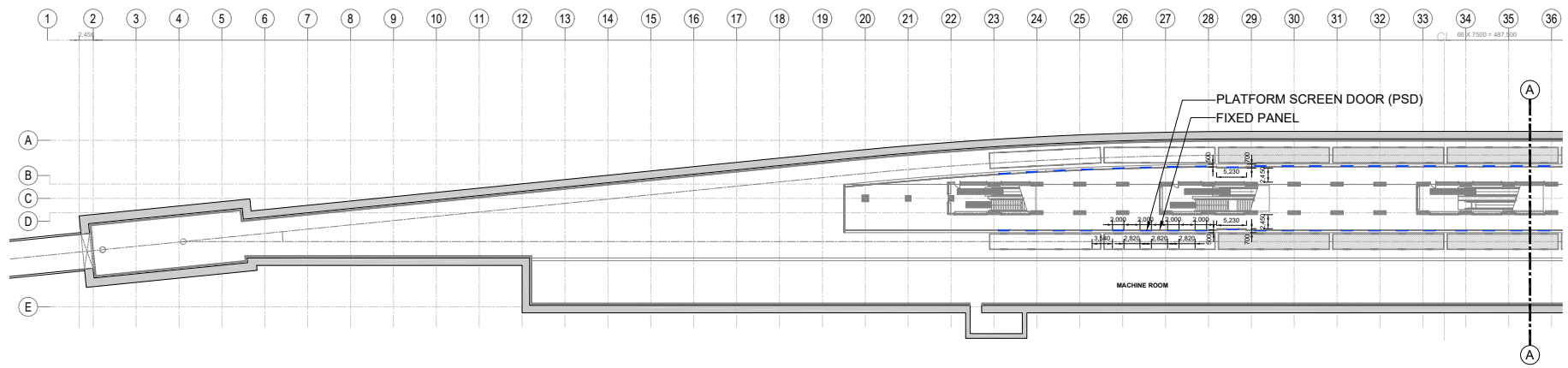
METRO MANILA SUBWAY PROJECT
 PHASE 1 : CP106
PLATFORM SCREEN DOOR LAYOUT PLAN
QUIRINO HIGHWAY STATION

DATE	Dec. 2018
SCALE	1:400
SHEET No.	
DRG No.	MMSP-PSD-0000-DD-0201
DRG S.	
REV	



PLATFORM LEVEL PLAN - (B3F)
(A3) 1:400

VERSIONS	DATE	DESCRIPTION	CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE 1 : CP106		DATE
			<p>JICA DESIGN TEAM</p> <p>ORIENTAL CONSULTANTS GLOBAL CO.,LTD. KATAHIRA & ENGINEERS INTERNATIONAL TOKYO METRO CO., LTD. PACIFIC CONSULTANTS CO.,LTD. JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD. TONICHI ENGINEERING CONSULTANTS, INC. ALMEC CORPORATION</p>			<p>TITLE NAME SIGNATURE</p> <p>DESIGNER</p> <p>CHECK</p> <p>TEAM LEADER</p> <p>PR. MANAGER</p>		<p>Dec. 2018</p> <p>SCALE 1:400</p> <p>SHEET No.</p> <p>DRG No. MMSP-PSD-0000-DD-0202</p> <p>DRG S. REV</p>
			<p>DEPARTMENT OF TRANSPORTATION (DOTr)</p> <p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>			<p>PLATFORM SCREEN DOOR LAYOUT PLAN</p> <p>TANDANG SORA STATION</p>		



PLATFORM LEVEL PLAN - (B4F)
(A3) 1:800

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

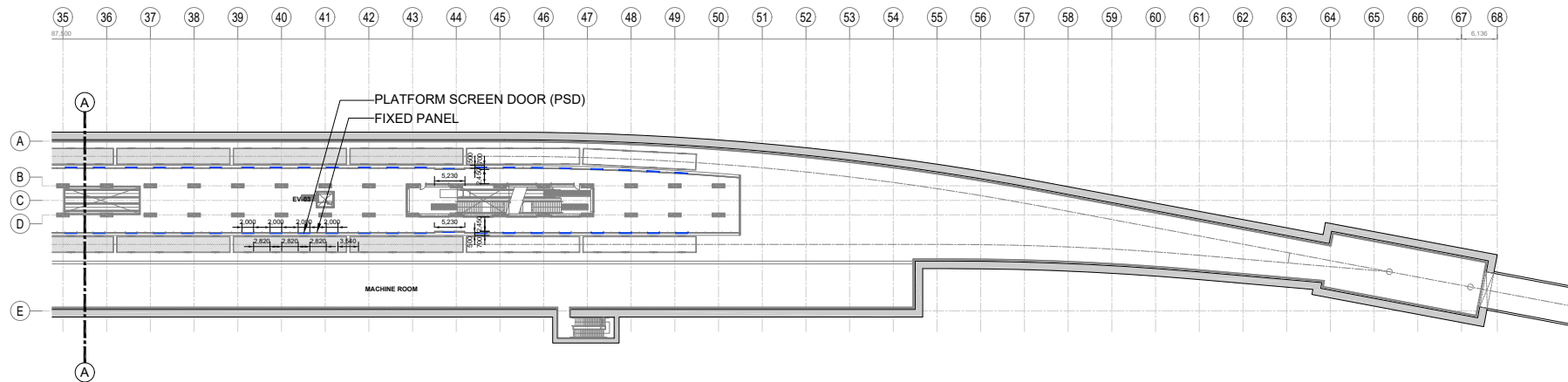
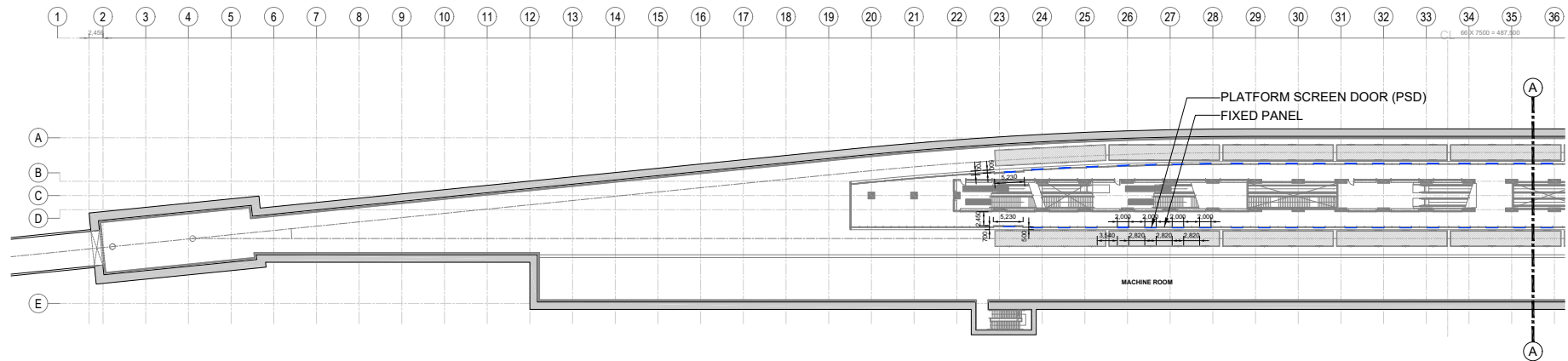
- ORIENTAL CONSULTANTS GLOBAL CO., LTD.
- TOKYO METRO CO., LTD.
- JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD.
- ALMEC CORPORATION
- KATAHIRA & ENGINEERS INTERNATIONAL
- PACIFIC CONSULTANTS CO., LTD.
- TONICHI ENGINEERING CONSULTANTS, INC.

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1: CP106

PLATFORM SCREEN DOOR
LAYOUT PLAN
NORTH AVENUE STATION (B4F)

DATE	Dec. 2018
SCALE	1:800
SHEET No.	
DRG No.	MMSP-PSD-0000-DD-0204
DRG S.	
REV	










PLATFORM LEVEL PLAN - (B3F)
(A3) 1:800

VERSIONS	DATE	DESCRIPTION


DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

JICA DESIGN TEAM

-  **ORIENTAL CONSULTANTS GLOBAL CO.,LTD.**
-  **TOKYO METRO CO., LTD.**
-  **JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.**
-  **ALMEC CORPORATION**
-  **KATAHIRA & ENGINEERS INTERNATIONAL**
-  **PACIFIC CONSULTANTS CO.,LTD.**
-  **TONICHI ENGINEERING CONSULTANTS, INC.**

CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
 PHASE1: CP106
PLATFORM SCREEN DOOR LAYOUT PLAN
NORTH AVENUE STATION (B3F)

DATE	Dec. 2018
SCALE	1:800
SHEET No.	
DRG No.	MMSP-PSD-0000-DD-0203
DRG S.	
REV	

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES


REFERENCE ONLY

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
MAINTENANCE MANAGEMENT SYSTEM (MMS)

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

Last modified by LUMBA_C6 / 04-Oct-2019
Filename: C:\Users\lumba_c6\Desktop\For_TinhPham\POWER SYSTEM CAD With TBlock

VERSIONS	DATE	DESCRIPTION	GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : PARANAQUE TO VALENZUELA	DATE Nov. 2019
0	Jan 19	FOR INFORMATION ONLY	 OCGlobal-JV Metro Manila Subway Project (MMSP)	TITLE	NAME	SIGNATURE	SCALE N.T.S.
				DESIGNER			SHEET No.
				CHECK			DRG No. MMSP-AFC-0000-RD-0000
				TEAM LEADER			DRG S.
				PR. MANAGER			REV 0
						MAINTENANCE MANAGEMENT SYSTEM COVER SHEET	





DEPARTMENT OF
TRANSPORTATION
(DOTr)

MAINTENANCE MANAGEMENT SYSTEM MMS

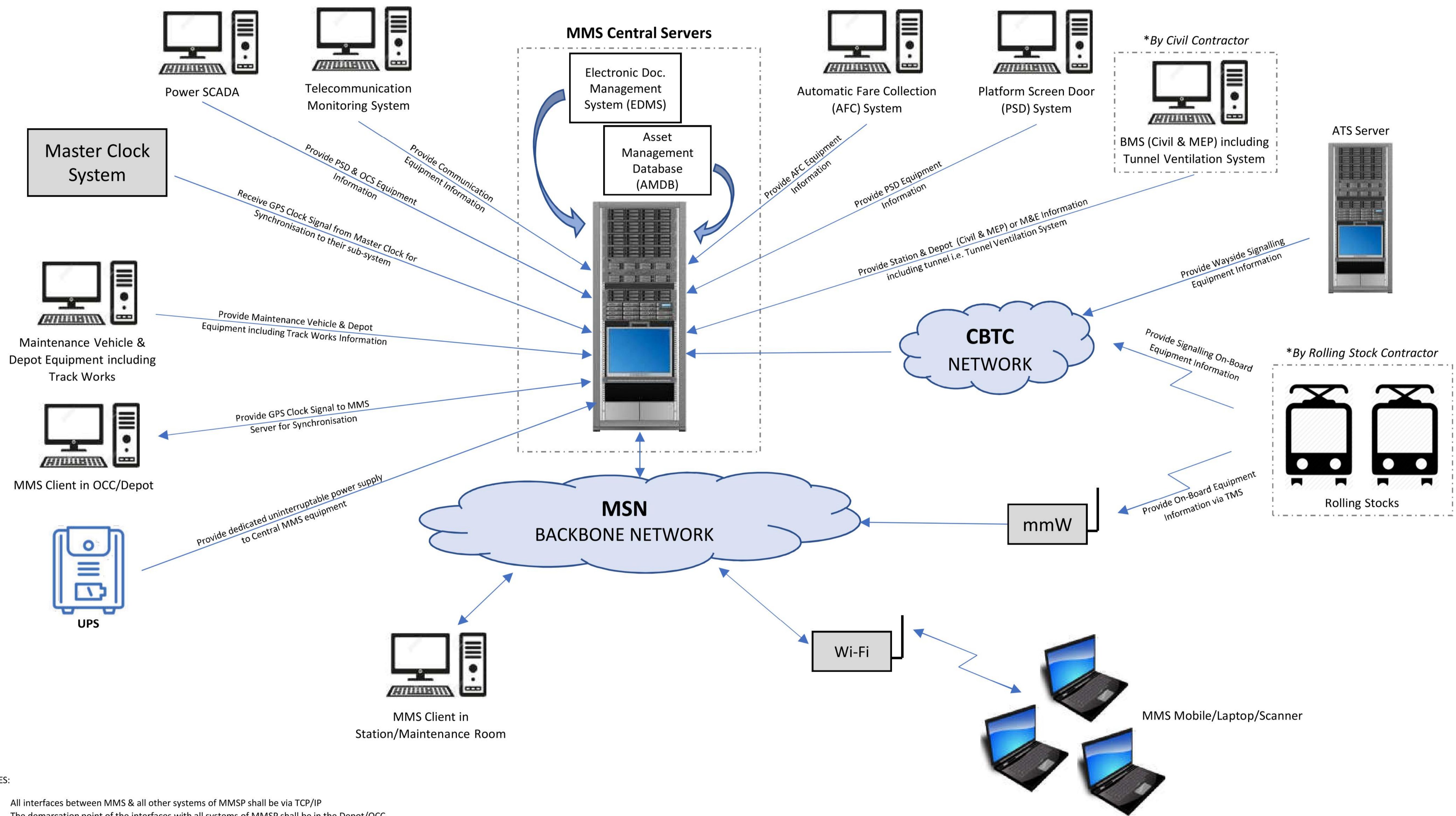
DRAWING INDEX

DRAWING No.	CONTENTS
MMS-0000-RD-0000	MAINTENANCE MANAGEMENT SYSTEM MMS COVER SHEET
MMS-0000-RD-0001	MAINTENANCE MANAGEMENT SYSTEM MMS DRAWING INDEX
MMS-0000-RD-0001*	MMS CONCEPTUAL DIAGRAM AND INTERFACES WITH OTHER SYSTEMS OF MMSP

Last modified by LUMBA_C6 / 04 Oct 2019
 Filename: C:\Users\lumba_c6\Desktop\For_TinhPhan\POWER SYSTEM CAD With TBlock

VERSIONS	DATE	DESCRIPTION		GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : PARANAQUE TO VALENZUELA	DATE 30 Sept. 2019
0	30/09/19	FOR INFORMATION ONLY	 DEPARTMENT OF TRANSPORTATION (DOTr)	 OCGlobal-JV	TITLE	NAME	SIGNATURE	SCALE N.T.S.
					DESIGNER			
					CHECK			DRG No. MMSP-MMS-0000-RD-0001
					TEAM LEADER			DRG S.
					PR. MANAGER			REV 0
MAINTENANCE SYSTEM MANAGEMENT DRAWING INDEX								

MMS CONCEPTUAL DIAGRAM & INTERFACES WITH OTHER SYSTEMS OF MMSP



Last modified by LUMBA_c6 / 25 Sep 2019
Filename: C:\Users\lumba_c6\Desktop\For_smael\MMSP-MMS-0000-RD-0001

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

GENERAL CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : PARANAQUE TO VALENZUELA

MMS CONCEPTUAL DIAGRAM AND INTERFACES WITH OTHER SYSTEMS OF MMSP

DATE	30.Sep. 2019
SCALE	N.T.S
SHEET No.	1 of 1
DRG No.	MMSP-MMS-0000-RD-0002
DRG S.	REV 0

DEPARTMENT OF TRANSPORTATION (DOTr)
REPUBLIC OF THE PHILIPPINES


REFERENCE ONLY

METRO MANILA SUBWAY PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

DRAWINGS
TYPICAL CROSS SECTION DRAWINGS

ORIENTAL CONSULTANTS GLOBAL CO., LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO., LTD
ALMEC CORPORATION
KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO., LTD
TONICHI ENGINEERING CONSULTANTS, INC.

Last modified by LUMBA_C6 / 04-Oct-2019
Filename: C:\Users\lumba_c6\Desktop\For_TinhPham\POWER SYSTEM CAD With TBlock

VERSIONS	DATE	DESCRIPTION	GENERAL CONSULTANT			METRO MANILA SUBWAY PROJECT PHASE1 : PARANAQUE TO VALENZUELA	DATE	
0	Jan 19	FOR INFORMATION ONLY	 OCGlobal-JV Metro Manila Subway Project (MMSP)	TITLE	NAME	SIGNATURE	Nov. 2019	
				DESIGNER			SCALE	N.T.S.
				CHECK			SHEET No.	
				TEAM LEADER			DRG No.	PO-CE-GE-0000
			PR. MANAGER			DRG S.	REV	
						ROLING STOCK COVER SHEET	0	




DEPARTMENT OF
TRANSPORTATION
(DOTr)

TYPICAL CROSS SECTION DRAWING DRAWING INDEX

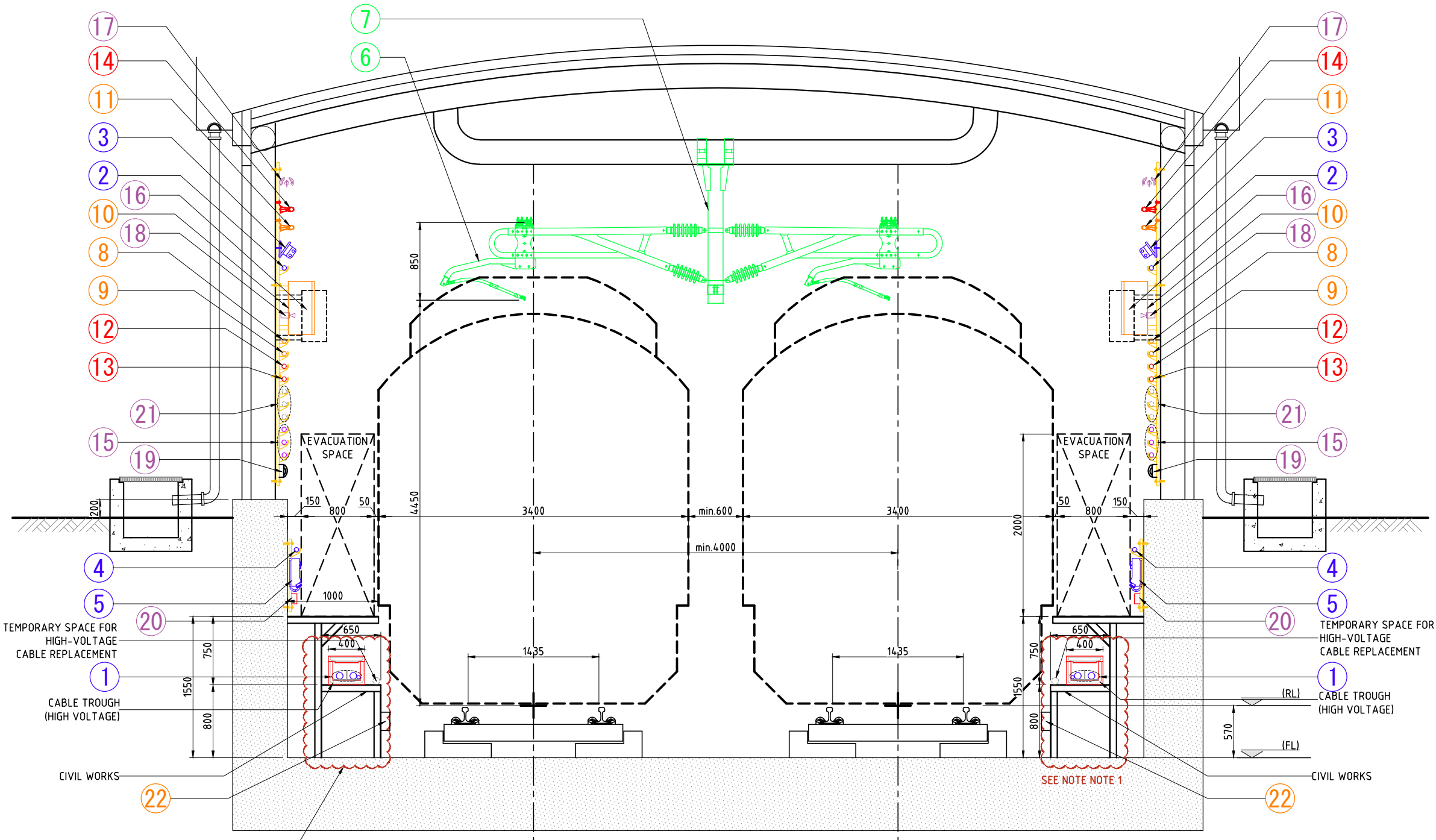
REFERENCE ONLY

DRAWING No.	CONTENTS
PO-CE-GE-0005	TYPICAL U-TYPE SECTION
PO-CE-GE-0006	TYPICAL TUNNEL CROSS SECTION
PO-CE-GE-0007	TYPICAL TUNNEL CROSS SECTION-STRAIGHT (WITH WASTE WATER PIPE)
PO-CE-GE-0008	TYPICAL TUNNEL CROSS SECTION-STRAIGHT (WITHOUT WASTE WATER PIPE)
PO-CE-GE-0009	TYPICAL TUNNEL CROSS SECTION-CURVE (WITH WASTE WATER PIPE)
PO-CE-GE-0010	TYPICAL TUNNEL CROSS SECTION-CURVE (WITHOUT WASTE WATER PIPE)
PO-CE-GE-0011	TYPICAL TUNNEL CROSS SECTION-NATM

VERSIONS	DATE	DESCRIPTION	CONSULTANT				METRO MANILA SUBWAY PROJECT PHASE1 : CP101	DATE 15 August 2019		
			JICA DESIGN TEAM 				TITLE	NAME	SIGNATURE	SCALE
							DESIGNER		SHEET No.	
							CHECK		DRG No. PO-CE-GE-0004	
							TEAM LEADER		DRG S.	
							PR. MANAGER		REV	
							TYPICAL CROSS SECTION DRAWING INDEX			

LEGEND:

1	High voltage cable 6.6kV XLPE 250mm ² x2 and ground wire
2	Tunnel illumination cable 600V XLPE 22mm ² x2
3	Tunnel illumination
4	Outlet cable 600V XLPE 100mm ² x2
5	Outlet Box
6	Rigid Suspension System(RISS)
7	Supporting Structure for RISS
8	Signal CBTC (Control cable)
9	Signal CBTC (Power cable)
10	Signal Box For antenna
11	Signal CBTC antenna (2.4GHz) or LCX cable
12	Mobile LCX cable
13	OFC (communication) cable
14	Telecommunication LCX cable
15	Out of the Project (General Telecom Cable) (Cellular-LCX Cable, Power and Data Cable)
16	Communication Remote Cabinet (Future Provision)
17	Millimeter Wave Transmitter Antenna (Future Provision)
18	CCTV Camera (Future Provision)
19	Emergency Telephone
20	Cellular Phone Repeater Cabinet (Future Provision)
21	General Telecom Cable replacement MMSP COMMUNICATION Power and Data Cable (Reserved)
22	Disconnection Box for Signaling



NOTE 1:
THE PROPOSED 6.6kV CABLE TROUGH AND ASSOCIATED STEEL FRAME SUPPORT AS SHOWN TO BE REMOVED AND REPLACED WITH 34.5kV HIGH VOLTAGE POWER CABLE.

THE NEW CABLE MANAGEMENT SYSTEM MUST BE DESIGNED AND INSTALLED WITH ADEQUATE OF PROTECTION TO PROTECT THE 34.5kV POWER CABLES UNDER THE WALKWAY.

TYPICAL U-TYPE SECTION - STRAIGHT SECTION
SCALE 1:50

NOTE:
LIGHTING - Install every 20m and supply power. (Waterproof and dustproof type)
OUTLETBOX - Height position of 300mm and install every 100m.

VERSIONS	DATE	DESCRIPTION
01	31 st March/19	Revision of February Submission

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CONSULTANT

JICA DESIGN TEAM

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.	KATAHIRA & ENGINEERS INTERNATIONAL
TOKYO METRO CO., LTD.	PACIFIC CONSULTANTS CO.,LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.	TONICHI ENGINEERING CONSULTANTS, INC.
ALMEC CORPORATION	

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

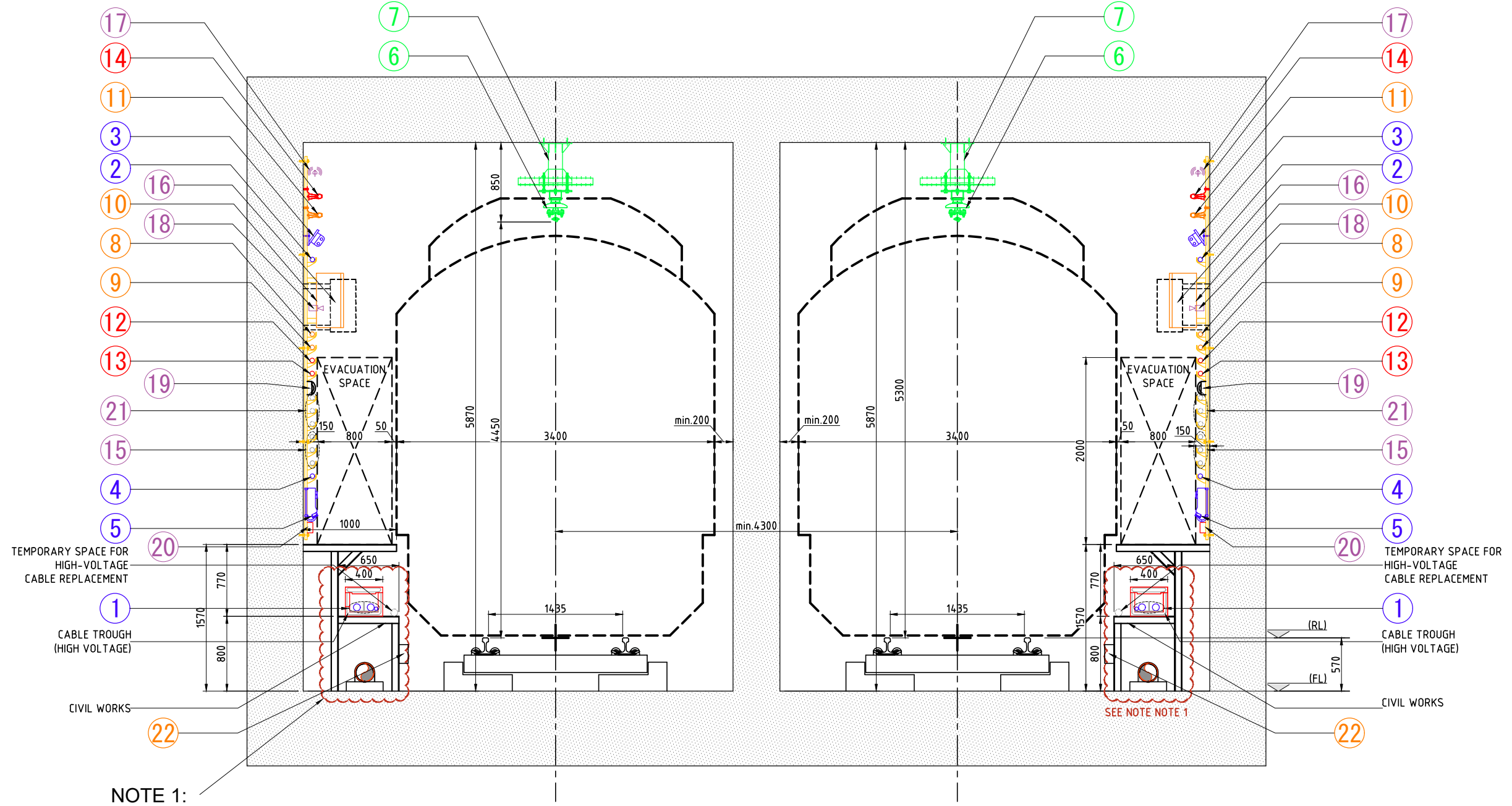
METRO MANILA SUBWAY PROJECT
PHASE 1 : CP101

TYPICAL U-TYPE SECTION

DATE	15 AUGUST 2019
SCALE	1:50
SHEET No.	
DRG No.	PO-CE-GE-0005
DRG S.	REV

LEGEND:

1	High voltage cable 6.6kV XLPE 250mm ² x2 and ground wire
2	Tunnel illumination cable 600V XLPE 22mm ² x2
3	Tunnel illumination
4	Outlet cable 600V XLPE 100mm ² x2
5	Outlet Box
6	Rigid Suspension System(RISS)
7	Supporting Structure for RISS
8	Signal CBTC (Control cable)
9	Signal CBTC (Power cable)
10	Signal Box For antenna
11	Signal CBTC antenna (2.4GHz) or LCX cable
12	Mobile LCX cable
13	OFC (communication) cable
14	Telecommunication LCX cable
15	Out of the Project (General Telecom Cable) (Cellular-LCX Cable, Power and Data Cable)
16	Communication Remote Cabinet (Future Provision)
17	Millimeter Wave Transmitter Antenna (Future Provision)
18	CCTV Camera (Future Provision)
19	Emergency Telephone
20	Cellular Phone Repeater Cabinet (Future Provision)
21	General Telecom Cable replacement MMSP COMMUNICATION Power and Data Cable (Reserved)
22	Disconnection Box for Signaling



NOTE 1:
THE PROPOSED 6.6kV CABLE TROUGH AND ASSOCIATED STEEL FRAME SUPPORT AS SHOWN TO BE REMOVED AND REPLACED WITH 34.5kV HIGH VOLTAGE POWER CABLE.

THE NEW CABLE MANAGEMENT SYSTEM MUST BE DESIGNED AND INSTALLED WITH ADEQUATE OF PROTECTION TO PROTECT THE 34.5kV HIGH VOLTAGE POWER CABLES AND WASTE WATER PIPE UNDER THE WALKWAY.

CUT AND COVER SECTION - STRAIGHT SECTION (THE SECTION BETWEEN STATIONS)
SCALE 1:50

NOTE:
LIGHTING - Install every 20m and supply power. (Waterproof and dustproof type)
OUTLETBOX - Height position of 300mm and install every 100m.

VERSIONS	DATE	DESCRIPTION
01	31 st /March/19	Revision of February Submission

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CONSULTANT

JICA DESIGN TEAM

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
KATAHIRA & ENGINEERS INTERNATIONAL
TOKYO METRO CO., LTD.
PACIFIC CONSULTANTS CO.,LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
TONICHI ENGINEERING CONSULTANTS, INC.
ALMEC CORPORATION

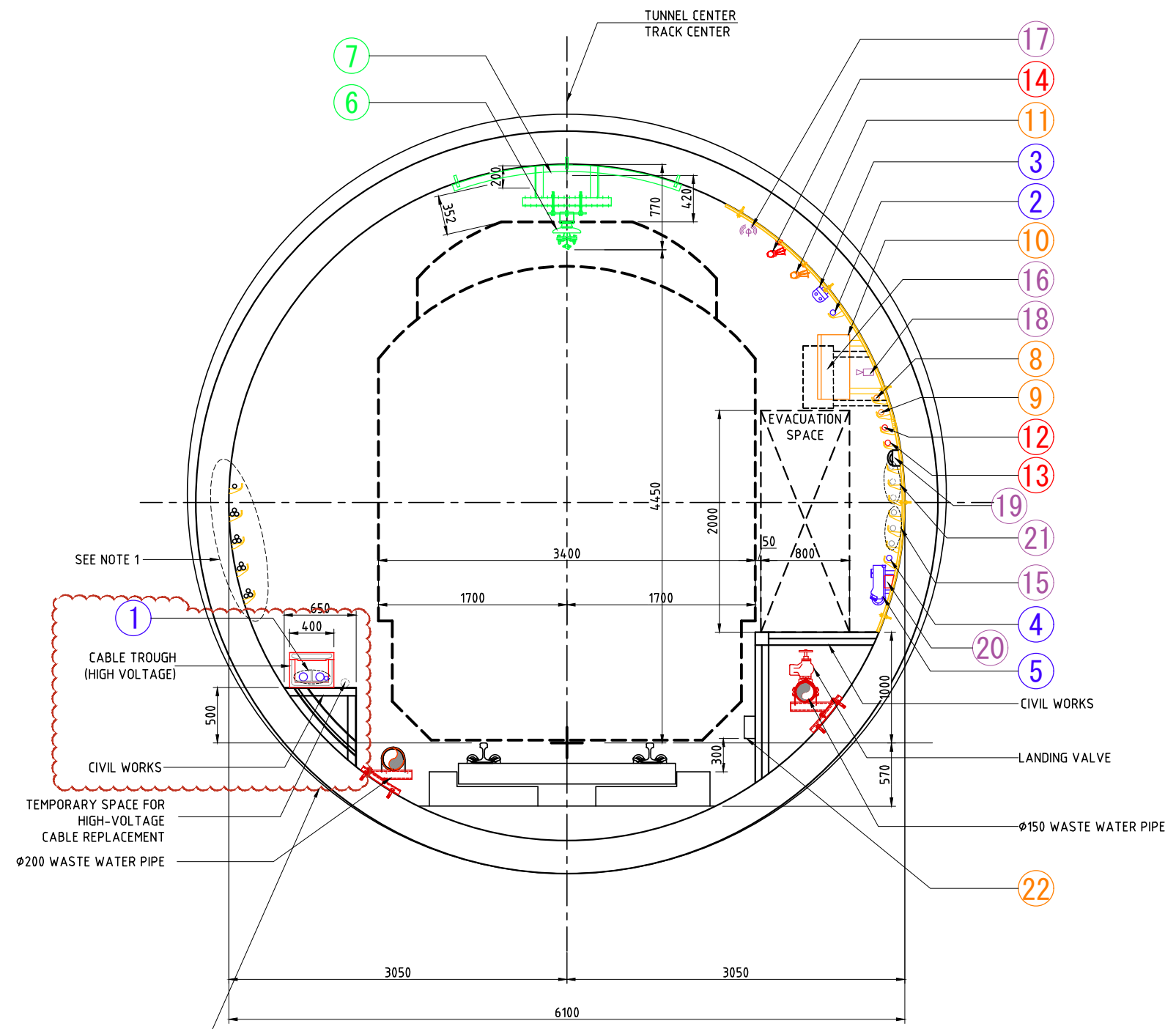
METRO MANILA SUBWAY PROJECT
PHASE1 : CP101

TYPICAL TUNNEL CROSS SECTION

DATE	15 AUGUST 2019
SCALE	1:50
SHEET No.	
DRG No.	PO-CE-GE-0006
DRG S.	REV

LEGEND:

①	High voltage cable 6.6kV XLPE 250mm ² x2 and ground wire
②	Tunnel illumination cable 600V XLPE 22mm ² x2
③	Tunnel illumination
④	Outlet cable 600V XLPE 100mm ² x2
⑤	Outlet Box
⑥	Rigid Suspension System(RISS)
⑦	Supporting Structure for RISS
⑧	Signal CBTC (Control cable)
⑨	Signal CBTC (Power cable)
⑩	Signal Box For antenna
⑪	Signal CBTC antenna (2.4GHz) or LCX cable
⑫	Mobile LCX cable
⑬	OFC (communication) cable
⑭	Telecommunication LCX cable
⑮	Out of the Project (General Telecom Cable) (Cellular-LCX Cable, Power and Data Cable)
⑯	Communication Remote Cabinet (Future Provision)
⑰	Millimeter Wave Transmitter Antenna (Future Provision)
⑱	CCTV Camera (Future Provision)
⑲	Emergency Telephone
⑳	Cellular Phone Repeater Cabinet (Future Provision)
㉑	General Telecom Cable replacement MMSP COMMUNICATION Power and Data Cable (Reserved)
㉒	Disconnection Box for Signaling



NOTE 1:
6.6kV CABLE TROUGH AND STEEL FRAME SUPPORT TO BE REMOVED AND REPLACED WITH J-HANGERS FIXED ONTO TUNNEL WALL FOR 34.5kV HV POWER CABLES.

NOTE:
LIGHTING - Install every 20m and supply power. (Waterproof and dustproof type)
OUTLETBOX - Height position of 300mm and install every 100m.

VERSIONS	DATE	DESCRIPTION

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CONSULTANT

JICA DESIGN TEAM

TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
TOKYO METRO CO., LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
ALMEC CORPORATION

KATAHIRA & ENGINEERS INTERNATIONAL
PACIFIC CONSULTANTS CO.,LTD.
TONICHI ENGINEERING CONSULTANTS, INC.

METRO MANILA SUBWAY PROJECT
PHASE1 : CP101

TYPICAL TUNNEL CROSS SECTION
(WITH WASTE WATER PIPE)

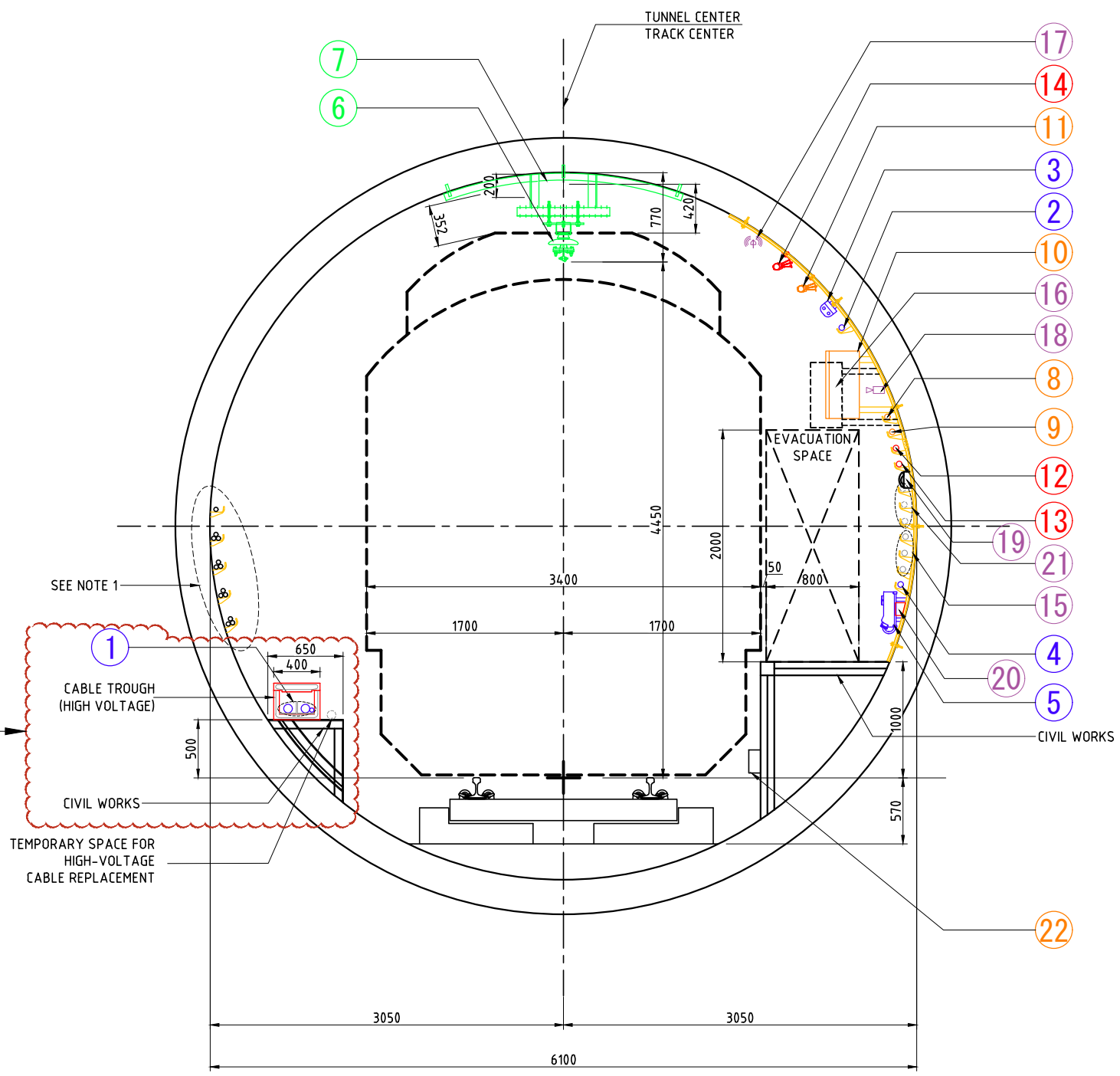
DATE	15 AUGUST 2019
SCALE	1:50
SHEET No.	
DRG No.	PO-CE-GE-0007
DRG S.	
REV	

LEGEND:

①	High voltage cable 6.6kV XLPE 250mm ² x2 and ground wire
②	Tunnel illumination cable 600V XLPE 22mm ² x2
③	Tunnel illumination
④	Outlet cable 600V XLPE 100mm ² x2
⑤	Outlet Box
⑥	Rigid Suspension System(RISS)
⑦	Supporting Structure for RISS
⑧	Signal CBTC (Control cable)
⑨	Signal CBTC (Power cable)
⑩	Signal Box For antenna
⑪	Signal CBTC antenna (2.4GHz) or LCX cable
⑫	Mobile LCX cable
⑬	OFC (communication) cable
⑭	Telecommunication LCX cable
⑮	Out of the Project (General Telecom Cable) (Cellular-LCX Cable, Power and Data Cable)
⑯	Communication Remote Cabinet (Future Provision)
⑰	Millimeter Wave Transmitter Antenna (Future Provision)
⑱	CCTV Camera (Future Provision)
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㉒	Disconnection Box for Signaling

NOTE 1:
6.6kV CABLE TROUGH AND STEEL FRAME SUPPORT TO BE REMOVED AND REPLACED WITH J-HANGERS FIXED ONTO TUNNEL WALL FOR 34.5kV HV POWER CABLES.

NOTE:
LIGHTING - Install every 20m and supply power. (Waterproof and dustproof type)
OUTLETBOX - Height position of 300mm and install every 100m.



STRAIGHT SECTION - TBM TUNNEL
SCALE 1:50

VERSIONS	DATE	DESCRIPTION
01	31 st March/19	Revision of February Submission

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

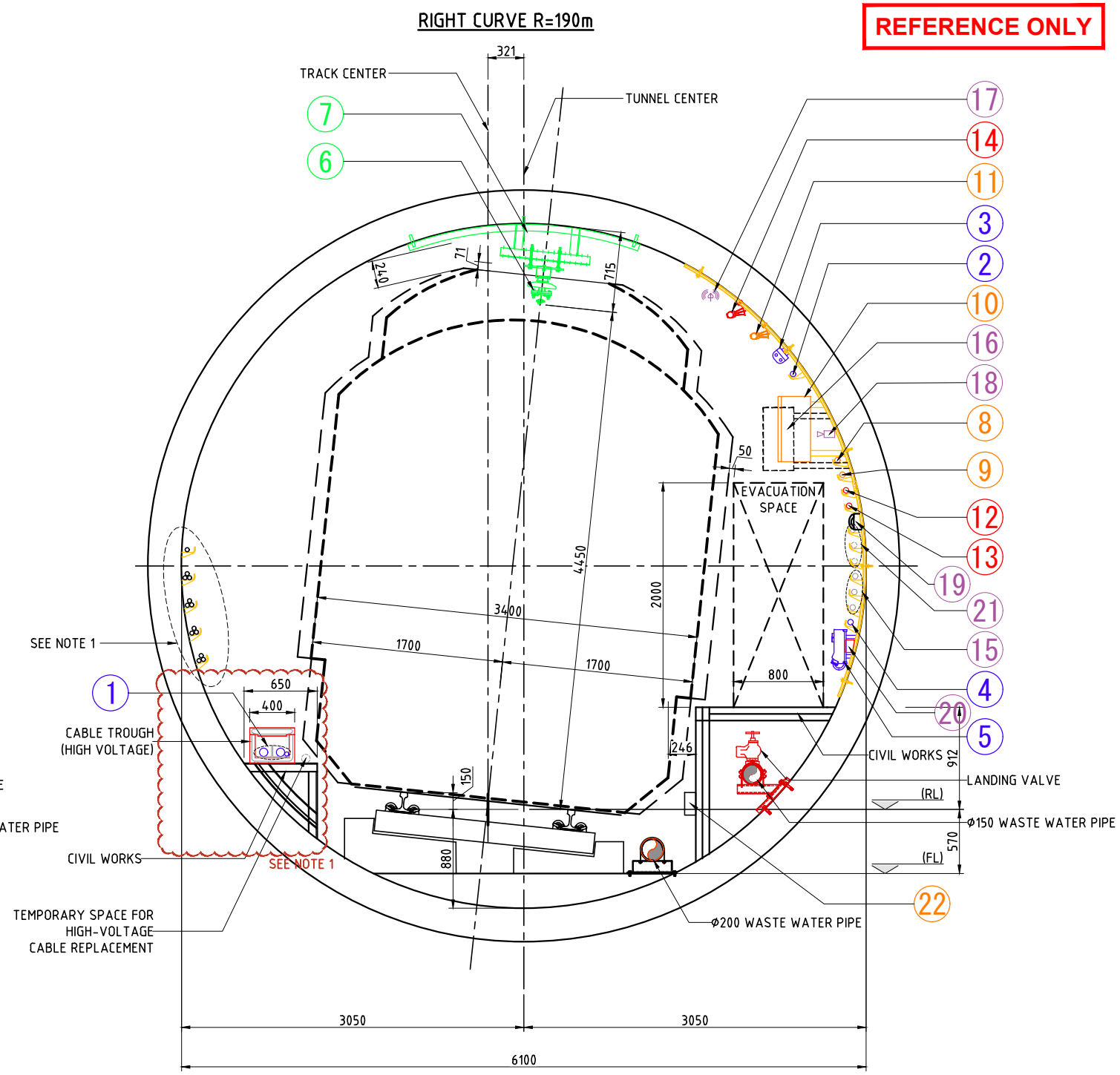
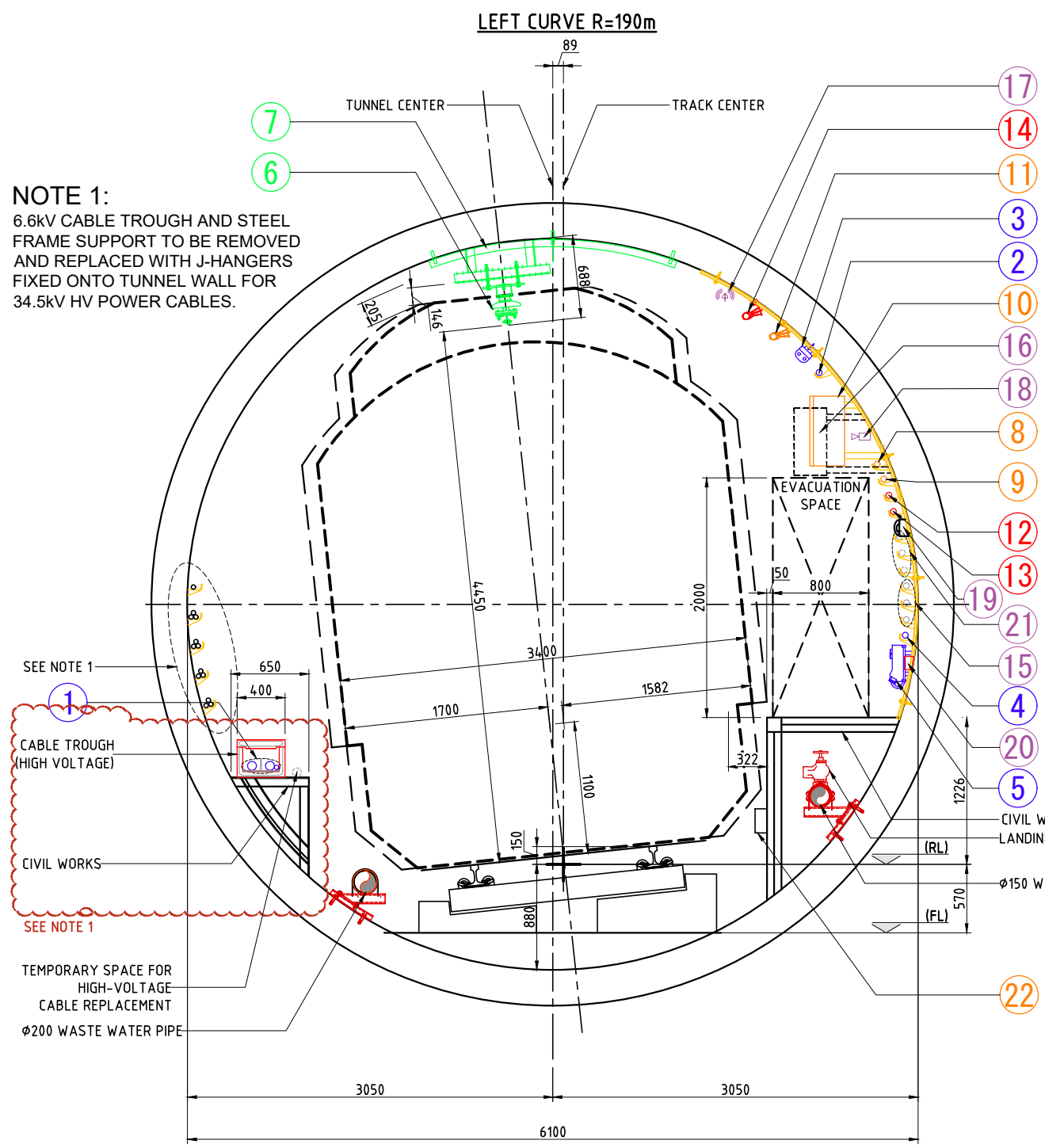
JICA DESIGN TEAM		CONSULTANT		
TITLE	NAME	SIGNATURE		
DESIGNER				
CHECK				
TEAM LEADER				
PR. MANAGER				

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP101

**TYPICAL TUNNEL CROSS SECTION
(WITHOUT WASTE WATER PIPE)**

DATE	15 AUGUST 2019
SCALE	1:50
SHEET No.	
DRG No.	PO-CE-GE-0008
DRG S.	REV

REFERENCE ONLY



NOTE 1:
6.6KV CABLE TROUGH AND STEEL FRAME SUPPORT TO BE REMOVED AND REPLACED WITH J-HANGERS FIXED ONTO TUNNEL WALL FOR 34.5KV HV POWER CABLES.

CURVE SECTION - TBM TUNNEL
SCALE 1:50

LEGEND:		4	8	12	16	20
1	High voltage cable 6.6KV XLPE 240mm ² x2 and ground wire	5	Signal CBTC (Control cable)	13	Communication Remote Cabinet (Future Provision)	21
2	Tunnel illumination cable 600V XLPE 22mm ² x2	6	Signal CBTC (Power cable)	14	Millimeter Wave Transmitter Antenna (Future Provision)	22
3	Tunnel illumination	7	Signal Box For antenna	15	CCTV Camera (Future Provision)	
		9	Signal CBTC antenna (2.4GHz) or LCX cable	16	Emergency Telephone	
		10	Outlet cable 600V XLPE 100mm ² x2	17	Cellular Phone Repeater Cabinet (Future Provision)	
		11	Outlet Box	18	General Telecom Cable replacement MMSP COMMUNICATION Power and Data Cable (Reserved)	
		12	Rigid Suspension System(RISS)	19	Disconnection Box for Signaling	
		13	Supporting Structure for RISS			

NOTE:
LIGHTING - Install every 20m and supply power. (Waterproof and dustproof type)
OUTLETBOX - Height position of 300mm and install every 100m.

VERSIONS	DATE	DESCRIPTION
01	31 st March/19	Revision of February Submission

DEPARTMENT OF TRANSPORTATION (DOTr)

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

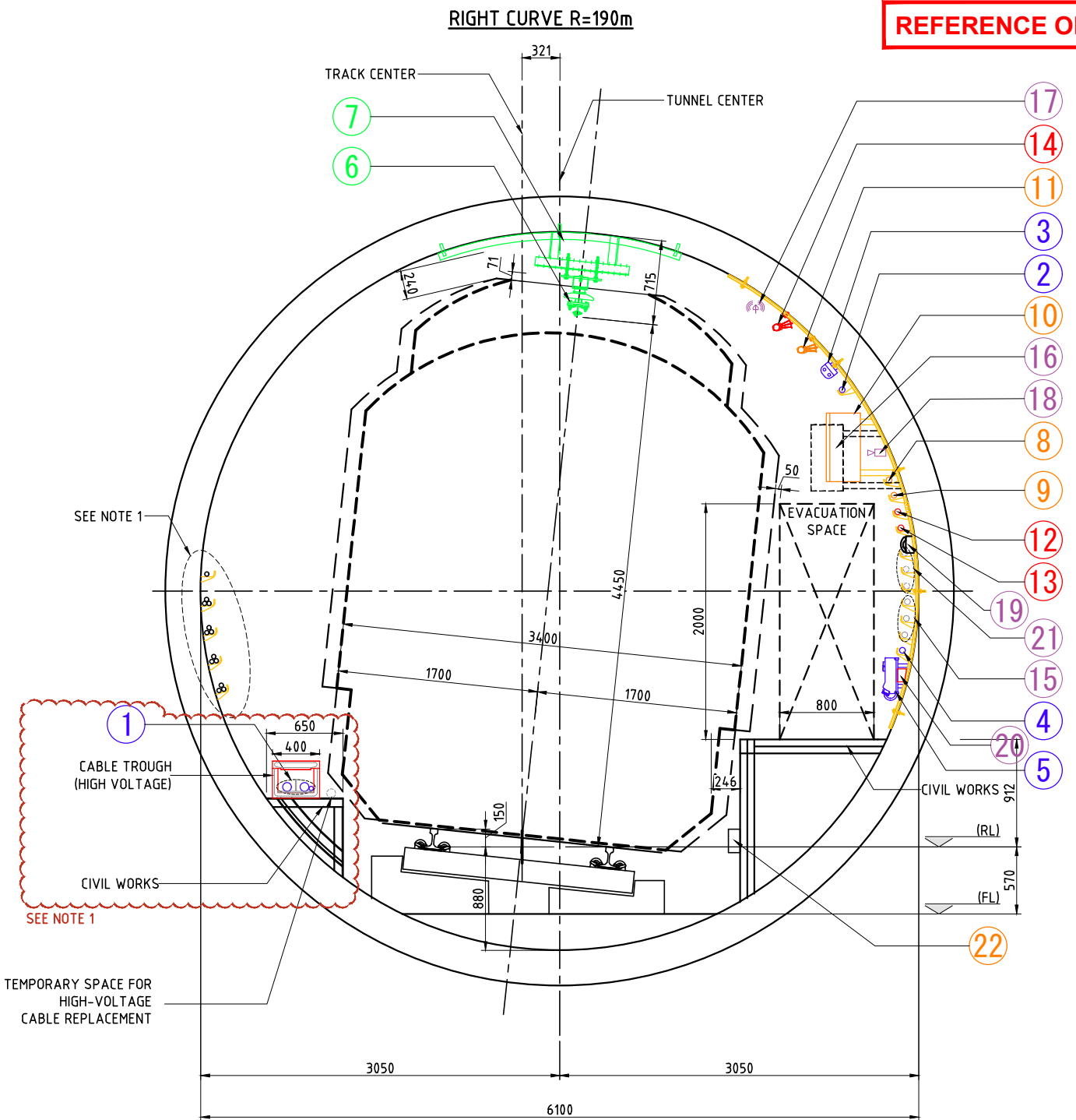
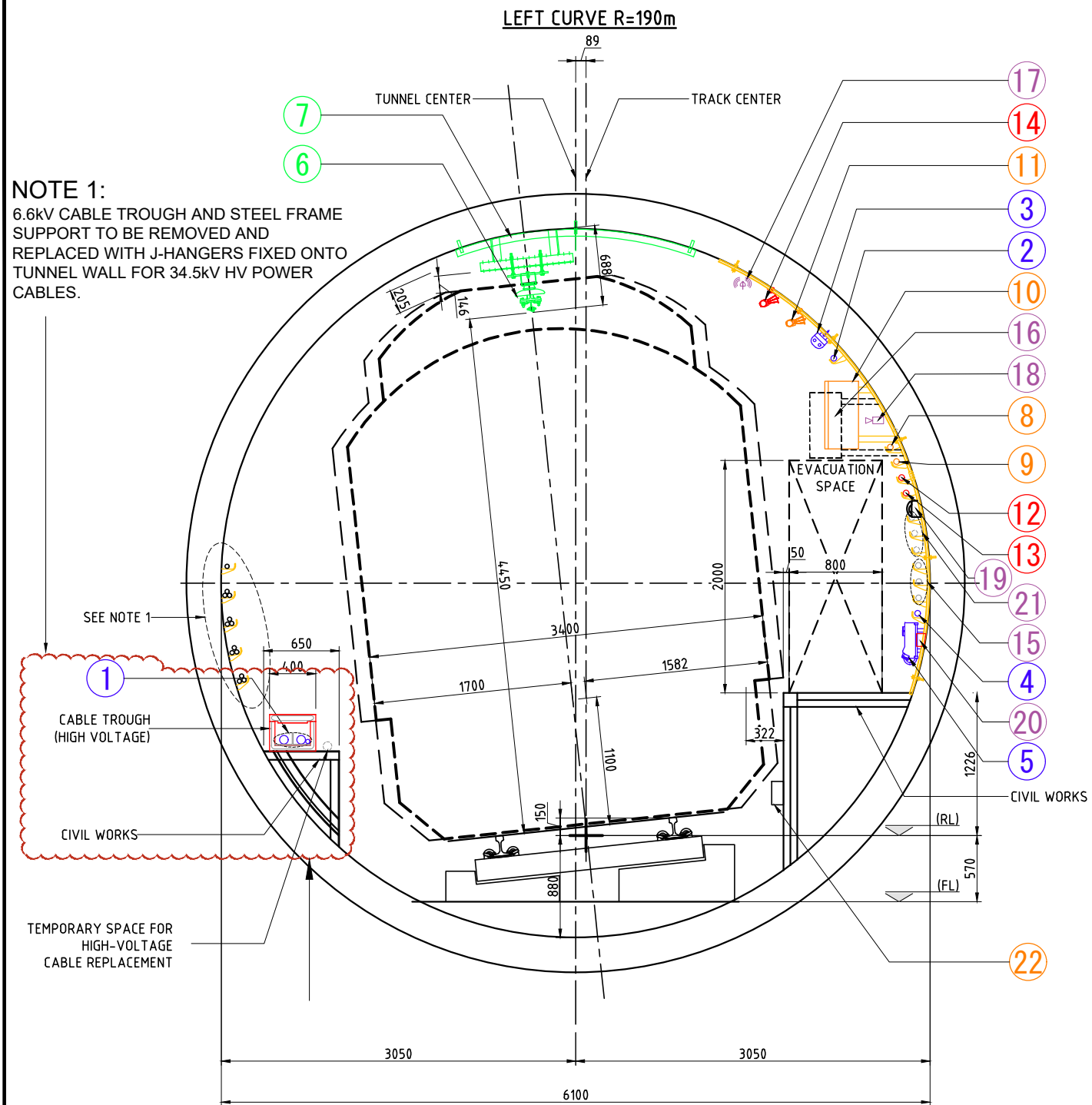
CONSULTANT		
TITLE	NAME	SIGNATURE
DESIGNER		
CHECK		
TEAM LEADER		
PR. MANAGER		

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP101

**TYPICAL TUNNEL CROSS SECTION
(WITH WASTE WATER PIPE)**

DATE	15 AUGUST 2019
SCALE	1:50
SHEET No.	
DRG No.	PO-CE-GE-0009
DRG S.	

REFERENCE ONLY



CURVE SECTION - TBM TUNNEL
SCALE 1:50

LEGEND:		4	8	12	16	20
1	High voltage cable 6.6kV XLPE 240mm ² x2 and ground wire	5	8	12	16	20
2	Tunnel illumination cable 600V XLPE 22mm ² x2	6	9	13	17	21
3	Tunnel illumination	7	10	14	18	22
		11	11	15	19	
		12	12	16	16	
		13	13	17	17	
		14	14	18	18	
		15	15	19	19	
		16	16	20	20	
		17	17	21	21	
		18	18	22	22	
		19	19			
		20	20			
		21	21			
		22	22			

NOTE:
LIGHTING - Install every 20m and supply power. (Waterproof and dustproof type)
OUTLETBOX - Height position of 300mm and install every 100m.

VERSIONS	DATE	DESCRIPTION
01	31 st /March/19	Revision of February Submission

DEPARTMENT OF TRANSPORTATION (DOTr)

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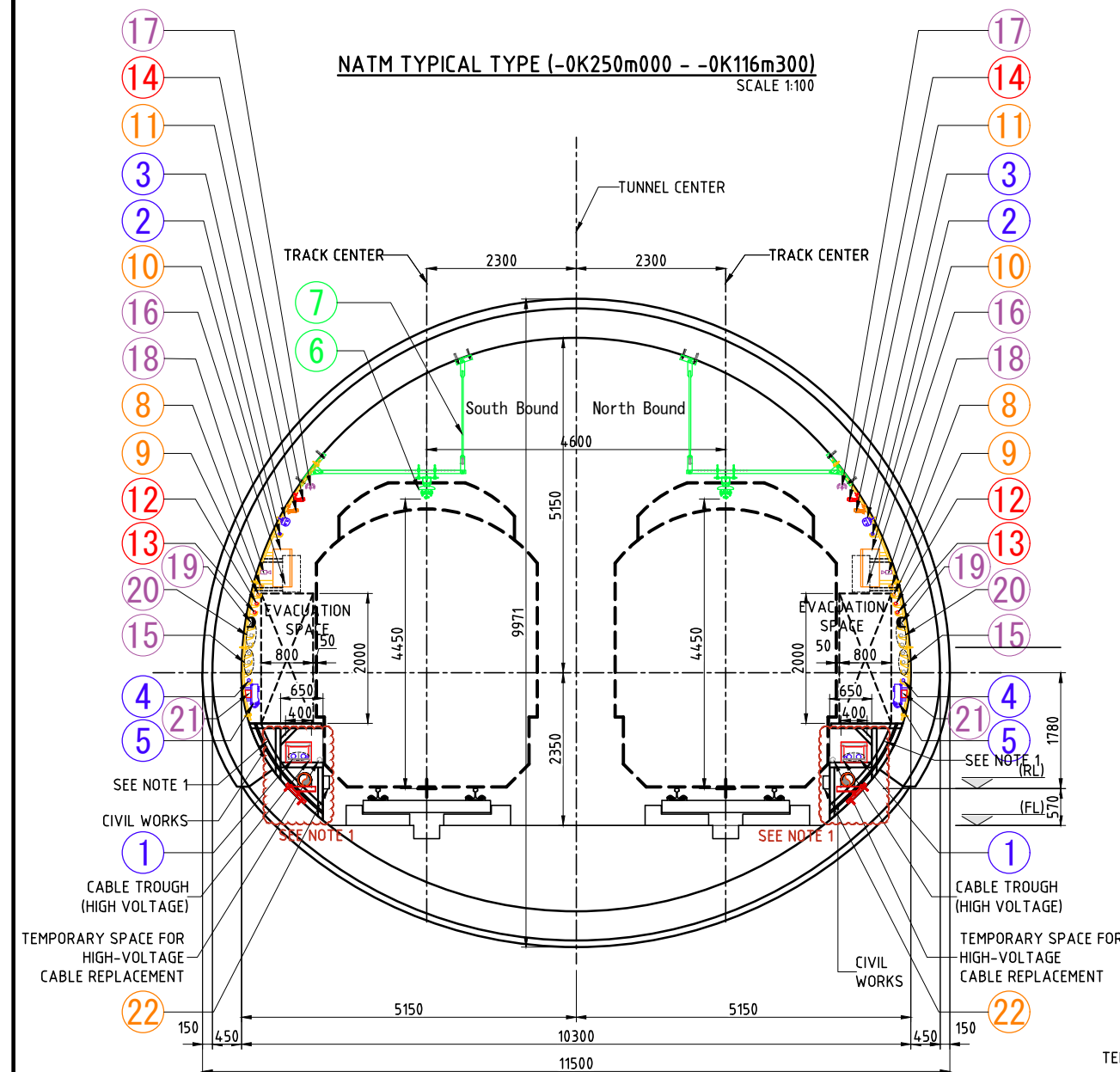
ORIENTAL CONSULTANTS GLOBAL CO.,LTD.
KATAHIRA & ENGINEERS INTERNATIONAL
TOKYO METRO CO., LTD.
PACIFIC CONSULTANTS CO.,LTD.
JAPAN INTERNATIONAL CONSULTANTS FOR TRANSPORTATION CO.,LTD.
TONICHI ENGINEERING CONSULTANTS, INC.
ALMEC CORPORATION

METRO MANILA SUBWAY PROJECT
PHASE 1 : CP101

TYPICAL TUNNEL CROSS SECTION (WITHOUT WASTE WATER PIPE)

DATE	15 AUGUST 2019
SCALE	1:50
SHEET No.	
DRG No.	PO-CE-GE-0010
DRG S.	REV

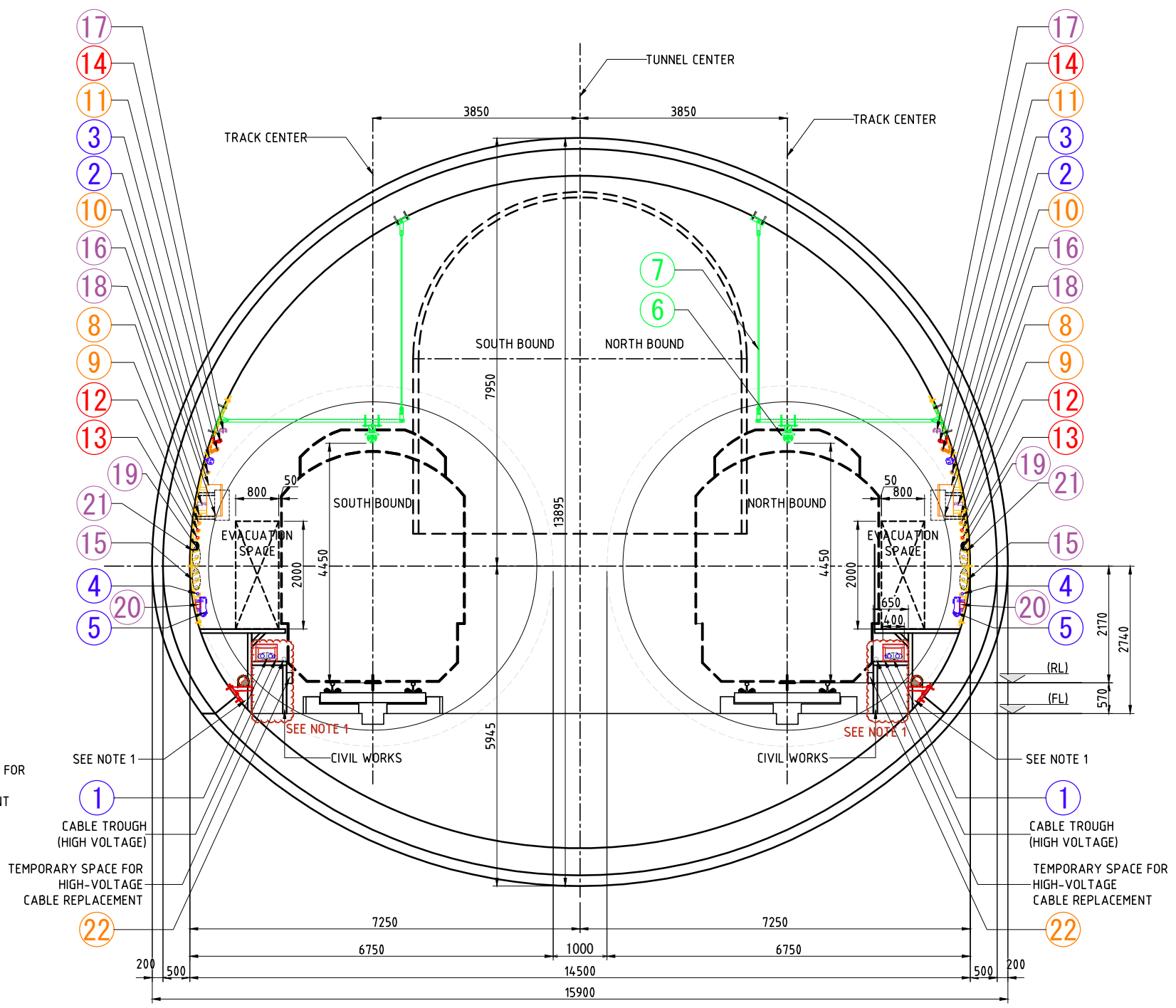
NATM TYPICAL TYPE (-0K250m000 - -0K116m300)
SCALE 1:100



NOTE 1:
THE PROPOSED 6.6KV CABLE TROUGH AND ASSOCIATED STEEL FRAME SUPPORT AS SHOWN TO BE REMOVED AND REPLACED WITH 34.5KV HIGH VOLTAGE POWER CABLE.

THE NEW CABLE MANAGEMENT SYSTEM MUST BE DESIGNED AND INSTALLED WITH ADEQUATE OF PROTECTION TO PROTECT THE 34.5KV POWER CABLES UNDER THE WALKWAY.

NATM LARGE TYPE (-0K344m200 - -0K250m000)
SCALE 1:100



LEGEND:		4	Outlet cable 600V XLPE 100mm ² x2	8	Signal CBTC (Control cable)	12	Mobile LCX cable	16	Communication Remote Cabinet (Future Provision)	20	Cellular Phone Repeater Cabinet (Future Provision)
1	High voltage cable 6.6KV XLPE 250mm ² x2 and ground wire	5	Outlet Box	9	Signal CBTC (Power cable)	13	OFC (communication) cable	17	Millimeter Wave Transmitter Antenna (Future Provision)	21	General Telecom Cable replacement MMSP COMMUNICATION Power and Data Cable (Reserved)
2	Tunnel illumination cable 600V XLPE 22mm ² x2	6	Rigid Suspension System(RISS)	10	Signal Box For antenna	14	Telecommunication LCX cable	18	CCTV Camera (Future Provision)	22	Disconnection Box for Signaling
3	Tunnel illumination	7	Supporting Structure for RISS	11	Signal CBTC antenna (2.4GHz) or LCX cable	15	Out of the Project (General Telecom Cable) (Cellular-LCX Cable, Power and Data Cable)	19	Emergency Telephone		

NOTE:
LIGHTING - Install every 20m and supply power. (Waterproof and dustproof type)
OUTLETBOX - Height position of 300mm and install every 100m.

VERSIONS	DATE	DESCRIPTION
01	31 st March/19	Revision of February Submission

DEPARTMENT OF TRANSPORTATION (DOTr)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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TONICHI ENGINEERING CONSULTANTS, INC.
ALMEC CORPORATION

METRO MANILA SUBWAY PROJECT
PHASE1 : CP101

DATE: 15 AUGUST 2019
SCALE: 1:100
SHEET No.
DRG No. PO-CE-GE-0011
DRG S. REV

TYPICAL TUNNEL CROSS SECTION