

Station	Horizontal Alignment	Superelevation	Existing Level	Setting Height	Filling Height	Accumulative Length	Distance	Station
459.000	L=200.000	0.65	459.956	459.770	0.65	3800.000	20.000	460.000
459.020	L=200.000	1.34	459.855	459.887	1.34	3640.000	20.000	460.020
459.040	L=200.000	1.31	459.800	459.855	1.31	3480.000	20.000	460.040
459.060	L=200.000	0.96	459.830	459.839	0.96	3680.000	20.000	460.060
459.080	L=200.000	0.96	459.830	459.839	0.96	3680.000	20.000	460.080
459.100	L=200.000	1.48	459.774	459.960	1.48	3700.000	20.000	460.100
459.120	L=200.000	1.04	459.774	459.960	1.04	3680.000	20.000	460.120
459.140	L=200.000	0.96	459.830	459.839	0.96	3680.000	20.000	460.140
459.160	L=200.000	0.96	459.830	459.839	0.96	3680.000	20.000	460.160
459.180	L=200.000	2.27	459.672	459.028	2.27	3720.000	20.000	460.180
459.200	L=200.000	2.22	459.660	459.034	2.22	3740.000	20.000	460.200
459.220	L=200.000	1.89	459.920	459.028	1.89	3760.000	20.000	460.220
459.240	L=200.000	0.62	459.232	459.000	0.62	3780.000	20.000	460.240
459.260	L=200.000	0.55	459.246	459.953	0.55	3800.000	20.000	460.260
459.280	L=200.000	0.86	459.872	459.885	0.86	3820.000	20.000	460.280
459.300	L=200.000	1.08	459.565	459.794	1.08	3840.000	20.000	460.300
459.320	L=200.000	1.26	459.276	459.663	1.26	3860.000	20.000	460.320
459.340	L=200.000	1.22	459.200	459.570	1.22	3880.000	20.000	460.340
459.360	L=200.000	1.22	459.139	459.513	1.22	3900.000	20.000	460.360
459.380	L=200.000	1.31	459.078	459.539	1.31	3920.000	20.000	460.380
459.400	L=200.000	1.47	459.000	459.427	1.47	3940.000	20.000	460.400
459.420	L=200.000	1.56	459.000	459.707	1.56	3960.000	20.000	460.420
459.440	L=200.000	1.64	459.000	459.782	1.64	3980.000	20.000	460.440
459.460	L=200.000	1.84	459.946	459.983	1.84	4000.000	20.000	460.460
459.480	L=200.000	1.98	459.888	459.015	1.98	4020.000	20.000	460.480
459.500	L=200.000	2.08	459.822	459.047	2.08	4040.000	20.000	460.500
459.520	L=200.000	2.10	459.950	459.204	2.10	4080.000	20.000	460.520
459.540	L=200.000	2.53	459.800	459.280	2.53	4100.000	20.000	460.540
459.560	L=200.000	2.28	459.920	459.357	2.28	4120.000	20.000	460.560
459.580	L=200.000	2.35	459.924	459.424	2.35	4140.000	20.000	460.580
459.600	L=200.000	2.56	459.900	459.517	2.56	4160.000	20.000	460.600
459.620	L=200.000	2.60	459.800	459.586	2.60	4180.000	20.000	460.620
459.640	L=200.000	2.99	459.527	459.664	2.99	4200.000	20.000	460.640

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

PRELIMINARY SURVEY FOR THE PROJECT FOR
CONSTRUCTION OF NILE RIVER BRIDGE
IN SOUTHERN SUDAN

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

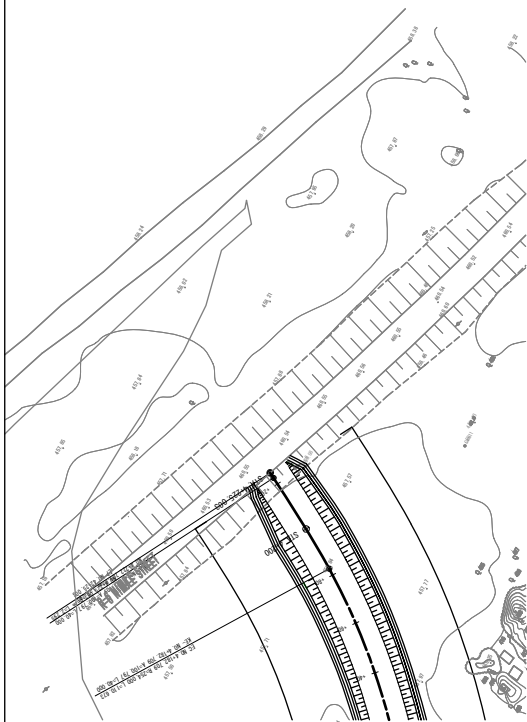
General Plan And Profile (7)

TITLE:

SCALE
V=1/200
H=1/1000

SHEET NO.
NB-12

DATE
OCT 2011



DL=465.000	
Slope (FPH)	460.610
F P H	460.514
Slope (PH)	459.664
P H	459.664
Existing Level	457.527
Cutting Height	
Filling Height	2.99
Accumulative Length	4200.000
Distance	17.29
Station	+220
Horizontal Alignment	
Superelevation	

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

PRELIMINARY SURVEY FOR THE PROJECT FOR
CONSTRUCTION OF NILE RIVER BRIDGE
IN SOUTHERN SUDAN

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

TITLE:

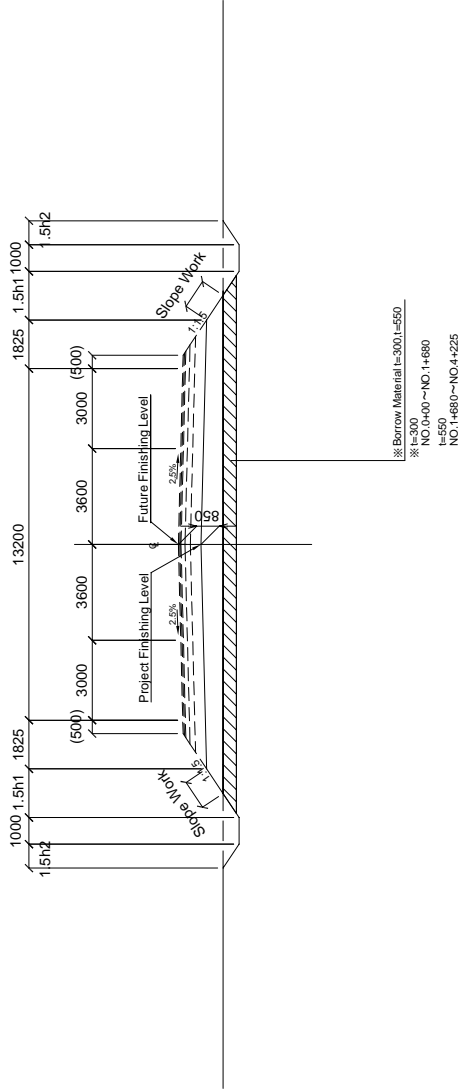
General Plan And Profile (8)

SCALE	SHEET NO.
V=1/200	
H=1/1000	
DATE	
	OCT 2011

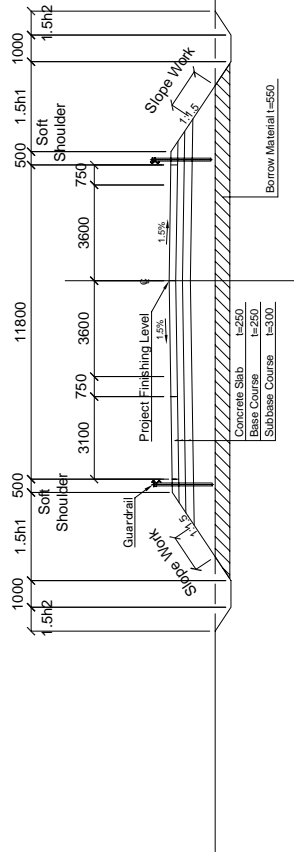
Typical Cross Section

SCALE 1/100

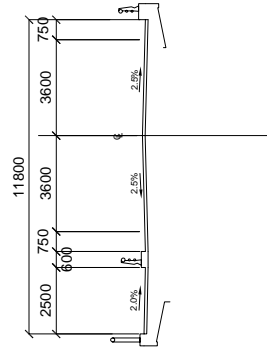
Standard



Concrete Pavement
No. 2+254~No. 2+304
No. 2+864~No. 2+914



Bridge
No. 2+304~No. 2+864



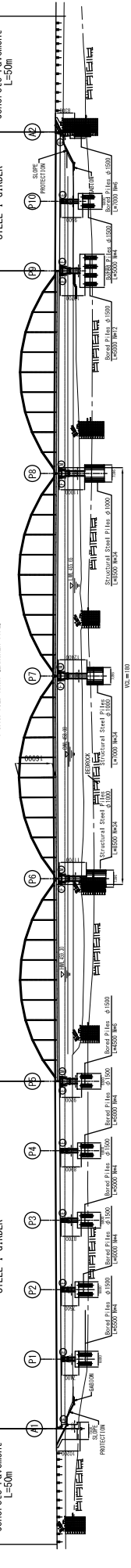
MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: Typical Cross Section Of Approach Road	SCALE	SHEET NO.
				1/100	NB-14
				DATE	OCT 2011

560000

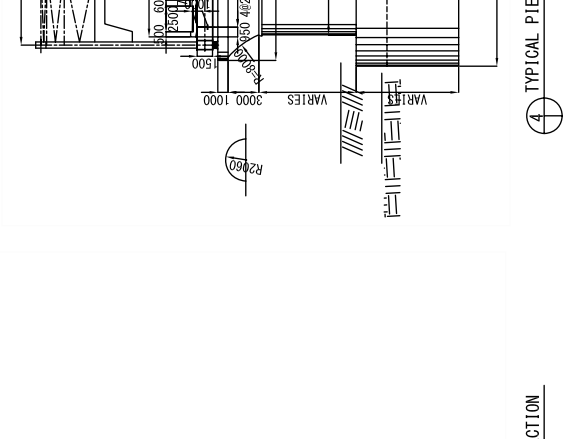
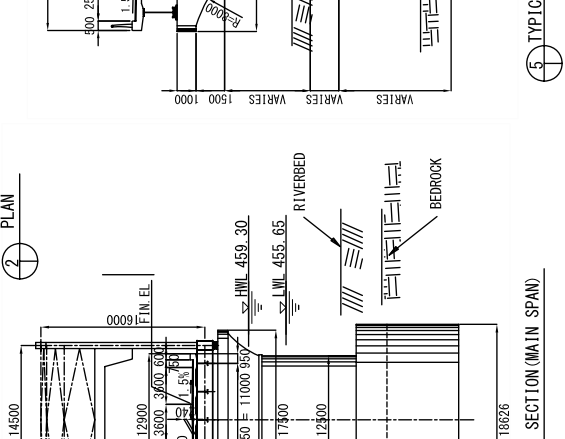
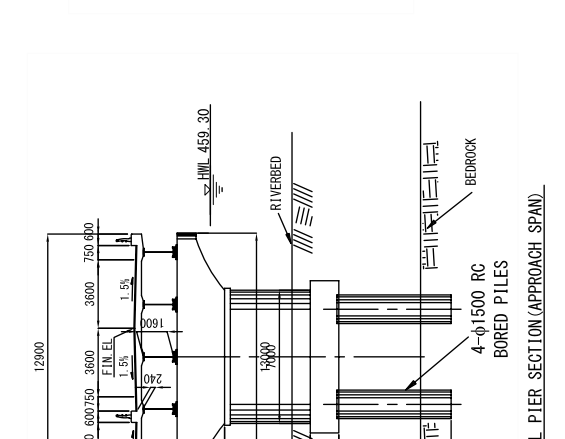
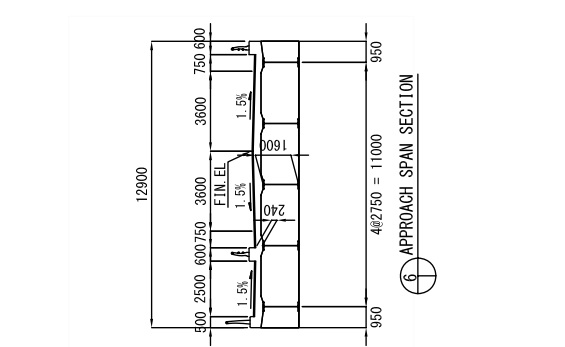
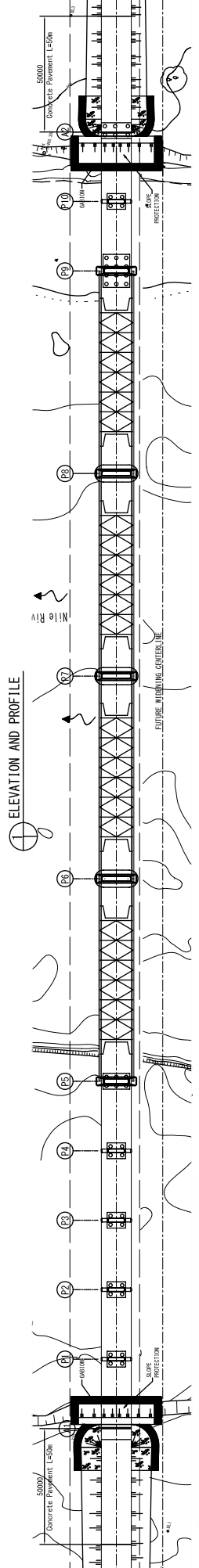
5630000 = 150000
STEEL I-GIRDER
Concrete Pavement L=50m

24630000 = 60000
STEEL I-GIRDER
Concrete Pavement L=50m

4687500 = 350000
4-SPAN TIED ARCH (LANGHER TYPE)
Structural Steel Piles 0.1000 L=20000
Structural Steel Piles 0.1000 L=20000
Structural Steel Piles 0.1000 L=20000
Structural Steel Piles 0.1000 L=20000



GRADIENT	FINISHED ELEVATION	EXISTING GROUND ELEVATION	STATION	DISTANCE	HORIZONTAL CURVE	GROSS SLOPE
	602.349	608.645	900			
	602.330	608.626	920			
	602.312	608.608	940			
	602.295	608.591	960			
	602.279	608.575	980			
	602.264	608.560	1000			
	602.250	608.546	1020			
	602.237	608.533	1040			
	602.225	608.521	1060			
	602.214	608.510	1080			
	602.204	608.500	1100			
	602.195	608.491	1120			
	602.187	608.483	1140			
	602.180	608.476	1160			
	602.174	608.470	1180			
	602.169	608.465	1200			
	602.165	608.461	1220			
	602.162	608.458	1240			
	602.160	608.456	1260			
	602.159	608.455	1280			
	602.158	608.454	1300			
	602.158	608.454	1320			
	602.158	608.454	1340			
	602.158	608.454	1360			
	602.158	608.454	1380			
	602.158	608.454	1400			
	602.158	608.454	1420			
	602.158	608.454	1440			
	602.158	608.454	1460			
	602.158	608.454	1480			
	602.158	608.454	1500			
	602.158	608.454	1520			
	602.158	608.454	1540			
	602.158	608.454	1560			
	602.158	608.454	1580			
	602.158	608.454	1600			



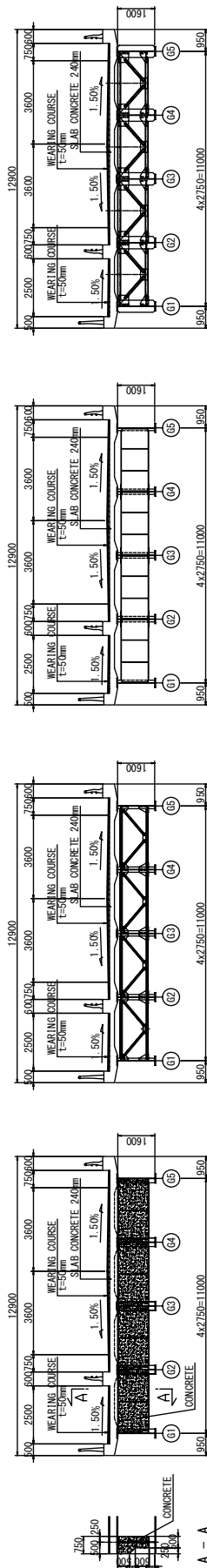
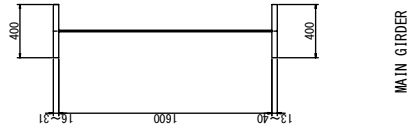
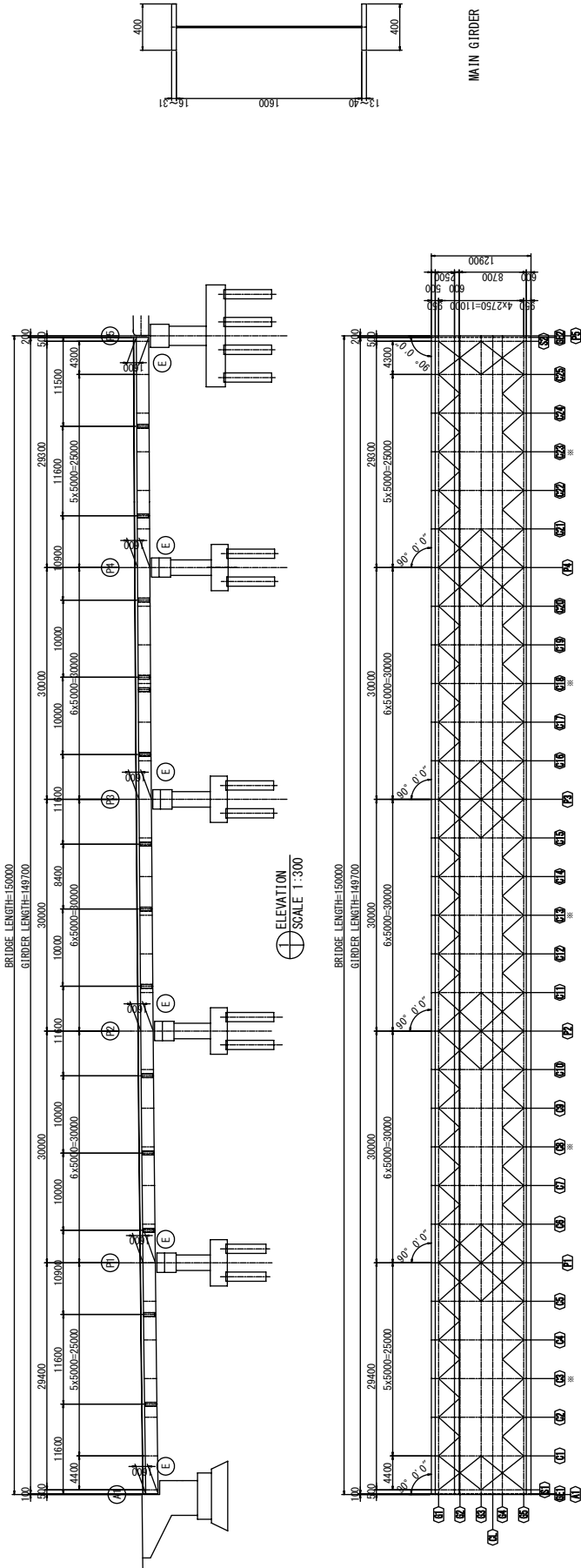
SHEET NO. NIB-15
SCALE: DATE: OCT 2011

TITLE:
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN

GENERAL VIEW OF THE BRIDGE

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

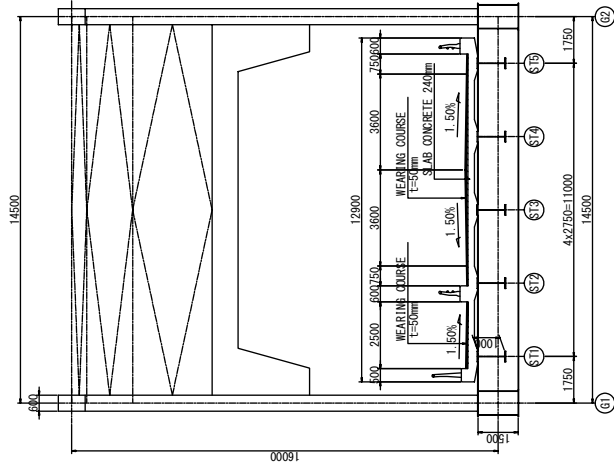
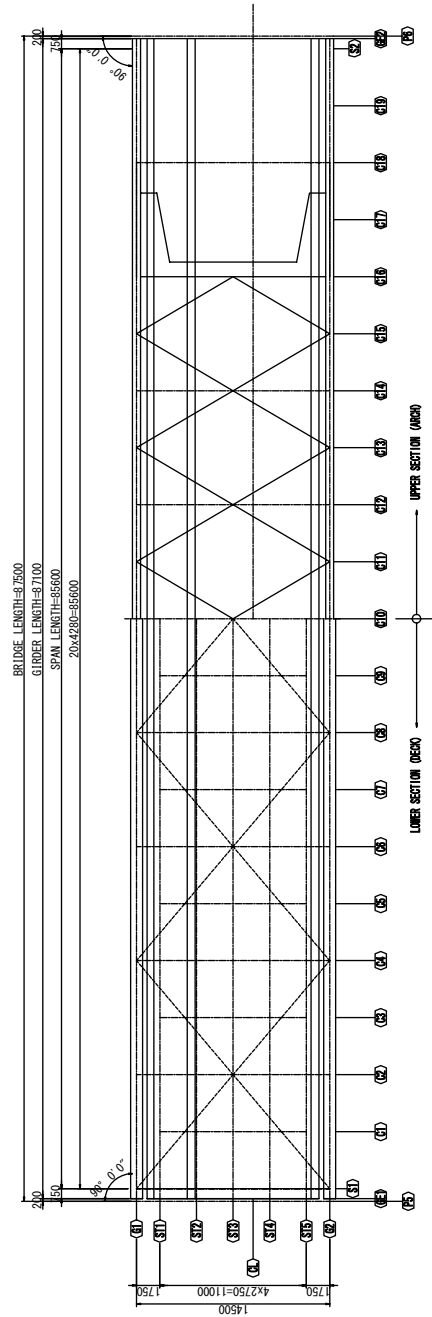
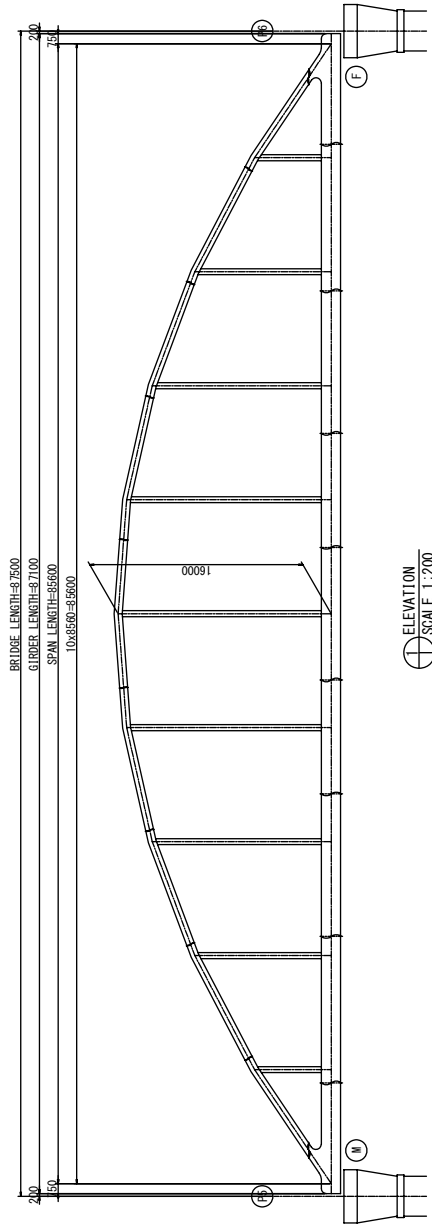


⊗ TYPICAL CROSS SECTIONS
SCALE 1:100

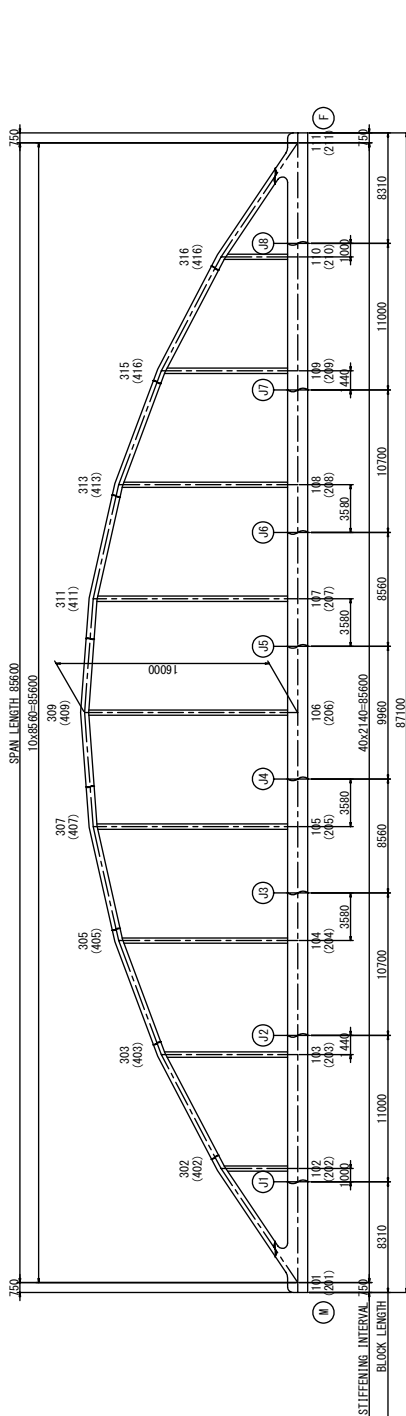
MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: SUPERSTRUCTURE LAYOUT AND TYPICAL SECTIONS (A1-P5)	SCALE	SHEET NO.
				1:100 1:300 DATE	NB-16 OCT 2011

P5-P6 DETAIL OF SUPER STRUCTURE

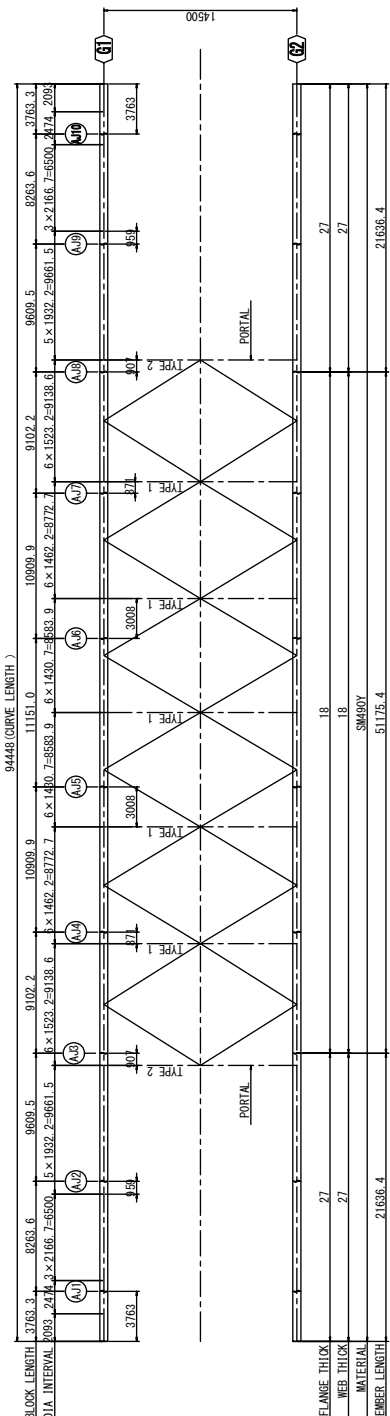
S = 1 : 200



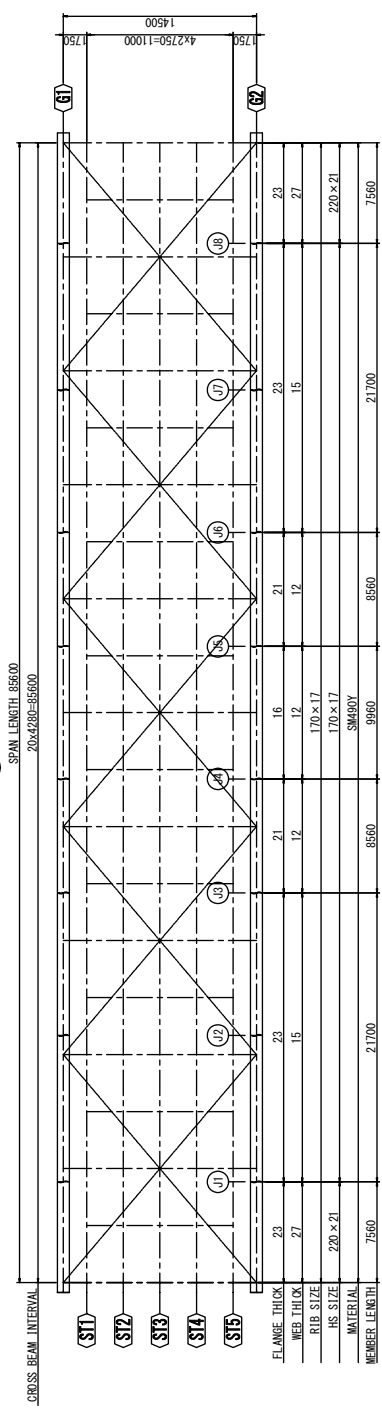
MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: SUPERSTRUCTURE LAYOUT AND TYPICAL SECTIONS (P5-P9 LANGHER ARCH)
SCALE		SHEET NO.	
DATE		NB-17	
OCT 2011		OCT 2011	



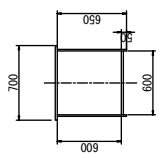
ELEVATION
SCALE 1:200



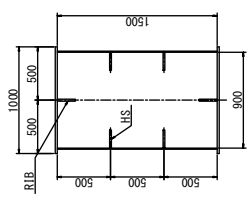
UPPER SECTION PLAN (ARCH)
SCALE 1:200



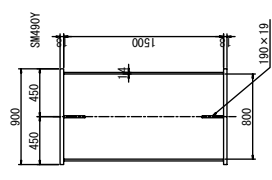
LOWER SECTION PLAN (DECK)
SCALE 1:200



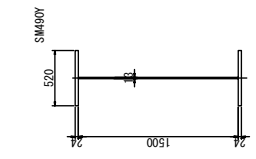
ARCH RIB



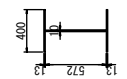
STIFFENING GIRDER



END CROSS-BEAM



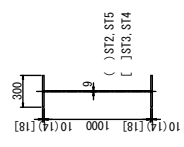
FLOOR BEAM



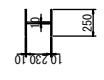
HANGER



LOWER LATERAL BRACING, BRAKE TRUSS

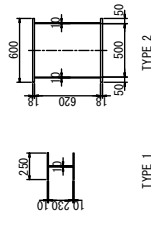


STRINGER



UPPER LATERAL BRACING

NOTE:
MATERIALS ARE ALL STEEL SM400 GRADE



STRUT

TYPE 1
TYPE 2

TITLE:

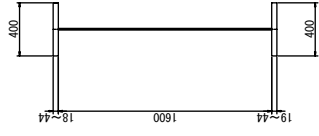
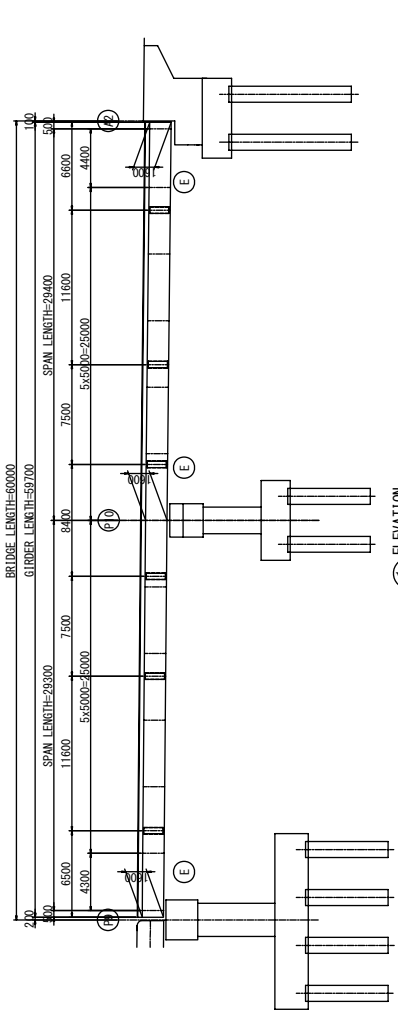
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

PRELIMINARY SURVEY FOR THE PROJECT FOR
CONSTRUCTION OF NILE RIVER BRIDGE
IN SOUTHERN SUDAN

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

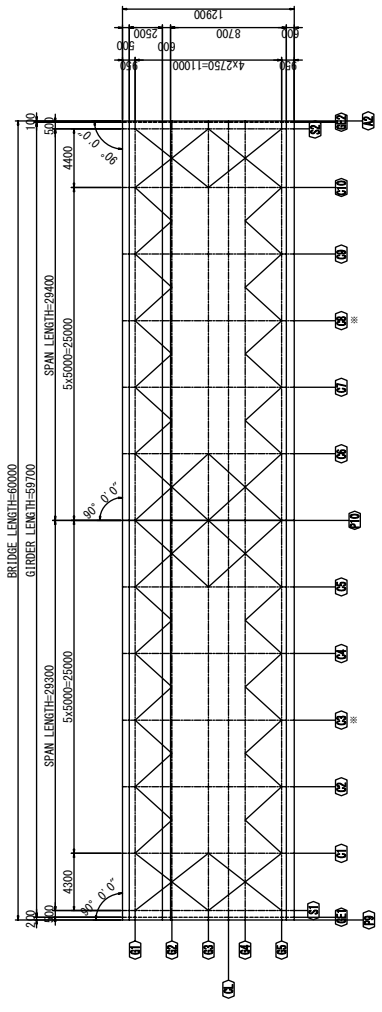
SCALE	SHEET NO.
1:200	
DATE	NO-18
	OCT 2011

TYPICAL DETAILS OF SUPERSTRUCTURE
FOR P5-P9(LANGHER ARCH)



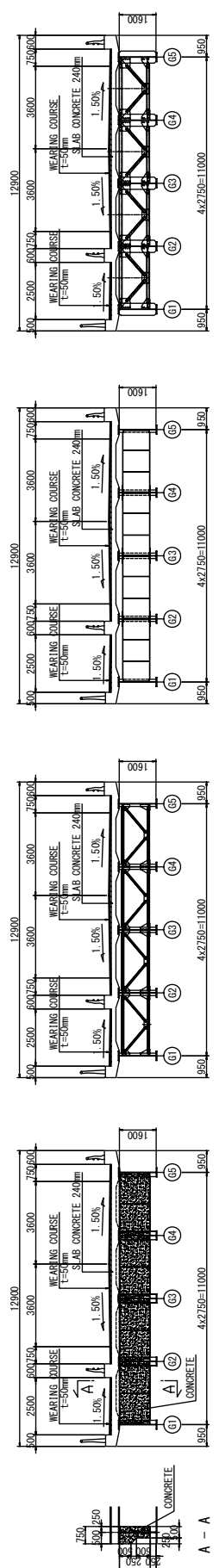
MAIN GIRDER

ELEVATION
SCALE 1:200



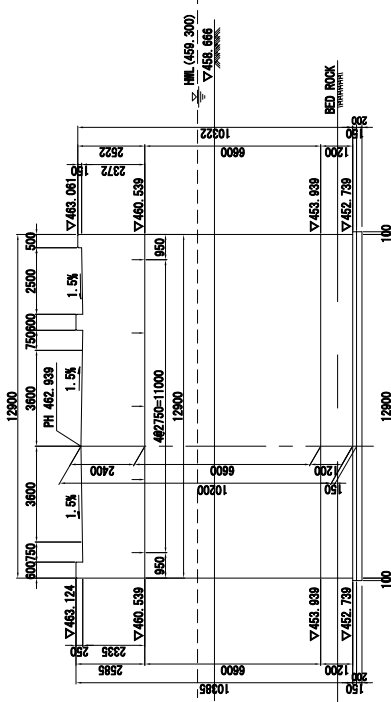
PLAN
SCALE 1:200

* is INTERMEDIATE CROSS BEAM.

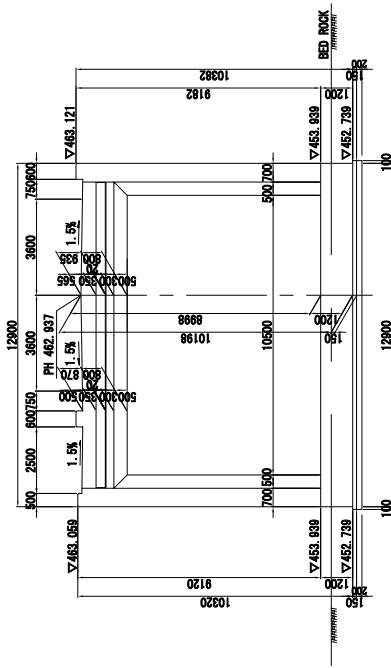


TYPICAL CROSS SECTIONS
SCALE 1:100

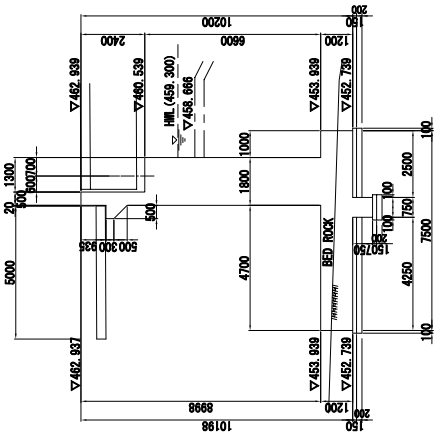
MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE:	SUPERSTRUCTURE LAYOUT AND TYPICAL SECTIONS (P9-A2)	
				SCALE	SHEET NO.
				1:100	
				1:200	
				DATE	NB-19
					OCT 2011



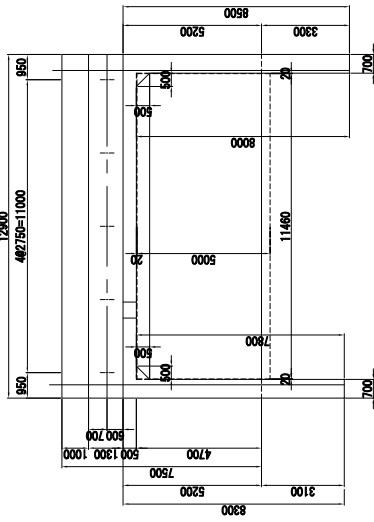
FRONT VIEW
SCALE 1:100



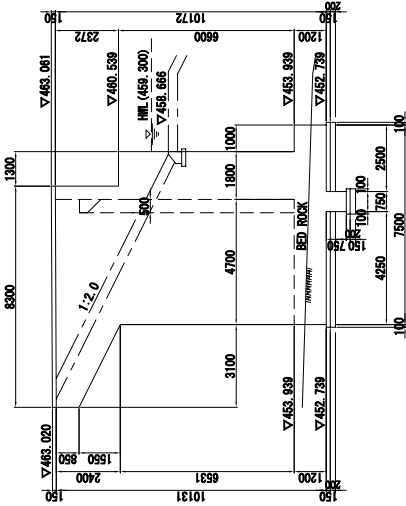
REAR VIEW
SCALE 1:100



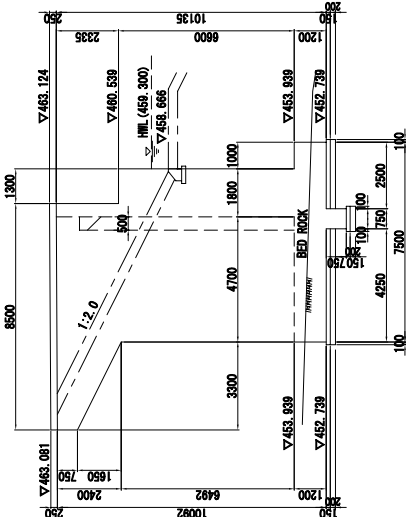
CROSS SECTION
SCALE 1:100



PLAN
SCALE 1:100



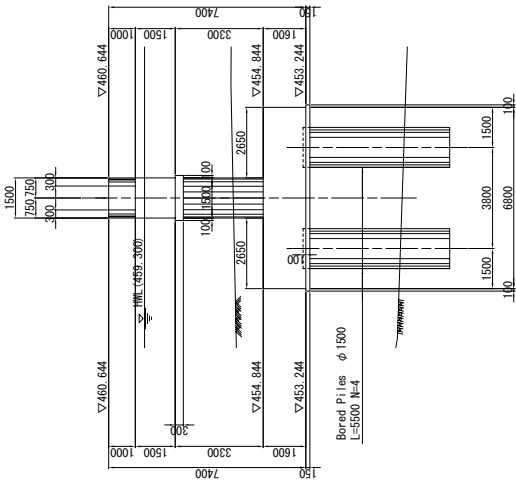
LEFT WING
SCALE 1:100



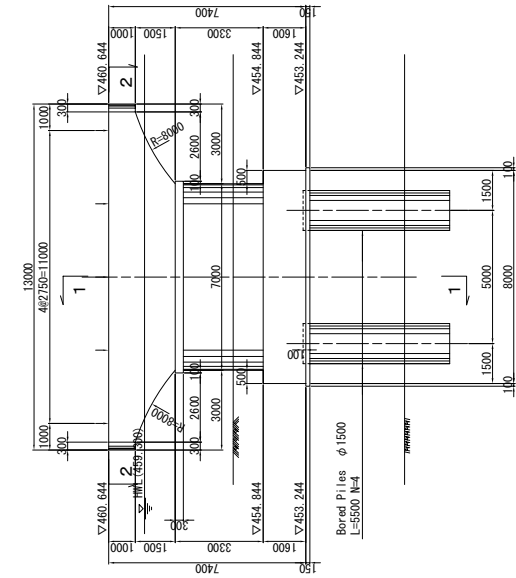
RIGHT WING
SCALE 1:100

ABUTMENT A1 LAYOUT AND DIMENSIONS
SCALE 1:100

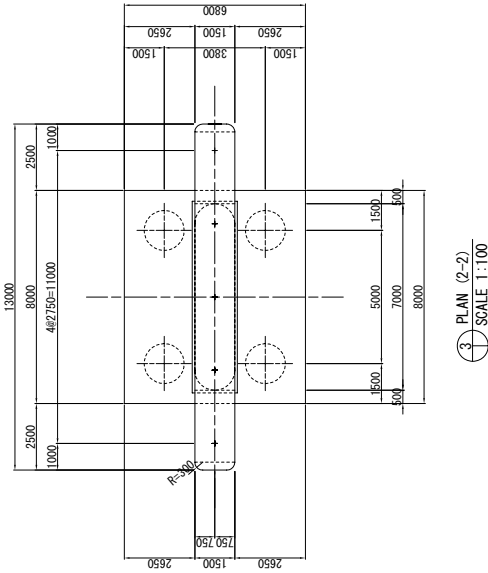
MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE:	ABUTMENT A1 LAYOUT AND DIMENSIONS		
				SCALE	DATE	SHEET NO.
				1:100		NS-20
						OCT 2011



⊕ FRONT VIEW
SCALE 1:100



⊕ SIDE VIEW (1-1)
SCALE 1:100



⊕ PLAN (2-2)
SCALE 1:100

⊕ PIER P1 LAYOUT AND DIMENSIONS
SCALE 1:100

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

PRELIMINARY SURVEY FOR THE PROJECT FOR
CONSTRUCTION OF NILE RIVER BRIDGE
IN SOUTHERN SUDAN

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

TITLE:

DIMENSIONS DETAILS FOR PIER-1

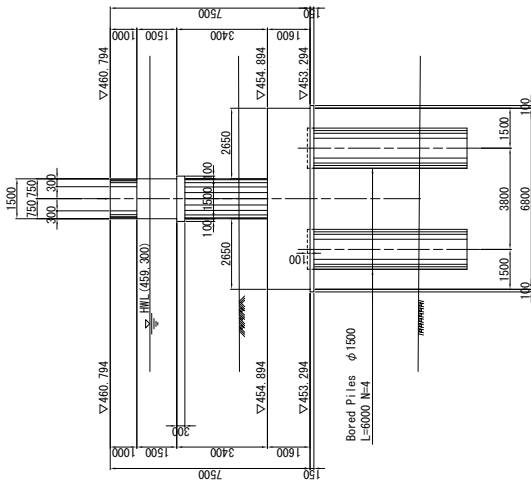
SHEET NO.

SCALE
1:100

DATE

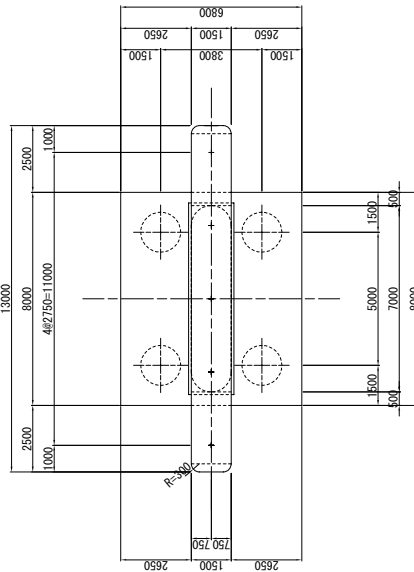
NB-21

OCT 2011



⊕ FRONT VIEW (1-1)
SCALE 1:100

⊕ SIDE VIEW (1-1)
SCALE 1:100



⊕ PLAN (2-2)
SCALE 1:100

⊕ PIER P2 LAYOUT AND DIMENSIONS
SCALE 1:100

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

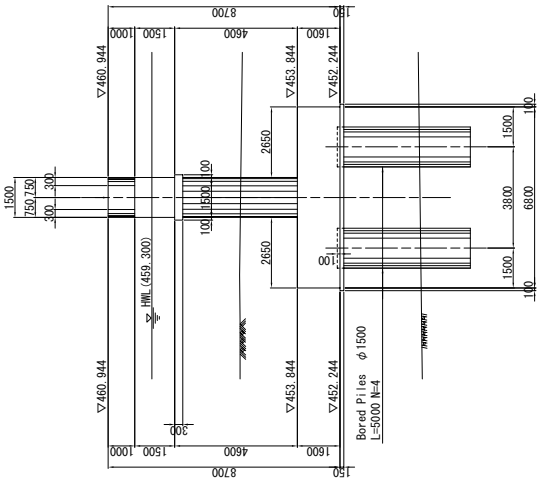
PRELIMINARY SURVEY FOR THE PROJECT FOR
CONSTRUCTION OF NILE RIVER BRIDGE
IN SOUTHERN SUDAN

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

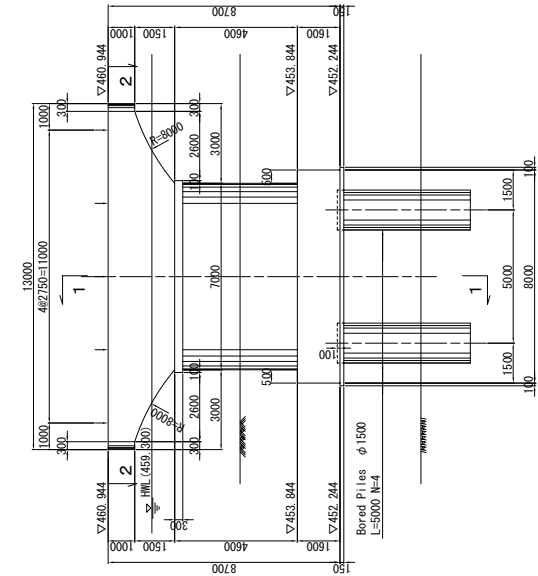
TITLE:

DIMENSIONS DETAILS FOR PIER-2

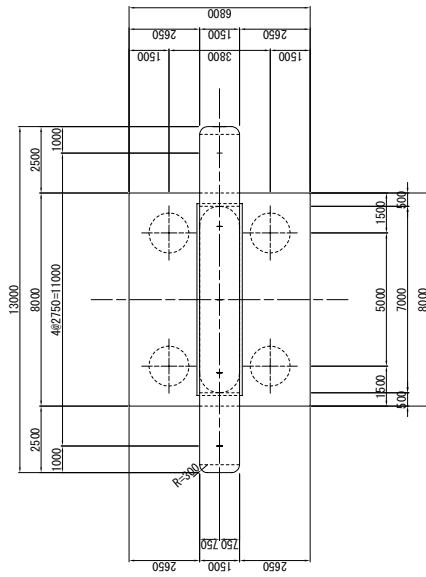
SCALE	SHEET NO.
1:100	
DATE	NB-22
	OCT 2011



2 SIDE VIEW (1-1)
SCALE 1:100



1 FRONT VIEW
SCALE 1:100



3 PLAN (2-2)
SCALE 1:100

A PIER P3 LAYOUT AND DIMENSIONS
SCALE 1:100

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

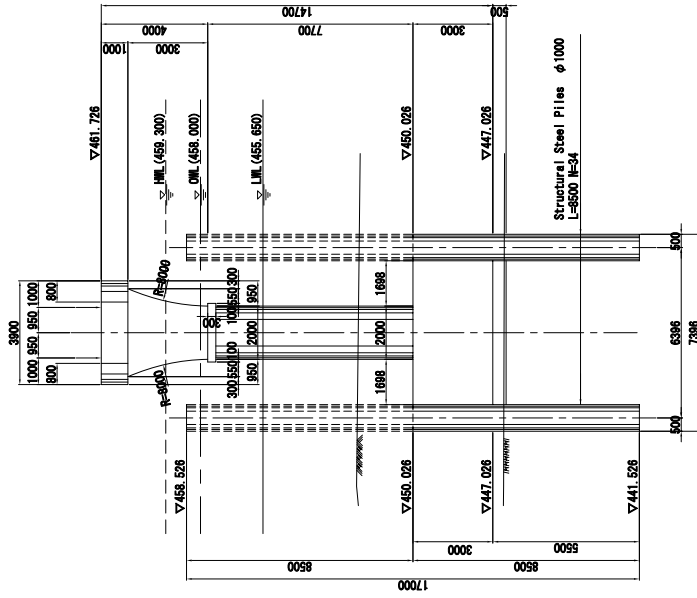
PRELIMINARY SURVEY FOR THE PROJECT FOR
CONSTRUCTION OF NILE RIVER BRIDGE
IN SOUTHERN SUDAN

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

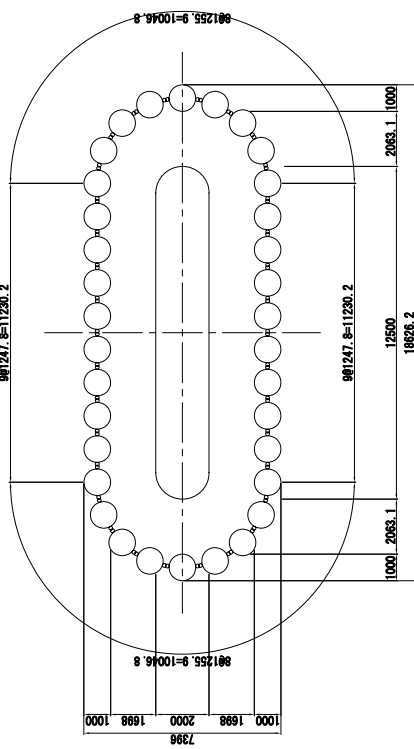
TITLE:

DIMENSIONS DETAILS FOR PIER-3

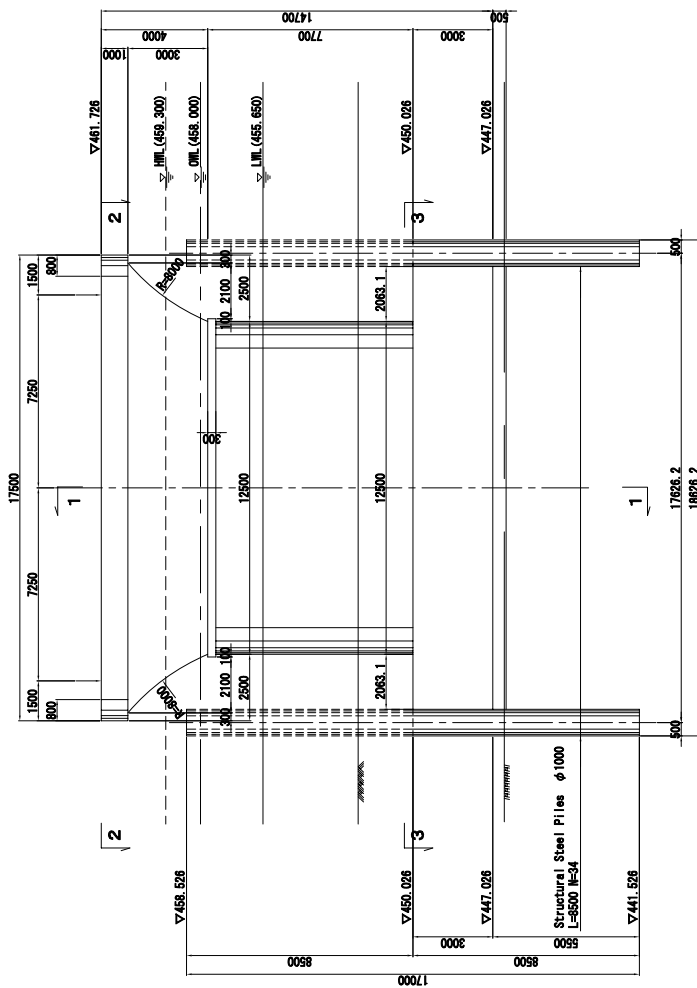
SCALE	SHEET NO.
1:100	
DATE	
OCT 2011	NS-23



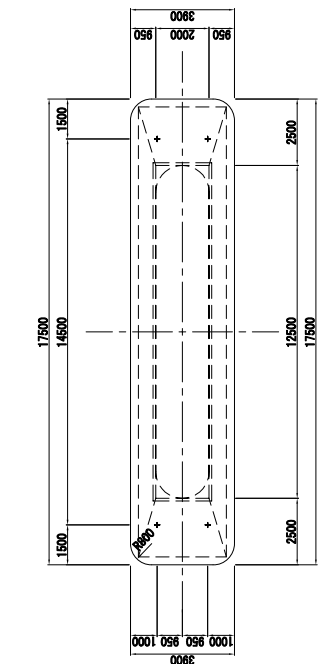
FRONT VIEW (1-1)
SCALE 1:100



SIDE VIEW (1-1)
SCALE 1:100



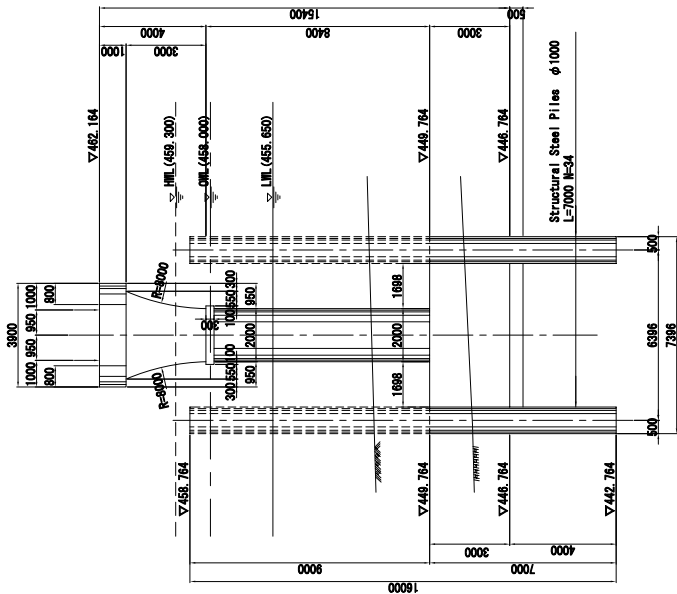
PLAN (2-2)
SCALE 1:100



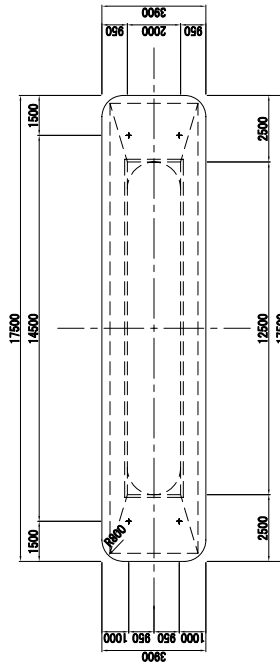
PLAN (3-3)
SCALE 1:100

PIER P6 LAYOUT AND DIMENSIONS
SCALE 1:100

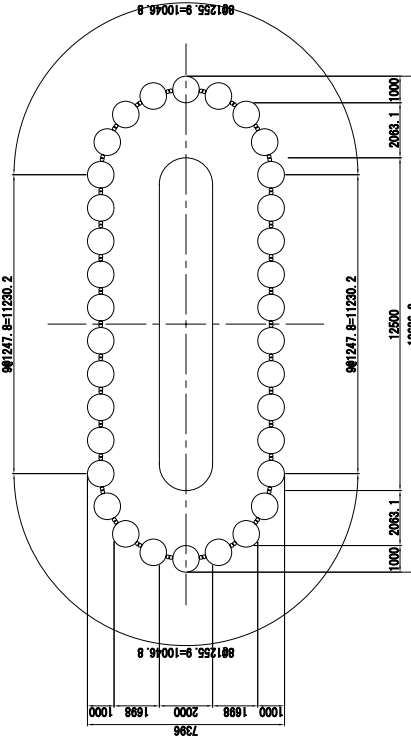
MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE:	DIMENSION DETAILS FOR PIER6	SHEET NO. NP-29
			SCALE 1:1, 0		
			DATE OCT 2011		



FRONT VIEW (1-1)
SCALE 1:100



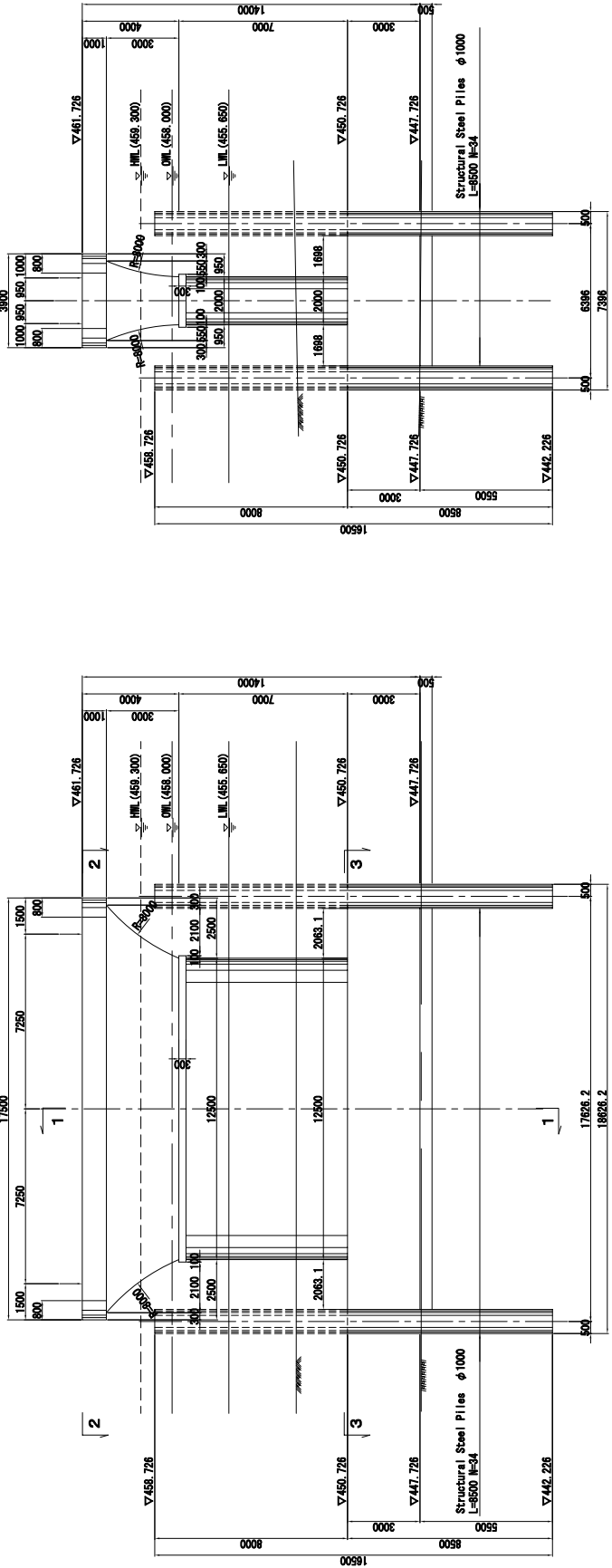
PLAN (2-2)
SCALE 1:100



PLAN (3-3)
SCALE 1:100

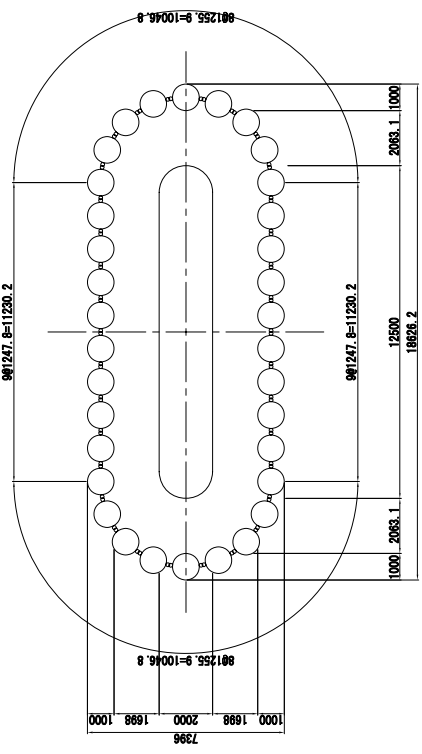
PIER P7 LAYOUT AND DIMENSIONS
SCALE 1:100

MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: DIMENSION DETAILS FOR PIER7	SCALE	SHEET NO.
				1:1.0	NS-27
				DATE	OCT 2011



FRONT VIEW (1-1)
SCALE 1:100

SIDE VIEW (1-1)
SCALE 1:100

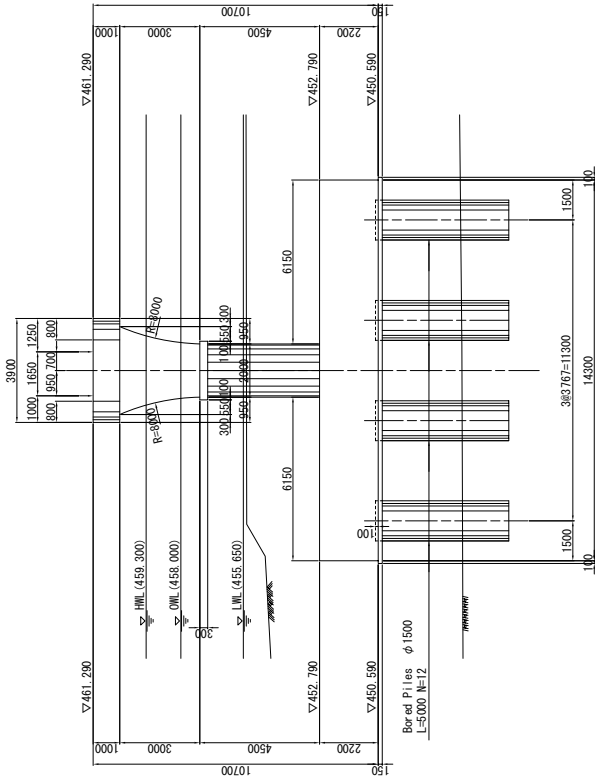


PLAN (2-2)
SCALE 1:100

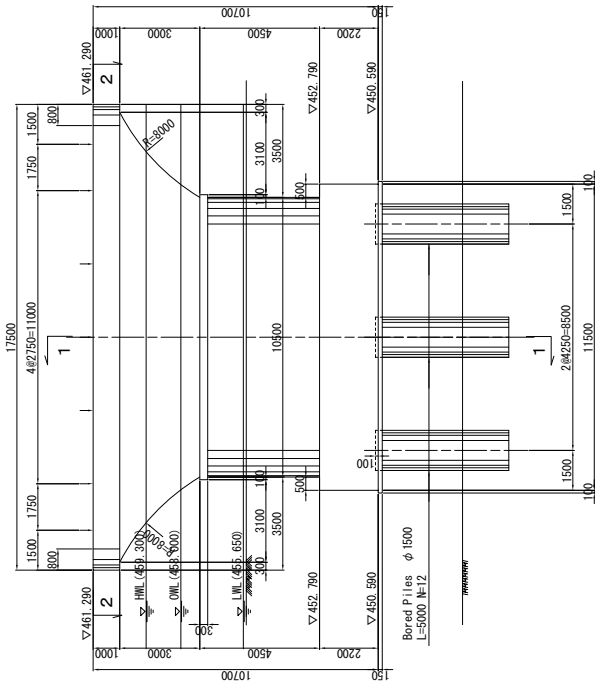
PLAN (3-3)
SCALE 1:100

PIER P8 LAYOUT AND DIMENSIONS
SCALE 1:100

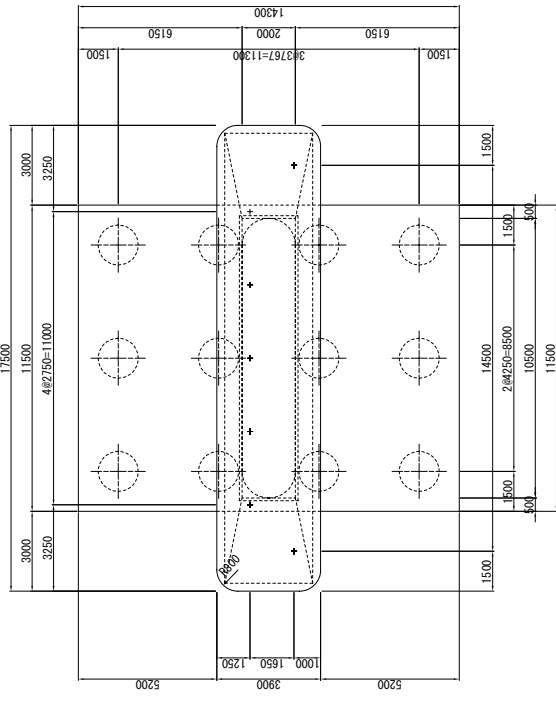
MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE:	DIMENSION DETAILS FOR PIER8		
				SCALE	SHEET NO.	
				1:1.0		
				DATE		NS-28
						OCT 2011



① SIDE VIEW (1-1)
SCALE 1:100



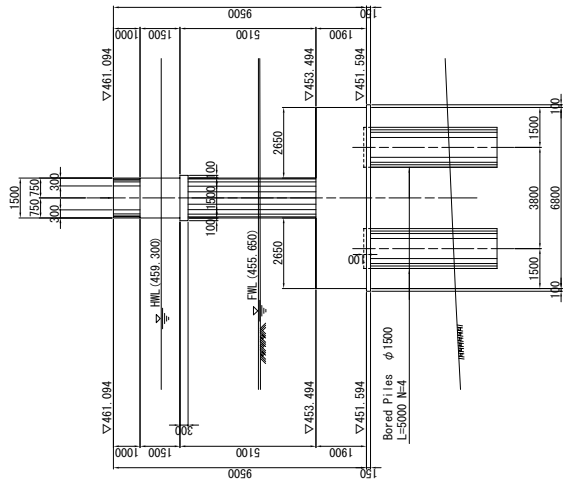
② FRONT VIEW
SCALE 1:100



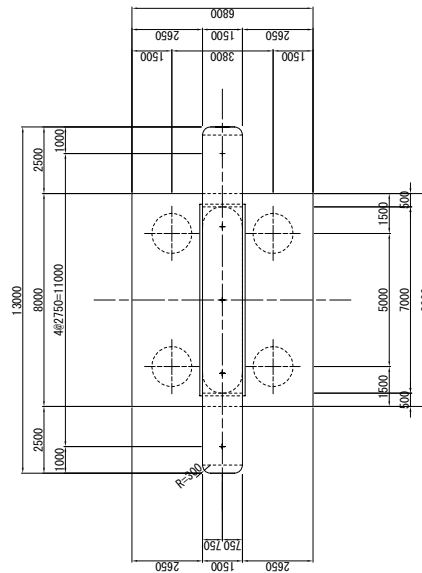
③ PLAN (2-2)
SCALE 1:100

④ PIER P9 LAYOUT AND DIMENSIONS
SCALE 1:100

MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: DIMENSION DETAILS FOR PIER9	SCALE	SHEET NO.
				1:1.0	
				DATE	NB-29
					OCT 2011



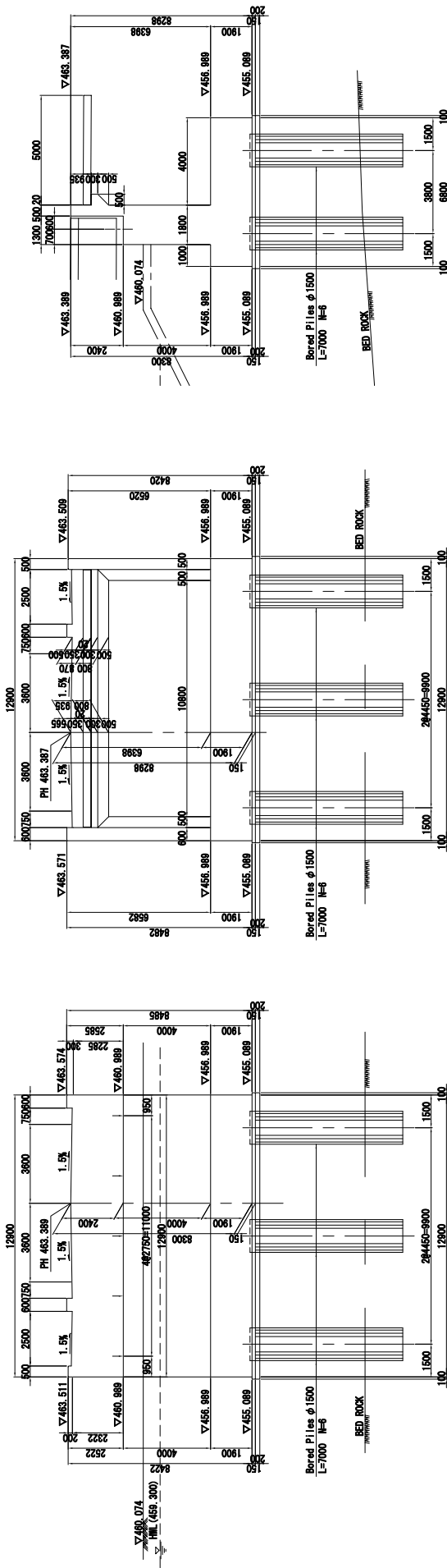
⊕ 1 FRONT VIEW (1-1)
SCALE 1:100



⊕ 2 SIDE VIEW (1-1)
SCALE 1:100

⊕ 3 PIER P10 LAYOUT AND DIMENSIONS
SCALE 1:100

MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: DIMENSION DETAILS FOR PIER10	SCALE	SHEET NO.
				1:1.0	NB-30
				DATE	OCT 2011

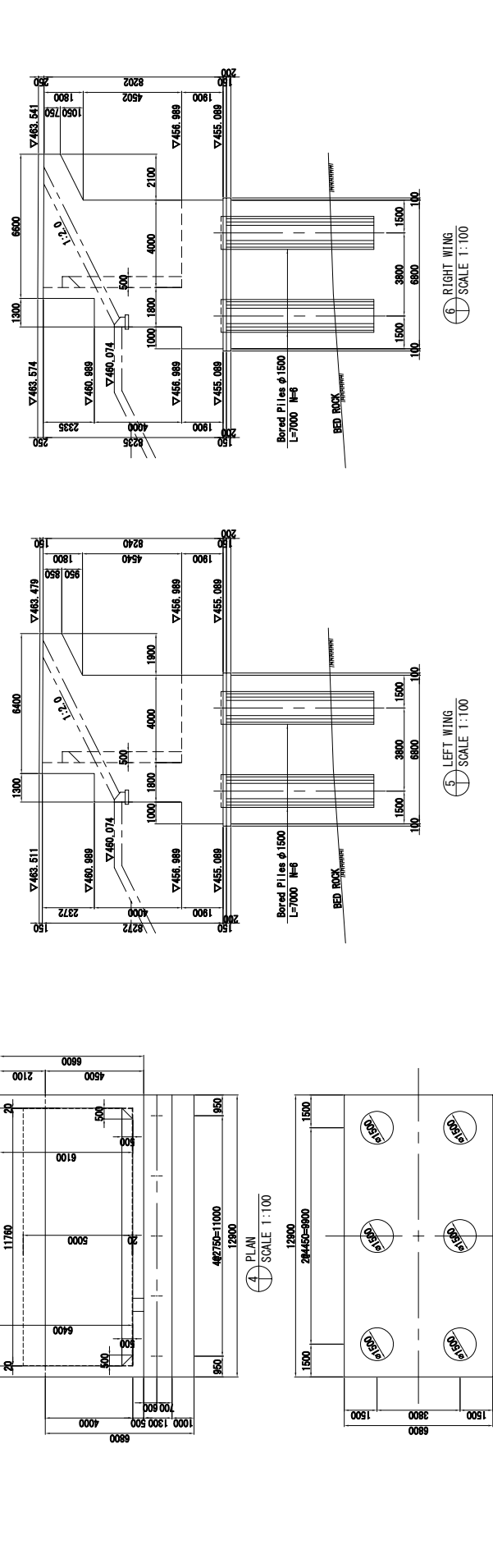


1 FRONT VIEW
SCALE 1:100

2 REAR VIEW
SCALE 1:100

3 CROSS SECTION
SCALE 1:100

4 PLAN
SCALE 1:100



5 LEFT WING
SCALE 1:100

6 RIGHT WING
SCALE 1:100

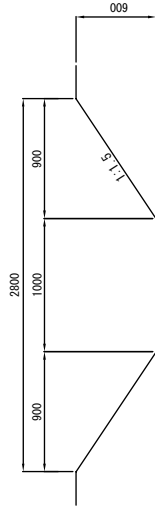
MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE:	ABUTMENT A2 LAYOUT AND DIMENSIONS	SCALE	SHEET NO.
			1:100		NS-31	
			DATE			
						OCT 2011

Drainage Details (1)

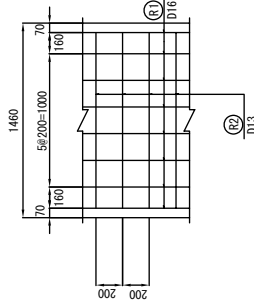
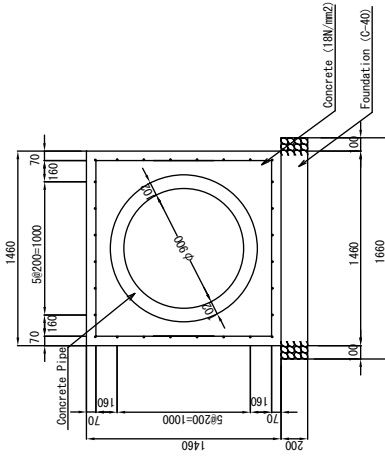
SCALE 1/20

Pipe Culvert D900

Earth Ditch



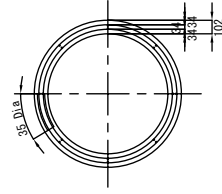
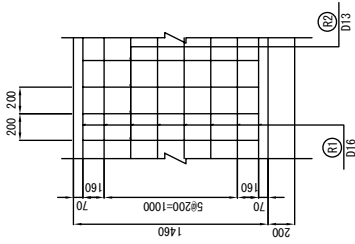
MATERIAL LIST		PER m	
TYPE	STANDARD	UNIT	QUANTITY
Excavation	Sand	cu.m	1.140



(Concrete Pipe D900)

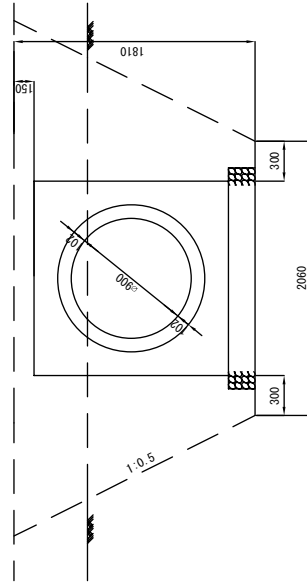
LONGITUDINAL SECTION

TWO LINES OF CIRCULAR REINFORCEMENT



METHODS OF PIPE INSTALLATION

▽ FINISH GRADE LINE



STEP1 CONSTRUCT COMPACTED EMBANKMENT TO AN ELEVATION 150mm ABOVE TOP OF PROPOSED PIPE

STEP2 TRENCH THROUGH THIS COMPACTED EMBANKMENT AND INSTALL PIPE OVER GRANULAR BEDDING BACK FILL WITH COMPACTED GRANULAR MATERIAL

MATERIAL LIST		PER m	
TYPE	STANDARD	UNIT	QUANTITY
Concrete	18N/mm ²	cu.m	1.174
	24N/mm ²	cu.m	0.321
Form		sq.m	5.269
		sq.m	7.341
		sq.m	12.610
Reinforced	D13	kg	30.845
	D16	kg	43.680
	φ8	kg	19.804
	φ10	kg	8.638
Foundation	C-40	cu.m	0.332

TITLE:

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

PRELIMINARY SURVEY FOR THE PROJECT FOR
CONSTRUCTION OF NILE RIVER BRIDGE
IN SOUTHERN SUDAN

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

SCALE 1/20

DATE

OCT 2011

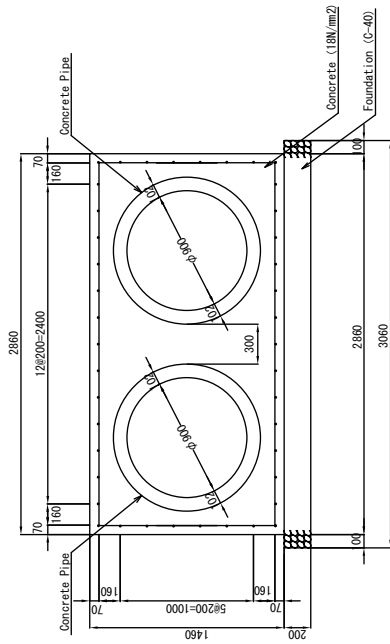
SHEET NO.

DRAINAGE DETAILS OF APPROACH ROAD (1)

Drainage Details (2)

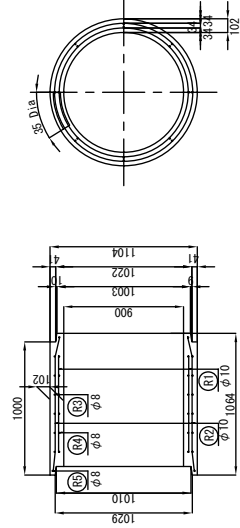
SCALE 1/20

Pipe Culvert D900 (2@D900)

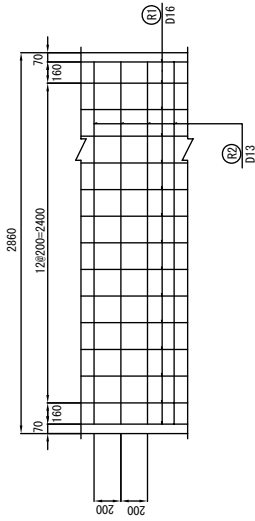
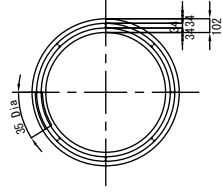


(Concrete Pipe D900)

LONGITUDINAL SECTION

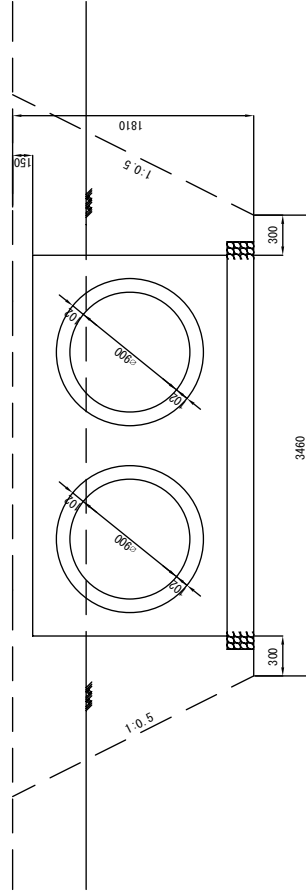


TWO LINES OF CIRCULAR REINFORCEMENT



METHODS OF PIPE INSTALLATION

▽ FINISH GRADE LINE



STEP1 CONSTRUCT COMPACTED EMBANKMENT TO AN ELEVATION 150mm ABOVE TOP OF PROPOSED PIPE

STEP2 TRENCH THROUGH THIS COMPACTED EMBANKMENT AND INSTALL PIPE OVER GRANULAR BEDDING BACK FILL WITH COMPACTED GRANULAR MATERIAL

MATERIAL LIST			PER m	
TYPE	STANDARD	UNIT	QUANTITY	REMARKS
Concrete	180/mm2	cu.m	2.261	(Concrete Pipe D900)
	240/mm2	cu.m	0.642	(Concrete Pipe D900)
Form		sq.m	7.442	(Concrete Pipe D900)
		sq.m	14.662	(Concrete Pipe D900)
		sq.m	22.124	
		kg	44.775	
Reinforced		kg	65.520	(Concrete Pipe D900)
		kg	38.008	(Concrete Pipe D900)
		kg	17.276	(Concrete Pipe D900)
Foundation	C-40	cu.m	0.612	

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

PRELIMINARY SURVEY FOR THE PROJECT FOR
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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

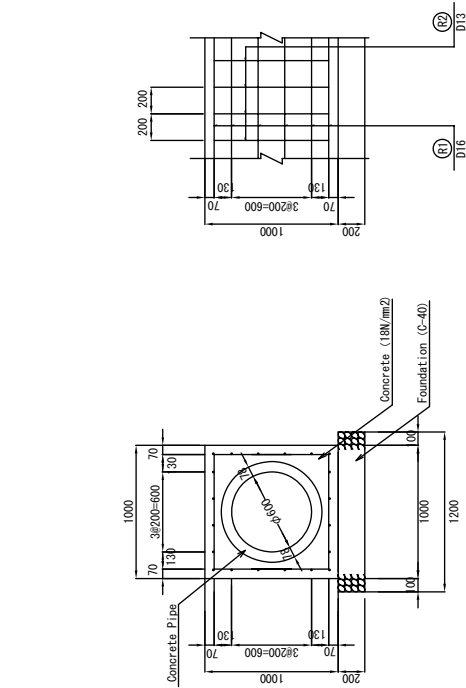
TITLE:

DRAINAGE DETAILS OF APPROACH ROAD (2)

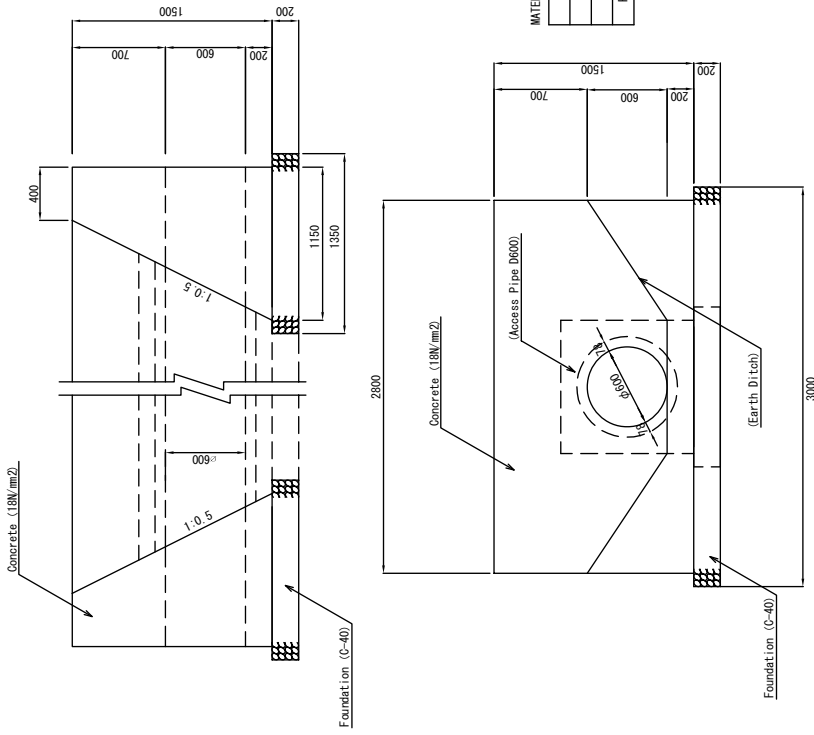
SCALE 1/20
DATE
OCT 2011
SHEET NO. NB-33

Drainage Details (3) SCALE 1/20

Access Pipe D600



Head Wall I

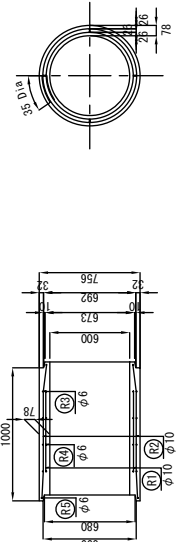


MATERIAL LIST				PER NOS.	
TYPE	STANDARD	UNIT	QUANTITY	REMARKS	
Concrete	18N/mm ²	cu.m	3.001		
Form		sq.m	10.622		
Foundation	C-40	cu.m	0.810		

MATERIAL LIST				PER m	
TYPE	STANDARD	UNIT	QUANTITY	REMARKS	
Concrete	18N/mm ²	cu.m	0.551		
	24N/mm ²	cu.m	0.166	(Concrete Pipe D600)	
Form		sq.m	3.100	(Concrete Pipe D600)	
		sq.m	4.780	(Concrete Pipe D600)	
Total		sq.m	7.882		
D13		kg	21.293		
D16		kg	31.200		
Reinforced	φ6	kg	5.464	(Concrete Pipe D600)	
	φ10	kg	3.988	(Concrete Pipe D600)	
Foundation	C-40	cu.m	0.240		

(Concrete Pipe D600)

TWO LINES OF CIRCULAR REINFORCEMENT



LONGITUDINAL SECTION

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

PRELIMINARY SURVEY FOR THE PROJECT FOR
CONSTRUCTION OF NILE RIVER BRIDGE
IN SOUTHERN SUDAN

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

TITLE:

DRAINAGE DETAILS OF APPROACH ROAD (3)

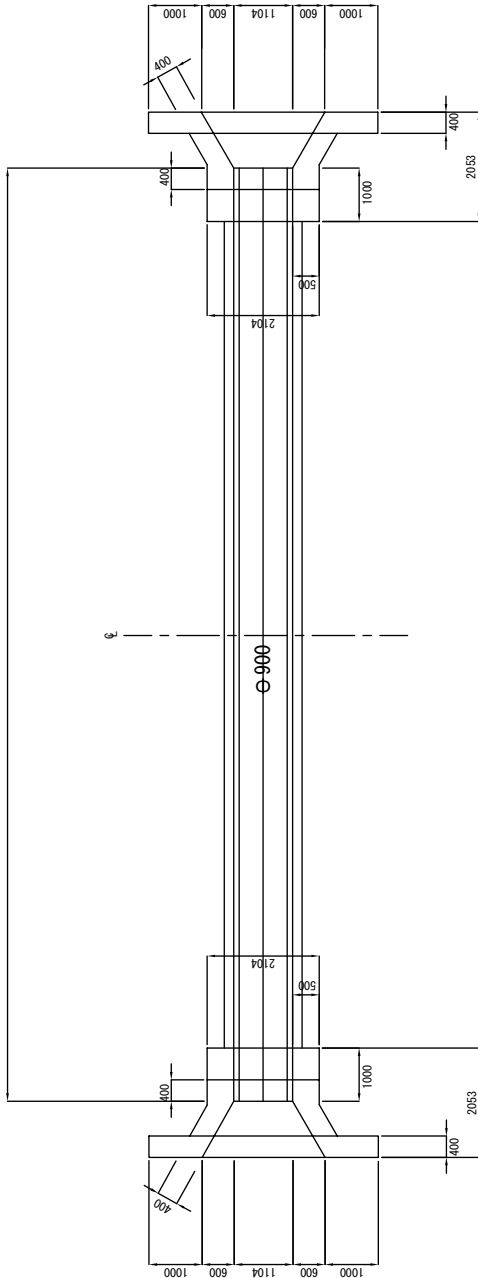
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1/20	
DATE	NO.34
OCT 2011	

Drainage Details (4)

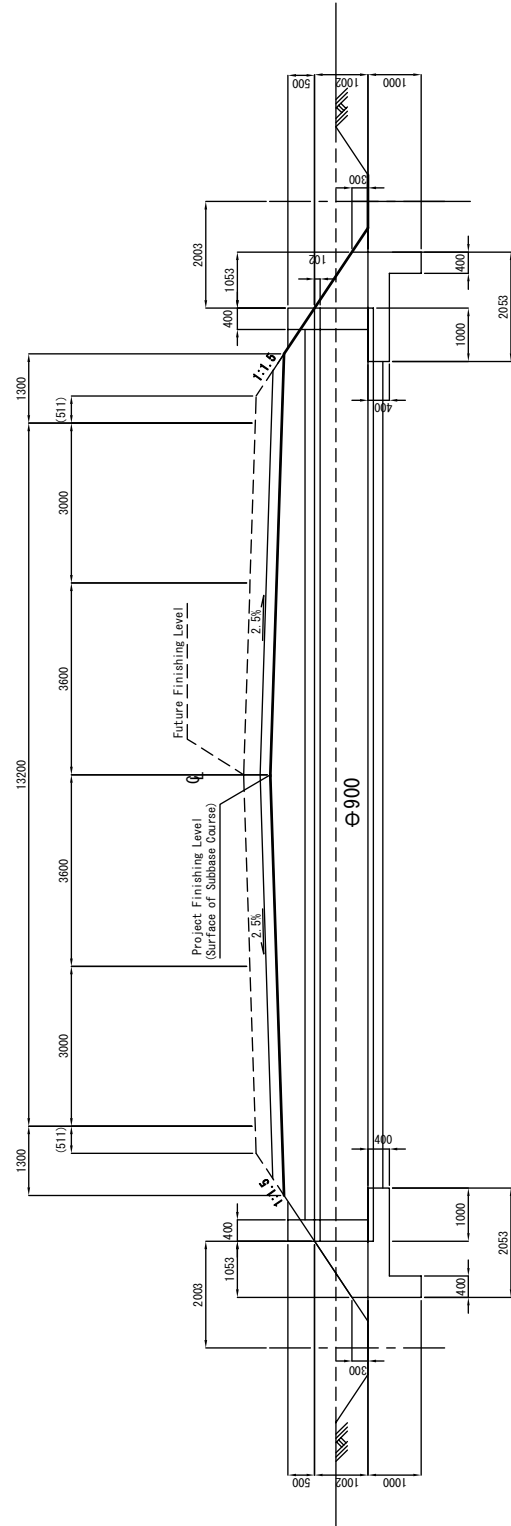
SCALE 1/50

Inlet Outlet
PLAN

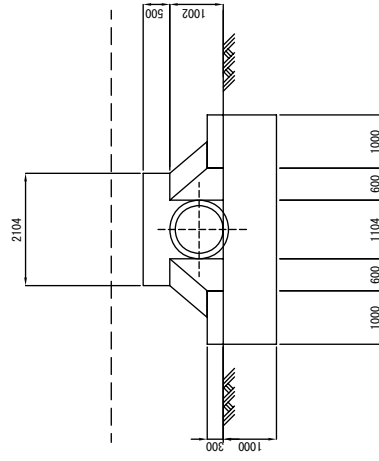
Pipe Culvert Length



SECTION



ELEVATION



MATERIAL LIST				PER NOS.	
TYPE	STANDARD	UNIT	QUANTITY	REMARKS	
Concrete	18W/mm ²	cu.m	5.377		
Form		sq.m	18.119		

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

PRELIMINARY SURVEY FOR THE PROJECT FOR
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IN SOUTHERN SUDAN

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

TITLE:

DRAINAGE DETAILS OF APPROACH ROAD (4)

SHEET NO.

1/50

DATE

OCT 2011

SCALE

1/50

DATE

OCT 2011

REMARKS

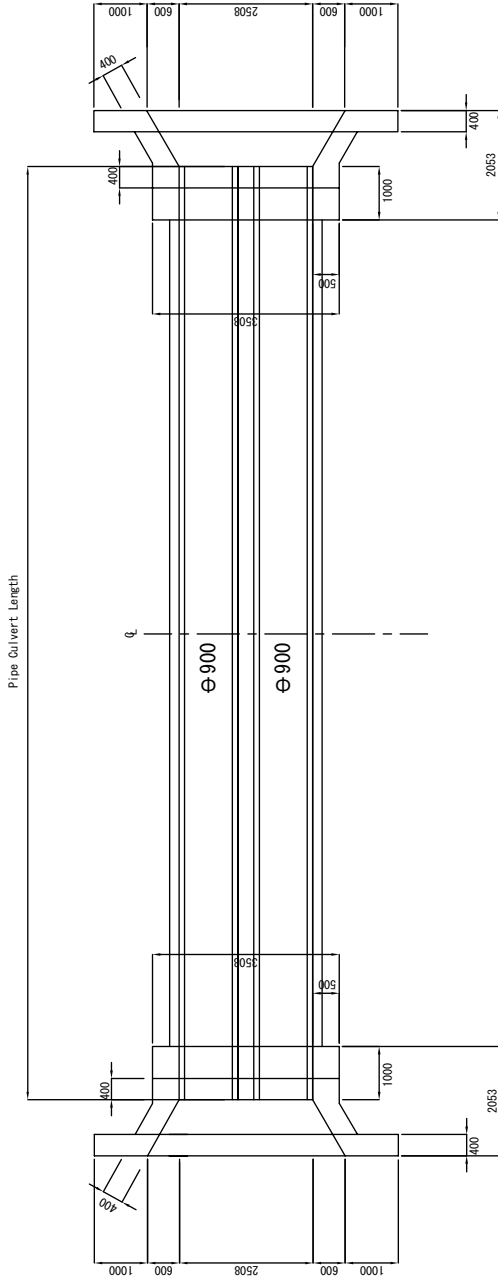
NB-35

Drainage Details (5)

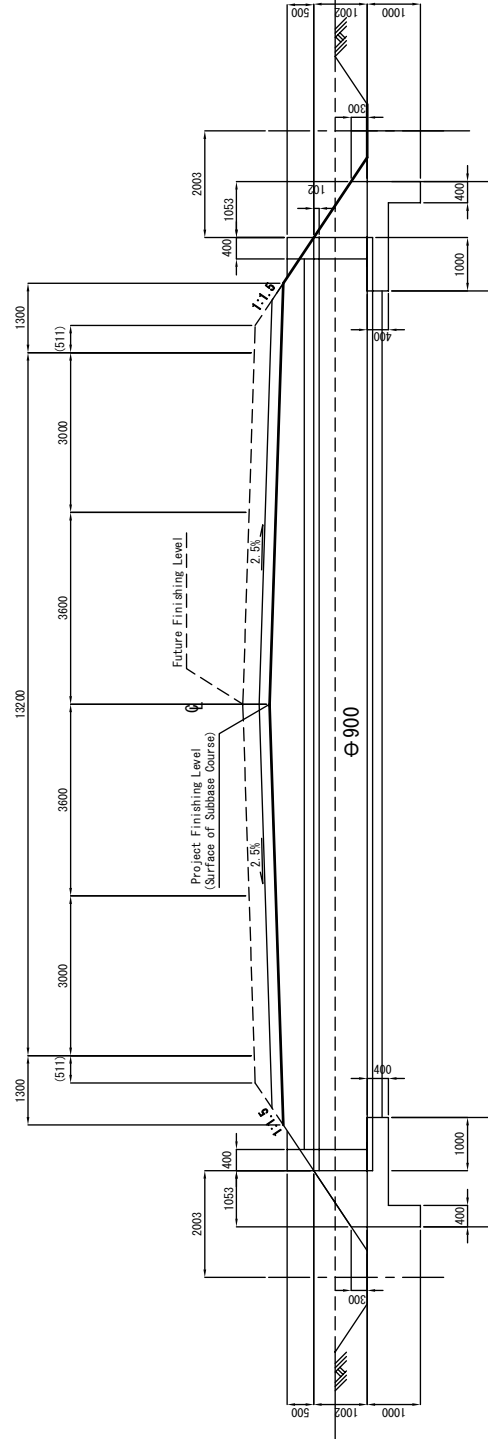
SCALE 1/50

Inlet Outlet (2@D900)

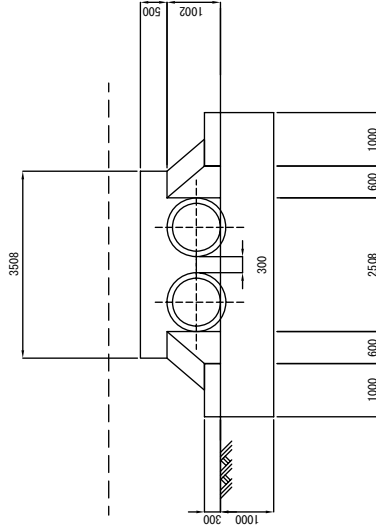
PLAN



SECTION



ELEVATION



MATERIAL LIST				PER MUS.
TYPE	STANDARD	UNIT	QUANTITY	REMARKS
Concrete	18N/mm ²	c.c.m	7.522	
Form		s.c.m	23.230	

MINISTRY OF TRANSPORT AND ROADS
GOVERNMENT OF SOUTHERN SUDAN

PRELIMINARY SURVEY FOR THE PROJECT FOR
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IN SOUTHERN SUDAN

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

TITLE:

DRAINAGE DETAILS OF APPROACH ROAD (5)

SCALE 1/50

DATE

OCT 2011

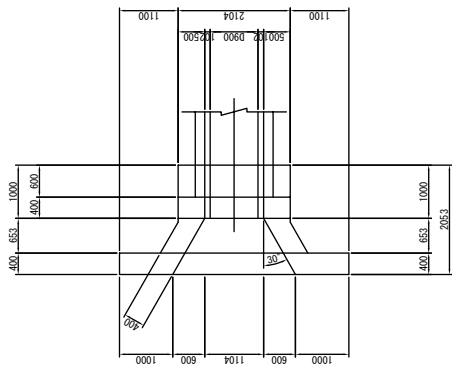
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NB-36

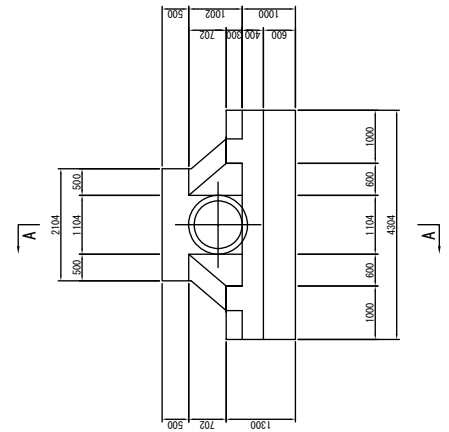
Drainage Details (6) SCALE 1/50

INLET (OUTLET) STRUCTURE

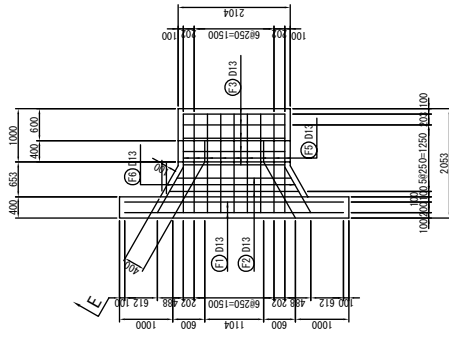
PLAN



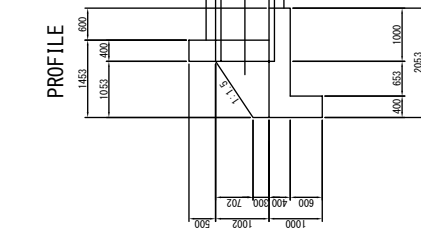
ELEVATION



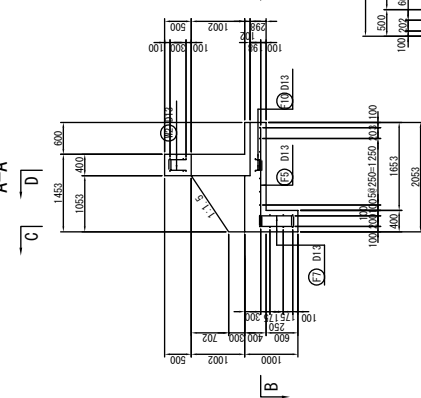
B-B



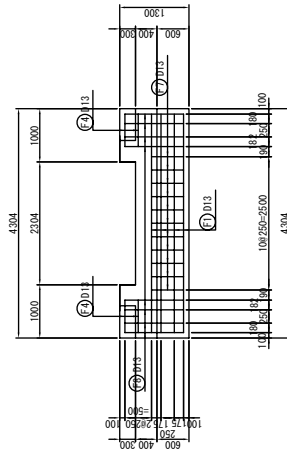
PROFILE



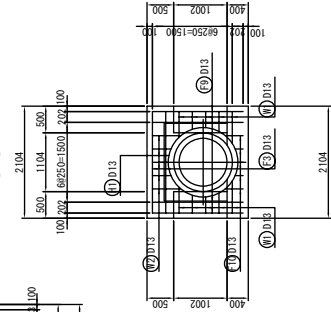
A-A



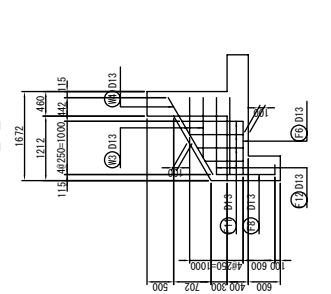
C-C



D-D

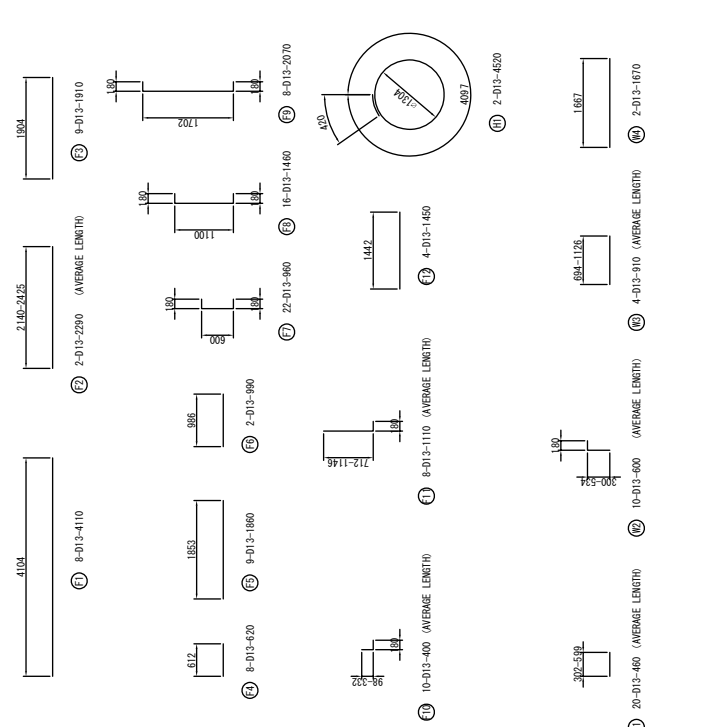


E-E



List of Bars

Items	Dia	Length (mm)	Unit	Kg/m	Kg/Unit	Mass (kg)	Remarks
F1	D13	4110	8	0.995	4.089	32.7	—
F2	D13	2290	2	0.995	2.279	4.6	(AVE. L)
F3	D13	1910	9	0.995	1.900	17.1	—
F4	D13	620	8	0.995	0.617	4.9	—
F5	D13	1860	9	0.995	1.851	16.7	—
F6	D13	990	2	0.995	0.995	2.0	—
F7	D13	960	22	0.995	0.955	21.0	—
F8	D13	1460	16	0.995	1.453	23.2	—
F9	D13	2070	8	0.995	2.060	16.5	—
F10	D13	400	10	0.995	0.398	4.0	(AVE. L)
F11	D13	1110	6	0.995	1.104	8.8	(AVE. L)
F12	D13	1450	4	0.995	1.443	5.8	—
W1	D13	460	20	0.995	0.458	9.2	(AVE. L)
W2	D13	600	10	0.995	0.597	6.0	(AVE. L)
W3	D13	910	4	0.995	0.905	3.6	(AVE. L)
W4	D13	1670	2	0.995	1.662	3.3	—
H1	D13	4520	2	0.995	4.497	8.0	—
			D13			188.4	kg
			Total			188.4	kg



PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: DRAINAGE DETAILS OF APPROACH ROAD (6)	
		SCALE	SHEET NO.
		1/50	NB-37
		DATE	OCT 2011

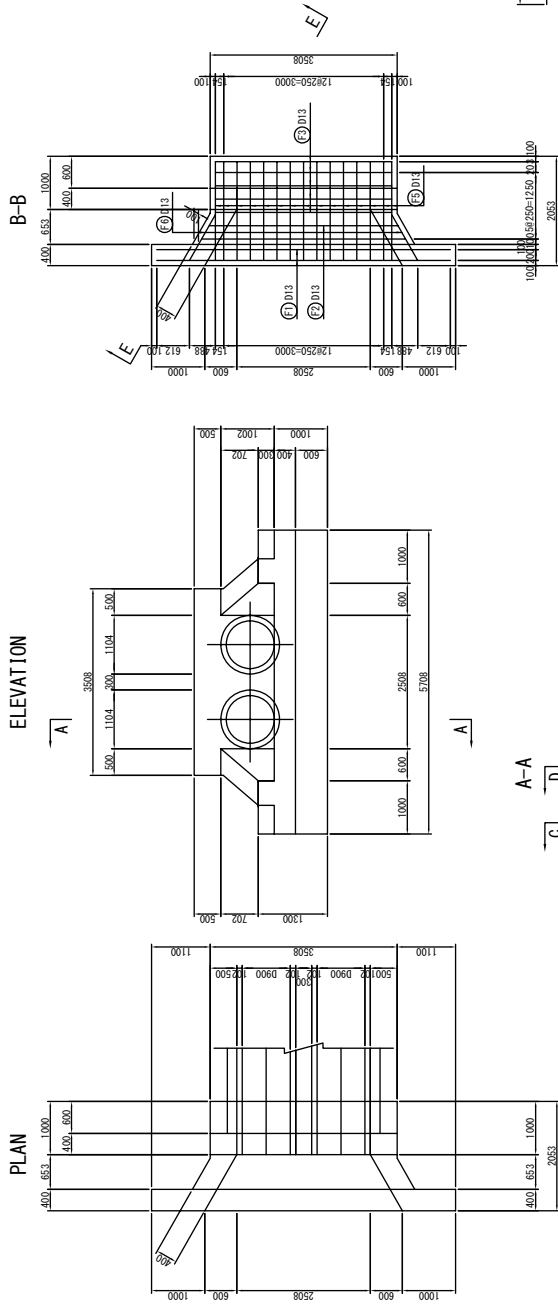
Drainage Details (7)

SCALE 1/50

INLET (OUTLET) 2@D900 STRUCTURE

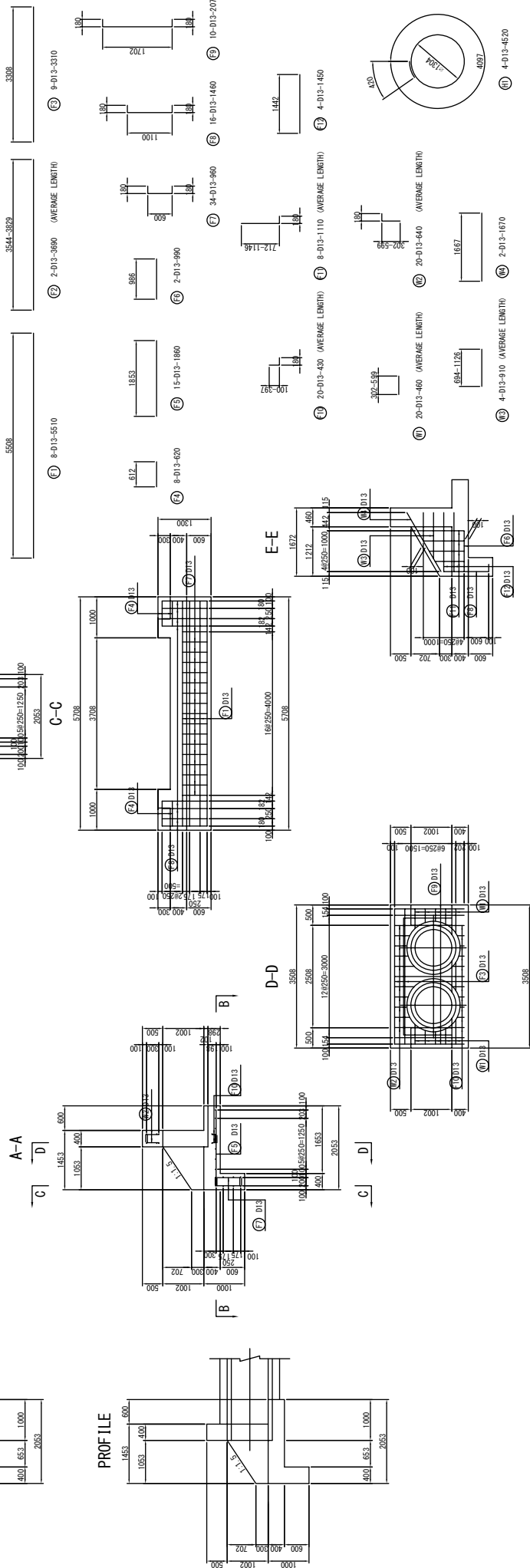
PLAN

ELEVATION



List of Bars

Items	Dia (mm)	Length (mm)	Unit	Kg/m	Kg/Unit	Mass (kg)	Remarks	
F1	D13	5510	8	0.995	5.482	43.9	—	
F2	D13	3690	2	0.995	3.672	7.3	(AVE L)	
F3	D13	3310	9	0.995	3.293	29.6	—	
F4	D13	620	8	0.995	0.617	4.9	—	
F5	D13	1890	15	0.995	1.551	27.8	—	
F6	D13	960	2	0.995	0.995	2.0	—	
F7	D13	960	34	0.995	0.995	32.5	—	
F8	D13	1460	16	0.995	1.453	23.2	—	
F9	D13	2070	10	0.995	2.069	20.6	—	
F10	D13	460	20	0.995	0.428	8.6	(AVE L)	
F11	D13	1170	8	0.995	1.104	8.8	(AVE L)	
F12	D13	1450	4	0.995	1.443	5.8	—	
F13	D13	460	20	0.995	0.428	8.6	(AVE L)	
F14	D13	910	4	0.995	0.910	3.6	(AVE L)	
F15	D13	1670	2	0.995	1.662	3.3	—	
F16	D13	4520	4	0.995	4.497	18.0	—	
Total							261.8 kg	



MINISTRY OF TRANSPORT AND ROADS
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PRELIMINARY SURVEY FOR THE PROJECT FOR
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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

TITLE:

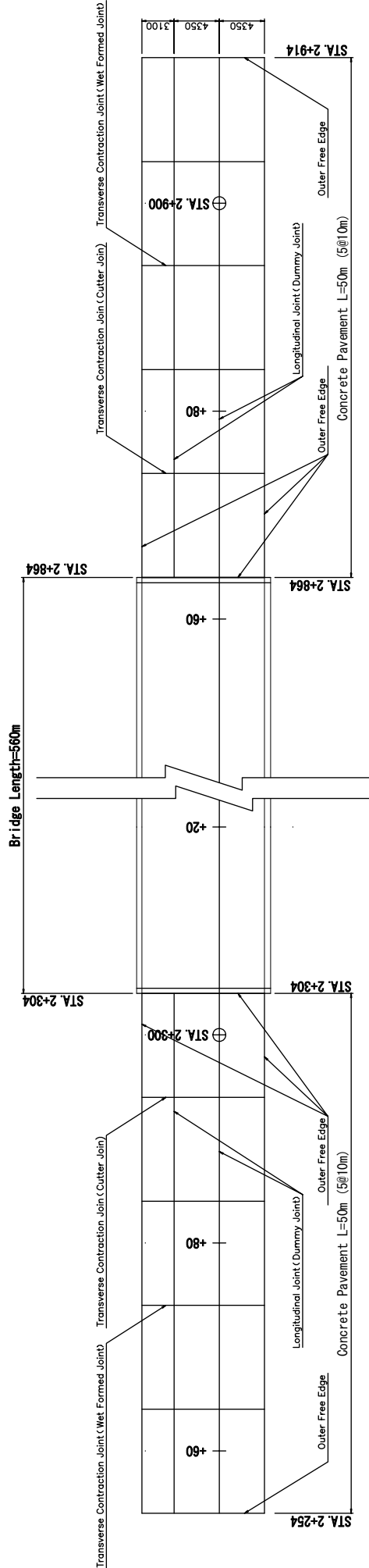
DRAINAGE DETAILS OF APPROACH ROAD (7)

SCALE	SHEET NO.
1/50	
DATE	NO-38
	OCT 2011

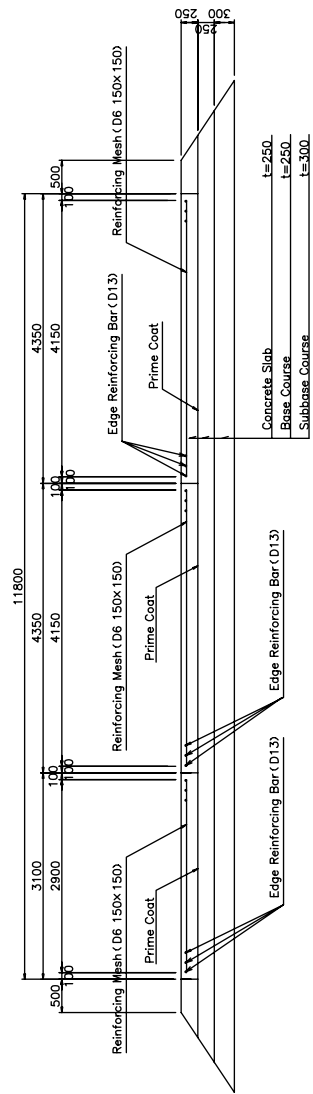
Detailed Drawings for Concrete Pavement Construction (1)

Joint Arrangement Illustration S=1:250

Longitudinal Joint (Dummy Joint)	STA. 2+254~STA. 2+304	50 x 2 Point
	STA. 2+864~STA. 2+914	50 x 2 Point
		Σ L=200. 00m
Transverse Contraction Joint (Cutter Joint)	11. 80 x 6 Point	
Transverse Contraction Joint (Wet Formed Joint)	11. 80 x 2 Point	
Outer Free Edge	STA. 2+254~STA. 2+304	50 x 2 Point+11. 80 x 2 Point
	STA. 2+864~STA. 2+914	50 x 2 Point+11. 80 x 2 Point
		Σ L=247. 20m



Standard Pavement Section S=1:40



Legend

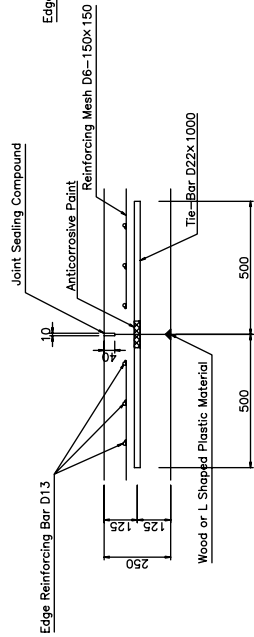
_____	Longitudinal Joint (Dummy Joint)
_____	Transverse Contraction Joint (Cutter Joint)
_____	Transverse Contraction Joint (Wet Formed Joint)
_____	Outer Free Edge

MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT~JAPAN ENGINEERING CONSULTANTS INC.	TITLE:	Drawings for Concrete Pavement Construction (1)
			SCALE	1:250 1:40
			DATE	NB-39
			SHEET NO.	OCT 2011

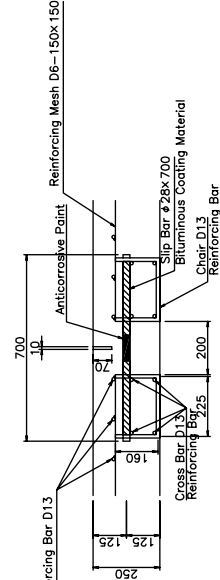
Detailed Drawings for Concrete Pavement Construction (2)

Joint Details

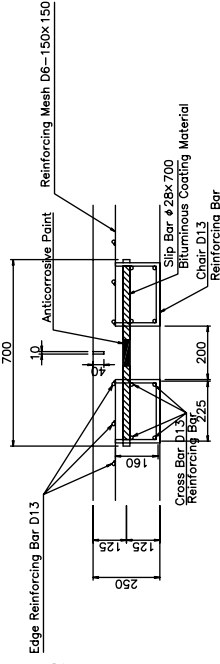
Longitudinal Joint (Dummy Joint) S=1:10



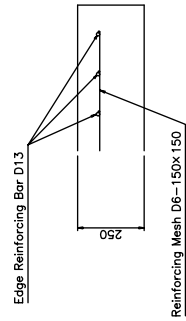
Transverse Contraction Joint (Cutter Joint) S=1:10



Transverse Contraction Joint (Wet Formed Joint) S=1:10

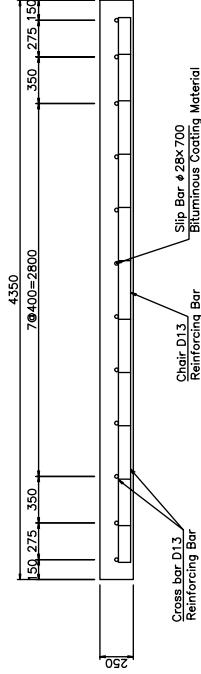


Outer Free Edge S=1:10

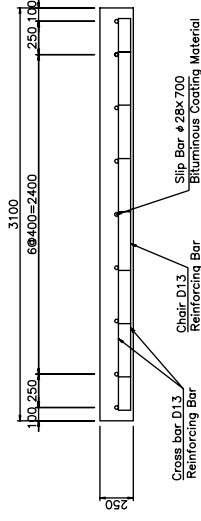


Slip Bar Layout S=1:20

W=4.35m

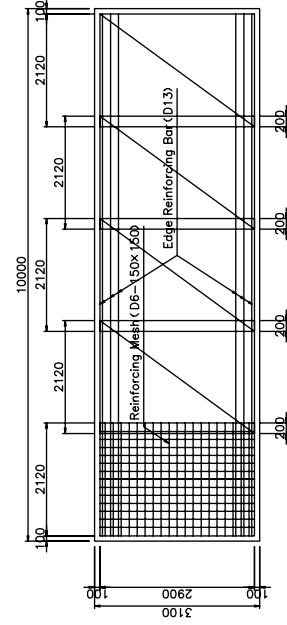
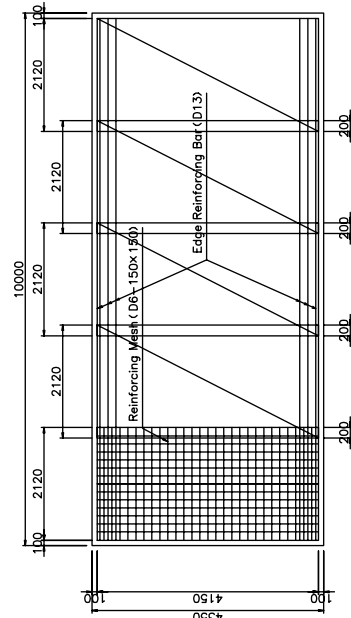


W=3.10m



Reinforcing Mesh and Edge Reinforcing Bar Layout

S=1:50



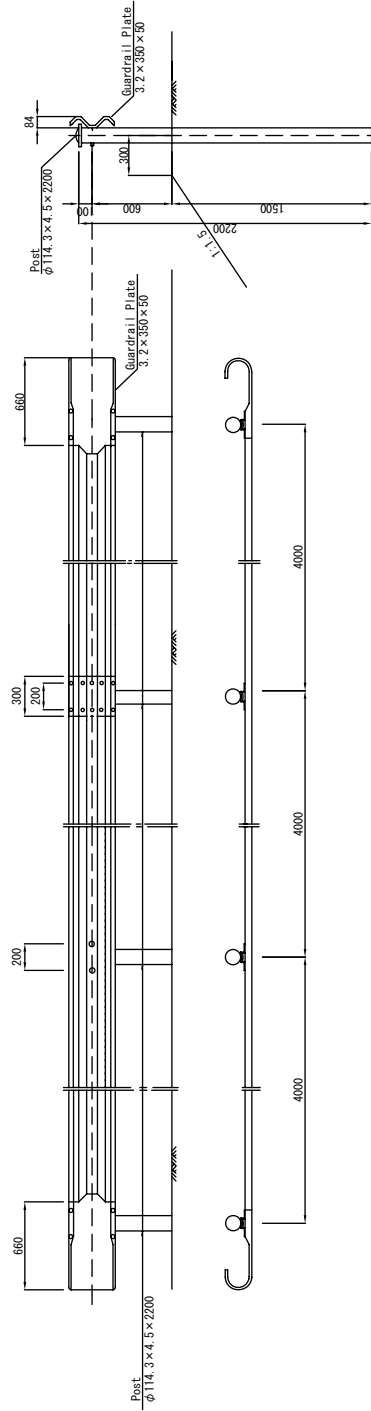
Classification	Details	Standard Dimensions	Unit	Quantity For Road Construction	Remarks
Concrete slab	Concrete	t=25cm	sq.m	1180.0	
Base Course		t=25cm	sq.m	1392.5	
Subbase Course		t=30cm	sq.m	1475.0	
Prime Coat			sq.m	1180.0	
Reinforcing Mesh		D6-150x150	t	3.6	3.05kg/m ²
Reinforcing Bar		D13	t	2.7	0.995kg/m
Slip Bar		28	t	0.9	4.83kg/m
Tie Bar		D22	t	0.6	3.04kg/m
Joint	Longitudinal Joint	Dummy Joint	m	200.0	
	Transverse Contraction Joint	Cutter Joint	m	70.8	
	Outer Free Edge	Wet Formed Joint	m	23.6	
			m	247.2	

Material List

MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: Drawings for Concrete Pavement Construction (2)	SCALE	SHEET NO.
				1:20	1
				1:50	
				DATE	OCT 2011

Ancillary Structure (1) SCALE 1:20

Guardrail



MATERIAL LIST

TYPE	STANDARD	UNIT	QUANTITY	REMARKS
Guardrail Plate	3.2 x 350 x 50	m	10.0	
Post	φ 114, 3 x 4.5 x 2200	no.	2.5	

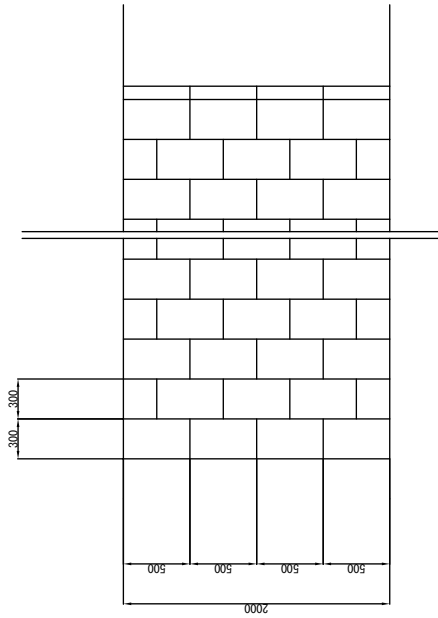
PER 10m

MINISTRY OF TRANSPORT AND ROADS GOVERNMENT OF SOUTHERN SUDAN	PRELIMINARY SURVEY FOR THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE IN SOUTHERN SUDAN	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. EIGHT-JAPAN ENGINEERING CONSULTANTS INC.	TITLE: Ancillary Structure (1)	SCALE	SHEET NO.
				1:20	
				DATE	NB-11
				OCT 2011	

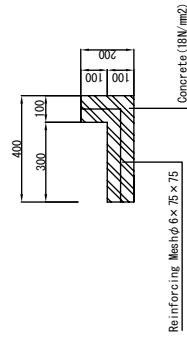
Ancillary Structure (2)

Step

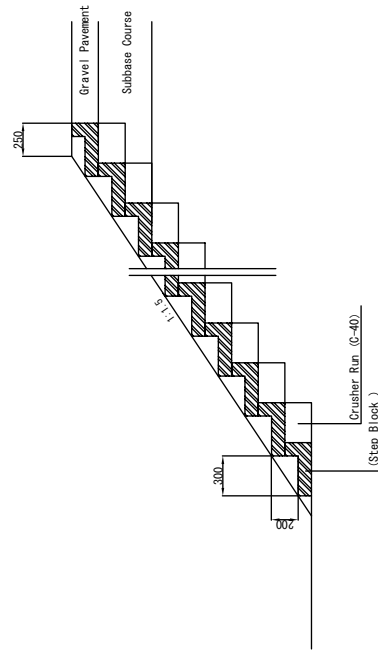
Plan SCALE 1:20



(Step Block)
SCALE 1:10



Profile SCALE 1:20



MATERIAL LIST		PER Nos.	
TYPE	STANDARD	UNIT	QUANTITY
Concrete	18N/mm ²	cu.m	0.025
Form		Sq.m	0.300
Reinforcing Mesh	φ 6 × 75 × 75	Kg	1.450
			REMARKS

MATERIAL LIST		PER m	
TYPE	STANDARD	UNIT	QUANTITY
(Step Block)		Nos.	13.3
Crusher Run	C-40	cu.m	0.24
			REMARKS

MINISTRY OF TRANSPORT AND ROADS
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JAPAN INTERNATIONAL COOPERATION AGENCY
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TITLE:

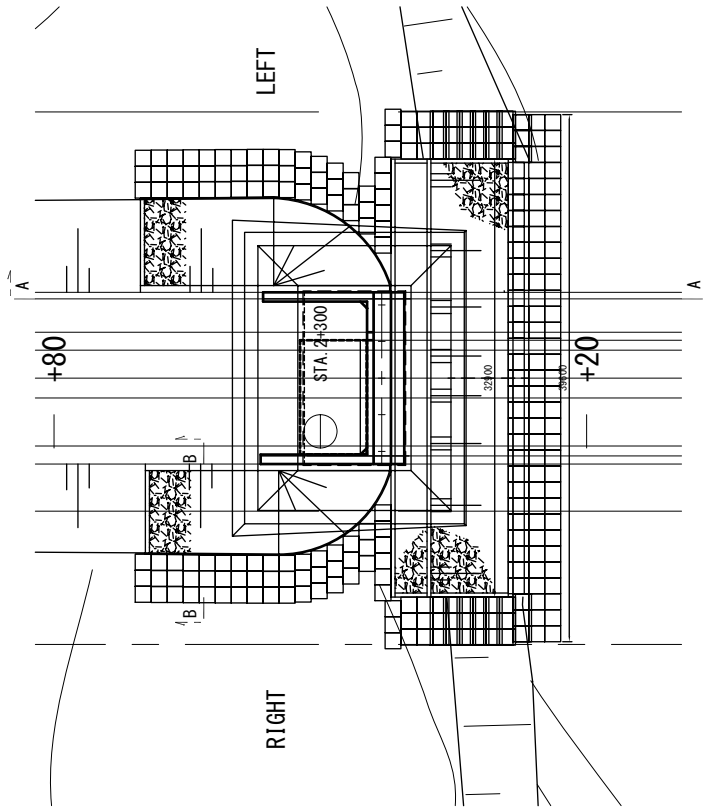
Ancillary Structure (2)

SCALE		SHEET NO.	
1:10	1:20		
		DATE	NB-42
			OCT 2011

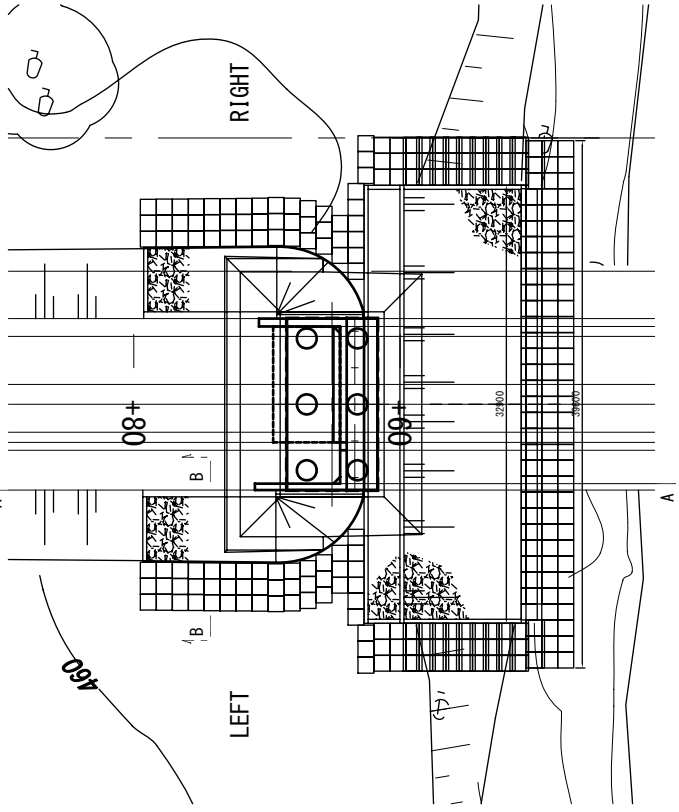
SLOPE PROTECTION LAYOUT AND DETAILS (1)

PLAN S=1:200

ABUTMENT-1

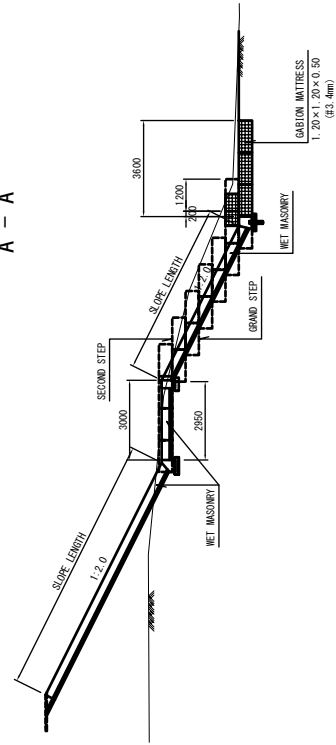


ABUTMENT-2

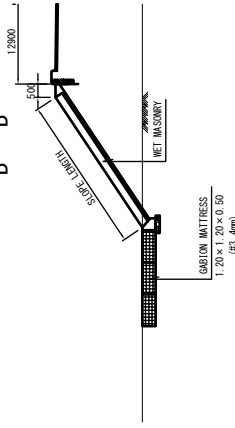


CROSS SECTION S=1:100

A - A



B - B



MINISTRY OF TRANSPORT AND ROADS
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EIGHT-JAPAN ENGINEERING CONSULTANTS INC.

TITLE:

SLOPE PROTECTION LAYOUT AND DETAILS (1)

SCALE
1:200
1:100

DATE

OCT 2011

SHEET NO.

NB-43

