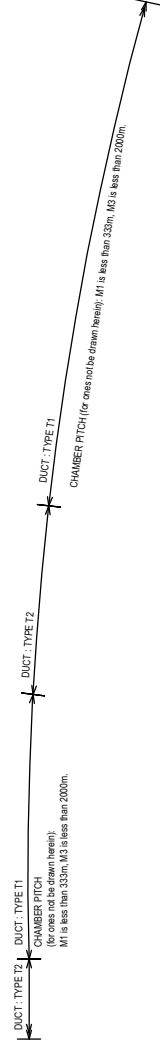
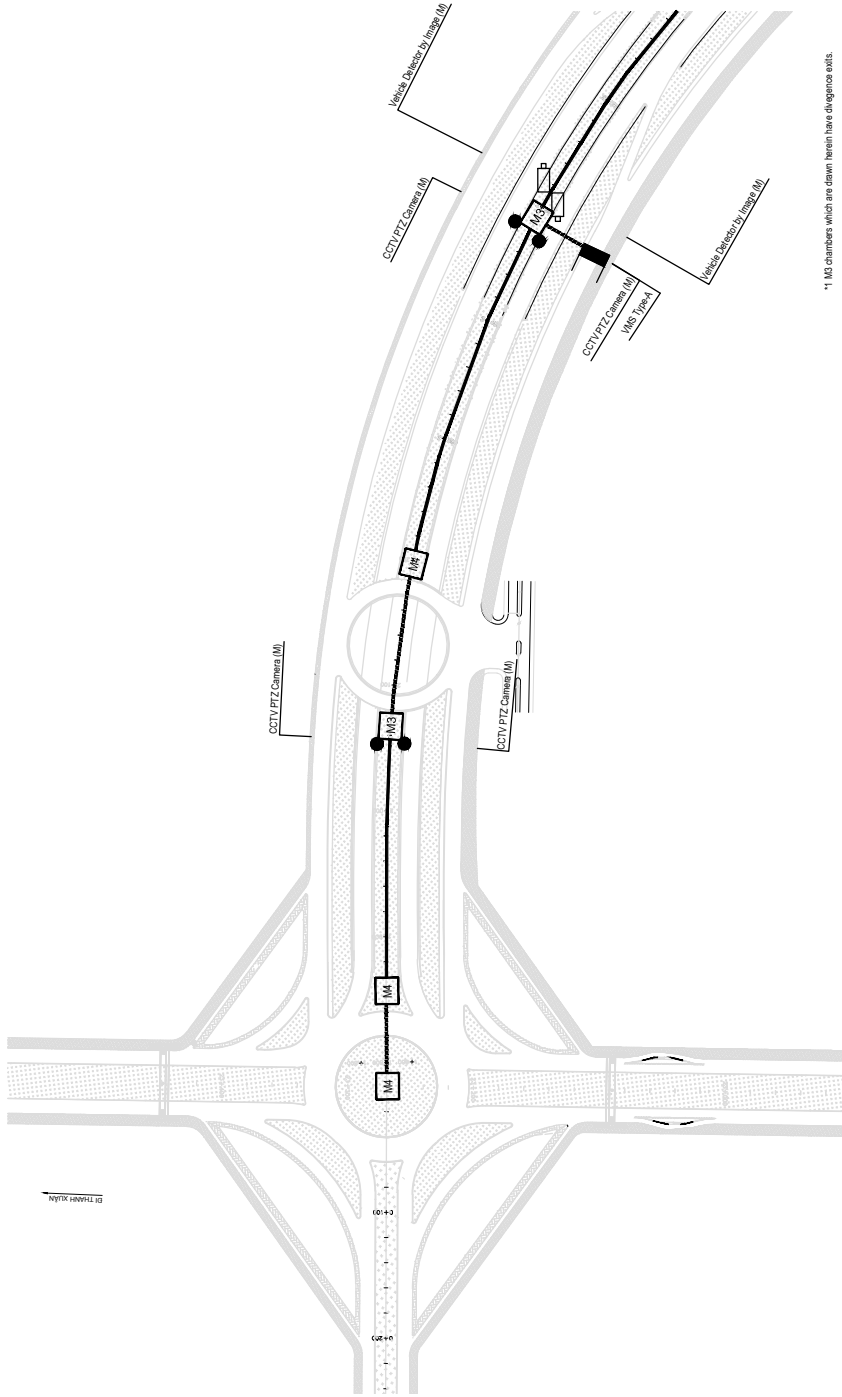
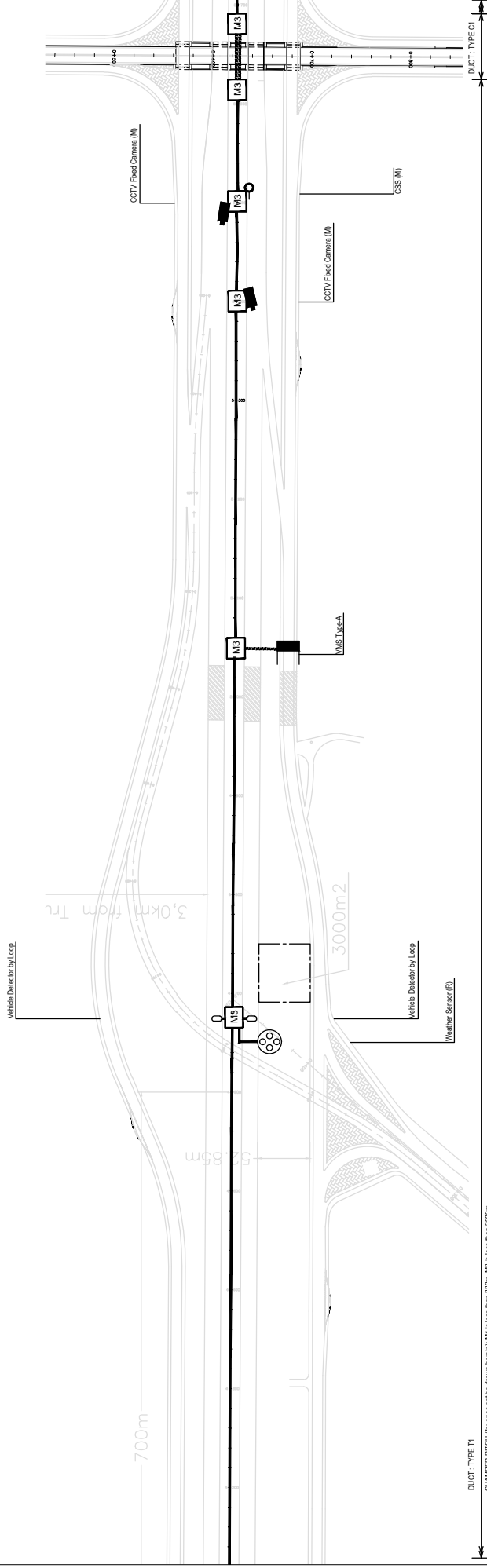
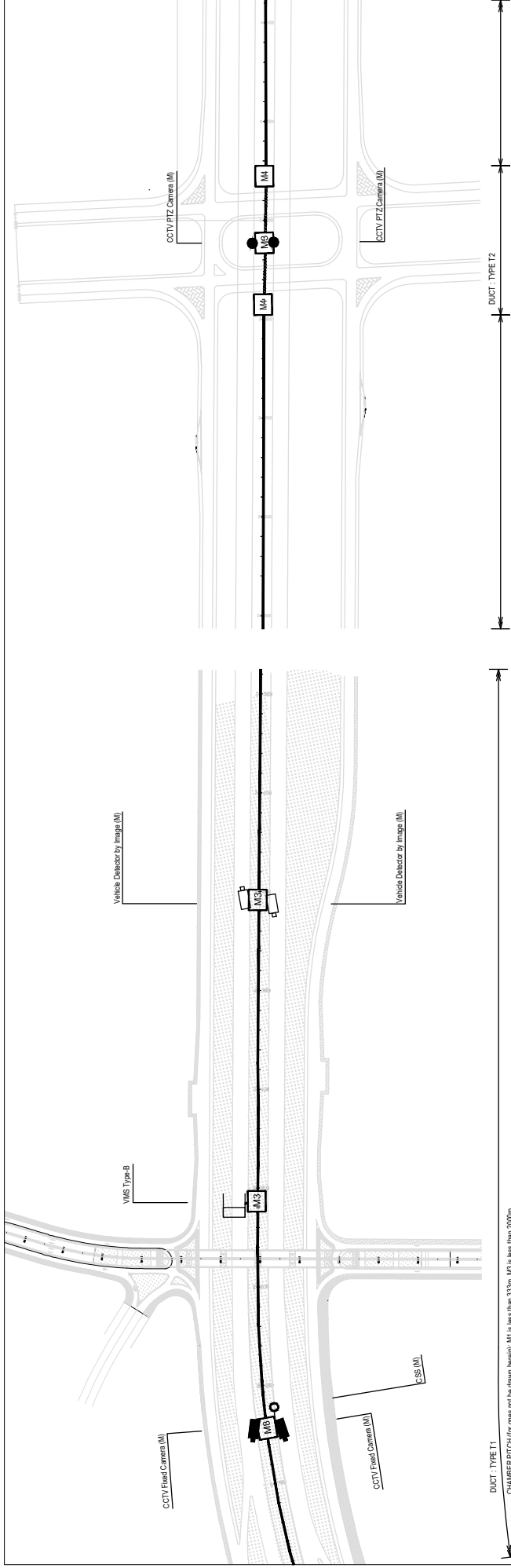


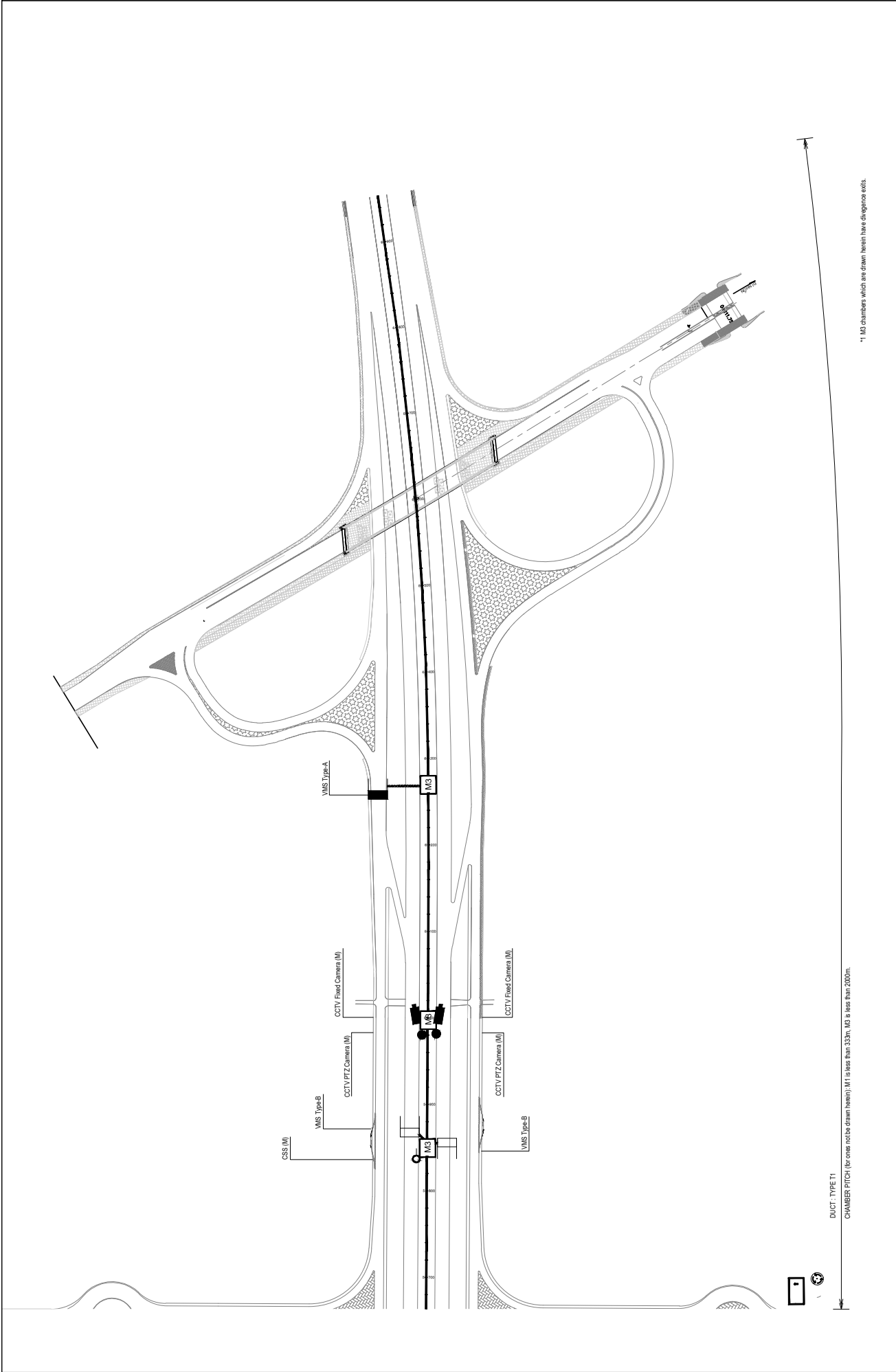
LANG - HOA LAC EXPRESSWAY



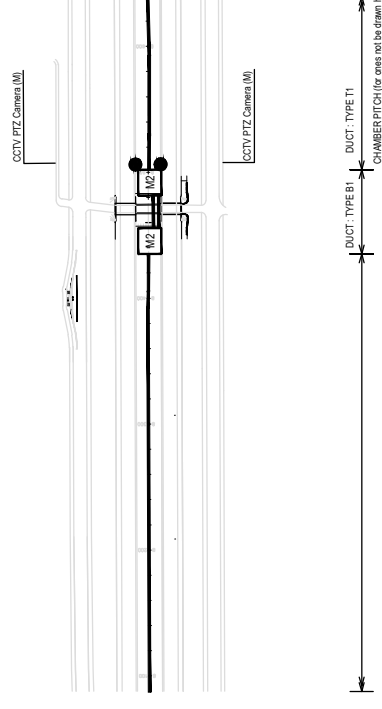
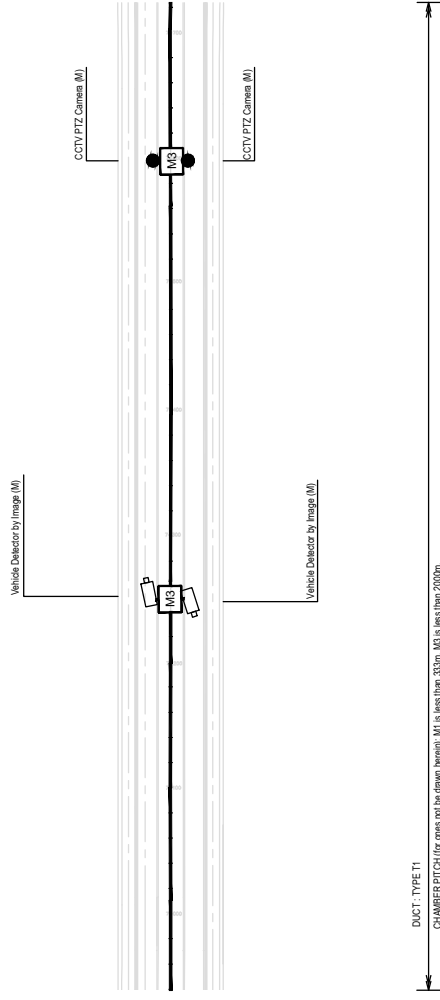
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
TITLE	NAME	SIGNATURE	DATE	DRAWING NO.:	VI.1-01
PREPARED BY				SHEET NO.:	
CHECKED BY				Rev.:	
APPROVED BY				Sheet	of
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		MINISTRY OF TRANSPORT		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 1+800 - KM 2+640, LANG-HOA LAC Exp.)	
				SCALE: 1:4000	



<p>DUCT TYPE T1 CHAMBER PITCH (for ones not be drawn herein): M1 is less than 333m, M2 is less than 2000m.</p>		<p>DUCT TYPE C1 CHAMBER PITCH (for ones not be drawn herein): M1 is less than 333m, M2 is less than 2000m.</p>	
<p>SOCIALIST REPUBLIC OF VIETNAM</p>			
<p>MINISTRY OF TRANSPORT</p>			
<p>ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM</p>			
<p>LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 2+640 - KM 5+700, LANG-HOA LAC Exp.)</p>			
<p>CONSULTANT</p>		<p>PACKAGE</p>	
TITLE	NAME	DRAWING NO.	SHEET NO.
PREPARED BY	SIGNATURE	VI.1-02	Sheet
CHECKED BY	DATE		of
APPROVED BY			
<p>ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.</p>		<p>SCALE: 1/4000</p>	

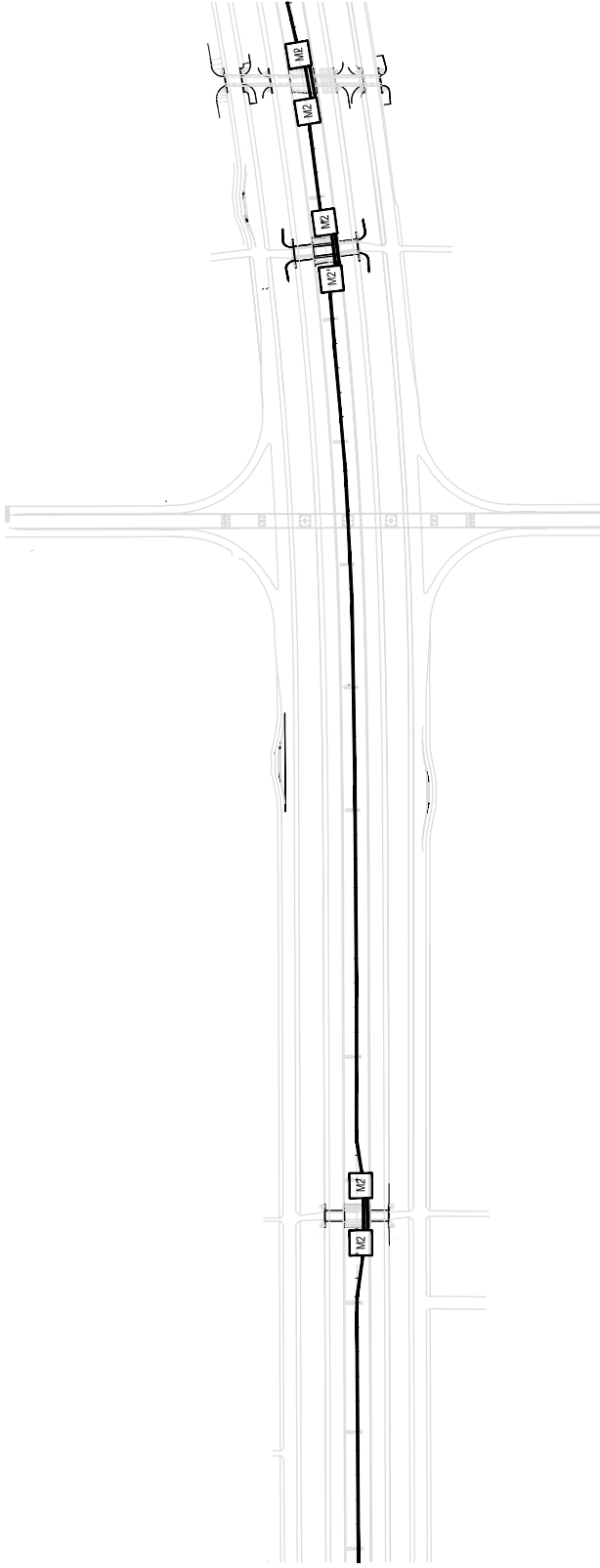


CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE: LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 5+700 - KM 6+900, LANG-HOA LAC Exp.)	
TITLE	NAME	SIGNATURE	DATE	PACKAGE	DRAWING NO.:
PREPARED BY					VI.1-03
CHECKED BY				SHEET NO.:	Sheet
APPROVED BY				Rev.:	of
TRANSPORTATION RESEARCH INSTITUTE CO., LTD		LANDTEC JAPAN INC.		SCALE : 1/4000	



*1 M0 chambers which are drawn herein have divergence angle.

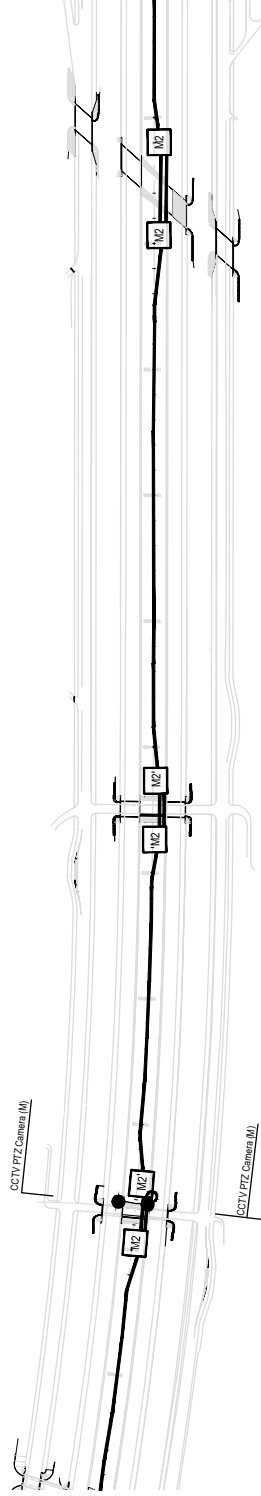
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		PACKAGE	
ORIENTAL CONSULTANTS CO., LTD	TITLE	NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING NO.:	
NEXCO EAST ENGINEERING CO., LTD	PREPARED BY	LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION		VI.1-04	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD	CHECKED BY	DUCT (KM 6+900 - KM 8+600, LANG-HOA LAC Exp.)		SHEET NO.:	
LANDTEC JAPAN INC.	APPROVED BY			Rev. of	
				Sheet of	
				SCALE : 1/4000	



DUCT : TYPE T1
 CHAMBER PITCH (for ones not be drawn herein)
 M1 is less than 333m, M3 is less than 2000m.

DUCT : TYPE B1
 CHAMBER PITCH (for ones not be drawn herein)
 M1 is less than 333m, M3 is less than 2000m.

DUCT : TYPE B1
 CHAMBER PITCH (for ones not be drawn herein)
 M1 is less than 333m, M3 is less than 2000m.



DUCT : TYPE T1
 CHAMBER PITCH (for ones not be drawn herein)
 M1 is less than 333m, M3 is less than 2000m.

DUCT : TYPE B1
 CHAMBER PITCH (for ones not be drawn herein)
 M1 is less than 333m, M3 is less than 2000m.

DUCT : TYPE B1
 CHAMBER PITCH (for ones not be drawn herein)
 M1 is less than 333m, M3 is less than 2000m.

* M3 chambers which are drawn herein have divergence exits.

SOCIALIST REPUBLIC OF VIETNAM

ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 DRAWING TITLE:
 LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION
 DUCT (KM 8+600 - KM 10+900, LANG-HOA LAC Exp.)

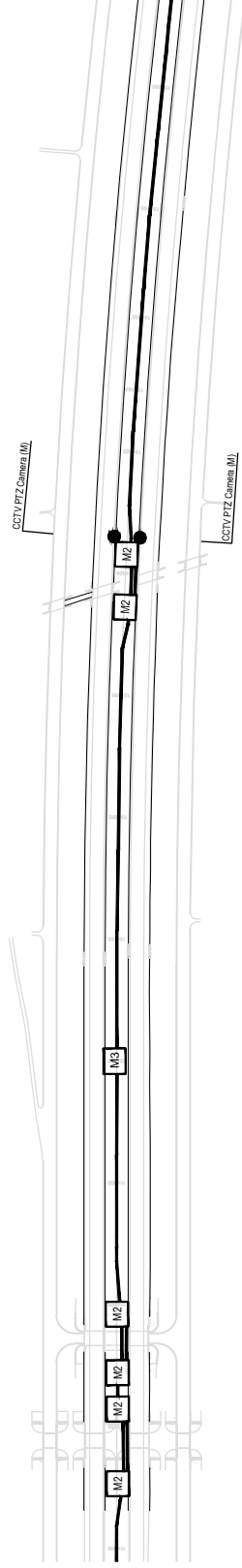
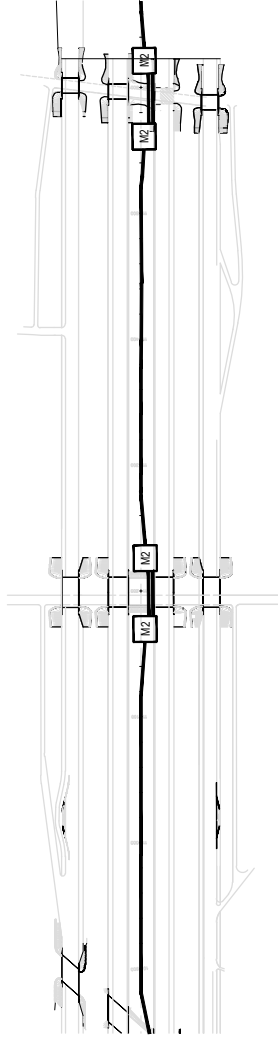
PACKAGE:
 DRAWING NO.: VI.1-05
 SHEET NO.:
 Sheet of

TITLE	NAME	SIGNATURE	DATE
PREPARED BY			
CHECKED BY			
APPROVED BY			

CONSULTANT
 ORIENTAL CONSULTANTS CO., LTD
 NEXCO EAST ENGINEERING CO., LTD
 NIPPON KOEI CO., LTD
 TRANSPORTATION RESEARCH INSTITUTE CO., LTD
 LANDTEC JAPAN INC.

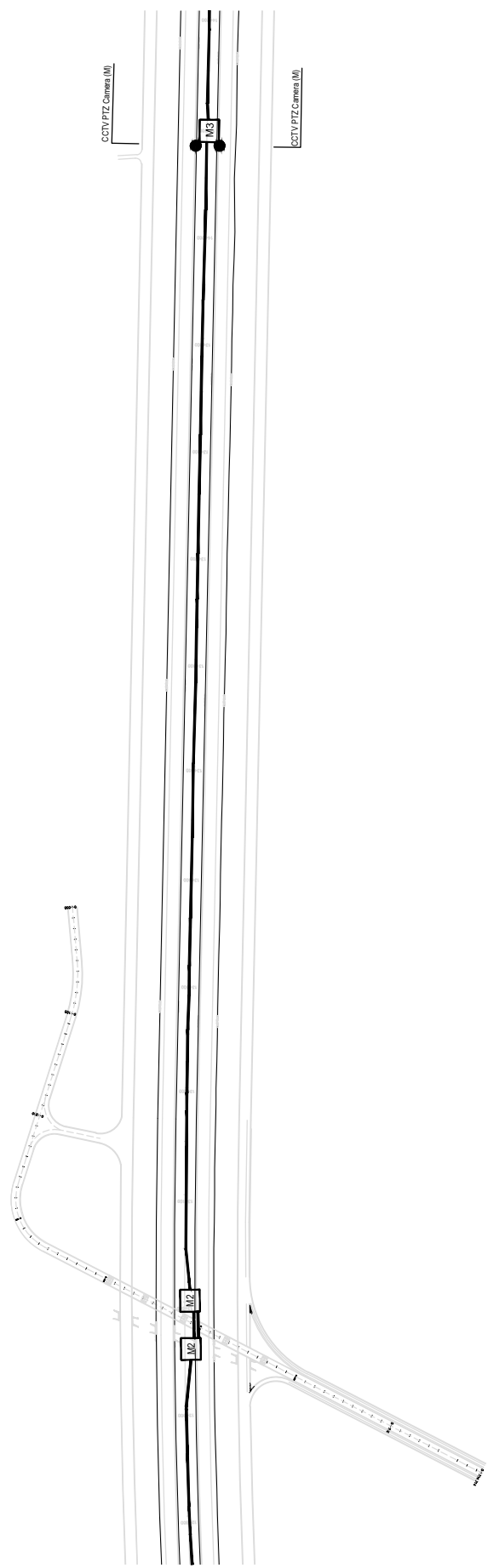
MINISTRY OF TRANSPORT

SCALE: 1:4000



*1 M3 chambers which are drawn herein have divergence exits.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE: LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 10+900 - KM 12+800, LANG-HOA LAC Exp.)	
TITLE	NAME	SIGNATURE	DATE	DRAWING NO.:	VI.1-06
PREPARED BY				SHEET NO.:	Sheet
CHECKED BY					of
APPROVED BY					Rev.
TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.				SCALE: 1:4000	



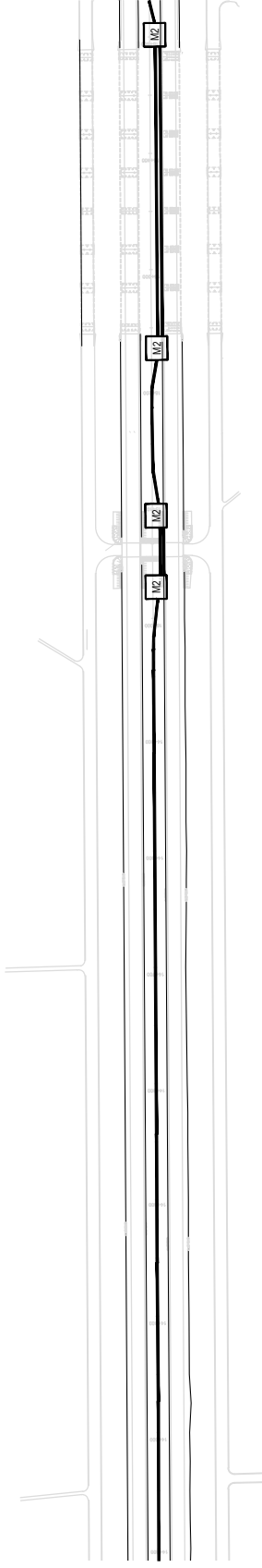
DUCT: TYPE B1
 CHAMBER PITCH (for ones not be drawn herein): M1 is less than 333m, M3 is less than 2000m.

DUCT: TYPE B1
 CHAMBER PITCH (for ones not be drawn herein): M1 is less than 333m, M3 is less than 2000m.

*1 M3 chambers which are drawn herein have diligence exits.

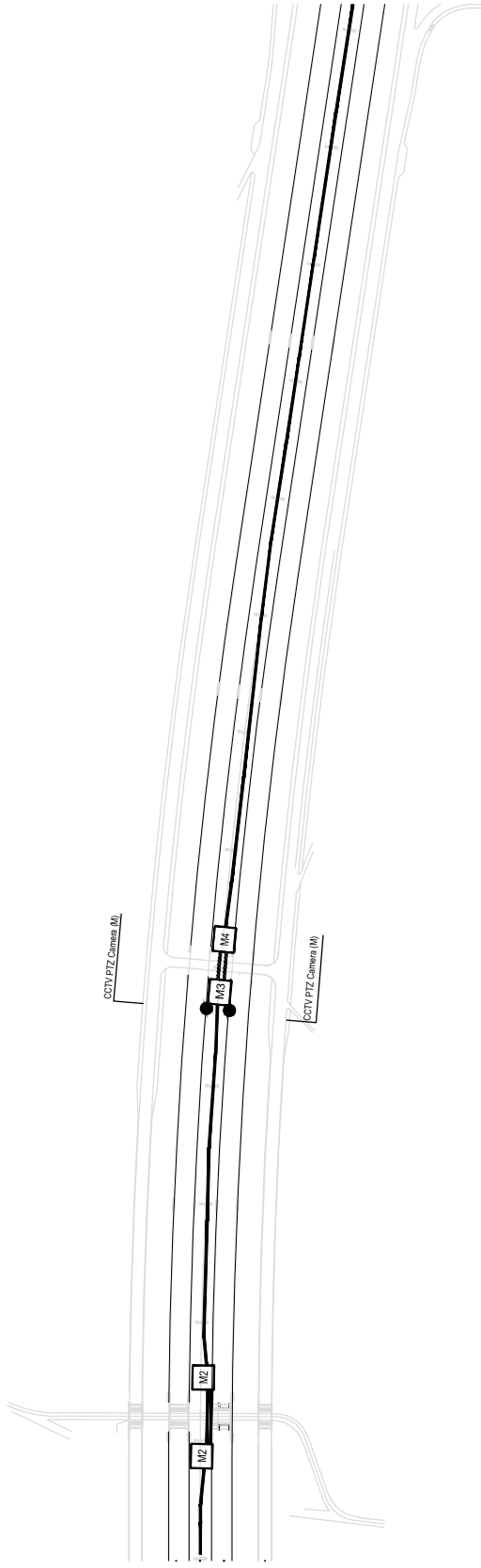
CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 12+800 - KM 14+200, LANG-HOA LAC Exp.)		PACKAGE: DRAWING NO.: VI.1-07 SHEET NO.: Sheet of
TITLE	NAME	SIGNATURE	DATE			
PREPARED BY						
CHECKED BY						
APPROVED BY						

SCALE: 1:14000



DUCT : TYPE T1
 CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.

DUCT : TYPE B1
 CHAMBER PITCH (for ones not be drawn herein) M5 (without obscure) is less than 100m.
 CHAMBER PITCH (for ones not be drawn herein) M5 (without obscure) is less than 100m.
 M1 is less than 333m, M3 is less than 2000m.

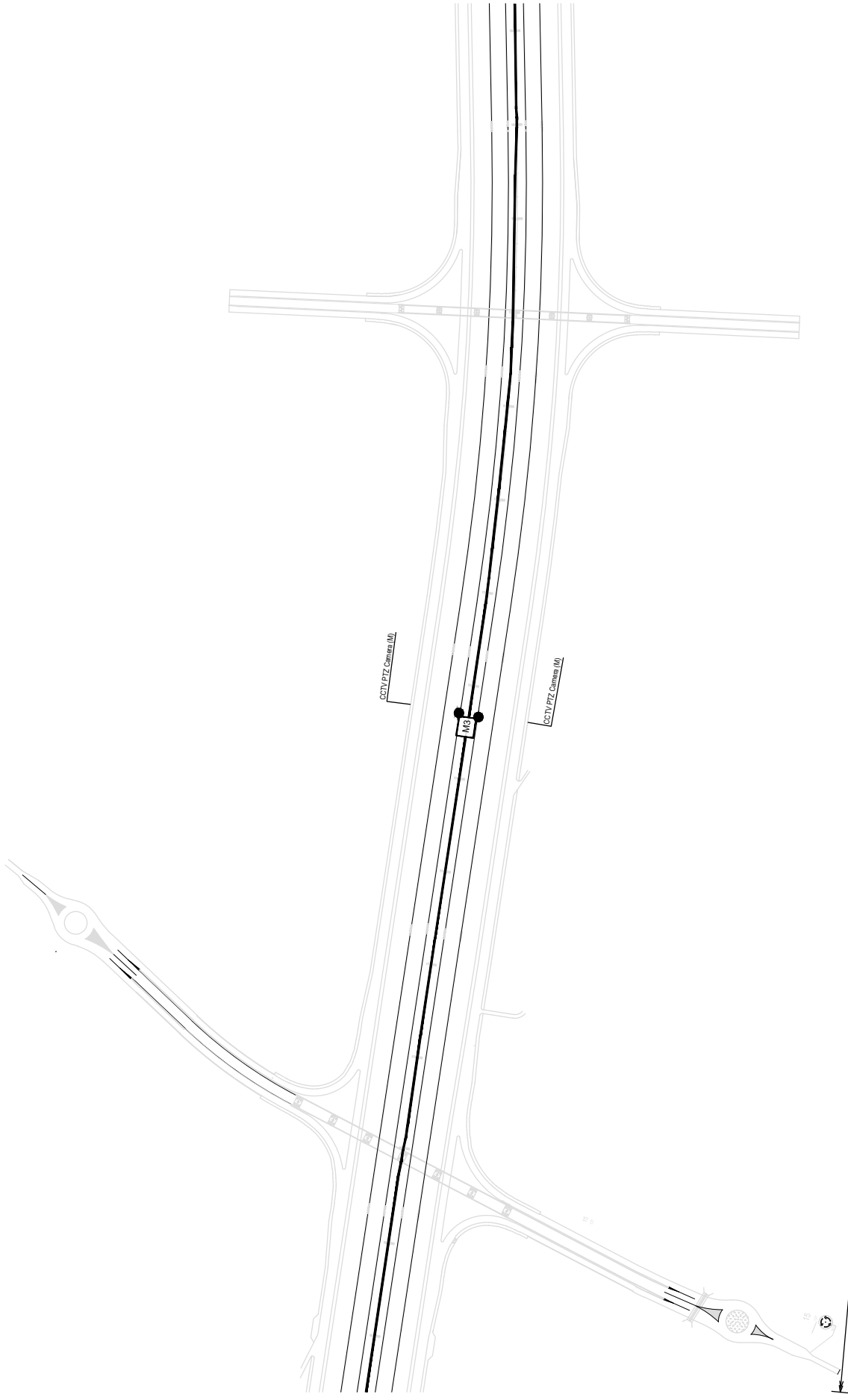


DUCT : TYPE T1
 CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.
 CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.
 M1 is less than 333m, M3 is less than 2000m.

DUCT : TYPE B1
 CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.
 CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.
 M1 is less than 333m, M3 is less than 2000m.

* M3 chambers which are drawn herein have diagonal exits.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		PACKAGE	
ORIENTAL CONSULTANTS CO., LTD	TITLE	NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING NO. VI.1-08	
NEXCO EAST ENGINEERING CO., LTD	PREPARED BY	LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION		SHEET NO. Sheet of	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD	CHECKED BY	DUCT (KM 14+200 - KM 16+800, LANG-HOA LAC Exp.)		Rev.	
LANDTEC JAPAN INC.	APPROVED BY			SCALE : 1:4000	



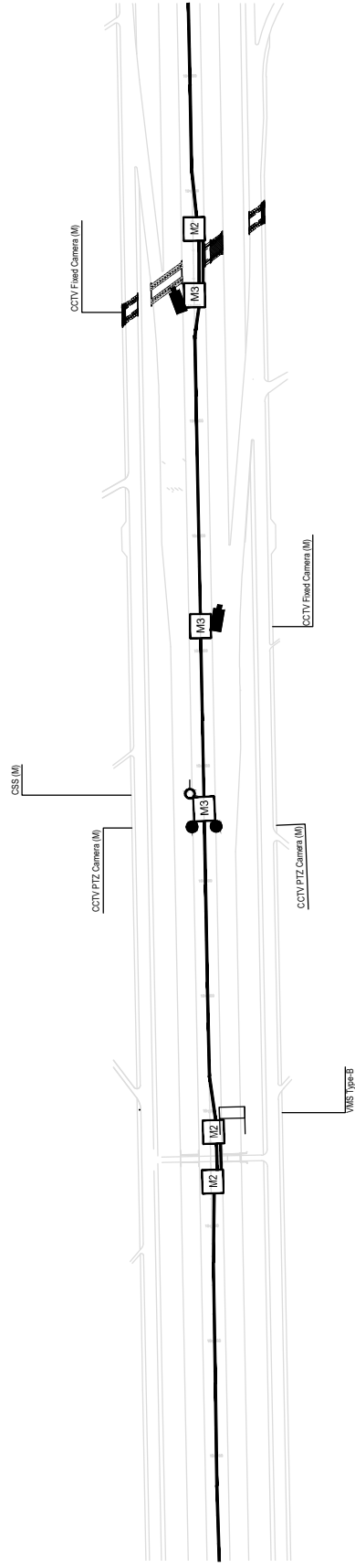
DUCT : TYPE T1

CHAMBER PITCH (for one side drawn here) M1 is less than 130m, M3 is less than 200m.

*1 M3 chambers which are drawn herein have divergence exits.

CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM DRAWING TITLE: LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 16+800 - KM 18+100, LANG-HOA LAC Exp.)		PACKAGE: DRAWING NO.: VI.1-09	SHEET NO.: Sheet of
TITLE	NAME	SIGNATURE	DATE				
PREPARED BY							
CHECKED BY							
APPROVED BY							

SCALE : 1:4000



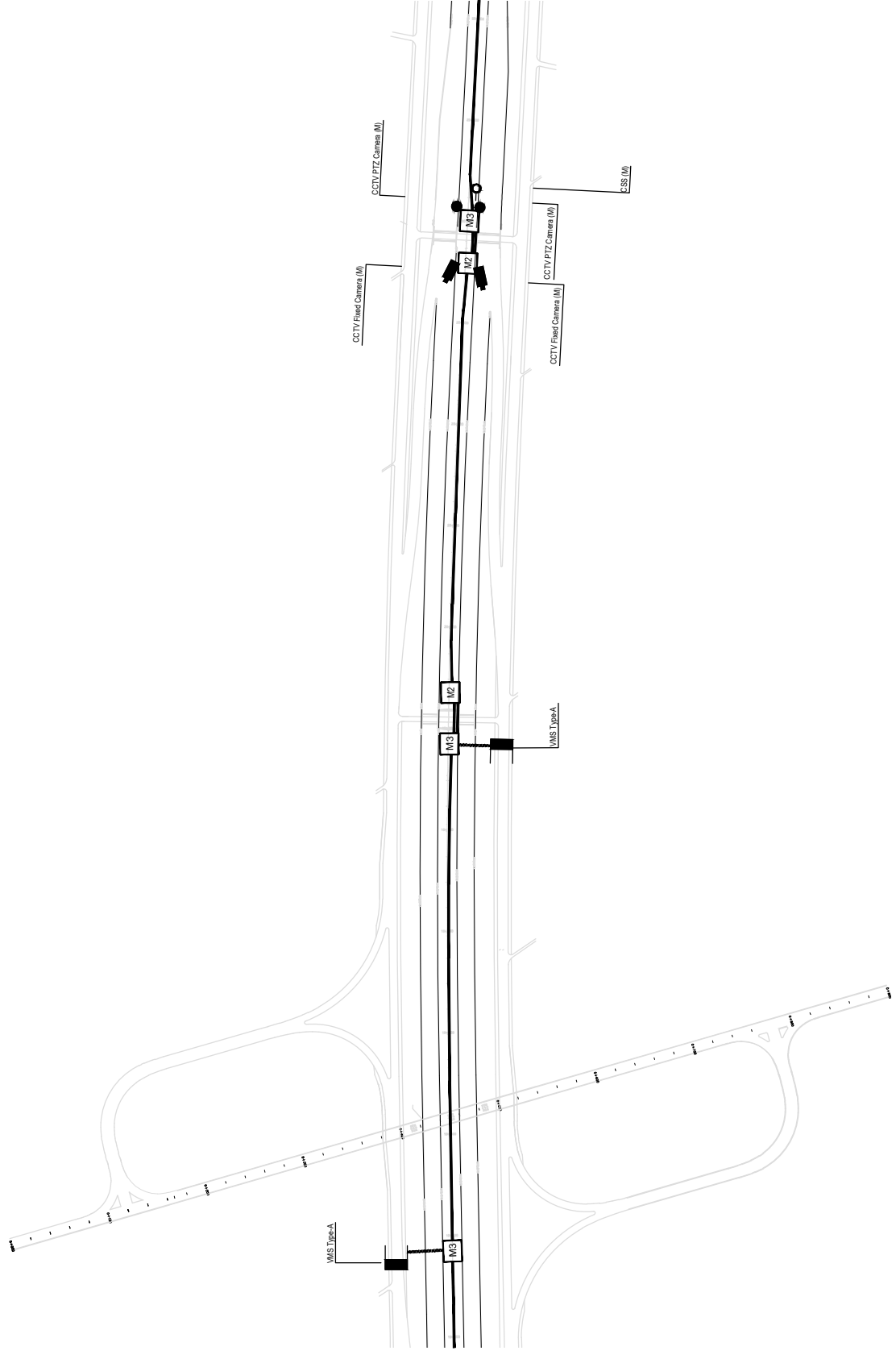
DUCT : TYPE T1
CHAMBER PITCH (for ones not be drawn herein). M1 is less than 333m, M3 is less than 2000m.

DUCT : TYPE B1
CHAMBER PITCH (for ones not be drawn herein). M1 is less than 333m, M3 is less than 2000m.

DUCT : TYPE T1
CHAMBER PITCH (for ones not be drawn herein). M1 is less than 333m, M3 is less than 2000m.

*1 M3 chambers which are drawn herein have divergence exits.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM				PACKAGE:	
		MINISTRY OF TRANSPORT				NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		TITLE		DRAWING NO.:		DRAWING NO.:	
NEXCO EAST ENGINEERING CO., LTD		PREPARED BY		VI.1- 10		VI.1- 10	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD		CHECKED BY		SHEET NO.:		SHEET NO.:	
LANDTEC JAPAN INC.		APPROVED BY		Rev.:		Rev.:	
				SCALE: 1:4000		Sheet of	



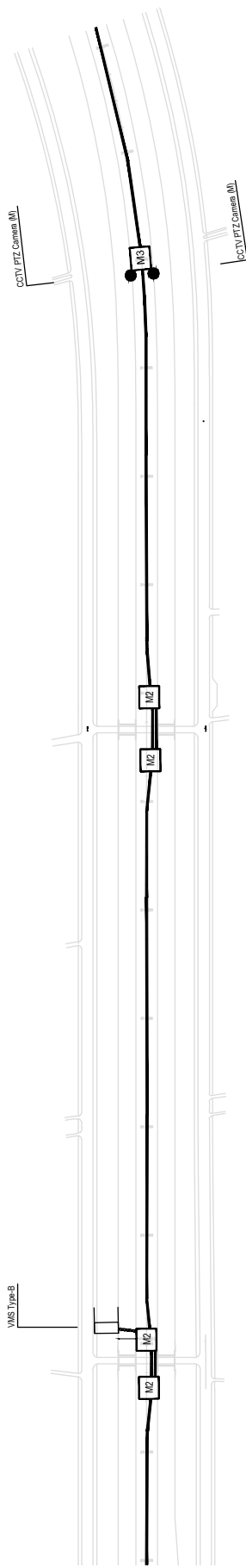
DUCT: TYPE T1 CHAMBER PITCH (for ones not be drawn herein) M1 is less than 33m, M3 is less than 200m.

DUCT: TYPE B1 CHAMBER PITCH (for ones not be drawn herein) M1 is less than 33m, M3 is less than 200m.

* M3 chambers which are drawn herein have danger exits.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
NEXCO EAST ENGINEERING CO., LTD				DRAWING NO.: VI.1- 11	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				SHEET NO.: Sheet of	
LANDTEC JAPAN INC.				Rev.:	
TITLE		NAME		SIGNATURE	
DATE		DATE		DATE	
PREPARED BY		NAME		SIGNATURE	
CHECKED BY		NAME		SIGNATURE	
APPROVED BY		NAME		SIGNATURE	

SCALE: 1:4000

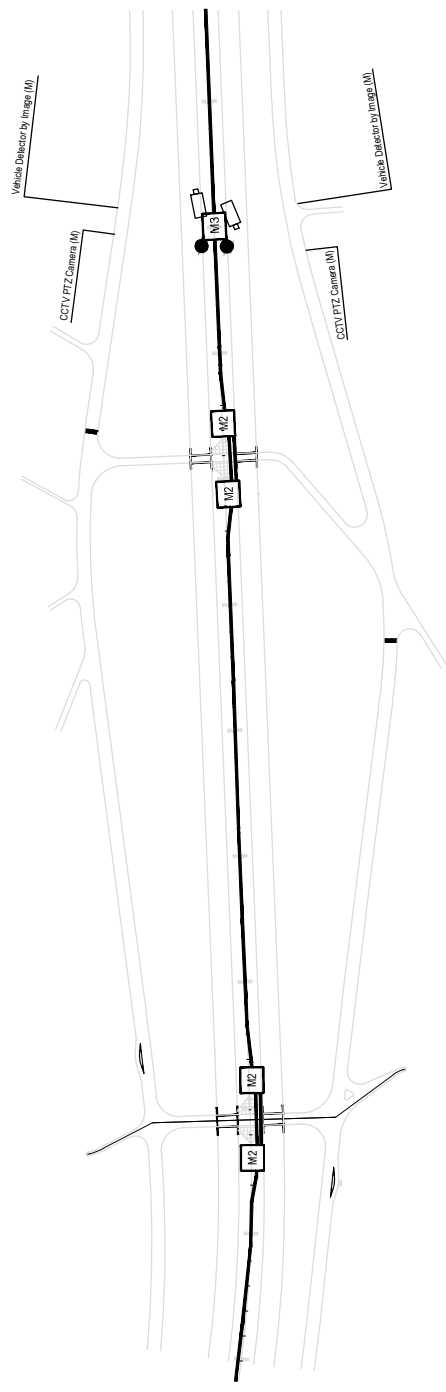


DUCT : TYPE T1
 CHAMBER PITCH (for ones not be drawn herein) : M1 is less than 333m, M3 is less than 200m.
 M1 is less than 333m, M3 is less than 200m.

DUCT : TYPE B1
 DUCT : TYPE T1
 CHAMBER PITCH (for ones not be drawn herein) : M1 is less than 333m, M3 is less than 200m.

*1 M3 chambers which are drawn herein have diaphragm exits.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		PACKAGE	
ORIENTAL CONSULTANTS CO., LTD	TITLE	NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING NO. : VI.1- 12	
NEXO EAST ENGINEERING CO., LTD	PREPARED BY	MINISTRY OF TRANSPORT		SHEET NO. : Sheet of	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD	CHECKED BY	DUCT (KM 20+675 - KM 22+000, LANG-HOA LAC Exp.)		Rev. :	
LANDTEC JAPAN INC.	APPROVED BY	SCALE : 1:4000			



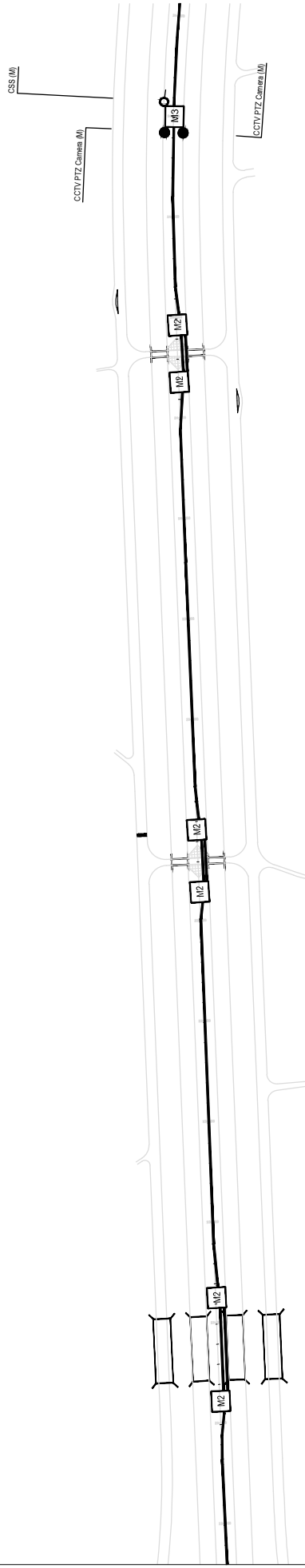
DUCT: TYPE T1
 CHAMBER PITCH (for ones not be drawn herein): M1 is less than 33m, M2 is less than 200m, M3 is less than 200m.

DUCT: TYPE B1
 CHAMBER PITCH (for ones not be drawn herein): M1 is less than 33m, M2 is less than 200m, M3 is less than 200m.

DUCT: TYPE T1
 CHAMBER PITCH (for ones not be drawn herein): M1 is less than 33m, M2 is less than 200m, M3 is less than 200m.

*1 M3 chambers which are drawn herein have divergence exits.

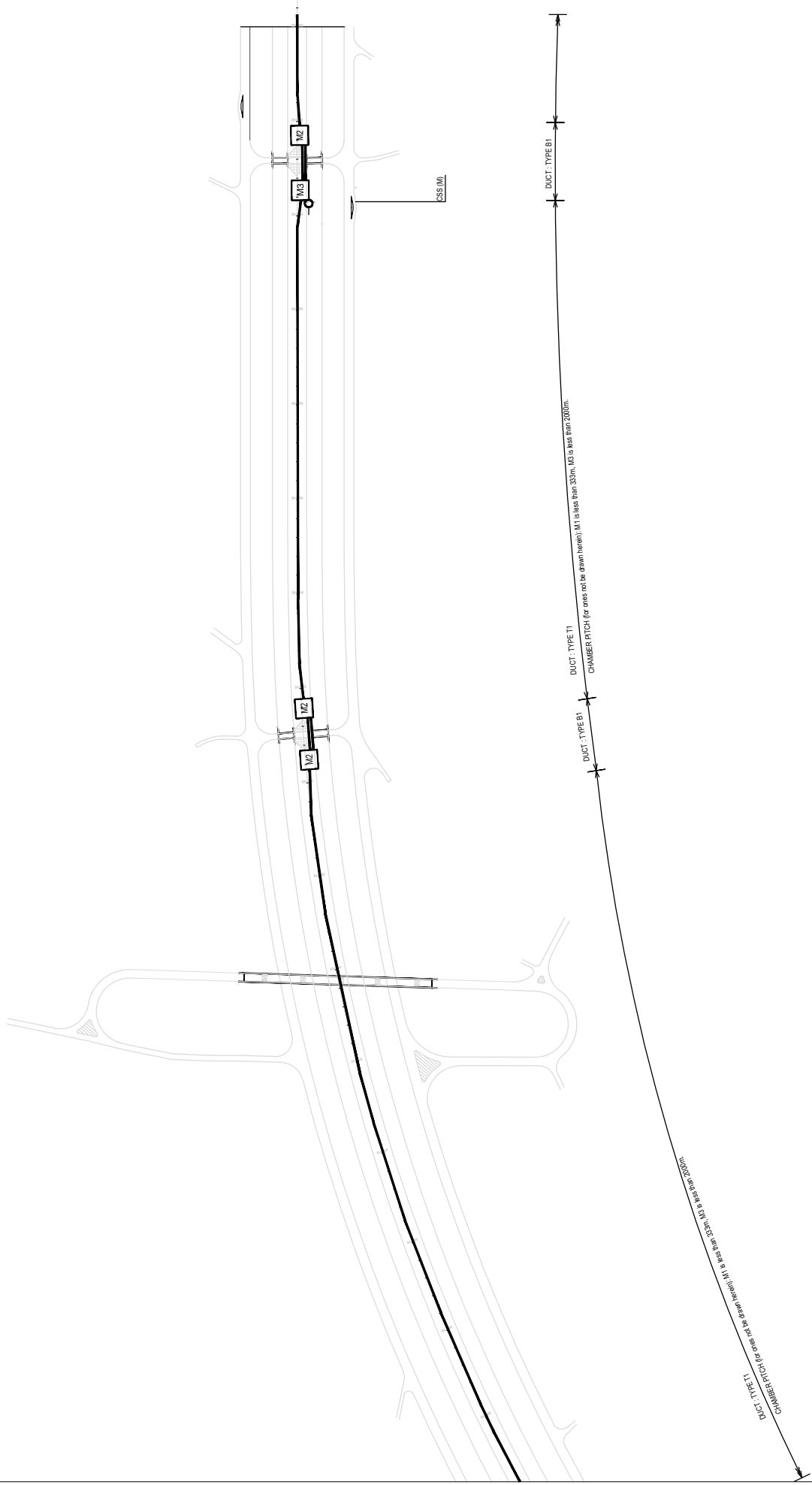
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		PACKAGE:
ORIENTAL CONSULTANTS CO., LTD				DRAWING TITLE:		DRAWING NO.:
NEXCO EAST ENGINEERING CO., LTD		MINISTRY OF TRANSPORT		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION		VI.1- 13
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				DUCT (KM 22+000 - KM 23+000, LANG-HOA LAC Exp.)		SHEET NO.:
LANDTEC JAPAN INC.						Rev.:
						Sheet
						of
						SCALE: 1:4000



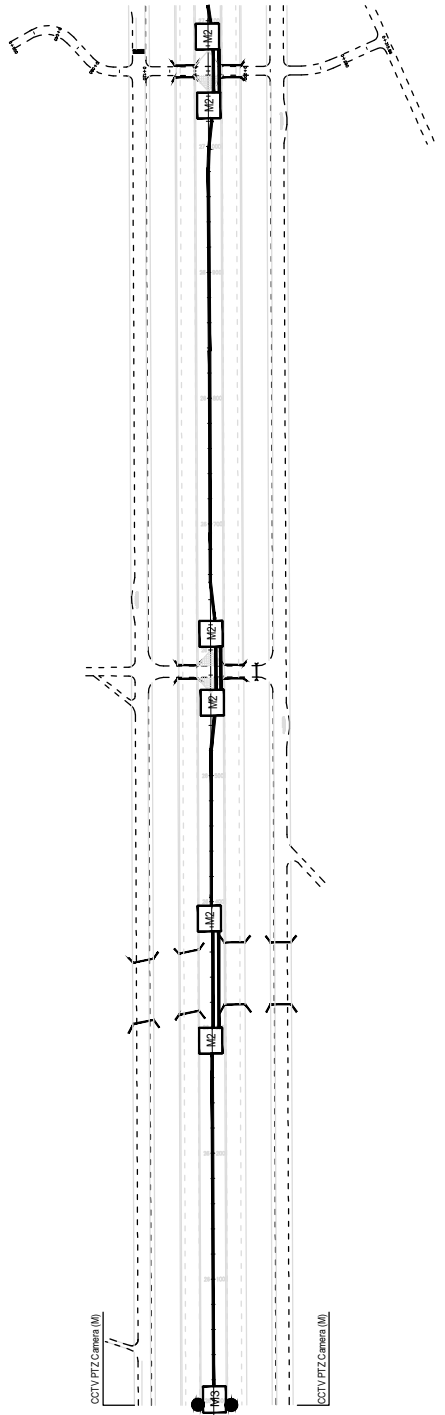
DUCT - TYPE T1 CHAMBER PITCH (for ones not be drawn herein). M1 is less than 33m, M3 is less than 200m.
 DUCT - TYPE B2 CHAMBER PITCH (for ones not be drawn herein). M1 is less than 33m, M3 is less than 200m.
 DUCT - TYPE B1 CHAMBER PITCH (for ones not be drawn herein). M1 is less than 33m, M3 is less than 200m.
 DUCT - TYPE T1 CHAMBER PITCH (for ones not be drawn herein). M1 is less than 33m, M3 is less than 200m.

*1 M3 chambers which are drawn herein have diagonals axis.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		PACKAGE	
ORIENTAL CONSULTANTS CO., LTD	TITLE	NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING NO. VI.1- 14	
NEXCO EAST ENGINEERING CO., LTD	PREPARED BY	LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION		SHEET NO. Sheet of	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD	CHECKED BY	DUCT (KM 23+000 - KM 24+500, LANG-HOA LAC Exp.)		Rev.	
LANDTEC JAPAN INC.	APPROVED BY			SCALE : 1:4000	



CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		PACKAGE	
ORIENTAL CONSULTANTS CO., LTD		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING NO. VI.1- 15	
NEXO EAST ENGINEERING CO., LTD		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION		SHEET NO. Sheet of	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD		DUCT (KM 24+500 - KM 26+000, LANG-HOA LAC Exp.)		REV.	
LANDTEC JAPAN INC.				SCALE: 1:4000	
TITLE	NAME	SIGNATURE	DATE		
PREPARED BY					
CHECKED BY					
APPROVED BY					

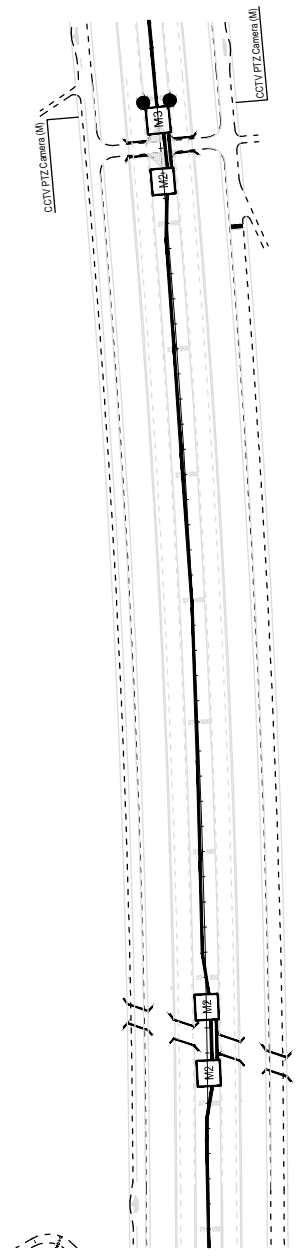


DUCT: TYPE T1
CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.

DUCT: TYPE B1
CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.

DUCT: TYPE B2

DUCT: TYPE T1
CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.



DUCT: TYPE T1
CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.

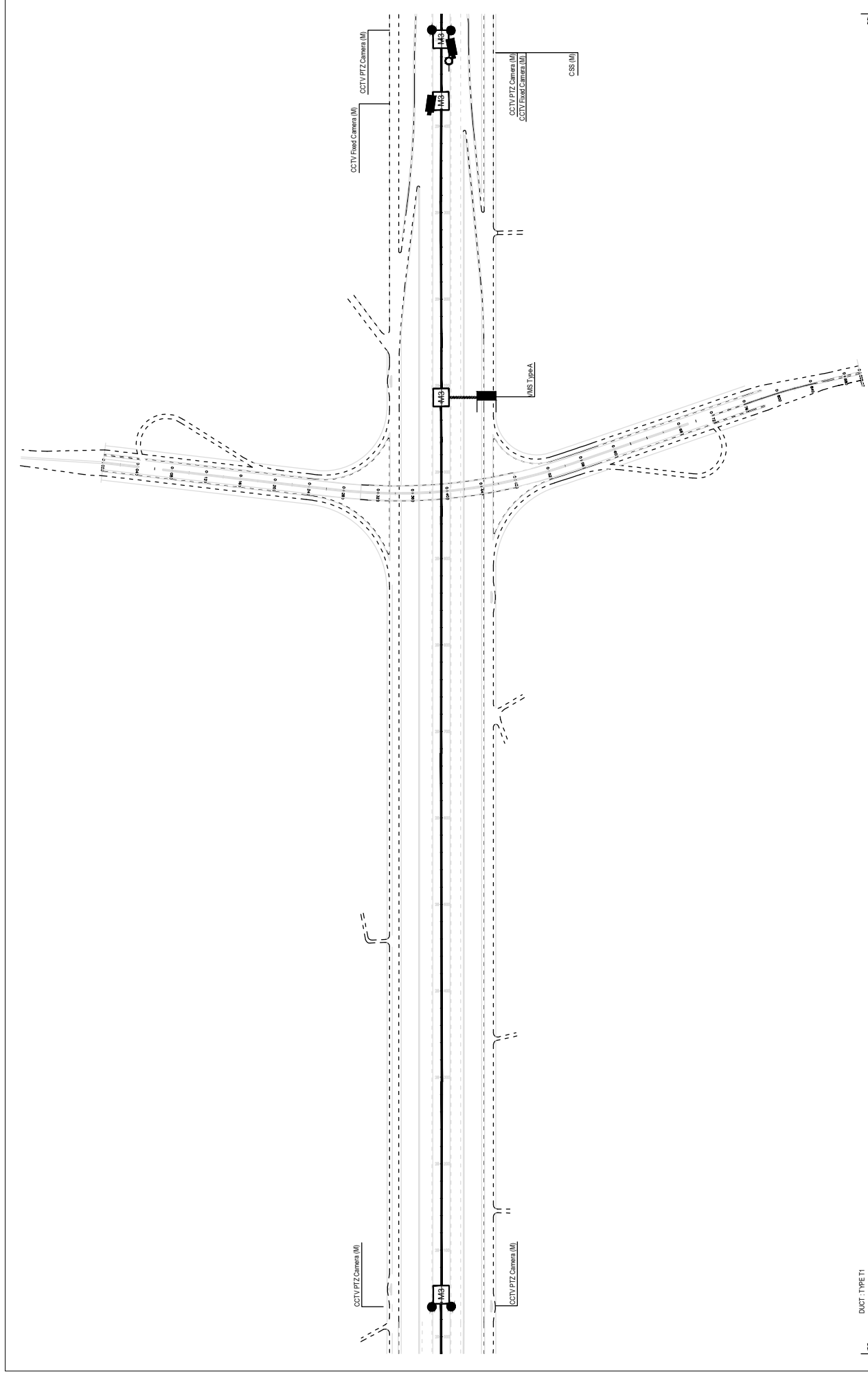
DUCT: TYPE B1
CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.

DUCT: TYPE T1
CHAMBER PITCH (for ones not be drawn herein) M1 is less than 333m, M3 is less than 2000m.

* M3 chambers which are drawn herein have divergence suits.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE: LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION	
NEXCO EAST ENGINEERING CO., LTD				DUCT (KM 26+000 - KM 28+000, LANG-HOA LAC Exp.)	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				PACKAGE: DRAWING NO.: VI.1- 16	
LANDTEC JAPAN INC.				SHEET NO.: Sheet of	
TITLE	NAME	SIGNATURE	DATE		
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CHECKED BY					
APPROVED BY					

SCALE: 1:4000

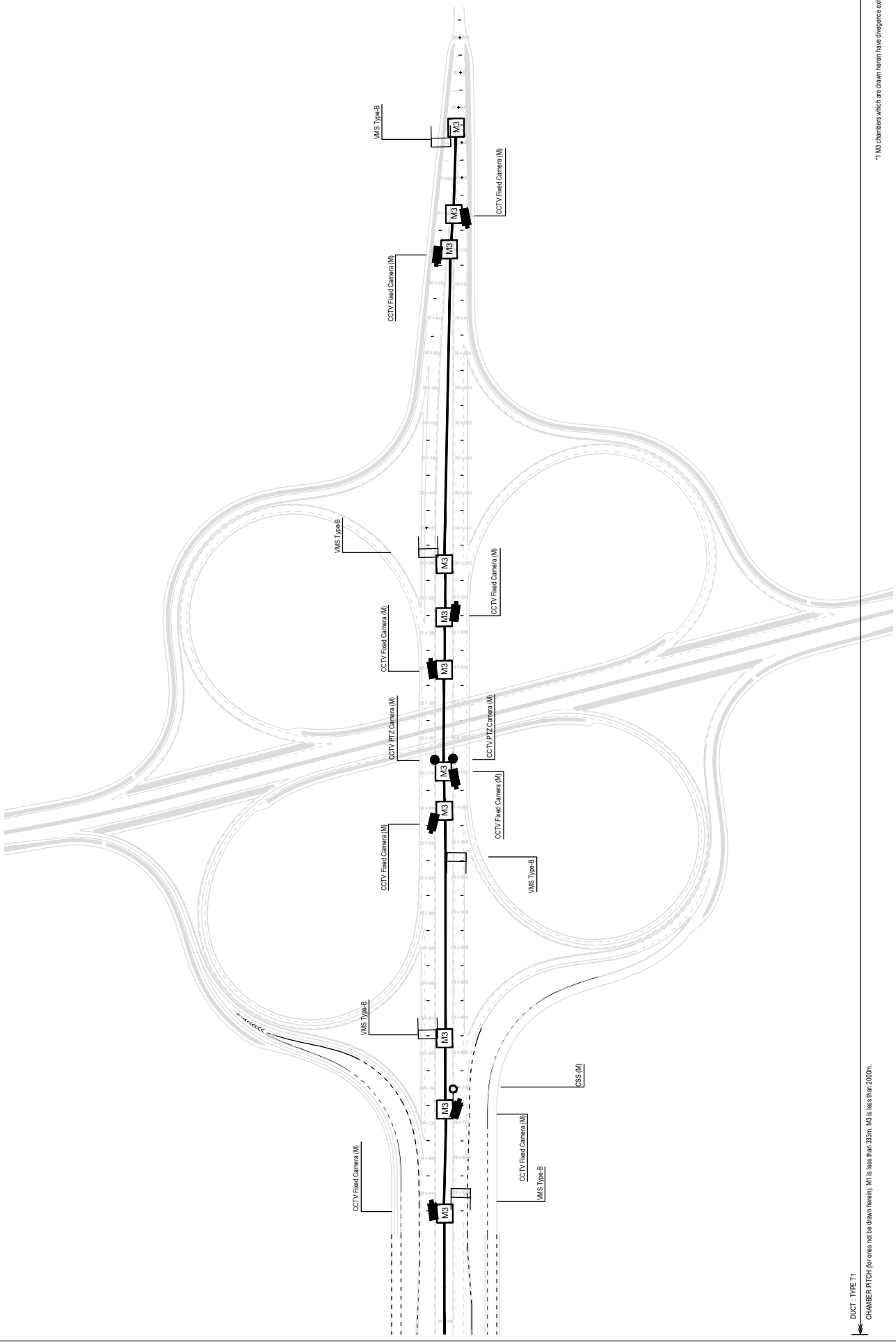


DUCT : TYPE 1

CHAMBER PITCH (for cases not be drawn herein): M1 is less than 33cm, M3 is less than 200cm.

*1 M3 chambers which are drawn herein have divergence exits.

<p>CONSULTANT</p> <p>ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.</p>		<p>SOCIALIST REPUBLIC OF VIETNAM</p> <p>MINISTRY OF TRANSPORT</p>		<p>PACKAGE: ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM</p>			
				<p>DRAWING TITLE: LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 28+000 - KM 29+500, LANG-HOA LAC Exp.)</p>			
<p>TITLE</p>		<p>NAME</p>		<p>SIGNATURE</p>		<p>DATE</p>	
<p>PREPARED BY</p>		<p>CHECKED BY</p>		<p>APPROVED BY</p>		<p>REVISION</p>	
<p>DRWING NO.: VI.1- 17</p>		<p>SHEET NO.: _____</p>		<p>Sheet _____ of _____</p>		<p>SCALE: 1:4000</p>	

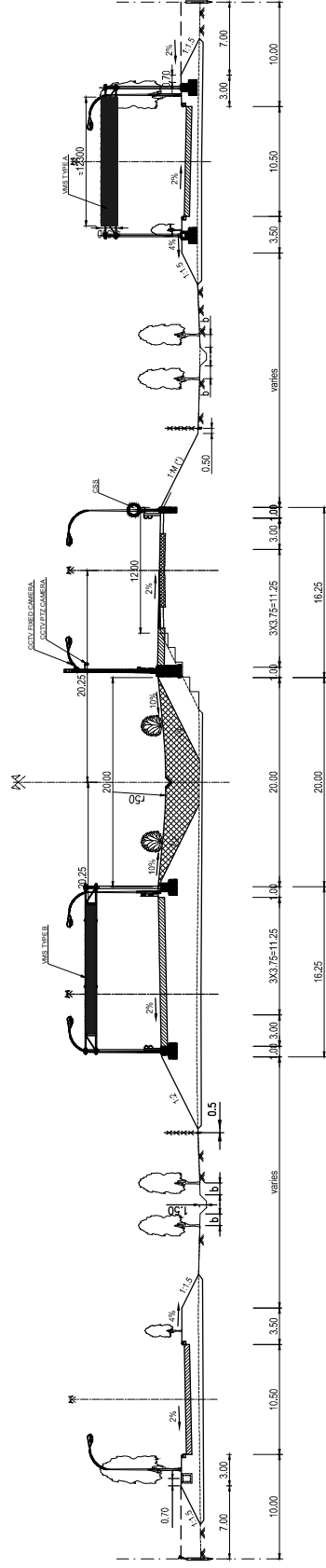


*1 M3 chambers which are drawn herein have divergence exits.

DUCT : TYPE T1
 CHAMBER PITCH (for cases not be drawn herein): M1 is less than 333m, M3 is less than 200m.

SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
		DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 29+500, LANG-HOA LAC Exp.) HOA LAC I.C.	
CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		PACKAGE DRAWING NO.: VI-1-18 SHEET NO.: Scale: 1/4000	Sheet of
TITLE	NAME	SIGNATURE	DATE
PREPARED BY			
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TYPICAL CROSS SECTION



TITLE	NAME	SIGNATURE	DATE
PREPARED BY			
CHECKED BY			
APPROVED BY			

CONSULTANT

ORIENTAL CONSULTANTS CO., LTD
 NEXCO EAST ENGINEERING CO., LTD
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 TRANSPORTATION RESEARCH INSTITUTE CO., LTD
 LANDTEC JAPAN INC.

SOCIALIST REPUBLIC OF VIETNAM

MINISTRY OF TRANSPORT

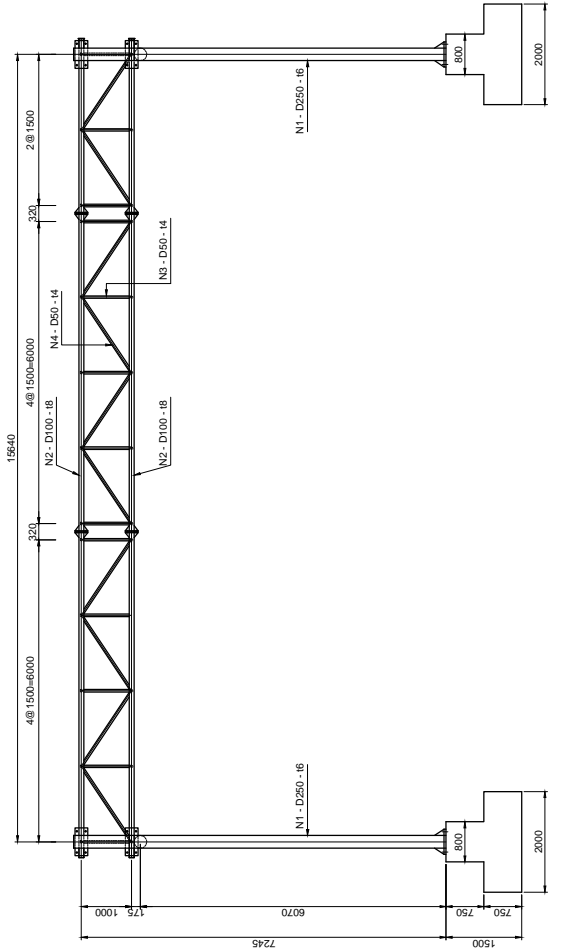
**ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM**

**TYPICAL CROSS SECTION OF EQUIPMENT ARRANGEMENT
 OF LANG - HOA LAC EXP.**

SCALE: N.T.S.

PACKAGE:	
DRAWING NO.:	M.2-01
SHEET NO.:	Sheet of

MAIN VIEW
SCALE: 1/100



SIDE VIEW
SCALE: 1/100

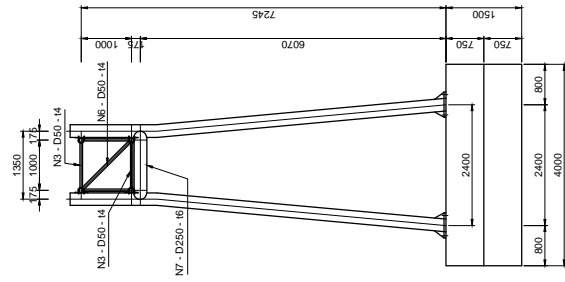
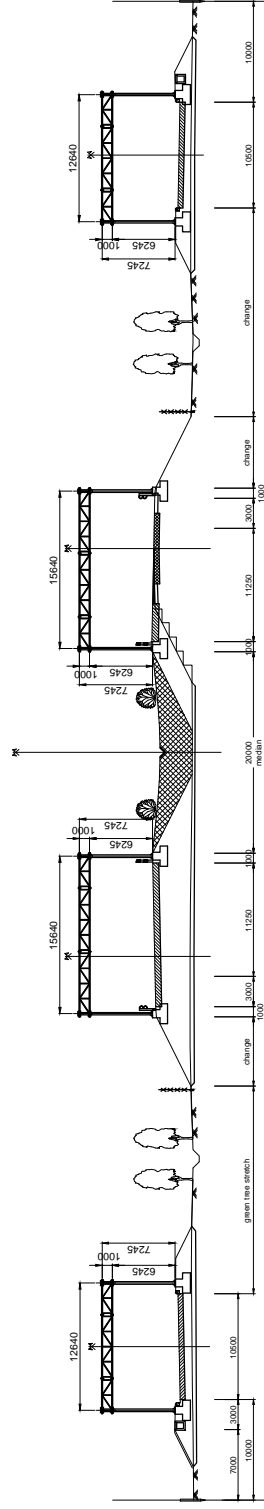


TABLE OF QUANTITY

Element	Type (mm)	Weight of element (kg)	Number of element (items)	Total weight (kg)	Notes
N1	Tube D250 1=6 L=7484	270.57	4	1082.27	Main column (upper part)
N2	Tube D100 1=6 L=16270	285.31	4	1151.26	Top chord, Bottom chord
N3	Tube D50 1=4 L=1020	4.54	52	235.96	Vertical web bar
N4	Tube D50 1=5 L=1803	10.00	40	400.18	Diagonal web bar
N6	Tube D50 1=5 L=1414	7.85	13	102.00	Diaphragm
N7	Tube D250 1=6 L=1350	48.74	2	97.48	Diaphragm
Total steel				3096.15	
		Concrete M200			16.65m ³ Assumed

GENERAL VIEW
SCALE: 1/2000



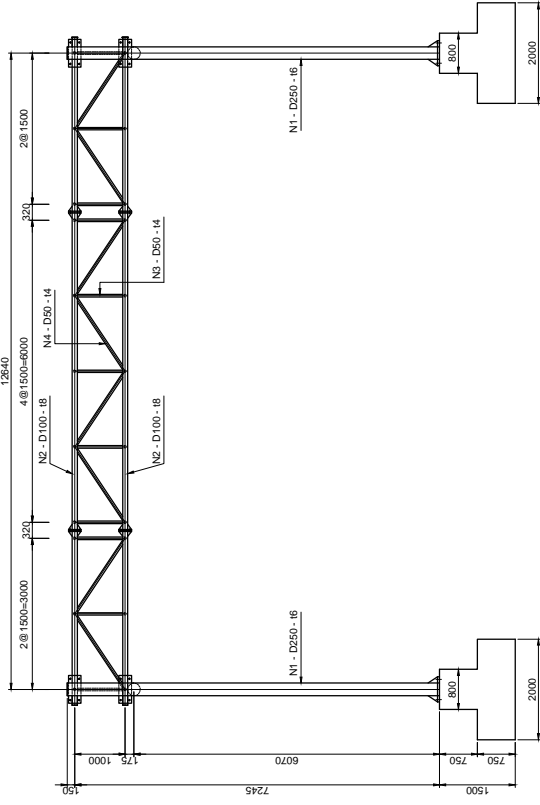
NOTES:

- Dimensions are in millimeter.
 - Structural steel conforms ASTM A-708M Grade 250 or equivalence with:
Yield strength: $F_y = 250$ MPa
Tensile strength: $F_u = 400$ MPa
 - Concrete structure equivalence with:
Concrete strength: $F_c = 19$ MPa
Reinforcing Bar (CB300-II): Yield strength: $F_y = 300$ MPa
Tensile strength: $F_u = 450$ MPa
4. The depth of foundation is just an estimated value.
The final depth of foundation shall be based on the real soil condition.
These structure should be redesigned to meet site condition.
5. In case without any recommendation about zipping in details all metal member exposed to weather or soil must be zincd with amount of 500g/m²

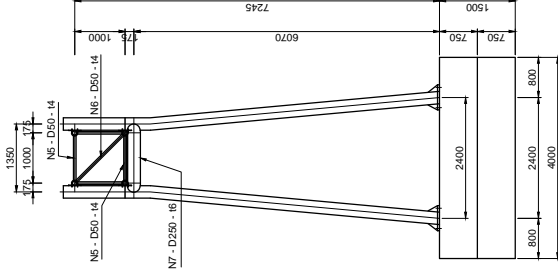
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		TITLE	NAME	SIGNATURE	DATE
		PREPARED BY			
		CHECKED BY			
		APPROVED BY			
MINISTRY OF TRANSPORT				DETAIL OF GANTRY AT EARTHWORK SECTION(1)	
DRAWING TITLE				PACKAGE	
DRAWING NO.				VI.2-02	
SHEET NO.				Sheet of	

SCALE: Various

MAIN VIEW
SCALE: 1/100



SIDE VIEW
SCALE: 1/100



GENERAL VIEW
SCALE: 1/500

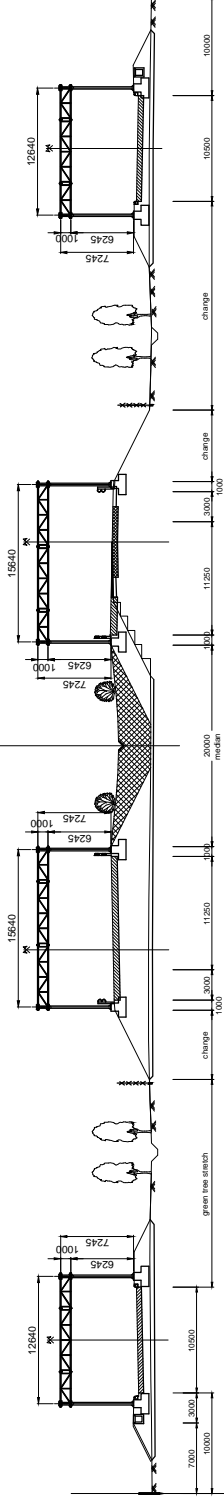


TABLE OF QUANTITY

Element	Type	Weight of element (kg)	Number of element	Total weight (kg)	Notes
N1	Tube D250 E=8 L=7494	270.57	4	1082.27	Main column (upper part)
N2	Tube D100 E=8 L=13270	240.86	4	963.46	Top chord, Bottom chord
N3	Tube D50 E=4 L=1000	4.54	44	199.96	Vertical web bar
N4	Tube D50 E=5 L=1603	10.00	52	520.16	Diagonal web bar
N5	Tube D50 E=5 L=1414	7.65	11	84.15	Diaphragm
N7	Tube D250 E=8 L=1350	46.74	2	93.48	Diaphragm
Total (kg)				2748.31	
Concrete M200					16.80m ³ Assumed

NOTES:

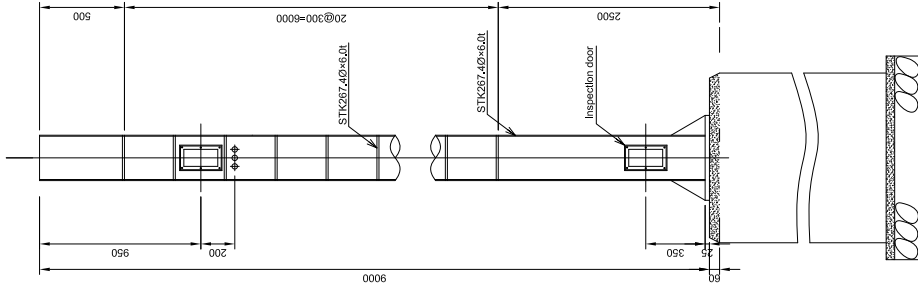
- Dimensions are in millimeter.
- Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
Yield strength: $F_y = 250$ MPa
Tensile strength: $F_u = 400$ MPa
- Concrete structure equivalence with:
Concrete strength: $F'_c = 18$ MPa
Reinforcing Bar (CB300-II): Yield strength: $F_y = 300$ MPa
Tensile strength: $F_u = 450$ MPa
- The depth of foundation is just an estimated value.
The final depth of foundation shall be based on the real soil condition.
These structure should be redesigned to meet site condition.
- In case without any recommendation about zinking in details all metal member exposed to weather or soil must be zincd with amount of 500g/m²

<p>CONSULTANT</p> <p>ORIENTAL CONSULTANTS CO., LTD NEXO EAST ENGINEERING CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.</p>		<p>SOCIALIST REPUBLIC OF VIETNAM</p>		<p>ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM</p>		<p>PACKAGE:</p>
		<p>TITLE</p> <p>PREPARED BY</p> <p>CHECKED BY</p> <p>APPROVED BY</p>	<p>NAME</p> <p>SIGNATURE</p> <p>DATE</p>	<p>DRAWING TITLE</p> <p>LANG - HOA LAC EXP.</p> <p>DETAIL OF GANTRY AT EARTHWORK SECTION(2)</p>	<p>DRAWING NO.:</p> <p>VI.2-03</p>	<p>SHEET NO.:</p> <p>Sheet</p>

SUPPORT POLE FOR CAMERA

SUPPORT POLE FOR CAMERA scale:1/30

FOUNDATION scale:1/30

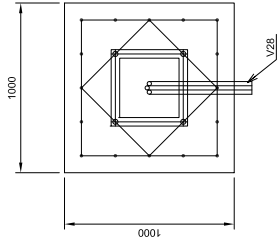


Volume table of support pole

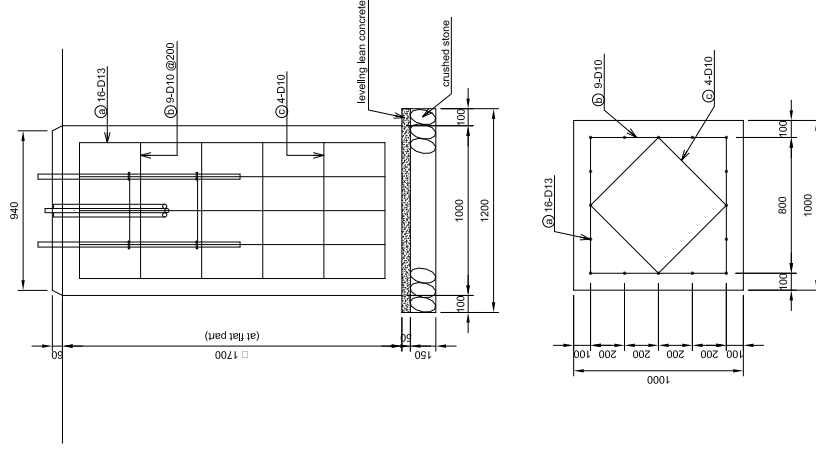
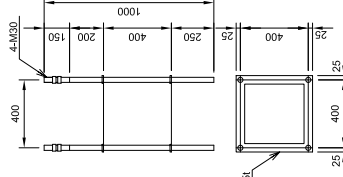
Material	Dimension	Weight (kg)
Pole	Steel 267.40x6.0	346.3
Sleep	Steel RB130	9.4
Base	Steel 25t	43.2
Base	Steel 12t	9.0
Total weight		416

Volume table of foundation

Items	class	unit	volume	at flat part	at embankment	remarks
concrete	M200	m ³	1.700	2.200		
formwork		m ²	6.800	8.800		
rebar	D13	kg	28.66	36.62		
rebar	D10	"	22.87	26.71		
anchor bolt	M30x1000x4	set	1	1		
normal bend	VE28	m	4.5	4.5		1.5mx3
crushed stone		m ³	0.216	0.216		
levelling lean concrete		m ³	0.072	0.072		
excavation		m ³	7.600	8.491		
backfill		m ³	5.612	6.220		
disposal of waste soil		m ³	1.988	2.272		



ANCHOR BOLT scale:1/30



Volume table of rebar at flat part

type	shape	length (m)	volume	weight (kg)
a	D13	1.60	16	28.66
b	D10	3.43	9	17.29
c	D10	2.49	4	5.58

Volume table of rebar at embankment part

type	shape	length (m)	volume	weight (kg)
a	D13	2.30	16	36.62
b	D10	3.43	11	21.13
c	D10	2.49	4	5.58

- *1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with: Yield strength: $F_y = 250$ MPa Tensile strength: $F_u = 400$ MPa
- *2 Concrete structure equivalence with: Reinforcing Bar (CS30B): Yield strength: $F_y = 300$ MPa Tensile strength: $F_u = 450$ MPa
- *3 In case without any recommendation about filling in details, all metal members exposed to weather or soil must be zinc with amount of 550g/m².
- *4 This drawing is based on NEXCO(Japan) drawings.
- *5 These structures should be redesigned to meet site condition.

CONSULTANT

ORIENTAL CONSULTANTS CO., LTD
 NEXCO EAST ENGINEERING CO., LTD
 NIPPON KOEI CO., LTD
 TRANSPORTATION RESEARCH INSTITUTE CO., LTD
 LANDTEC JAPAN INC.

TITLE	NAME	SIGNATURE	DATE
PREPARED BY			
CHECKED BY			
APPROVED BY			

SOCIALIST REPUBLIC OF VIETNAM

MINISTRY OF TRANSPORT

NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM

LANG - HOA LAC EXP.
 SUPPORT POLE FOR CAMERA

SCALE: 1/30

DRAWING No: VI2-04

SHEET No: Sheet of

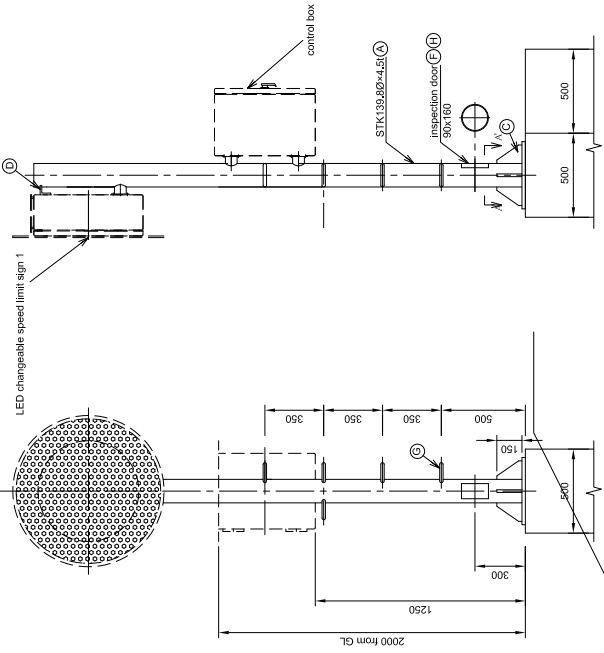
PACKAGE

SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN

SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN scale:1/30
(AT ENDS)

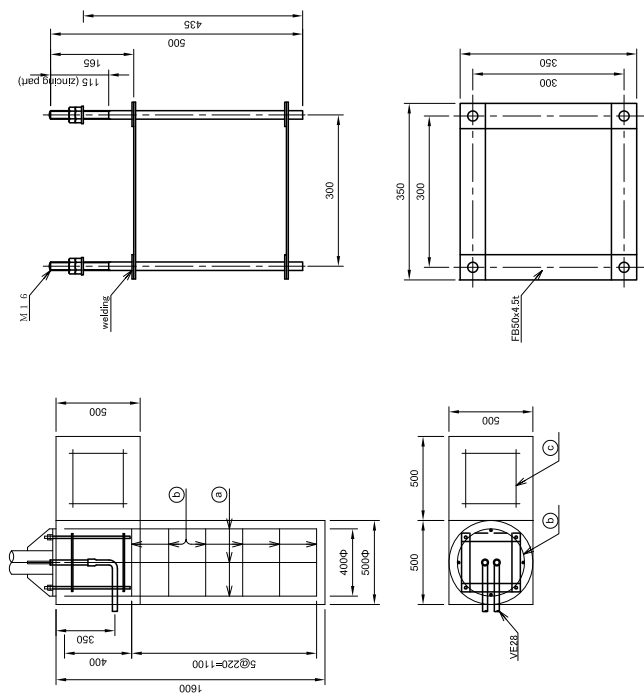
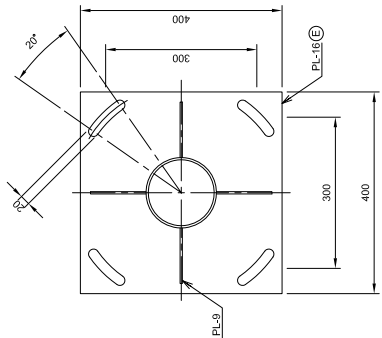
FOUNDATION scale:1/30

ANCHOR BOLT scale:1/10



(AT MIDDLE)

BASE PLATE SCALE:1/10



Volume table of support pole

Material	Dimension	Weight (kg)
(A) Steel	130.862x4.51	47.0
(B) Steel	9x	18.0
(C) Steel	6t	1.4
(D) Steel	16t	20.0
(E) Steel	3.2t	1.4
(F) Steel	RB130P	4.0
(G) Steel	FB50x8t	1.0
(H) Steel		1.0
Total weight		95
		87

Rebar processing table of foundation

type	shape	volume at embankment
a	D13	4
b	D10	6
c	D13	12

*c is used for maintenance.

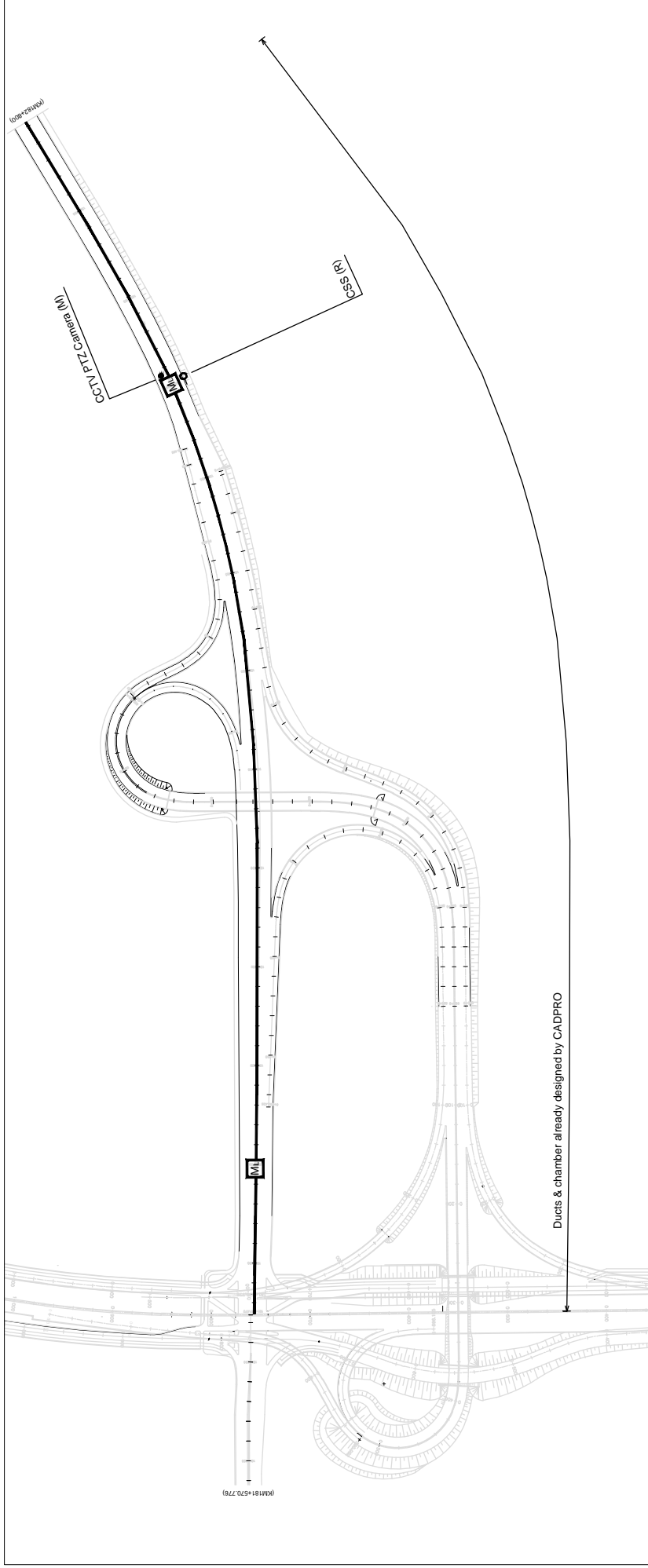
Volume table of foundation

items	class	unit	volume at embankment
concrete	D13	m ³	0.466
rebar	D10	kg	9.719
rebar	"	"	5.860
formwork	"	m ²	1.5
disposal of waste soil	"	m ³	0.316
anchor bolt	160x500x4	set	1
normal bend	VE28	pipe	2

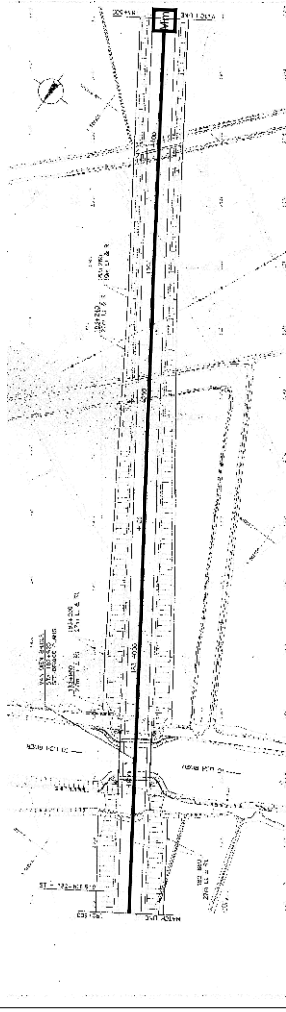
- *1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
Yield strength: Fy = 250 MPa
Tensile strength: Fu = 400 MPa
- *2 Reinforcing bar conforms with:
Concrete strength: Fc = 18(Mpa)
Reinforcing Bar (CB300-II) : Yield strength: Fy = 300 MPa
Tensile strength: Fu = 450 MPa
- *3 In case without any recommendation about zincing in details, all metal members exposed to weather or soil must be zinc-coated with amount of 550g/m².
- *4 This drawing be based on NEXCO(Japan) drawings.
- *5 These structures should be redesigned to meet site condition.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
TITLE	NAME	SIGNATURE	DATE	DRAWING TITLE:	PACKAGE:
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CHECKED BY				SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN	V1.2-05
APPROVED BY				SHEET NO.:	Sheet
				of	Rec

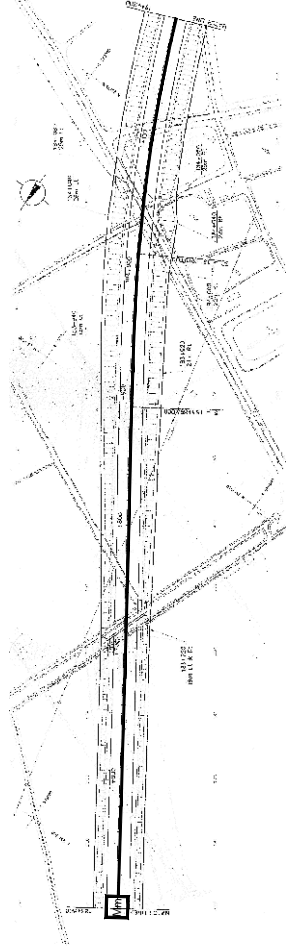
PHAP VAN - GIE EXPRESSWAY



Ducts & chamber already designed by CADPRO



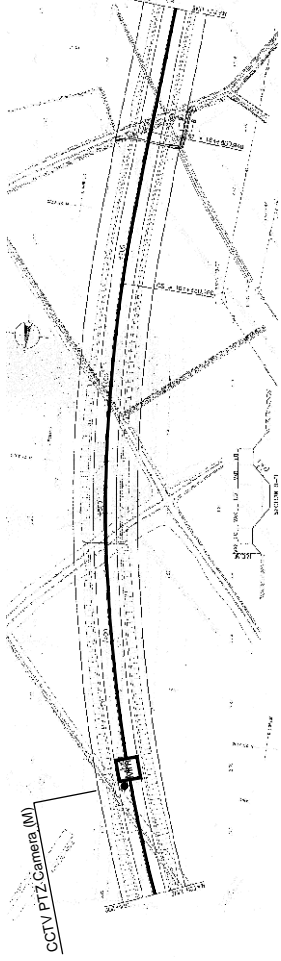
Ducts & chamber already designed by CADPRO



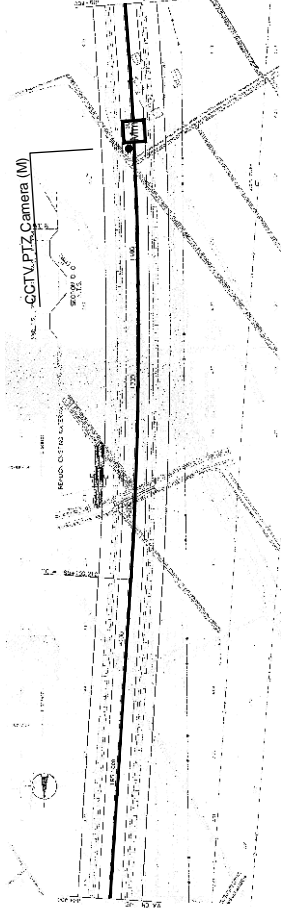
Ducts & chamber already designed by CADPRO

Notes: Roadside equipment must be designed in this project.
Mn, M1, were designed by CADPRO
M1, M3, M4, T2, T3 shall be designed in this project.

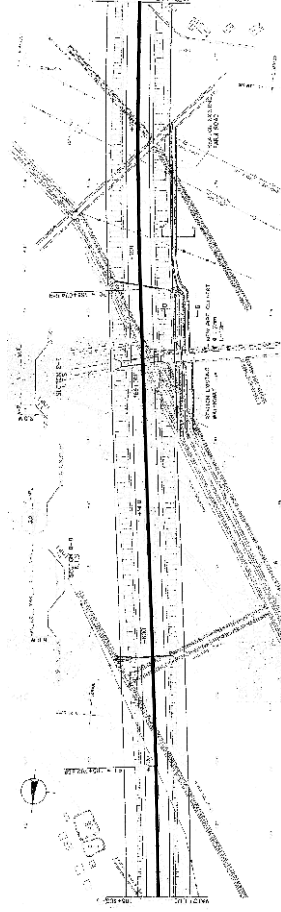
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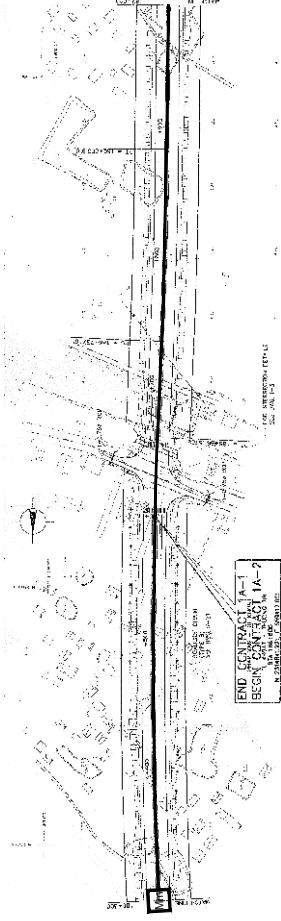
Ducts & chamber already designed by CADPRO



Ducts & chamber already designed by CADPRO



Ducts & chamber already designed by CADPRO

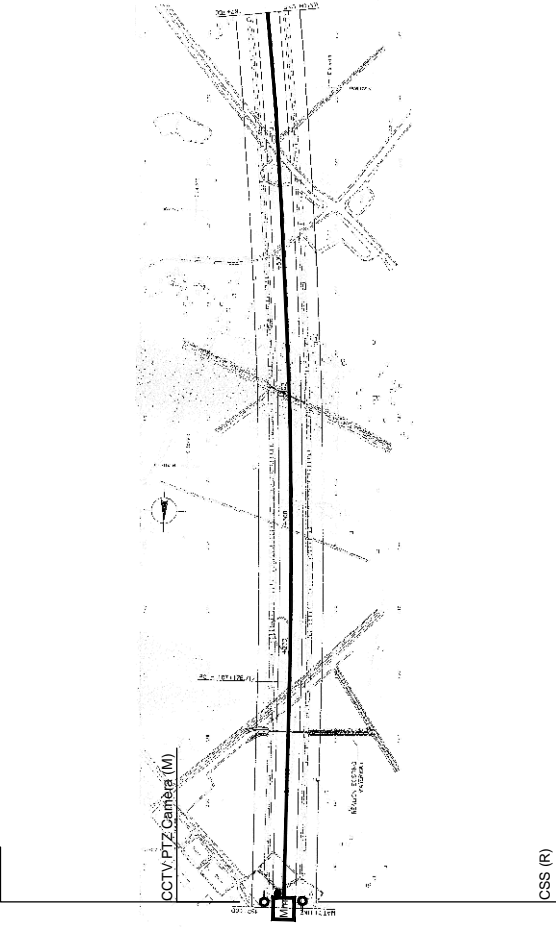


Ducts & chamber already designed by CADPRO

Notes: Roadside equipment must be designed in this project.
 Mm, Ml, were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

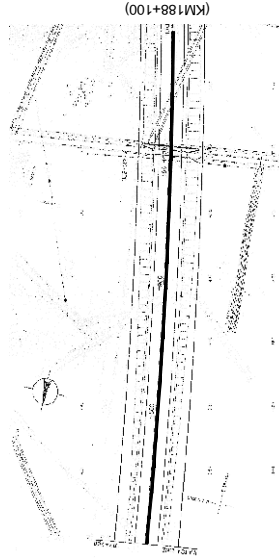
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		END CONTRACT SECTION CONTRACT No. 14-2		END CONTRACT SECTION CONTRACT No. 14-2		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 184+200 - KM 187+000, PHAP VAN- GIE EXP.)		DRAWING NO.: VI.1.1-02 SHEET NO.: SCALE: Sheet of

CSS (R)

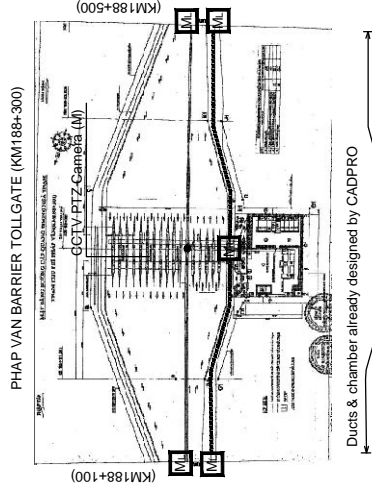


CSS (R)

Ducts & chamber already designed by CADPRO



Ducts & chamber already designed by CADPRO



Notes: Roadside equipment must be designed in this project.
 Mm, M.L., were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

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ORIENTAL CONSULTANTS CO., LTD		PREPARED BY			
NEXCO EAST ENGINEERING CO., LTD		CHECKED BY			
TRANSPORTATION RESEARCH INSTITUTE CO., LTD		APPROVED BY			
LANDTEC JAPAN INC.					

SOCIALIST REPUBLIC OF VIETNAM

MINISTRY OF TRANSPORT

ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 DRAWING TITLE
 LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION
 DUCT (KM 187+000 - KM 189+500, PHAP VAN- GIE EXP.)

PACKAGE:

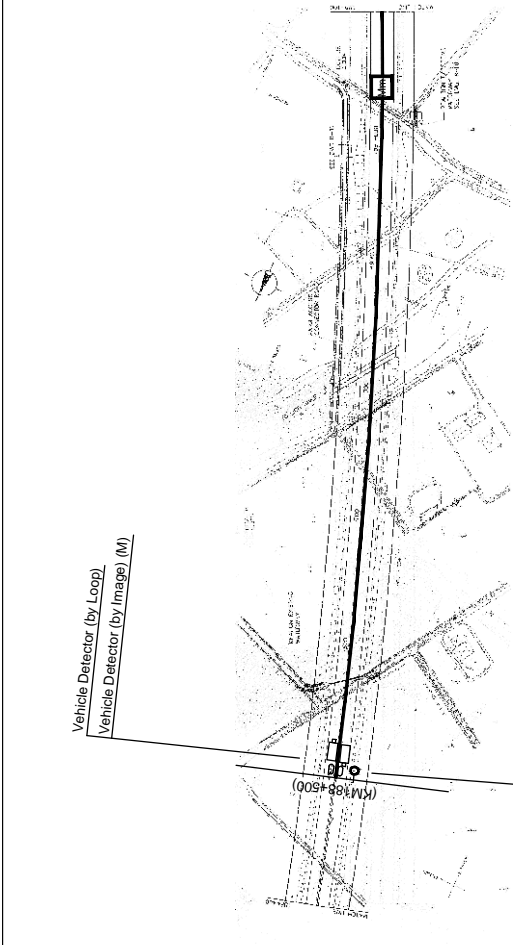
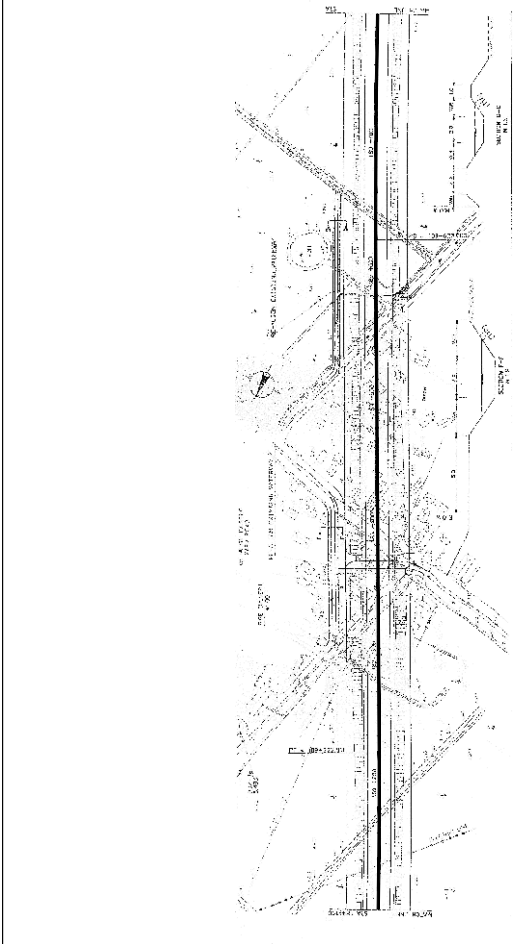
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VI.1.1 - 03

SHEET NO.:

Sheet of

SCALE:



Vehicle Detector (by Loop)
Vehicle Detector (by Image) (M)

Vehicle Detector (by Image) (M)
Vehicle Detector (by Loop)
CSS (R)

CCTV PTZ Camera (M)

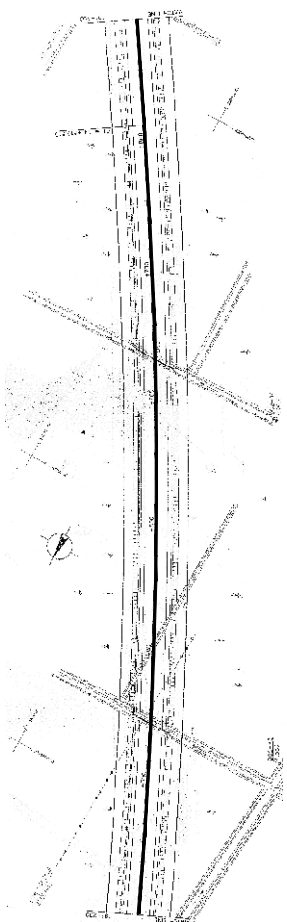
Ducts & chamber already designed by CADPRO

Ducts & chamber already designed by CADPRO

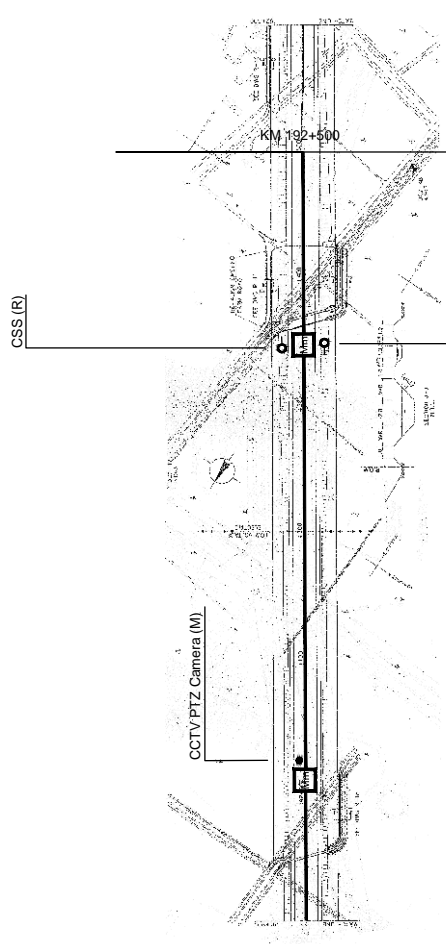
Ducts & chamber already designed by CADPRO

Notes: Roadside equipment must be designed in this project.
Mn, ML, were designed by CADPRO.
M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		MINISTRY OF TRANSPORT		DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 188+500 - KM 191+200, PHAP VAN- GIE EXP.)	
TITLE	NAME	SIGNATURE	DATE	PACKAGE	DRAWING NO.
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CHECKED BY					SHEET NO.
APPROVED BY					Sheet of
					Rev.
					SCALE



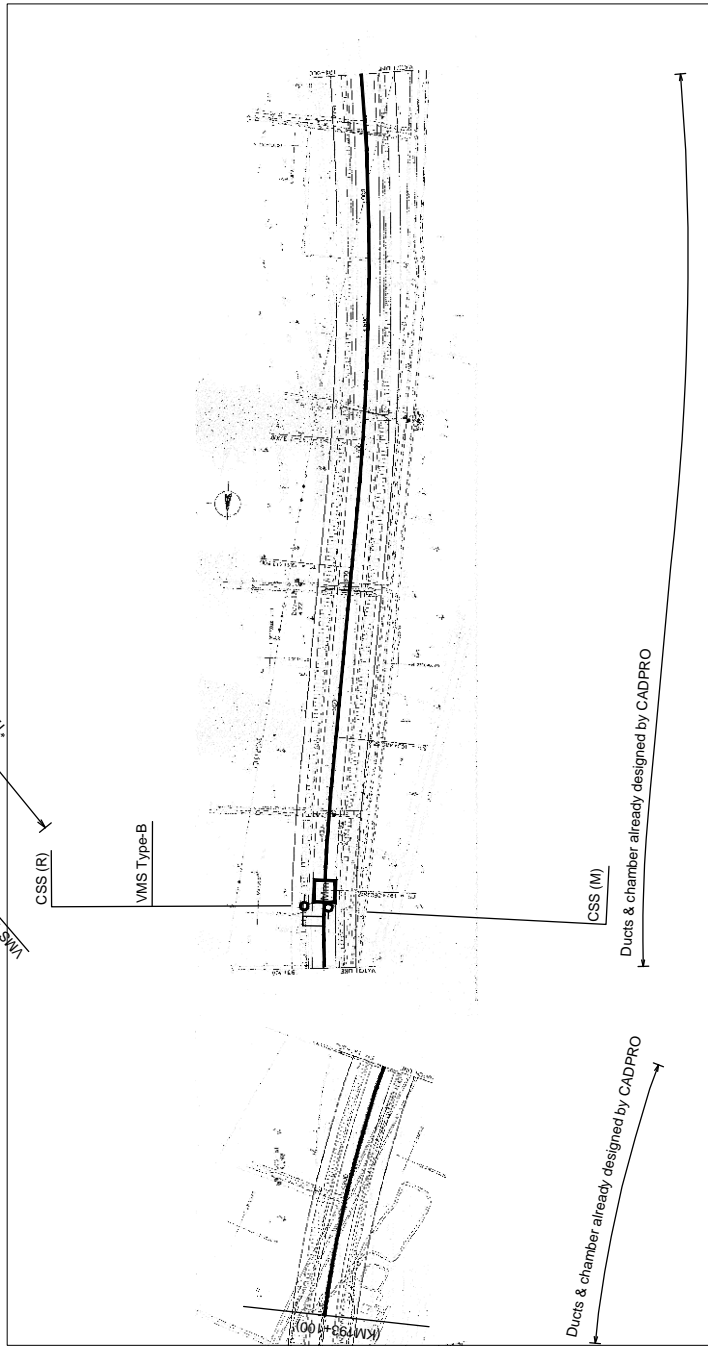
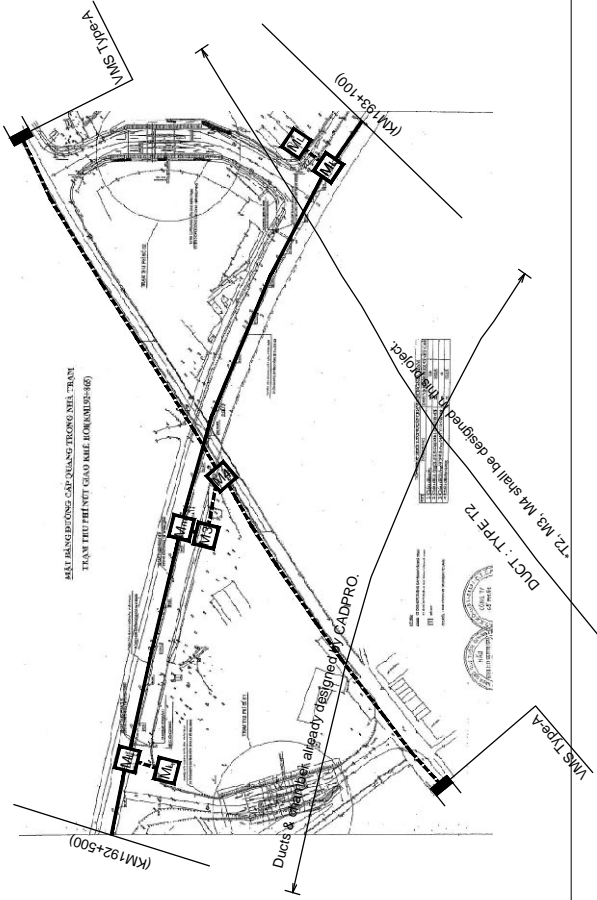
Ducts & chamber already designed by CADPRO



Ducts & chamber already designed by CADPRO

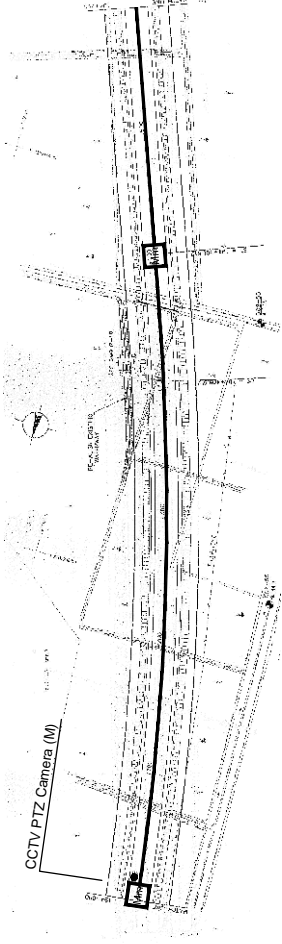
Notes: Roadside equipment must be designed in this project.
 Mn, ML were designed by CADPRO.
 MT, MS, M4, T2, T3 shall be designed in this project.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		MINISTRY OF TRANSPORT		DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 191+200 - KM 192+500, PHAP VAN- GIE EXP.)	
TITLE	NAME	SIGNATURE	DATE	PACKAGE	DRAWING NO.
PREPARED BY					VII.1 - 05
CHECKED BY				SHEET NO.	Sheet
APPROVED BY				Rev.	of
SCALE:					

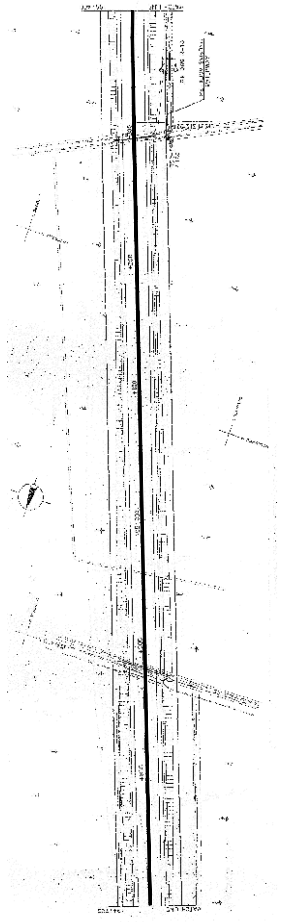


Notes: Roadside equipment must be designed in this project.
 Mh, Ml, were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

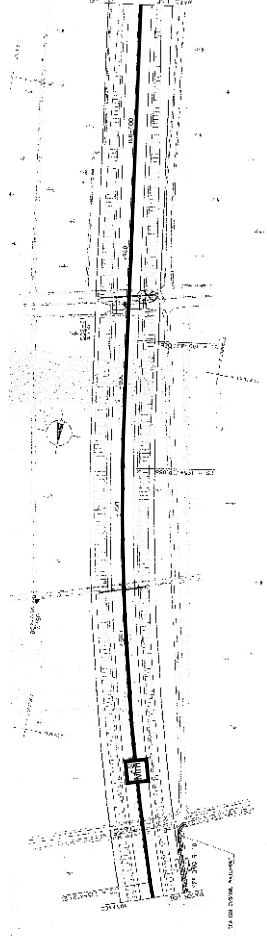
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NEXO EAST ENGINEERING CO., LTD		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 192+500 - KM 194+000, PHAP VAN- GIE EXP.)		DRAWING NO.: VII.1 - 06	
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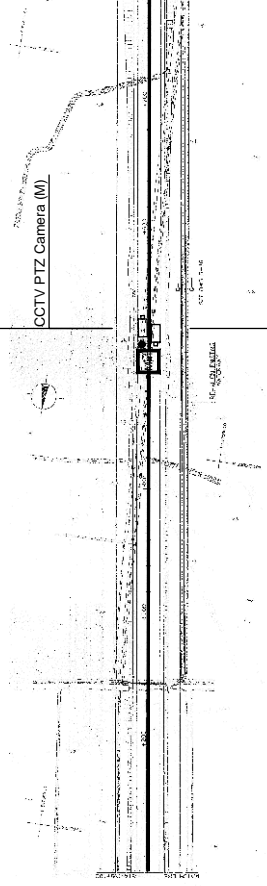
Ducts & chamber already designed by CADPRO



Ducts & chamber already designed by CADPRO



Ducts & chamber already designed by CADPRO



Ducts & chamber already designed by CADPRO

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 Mm, Ml, were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

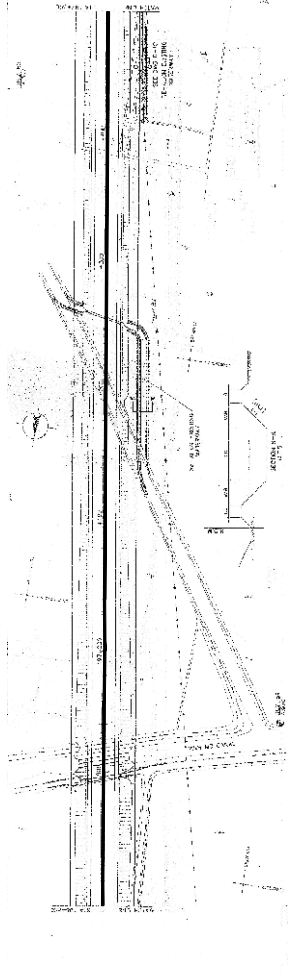
SOCIALIST REPUBLIC OF VIETNAM
 MINISTRY OF TRANSPORT

ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 DRAWING TITLE
 LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION
 DUCT (KM 194+000 ~ KM 196+800; PHAP VAN- GIE EXP.)

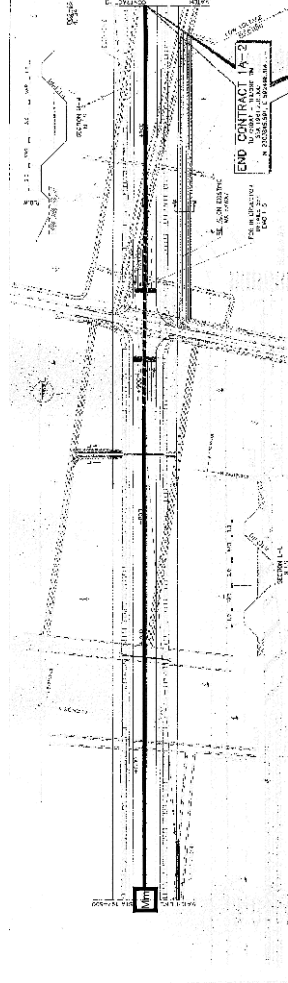
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DRAWING NO.:	VII.1 - 07
SHEET NO.:	Sheet
Rev.:	of

TITLE	NAME	SIGNATURE	DATE
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 NEXCO EAST ENGINEERING CO., LTD
 NIPPON KOEI CO., LTD
 TRANSPORTATION RESEARCH INSTITUTE CO., LTD
 LANDTEC JAPAN INC.



Ducts & chamber already designed by CADPRO



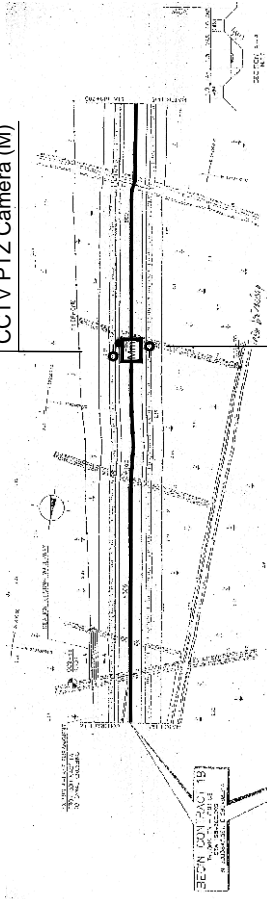
Ducts & chamber already designed by CADPRO

Notes: Roadside equipment must be designed in this project.
 M1, M2, were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		TITLE	NAME	SIGNATURE	DATE
		PREPARED BY			
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		APPROVED BY			
SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM			
		DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 196+800 ~ KM 198+200; PHAP VAN- GIE EXP.)			
PACKAGE:		DRAWING NO.: VII.1 - 08		SHEET NO.:	
SCALE:		Sheet		of	

CSS (R)

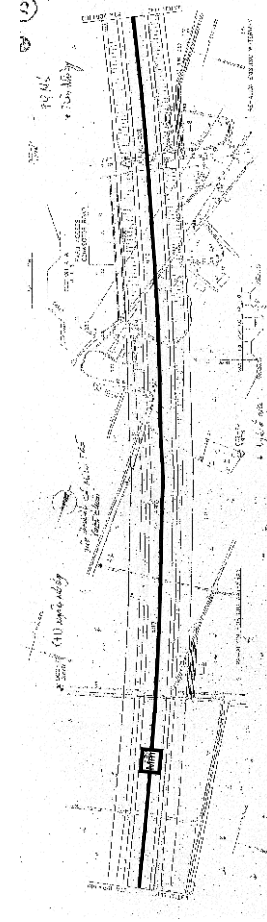
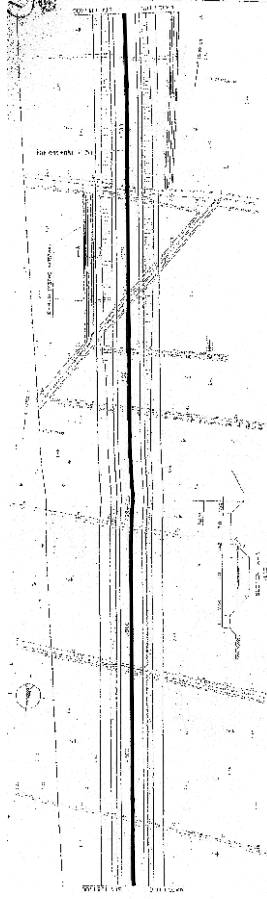
CCTV PTZ Camera (M)



Ducts & chamber already designed by CADPRO.

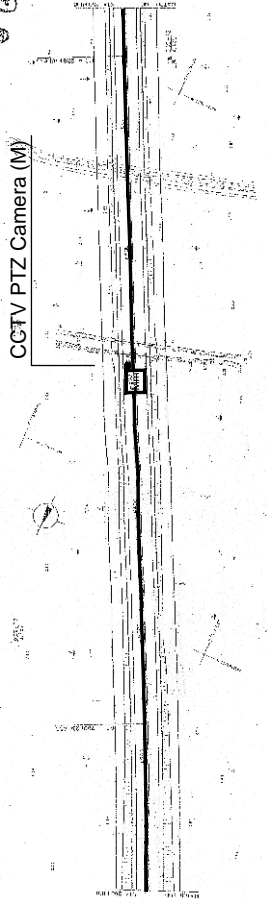
CSS (R)

Ducts & chamber already designed by CADPRO.



Ducts & chamber already designed by CADPRO.

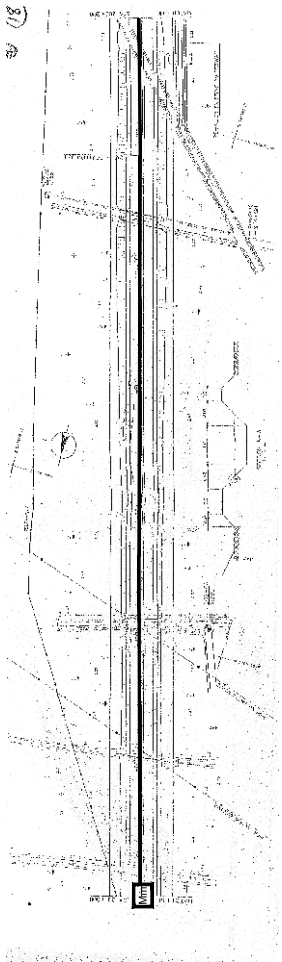
CCTV PTZ Camera (M)



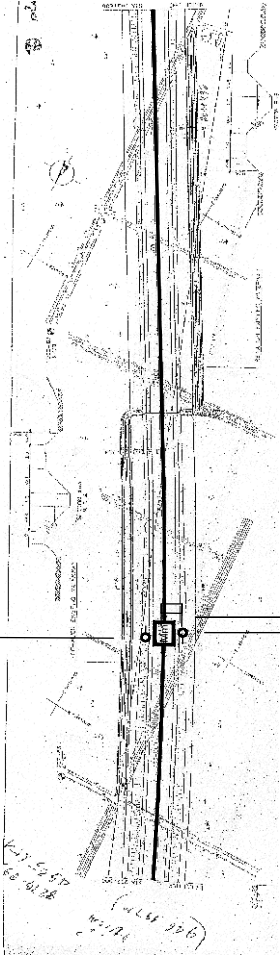
Ducts & chamber already designed by CADPRO.

Notes: Roadside equipment must be designed in this project.
 Mm, M1, were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT				SOCIALIST REPUBLIC OF VIETNAM			
TITLE	NAME	SIGNATURE	DATE	NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM			
PREPARED BY				DRAWING TITLE			
CHECKED BY				LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION			
APPROVED BY				DUCT (KM 198+200 - KM 200+800, PHAP VAN - GIE EXP)			
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.				PACKAGE			
				DRAWING NO. VII.1 - 09			
				SHEET NO. Sheet of			
				SCALE			
				MINISTRY OF TRANSPORT			

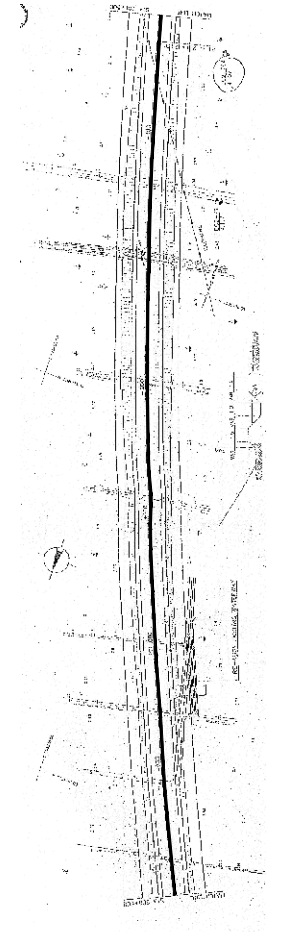


Ducts & chamber already designed by CADPRO.

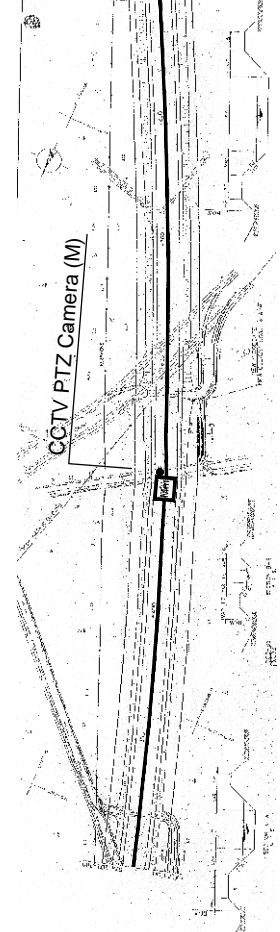


Notes: Roadside equipment must be designed in this project.
 Mm, ML were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

Ducts & chamber already designed by CADPRO.

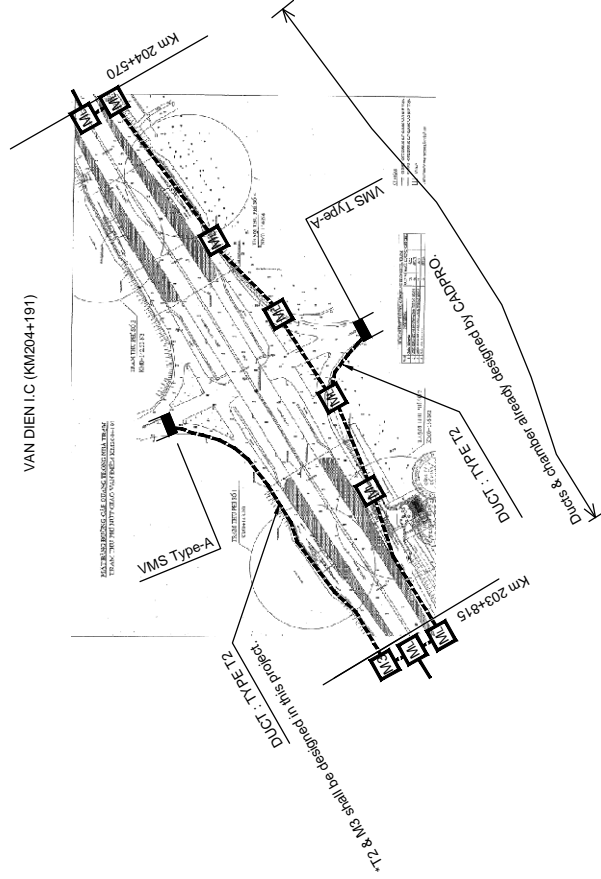
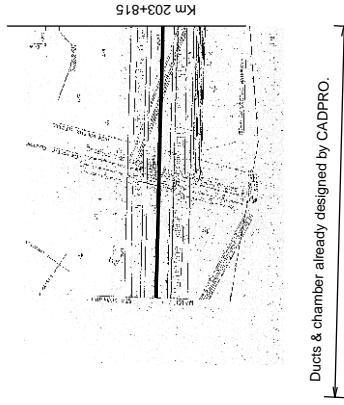
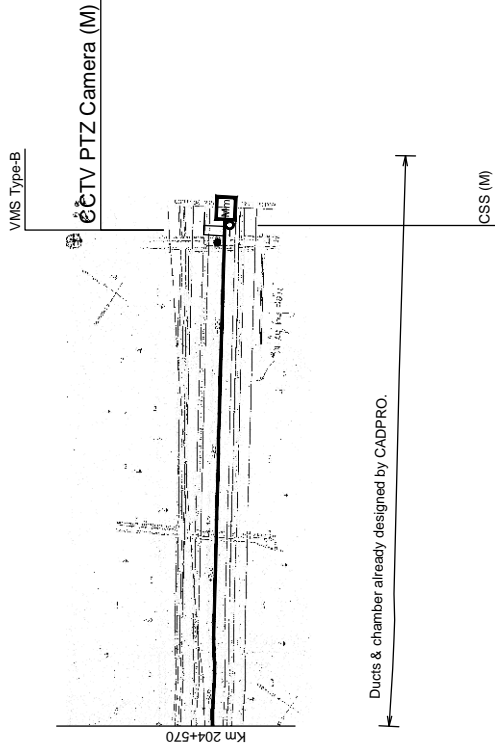


Ducts & chamber already designed by CADPRO.



Ducts & chamber already designed by CADPRO.

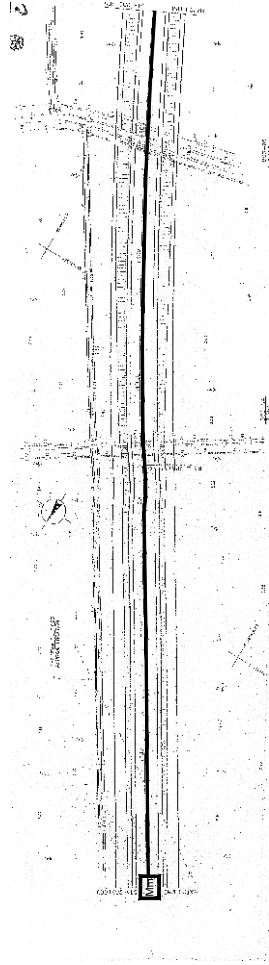
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ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE	
NEXCO EAST ENGINEERING CO., LTD				LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				DUCT (KM 200+800 - KM 203+600, PHAP VAN - GIE EXP.)	
LANDTEC JAPAN INC.				PACKAGE	
TITLE	NAME	SIGNATURE	DATE	DRAWING NO. VII.1 - 10	
PREPARED BY				SHEET NO.	
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APPROVED BY				Rev.	
SCALE:					



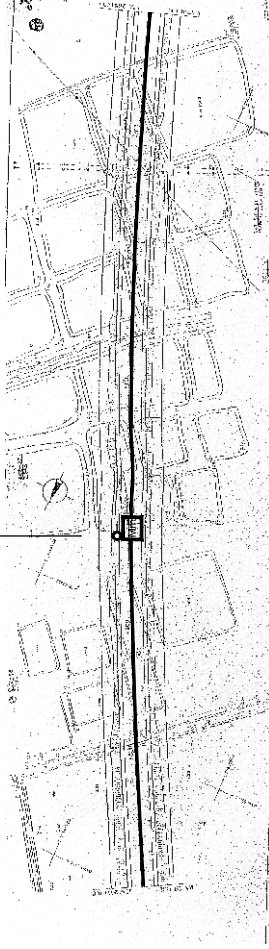
Notes: Roadside equipment must be designed in this project.
 Mm, ML, were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 203+600 - KM 205+000, PHAP VAN - GIE EXP.)	
TITLE	NAME	SIGNATURE	DATE	PACKAGE	DRAWING NO.:
PREPARED BY					VII.1 - 11
CHECKED BY				SHEET NO.:	Sheet
APPROVED BY				Rev.:	of
TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.				SCALE:	

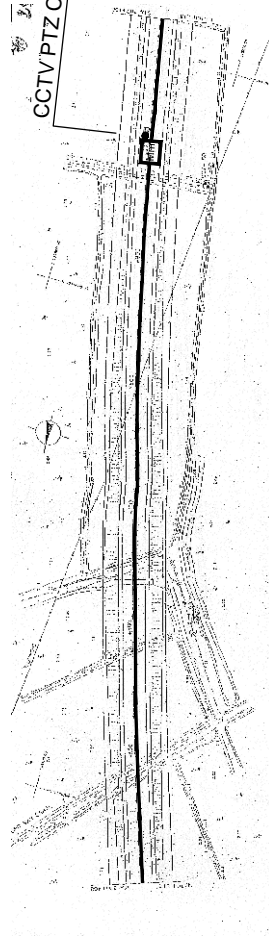
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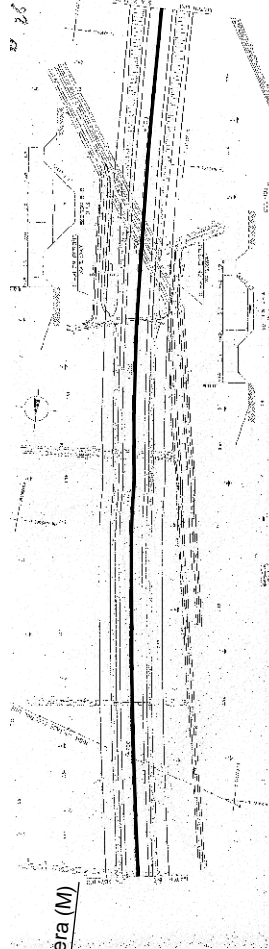
Ducts & chamber already designed by CADPRO.



Ducts & chamber already designed by CADPRO.



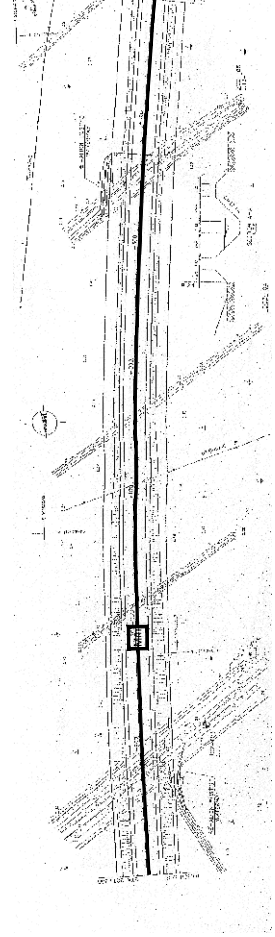
Ducts & chamber already designed by CADPRO.



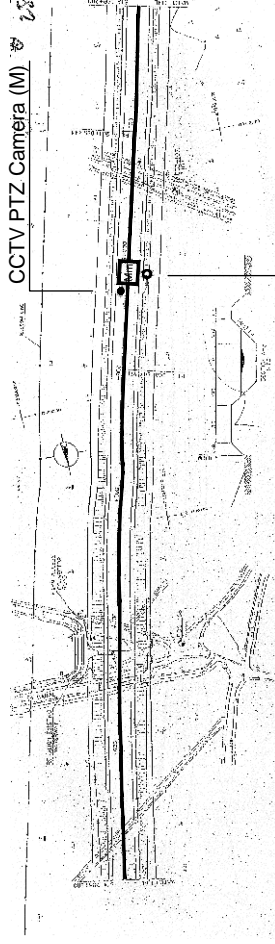
Ducts & chamber already designed by CADPRO.

Notes: Roadside equipment must be designed in this project.
Mn, ML, were designed by CADPRO.
M1, M3, M4, T2, T3 shall be designed in this project.

<p>CONSULTANT</p> <p>ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.</p>		<p>TITLE</p> <p>PREPARED BY</p> <p>CHECKED BY</p> <p>APPROVED BY</p>		<p>NAME</p>	<p>SIGNATURE</p>	<p>DATE</p>
		<p>SOCIALIST REPUBLIC OF VIETNAM</p> <p>MINISTRY OF TRANSPORT</p>				
<p>ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM</p>		<p>PACKAGE</p>		<p>DRAWING NO.: VII.1 - 12</p>		
<p>LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 205+000 - KM 207+800, PHAP VAN - GIE EXP.)</p>		<p>DRAWING TITLE</p>		<p>SHEET NO. _____ of _____</p>		

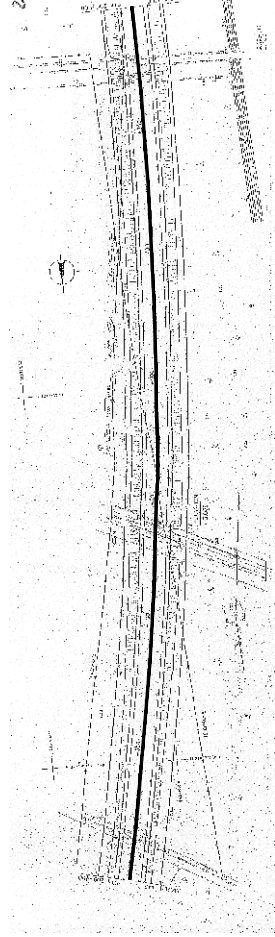


Ducts & chamber already designed by CADPRO.

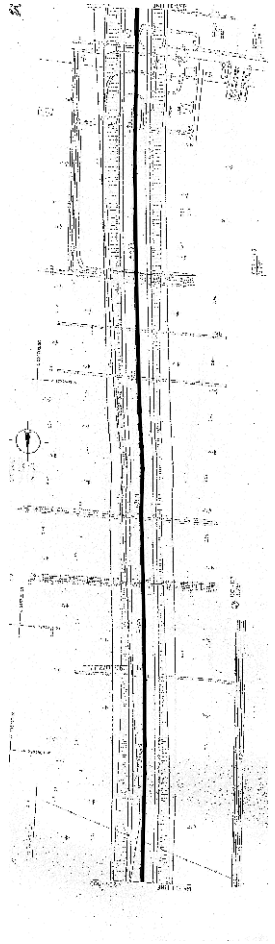


Ducts & chamber already designed by CADPRO.

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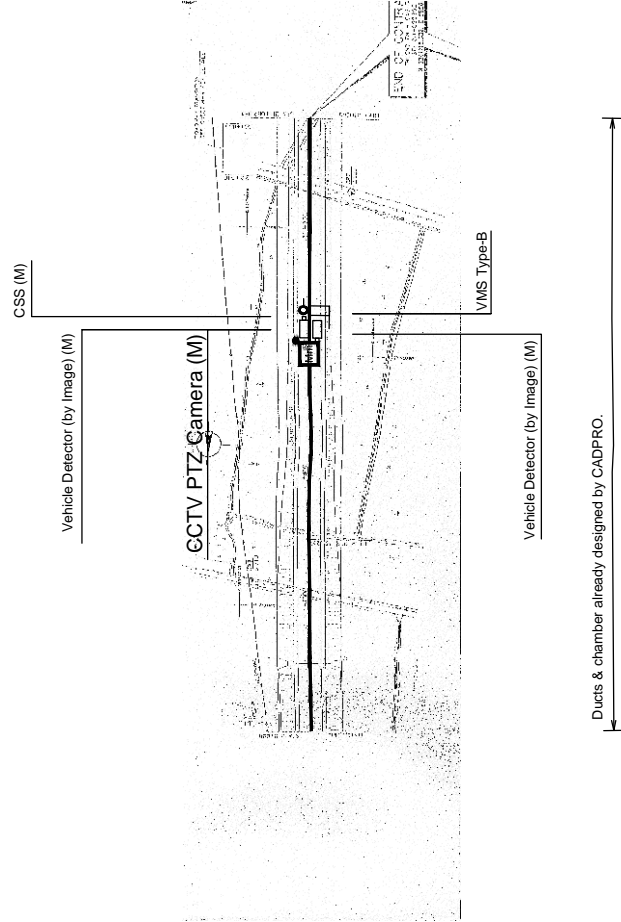
Ducts & chamber already designed by CADPRO.



Ducts & chamber already designed by CADPRO.

Notes: Roadside equipment must be designed in this project.
Mm, Ml, were designed by CADPRO.
M1, M3, M4, T2, T3 shall be designed in this project.

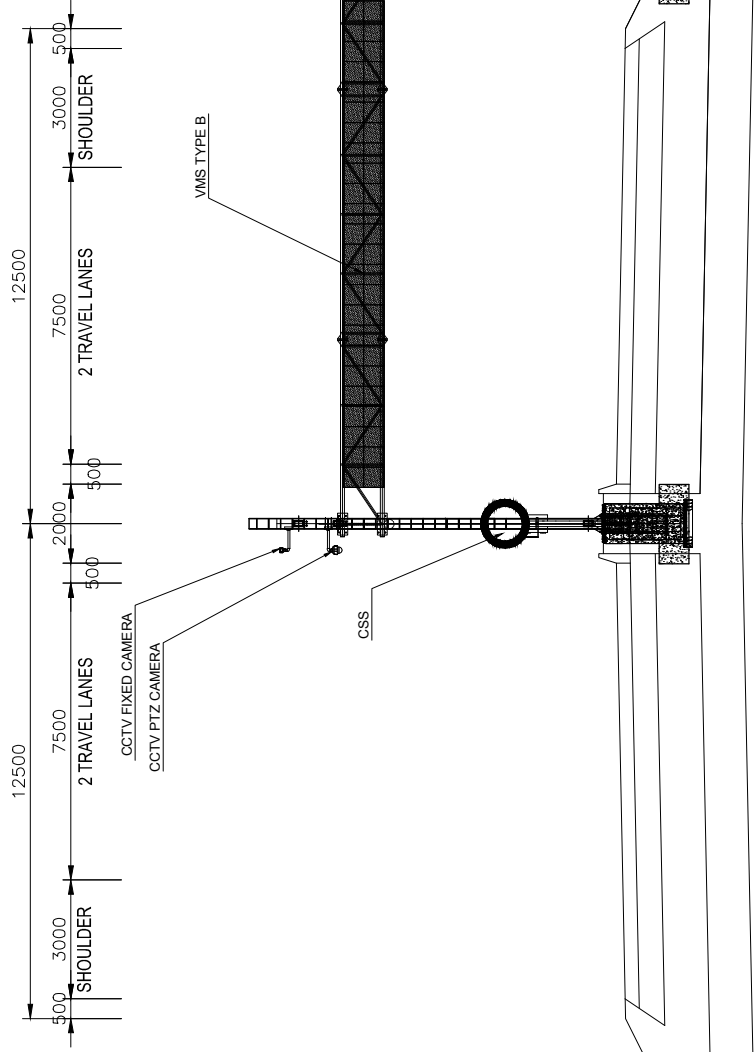
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM				ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
		ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		MINISTRY OF TRANSPORT		DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 207+800 - KM 210+600, PHAP VAN - GIE EXP.)	
TITLE	NAME	SIGNATURE	DATE	PACKAGE			
PREPARED BY				DRAWING NO.: VII.1 - 13			
CHECKED BY				SHEET NO.: Sheet of			
APPROVED BY				Rev:			
				SCALE:			



Notes: Roadside equipment must be designed in this project.
 Mm, ML, were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

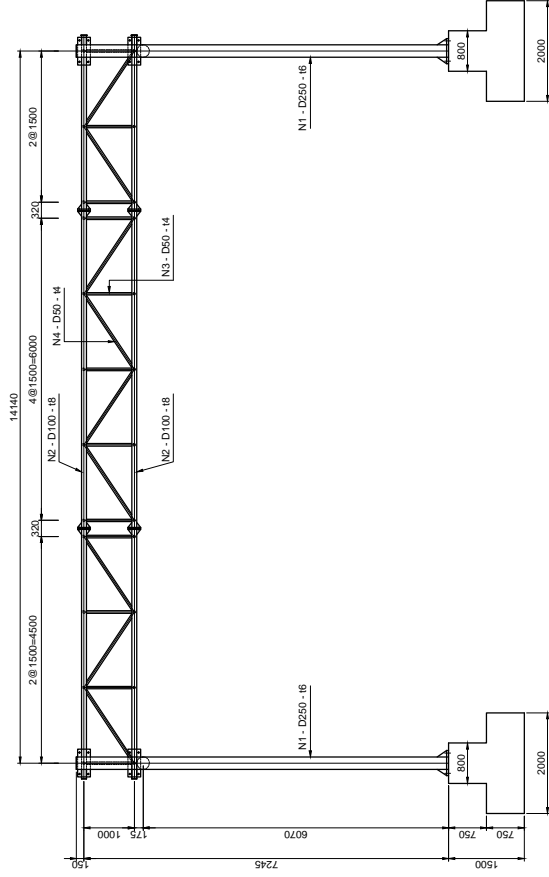
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ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		TITLE	NAME	SIGNATURE	DATE	SHEET NO.:		Rev:
		PREPARED BY				Sheet		of
		CHECKED BY				SCALE:		
		APPROVED BY						

TYPICAL CROSS SECTION

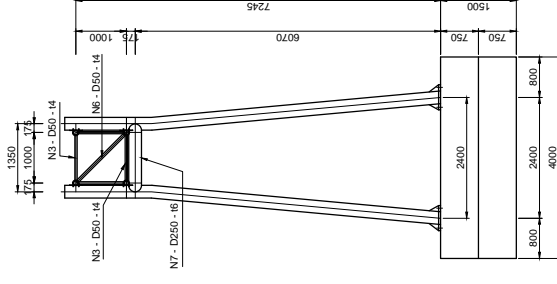


CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE	
NEXCO EAST ENGINEERING CO., LTD				TYPICAL CROSS SECTION OF EQUIPMENT ARRANGEMENT	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				OF PHAP VAN - GIE EXP.	
LANDTEC JAPAN INC.				SCALE: N.T.S	
TITLE	NAME	SIGNATURE	DATE	PACKAGE	DRAWING NO.
PREPARED BY				NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	VI.2-01
CHECKED BY					
APPROVED BY					

MAIN VIEW
SCALE: 1/100



SIDE VIEW
SCALE: 1/100



GENERAL VIEW
SCALE: 1/300

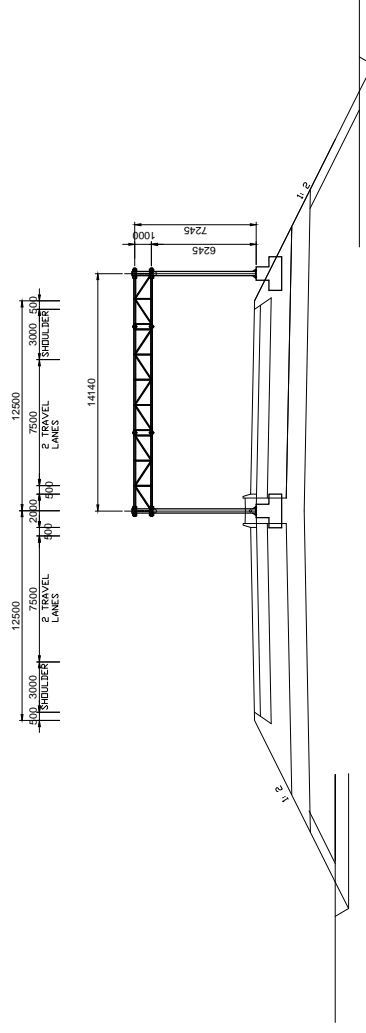


TABLE OF QUANTITY

Element	Type	Weight of element (kg)	Number of element	Total weight (kg)	Notes
N1	Tube D250-16 L=7454	65.27	4	261.07	Main column (upper part)
N2	Tube D100-18 L=14370	263.08	4	1052.35	Main column (lower part)
N3	Tube D50-14 L=10300	4.94	48	217.81	Diagonal web bar
N4	Tube D50-14 L=1833	10.00	26	260.00	Diagonal web bar
N6	Tube D50-14 L=1414	7.85	12	94.15	Diaphragm
N7	Tube D250-16 L=1350	48.74	2	97.48	Diaphragm
Total steel				2924.23	
Concrete M200				15.50m³	Assumed

NOTES:

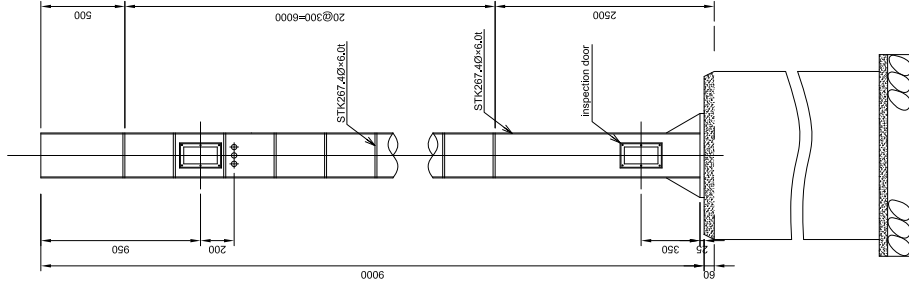
- Dimensions are in millimeter.
- Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
Yield strength: $F_y = 250$ MPa
Tensile strength: $F_u = 400$ MPa
- Concrete structure equivalence with:
Concrete strength: $F_c = 18$ MPa
Reinforcing Bar (CB300-II) : Yield strength: $F_y = 300$ MPa
Tensile strength: $F_u = 450$ MPa
- The depth of foundation is just an estimated value.
The final depth of foundation shall be based on the real soil condition.
These structure should be redesigned to meet site condition.
- In case without any recommendation about zining in details all metal member exposed to weather or soil must be zined with amount of 500g/m².

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD	NEXCO EAST ENGINEERING CO., LTD	NIPPON KOEI CO., LTD	LANDTEC JAPAN INC.	DRAWING TITLE	DRAWING NO.:
MINISTRY OF TRANSPORT				PHAP VAN - GIE EXPRESSWAY	
DETAIL OF GANTRY AT EARTH SECTION				SHEET NO.:	VII.2-02
APPROVED BY:				Rev.:	Sheet of

SUPPORT POLE FOR CAMERA

FOUNDATION scale: 1/30

SUPPORT POLE FOR CAMERA scale: 1/30

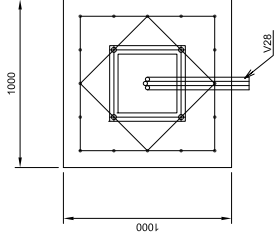


Volume table of support pole

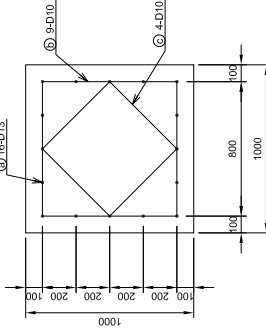
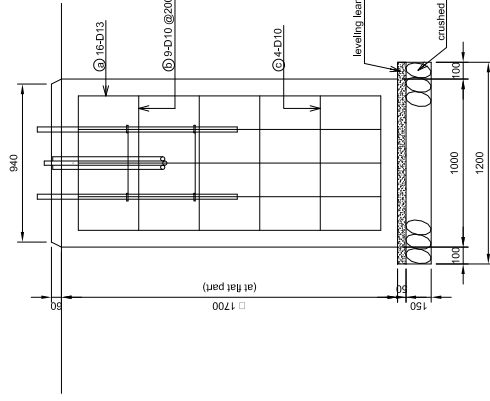
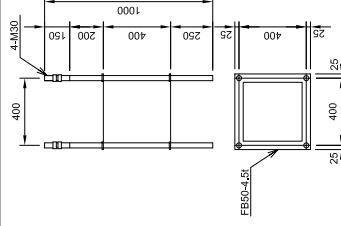
Material	Dimension	Weight (kg)	
Pole	STK400	267.40x6L	346.3
Step	SS400	RB130	9.4
Base	SS400	25	46.2
Base	SS400	121	5.0
Total weight		416	

Volume table of foundation

Items	class	unit	volume at flat part	volume at embankment	remarks
concrete	M200	m ³	1.700	2.200	
formwork	M200	m ²	6.800	8.800	
rebar	D13	kg	28.66	36.62	
rebar	D10	kg	22.87	26.71	
anchor bolt	M30x1000x4	set	1	1	
normal bend	VE28	m	4.5	4.5	1.5mx3
crushed stone		m ³	0.216	0.216	
leveling lean concrete		m ³	0.072	0.072	
excavation		m ²	7.600	8.481	
backfill		m ³	5.612	6.220	
disposal of waste soil		m ³	1.989	2.272	



ANCHOR BOLT scale: 1/30



Volume table of rebar at embankment part

type	shape	length (m)	volume	weight (kg)
a	D13	2.30	16	36.62
b	D10	3.43	11	21.13
c	D10	2.49	4	5.56

Volume table of rebar at flat part

type	shape	length (m)	volume	weight (kg)
a	D13	1.50	16	28.66
b	D10	3.43	9	17.29
c	D10	2.49	4	5.56

*1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
Yield strength: Fy = 250 MPa
Tensile strength: Fu = 400 MPa
*2 Increase structural equivalence with:
Concrete strength: Fc = 20 MPa
Reinforcing Bar (CB300-II): Yield strength: Fy = 300 MPa
Tensile strength: Fu = 450 MPa
*3 In case without any recommendation about zincing in details, all metal members exposed to weather or soil must be zinc with amount of 550g/m².
*4 This drawing is based on NEXCO (Japan) drawings.
*5 These structures should be redesigned to meet site condition.

SOCIALIST REPUBLIC OF VIETNAM
MINISTRY OF TRANSPORT

ITS INTEGRATION PROJECT ON
NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
PHAP VAN - GIE EXPRESSWAY
SUPPORT POLE FOR CAMERA

PACKAGE:
DRAWING No: VI.2-03
SHEET No: _____ of _____
Scale: 1/30

CONSULTANT

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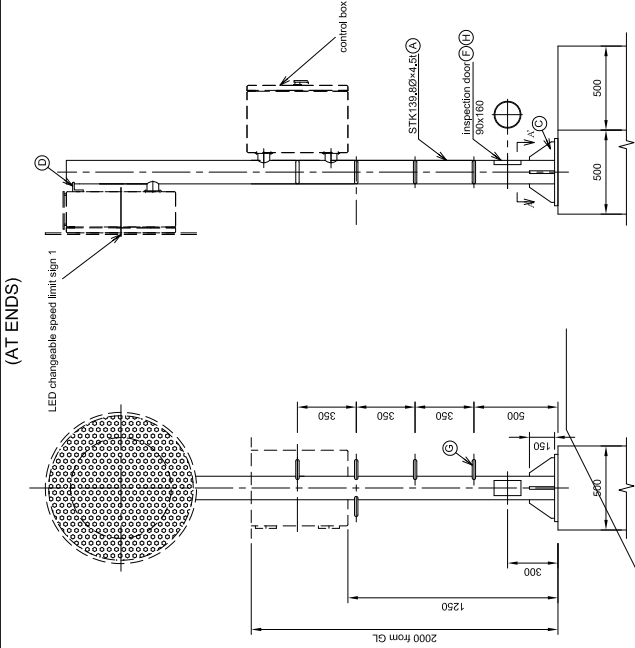
ORIENTAL CONSULTANTS CO., LTD
NEXCO EAST ENGINEERING CO., LTD
NIPPON KOEI CO., LTD
TRANSPORTATION RESEARCH INSTITUTE CO., LTD
LANDTEC JAPAN INC.

SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN

SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN scale:1/30

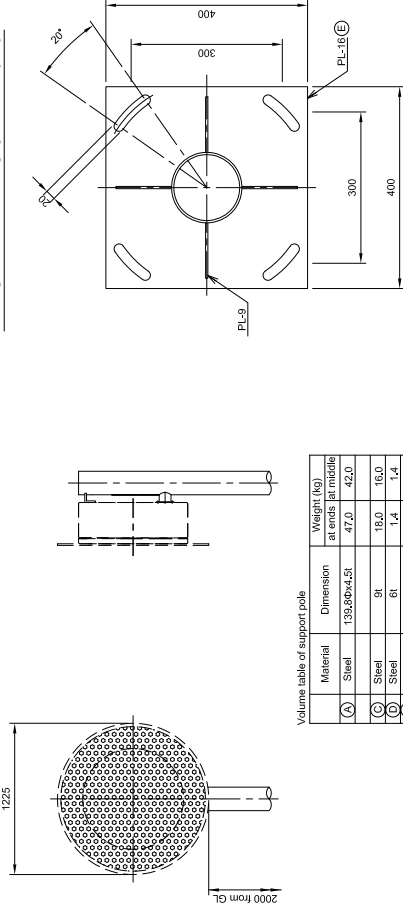
FOUNDATION scale:1/30

ANCHOR BOLT scale:1/10



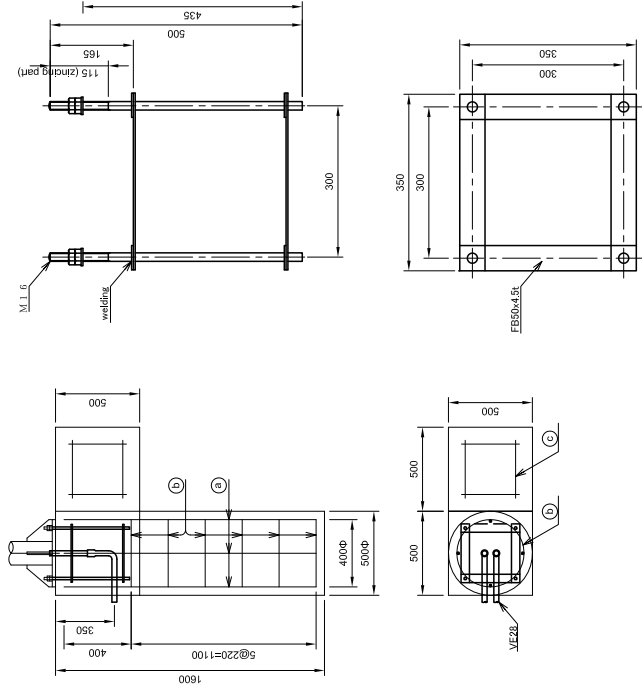
(AT MIDDLE)

BASE PLATE SCALE:1/10



Volume table of support pole

Material	Dimension	Weight (kg)
(A) Steel	133,80x4,51	47,0
(B) Steel	91	18,0
(C) Steel	61	1,4
(D) Steel	181	20,0
(E) Steel	3,21	1,4
(F) Steel	RB130	4,0
(G) Steel	FBS0XR	1,0
(H) Steel		1,0
Total weight		95
Total weight		87



Rebar processing table of foundation

type	shape	volume at embankment
a	D13	4
b	D10	6
c	D13	12

*c is used for maintenance.

Volume table of foundation

items	class	unit	volume at embankment
concrete		m ³	0,466
rebar	D13	kg	9,719
rebar	D10	"	5,860
formwork		m ²	1,5
disposal of waste soil		m ³	0,316
anchor bolt	160x300x4	set	1
normal band	VE28	pipe	2

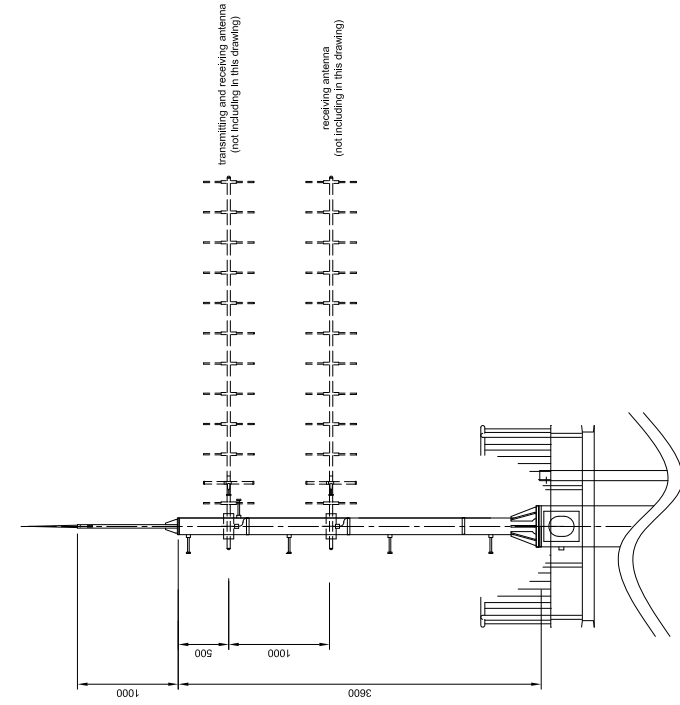
- *1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
Yield strength: Fy = 250 MPa
Tensile strength: Fu = 400 MPa
- *2 Concrete structure equivalence with:
Concrete strength: f'c = 20 MPa
Reinforcing Bar (CS300-1) : Yield strength: Fy = 300 MPa
Tensile strength: Fu = 450 MPa
- *3 In case without any recommendation about zinking in details, all metal members exposed to weather or soil must be zinc-coated with amount of 550g/m².
- *4 This drawing be based on NEXCO(Japan) drawings.
- *5 These structures should be redesigned to meet site condition.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
TITLE	NAME	SIGNATURE	DATE	DRAWING TITLE	DRAWING NO.
PREPARED BY				SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN	VII.2-04
CHECKED BY					
APPROVED BY					
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.			PHAP VAN - GIE EXPRESSWAY SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN SCALE: VARIOUS		
			SHEET No. of		
			Rev:		

RADIO COMMUNICATION ANTENNA TOWER

RADIO COMMUNICATION TOWER scale: 1/150

SUPPORT FOR ANTENNA scale: 1/50



Volume table for TYPE 1

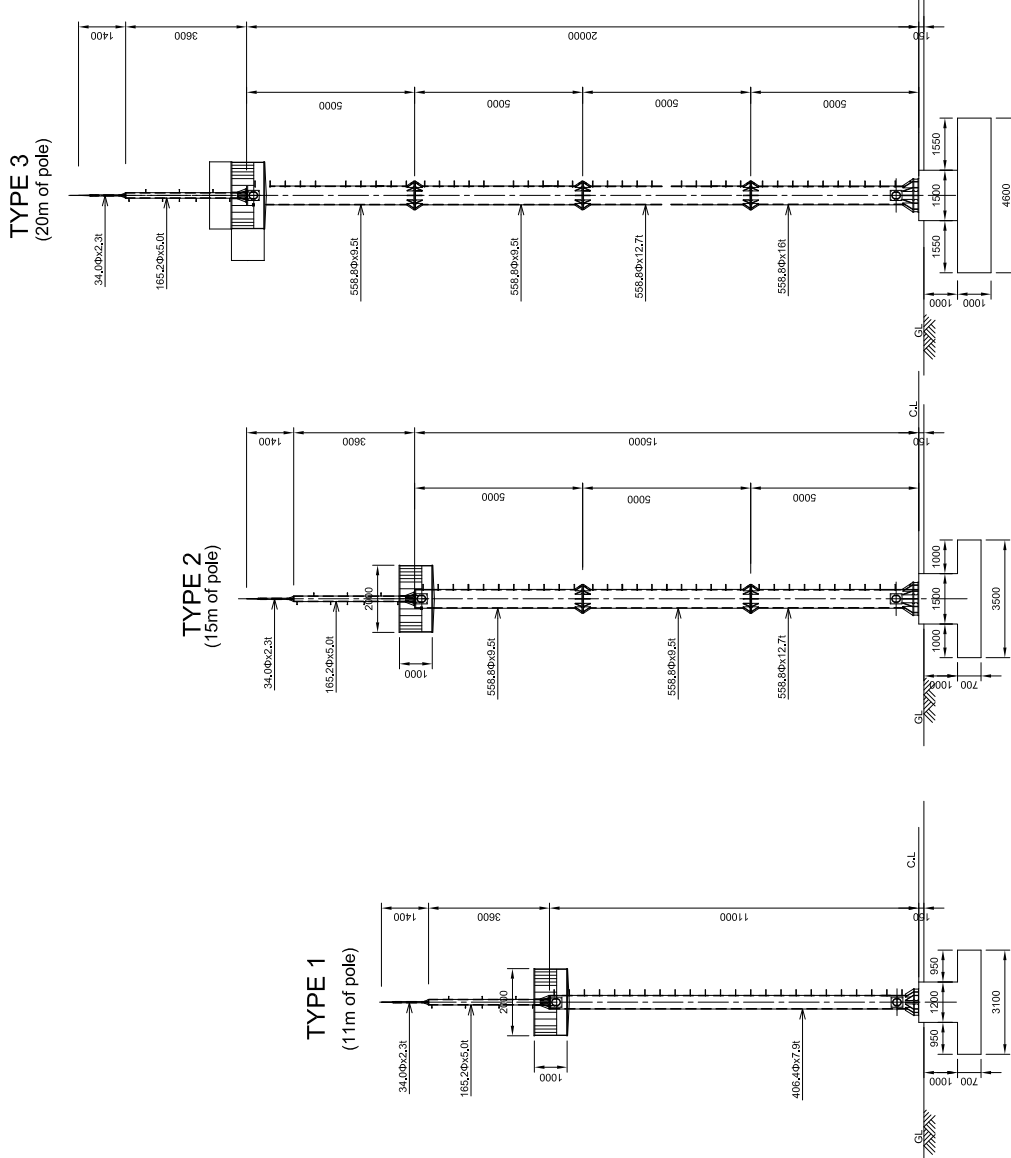
Material	Dimension	Volume	Remarks
Steel	408.40x7.9t	855kg	
Steel	165.20x5.0t	75kg	
Steel	34.00x2.3t	3kg	
Foundation	RC	3100x3100	8.5m ³

Volume table for TYPE 2

Material	Dimension	Volume	Remarks
Steel	558.80x9.5t	1230kg	
Steel	558.80x12.7t	1230kg	
Steel	165.20x5.0t	75kg	
Steel	34.00x2.3t	3kg	
Foundation	RC	3500x3500	11.5m ³

Volume table for TYPE 3

Material	Dimension	Volume	Remarks
Steel	558.80x9.5t	855kg	
Steel	558.80x12.7t	855kg	
Steel	165.20x5.0t	75kg	
Steel	34.00x2.3t	3kg	
Foundation	RC	3100x3100	24.0m ³



*1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
Yield strength: $F_y = 250$ MPa
Tensile strength: $F_u = 400$ MPa

*2 Concrete structure conforms with:
Concrete strength: $f_{cm} = 25$ MPa
Reinforcing Bar (CS300-1) : Yield strength: $F_y = 300$ MPa
Tensile strength: $F_u = 450$ MPa

*3 In case without any recommendation about zinking in details, all metal members exposed to weather or soil must be zinked with amount of 550g/m².

*4 This drawing be based on NEXCO(Japan) drawings.

*5 These structures should be redesigned to meet site condition.

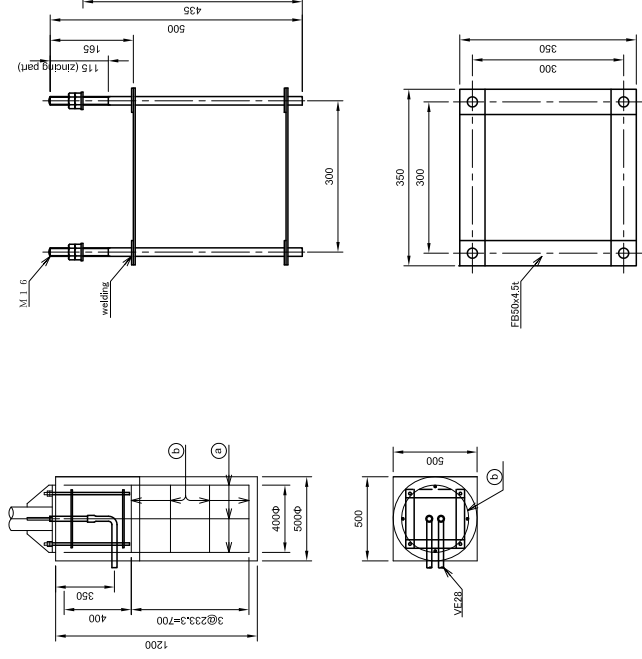
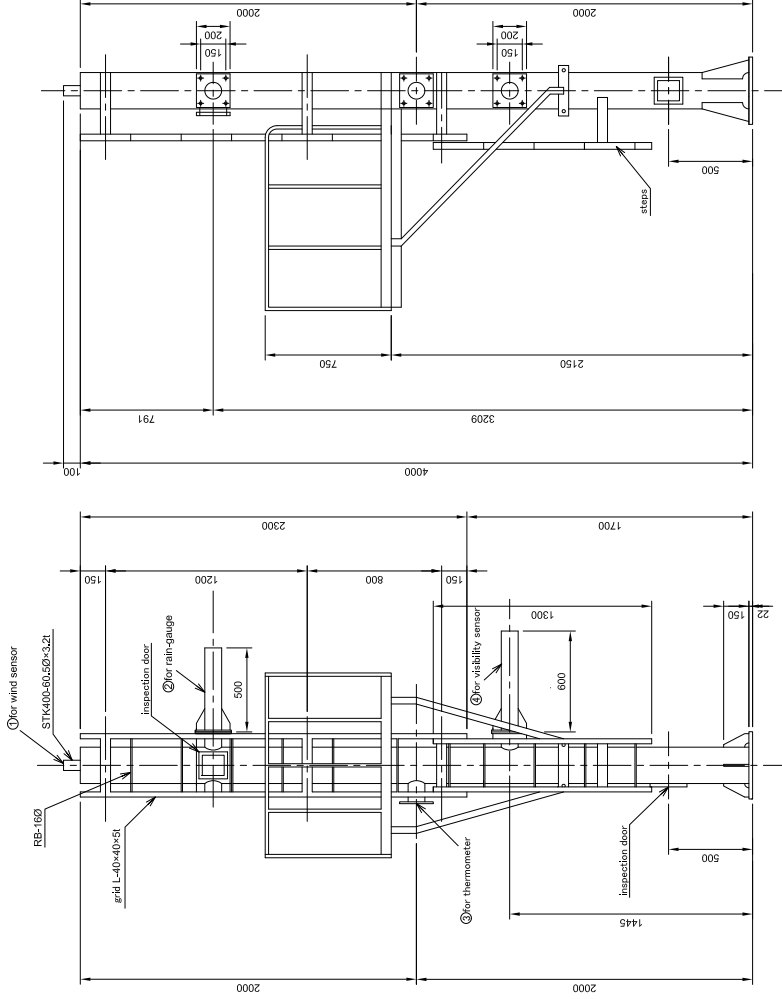
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
TITLE	NAME	SIGNATURE	DATE	DRAWING NO.:	VIII.2-05
PREPARED BY				PHAP VAN - GIE EXPRESSWAY	
CHECKED BY				RADIO COMMUNICATION ANTENNA TOWER	
APPROVED BY				SHEET NO.:	Sheet of
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SCALE: Various			

SUPPORT POLE FOR WEATHER SENSOR

SUPPORT POLE FOR WEATHER SENSOR scale:1/30

FOUNDATION scale:1/30

ANCHOR BOLT scale:1/10



Rebar processing table of foundation

type	shape	volume in flat part
a	D13	4
b	D10	4

Volume table of foundation

Items	class	unit	volume in flat part
concrete	D13	m ³	0.262
rebar	D10	kg	4.376
formwork		m ²	1.0
disposal of waste soil		m ³	0.236
anchor bolt		set	1
normal band	VE28	pipe	2

Volume table of support pole

No.	Material	Dimension	Volume	Weight (kg)	Remarks
①	Steel	2-16x20x3,2L	4.0	106.4	
	Steel	114.30x4.5L	0.160	4.708	
	Steel	114.30x4.5L	0.384	10.708	
	Steel	22L	0.160	27.632	
	Steel	16L	0.205	25.727	
	Steel	12L	0.028	2.713	
	Steel	4.25L	0.146	5.1564	
	Steel	16x20x4.5L	0.040	5.020	
	Steel	12L	0.035	3.297	
	Steel	114.30x4.5L	0.354	7.125	
②	Steel	16L	0.040	5.020	
	Steel	12L	0.035	3.297	
	Steel	7.5x50x6L	0.339	4.860	
	Steel	FE-56x6L	3.900	4.8642	
	stage	XG-21	1.000	13.70	
		SGP-20A	14.0	23.52	
	steps	40x40x5L	7.2	21.240	
		RP-16P	3.6L	3.880	
	Total weight			369kg	

- *1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
Yield strength: Fy = 250 MPa
Tensile strength: Ft = 400 MPa
- *2 Concrete structure conforms with:
Concrete strength: f'c = 20 MPa
Reinforcing Bar (CS300-1) : Yield strength: Fy = 300 MPa
Tensile strength: Ft = 450 MPa
- *3 In case without any recommendation about zincing in details, all metal members exposed to weather or soil must be zinced with amount of 550g/m².
- *4 This drawing be based on NEXCO(Japan) drawings.
- *5 These structures should be redesigned to meet site condition.

CONSULTANT

TITLE	NAME	SIGNATURE	DATE
PREPARED BY			
CHECKED BY			
APPROVED BY			

ORIENTAL CONSULTANTS CO., LTD
NEXCO EAST ENGINEERING CO., LTD
NIPPON KOEI CO., LTD
TRANSPORTATION RESEARCH INSTITUTE CO., LTD
LANDTEC JAPAN INC.

SOCIALIST REPUBLIC OF VIETNAM

MINISTRY OF TRANSPORT

**ITS INTEGRATION PROJECT ON
NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM**

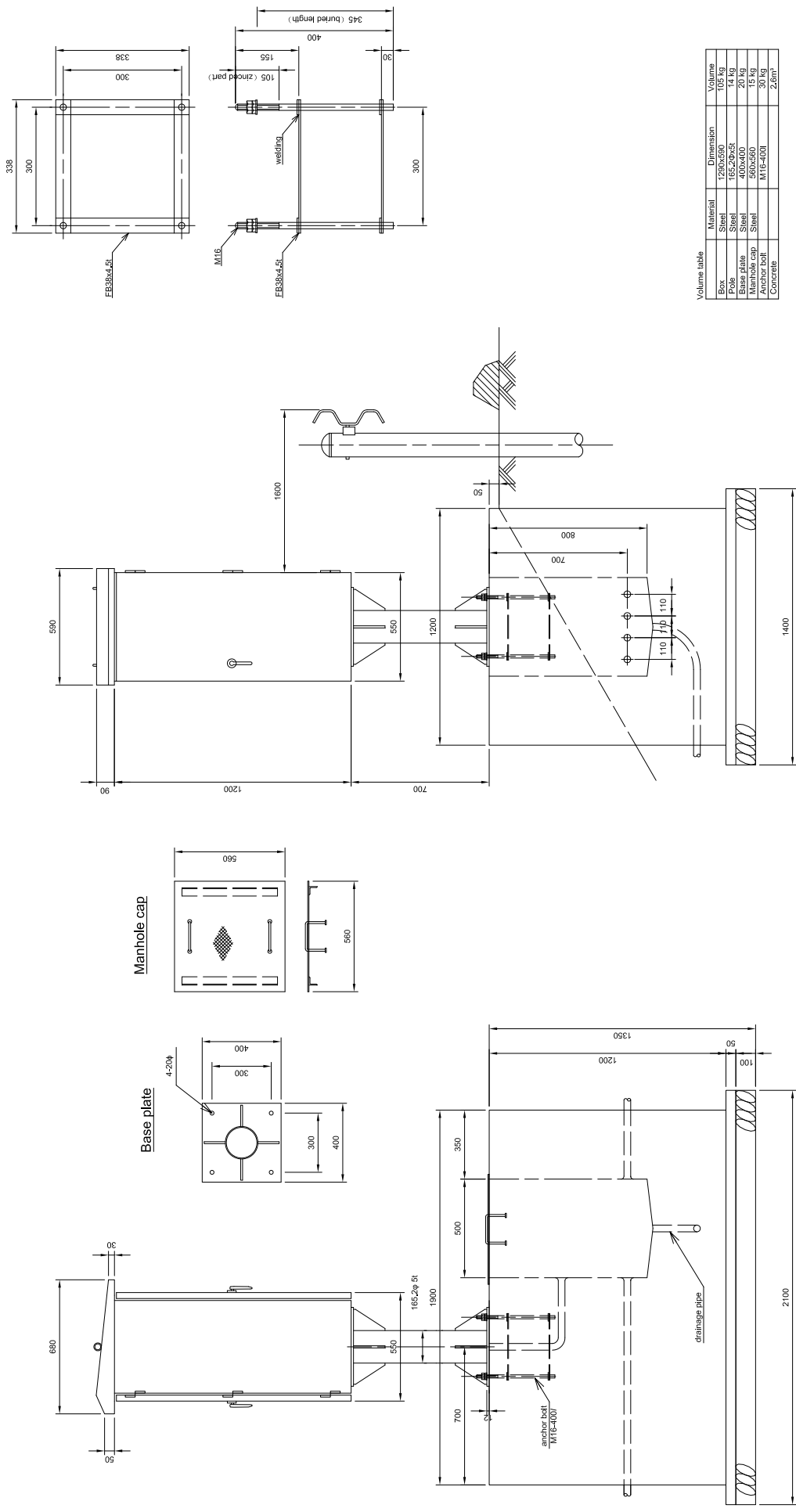
PHAP VAN - GIE EXPRESSWAY
SUPPORT POLE FOR WEATHER SENSOR

PACKAGE: _____
DRAWING NO.: VIL-2-06
SHEET NO.: _____ of _____
SCALE: Various

HOUSING BOX FOR WEATHER SENSOR

STANCE FIGURE scale: 1/20

ANCHOR BOLT scale: 1/10



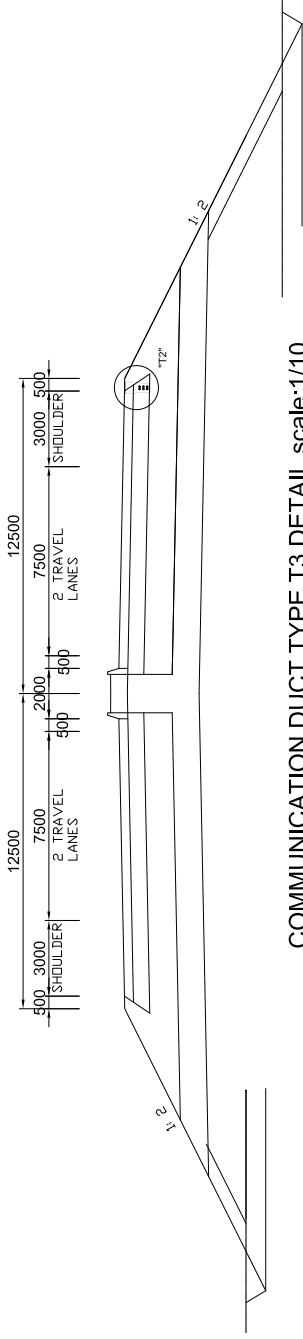
*1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
 Yield strength: $F_y = 250$ MPa
 Tensile strength: $F_u = 400$ MPa
 *2 Concrete strength conforms with:
 Reinforcing Bar (CS300-U) : Yield strength: $F_y = 300$ MPa
 Tensile strength: $F_u = 450$ MPa

*3 In case without any recommendation about zinking in details, all metal members exposed to weather or soil must be zinked with amount of 550g/m².
 *4 This drawing be based on NEXCO(Japan) drawings.
 *5 These structures should be redesigned to meet site condition.

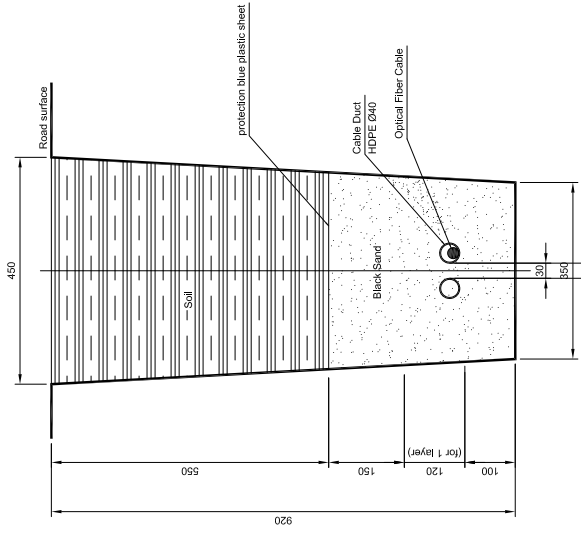
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TITLE	NAME	SIGNATURE	DATE	DRAWING NO.:	VIL-2-07
PREPARED BY				SHEET No.:	
CHECKED BY				Sheet	of
APPROVED BY				Scale:	Various
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.			PHAP VAN - GIE EXPRESSWAY HOUSING BOX FOR WEATHER SENSOR		

TYPICAL CROSS SECTION OF COMMUNICATION DUCT (TYPE T2, T3) IN EARTHWORK SECTION

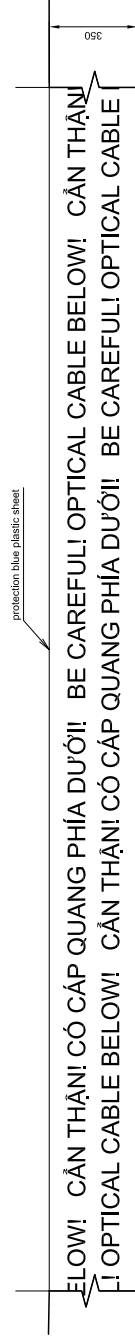
ARRANGEMENT OF COMMUNICATION DUCT IN SHOULDER (T2 TYPE)
(WHEN MEDIAN WIDTH BE LESS THAN 2.0M)



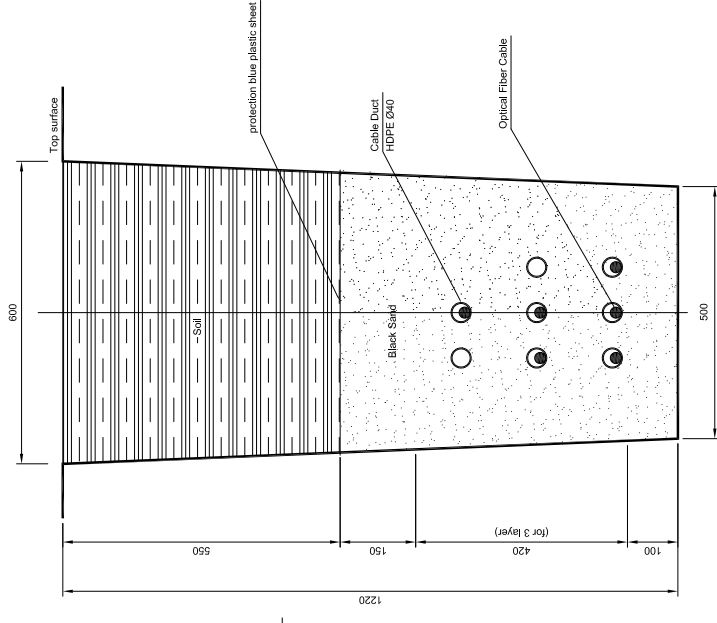
COMMUNICATION DUCT TYPE T3 DETAIL scale:1/10
(USE FOR COMMUNICATION DUCT SPREAD FOR ROADSIDE EQUIPMENT)



PROTECTION BLUE PLASTIC SHEET scale:1/20



T2 DETAIL scale:1/10



Volume table of T2 Duct (for 1 kilometer in length)

Item	Volume
Disposal soil	87.4 m ³
Black sand	353 m ³
Backfill soil	318 m ³
Protection blue plastic sheet	600 m ²

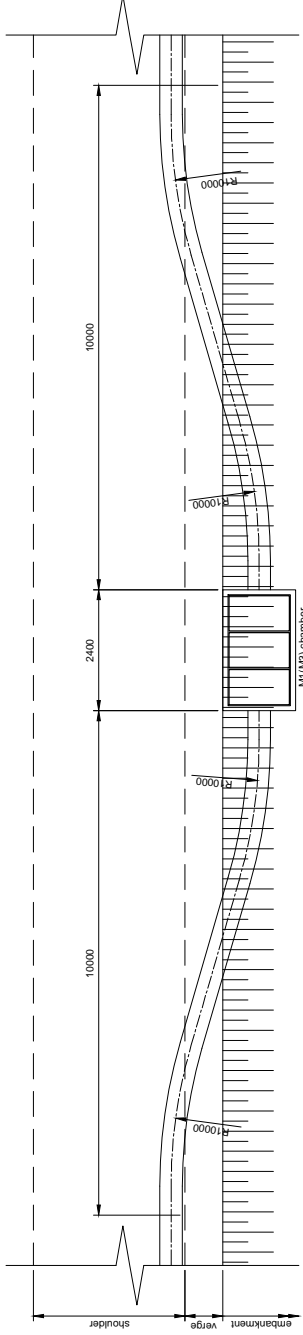
Volume table of T3 Duct (for 1 kilometer in length)

Item	Volume
Disposal soil	285 m ³
Black sand	137 m ³
Backfill soil	23.1 m ³
Protection blue plastic sheet	350 m ²

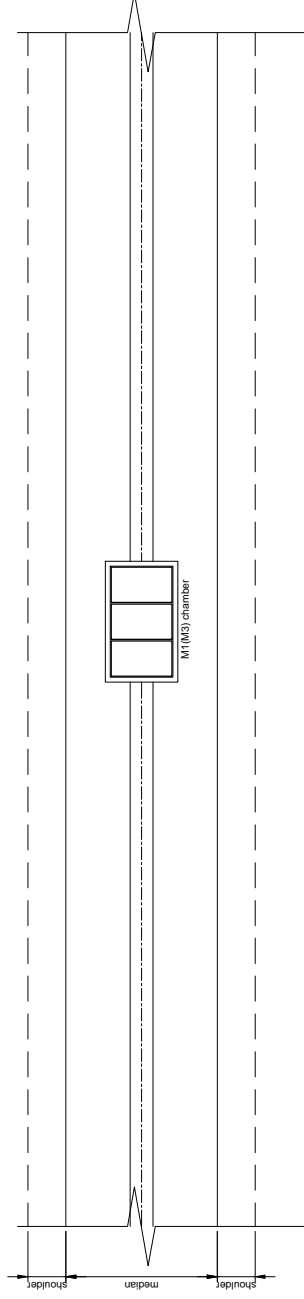
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM	
TITLE	NAME	SIGNATURE	DATE
ORIENTAL CONSULTANTS CO., LTD			
NEXCO EAST ENGINEERING CO., LTD			
NIPPON KOEI CO., LTD			
TRANSPORTATION RESEARCH INSTITUTE CO., LTD			
LANDTEC JAPAN INC.			
MINISTRY OF TRANSPORT		SCALE: varies	
ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING NO: VII.3-01	
PHAP VAN - GIE EXPRESSWAY TYPICAL CROSS SECTION OF COMMUNICATION DUCT (TYPE T2, T3) IN EARTHWORK SECTION		SHEET NO: of	
		Rev:	

ARRANGEMENT OF COMMUNICATION DUCT AT CHAMBER (1)

CHAMBER FOR COMMUNICATION DUCT ON ROAD scale: 1/100



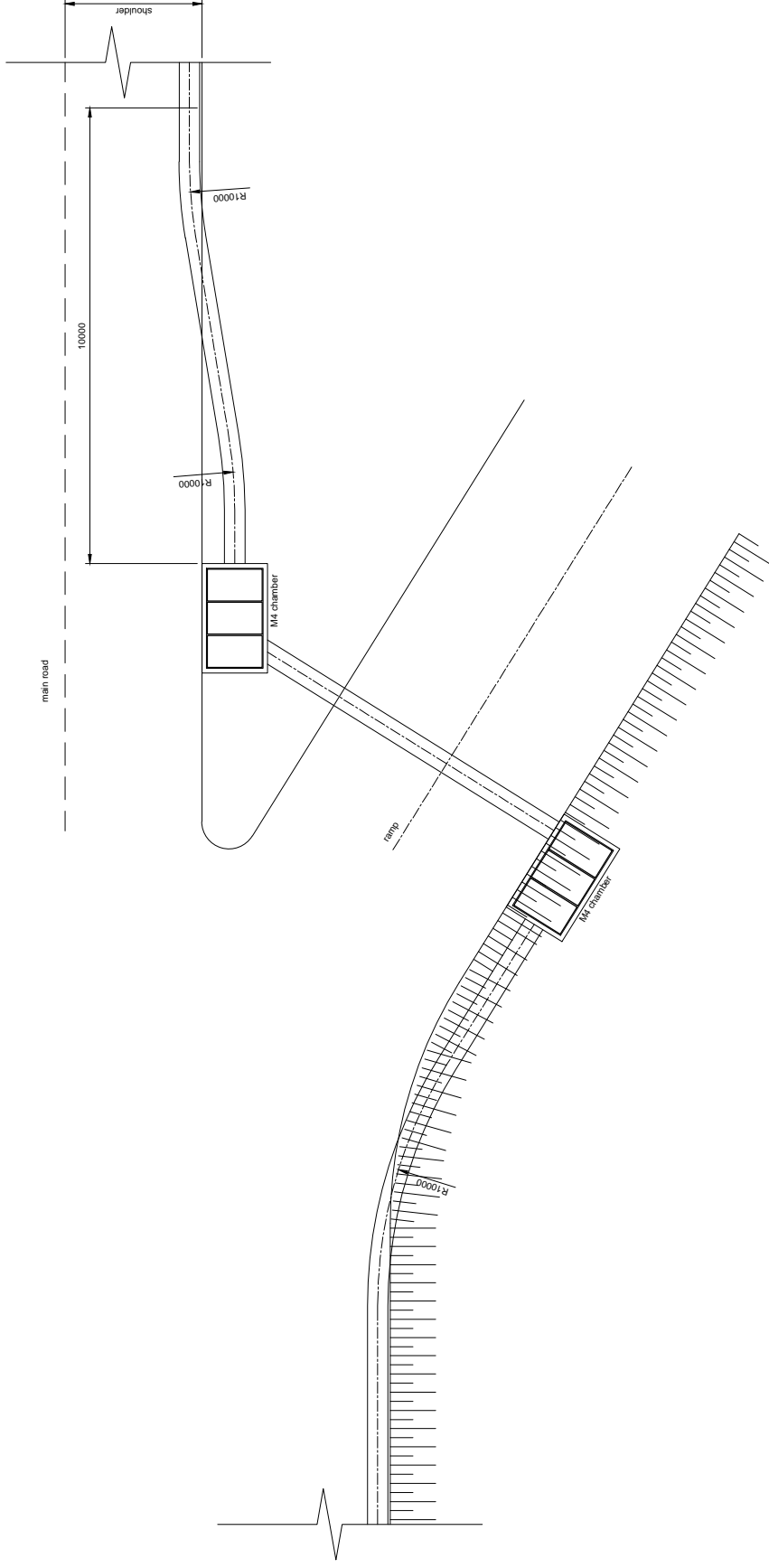
CHAMBER FOR COMMUNICATION DUCT ON MEDIAN scale: 1/100



ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM PHAP VAN - GIE EXPRESSWAY ARRANGEMENT OF COMMUNICATION DUCT AT CHAMBER (1)		PACKAGE	
		TITLE	NAME	SIGNATURE	DATE	DRAWING NO.			
PREPARED BY									
CHECKED BY									
APPROVED BY									
							MINISTRY OF TRANSPORT		
							SCALE: 1/100		
							SHEET NO. VI.3-02		
							Rev:	Sheet	of

ARRANGEMENT OF COMMUNICATION DUCT AT CHAMBER (2)

CHAMBER FOR CHANGING DIRECTION OF COMMUNICATION DUCT ON ROAD scale: 1/100



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TITLE	NAME	SIGNATURE	DATE
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SOCIALIST REPUBLIC OF VIETNAM
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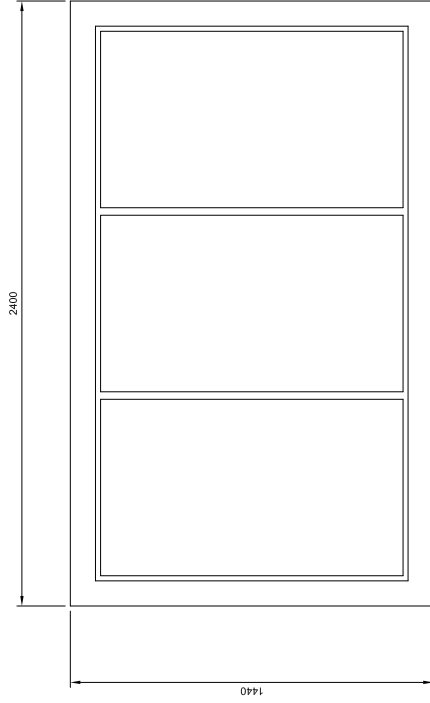
PACKAGE
 ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 DRAWING TITLE
 PHAP VAN - GIE EXPRESSWAY
 ARRANGEMENT OF COMMUNICATION DUCT AT CHAMBER (2)

DRAWING NO.: VI.3-03
 SHEET NO.: _____ of _____
 Rev: _____

SCALE: 1/100

DETAIL OF COMMUNICATION DUCT CHAMBER (TYPE M1)

(INSTALL AT MEDIAN or ON EMBANKMENT; WITH PITCH LESS THAN 333m)

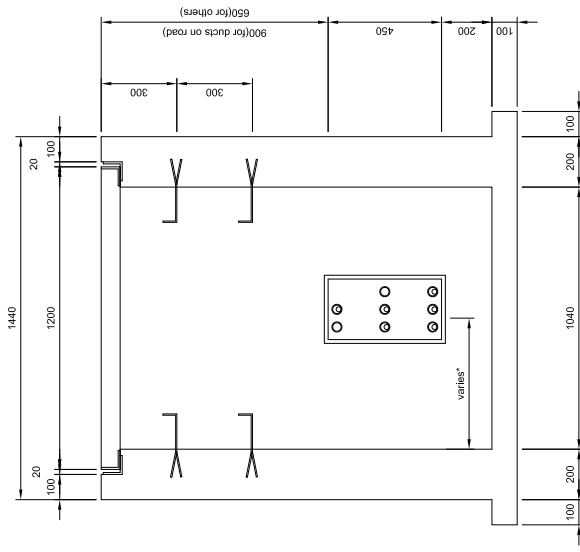
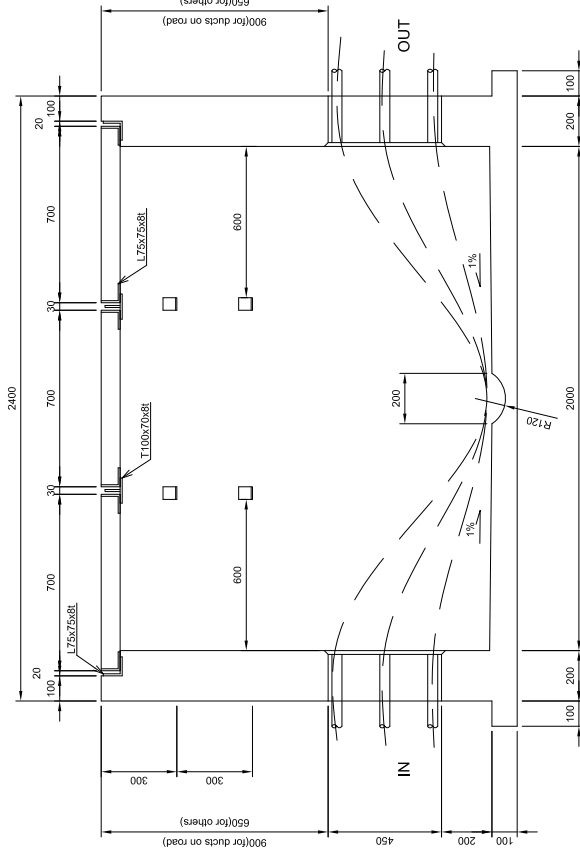


Volume table of chamber for ducts on road

	Volume
L75x75x8L	183 kg
PL80x8L	70 kg
T100x70x8L	26 kg
Concrete M300	1.9 m ³

Volume table of chamber for others

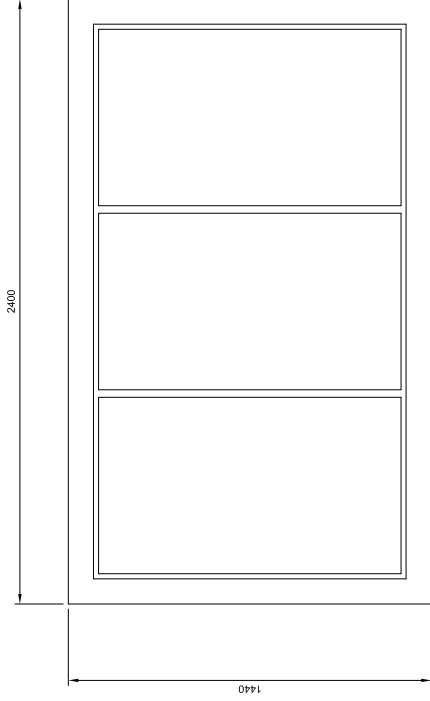
	Volume
L75x75x8L	183 kg
PL80x8L	70 kg
T100x70x8L	26 kg
Concrete M300	1.7 m ³



* Depending to duct arrangement.
 *1 Concrete structure equivalence with:
 Concrete strength: F_c = 18 MPa; Yield strength: F_y = 300 MPa;
 Reinforcing Bar (CB300-II): Tensile strength: F_t = 450 MPa;

CONSULTANT	SOCIALIST REPUBLIC OF VIETNAM	ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	PACKAGE:
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NEXCO EAST ENGINEERING CO., LTD			
TRANSPORTATION RESEARCH INSTITUTE CO., LTD			
LANDTEC JAPAN INC.			
		DRAWING TITLE: DETAIL OF COMMUNICATION DUCT CHAMBER (TYPE M1)	
		DRAWING No.: VII-3-04	
		SHEET No.: Sheet of	
		Scale: 1:20	

DETAIL OF COMMUNICATION DUCT CHAMBER (TYPE M3) (INSTALL AT MEDIAN or EMBANKMENT; WITH PITCH LESS THAN 2000M)

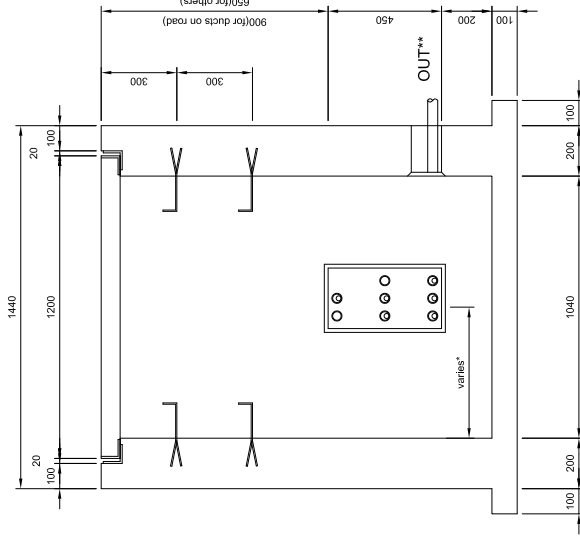
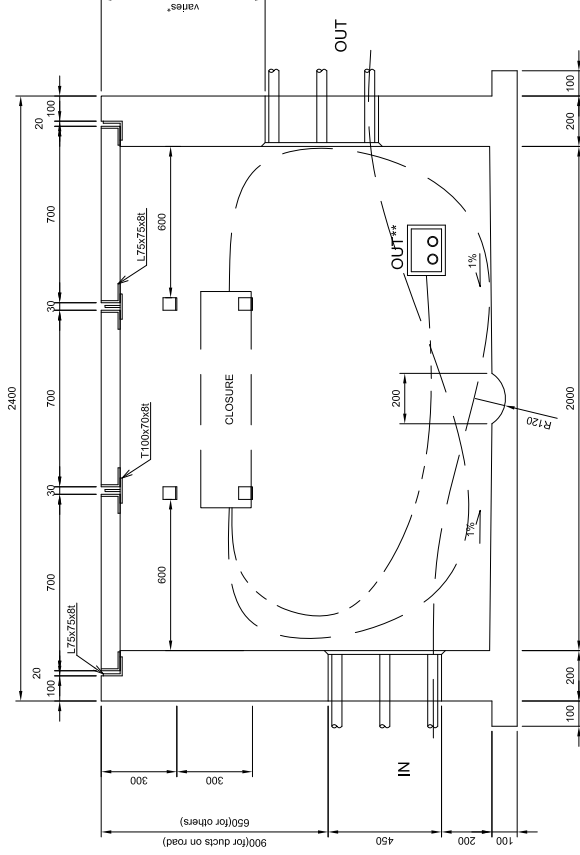


Volume table of chamber for ducts on road

	Volume
L75x75x8L	183 kg
PL80x8L	70 kg
T100x70x8L	26 kg
Concrete M300	1.9 m ³

Volume table of chamber for others

	Volume
L75x75x8L	183 kg
PL80x8L	70 kg
T100x70x8L	26 kg
Concrete M300	1.7 m ³

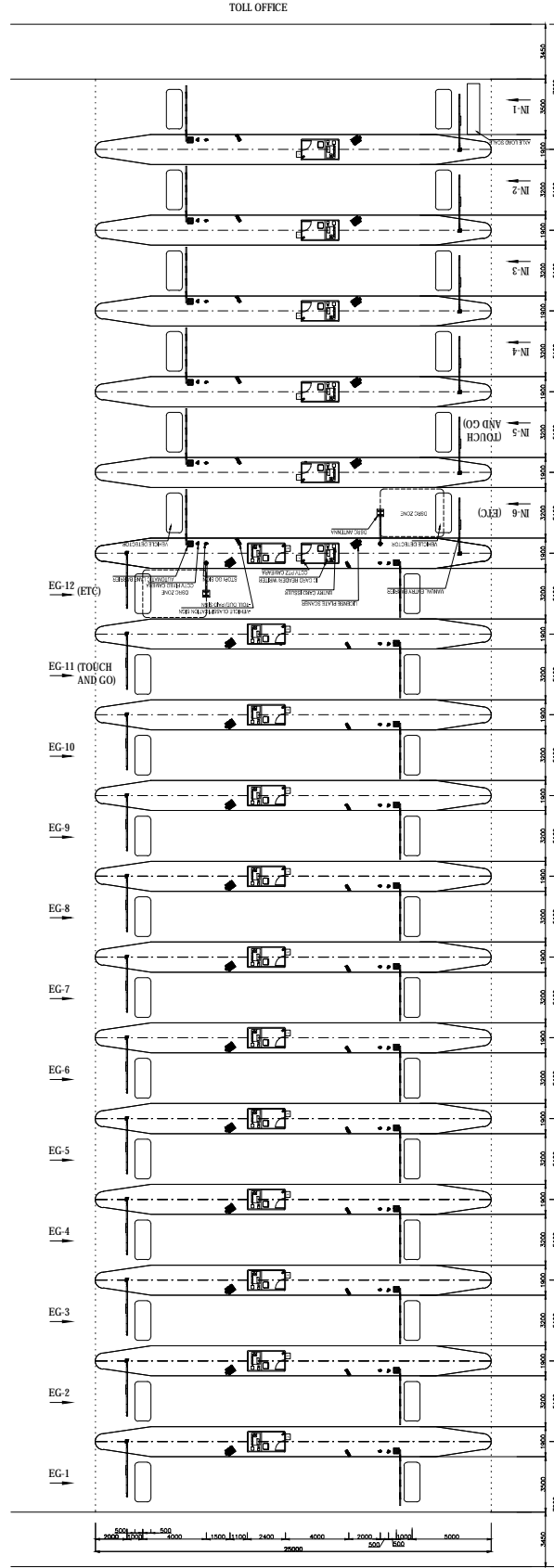


*1 Concrete structure equivalence with:
 Concrete strength: F_c = 18 MPa; Yield strength: F_y = 300 MPa;
 Reinforcing Bar (CB300-II): Tensile strength: F_t = 450 MPa;

* Depending to duct arrangement,
 ** Divergence exits be used for roadside equipments.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD	TITLE	NAME	SIGNATURE	DATE	
NEXCO EAST ENGINEERING CO., LTD	PREPARED BY				
NIPPON KOGI CO., LTD	CHECKED BY				
TRANSPORTATION RESEARCH INSTITUTE CO., LTD	APPROVED BY				
LANDTEC JAPAN INC.					
MINISTRY OF TRANSPORT			PACKAGE:		
DETAIL OF COMMUNICATION DUCT CHAMBER (TYPE M3)			PHAP VAN - GIE EXPRESSWAY		
VI.3-05			Sheet of		
SCALE: 1/20			Revised		

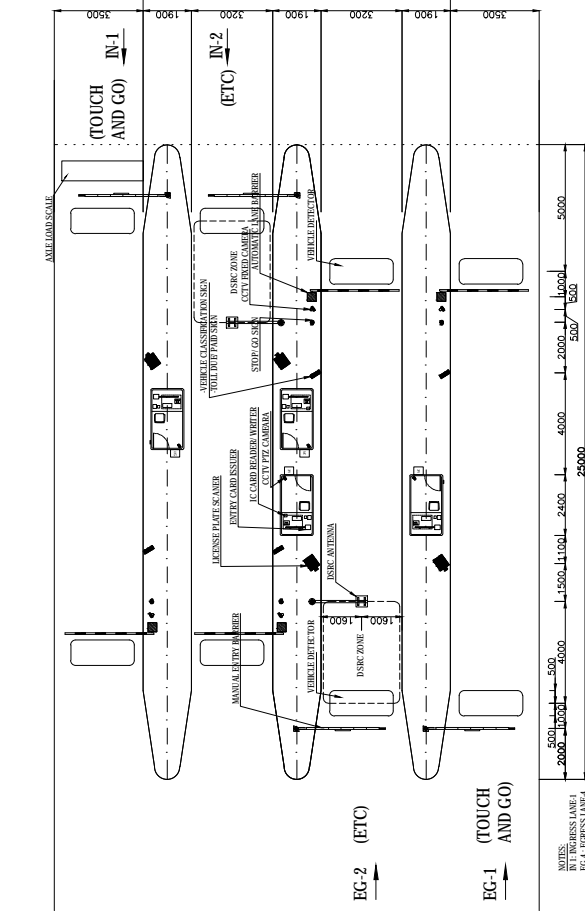
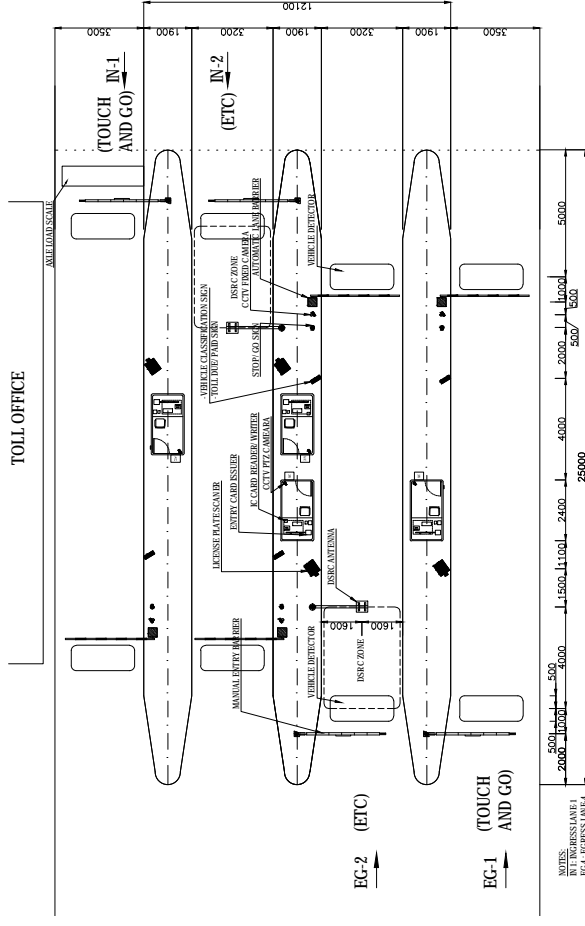
TYPICAL LAYOUT OF TOLL EQUIPMENT FOR 18 LANES



NOTES:
 IN 3: REGRESS LANE.3
 EG 1 : REGRESS LANE.1

PACKAGE:		ITS INTEGRATION PROJECT ON	
DRAWING NO.:		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
SHEET NO.:		EGPT. ARRANGEMENT AT PHUONG NHI TOLLGATE (Km 188+300, PHAP VAN - GIE EXP.)	
Rev.:		SCALE: 1/200	
Sheet		of	
SOCIALIST REPUBLIC OF VIETNAM			
MINISTRY OF TRANSPORT			
CONSULTANT			
ORIENTAL CONSULTANTS CO., LTD		TITLE	SIGNATURE
NEXCO EAST ENGINEERING CO., LTD		PREPARED BY	DATE
TRANSPORTATION RESEARCH INSTITUTE CO., LTD		CHECKED BY	
LANDTEC JAPAN INC.		APPROVED BY	

TYPICAL LAYOUT OF TOLL EQUIPMENT FOR 4 LANES

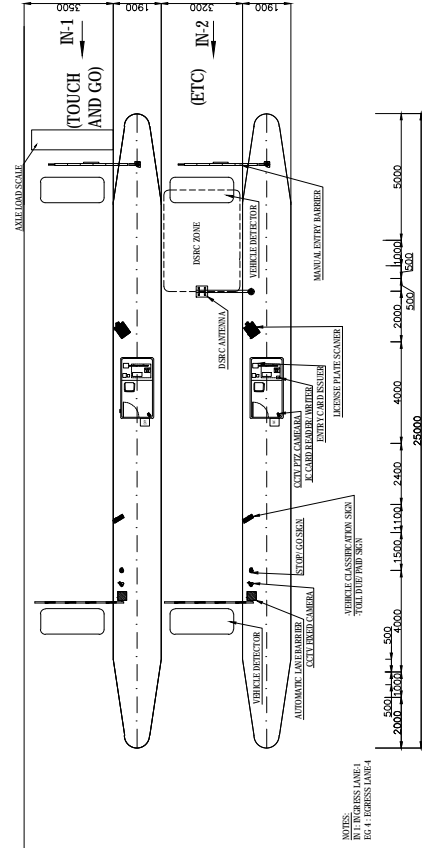


NOTES:
 BY T. HIRISSIANE I
 EG 4 - HIRISSIANE I

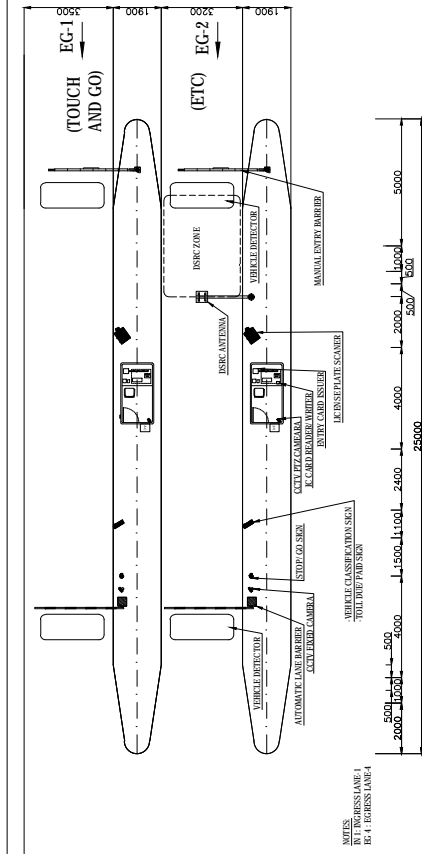
NOTES:
 BY T. HIRISSIANE I
 EG 1 - HIRISSIANE I

SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
		DRAWING TITLE EQPT. ARRANGEMENT AT KHE HOI TOLLGATE (Km 192+881, PHAP VAN - GIE EXP.)	PACKAGE: DRAWING NO.: VII-402
CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SHEET NO.: Sheet of	Rev:
TITLE PREPARED BY CHECKED BY APPROVED BY	NAME SIGNATURE DATE	SCALE: 1:200	

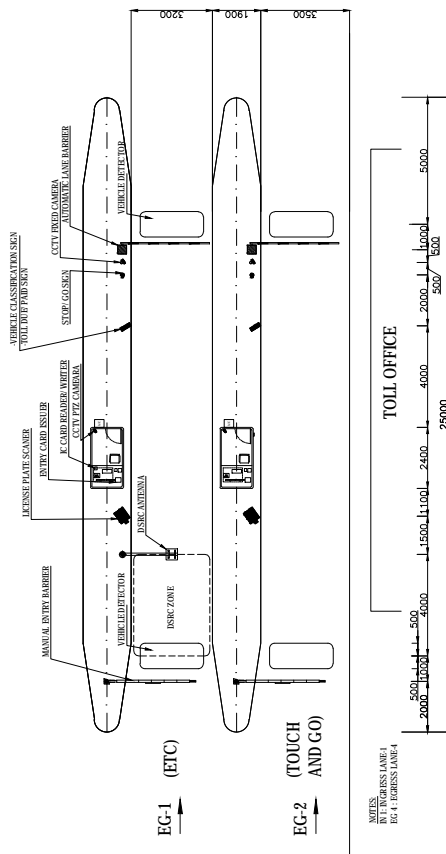
TYPICAL LAYOUT OF TOLL EQUIPMENT FOR 2 LANES



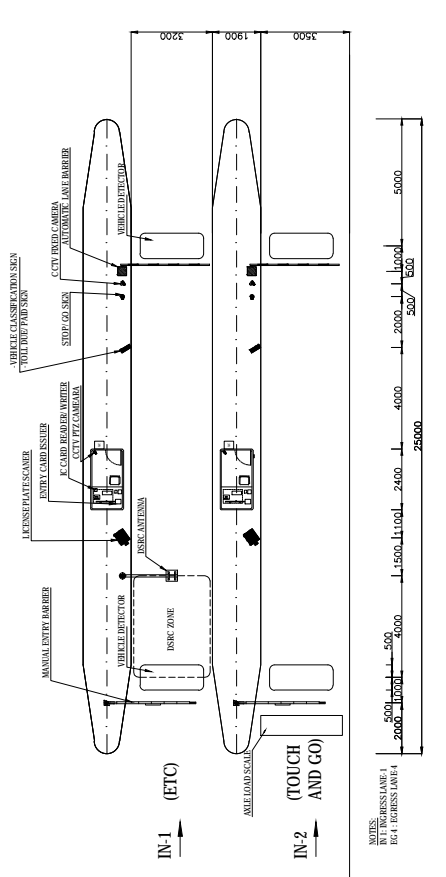
NOTES:
 IN-1 INGRESS LANE-1
 IN-2 INGRESS LANE-2



NOTES:
 EG-1 INGRESS LANE-1
 EG-2 INGRESS LANE-2

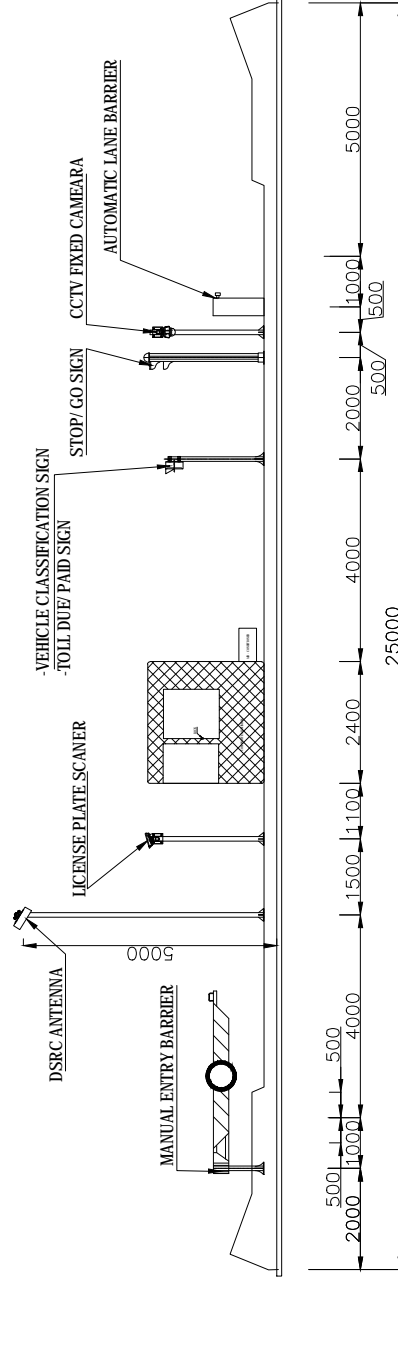
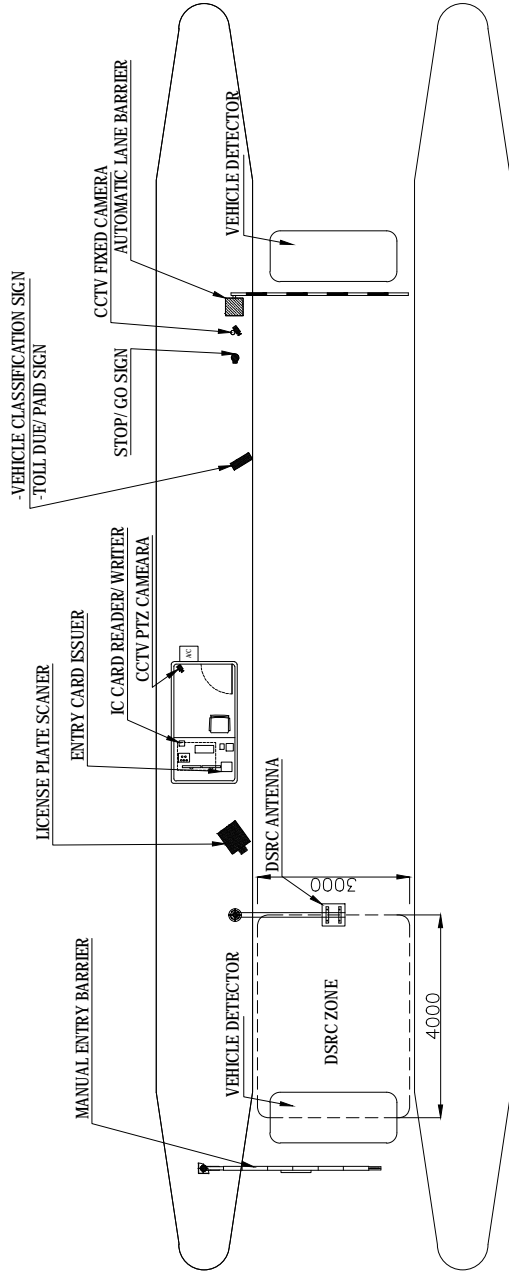


NOTES:
 EG-1 INGRESS LANE-1
 EG-2 INGRESS LANE-2

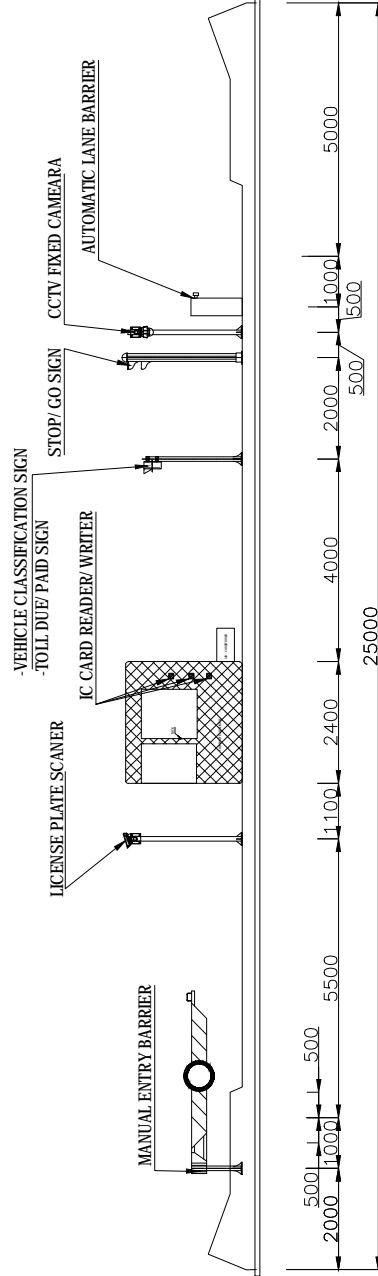
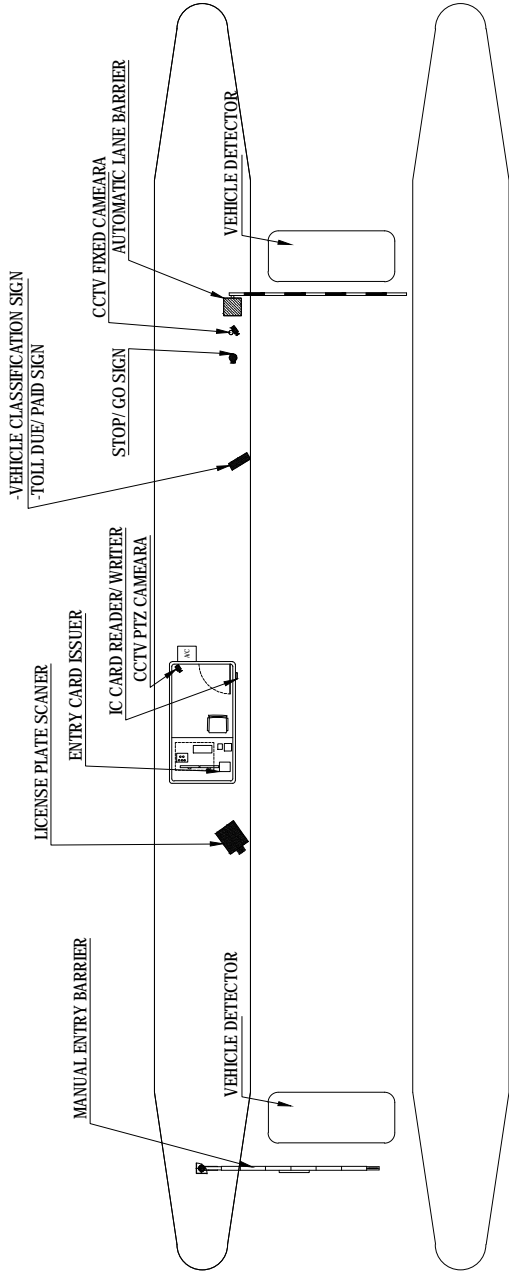


NOTES:
 IN-1 INGRESS LANE-1
 IN-2 INGRESS LANE-2

SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
		DRAWING TITLE EQPT. ARRANGEMENT AT VAN DIEM TOLLGATE (Km 203+100 - Km 205+000, PHAP VAN - GIE EXP.)	DRAWING NO.: VII-403
CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		PACKAGE: NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	SHEET NO.: VII-403
TITLE PREPARED BY CHECKED BY APPROVED BY	NAME SIGNATURE DATE	SCALE: 1:200	SHEET NO. of Sheet of



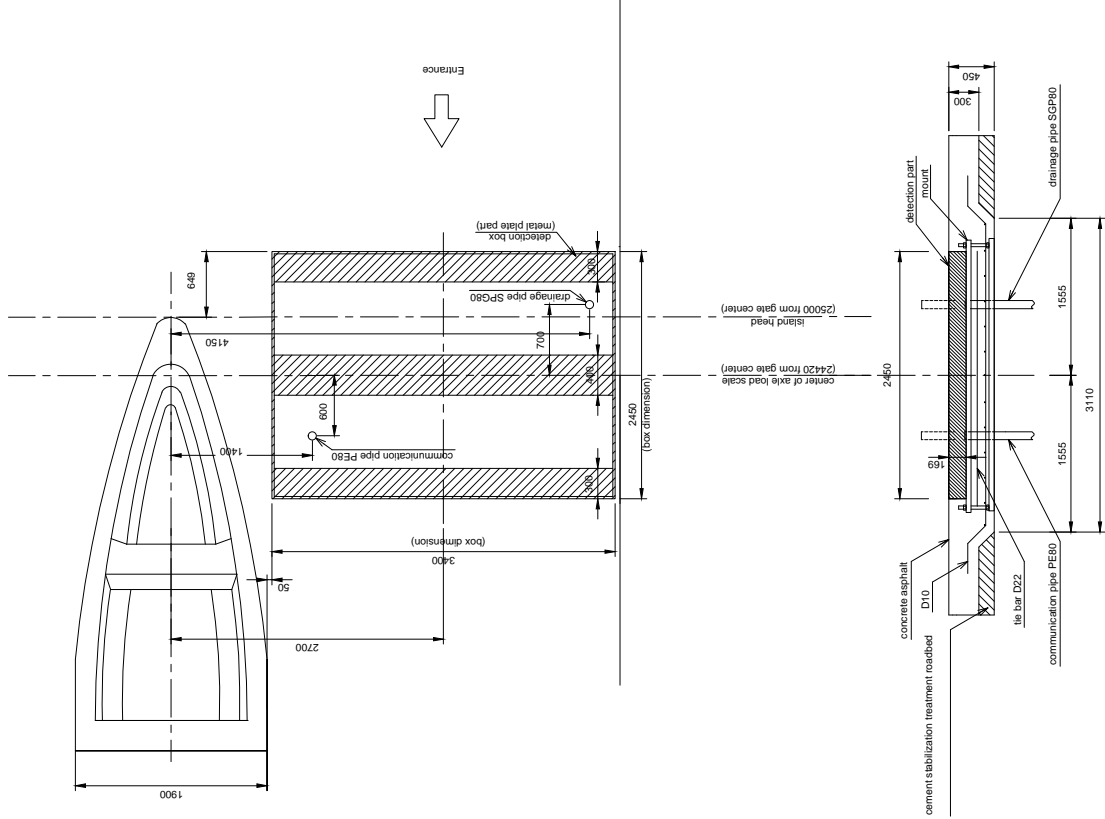
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE	
NEXCO EAST ENGINEERING CO., LTD				EQUIP. ARRANGEMENT PROFILE AT TOLLGATE,	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				PHAP VAN - GIE EXP FOR ETC LANE	
LANDTEC JAPAN INC.				PACKAGE	
TITLE	NAME	SIGNATURE	DATE	DRAWING NO.: VII-104	
PREPARED BY				SHEET NO.:	
CHECKED BY				Sheet	
APPROVED BY				of	
				SCALE: 1/100	



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ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE	
NEXCO EAST ENGINEERING CO., LTD				EQUIP. ARRANGEMENT PROFILE AT TOLLGATE, PHAP VAN - GIE EXP FOR TOUCH & GO/MANUAL LANE	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				PACKAGE	
LANDTEC JAPAN INC.				DRAWING NO.: VII-4-05	
TITLE	NAME	SIGNATURE	DATE	SHEET NO.	Sheet
PREPARED BY					of
CHECKED BY					
APPROVED BY					

SCALE: 1/100

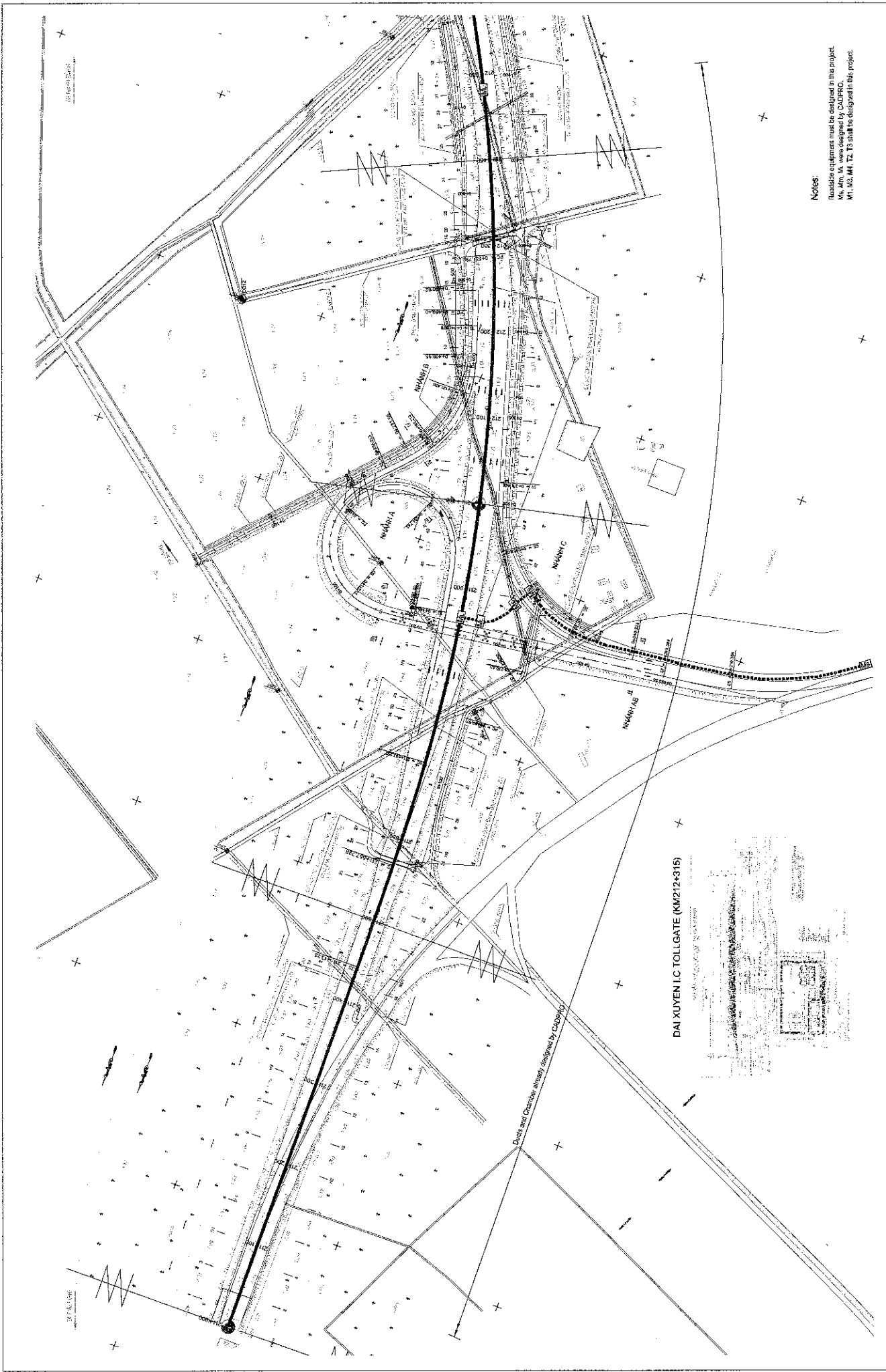
BASE STRUCTURE FOR AXLE LOAD SCALE (for reference)



*1. All works belong to equipment makers.

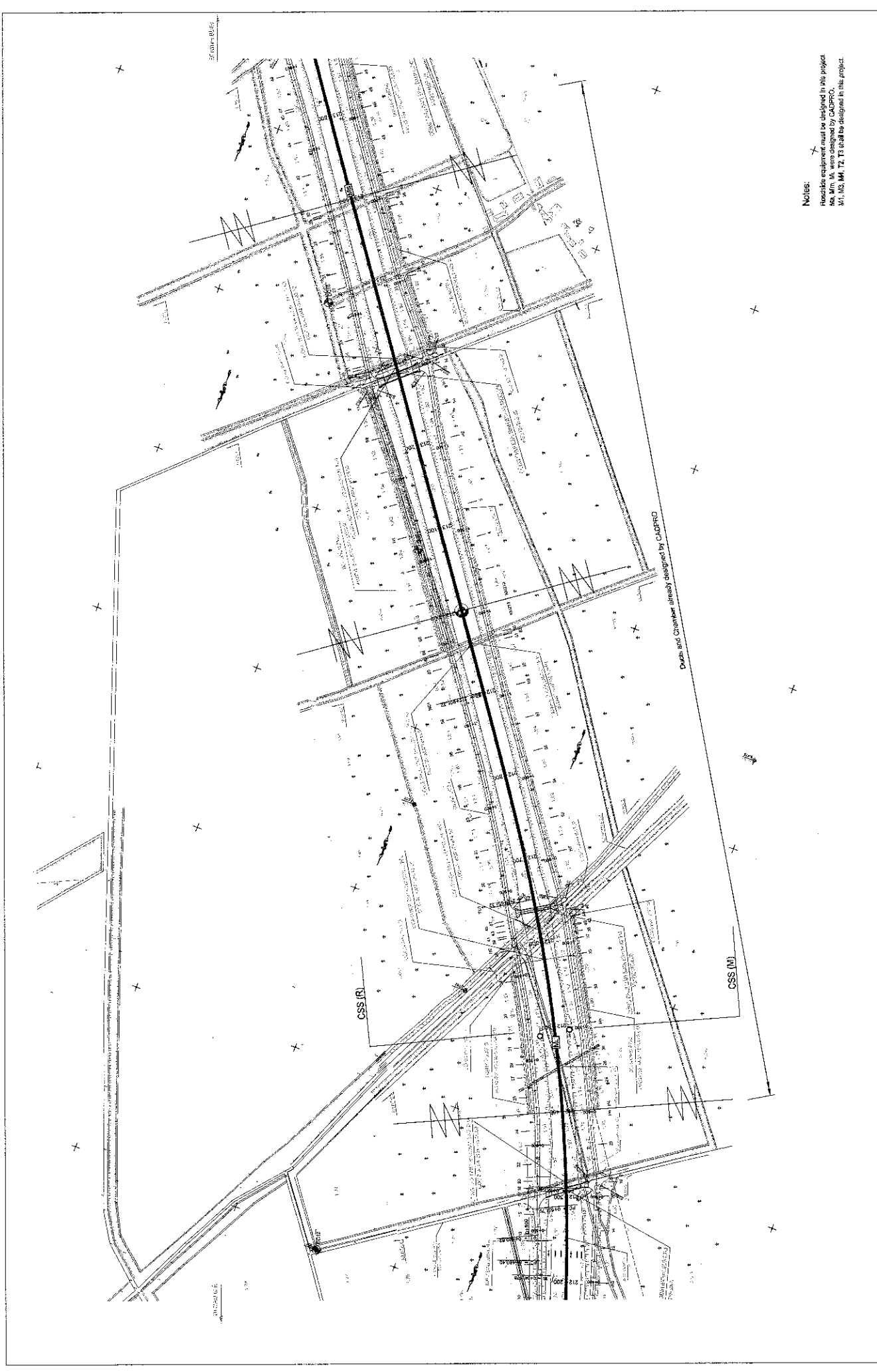
CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM PHAP VAN - GIE EXPRESSWAY BASE STRUCTURE FOR AXLE LOAD SCALE (for reference)		PACKAGE DRAWING NO.: VII.4.06 SHEET NO.: _____ of _____ Rev: _____
		TITLE PREPARED BY CHECKED BY APPROVED BY		NAME SIGNATURE DATE		SCALE: 1:50

GIE - NINH BINH EXPRESSWAY



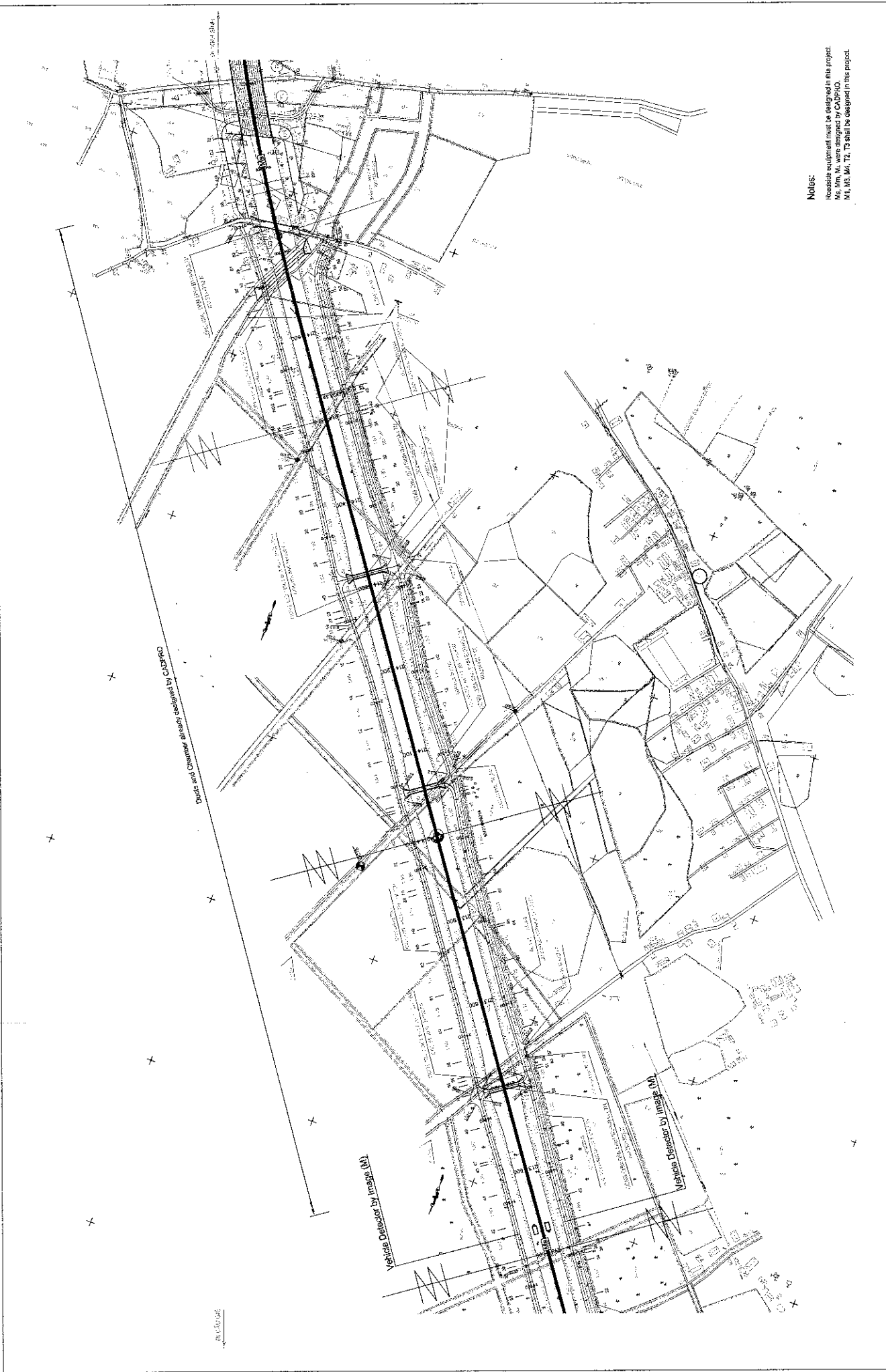
Notes:
 Roadside equipment must be designed in this project.
 Ms. A.M. were designed by CUPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		TITLE		SIGNATURE		DATE	
		PREPARED BY	CHECKED BY	APPROVED BY			
SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT				ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 211+000 ~ KM 212+400 - GIE - NINH BINH EXP.)			
PACKAGE		DRAWING TITLE		DRAWING NO.		SHEET No.	
		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT		SHEET No.	
						Scale: 1:4000	
						Sheet of	



Notes:
 X Reside equipment must be designed in this project
 MS, MM, MA, were designed by CAOPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT		SIGNATURE		DATE	
TITLE	NAME				
PREPARED BY					
CHECKED BY					
APPROVED BY					
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT			
PACKAGE: NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		ITS INTEGRATION PROJECT ON LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 212+400 - KM 213+600 - GIE - NINH BINH EXP.)			
DRAWING No.		SHEET No.		Scale	
VIL. 1-02		Sheet		of	
		No.			



Notes:
 Roadside equipment must be designed in this project.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		PACKAGE:
		MINISTRY OF TRANSPORT		DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 213+600 - KM 214+800 - GIE - NINH BINH EXP.)		DRAWING NO: VIE. 1-03
TITLE	NAME	SIGNATURE	DATE	SHEET NO.:		
PREPARED BY	CHECKED BY	APPROVED BY	SCALE: 1:400	Sheet of		

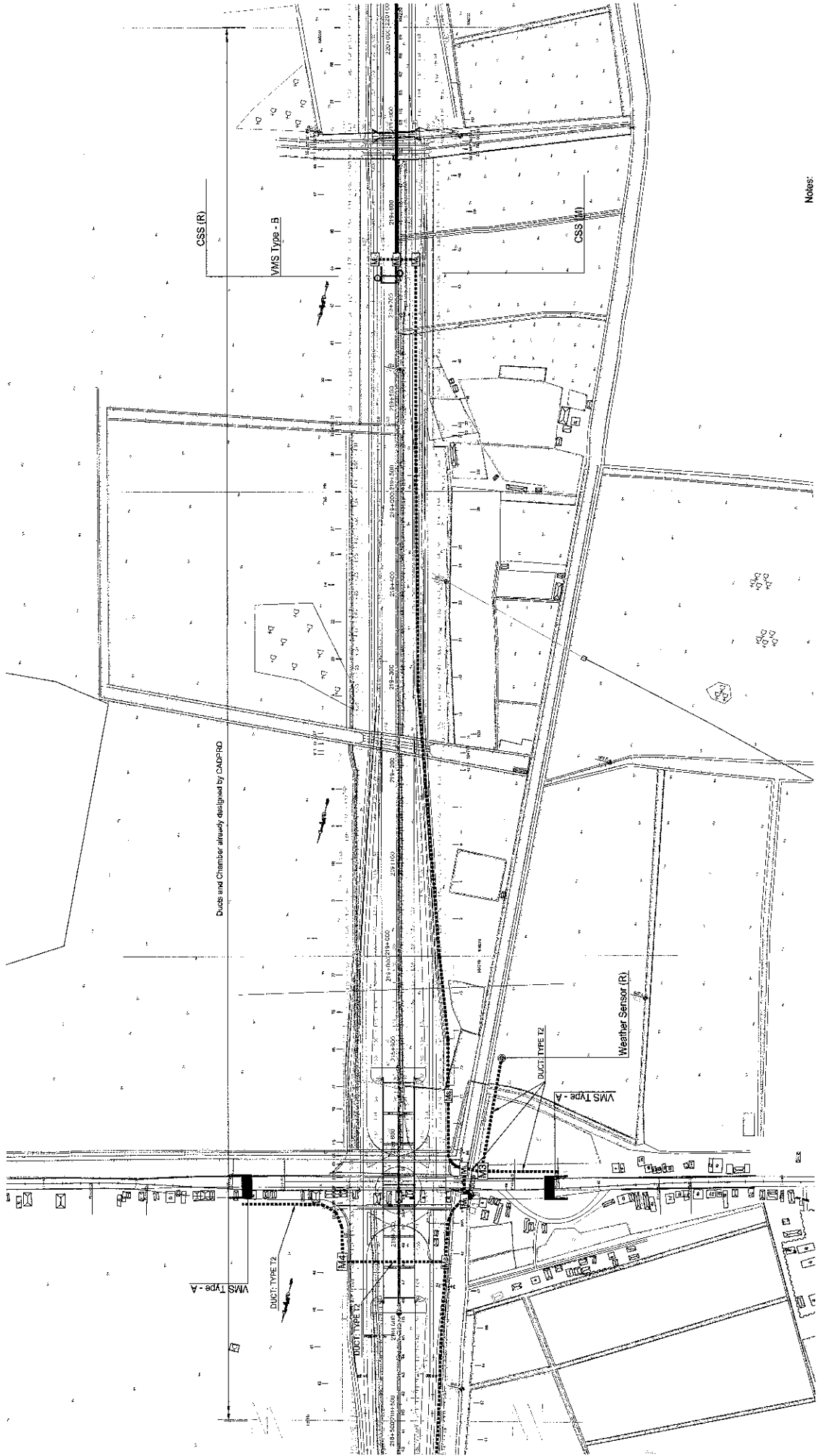


Notes:
 Roadside equipment must be designed in this project.
 Ms. Km 44, were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 214+800 - KM 216+000 - GIE - NINH BINH EXP.) SCALE: 1:800	
TITLE	NAME	SIGNATURE	DATE	PACKAGE	DRAWING NO.
PREPARED BY					VII.1-04
CHECKED BY					SHEET No.
APPROVED BY					Sheet of



CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT		DRAWING TITLE	
NEXCO EAST ENGINEERING CO., LTD				LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT	
NIPPON KOEI CO. LTD				(KM 216+000 - KM 216+500, GIE - NINH BINH EXP.)	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				PROJECT NO.	
LANDTEC JAPAN INC.				Sheet of	
				Vol. 05	
				Rev.	



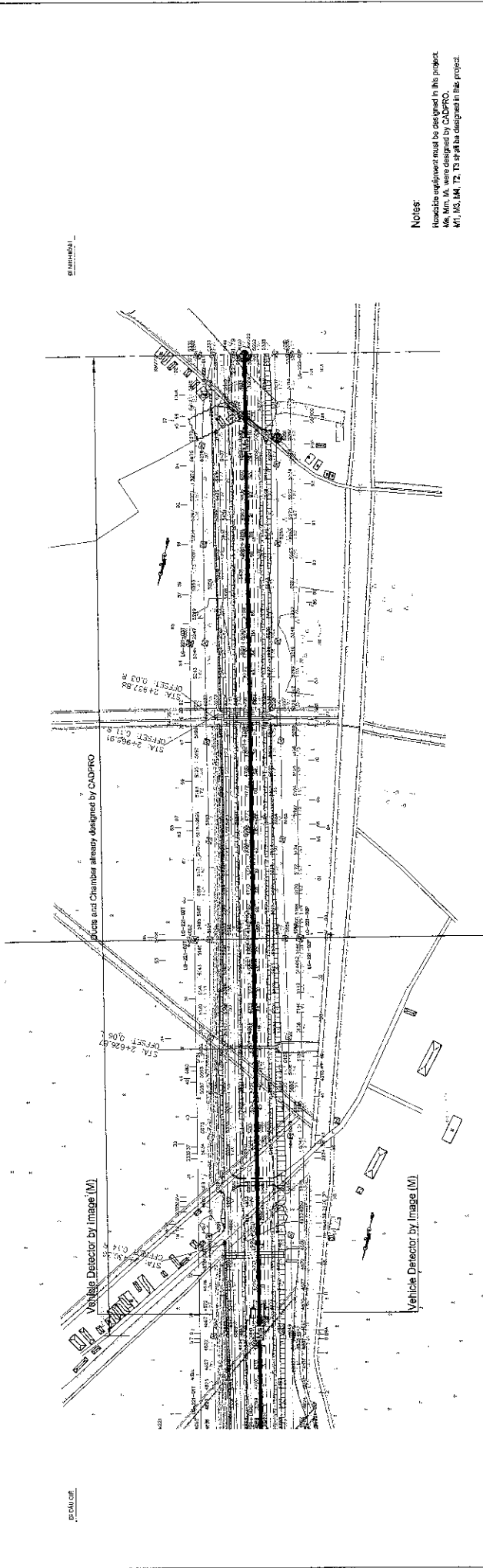
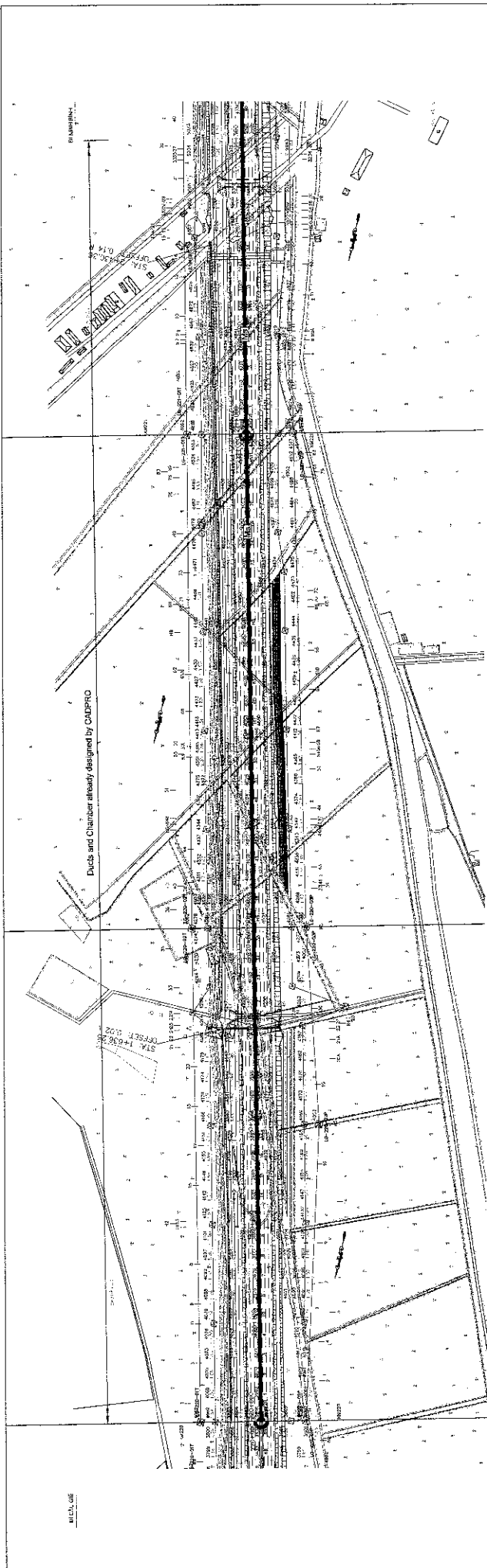
Notes:
 Roadside equipment must be designed in this project.
 Ms. Mm, Mm, were designed by CADPRO.
 M1, M2, M3, T2, T3 shall be designed in this project.

PROJECT		NO. 100
DRAWING TITLE		VIII 1-05
DRAWING NO.		
SHEET NO.		Sheet of

ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT
 (KM 278+500 - KM 220+000, GIE - NINH BINH EXP.)

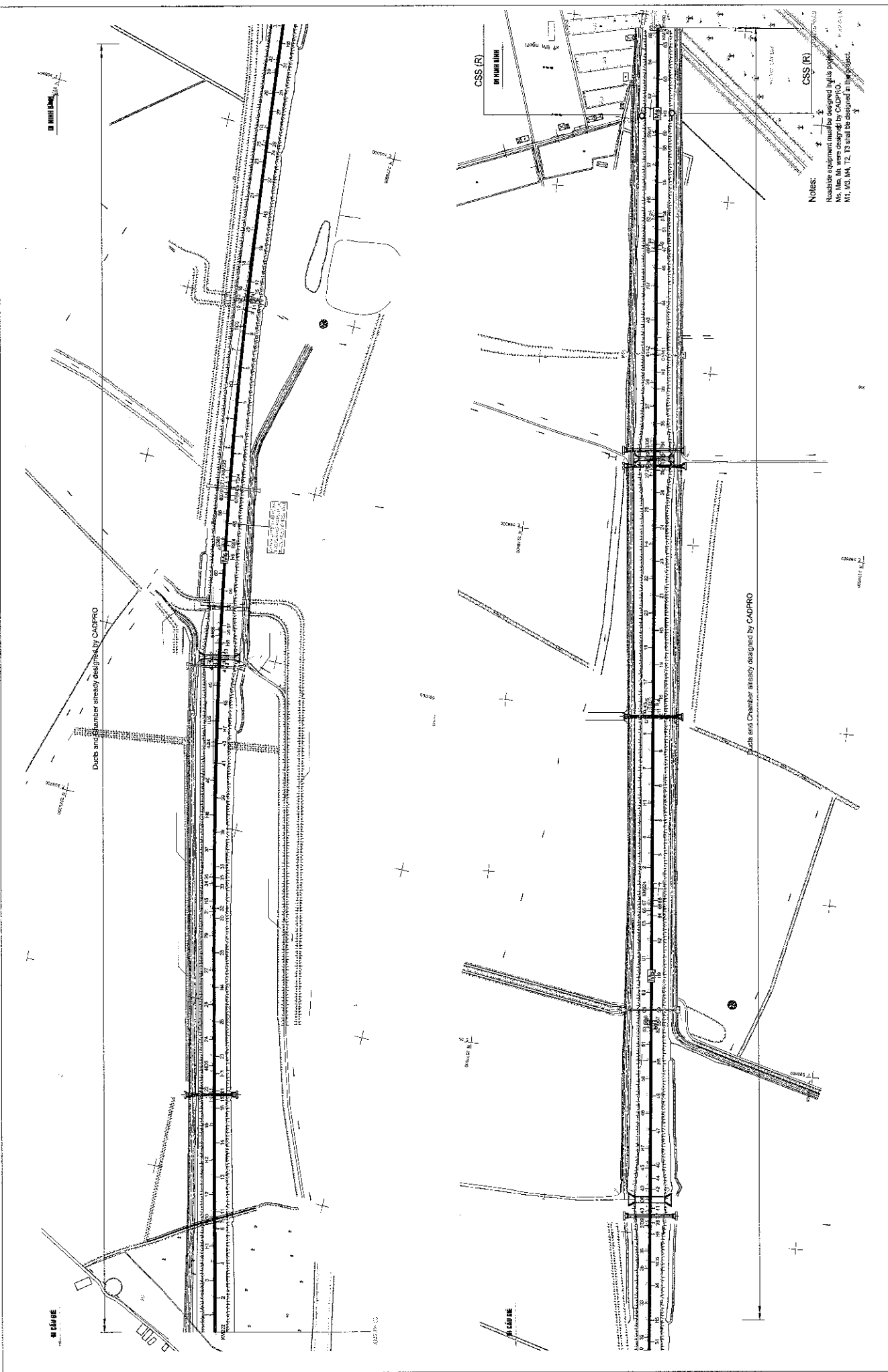
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM	
ORIENTAL CONSULTANTS CO., LTD		MINISTRY OF TRANSPORT	
NEXCO EAST ENGINEERING CO., LTD			
TRANSPORTATION RESEARCH INSTITUTE CO., LTD			
LANDTEC JAPAN INC.			
TITLE	NAME	SIGNATURE	DATE
PREPARED BY			
CHECKED BY			
APPROVED BY			

SCALE: 1:4000



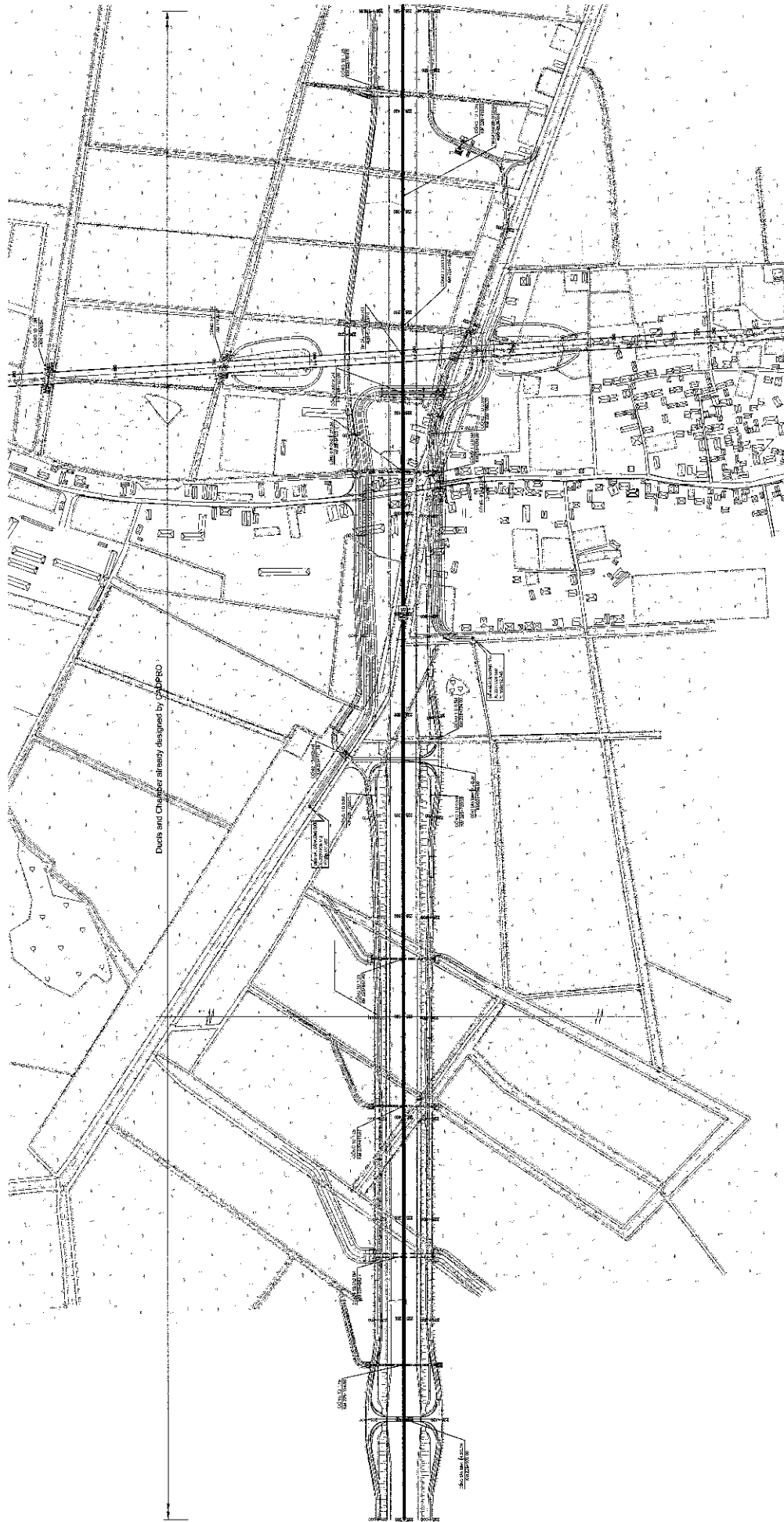
Notes:
 Roadside equipment must be designed in this project
 by the contractor of CADPRO
 K1, M3, M4, T3 shall be designed in this project.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
TITLE	NAME	DATE	DATE	DATE	DATE
PREPARED BY	SIGNATURE				
CHECKED BY					
APPROVED BY					
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANITEC JAPAN INC.		MINISTRY OF TRANSPORT SCALE: 1:4000			
TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANITEC JAPAN INC.		SHEET No. 111 of 111 DRAWING No. VIL-1-07			



Notes:
 Roadside equipment and communication ducts layout plan.
 Ms. Min. M. were designed by CADPRO.
 M1, M3, M4, T3 shall be designed in this project.

CONSULTANT				SOCIALIST REPUBLIC OF VIETNAM			
TITLE	NAME	SIGNATURE	DATE	ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM			
PREPARED BY				ROADWAY NO. 3			
CHECKED BY				LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 222+000 - KM 225+000, GIE - NINH BINH EXP.)			
APPROVED BY				MINISTRY OF TRANSPORT			
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.				SCALE: 1:400			
				PACKAGE			
				DRAWING NO.			
				SHEET No.			
				Sheet of			
				Date			
				VIII.1.08			

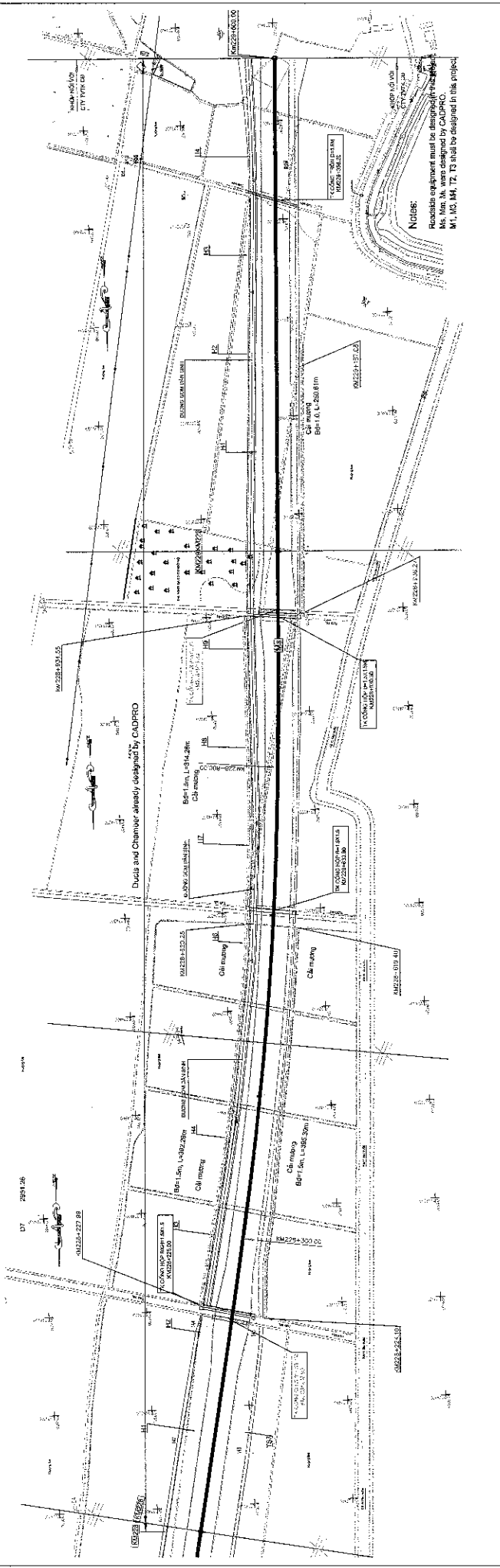
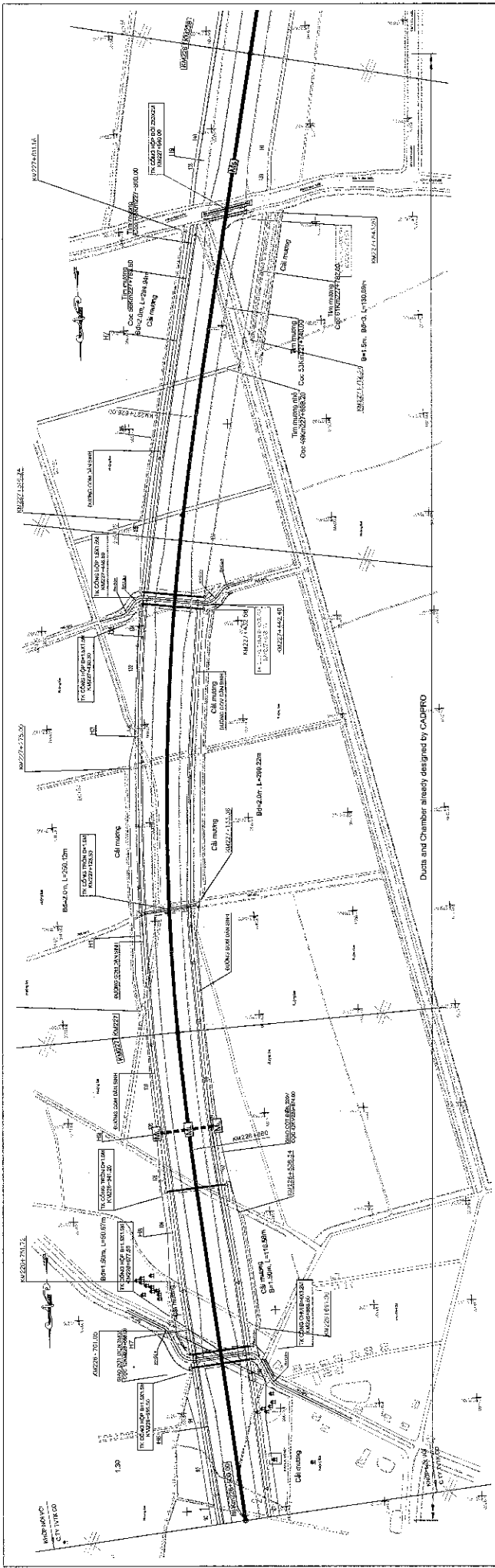


Notes:
 Roadside equipment must be designed in this project
 in accordance with the standards of SUPRO
 (VI, VII, VIII, IX, X, XI, XII, XIII) and be designed in this project.

CONSULTANT				SOCIALIST REPUBLIC OF VIETNAM			
TITLE	NAME	SIGNATURE	DATE	ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM			
PREPARED BY				DRAWN BY			
CHECKED BY				LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 225+000 ~ KM 226+500 - GIE - NINH BINH EXP.)			
APPROVED BY				PACKAGE			
				DRAWING No. VII.1-09			
				SHEET No. Sheet of			
				SCALE: 1:400			

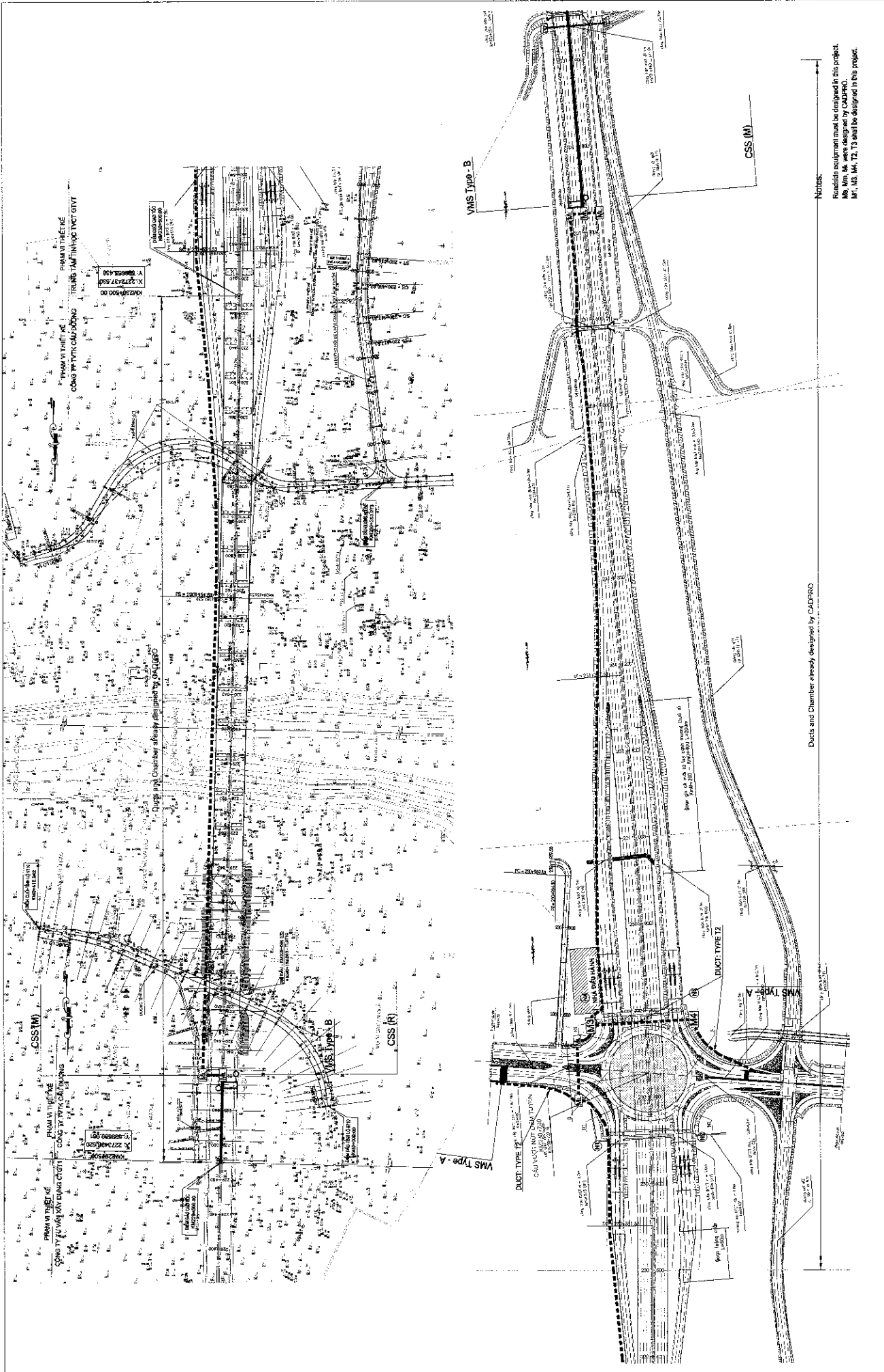
ORIENTAL CONSULTANTS CO., LTD
 NEXCO EAST ENGINEERING CO., LTD
 NIPPON KOEI CO., LTD
 TRANSPORTATION RESEARCH INSTITUTE CO., LTD
 LANDTEC JAPAN INC.

MINISTRY OF TRANSPORT



Notes:
Roadside equipment must be designed by CADPRO.
Ms. A10, A11, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21, A22, A23, A24, A25, A26, A27, A28, A29, A30, A31, A32, A33, A34, A35, A36, A37, A38, A39, A40, A41, A42, A43, A44, A45, A46, A47, A48, A49, A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60, A61, A62, A63, A64, A65, A66, A67, A68, A69, A70, A71, A72, A73 shall be designed in this project.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		PROJECT	
TITLE	NAME	ITS INTEGRATION PROJECT ON		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
PREPARED BY	ORIENTAL CONSULTANTS CO., LTD	MINISTRY OF TRANSPORT		DRAWING TITLE	
CHECKED BY	NEXCO EAST ENGINEERING CO., LTD	LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT		DRAWING NO.	
APPROVED BY	NIPPON KOEI CO., LTD	(KM 226+500 - KM 229+500 - GIE - NINH BINH EXP.)		SHEET No.	
	TRANSPORTATION RESEARCH INSTITUTE CO., LTD			Sheet of	
	LANDTEC JAPAN INC.			Scale	
				1:500	



Ducts and Chamber already designed by CADPRO

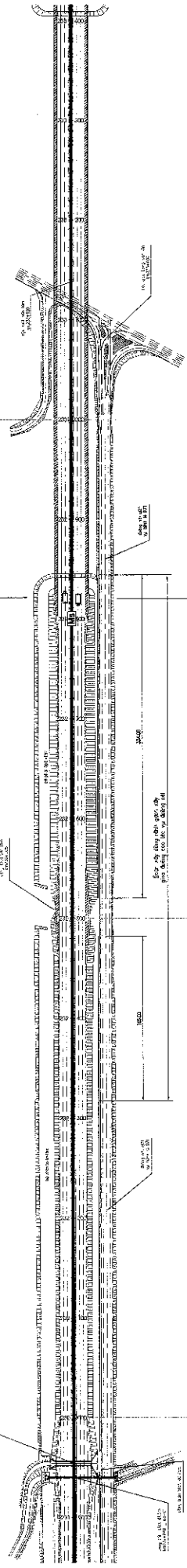
Notes:

Roadside equipment must be designed in this project.
 MS, MM, M, was designed by CADPRO.
 M1, M2, M3, T2, T3 shall be designed in this project.

CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 229+500 - KM 231+900, GIE - NINH BINH EXP.) SCALE: 1:4000	
		TITLE PREPARED BY CHECKED BY APPROVED BY	NAME SIGNATURE DATE	PACKAGE DRAWING TITLE SHEET NO.	DRAWING No. SHEET No. of

Vehicle Detector by Image (M)

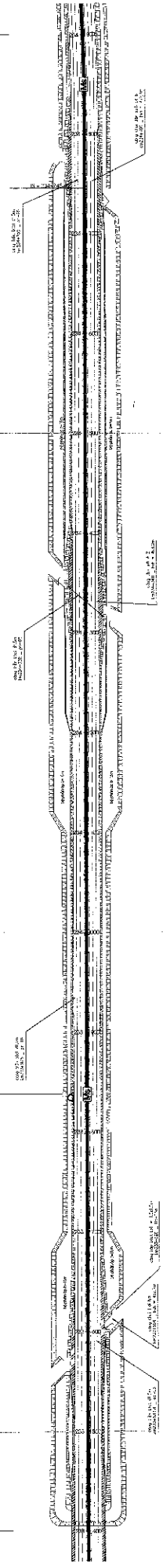
Ducts and Chamber already designed by CADPRO



Vehicle Detector by Image (M)

CSS (R)

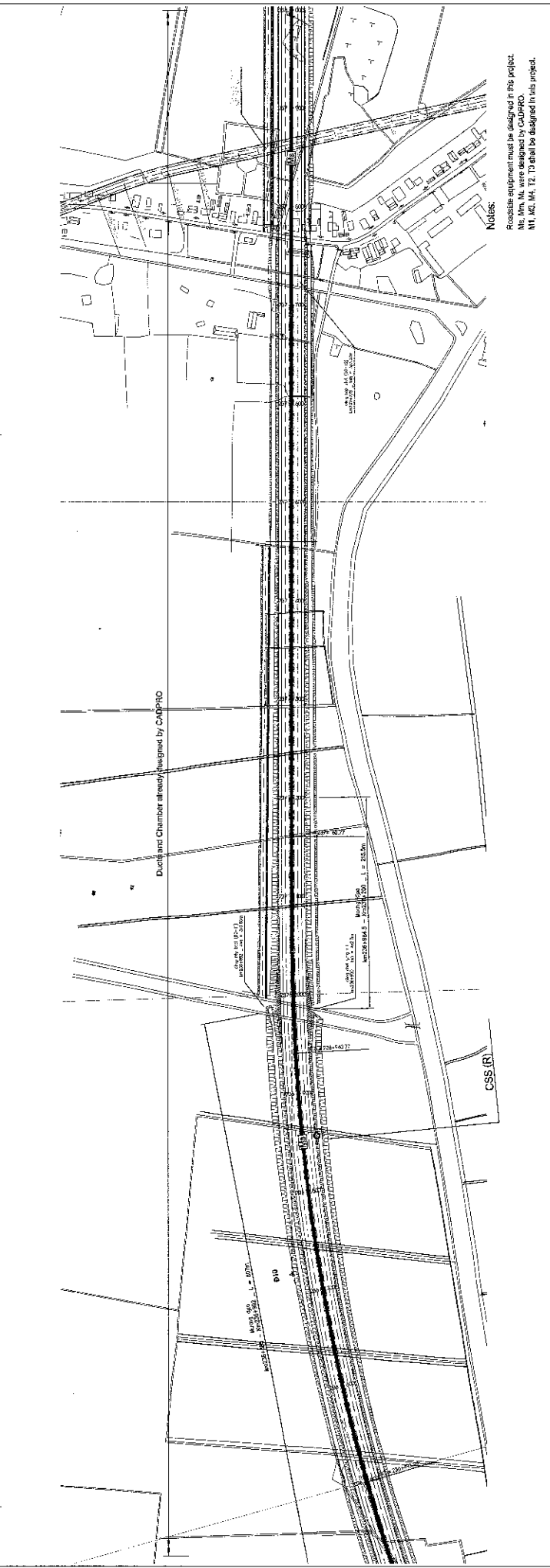
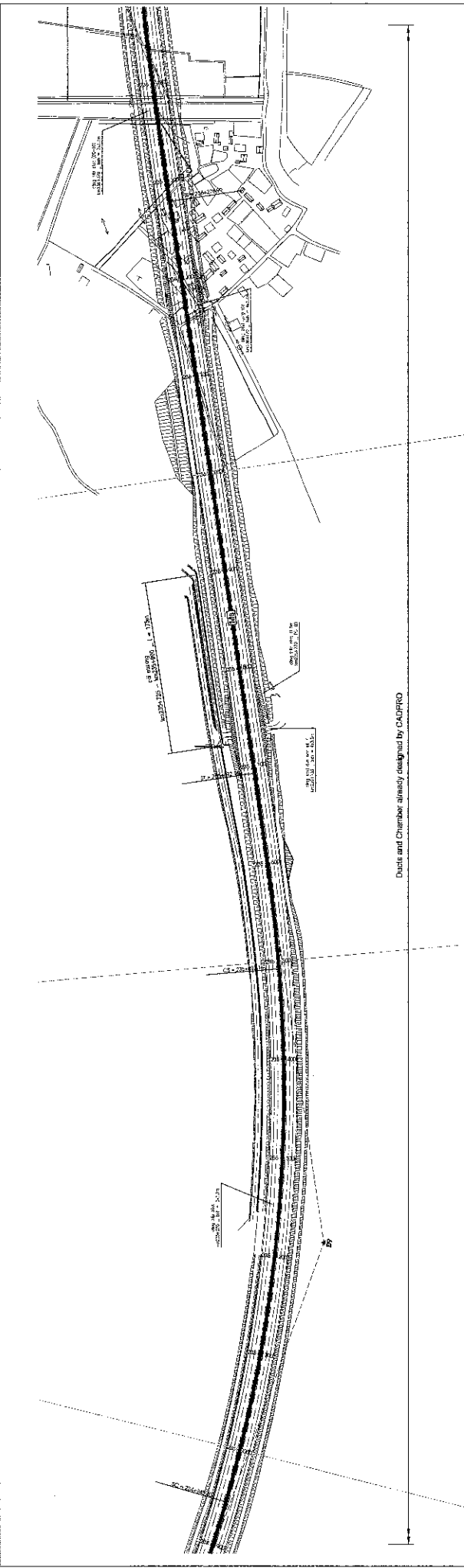
Ducts and Chamber already designed by CADPRO



Notes:
 Roadside equipment must be designed in this project.
 Ms. Km. 10, were designed by CADPRO.
 M1, M2, M4, T2, T3 shall be designed in this project.

CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 231+900 ~ KM 234+900 - GIE - NINH BINH EXP.)	
		TITLE PREPARED BY CHECKED BY APPROVED BY	NAME 	SIGNATURE 	DATE

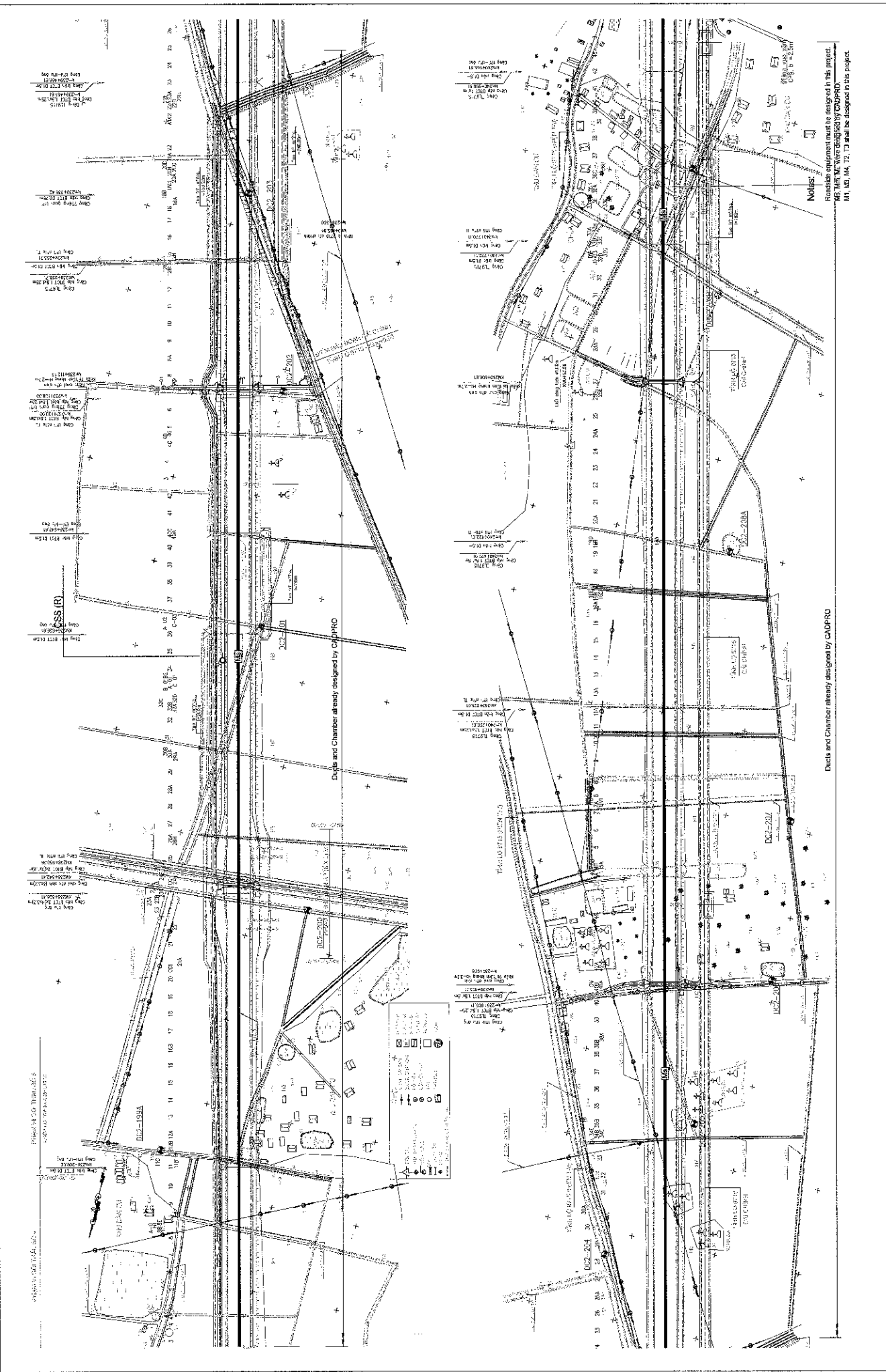
SCALE 1:1000



Notes:
Roadside equipment must be designed in this project.
Rt, Mm, Ml were assigned by CAUPRO.
Rt, Mm, Ml, T2, T3 shall be designed in this project.

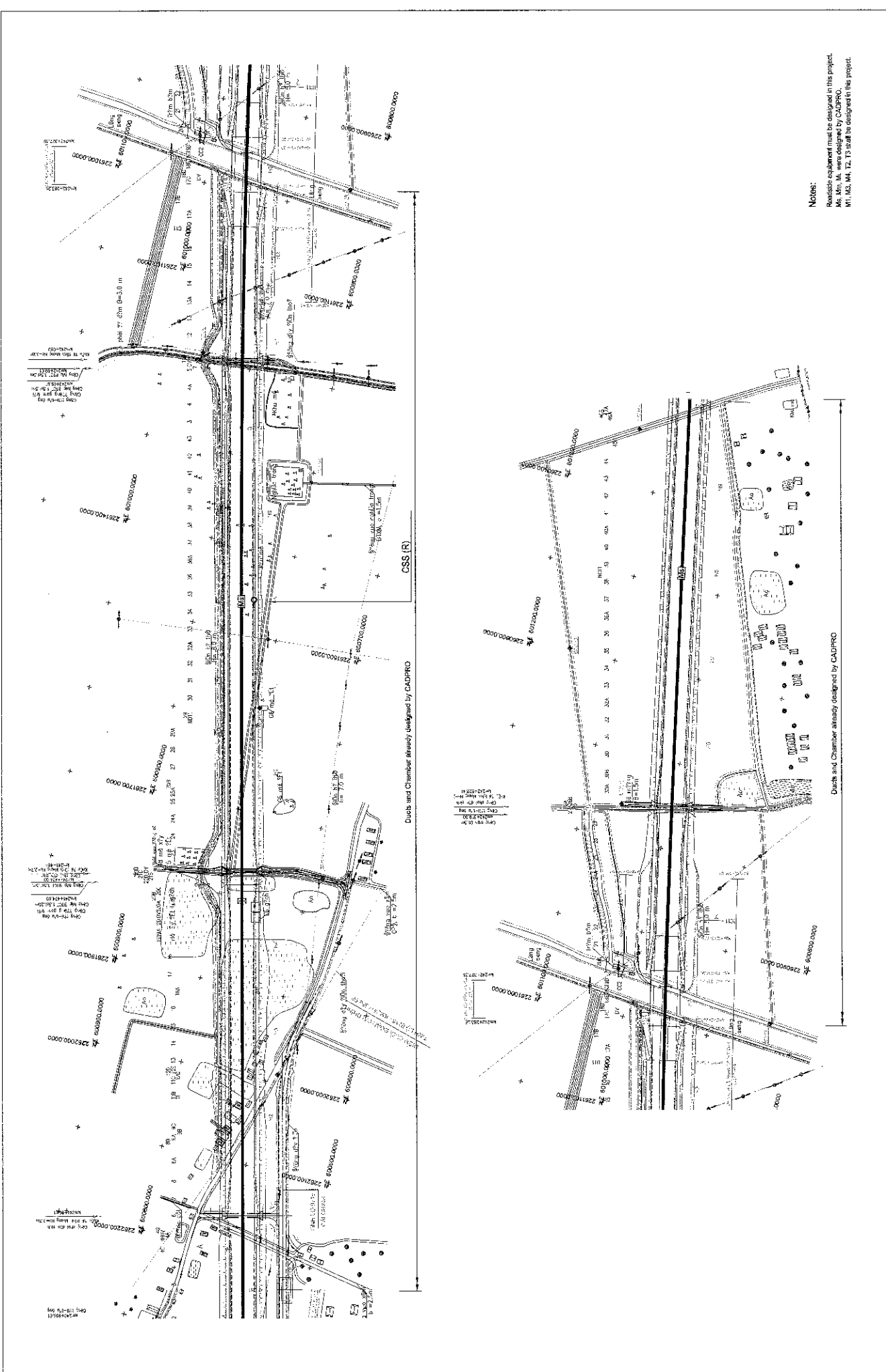
CONSULTANT		SIGNATURE		DATE	
TITLE	NAME	SIGNATURE	DATE		
PREPARED BY					
CHECKED BY					
APPROVED BY					

SOCIALIST REPUBLIC OF VIETNAM		PACKAGE	
MINISTRY OF TRANSPORT		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
ITS INTEGRATION PROJECT ON		DRAWING TITLE	
LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT	
(KM 234+800 ~ KM 238+000 GIE - NINH BINH EXP.)		SHEET No.:	
SCALE: 1:800		Sheet of	
		VIL. 1-13	
		R/W:	



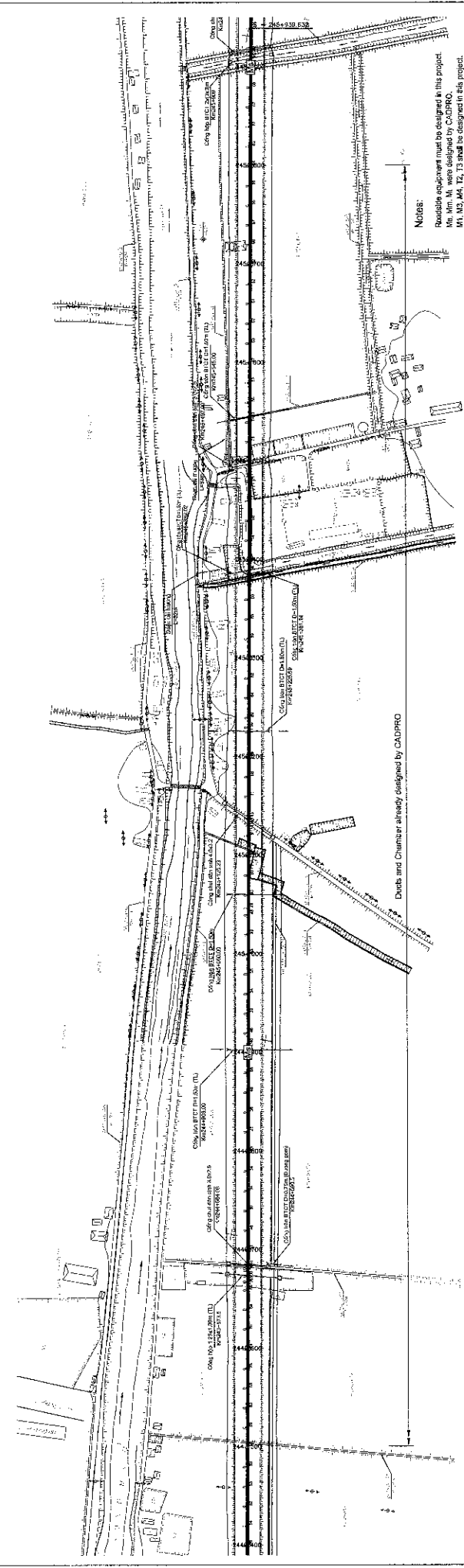
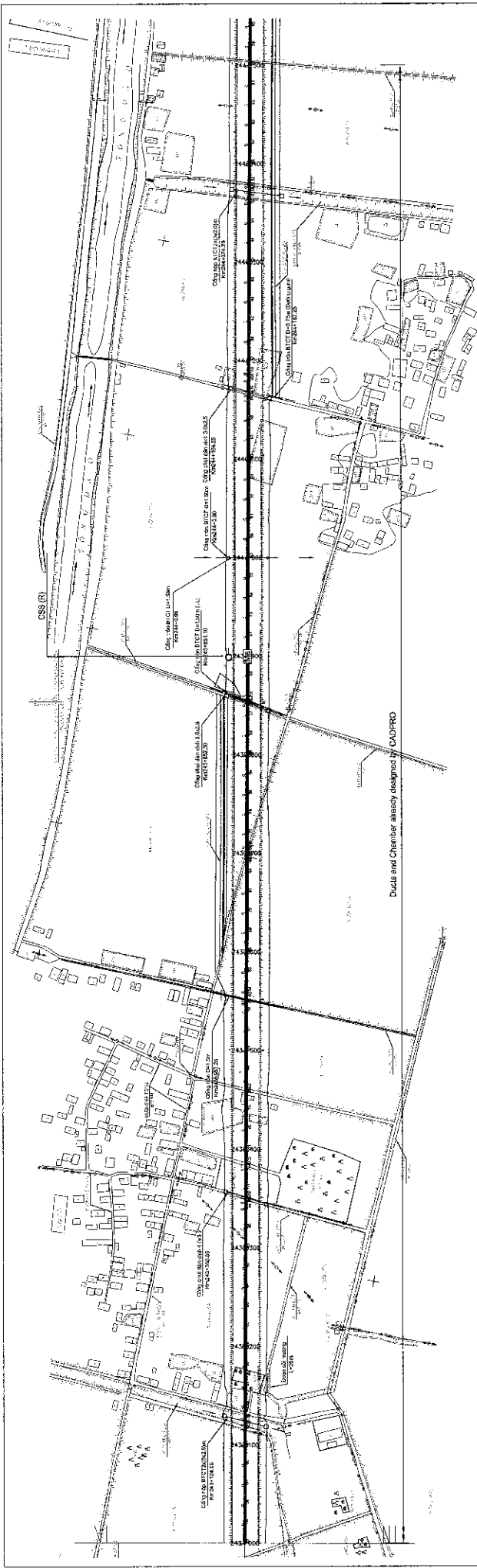
CONSULTANT		SIGNATURE		DATE	
TITLE	NAME				
PREPARED BY					
CHECKED BY					
APPROVED BY					
ORIENTAL CONSULTANTS CO., LTD		SOCIALIST REPUBLIC OF VIETNAM			
NEXCO EAST ENGINEERING CO., LTD		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM			
NIPPON KOGI CO., LTD		DRAWING TITLE			
TRANSPORTATION RESEARCH INSTITUTE CO., LTD		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT			
LANDTEC JAPAN INC.		(KM 238+000 ~ KM 241+000 - GIÉ - NINH BINH EXP.)			
		PACKAGE			
		DRAWING NO. VII.1-14			
		SHEET NO. of			

NOTES:
 1. Roadside equipment must be designed in this project
 2. All ducts and chambers must be designed in this project
 3. All ducts and chambers must be designed in this project
 4. All ducts and chambers must be designed in this project
 5. All ducts and chambers must be designed in this project
 6. All ducts and chambers must be designed in this project
 7. All ducts and chambers must be designed in this project
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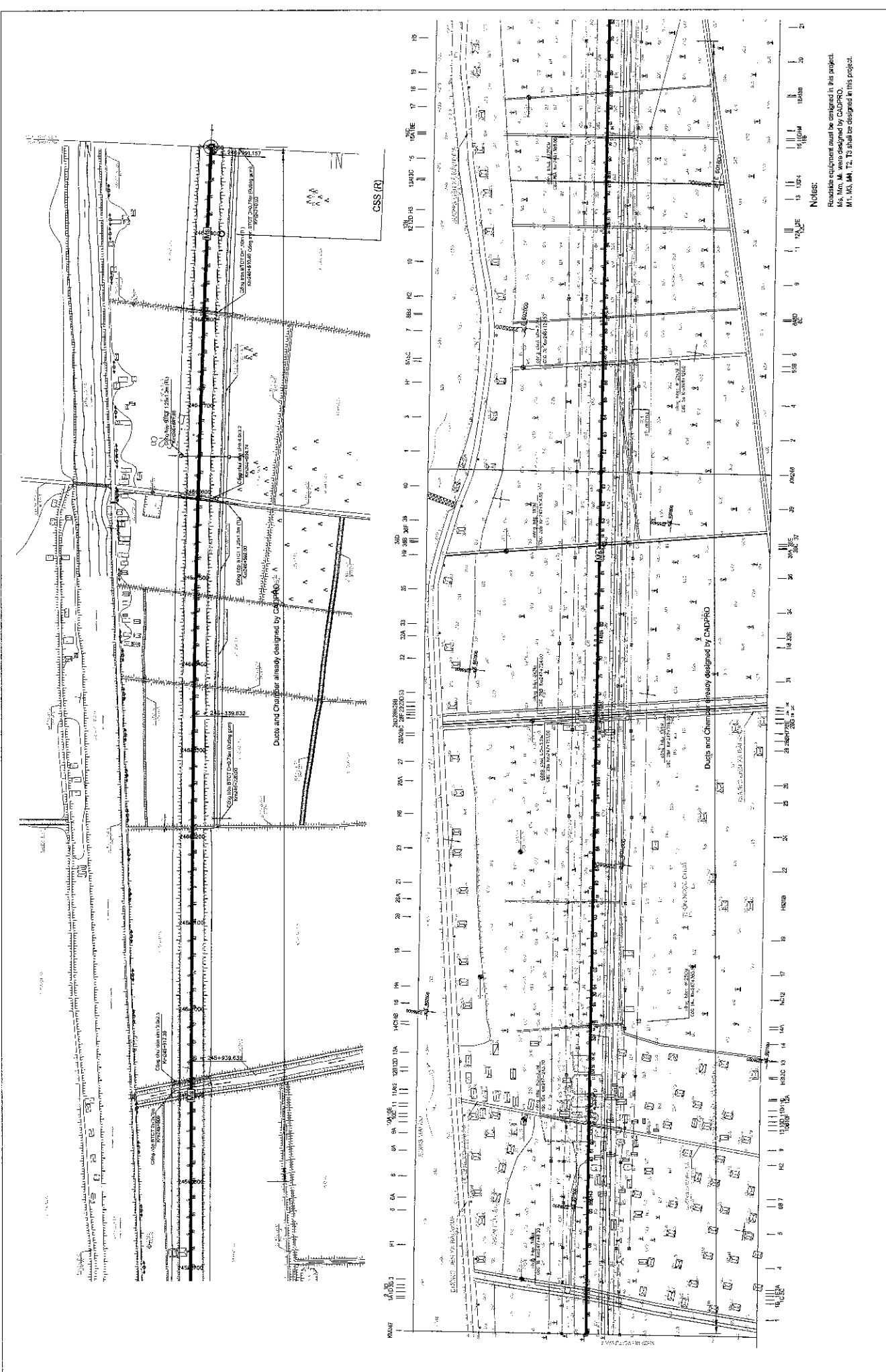
Notes:
 Roadside equipment must be designed in this project.
 Ms. Min. M. were designed by CADPRO.
 M1, M2, M4, T2, T3 shall be designed in this project.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM	
TITLE	NAME	SIGNATURE	DATE
ORIENTAL CONSULTANTS CO., LTD			
PREPARED BY			
NEXCO EAST ENGINEERING CO., LTD			
CHECKED BY			
TRANSPORTATION RESEARCH INSTITUTE CO., LTD			
APPROVED BY			
LANDTEC JAPAN INC.			
PROJECT TITLE		ITS INTEGRATION PROJECT ON	
NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING NO.	
LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT		M11 - 15	
(KM 241+000 - KM 243+000, GIE - NINH BINH EXP.)		SHEET No.	
		Sheet of	
		Scale: 1:800	



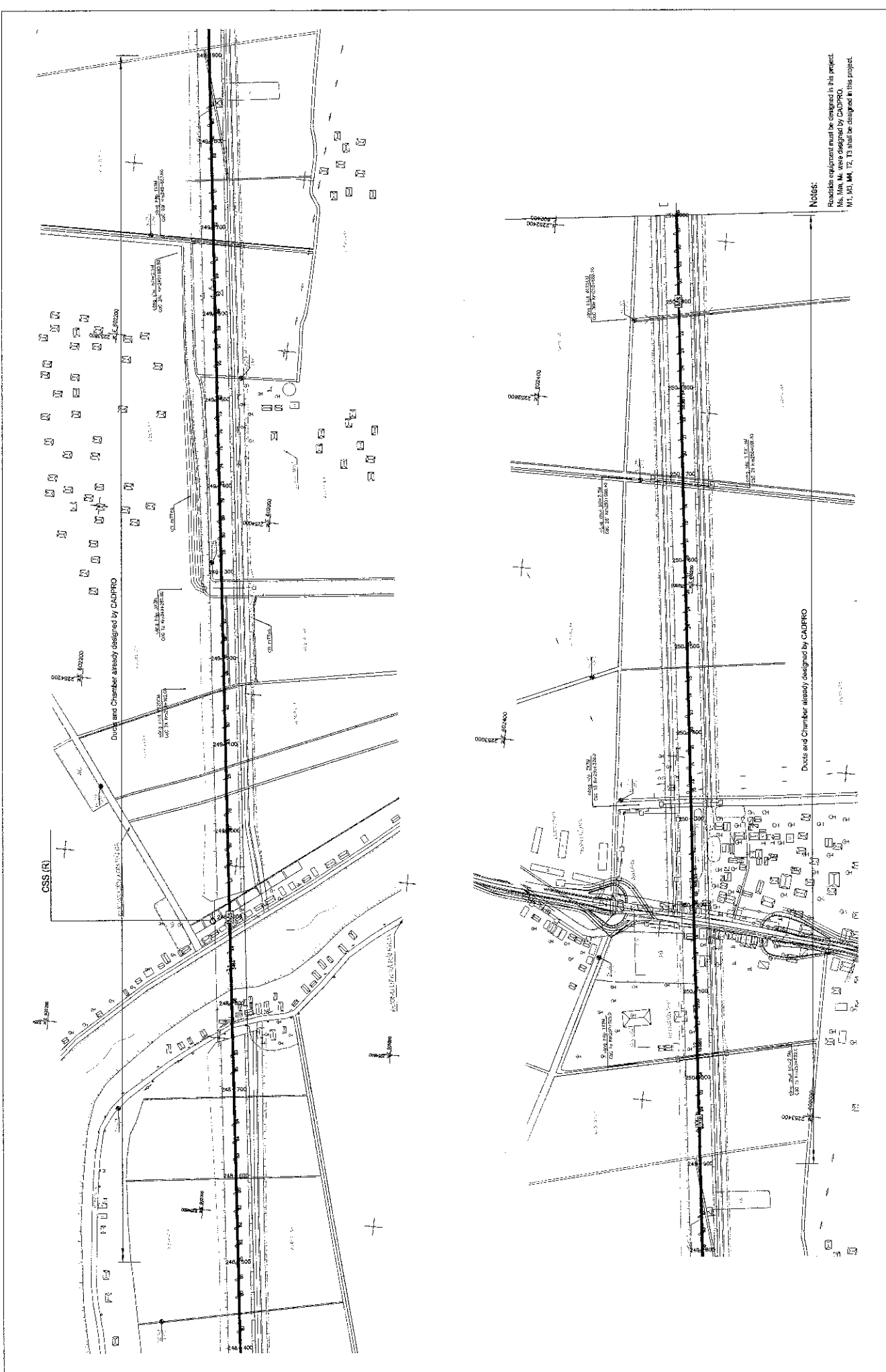
NOTES:
 Roadside equipment must be designed in this project
 Mr. Min. M. were designed by CADPRO.
 M1, M2, M4, T2, T3 and to designed in this project.

CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
TITLE	NAME	SIGNATURE	DATE	DRAWING TITLE	
PREPARED BY				LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT	
CHECKED BY				(KM 243+000 - KM 245+800 - GIE - NINH BINH EXP.)	
APPROVED BY				PACKAGE	SCALE 1:1000
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.			MINISTRY OF TRANSPORT		
			PROJECT NO. VIL 1-18		
			SHEET NO. 5		
			REV. 0		

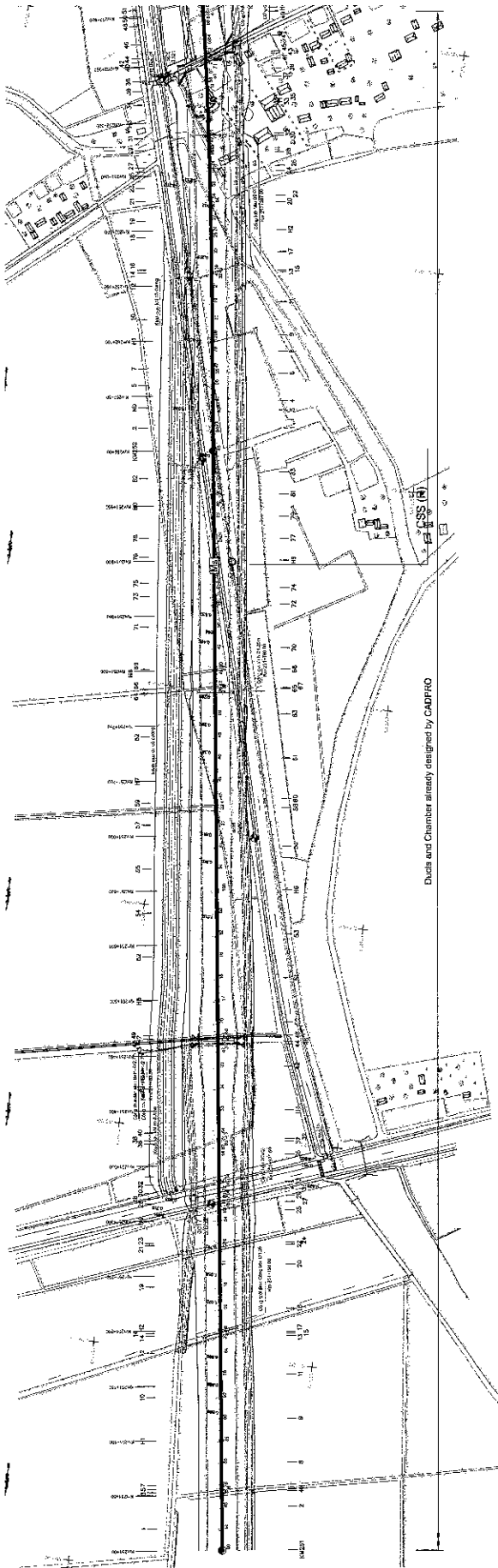


Notes:
 Roadside equipment must be designed in this project.
 Ms. Min. M. were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

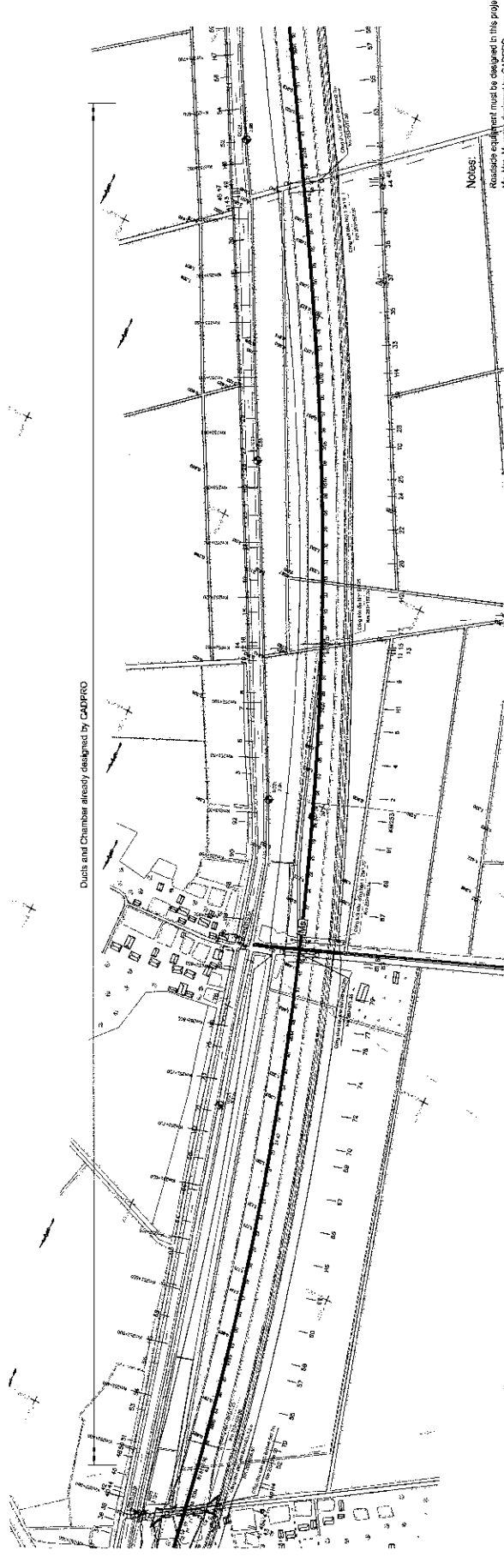
CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO. 3 & NORTHERN AREA OF VIETNAM		PACKAGE
TITLE	NAME	SIGNATURE	DATE	DRAWING TITLE	DRAWING NO.	VI.1-17
PREPARED BY				LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 2+45-500 - KM 2+45-500, GIE - NINH BINH EXP.)	SHEET NO.	
CHECKED BY					SCALE	1:400
APPROVED BY						
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDEC JAPAN INC.				MINISTRY OF TRANSPORT		



CONSULTANT		TITLE		NAME		SIGNATURE		DATE	
		ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		PREPARED BY		CHECKED BY		APPROVED BY	
SOCIALIST REPUBLIC OF VIETNAM		MINISTRY OF TRANSPORT		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING TITLE		DRAWING No.	
		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 248+500 - KM 251+000 , GE - NINH BINH EXP.)		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 248+500 - KM 251+000 , GE - NINH BINH EXP.)		SHEET No.	
								VIII 1 - 18	
								Sheet of	
								Scale 1:4000	



Ducts and Chambers already designed by CADIPRO



Ducts and Chambers already designed by CADIPRO

Notes:
 Roadside equipment must be designed in this project.
 M. 101, M. 102, M. 103, M. 104, M. 105, M. 106, M. 107, M. 108, M. 109, M. 110, M. 111, M. 112, M. 113, M. 114, M. 115, M. 116, M. 117, M. 118, M. 119, M. 120, M. 121, M. 122, M. 123, M. 124, M. 125, M. 126, M. 127, M. 128, M. 129, M. 130, M. 131, M. 132, M. 133, M. 134, M. 135, M. 136, M. 137, M. 138, M. 139, M. 140, M. 141, M. 142, M. 143, M. 144, M. 145, M. 146, M. 147, M. 148, M. 149, M. 150, M. 151, M. 152, M. 153, M. 154, M. 155, M. 156, M. 157, M. 158, M. 159, M. 160, M. 161, M. 162, M. 163, M. 164, M. 165, M. 166, M. 167, M. 168, M. 169, M. 170, M. 171, M. 172, M. 173, M. 174, M. 175, M. 176, M. 177, M. 178, M. 179, M. 180, M. 181, M. 182, M. 183, M. 184, M. 185, M. 186, M. 187, M. 188, M. 189, M. 190, M. 191, M. 192, M. 193, M. 194, M. 195, M. 196, M. 197, M. 198, M. 199, M. 200, M. 201, M. 202, M. 203, M. 204, M. 205, M. 206, M. 207, M. 208, M. 209, M. 210, M. 211, M. 212, M. 213, M. 214, M. 215, M. 216, M. 217, M. 218, M. 219, M. 220, M. 221, M. 222, M. 223, M. 224, M. 225, 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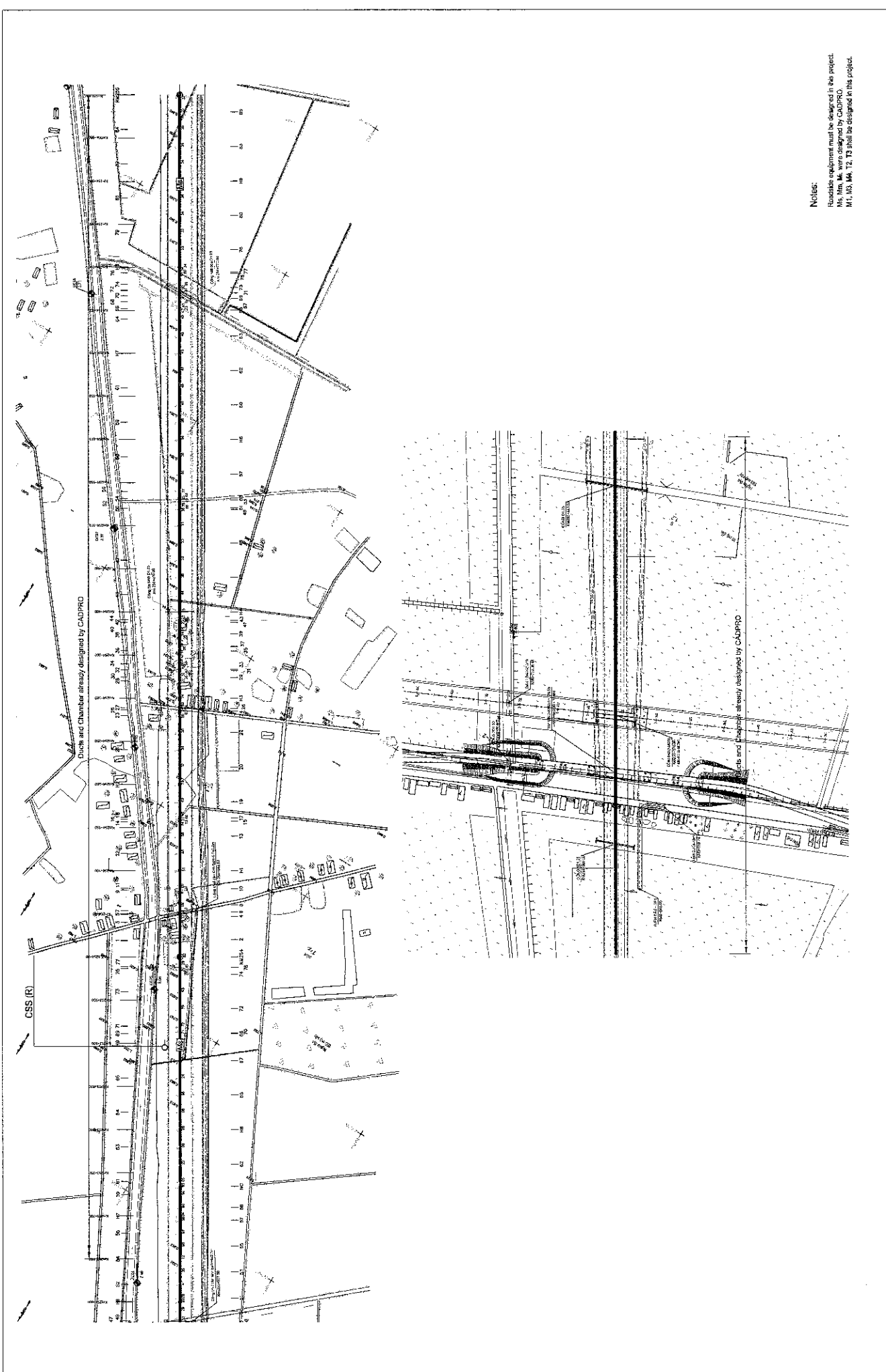
SOCIALIST REPUBLIC OF VIETNAM

CONSULTANT
 ORIENTAL CONSULTANTS CO., LTD
 NEXCO EAST ENGINEERING CO., LTD
 NIPPON KOEI CO., LTD
 TRANSPORTATION RESEARCH INSTITUTE CO., LTD
 LANDTEC JAPAN INC.

TITLE	NAME	SIGNATURE	DATE
PREPARED BY			
CHECKED BY			
APPROVED BY			

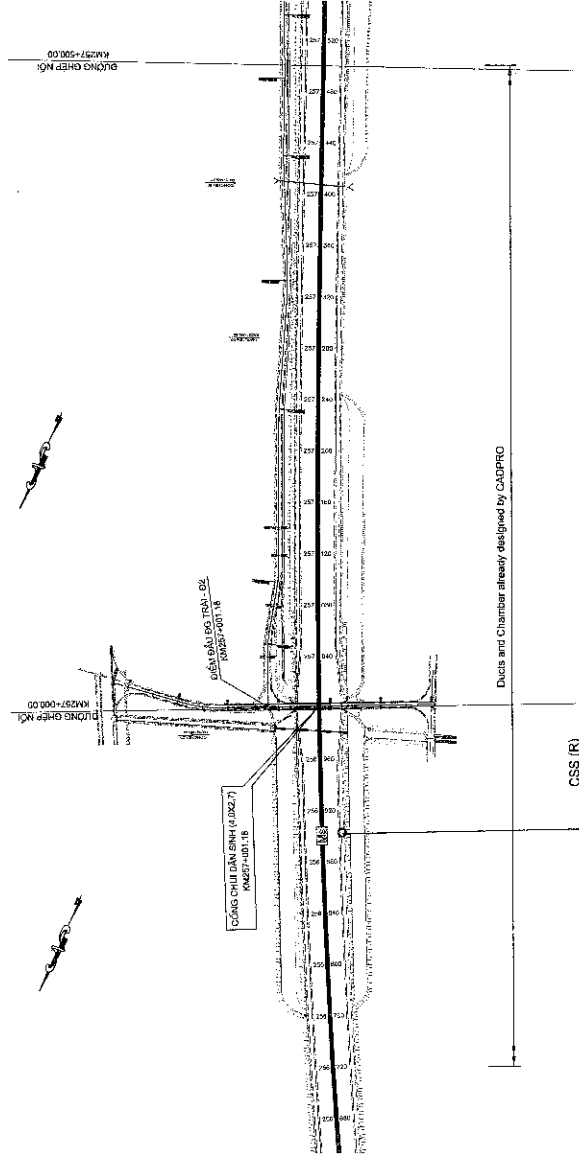
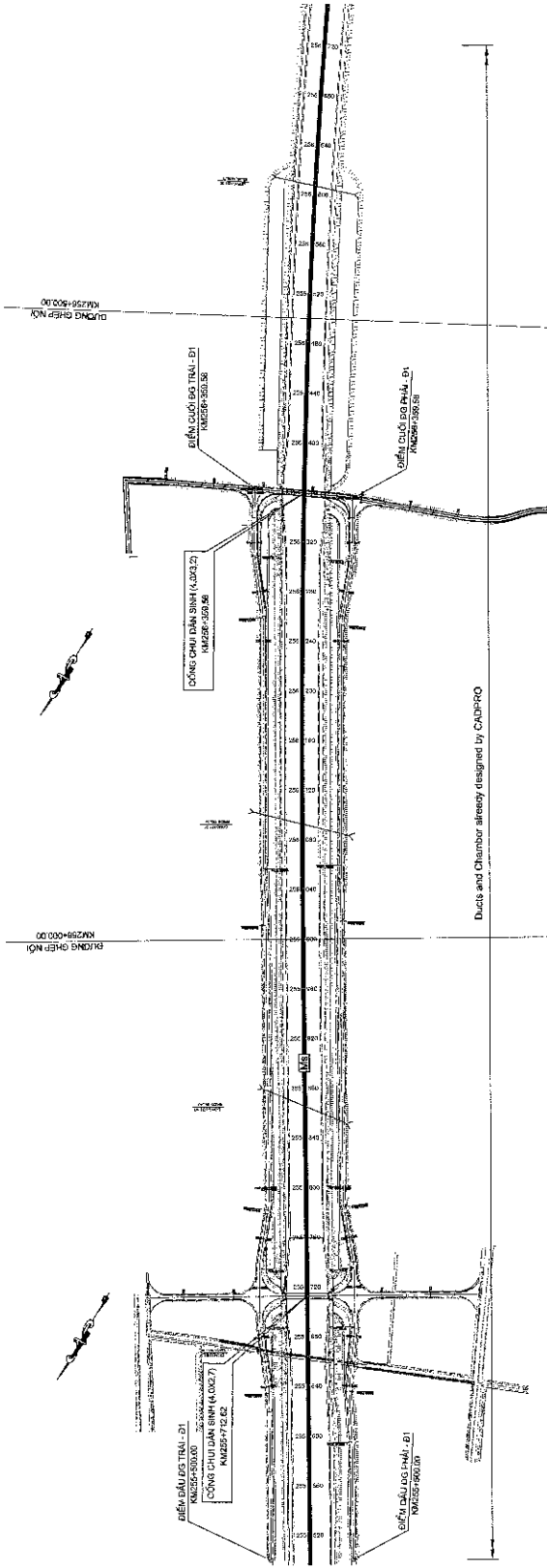
MINISTRY OF TRANSPORT

ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 DRAWING TITLE
 LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT
 (KM 251+000 ~ KM 253+650 - GIE - NINH BINH EXP.)
 SCALE: 1:800
 SHEET No. _____ of _____
 DRAWING No. V18.1-19
 Rev. 1-19



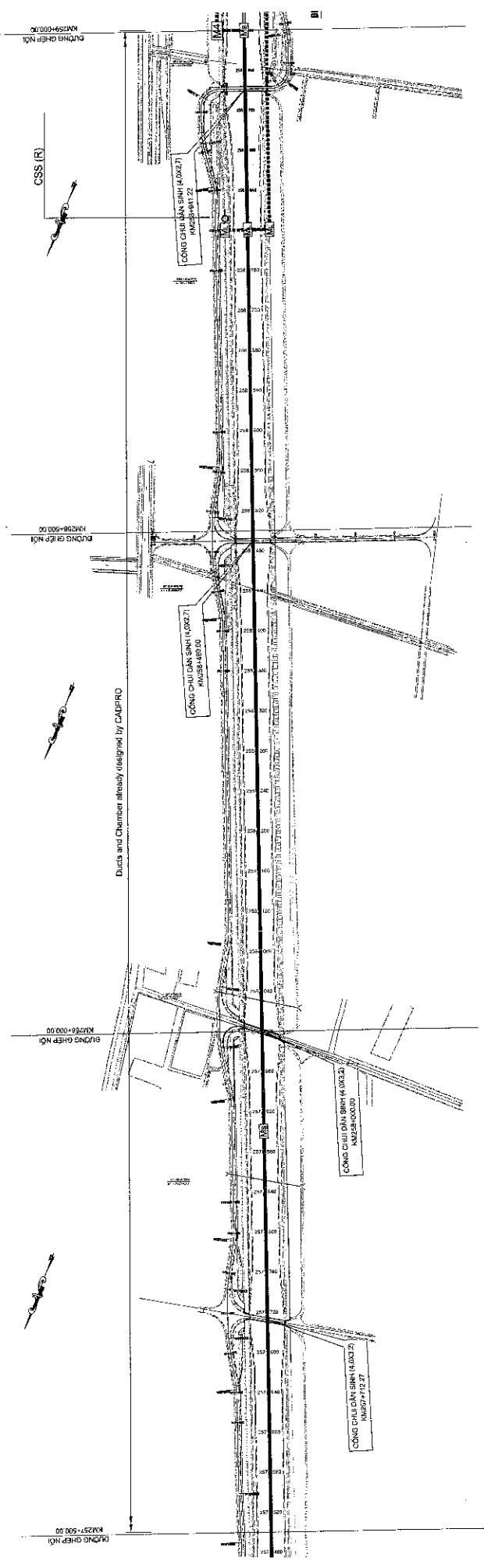
Notes:
 Roadside equipment must be designed in this project.
 Ms. Min. Mt. were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT		SIGNATURE		DATE	
TITLE	NAME				
PREPARED BY					
CHECKED BY					
APPROVED BY					
ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT			
NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM.253+650 ~ KM.255+500 , GIE - NINH BINH EXP.)		PACKAGE		DRAWING TITLE	
		ITS INTEGRATION PROJECT ON		VIII.1-23	
		SHEET No.		Sheet of	
		SCALE: 1:4000		Date	



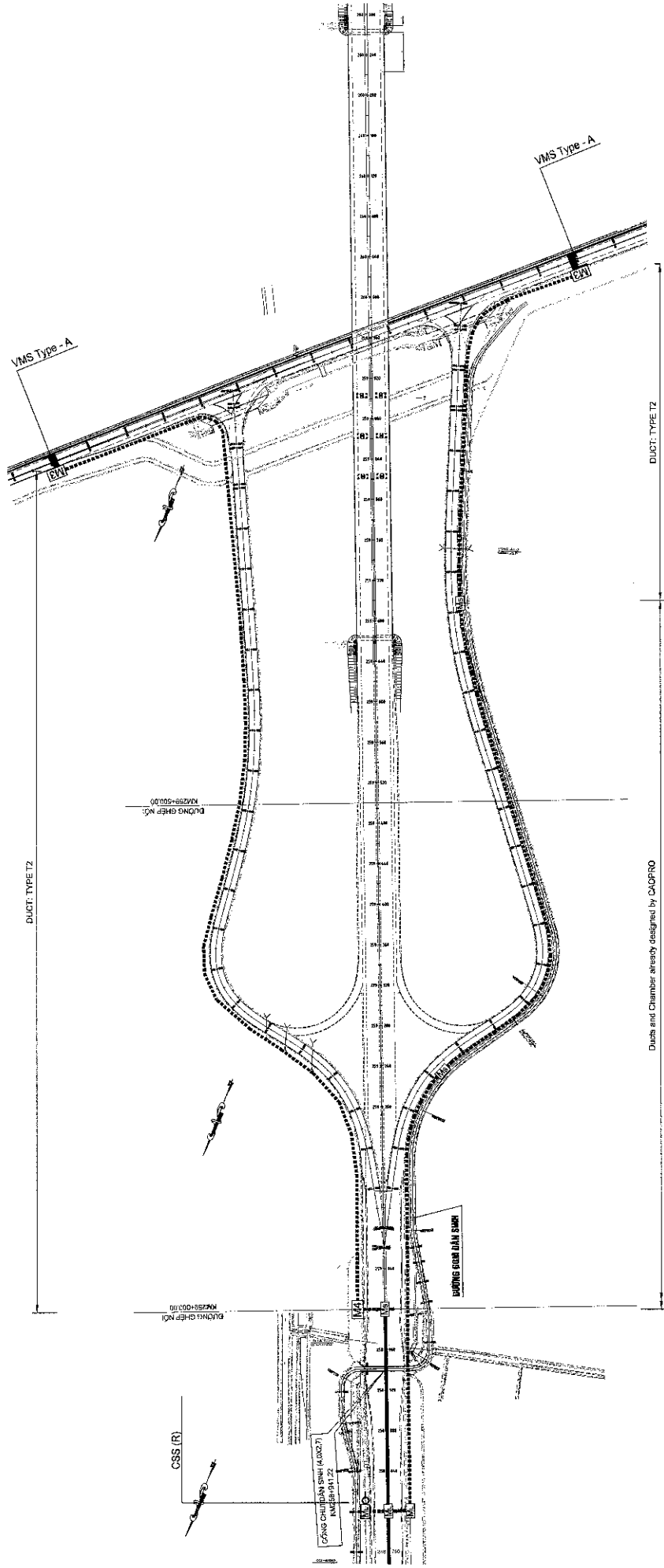
Notes:
 Roadside equipment must be designed in this project.
 Ms. Mm. Mm. were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT		SIGNATURE		DATE	
ORIENTAL CONSULTANTS CO., LTD					
NEXCO EAST ENGINEERING CO., LTD		PREPARED BY			
TRANSPORTATION RESEARCH INSTITUTE CO., LTD		CHECKED BY			
LANDTEC JAPAN INC.		APPROVED BY			
MINISTRY OF TRANSPORT		SOCIALIST REPUBLIC OF VIETNAM			
PACKAGE		ITS INTEGRATION PROJECT ON			
DRAWING NO.		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM			
SHEET NO.		LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT			
Rev.		(KM 255+500 - KM 257+500, 01E - NINH BINH EXP.)			
Scale		SCALE: 1:500			



Notes:
 Roadside equipment must be designed in this project.
 M8, M9, M10 were designed by CADPRO.
 M1, M3, M4, T2, T3 shall be designed in this project.

CONSULTANT ORIENTAL CONSULTANTS CO., LTD NEXCO EAST ENGINEERING CO., LTD NIPPON KOEI CO., LTD TRANSPORTATION RESEARCH INSTITUTE CO., LTD LANDTEC JAPAN INC.		SOCIALIST REPUBLIC OF VIETNAM MINISTRY OF TRANSPORT		ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM BRANCH TYPE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 257+500 - KM 259+000 - GIE - NINH BINH EXP.)		PACKAGE: DRAWING NO.: VII - 22 SHEET NO.: Sheet of
		TITLE PREPARED BY CHECKED BY APPROVED BY		NAME SIGNATURE DATE		SCALE: 1:400

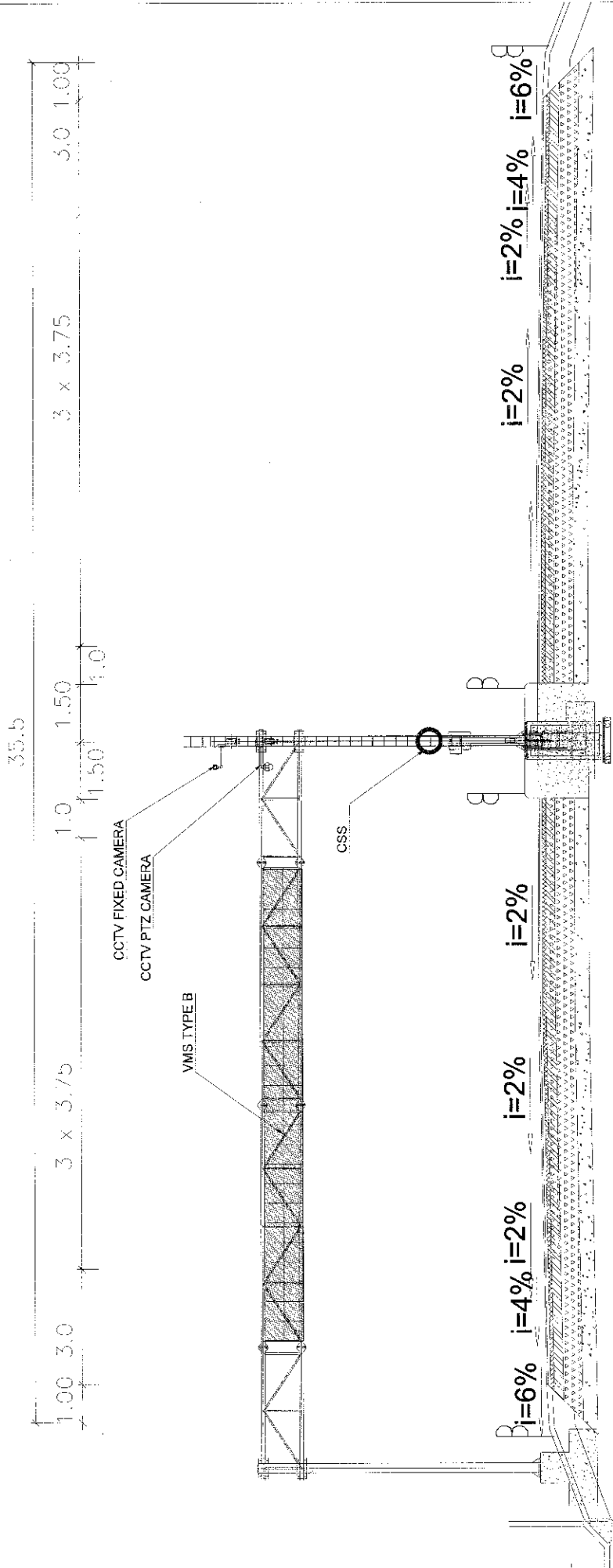


Ducts and Chambers already designed by CAOPRO

Notes:
 Roadside equipment must be installed in this Project.
 Ms. Min. M. were designed by CAOPRO.
 M1, M2, M3, T2, T3 shall be designed in this project.

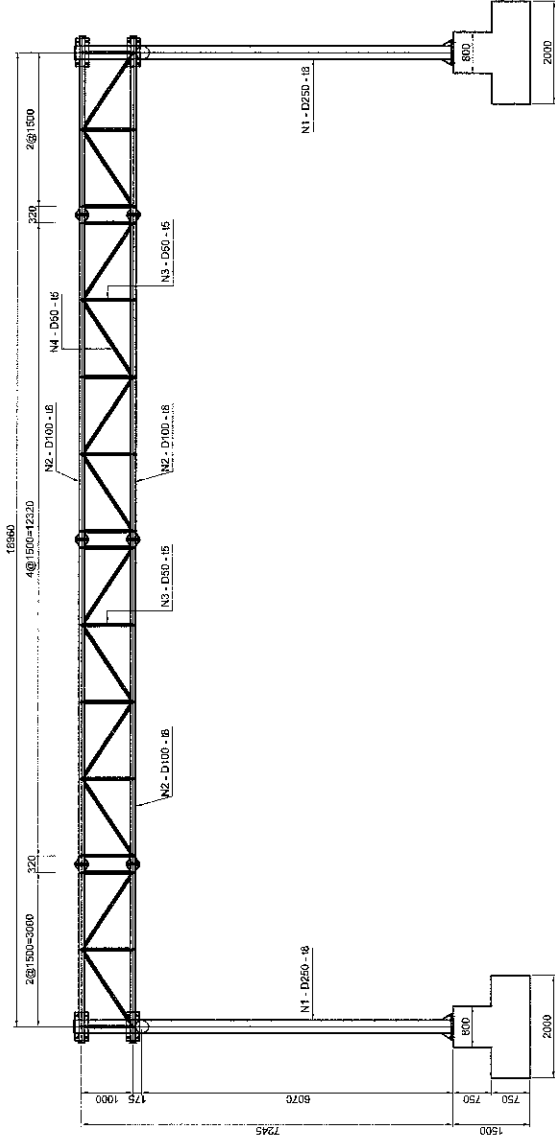
CONSULTANT				SOCIALIST REPUBLIC OF VIETNAM			
				MINISTRY OF TRANSPORT			
ORIENTAL CONSULTANTS CO., LTD		NEXCO EAST ENGINEERING CO., LTD		TRANSPORTATION RESEARCH INSTITUTE CO., LTD		LANDTEC JAPAN INC.	
TITLE	NAME	SIGNATURE	DATE	ITS INTEGRATION PROJECT ON NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM			
PREPARED BY				DRAWING TITLE LAYOUT PLAN OF ROADSIDE EQUIPMENT & COMMUNICATION DUCT (KM 259+000 ~ KM 260+000 , GE - NINH BINH EXP.)			
CHECKED BY				PACKAGE			
APPROVED BY				DRAWING No. V18 1-23			
				SHEET No. Sheet 04			
				SCALE: 1:4000			

TYPICAL CROSS SECTION

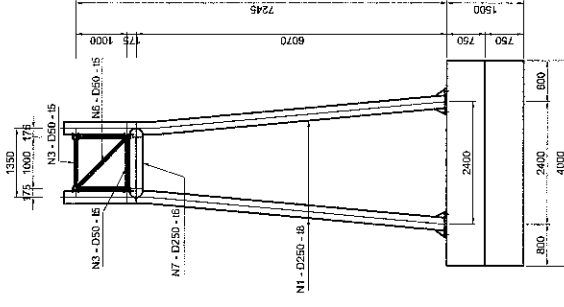


CONSULTANT		SOCIALIST REPUBLIC OF VIETNAM		ITS INTEGRATION PROJECT ON	
ORIENTAL CONSULTANTS CO., LTD		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM		DRAWING TITLE	
NEXCO EAST ENGINEERING CO., LTD		MINISTRY OF TRANSPORT		TYPICAL CROSS SECTION OF EQUIPMENT ARRANGEMENT	
NIPPON KOEI CO., LTD				OF GIE - NINH BINH EXP.	
TRANSPORTATION RESEARCH INSTITUTE CO., LTD				SCALE: 1:20	
LANDTEC JAPAN INC.				DRAWING No.	
				Sheet	
				No.	
				Date	
				Prepared by	
				Checked by	
				Approved by	

MAIN VIEW
SCALE: 1/100



SIDE VIEW
SCALE: 1/100



GENERAL VIEW
SCALE: 1/200

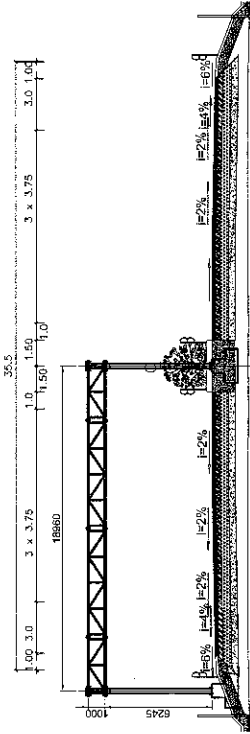


TABLE OF QUANTITY

Element	Type	Weight of element (kg)	Number of element	Total weight (kg)	Notes
N1	Tube D250 t=6 L=7454	352.83	4	1411.31	Main column (upper part)
N2	Tube D100 t=6 L=15550	255.88	4	1023.52	Top chord
N3	Tube D50 t=5 L=1039	5.65	64	361.76	Bottom chord
N4	Tube D50 t=5 L=1803	10.00	43	420.00	Vertical web bar
N5	Tube D50 t=6 L=1474	7.85	18	141.30	Diagonal bracing
N6	Tube D250 t=6 L=1380	48.74	2	97.48	Diagonal bracing
Total steel				3971.36	
Concrete M200				15.80m ³ assumed	

NOTES:

- Dimensions are in millimeter.
- Structural steel conforms ASTM A-708M Grade 250 or equivalence with:
Yield strength: Fy = 250 MPa
Tensile strength: Fu = 400 MPa
- Concrete structure equivalence with:
Concrete strength: Fc = 18MPa
Reinforcing Bar (CS-300-10) : Yield strength: Fy = 300 MPa
Tensile strength: Fu = 450 MPa
- The depth of foundation is just an estimated value.
The final depth of foundation shall be based on the real soil condition.
These structure should be redesigned to meet site condition.
- In case without any recommendation about staking in details, all metal member exposed to weather or soil must be staked with amount of 50g/m².

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TITLE	NAME	SIGNATURE	DATE
PREPARED BY			
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SOCIALIST REPUBLIC OF VIETNAM
MINISTRY OF TRANSPORT

ITS INTEGRATION PROJECT ON
NEW NATIONAL HIGHWAY NO.3 IN NORTHERN AREA OF VIETNAM
GIÉ - NINH BINH EXPRESSWAY
DETAIL OF GANTRY AT EARTHWORK SECTION

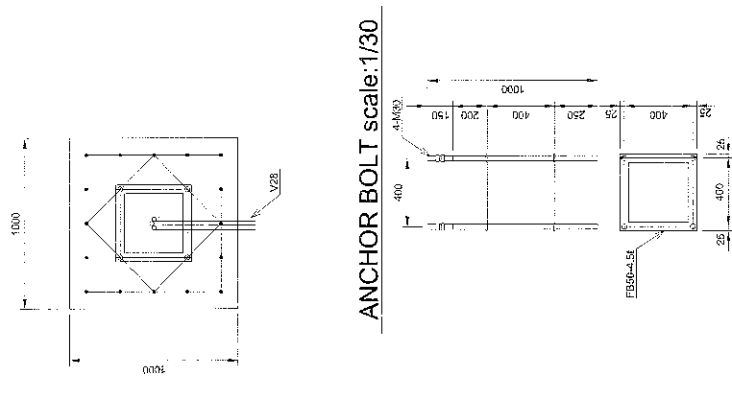
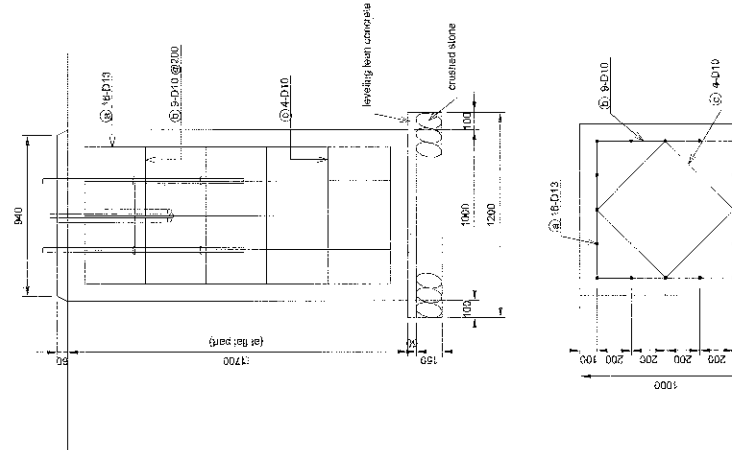
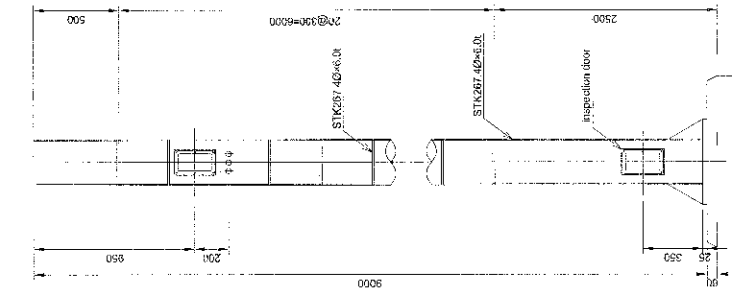
PACKAGE:
DRAWING NO:
SHEET NO:
VIII.2-02
Sheet of

SCALE: VARIOUS

SUPPORT POLE FOR CAMERA

FOUNDATION scale: 1/30

SUPPORT POLE FOR CAMERA scale: 1/30

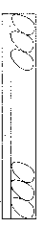


Volume table of support pole

Material	Dimension	Weight (kg)
PMa Steel	287.40x60x5	948.3
Strip Steel	RB13up	9.4
Base Steel	Z81	48.2
Base Steel	L21	9.0
Total weight		416

Volume table of foundation

Notes	class	unit	volume	weight
concrete	M200	m ³	1.700	2,220
formwork	E15	m ²	6,880	8,880
rebar	D16	kg	29.85	3,872
rebar	D10	kg	26.11	3,394
anchor bolt	MSK200x100x4	set	4.5	4.5
concrete beam	VE2B	m ³	0.218	0.278
concrete beam	VE2B	m ³	0.072	0.092
leveling beam concrete		m ³	7.660	8,461
excavation		m ³	5.612	6,220
backfill		m ³	1.965	2,272
disposal of waste soil		m ³		



Volume table of rebar at 1st part

type	shape	length (m)	volume	weight (kg)
a	D13	1.80	16	28.66
b	D10	3.43	9	17.29
c	D10	2.48	4	5.58

Volume table of rebar at embankment part

type	shape	length (m)	volume	weight (kg)
a	D13	2.33	16	36.82
b	D10	3.43	11	21.13
c	D10	2.49	4	5.58

*1 Structural steel conforms ASTM A-709M Grade 250 or equivalent with:
 Yield strength: F_y = 250 MPa
 Tensile strength: F_t = 420 MPa
 *2 Concrete structure equivalence with:
 Concrete strength: F_c' = 18Mpa
 Reinforcing Bar (CS30C-11): Yield strength: F_y = 300 MPa
 Tensile strength: F_t = 420 MPa

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SOCIALIST REPUBLIC OF VIETNAM

MINISTRY OF TRANSPORT

ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 GIÉ-NINH BINH EXPRESSWAY
 SUPPORT POLE FOR CAMERA

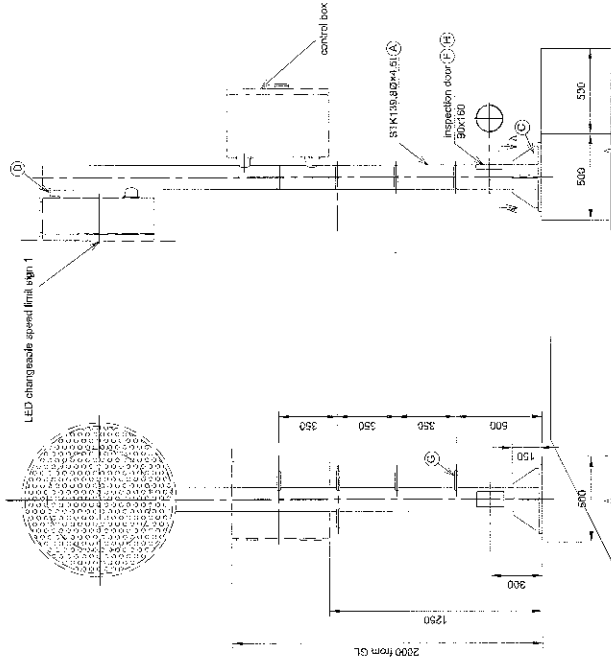
DRAWN BY: [Signature]
 SHEET NO. 4
 SCALE: 1/30
 PROJECT No. VIII.2-03

SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN

SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN scale: 1/30
(AT ENDS)

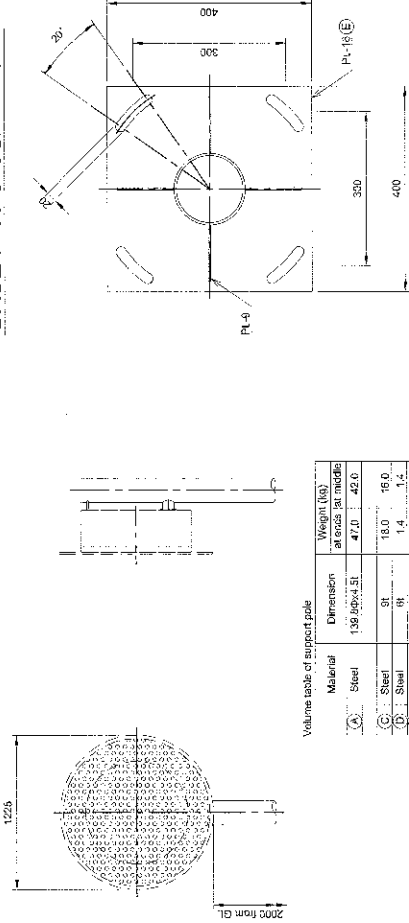
FOUNDATION scale: 1/30

ANCHOR BOLT scale: 1/10



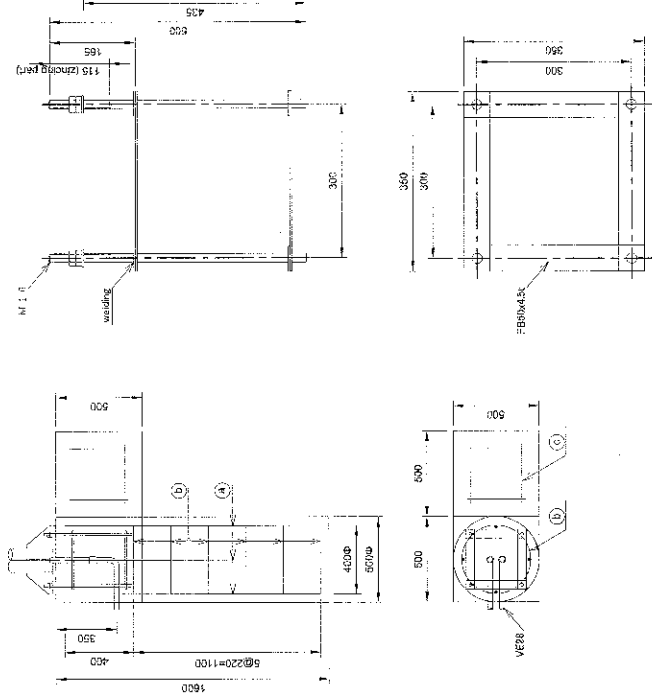
(AT MIDDLE)

BASE PLATE SCALE: 1/10



Volume table of support pole

Material	Dimension	Weight (kg)
Steel	130 (Ø200x150)	47.0
Steel	Ø1	18.0
Steel	Ø2	1.4
Steel	Ø3	20.0
Steel	Ø4	1.4
Steel	Ø5	4.0
Steel	Ø6	1.0
Steel	Ø7	1.0
Steel	Ø8	1.0
Steel	Ø9	1.0
Steel	Ø10	1.0
Steel	Ø11	1.0
Steel	Ø12	1.0
Steel	Ø13	1.0
Steel	Ø14	1.0
Steel	Ø15	1.0
Steel	Ø16	1.0
Steel	Ø17	1.0
Steel	Ø18	1.0
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Steel	Ø73	1.0
Steel	Ø74	1.0
Steel	Ø75	1.0
Steel	Ø76	1.0
Steel	Ø77	1.0
Steel	Ø78	1.0
Steel	Ø79	1.0
Steel	Ø80	1.0
Steel	Ø81	1.0
Steel	Ø82	1.0
Steel	Ø83	1.0
Steel	Ø84	1.0
Steel	Ø85	1.0
Steel	Ø86	1.0
Steel	Ø87	1.0
Steel	Ø88	1.0
Steel	Ø89	1.0
Steel	Ø90	1.0
Steel	Ø91	1.0
Steel	Ø92	1.0
Steel	Ø93	1.0
Steel	Ø94	1.0
Steel	Ø95	1.0
Steel	Ø96	1.0
Steel	Ø97	1.0
Steel	Ø98	1.0
Steel	Ø99	1.0
Steel	Ø100	1.0



Rebar processing table of foundation

type	shape	volume at unanchoring
a	D13	4
b	D10	6
c	D13	12

*c is used for maintenance.

Volume table of foundation

item	class	unit	volume at unanchoring
concrete	C13	m ³	0.405
rebar	D10	kg	9.719
rebar	D13	kg	3.550
formwork	D10	m ²	0.216
formwork	D13	m ²	0.216
formwork	VE23	mm	1
formwork	VE23	mm	2

- *1 Structural steel conforms ASTM A709M Grade 250 or equivalent with:
 - Yield strength: $F_y = 250$ MPa
 - Tensile strength: $F_u = 420$ MPa
- *2 Concrete air-void equivalent ratio:
 - Concrete strength: $F_c = 18$ MPa
 - Reinforcing bar (CE300-9): Tensile strength: $F_t = 549$ MPa
 - Reinforcing bar: $F_t = 480$ MPa
- *3 In case without any recommendation about welding details, all metal parts are welded with E70T-1 electrode.
- *4 The design of this structure is based on the amount of 500g/m².
- *5 These structures should be redesigned to meet site condition.

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SOCIALIST REPUBLIC OF VIETNAM

MINISTRY OF TRANSPORT

**ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM**

GIE - NINH BINH EXPRESSWAY
 SUPPORT POLE FOR CHANGEABLE SPEED LIMIT SIGN

SCALE: Vertical

Sheet 01 of 01

VIII.2-04

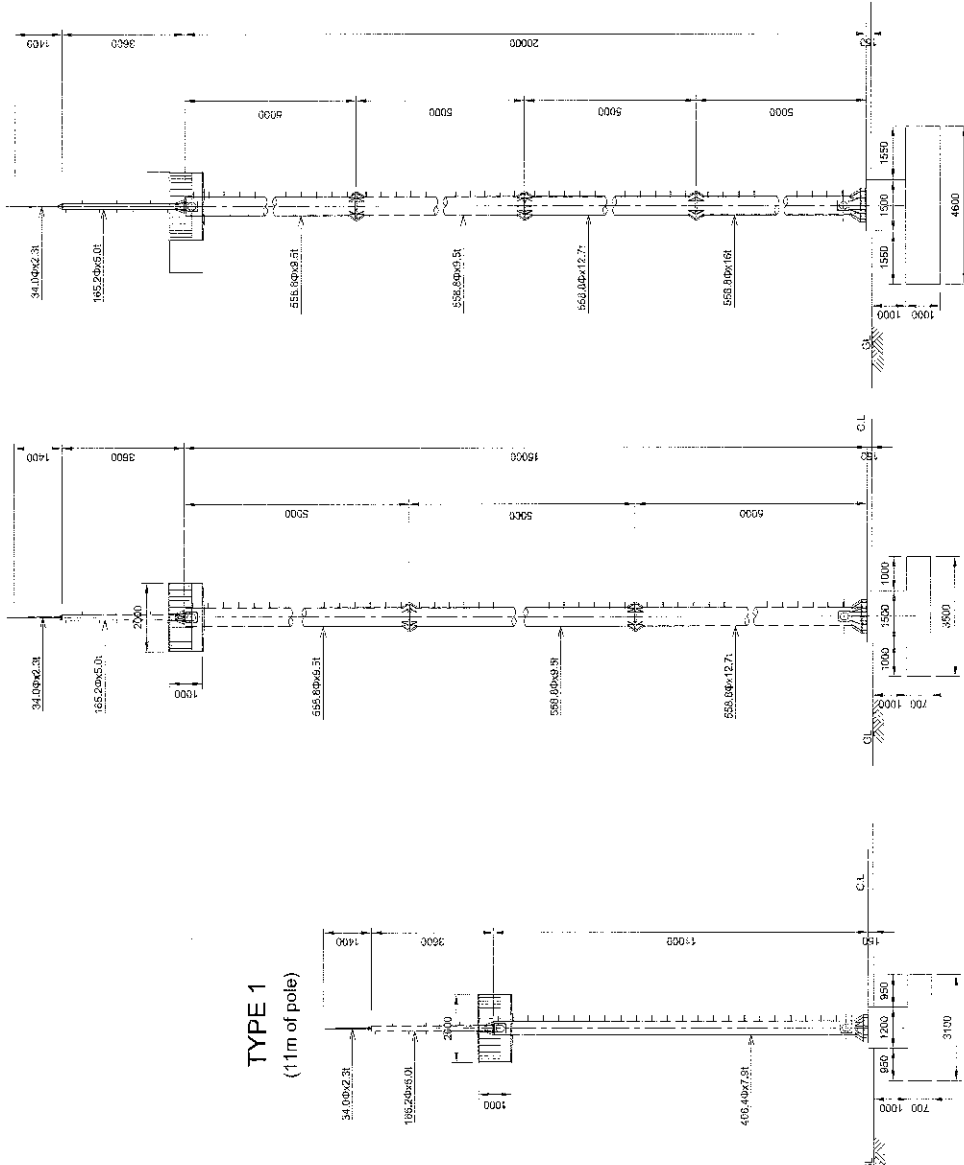
RADIO COMMUNICATION ANTENNA TOWER

RADIO COMMUNICATION TOWER scale: 1/150

SUPPORT FOR ANTENNA scale: 1/150

TYPE 2
(15m of pole)

TYPE 3
(20m of pole)



Volume table for TYPE 1

Material	Dimension	Volume	Remarks
Pole	405.40x7.5t	855kg	
Steel	195.20x5.0t	33g	
Steel	94.10x2.2t	3g	
Foundation	RC	3.130x4.100	61.6m ³

Volume table for TYPE 2

Material	Dimension	Volume	Remarks
Pole	555.80x12.7t	855kg	
Steel	555.80x3.1t	120kg	
Steel	195.20x5.0t	75kg	
Foundation	RC	3.550x5.500	71.3m ³

Volume table for TYPE 3

Material	Dimension	Volume	Remarks
Pole	555.80x12.7t	1670kg	
Steel	555.80x12.7t	855kg	
Steel	555.80x3.1t	135kg	
Steel	195.20x5.0t	78kg	
Foundation	RC	3.100x5.100	24.5m ³

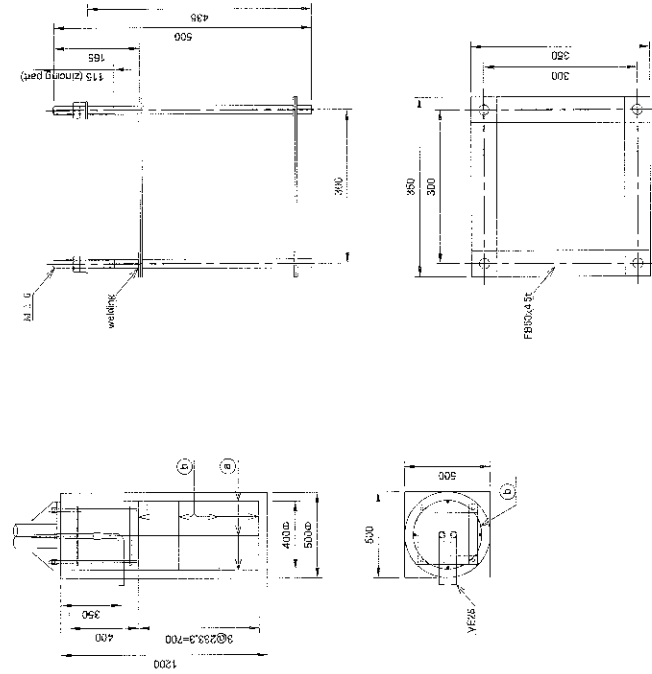
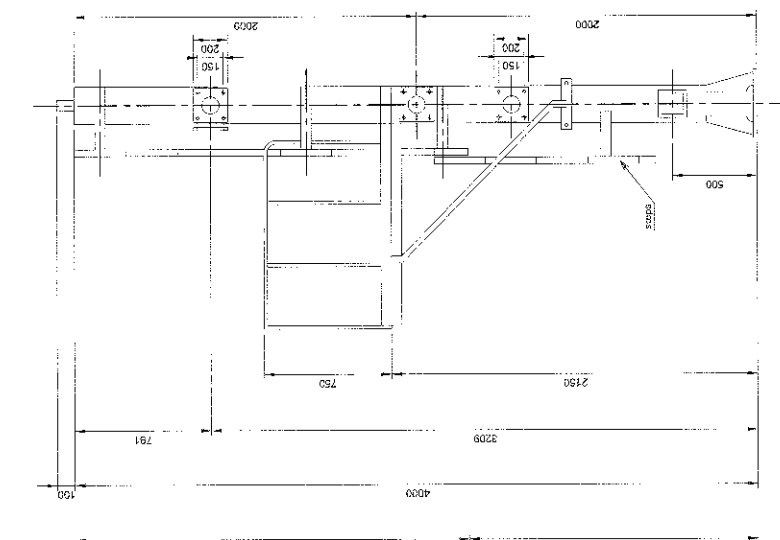
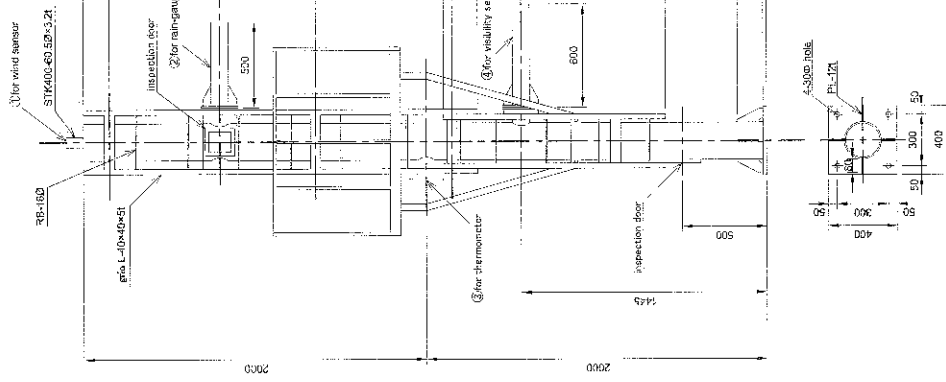
- *1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with:
Yield strength: Fy = 250 MPa
Tensile strength: Fu = 400 MPa
- *2 Reinforcing bar conforms with:
Concrete strength: Fc = 18 Mpa
Reinforcing Bar (CR500-B): Yield strength: Fy = 350 MPa
Tensile strength: Fu = 480 MPa
- *3 In case without any recommendation about zoning in details, all metal members exposed to weather or soil must be finished with amount of 550g/m².
- *4 This drawing is based on NEXCO(Japan) drawings.
- *5 These structural details are designed for main site condition.

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DRAWING TITLE		DRAWING NO.	
		VIII.2.05	
SCALE		Sheet of	
		Rev.	

SUPPORT POLE FOR WEATHER SENSOR

FOUNDATION scale: 1/30

ANCHOR BOLT scale: 1/10



Rebar processing table of foundation

Type	Shape	Volume in Bar part
a	D13	4
b	D10	4

Volume table of foundation

Items	Unit	Volume in Bar part
concrete	m ³	0.292
rebar	kg	4.378
formwork	m ²	3.927
Disposal of waste soil	m ³	0.236
Anchor bolt	kg	1.162
Normal metal	kg	0.228

Volume table of support pole

No.	Material	Dimension	Volume	Weight (kg)	Remarks
①	Steel	216.396x3.2t	4.0	159.4	
	Steel	60.596x3.2t	0.1	0.452	
	Steel	114.396x4.5t	0.364	4.709	
	Steel	22t	0.180	27.092	
	Steel	16t	0.205	2.737	
	Steel	4.5t	0.148	5.164	
	Steel	114.396x4.5t	0.484	6.905	
	Steel	16t	0.240	3.297	
	Steel	12t	0.085	1.130	
	Steel	114.396x4.5t	0.584	7.725	
②	Steel	16t	0.130	1.740	
	Steel	500/50/6L	8.100	40.313	
	FB-50-0R	8.900	4.8842		
	XG-21	1.000	13.70		
③	Aluminum	SQP-20A	14.0	29.52	
	Aluminum	RB-100R	14.0	21.600	
	Aluminum	RB-100R	5.84	12.080	
Total weight					364.3

- *1 Structural steel conforms ASTM A-709M Grade 250 or equivalence with: Yield strength: $F_y = 250$ MPa
- *2 Concrete strength: $F_c = 18$ MPa
- *3 In cases without any recommendation about zincing in details, all metal members exposed to weather or soil must be zined with amount of 150g/m².
- *4 This drawing is based on NEXCO's design drawings.
- *5 These structures are not to be redesigned in their own condition.

SOCIALIST REPUBLIC OF VIETNAM

**ITS INTEGRATION PROJECT ON
NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM**

**GIE - NINH BINH EXPRESSWAY
SUPPORT POLE FOR WEATHER SENSOR**

DRAWING TITLE: _____ PROJECT NO.: _____
DESIGNING TITLE: _____ DRAWING NO.: _____
SCALE: Vertical SHEET # of _____

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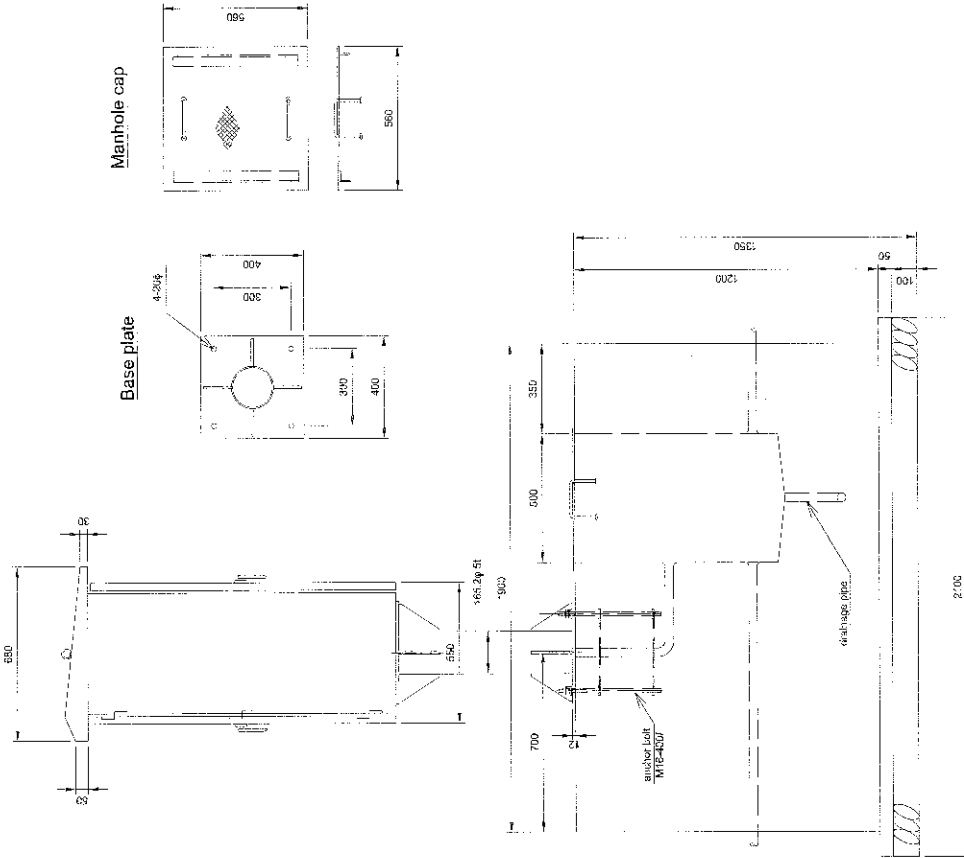
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MINISTRY OF TRANSPORT

VIII.2.06

HOUSING BOX FOR WEATHER SENSOR

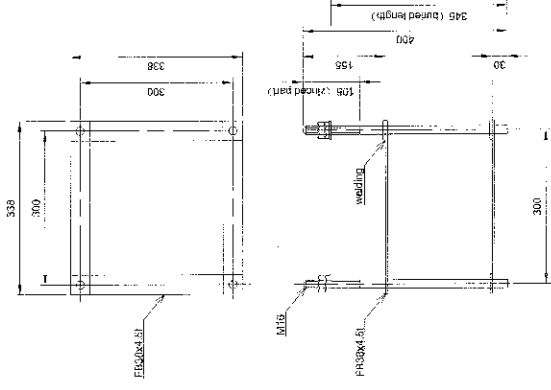
STANCE FIGURE scale: 1/20



Base plate

Manhole cap

ANCHOR BOLT scale: 1/10



Volume table	Material	Quantity	Unit	Weight
Box	Steel	1200x500	14.80	105.36
Frame	Steel	155x20x60	14.80	105.36
Base plate	Steel	1000x400	20 kg	
Manhole cap	Steel	560x560	15 kg	
Anchor bolt	Steel	M16-100	36 kg	
Concrete			2.0m ³	

- *1 Structural steel conforms ASTM A-709M Grade 250 or equivalent with:
Yield strength: $F_y = 250$ MPa
Tensile strength: $F_u = 400$ MPa
- *2 Concrete strength: $F_c = 10$ MPa
- Reinforcing bar (GB300-11): Yield strength: $F_y = 300$ MPa
Tensile strength: $F_u = 450$ MPa

- *3 In case without any recommendation about zinking or details, all metal members exposed to weather or soil must be zinked with amount of 60g/m².
- *4 This drawing is based on NEXCO Japan Reports.
- *5 These structures should be redesigned to meet site condition.

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NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM

GIE - NINH BINH EXPRESSWAY
HOUSING BOX FOR WEATHER SENSOR

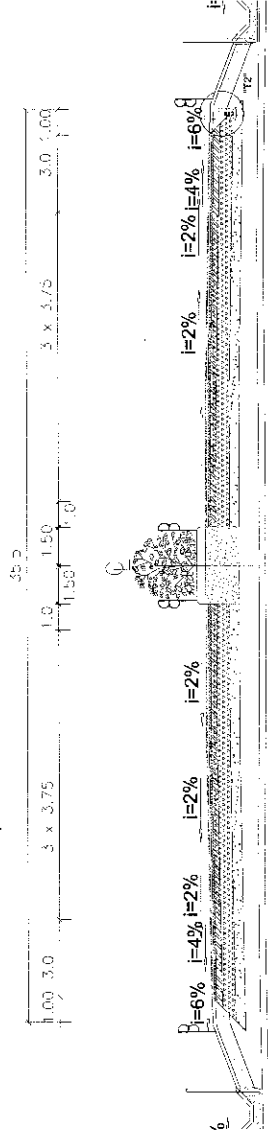
DESIGNED TITLE: VIII.2-07

SCALE: VARIOUS

TYPICAL CROSS SECTION OF COMMUNICATION DUCT (TYPE T2, T3) IN EARTHWORK SECTION

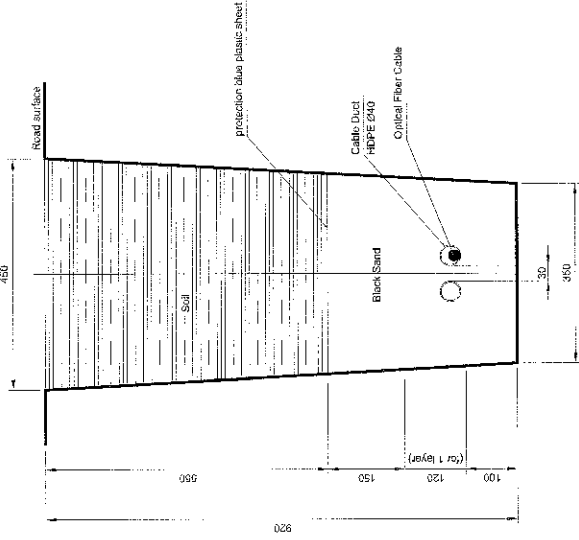
T2 DETAIL scale: 1/10

ARRANGEMENT OF COMMUNICATION DUCT IN SHOULDER (T2 TYPE)
(WHEN MEDIAN WIDTH BE LESS THAN 2.0M)



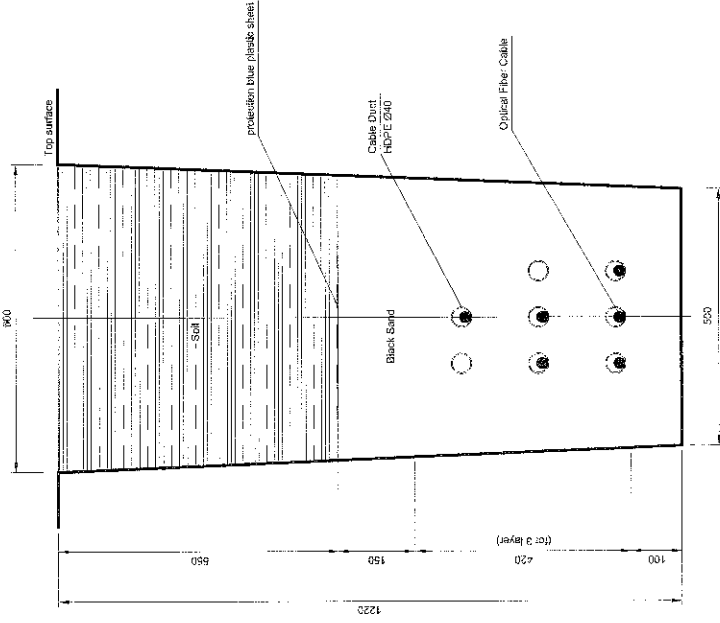
COMMUNICATION DUCT TYPE T3 DETAIL scale: 1/10

(USE FOR COMMUNICATION DUCT SPREAD FOR ROADSIDE EQUIPMENT)



PROTECTION BLUE PLASTIC SHEET scale: 1/20

protection blue plastic sheet



Volume table of T2 Duct (for 1 kilometer in length)

Material	Volume
Disposal soil	871 m ³
Black sand	353 m ³
Backfill soil	316 m ³
Protection blue plastic sheet	500 m ²

Volume table of T3 Duct (for 1 kilometer in length)

Material	Volume
Disposal soil	385 m ³
Black sand	137 m ³
Backfill soil	221 m ³
Protection blue plastic sheet	350 m ²

BELOW! CÁN THẬN CÓ CÁP QUANG PHÍA DƯỚI! BE CAREFUL! OPTICAL CABLE BELOW! CÁN THẬN
DƯỚI! CÁP QUANG PHÍA DƯỚI! BE CAREFUL! OPTICAL CABLE BELOW!

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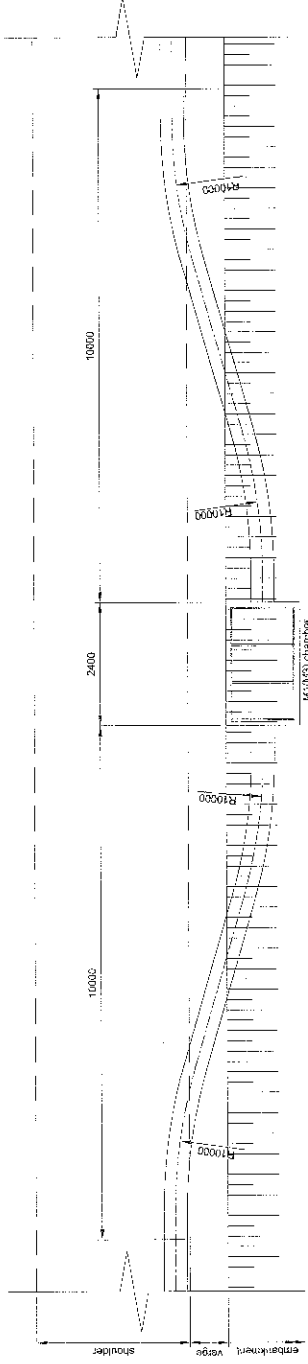
MINISTRY OF TRANSPORT

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GIE - NINH BINH EXPRESSWAY
TYPICAL CROSS SECTION OF COMMUNICATION DUCT (TYPE T2, T3)
IN EARTHWORK SECTION

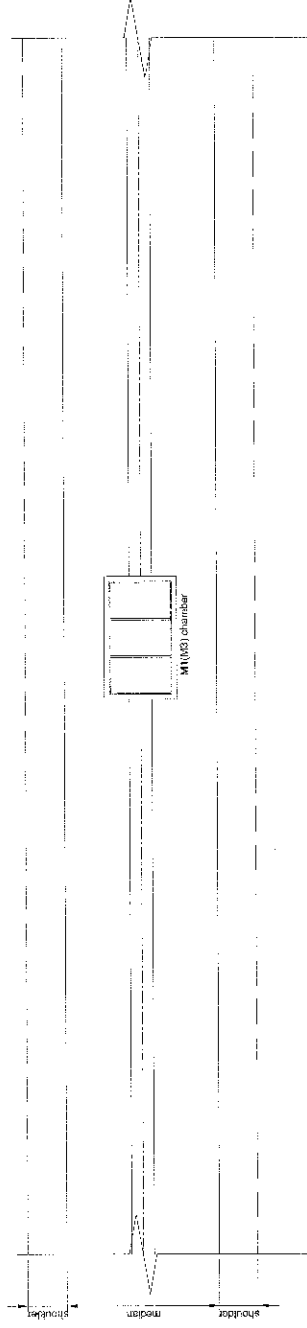
PACKAGE _____
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SHEET NO. _____ of _____
Scale: Vertical _____
VIII.3.01

ARRANGEMENT OF COMMUNICATION DUCT AT CHAMBER (1)

CHAMBER FOR COMMUNICATION DUCT ON ROAD scale: 1/100



CHAMBER FOR COMMUNICATION DUCT ON MEDIAN scale: 1/100



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 GIE - NINH BINH EXPRESSWAY
 ARRANGEMENT OF COMMUNICATION DUCT AT CHAMBER (1)

PACKAGE

NUMBER

VIII.3-02

SHEET NO.

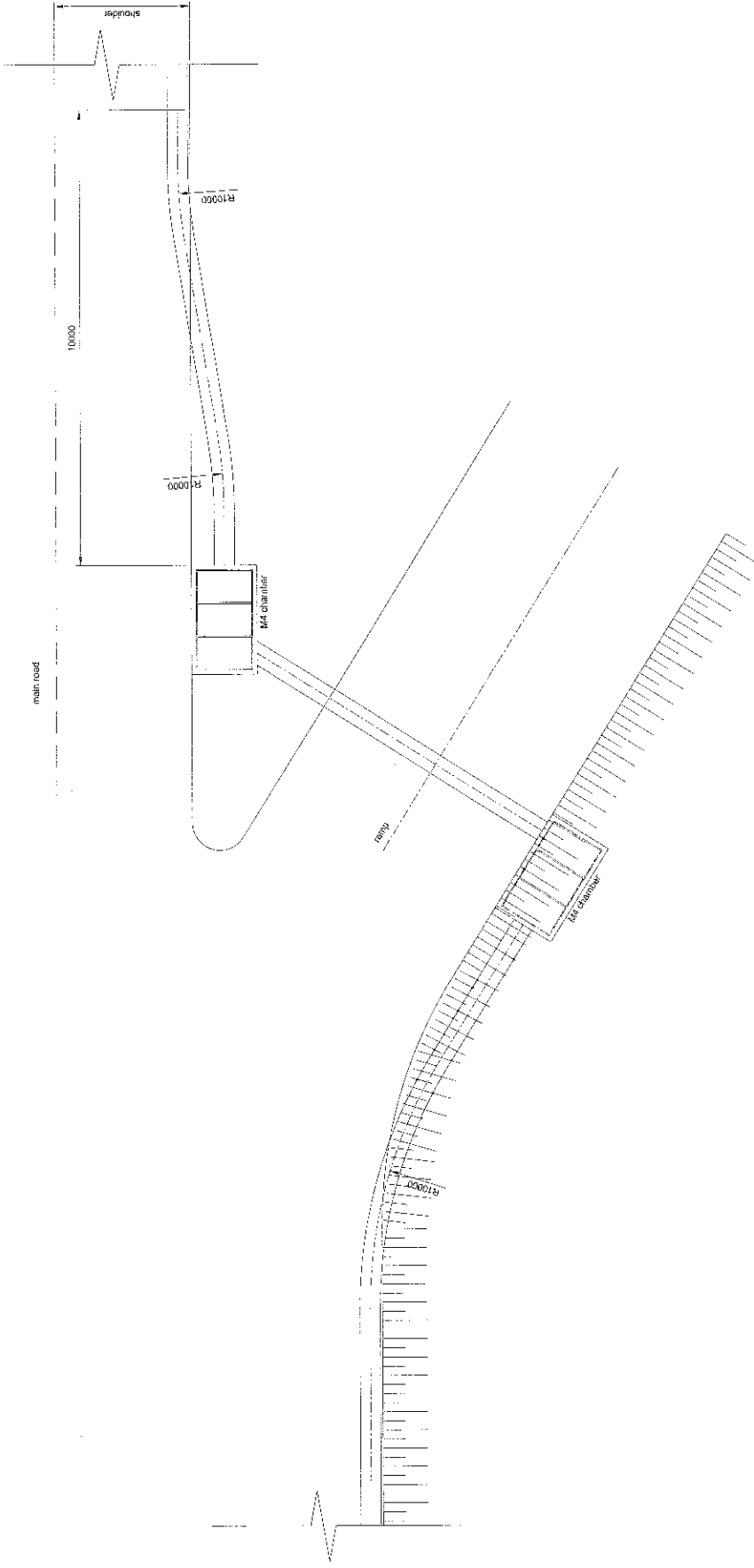
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of

SCALE: 1/100

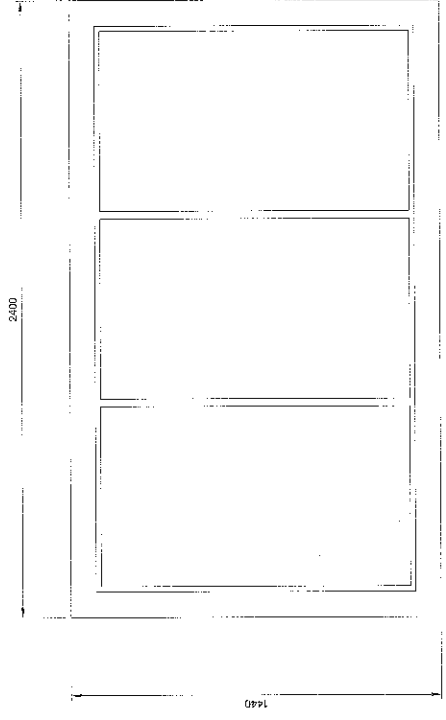
ARRANGEMENT OF COMMUNICATION DUCT AT CHAMBER (2)

CHAMBER FOR CHANGING DIRECTION OF COMMUNICATION DUCT ON ROAD scale: 1/100



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NEXCO EAST ENGINEERING CO., LTD	PREPARED BY	GIE - NINH BINH EXPRESSWAY		DESIGNER	
NIPPON KOEI CO., LTD	CHECKED BY	ARRANGEMENT OF COMMUNICATION DUCT AT CHAMBER (2)		SCALE	1/100
TRANSPORTATION RESEARCH INSTITUTE CO., LTD	APPROVED BY			Sheet	of
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DETAIL OF COMMUNICATION DUCT CHAMBER (TYPE M1) (INSTALL AT MEDIAN or ON EMBANKMENT; WITH PITCH LESS THAN 333m)

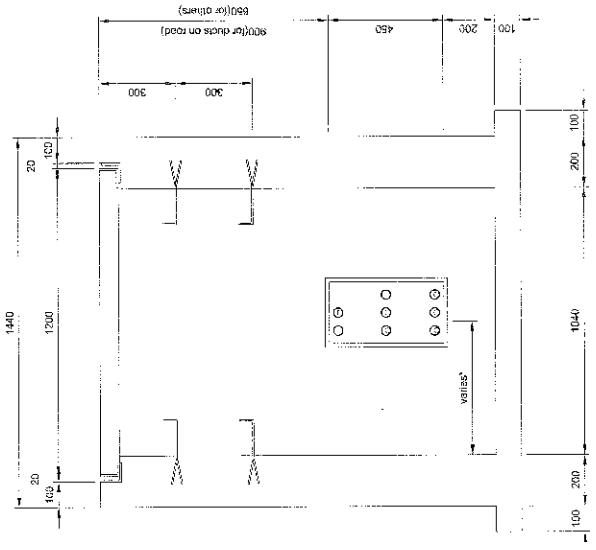
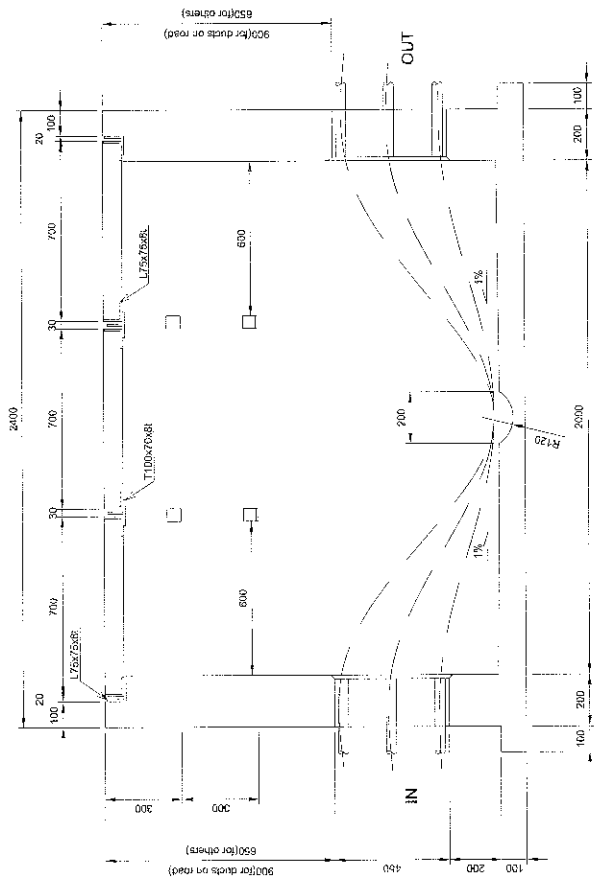


Volume table of chamber for ducts on road

Code	Volume
L75x75x81	183 kg
PL30x81	10 kg
T100x70x81	28 kg
Concrete M300	1.9 m ³

Volume table of chamber for off-roads

Code	Volume
L75x75x81	153 kg
PL30x81	10 kg
T100x70x81	28 kg
Concrete M300	1.7 m ³



* Concrete structure equivalent to: f_{ck} = 300 MPa
 Concrete strength: f_{td} = 18 MPa
 Reinforcing bar (C3000-1): Yield strength: f_{yk} = 460 MPa

Depending on duct arrangement.

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**ITS INTEGRATION PROJECT ON
NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM**

GIE - NINH BINH EXPRESSWAY

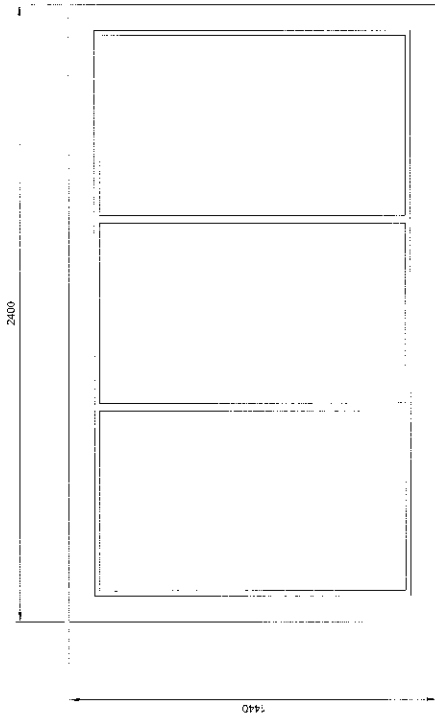
DETAIL OF COMMUNICATION DUCT CHAMBER (TYPE M1)

SCALE: 1:20

Sheet 04 of 04

VIII.3-04

DETAIL OF COMMUNICATION DUCT CHAMBER (TYPE M4) (INSTALL AT MEDIAN or EMBANKMENT; FOR CHANGING DUCT DIRECTION)

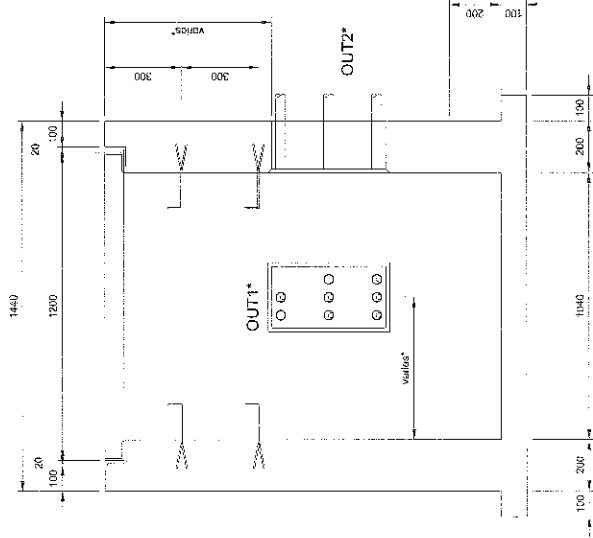
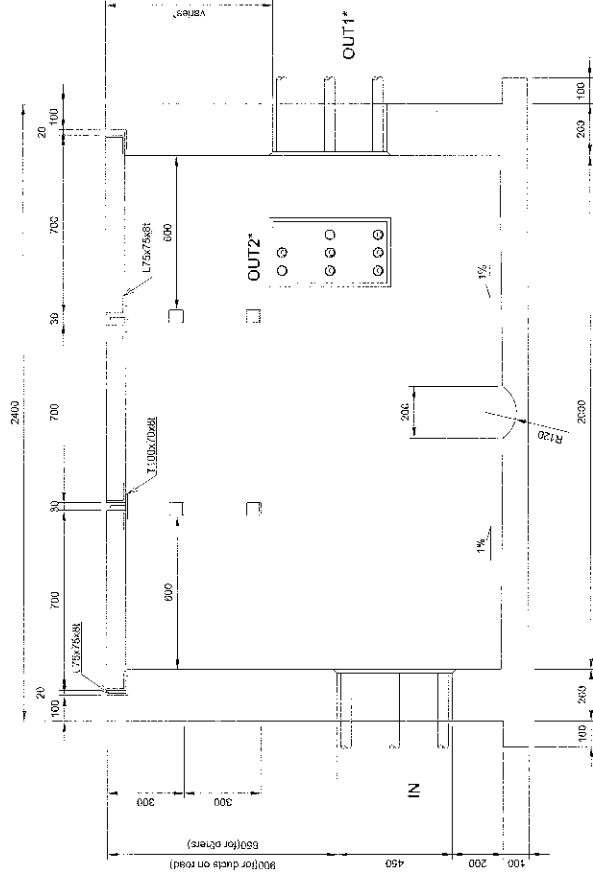


Volume table of chamber for ducts on road

Volume	Volume
L75x75x81	183 kg
P40x81	10 kg
T100x70x81	25 kg
Concrete M300	1.2 m ³

Volume table of chamber for others

Volume	Volume
L75x75x81	153 kg
P40x81	10 kg
T100x70x81	25 kg
Concrete M300	1.2 m ³



* Depending to duct arrangement.
 *1 Concrete structure equivalence with:
 Concrete strength: Fc = 18 MPa
 Reinforcing bar: (CS500-4):
 Yield strength: Fy = 360 MPa
 Tensile strength: Ft = 460 MPa

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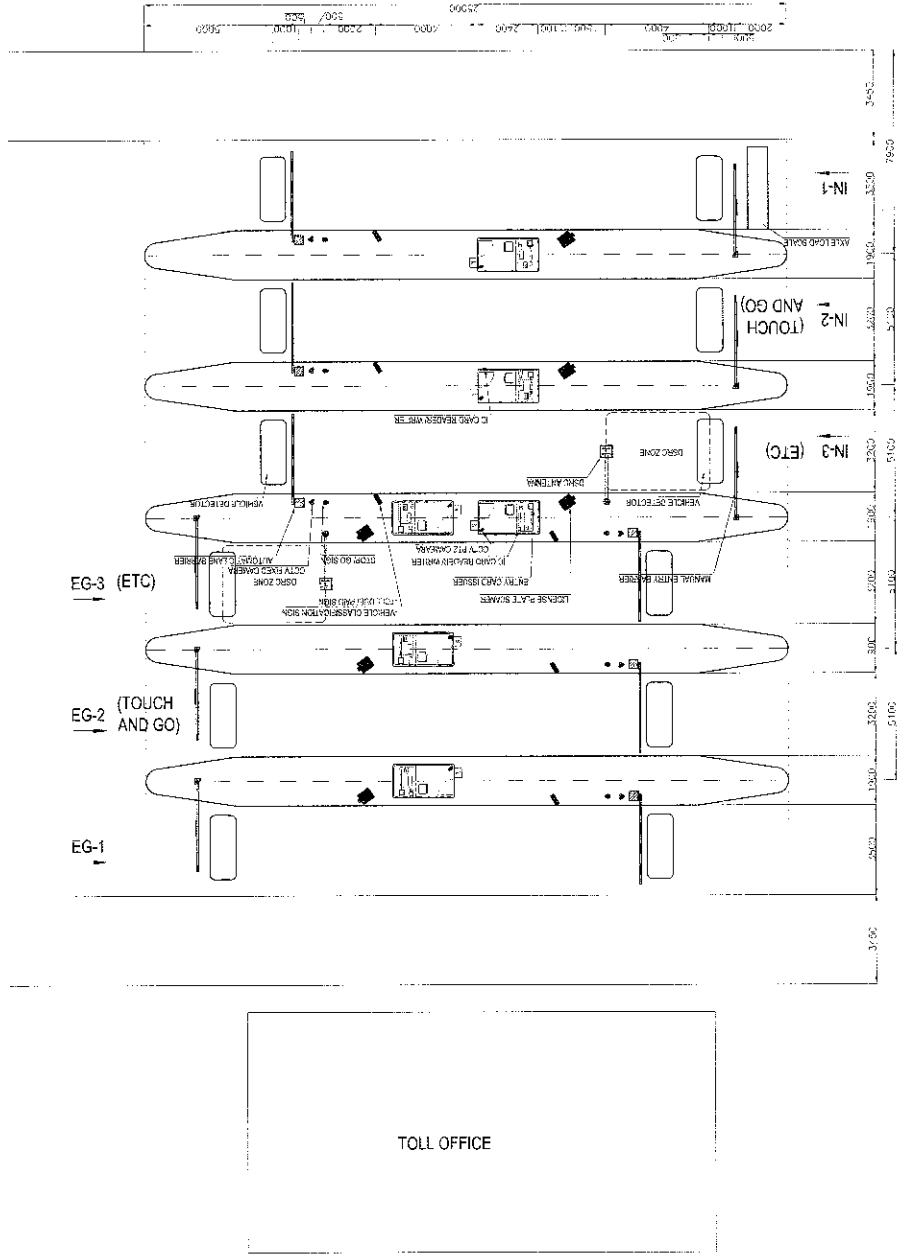
ITS INTEGRATION PROJECT ON
 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 (SUBJECT TITLE)
 GIE - NINH BINH EXPRESSWAY
 DETAIL OF COMMUNICATION DUCT CHAMBER (TYPE M4)

SCALE: 1:20

Sheet 01

DATE: VIII.3.06

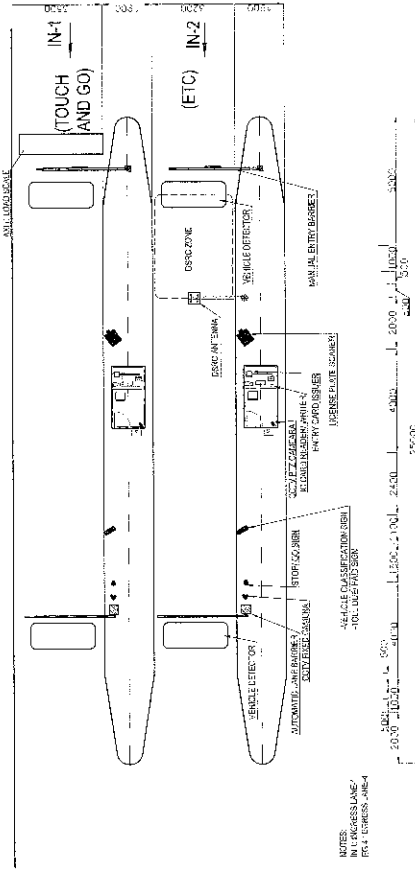
TYPICAL LAYOUT OF TOLL EQUIPMENT FOR 6 LANES



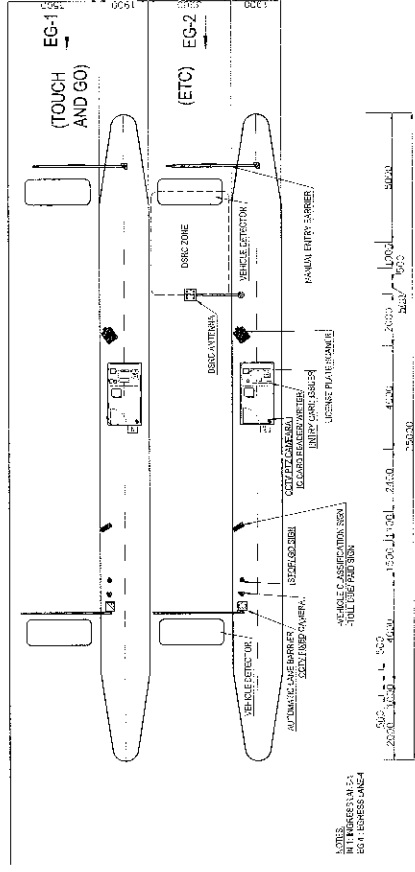
NOTES:
 1. REFER TO DRAWING SHEET
 2. REFER TO DRAWING SHEET

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MINISTRY OF TRANSPORT		DRAWING TITLE		EQUIP. ARRANGEMENT AT DAI XUYEN TOLLGATE (Km 211+860, GIE - NINH BINH EXP)		PROJECT NO.
		DRAWING NO.		VIL-4-01		SHEET
		SCALE		1/200		OF

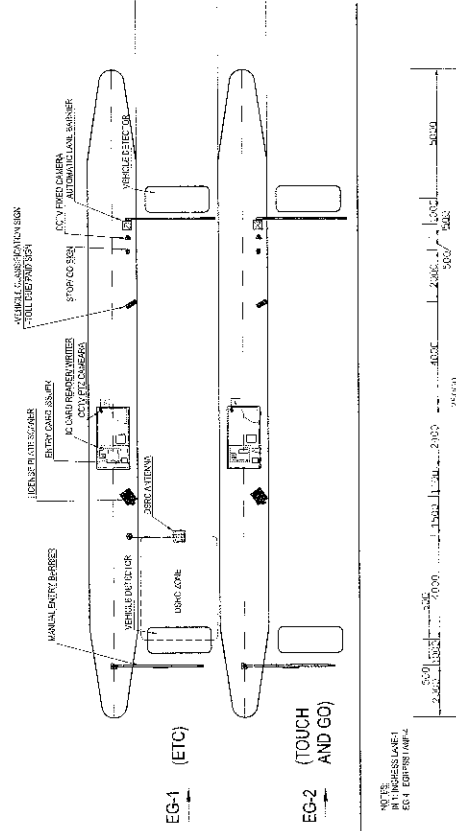
TYPICAL LAYOUT OF TOLL EQUIPMENT FOR 2 LANES



NOTES:
IN-1 (REGULAR LANE)
EG-1 EXPRESS LANE-4

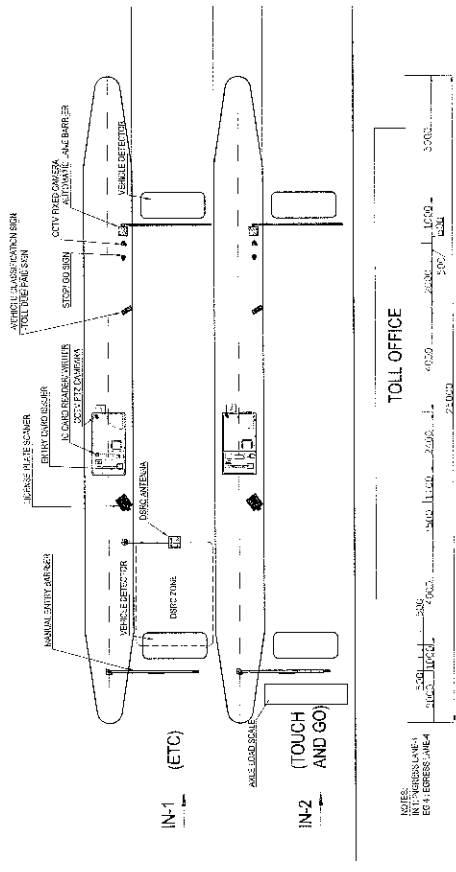


NOTES:
IN-1 (REGULAR LANE)
EG-1 EXPRESS LANE-4



NOTES:
IN-1 (REGULAR LANE)
EG-1 EXPRESS LANE-4

NOTES:
IN-1 (REGULAR LANE)
EG-1 EXPRESS LANE-4



NOTES:
IN-1 (REGULAR LANE)
EG-1 EXPRESS LANE-4

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SOCIALIST REPUBLIC OF VIETNAM

MINISTRY OF TRANSPORT

PROGRAM:
NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
PROJECT TITLE:
EQUIP. ARRANGEMENT AT VUC YONG TOLLGATE
(Km 217+750 ~ Km 219+750, GIE - NINH BINH EXP.)

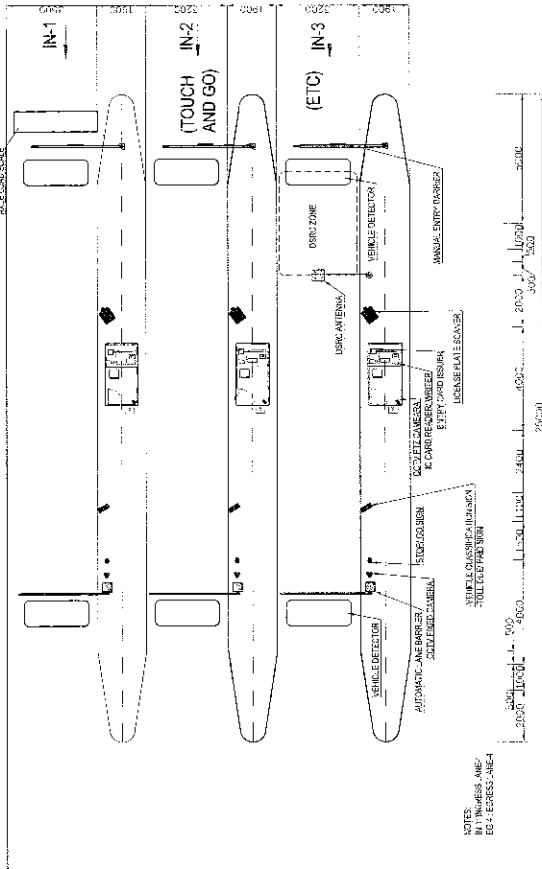
REVISION:
VIII.4.02

SHEET NO. 12/20

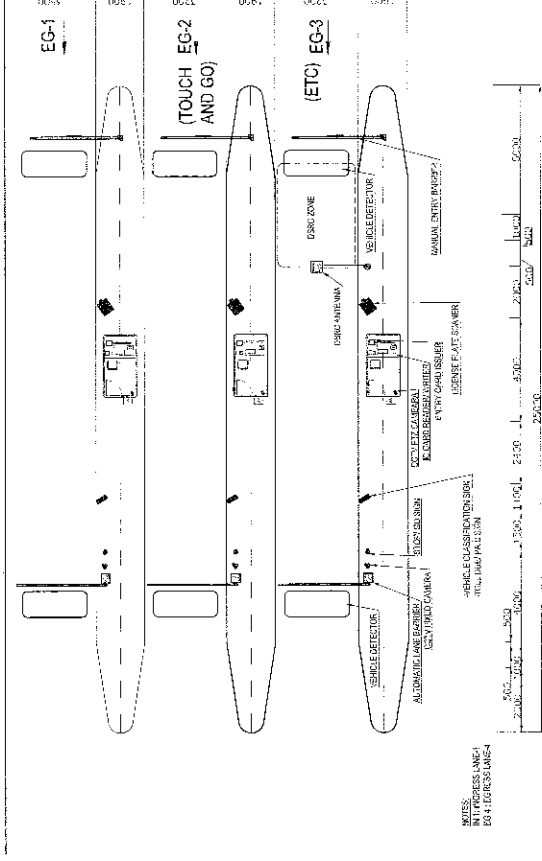
SHEET OF 20

TYPICAL LAYOUT OF TOLL EQUIPMENT FOR 3 LANES

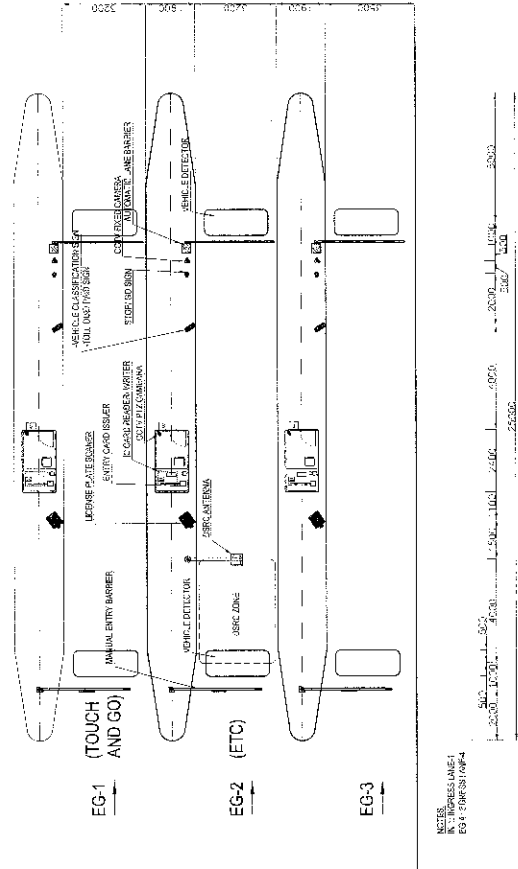
TOLL OFFICE



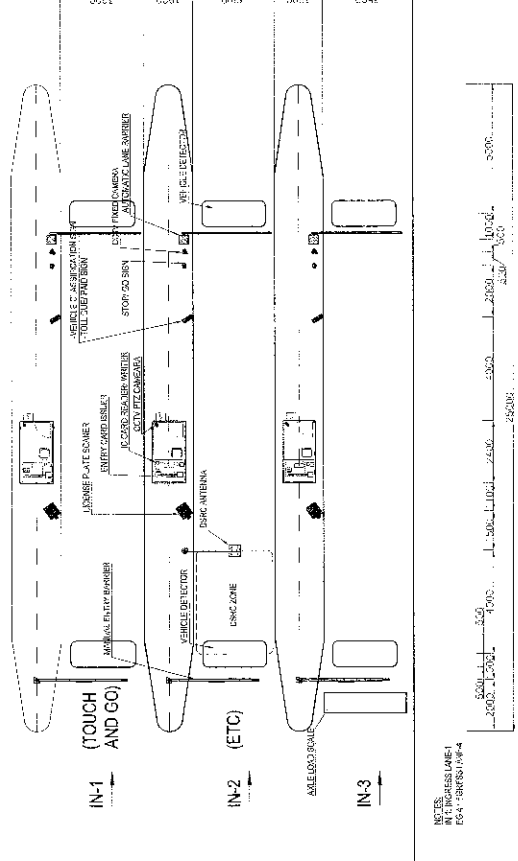
NOTES:
 IN-1 TOUCH AND GO
 IN-2 TOUCH AND GO
 IN-3 ETC



NOTES:
 EG-1 TOUCH AND GO
 EG-2 TOUCH AND GO
 EG-3 ETC



NOTES:
 EG-1 TOUCH AND GO
 EG-2 TOUCH AND GO
 EG-3 ETC



NOTES:
 IN-1 TOUCH AND GO
 IN-2 TOUCH AND GO
 IN-3 ETC

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NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM

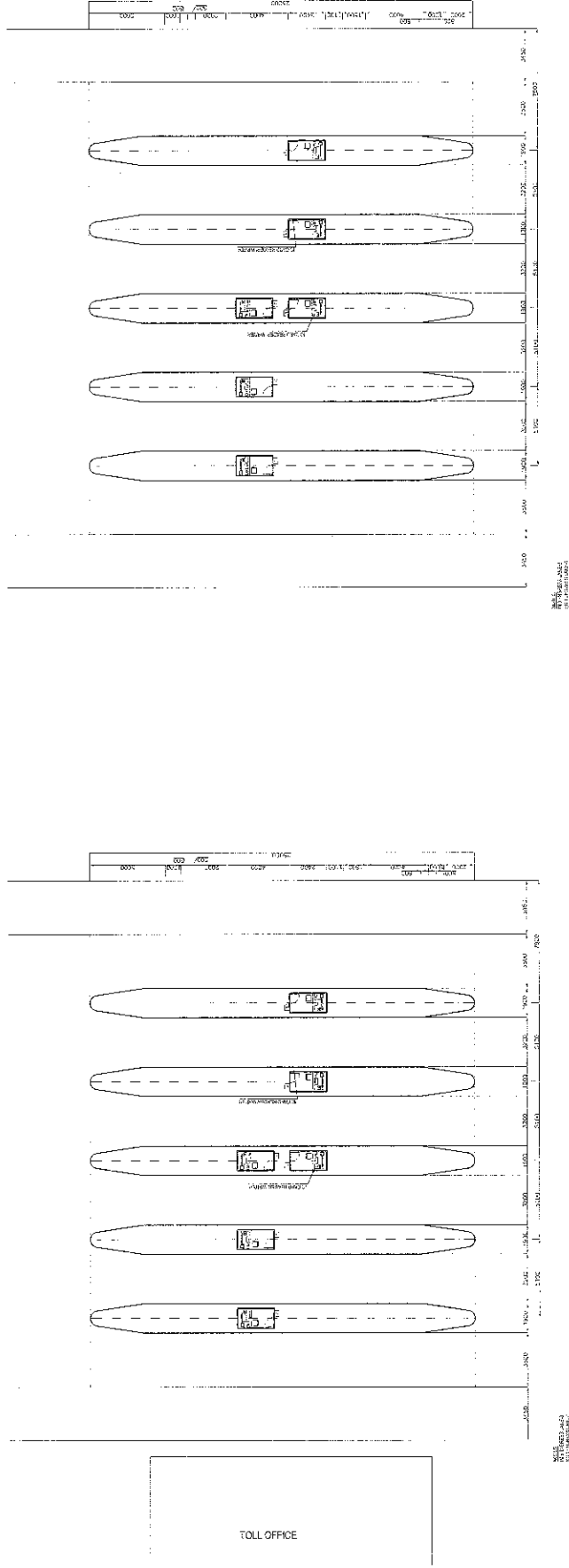
EQUIPMENT ARRANGEMENT AT LAM TUYEN TOLLGATE
(Km 230+700, GIE - NINH BINH EXP.)

SCALE: 1:2000

DRAWING NO: VIII.4.03

DATE: 05/08/04

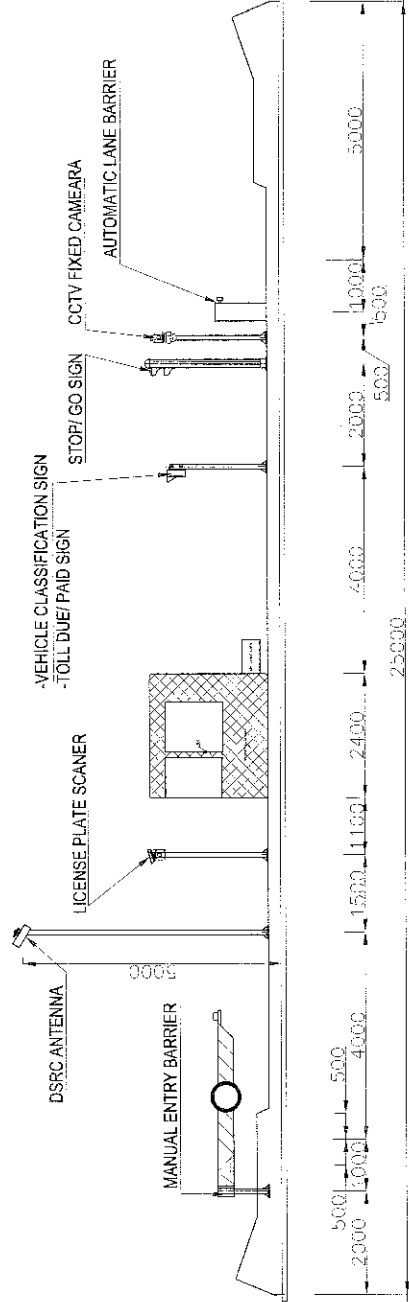
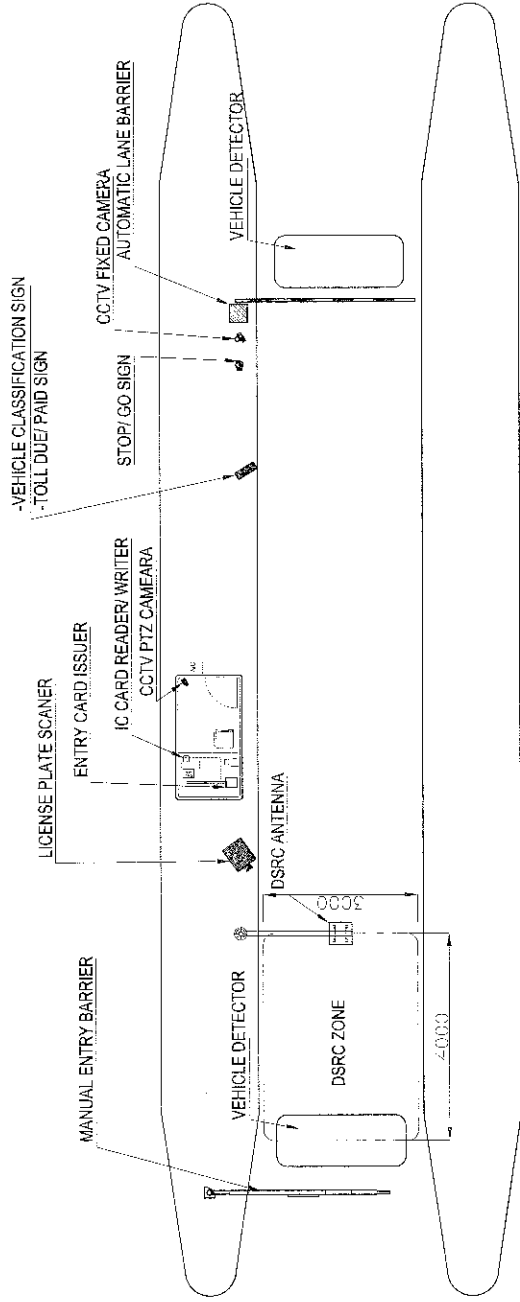
TYPICAL LAYOUT OF TOLL EQUIPMENT FOR 6 LANES



REVISIONS
BY DATE

REVISIONS
BY DATE

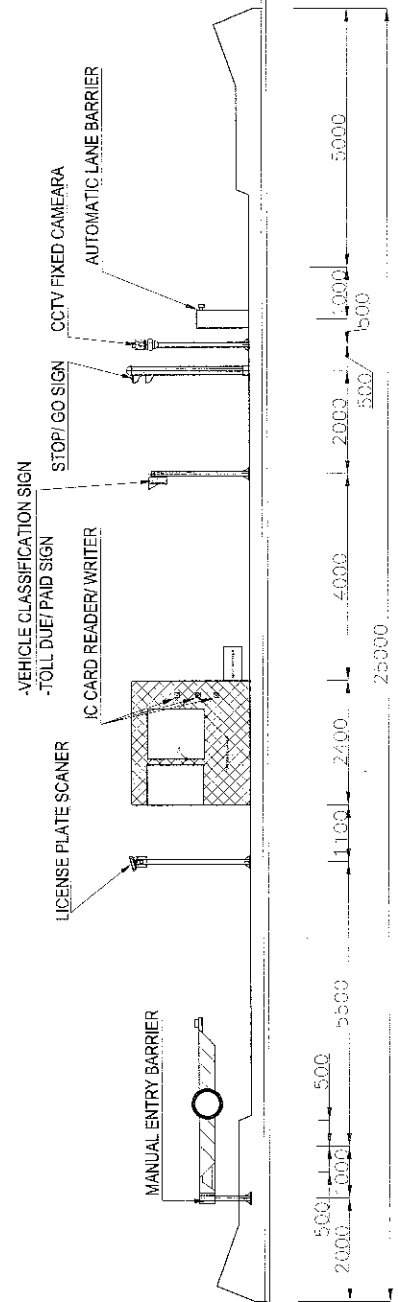
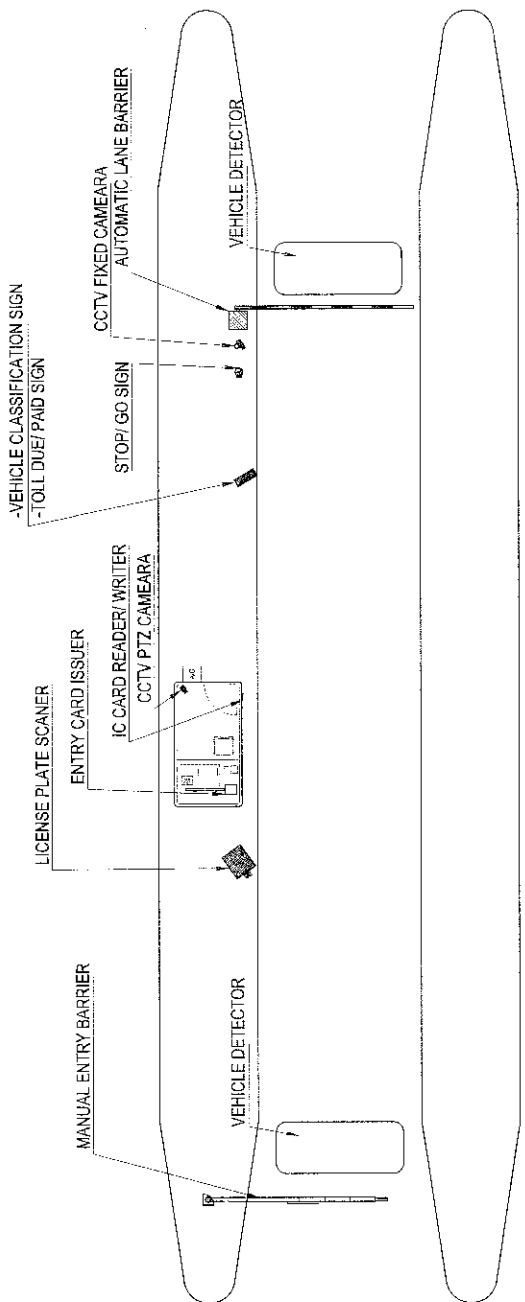
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DRAWING NO.		NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM	
SHEET NO.		EQUIPMENT ARRANGEMENT AT CAO SO TOLLGATE	
SHEET OF		(Km 259+500, GIE - NINH BINH EXP.)	
SCALE		1:3000	
PROJECT NO.		VIII.4.94	



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 GIE - NINH BINH EXP FOR ETC LANE

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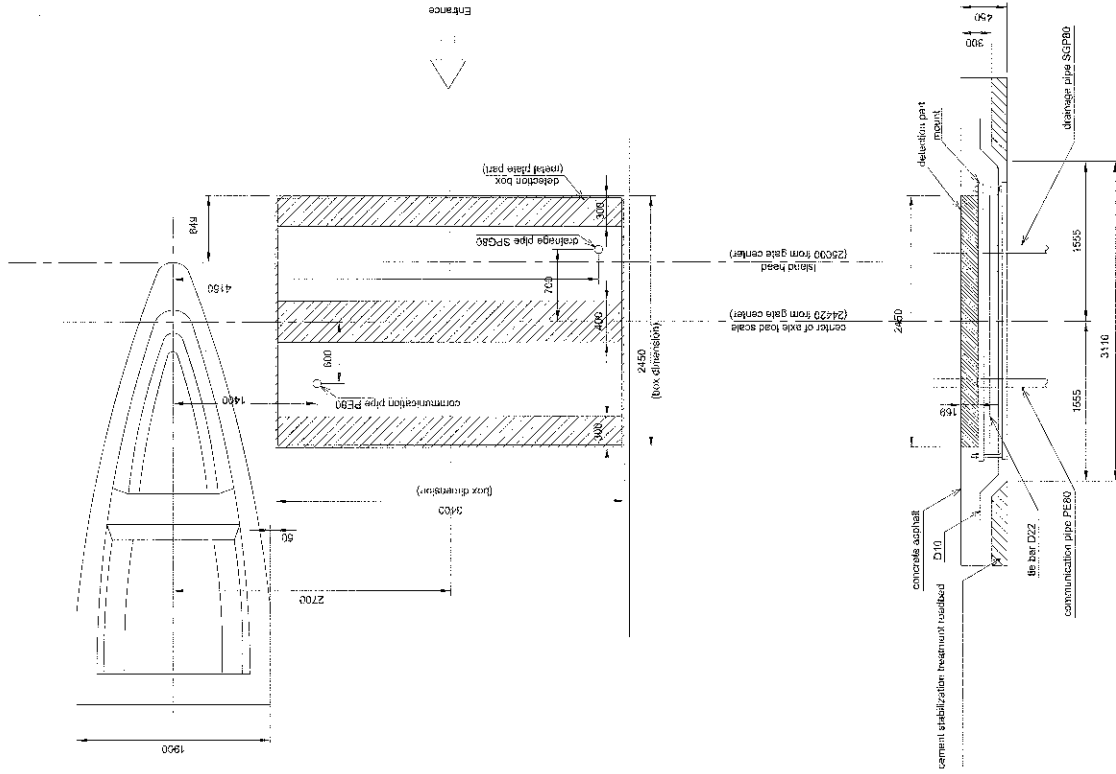
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 NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM
 DRAWING TITLE
 EQPT. ARRANGEMENT PROFILE AT TOLLGATE
 GIE - NINH BINH EXP FOR TOUCH&GO-MANUAL LANE

PACKAGE
 DRAWING NO.
 SHEET NO.
 SHEET OF
 VIT-4-96
 SCALE: 1/100

BASE STRUCTURE FOR AXLE LOAD SCALE (for reference)



*1. All works belong to equipment makers.

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MINISTRY OF TRANSPORT

ITS INTEGRATION PROJECT ON
NEW NATIONAL HIGHWAY NO.3 & NORTHERN AREA OF VIETNAM

GIE - NINH BINH EXPRESSWAY
BASE STRUCTURE FOR AXLE LOAD SCALE (for reference)

PACKAGE: _____
DRAWING TITLE: _____
SHEET No: _____
Sheet: _____ of _____
DATE: _____
VIII.4-07