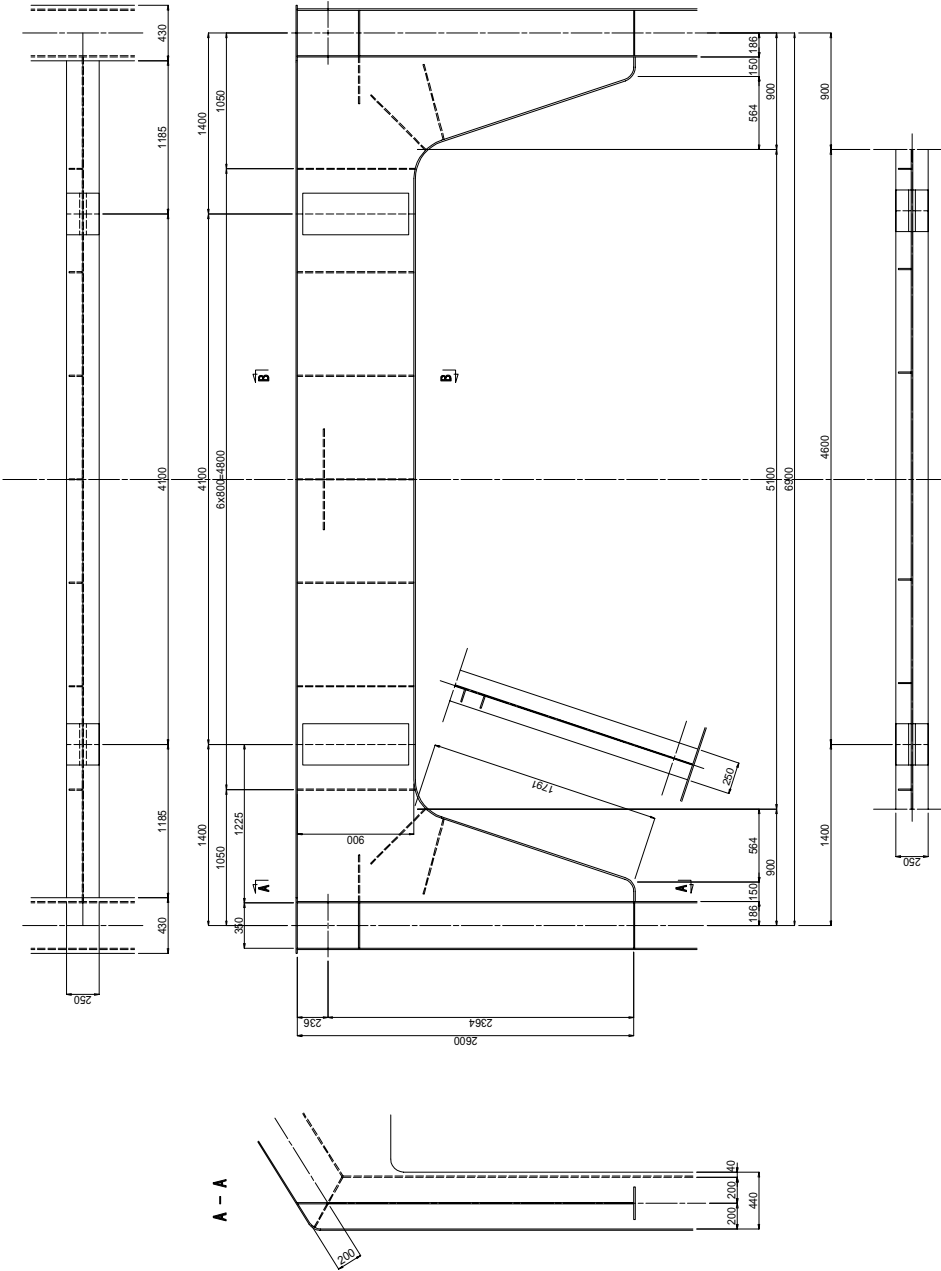


THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECT MANAGEMENT UNIT NO. 11, MINISTRY OF TRANSPORT	
PROJECT: THE PROJECT FOR IMPROVING OF ROAD BRIDGE IN MICHUEN PROVINCE	
CONSULTANT: ORIENTAL CONSULTANTS CO., LTD	
DESIGNED BY	CHECKED BY
DRAWN BY	DATE
APPROVED BY	

# 3-1 REINFORCEMENT OF PORTAL

SCALE = 1 / 20

SECTION	SCALE	DRAWING NO.	SHEET NO.
DRAWING NO.	1/20	3-1 REINFORCEMENT OF PORTAL	OF
DATE		DESCRIPTION	SIGNATURE

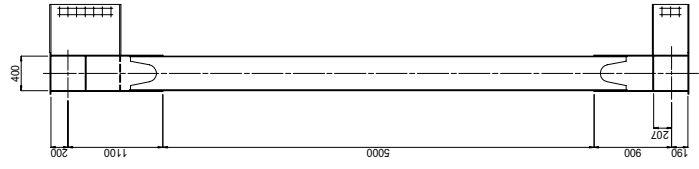
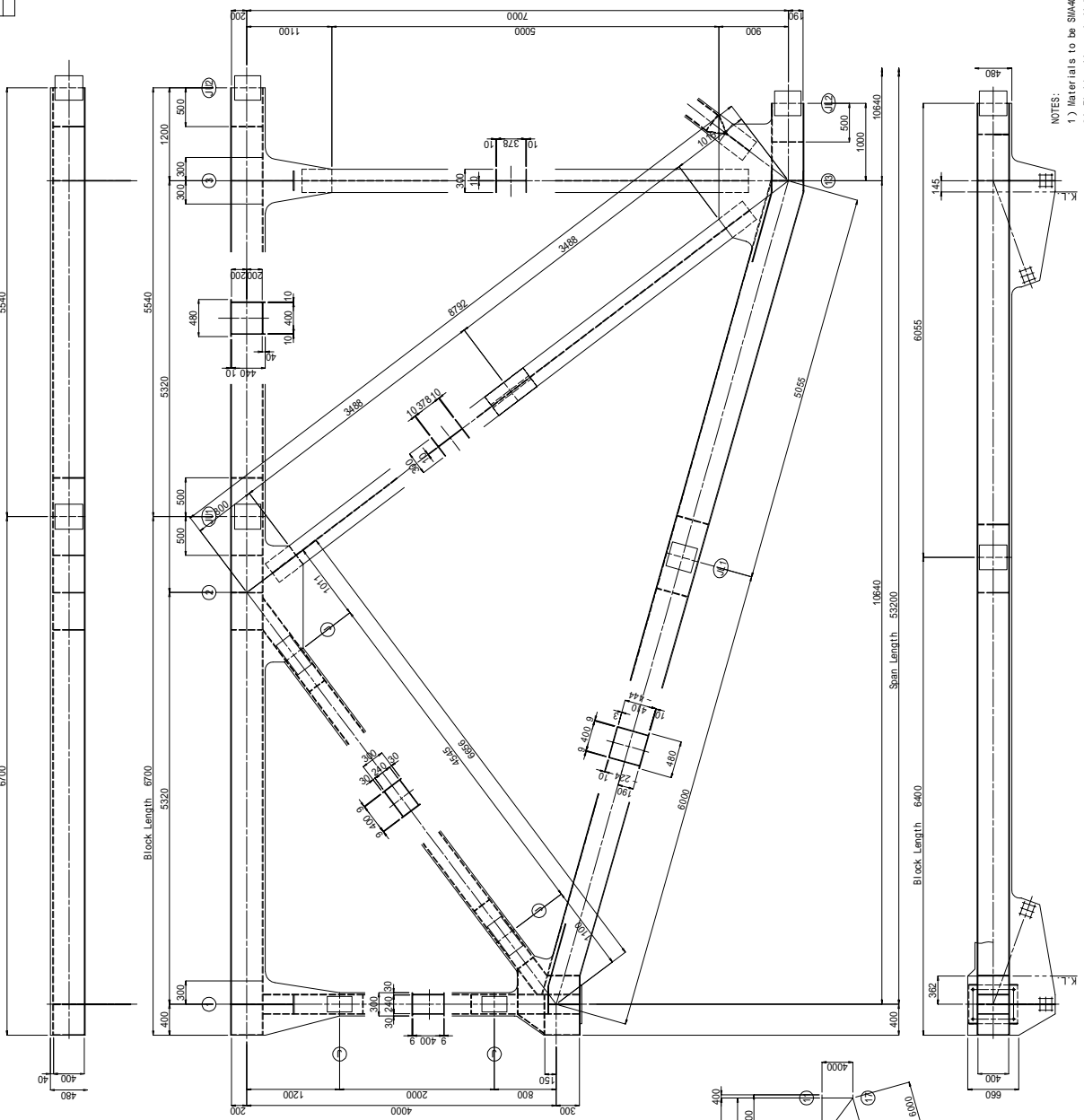


THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECT MANAGEMENT UNIT NO. 14, MINISTRY OF TRANSPORT	
PROJECT: THE PROJECT FOR IMPROVING OF ROAD BRIDGE IN BACH BINH PROVINCE	
CONSULTANT	ORIENTAL CONSULTANTS CO., LTD
DESIGNED BY	CHECKED BY
DRAWN BY	APPROVED BY
DATE	

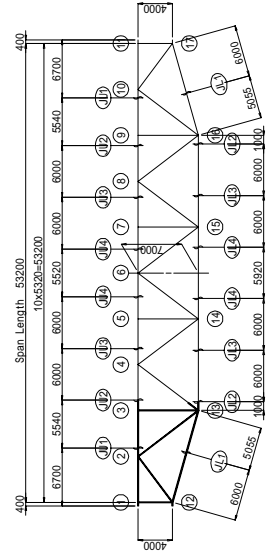
# 3-2 MAIN GERDER - 1

SCALE = 1 / 30

SECTION	SCALE	DRAWING NO.	SHEET NO.
DRAWING	1/30	3-2 MAIN GERDER - 1	OF
REV. NO.	DATE	DESCRIPTION	SIGNATURE



KEY PLAN  
SCALE = 1 / 300



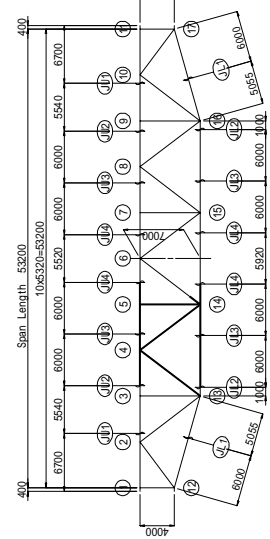
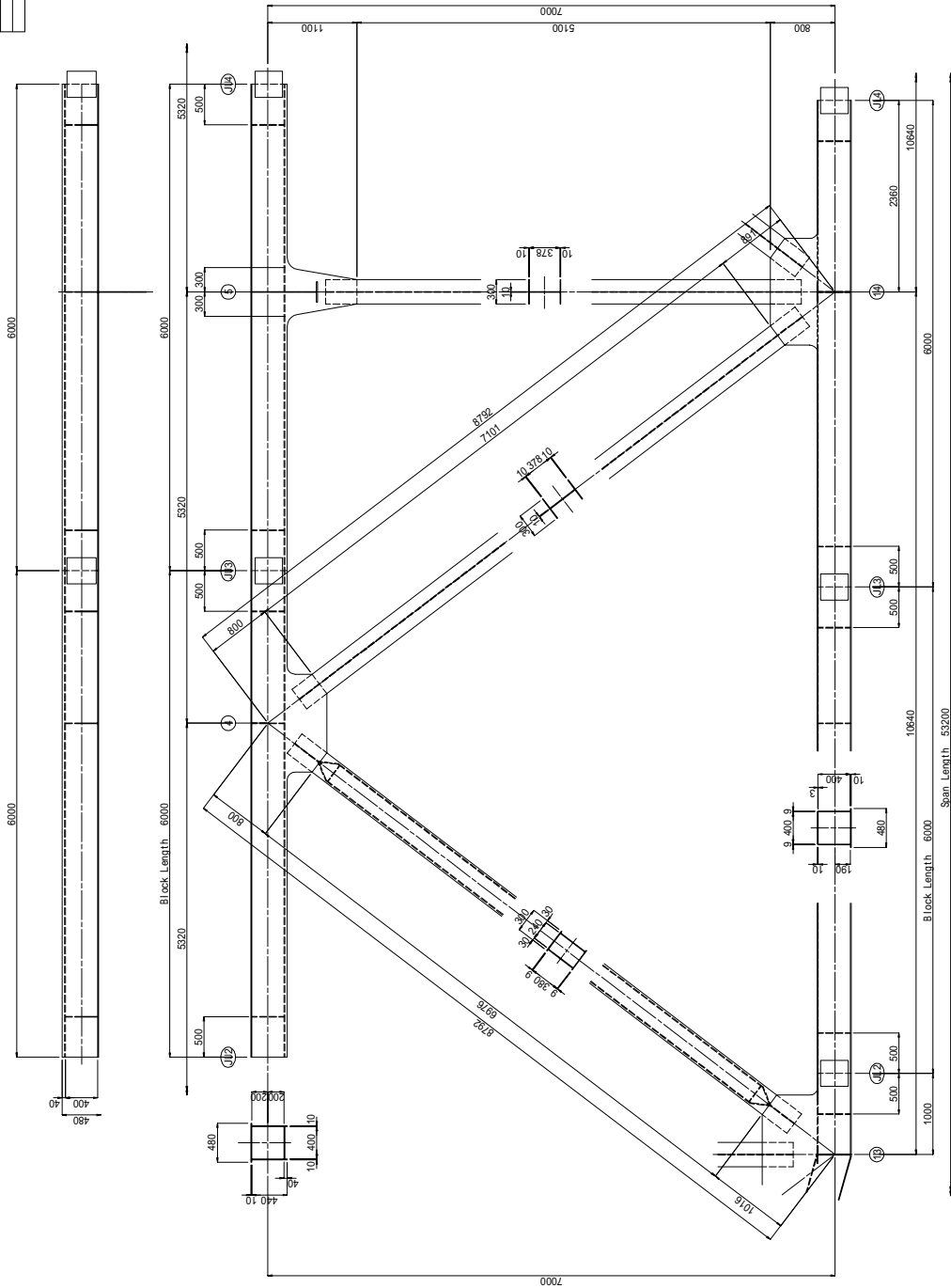
- NOTES:
- 1) Materials to be SMA400AII unless otherwise noted.
  - 2) Field splices shall be connected by T C B (122, S107II) .
  - 3) Radius of seal top to be 35mm unless noted.

THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECT MANAGEMENT UNIT NO. 11, MINISTRY OF TRANSPORT	
PROJECT: THE PROJECT FOR IMPROVING OF ROAD BRIDGE IN BACH BINH PROVINCE	
CONSULTANT	ORIENTAL CONSULTANTS CO., LTD
DESIGNED BY	CHECKED BY
DRAWN BY	APPROVED BY
DATE	DATE

# 3-2 MAIN GERDER - 2

SCALE = 1 / 30

SECTION	SCALE	DRAWING NO.	SHEET NO.
DRAWING FILE	1/30	3-2 MAIN GERDER - 2	OF
REV. NO.	DATE	DESCRIPTION	SIGNATURE



KEY PLAN  
SCALE = 1 / 300

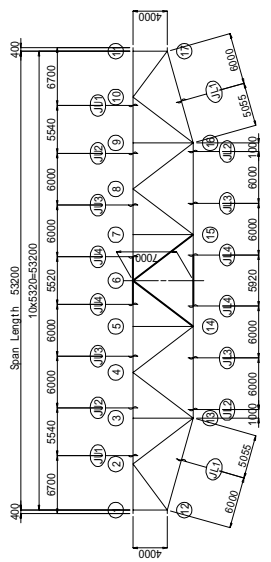
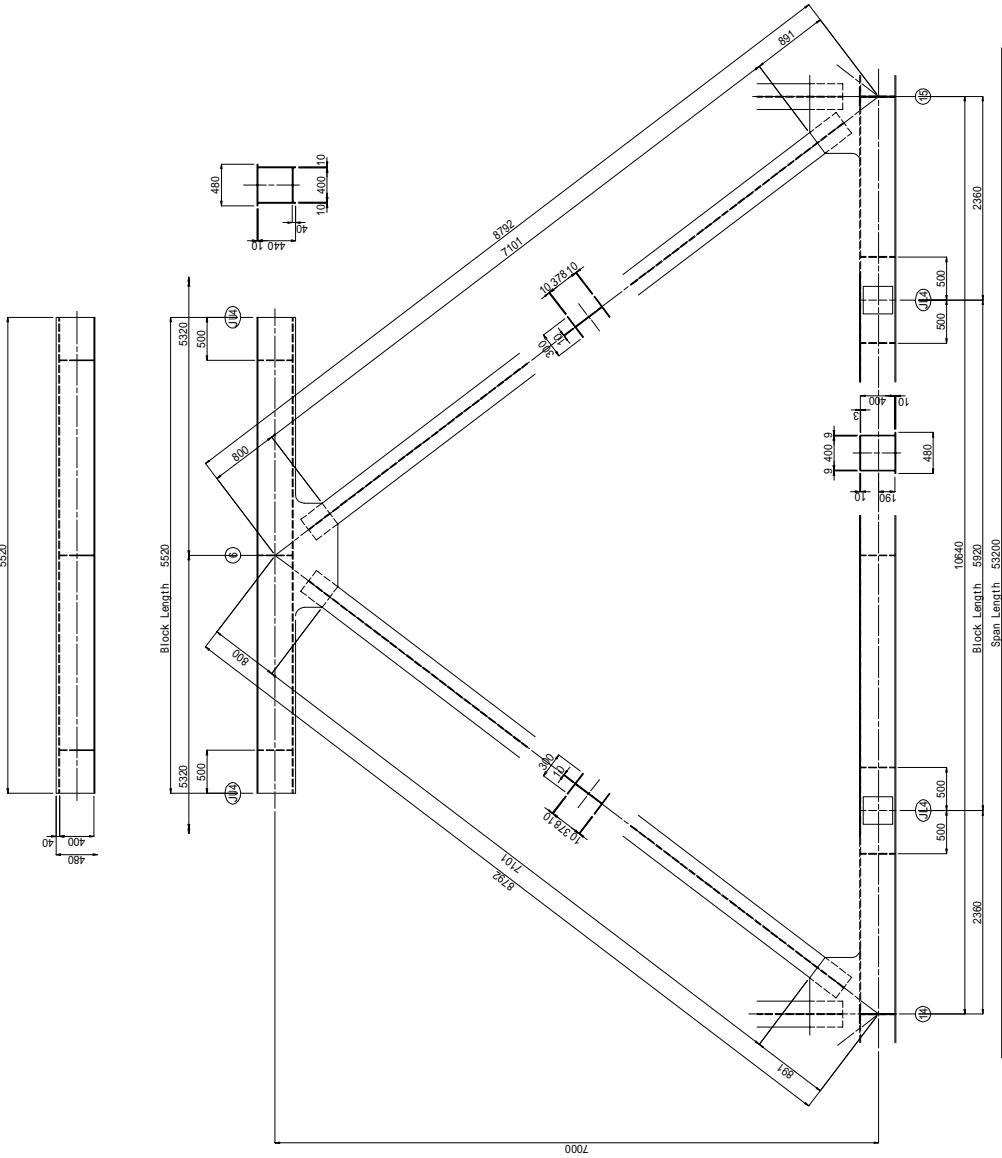
- NOTES:
- 1) Materials to be SMA400W unless otherwise noted.
  - 2) Field splices shall be connected by T C B (122, S107H) .
  - 3) Radius of seal top to be 35mm unless noted.

THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECT MANAGEMENT UNIT NO. 11, MINISTRY OF TRANSPORT	
PROJECT: THE PROJECT FOR IMPROVING OF ROAD BRIDGE IN NORTH HIGHLANDS PROVINCES	
CONSULTANT: ORIENTAL CONSULTANTS CO., LTD	
DESIGNED BY	CHECKED BY
DRAWN BY	APPROVED BY
DATE	DATE

# 3-2 MAIN GERDER - 3

SCALE = 1 / 30

SECTION	SCALE	DRAWING NO.	SHEET NO.
DRAWING FILE NO.	1/30	3-2 MAIN GERDER - 3	OF
DATE		DESCRIPTION	SIGNATURE



KEY PLAN  
SCALE = 1 / 300

- NOTES:
- 1) Materials to be SMA400W unless otherwise noted.
  - 2) Field splices shall be connected by T C B (122, S107M) .
  - 3) Radius of seal top to be 35mm unless noted.

THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECT MANAGEMENT UNIT NO. 14, MINISTRY OF TRANSPORT	
PROJECT: THE PROJECT FOR IMPROVING OF ROAD BRIDGE IN NORTH HIGHLANDS PROVINCES	
CONSULTANT	ORIENTAL CONSULTANTS CO., LTD
DESIGNED BY	CHECKED BY
DRAWN BY	APPROVED BY
DATE	

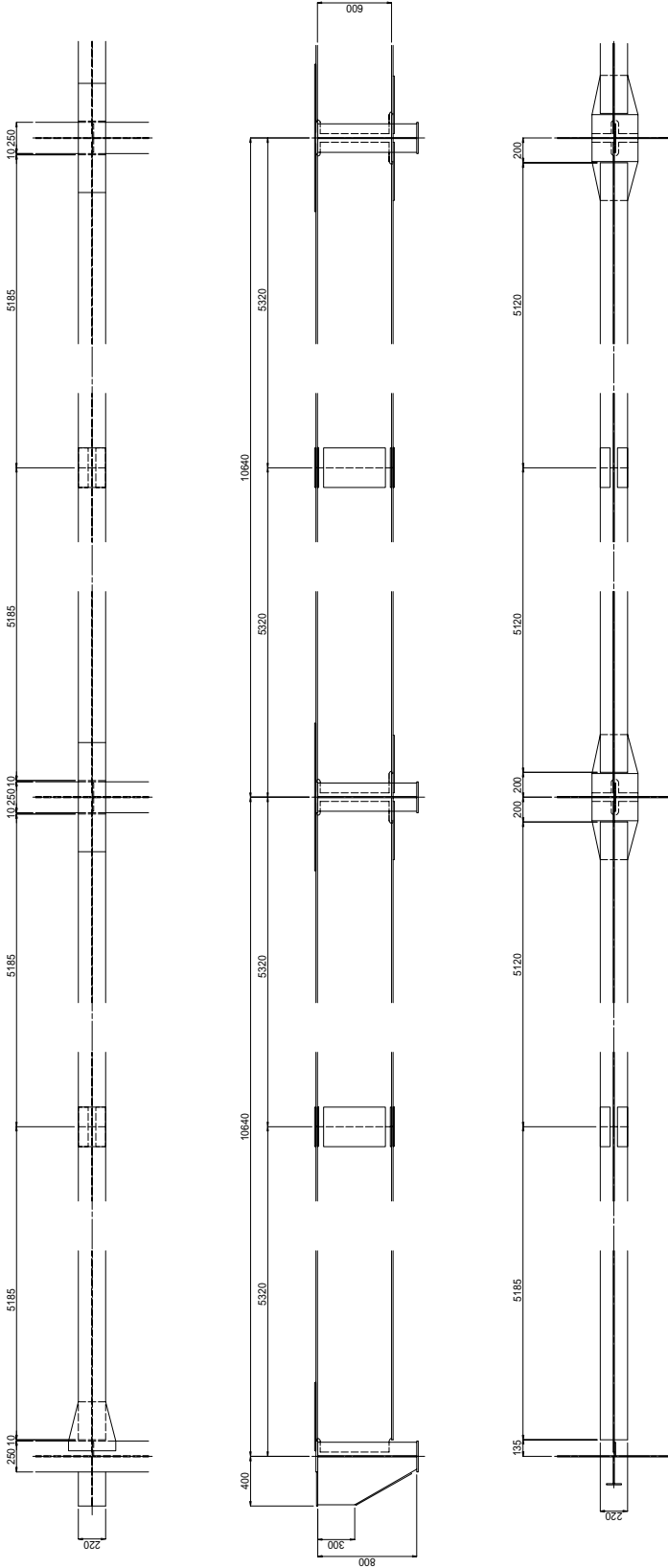
# 3-2 FLOOR BEAM

SCALE = 1 / 20

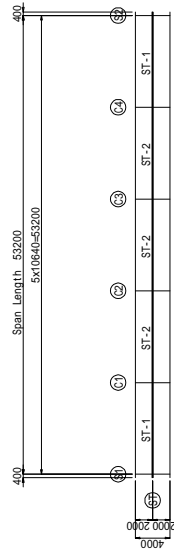
SECTION	SCALE	DRAWING NO.	SHEET NO.
DRAWING NO.	1/20	CT-	OF
DATE		3-2 FLOOR BEAM	
		DESCRIPTION	SIGNATURE

ST-1

ST-2



KEY PLAN  
SCALE = 1 / 300



- NOTES:
- 1) Materials to be SMA400W unless otherwise noted.
  - 2) Field splices shall be connected by T C B (UZ2, S107W) .
  - 3) Radius of seal top to be 35mm unless noted.

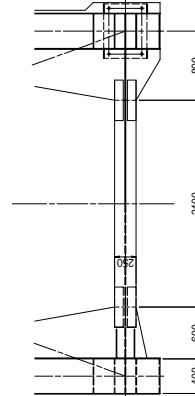
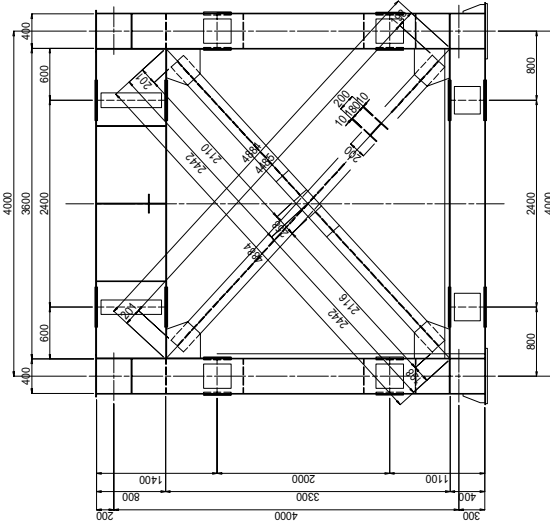
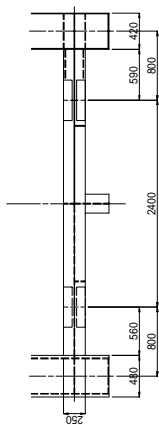
THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECT MANAGEMENT UNIT NO. 14, MINISTRY OF TRANSPORT	
PROJECT: THE PROJECT FOR IMPROVING OF ROAD BRIDGE IN BACH BINH PROVINCE	
CONSULTANT	ORIENTAL CONSULTANTS CO., LTD
DESIGNED BY	CHECKED BY
DRAWN BY	DATE
DATE	APPROVED BY

# 3-2 CROSS BEAM - LITTLE STRUCTURE

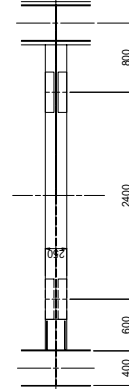
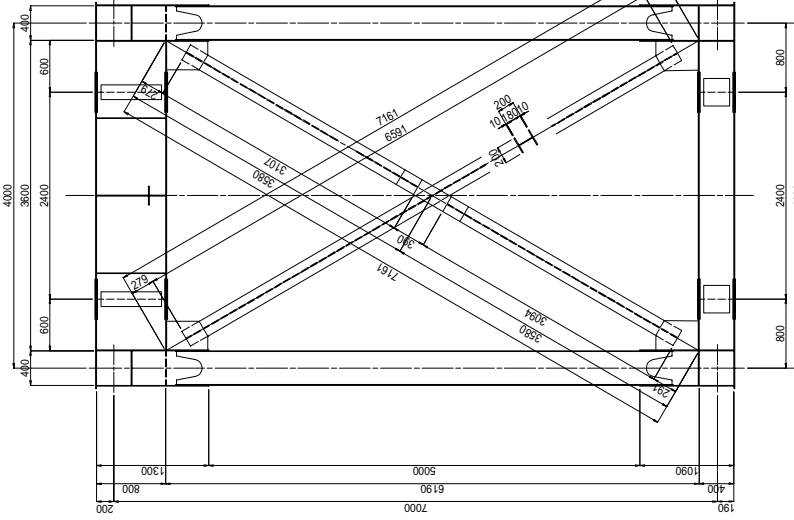
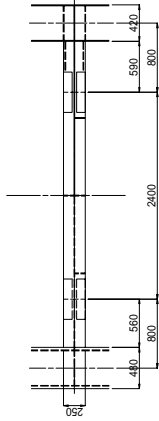
SCALE = 1 / 30

SECTION	SCALE	DRAWING NO.	SHEET NO.
DRAWING NO.	1/30	CT-	OF
REVISION	DATE	DESCRIPTION	SIGNATURE

(S1) - (S2)

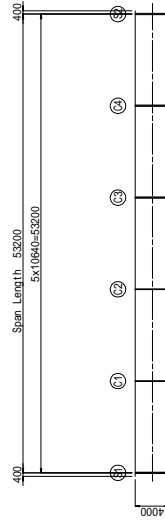


(S3) - (S4)



## KEY PLAN

SCALE = 1 / 300



**NOTES:**

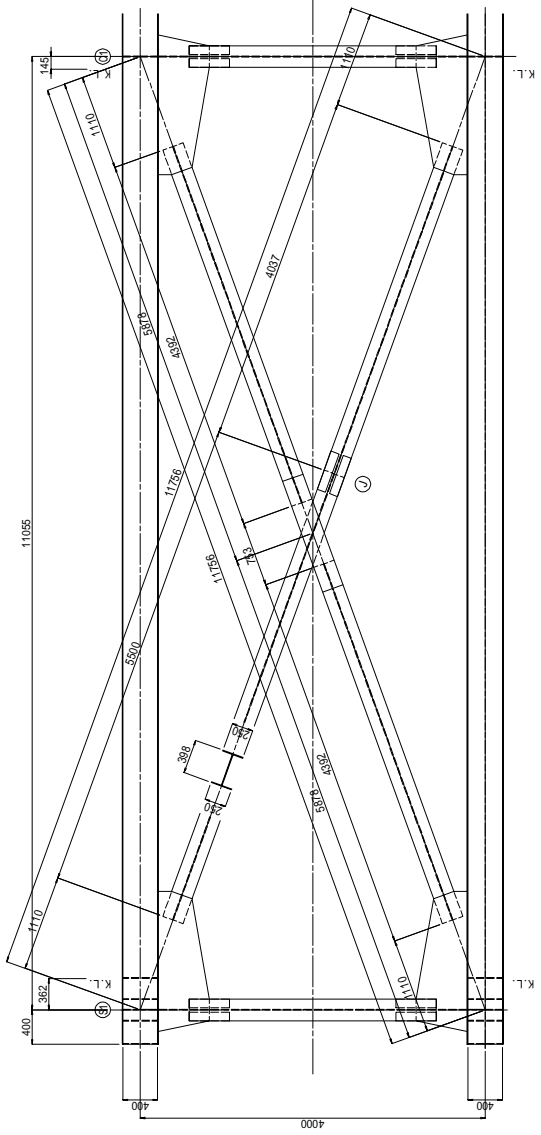
- 1) Materials to be SMA400W unless otherwise noted.
- 2) Field splices shall be connected by T.C.B. (122, S107W).
- 3) Radius of seal top to be 35mm unless noted.

THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECT MANAGEMENT UNIT NO. 11, MINISTRY OF TRANSPORT	
PROJECT: THE PROJECT FOR IMPROVING OF ROAD BRIDGE IN NORTH HIGHLANDS PROVINCES	
CONSULTANT: ORIENTAL CONSULTANTS CO., LTD	
DESIGNED BY	CHECKED BY
DRAWN BY	CHECKED BY
DATE	DATE

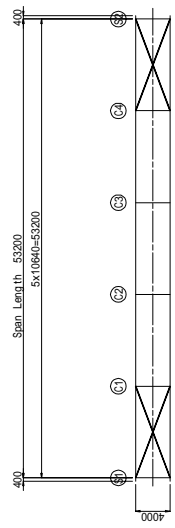
# 3-2 LATERAL BRACING

SCALE = 1 / 30

SECTION	SCALE	DRAWING NO.	SHEET NO.
DRAWING NO.	1/30	3-2 LATERAL BRACING	OF
DATE		DESCRIPTION	SIGNATURE



**KEY PLAN**  
SCALE = 1 / 300

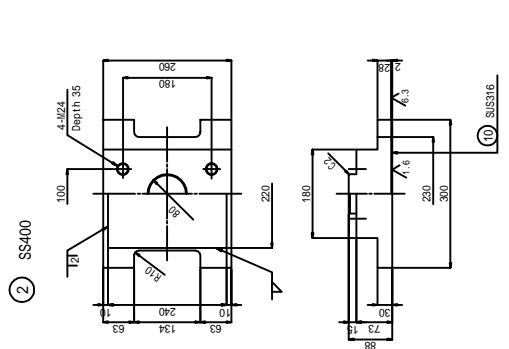
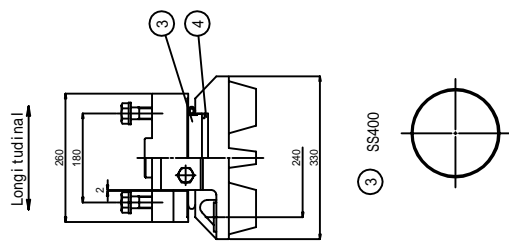
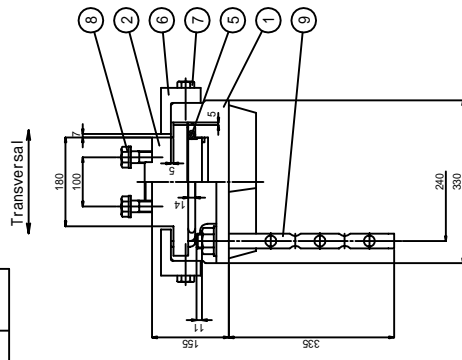


- NOTES:**
- 1) Materials to be SMA400W unless otherwise noted.
  - 2) Field splices shall be connected by T C B (122, S107W) .
  - 3) Radius of seal top to be 35mm unless noted.

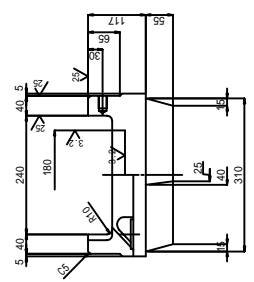
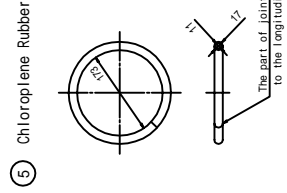
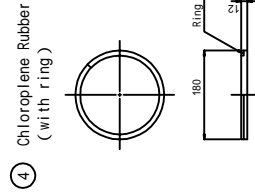
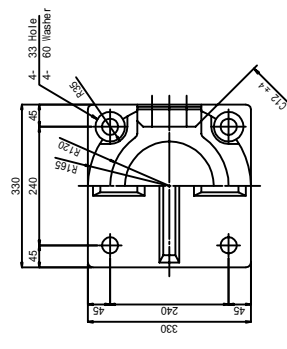
THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM  
 PROJECT: MANAGEMENT UNIT NO. 18, VIETNAM CITY OF HO CHI MINH  
 CONSULTANT: ORIENTAL CONSULTANTS CO., LTD  
 DESIGNED BY: / EXECUTED BY: / APPROVED BY: /  
 DRAWN BY: / DATE: /

### 4-1 BEARING SHOE (for PLATE GIRDER) / 10

60t - Fix



① SCW480N



- ⑦ Bolt M20 x 50 4.6
- ⑧ Bolt M24 x 4.6 washer 2&4&4x4.5 -10H

**Design Condition**

Reaction	
Total Reaction	R 622 kN
Reaction of Dead Load	Rd 480 kN
Longitudinal Reaction (Eq.)	R <sub>lff</sub> 195 kN
Longitudinal Reaction (Eq.)	R <sub>lfe</sub> 254 kN
Transversal Reaction (Eq.)	R <sub>lze</sub> 242 kN
Uplift (Eq.)	V 67 kN

Allowable Compressive Stress	
Sub-Structure	ba 8 N/mm <sup>2</sup>
Super-Structure	ba 210 N/mm <sup>2</sup>

**Material List**

No.	Name	Material	Weight(kg)	Remarks
1	Lower Shoe	SCW480N	1 49.5	
2	Upper Shoe	SS400	1 31.1	
3	Pinch Plate	SS400	1 5.3	
4	Rubber Plate	Chloroprene	1 0.4	with Ring
5	Sealing	Chloroprene	1 0.1	
6	Side Block	SS400	2 7.1	
7	Bolt		4 0.8	JIS B 1180
8	Bolt/washer		4 1.4	JIS B 1180 JIS B 1238
9	Anchorbolt/Nut	SS400	4 9.8	JIS B 1181 JIS B 1181
10	Stainless Plate	SUS316	1 0.8	Z20&Z23&Z38
Total Weight			106.3	kg
Surface Treatment				
Galvanizing			650 g/m <sup>2</sup> , 350 g/m <sup>2</sup> (Bolt)	
Painting			Painting Area 0.40 m <sup>2</sup>	

DRAWING TITLE	SCALE	APPROVAL NO.	DRAWN BY
BEARING SHOE 60t-Fix	1 / 10		
DATE	DESCRIPTION	REVISION	



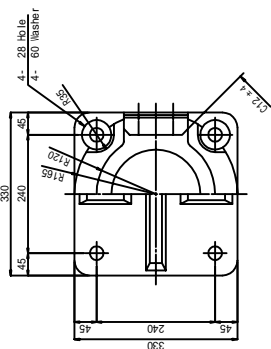
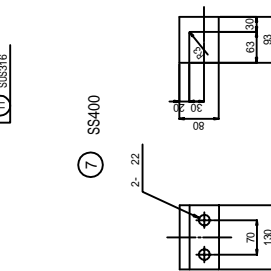
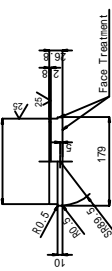
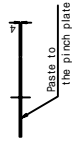
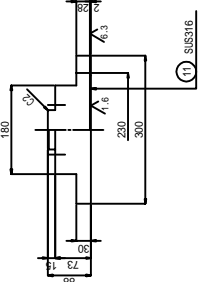
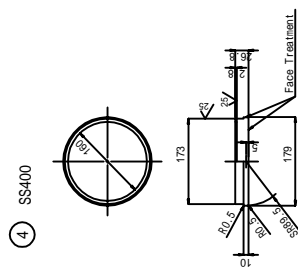
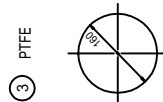
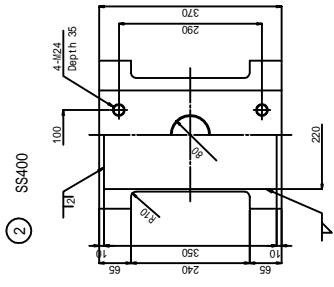
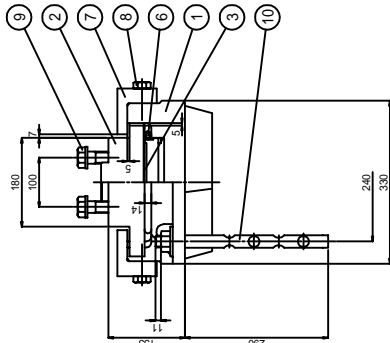
THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	DESIGN NO.	DATE
PROJECT: MANAGEMENT UNIT NO. 18, MINISTRY OF TRANSPORT	DATE	DATE
CONSULTANT: ORIENTAL CONSULTANTS CO., LTD.	DESIGNED BY	APPROVED BY
	SIGNATURE	

# 4-2 BEARING SHOE (for PLATE GIRDER) / 10

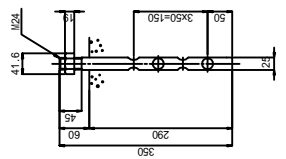
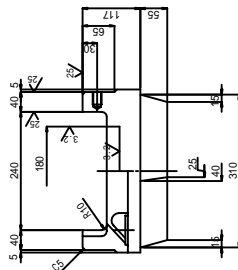
60t - Mov

Transverse

Longitudinal



The part of joint face to the longitudinal



**Design Condition**

Total Reaction	R	603 kN
Reaction of Dead Load	Rd	480 kN
Longitudinal Reaction (Eq.)	R <sub>l1</sub>	60 kN
Longitudinal Reaction (Eq.)	R <sub>l2</sub>	176 kN
Transverse Reaction (Eq.)	R <sub>t</sub>	176 kN
Uplift (Eq.)	V	67 kN

Moveable Length	e1	50 mm
Surplus Length	e2	70 mm
Total Length	e	110 mm

Coefficient of Friction	f	0.10
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Allowable Compressive Stress	ba	8 N/mm <sup>2</sup>
Sub-Structure	ba	210 N/mm <sup>2</sup>

**Material List**

No.	Name	Material	Weight(kg)	Remarks
1	Lower Shoe	SM480N	1	48.7
2	Upper Shoe	SS400	1	43.4
3	Pinch Plate	PTFE	1	0.2
4	Pinch Plate	SS400	1	4.6
5	Rubber Plate	Chloroprene	1	0.4 with Ring
6	Sealing	Chloroprene	1	0.1
7	Side Block	SS400	2	7.1
8	Bolt		4	0.8 JIS B 1180
9	Bolt/washer		4	1.4 JIS B 1180
10	Anchorbolt/Nut	SS400	4	5.8 JIS B 1181
11	Stainless Plate	SUS316	1	1.2 220x24x6

Total Weight	114.7	kg
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Surface Treatment	Galvanizing	550 g/m <sup>2</sup> , 350 g/m <sup>2</sup> ( Bolt )
Painting Area	0.43	m <sup>2</sup>

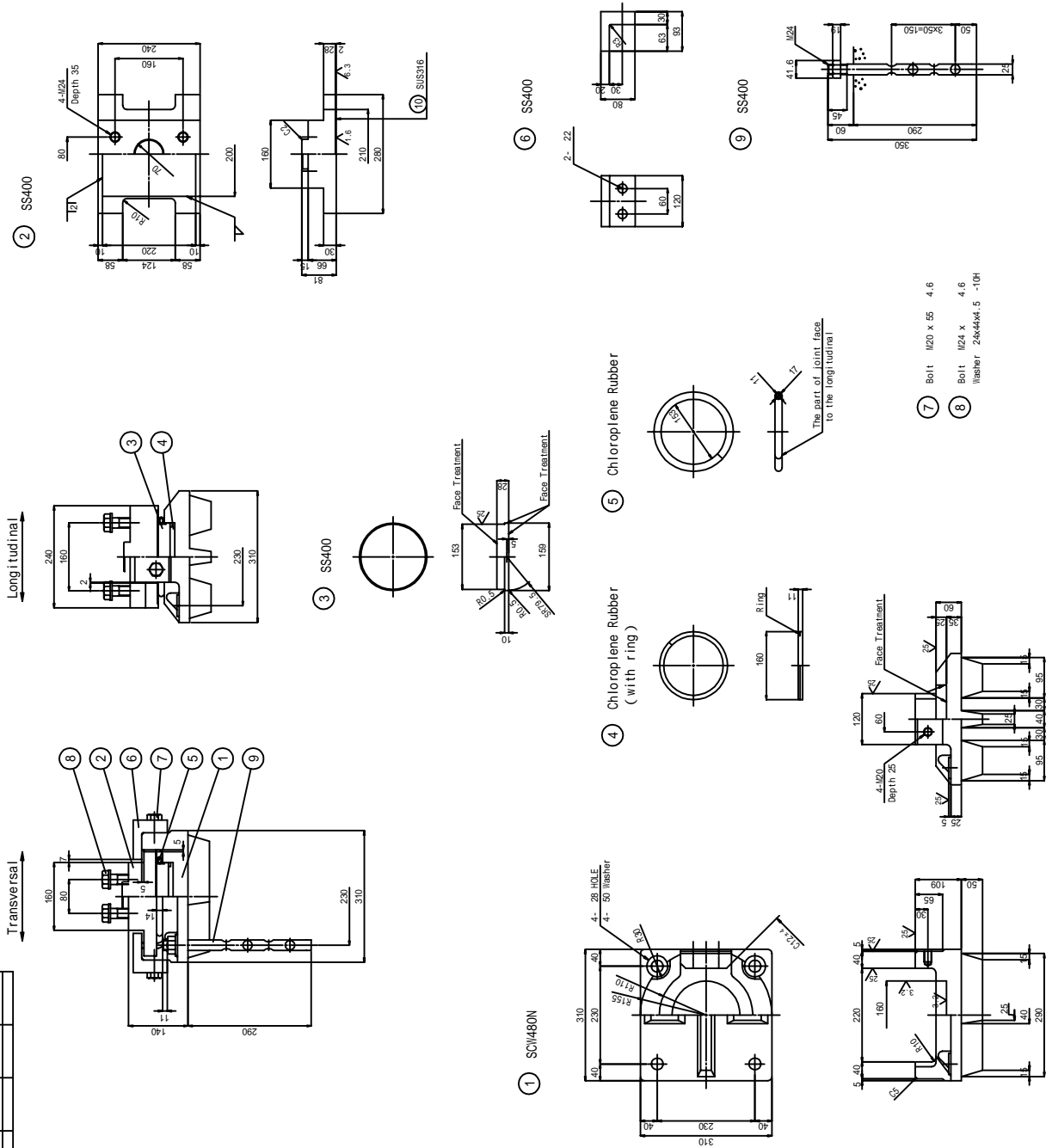
THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM  
 PROJECT: MANAGEMENT UNIT No. 18, MINISTRY OF TRANSPORT  
 CONSULTANT: ORIENTAL CONSULTANTS CO., LTD  
 DESIGNED BY: / EXECUTED BY: / APPROVED BY: /  
 SIGNATURE: / DATE: /

# 4-3 BEARING SHOE (for PLATE GIRDER) / 10

40t - Fix

DATE	REVISION	APPROVAL NO.	DESIGNER

DATE	REVISION	APPROVAL NO.	DESIGNER



Reaction	
Total Reaction	R 472 kN
Reaction of Dead Load	Rd 320 kN
Longitudinal Reaction (Eq.)	R <sub>l1</sub> 135 kN
Longitudinal Reaction (Eq.)	R <sub>l2</sub> 176 kN
Transverse Reaction (Eq.)	R <sub>t</sub> 176 kN
Uplift (Eq.)	V 62 kN
Allowable Compressive Stress	
Sub-Structure	ba 8 N/mm <sup>2</sup>
Super-Structure	ba 210 N/mm <sup>2</sup>

No.	Name	Material	Weight(kg)	Remarks
1	Lower Shoe	SCM480N	1 40.2	
2	Upper Shoe	SS400	1 23.8	
3	Pinch Plate	SS400	1 4.2	
4	Rubber Plate	Chloroprene	1 0.3 with Ring	
5	Sealing	Chloroprene	1 0.1	
6	Side Block	SS400	2 6.5	
7	Bolt		4 0.8	JIS B 1180
8	Bolt/Washer		4 1.4	JIS B 1238
9	Anchorbolt/Nut	SS400	4 5.8	JIS B 1161
10	Stainless Plate	SUS316	1 0.7	JIS B 1161
Total Weight			83.8	kg
Surface Treatment				
Galvanizing			650 g/m <sup>2</sup> , 350 g/m <sup>2</sup> (Bolt)	
Painting			Painting Area 0.36 m <sup>2</sup>	

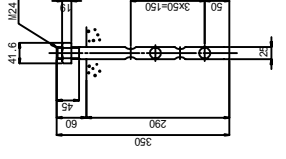
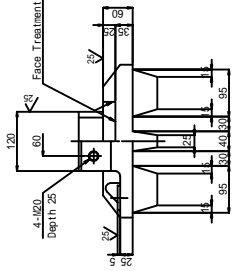
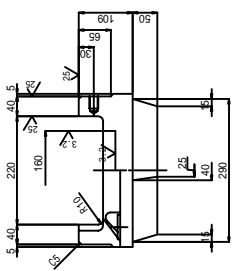
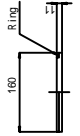
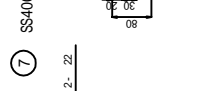
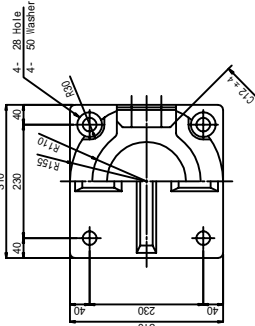
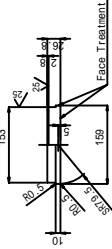
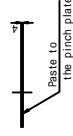
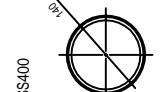
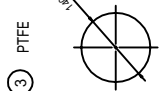
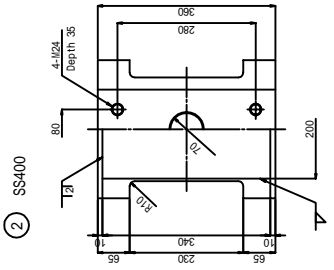
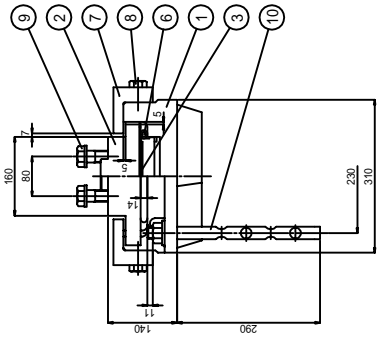
THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM
PROJECT: "CONSTRUCTION OF THE PORT OF HONG HONG IN HONG KONG SPECIAL ADMINISTRATIVE REGION"
CONSULTANT: ORIENTAL CONSULTANTS CO., LTD
DESIGNED BY: _____
APPROVED BY: _____
DATE: _____
SIGNATURE: _____

# 4-4 BEARING SHOE (for PLATE GIRDER) / 10

40t - Mov

Transversal

Longitudinal



Design Condition

Total Reaction	R	461 kN
Reaction of Dead Load	Rd	320 kN
Longitudinal Reaction (Eq.)	R <sub>lff</sub>	46 kN
Longitudinal Reaction (Eq.)	R <sub>lfe</sub>	176 kN
Transversal Reaction (Eq.)	R <sub>tz</sub>	176 kN
Uplift (Eq.)	V	62 kN

Movement

Movable Length	e1	50 mm
Surplus Length	e2	70 mm
Total Length	e	110 mm

Friction

Coefficient of Friction	f	0.10
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Allowable Compressive Stresses

Sub-Structure	ba	8 N/mm <sup>2</sup>
Super-Structure	ba	210 N/mm <sup>2</sup>

### Material List

No.	Name	Material	Weight(kg)	Remarks
1	Lower Shoe	SCM480N	1	40.2
2	Upper Shoe	SS400	1	34.9
3	Pinch Plate	PTFE	1	0.1
4	Pinch Plate	SS400	1	3.7
5	Rubber Plate	Chloroprene	1	0.3 with Ring
6	Sealing	Chloroprene	1	0.1
7	Side Block	SS400	2	6.5
8	Bolt	—	4	0.8 JIS B 1180
9	Bolt/washer	—	4	1.4 JIS B 1190
10	Anchorbolt/Nut	SS400	4	5.8 JIS B 1181
11	Stainless Plate	SUS316	1	1.1 200x2x36

Total weight 94.9 kg

Surface Treatment

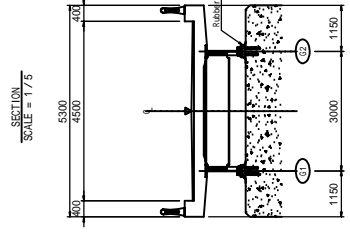
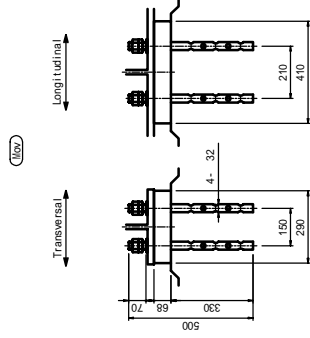
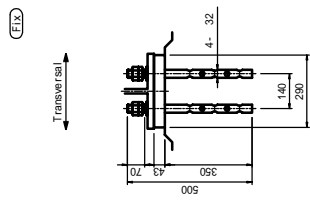
Galvanizing	550 g/m <sup>2</sup> , 350 g/m <sup>2</sup> (Bolt)
Painting	Painting Area 0.38 m <sup>2</sup>

DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY
CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY
DATE	DATE	DATE	DATE

# 5-1 BEARING SHOE ( Rubber ) - 500KN S=1/20

(Fix , Mov)

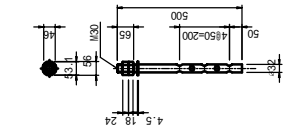
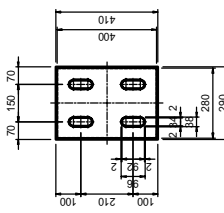
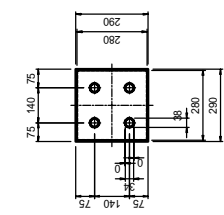
NO.	DATE	DESCRIPTION	SIGNATURE
1		BEARING SHOE ( Rubber ) - 500KN	
2			
3			



(FIX) Rubber Bearing Shoe (chloroplene+SS400)

(MOV) Rubber Bearing Shoe (chloroplene+SS400)

Anchor Bolt (SS304)



Rubber : te x m = 0mm x 3 layers  
Steel plate : ts x m = 2.3mm x 4 plates

Rubber : te x m = 0mm x 5 layers  
Steel plate : ts x m = 2.3mm x 6 plates

**Material List**

Item	Size	Material	Unit	Qty	Quantity	Unit Price (JPY)	Total Price (JPY)	Remarks
Rubber (FIX)	200x290x43	CR+SS400	Mos	2	2	54.9		
Rubber (Mov)	200x290x68		Mos	2	2	109.8		
ANCHOR BOLT	SS304		M	8	16	374.4		16 100% 374.4

note 1. Anchor bolt is specified to be galvanized.  
note 2. Quantity of galvanizing is specified by JIS8841 H025.

Note : 1) The physical properties of the rubber are referred to the table below.

**Physical Properties**

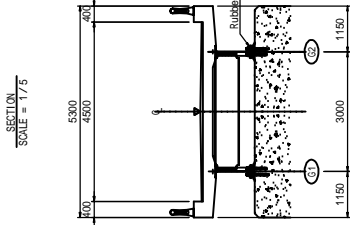
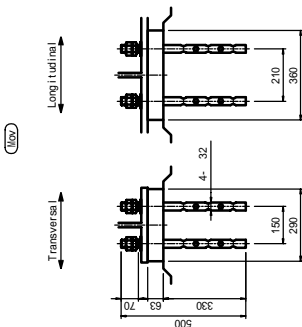
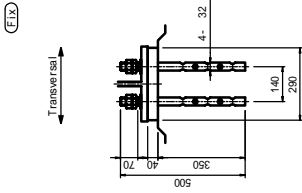
Items	digit	Fluorocarbon (CF)		Items for test
		Standard value	test value	
Specific Characteristics	breaking elongation	%	680	Compressive test (JIS K 6251)
	tears strength	N/mm <sup>2</sup>	over 15	Compression test (JIS K 6251)
aging test	changeable rate for 20 days (70 degree C/72 hours)	%	minus 10 to plus 100	Air heat aging test (JIS K 6251)
	changeable rate of elongation (70 degree C/72 hours)	%	plus/2	Air heat aging test (JIS K 6251)
compressive permanent deformation rate	under 35 (70 degree C/72 hours)	%	no abnormality	Compressive permanent deformation test (JIS K 6251)
	under 35 (70 degree C/72 hours)	%	abnormality	Static ozone aging test (JIS K 6251)
ozone resistance	by visual inspection	---	no cracks	Static ozone aging test (JIS K 6251)
	under 10 (55 degree C/72 hours)	%	abnormality	Flexion test (JIS K 6251)
cold resistance	under minus 30 degree	---	no abnormality	Low temperature impact test (JIS K 6251)
	under minus 30 degree	%	abnormality	Static ozone aging test (JIS K 6251)
adhesive strength	by visual inspection	---	no cracks	Exfoliation test (JIS K 6251)
	over 7	N/mm	20	

JIS - Japanese Industrial Standard

# 5-2 BEARING SHOE ( Rubber ) - 400KN S=1/20

( Fix , Mov )

DESIGNED BY	DESIGNED BY	DESIGNED BY
CHECKED BY	CHECKED BY	CHECKED BY
DATE	DATE	DATE

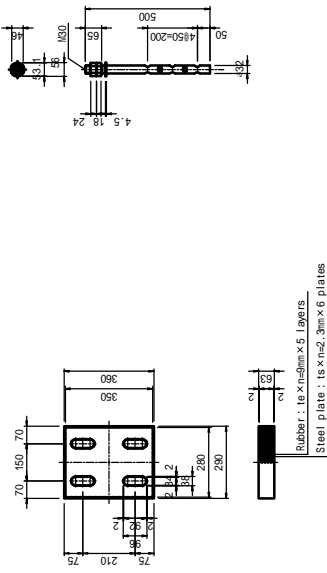
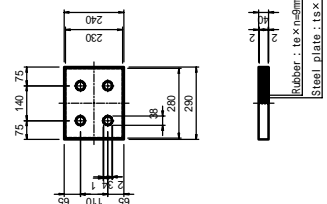


NO.	DATE	DESCRIPTION	SIGNATURE
1		BEARING SHOE ( Rubber ) - 400KN	

(FIX) Rubber Bearing Shoe (chloroplene:SS400)

(MOV) Rubber Bearing Shoe (chloroplene:SS400)

Anchor Bolt (S355N)



Item	Size	Material	Unit	Qty	Quantity	Unit Price (JPY)	Total Price (JPY)	Remarks
Rubber (FIX)	200x240x40	CP:SS400	Nos.	2	2	54.9		
Rubber (Mov)	200x260x60			2	2	109.8		
ANCHOR BOLT	S355N			8	16	374.4		with zinc plating

note 1. Anchor bolt is specified to be galvanized.  
note 2. Quantity of galvanizing is specified by JIS8841 H025.

Note : 1) The physical properties of the rubber are referred the table below.

Physical Properties

Items	digit	Plychotoprene (CP)		Items for test
		test value	GB	
Specific Characteristics	breaking elongation	%	680	Compressive test (JIS K 6251)
	tears strength	N/mm <sup>2</sup>	over 450	
	changeable rate for 20 degree C/72 hours	%	minus 10 to plus 100	Air heat aging test (JIS K 6252)
aging test	changeable rate of elongation	%	over minus 50 (70 degree C/72 hours)	
	compressive permanent deformation rate	%	under 35 (70 degree C/72 hours)	Compressive permanent deformation test (JIS K 6252)
	ozone resistance	---	no cracks by visual inspection	Static ozone aging test (JIS K 6257)
Adging durability	water resistance	%	under 10 (55 degree C/72 hours)	Flexion test (JIS K 6258)
	cold resistance	---	under minus 30 degree	low temperature impact test (JIS K 6261)
	ozone resistance (low temperature)	---	no cracks by visual inspection	Static ozone aging test (JIS K 6258)
adhesive strength	N/mm	over 7	20	Extraction test (JIS K 6259)

JIS -Japanese Industrial Standard

# 5-3 BEARING SHOE ( Rubber ) - 300KN S=1/20

(Fix , Mov)

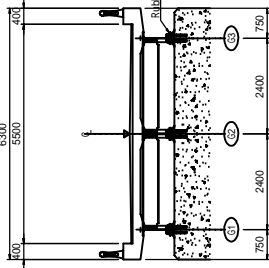
NO.	DATE	REVISION	BY	CHK	APP

DESIGNED BY	
CHECKED BY	
DATE	

**(FIX)**

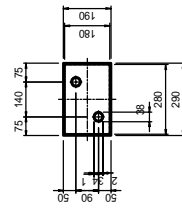
**(MOV)**

**(MOV)**



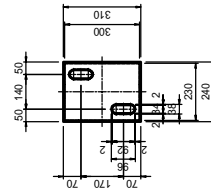
SECTION  
SCALE = 1/7.5

**(FIX)** Rubber Bearing Shoe (chloroplene-SS400)



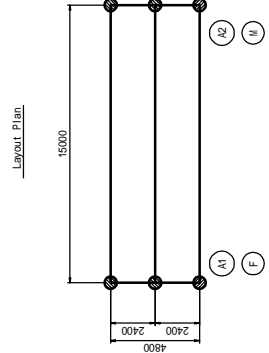
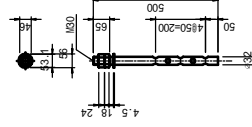
Rubber: 18 x 140 x 75 mm x 3 layers.  
Steel plate: 18 x 140 x 2.3 mm x 4 plates.

**(MOV)** Rubber Bearing Shoe (chloroplene-SS400)



Rubber: 18 x 140 x 50 mm x 5 layers.  
Steel plate: 18 x 140 x 2.3 mm x 6 plates.

Anchor Bolt (SS52N)



## Material List

Item	Size	Material	Unit	Qty	Quantity	Unit Price (JPY)	Total (JPY)	Remarks
Rubber (FIX)	180x280x40	CP-SS400	Nos.	3	3	54.9	164.7	
Rubber (Mov)	240x240x60	CP-SS400	nos.	3	3	109.8	329.4	
ANCHOR BOLT	24x500	SS52N	φ	6	12	374.4	4512.0	1/12mmφ Anchor Bolt

note 1. Anchor bolt is specified to be galvanized.

note 2. Quantity of galvanizing is specified by JIS8841 H0235.

Note : 1) The physical properties of the rubber are referred the table below.

## Physical Properties

Items	digit	Pyrocharoplene (CP)		Items for test
		Standard value	test value	
Specific Characteristics	breaking elongation	%	680	Compressive test (JIS K 6251)
	tear strength	N/mm <sup>2</sup>	18.0	
	changeable rate for 25% elongation	%	plus12	
aging test	changeable rate of elongation	%	plus7	Hot air aging test (JIS K 6252)
	compressive permanent deformation rate	%	under 35	Compressive permanent deformation test (JIS K 6252)
aging durability	ozone resistance	---	no cracks by visual inspection	Static ozone aging test (JIS K 6253)
	water resistance	%	under 10 (55 degree C/72hours)	Swelling test (JIS K 6253)
	cold resistance	---	under minus 30 degree	Low temperature impact test (JIS K 6251)
adhesive strength	ozone resistance (low temperature)	---	no cracks by visual inspection	Static ozone aging test (JIS K 6253)
		N/mm	over 7	Swelling test (JIS K 6253)

JIS - Japanese Industrial Standard

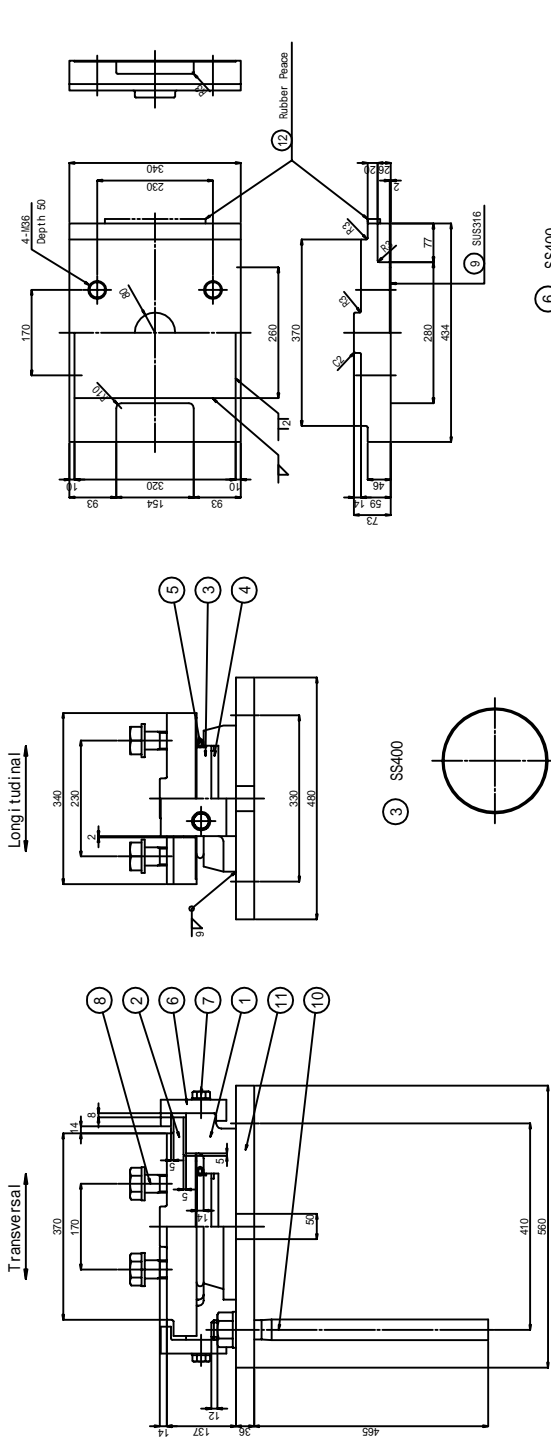
# 6-1 BEARING SHOE (for STEEL TRUSS) 1 / 10

80t - Fix

DESIGN NO.	1 / 10	QUANTITY NO.	01
DRAWING TITLE	BEARING SHOE 80t-F1A	DATE	
REV. NO.		DESCRIPTION	

Transversal

Longitudinal



Design Condition

Total Reaction	R	800 KN
Reaction of Dead Load	Rd	520 KN
Longitudinal Reaction (Eq.)	R <sub>lt</sub>	926 KN
Transversal Reaction (Eq.)	R <sub>tr</sub>	463 KN
Uplift (Eq.)	V	166 KN

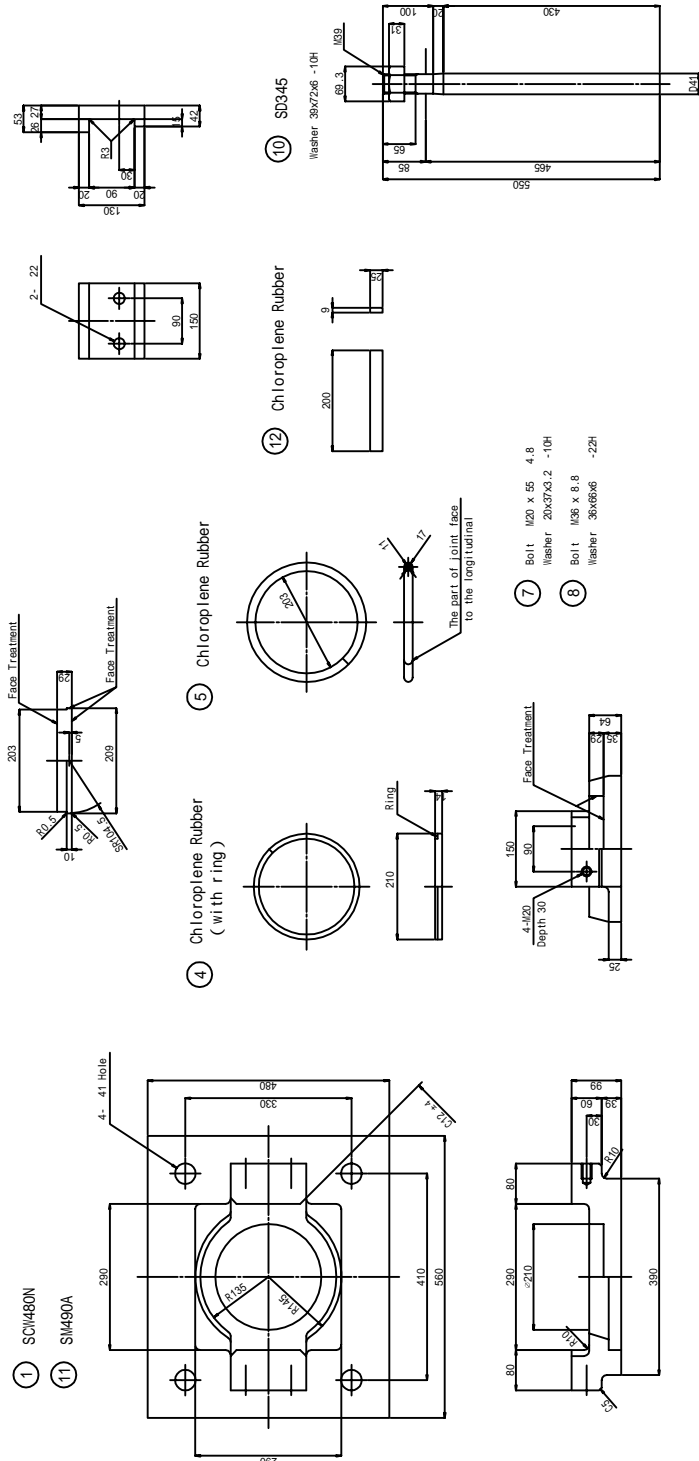
Horizontal Seismic Coefficient

Horizontal Coefficient	Kh	
Allowable Compressive Stress	ba	8 N/mm <sup>2</sup>
Super-Structure	ba	210 N/mm <sup>2</sup>

Material List

No	Material	Weight (kg)	Remarks
①	Lower Shoe SCI480N	1	44.2
②	Upper Shoe SCI480N or SCI480	1	56.4
③	Pinch Plate SS400	1	7.5
④	Rubber Plate Chloroprene	1	0.6 with Ring
⑤	Shealing Chloroprene	1	0.1
⑥	Side Block SS400	2	9.9
⑦	Bolt/washer JIS B 1180 JIS B 1256	4	0.9
⑧	Bolt/washer JIS B 1180 JIS B 1256	4	0.9
⑨	Stainless Plate SUS316	1	1.3 860x240x6
⑩	Anchor Bolt/Washer SD345	4	25.1 JIS B 1181 JIS B 1258
⑪	Base Plate SM490A	1	73.9
⑫	Rubber Pease Chloroprene	2	for erection
Total Weight		221.9	kg
Surface Treatment		Galvanizing 550 g/m <sup>2</sup> , 350 g/m <sup>2</sup> (Bolt)	
Painting Area		0.76 m <sup>2</sup>	

Note) 1. Rubber pease ⑫ should be removed after erection works.  
 2. Mark ○ indicates the galvanized materials



THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECTS MANAGEMENT UNIT NO. 16, MINISTRY OF TRANSPORT	
CONTRACT NO. 100/1997/PT.01	
CONTRACTOR: ORIENTAL CONSULTANTS CO., LTD.	
DESIGNED BY	CHECKED BY
DATE	DATE

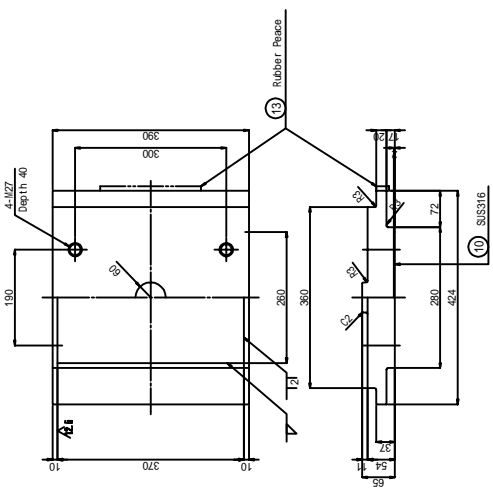
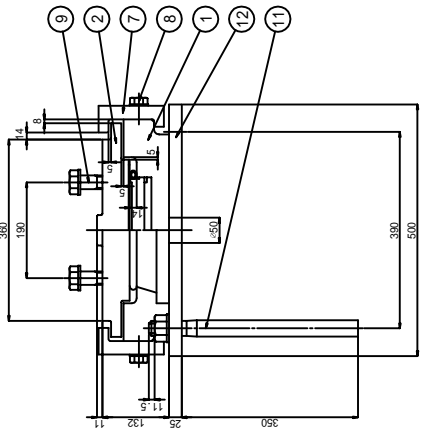
# 6-2 BEARING SHOE (for STEEL TRUSS) 1 / 10

80t - Mov

② SIM490A or SCW480N

Transverse

Longitudinal



Reaction	
Total Reaction	R 800 KN
Reaction of Dead Load	Rd 520 KN
Longitudinal Reaction (Eq.)	R <sub>HL</sub> 80 KN
Transverse Reaction (Eq.)	R <sub>VT</sub> 463 KN
Uplift (Eq.)	V 156 KN

Movement	
Moveable Length	e1 50 mm
Surplus Length	e2 70 mm
Total Length	e 110 mm

Horizontal Seismic Coefficient	
Horizontal Coefficient	kh 0.89

Friction	
Coefficient of Friction	f 0.10

Allowable Compressive Stress	
Sub-Structure	ba 8 N/mm <sup>2</sup>
Super-Structure	ba 210 N/mm <sup>2</sup>

## Design Condition

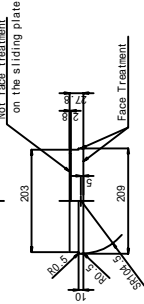
③ PTFE

④ SS400

① SCW480N

⑫ SIM490A

⑦ SS400

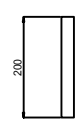
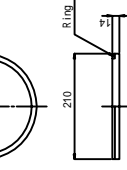


⑤ Chloroprene Rubber (with ring)

⑥ Chloroprene Rubber



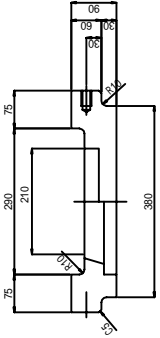
⑬ Chloroprene Rubber



## Material List

No.	Material	Weight (kg)	Remarks
①	Lower Shoe SCW480N	1 42.1	
②	Upper Shoe SIM490A or SCW480N	1 57.2	
3	Sliding Plate PTFE	1 0.2	
4	Pinch Plate SS400	1 6.6	
5	Rubber Plate Chloroprene	1 0.6	with ring
6	Sealing Chloroprene	1 0.1	
⑦	Side Block SS400	2 9.9	
⑧	Bolt/washer	4 0.9	JIS B 180, JIS B 1256, JIS B 1258, JIS B 1259
⑨	Bolt/washer	4 4.2	JIS B 180, JIS B 1256, JIS B 1258, JIS B 1259
10	Stainless Plate SUS316	1 1.5	200x20x6
⑪	Anchor Bolt/Washer	4 11.2	JIS B 181, JIS B 1258
⑫	Base Plate SIM490A	1 40.2	
13	Rubber Piece Chloroprene	2	for erection
Total Weight		170.5	kg
Surface Treatment			
Galvanizing		550 g/m <sup>2</sup> , 350 g/m <sup>2</sup> ( Bolt )	
Painting Area		0.66	m <sup>2</sup>

Note) 1. Rubber piece ⑬ should be removed after erection works.  
2. Mark ○ indicates the galvanized materials



- ⑧ Bolt M20 x 55 4.8
- ⑨ Washer 20x37x3.2 -10H
- ⑩ Bolt M27 x 8.8
- ⑪ Washer 27x50x4.5 -22H

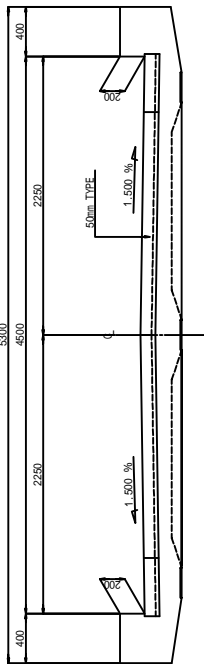


THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM			
PROJECTS MANAGEMENT UNIT, 14, LE KHAI PHU ST, HO CHI MINH CITY			
PROJECT: REPAIR FOR DAMAGES OF BRIDGE AT DAM KHAU MANG HAI			
CONSULTANT: GEOTECHNICAL CONSULTING CO., LTD.			
NAME	DESIGNED BY	APPROVED BY	
SIGNATURE	SIGNATURE	SIGNATURE	
DATE	DATE	DATE	

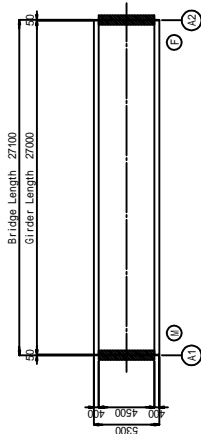
### 7-1 EXPANSION JOINT S = 1 / 40 ( TYPE 50mm )

DESIGN NO.	SCALE	DATE	SHEET NO.
7-1	1:40		OF
7-1 EXPANSION JOINT (TYPE 50mm)			
NO.	DATE	DESCRIPTION	SIGNATURE

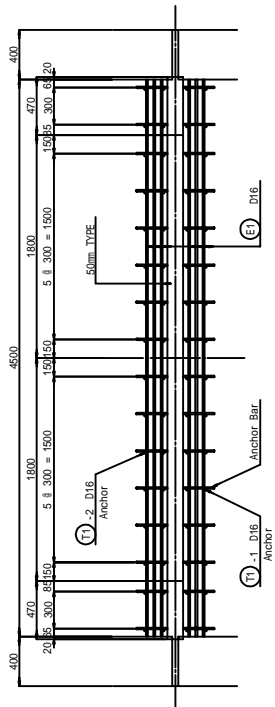
CROSS SECTION



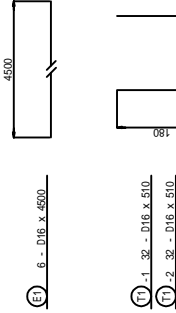
KEY PLAN S=1/400



PLAN



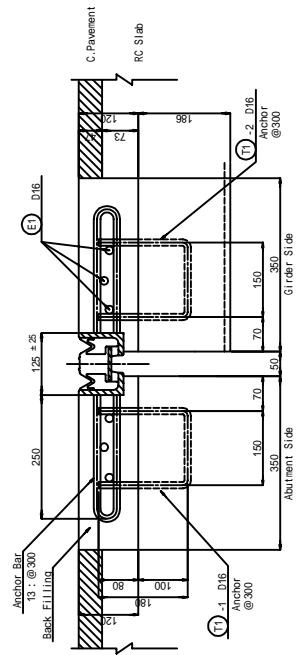
REINFORCING BAR S=1/10



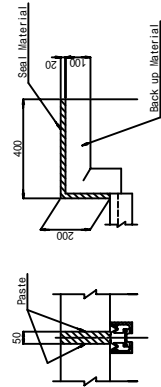
MATERIAL LIST

NAME	KIND	SIZE	QUANTITY	REMARKS
Rubber Joint	TYPE 50mm	125x 90x 1800	4 nos	Total 9.08 m
Back Filling	Concrete	125x 90x 470	4 nos	
Reinforcing Bar	E1	32x 120x 600	0.756 m <sup>3</sup>	
Anchor Bar	T1-1	32-D16x 510	84.2 Kg	Sub Structure
Anchor Bar	T1-2	32-D16x 510	25.5 Kg	Sub Structure
Seal Material		50x 20x 600	3.6 ̄	
Bond	Primer		g	
Back up Material	Urethane	100x100	3.6 m	

DETAIL S=1/10



DETAIL OF SEALING COAT S=1/20



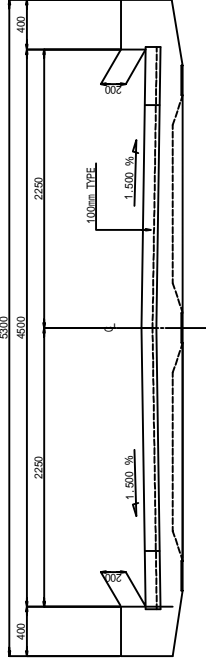
THE GOVERNMENT OF SOCIALIST REPUBLIC OF VIETNAM	
PROJECTS MANAGEMENT UNIT (IN THE MINISTRY OF TRANSPORT)	
PROJECT: REPAIRS FOR BRIDGES IN HAI PHONG PROVINCE	
CONTRACT: CONTRACT NO. 1/10	
DESIGNED BY	APPROVED BY
NAME	NAME
SIGNATURE	SIGNATURE
DATE	DATE

# 7-2 EXPANSION JOINT S = 1 / 40

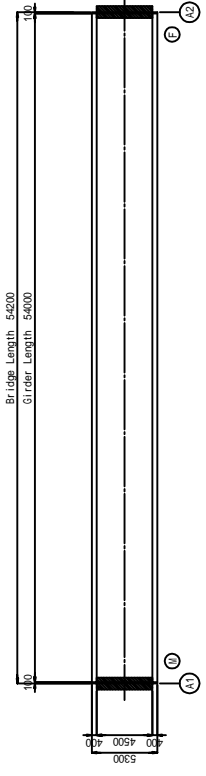
( TYPE 100mm )

SCALE	1/40	DATE	
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NO.		DATE	
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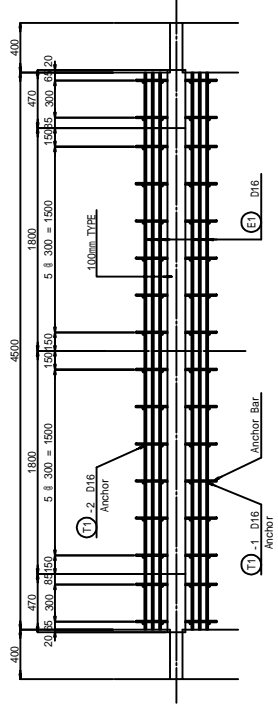
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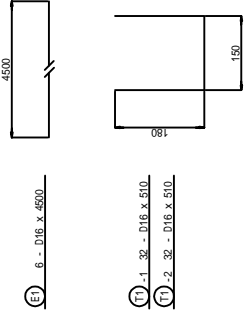
KEY PLAN S=1/400



PLAN



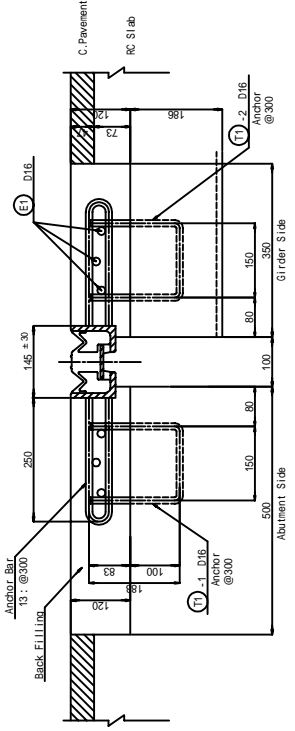
REINFORCING BAR S=1/10



MATERIAL LIST

NAME	KIND	SIZE	QUANTITY	REMARKS
Rubber Joint	TYPE 100mm	145x 90x 1800	4 nos	Total 9.08 m
Back Filling	Concrete	145x 90x 470	4 nos	
Reinforcing Bar		60x120x300	0.54 m <sup>3</sup>	
Anchor Bar		32x120x300	0.378 m <sup>3</sup>	
Seal Material	T1-1	12-D16x500	84.2 kg	Sub Structure
Bond	T1-2	32-D16x 510	25.5 kg	Slupe Structure
Back up Material	Primer	100x 20x240	4.8 g	
	Urethane	200x100	2.4 m	

DETAIL S=1/10



DETAIL OF SEALING COAT S=1/20

