

Appendix-6

Drawings

**GOVERNMENT OF KYRGYZ REPUBLIC
MINISTRY OF TRANSPORT AND COMMUNICATION**



**PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD**

DRAWINGS

DECEMBER 2014

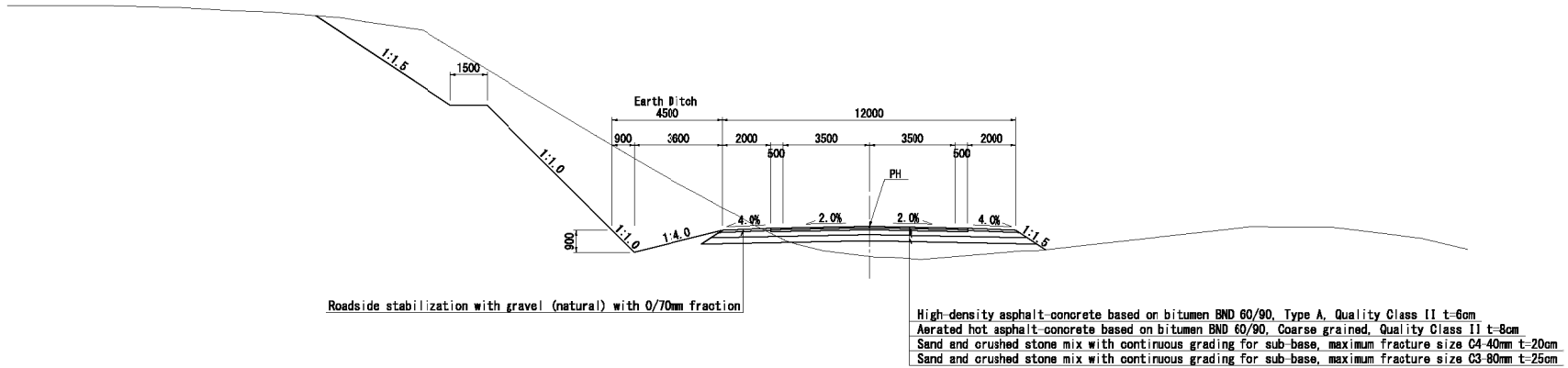
**JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.**

KOKUSAI KOGYO CO., LTD.

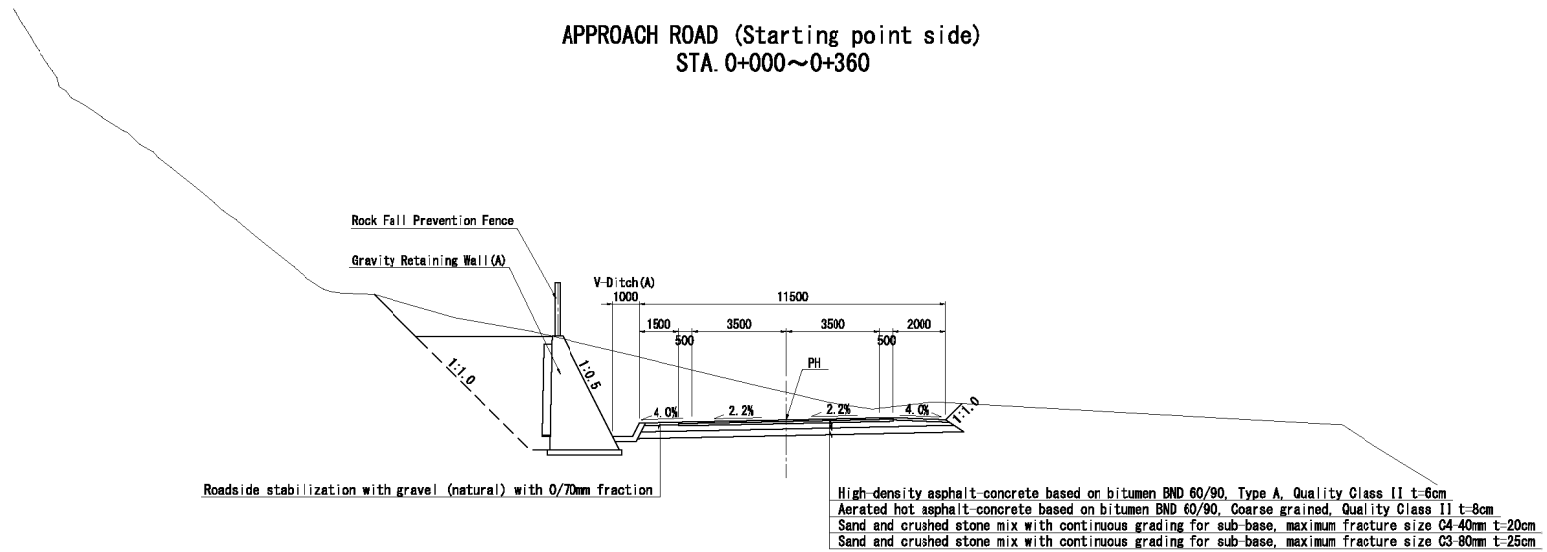
PREPARATORY SURVEY OF THE PROJECT FOR AVALANCHE PROTECTION ON BISHKEK-OSH ROAD

DRAWING LIST

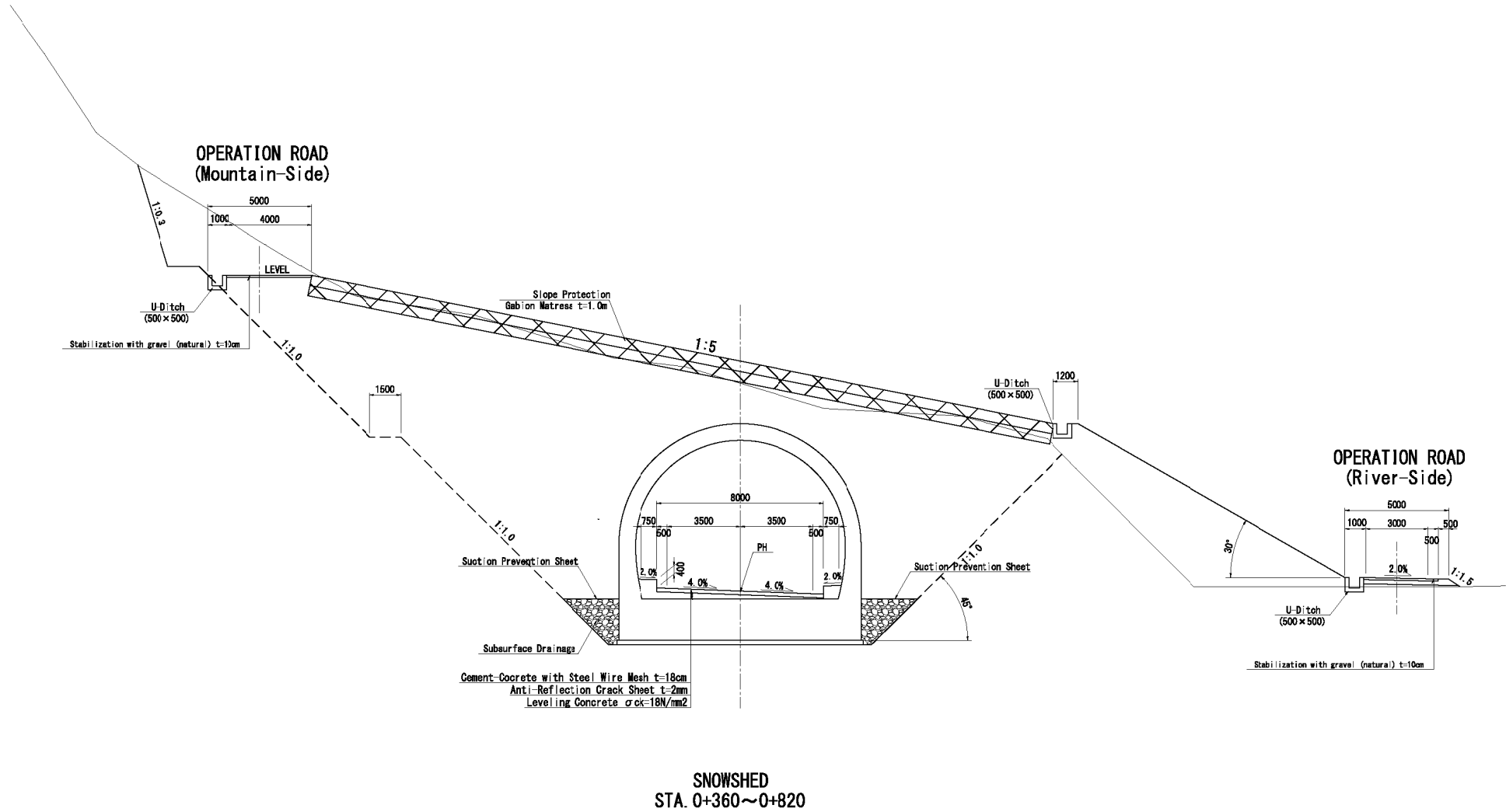
No.	DRAWING TITLE AVALANCHE PROTECTION ON BISHKEK-OSH ROAD	SHEET NO.	No. of Sheets
1.	TYPICAL CROSS SECTION	TP - 01 ~ 02	2
2.	GENERAL DRAWING	GD - 01 ~ 02	2
3.	FACILITY PLAN	FP - 01 ~ 03	3
4.	DETAIL OF DRAINAGE STRUCTURE	DS - 01 ~ 11	11
5.	DETAIL OF ANCILLARY STRUCTURE	DA - 01 ~ 02	2
6.	DETAIL OF CONCRETE PAVEMENT	DC - 01	1
7.	GENERAL LAYOUT OF ARCH CULVERT	GL - 01	1
8.	DETAIL OF ARCH CULVERT	AC - 01 ~ 03	3
9.	LAYOUT OF LIGHTING IN ARCH CULVERT	LL - 01	1
10.	WIRING SYSTEM OF LIGHTING	WS - 01	1
11.	INSTALLATION OF LAMP AND WIRING	IL - 01	1
12.	DISTRIBUTION BOARD	DB - 01	1
13.	LEAD-IN POLE AND SWITCH BOX	LP - 01	1
14.	EXTERIOR LIGHT	EL - 01	1
	TOTAL		31



APPROACH ROAD (Starting point side)
 STA. 0+000~0+360



APPROACH ROAD (Ending point side)
 STA. 0+820~1+009.57



MINISTRY OF TRANSPORT AND
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GOVERNMENT OF KYRGYZ REPUBLIC

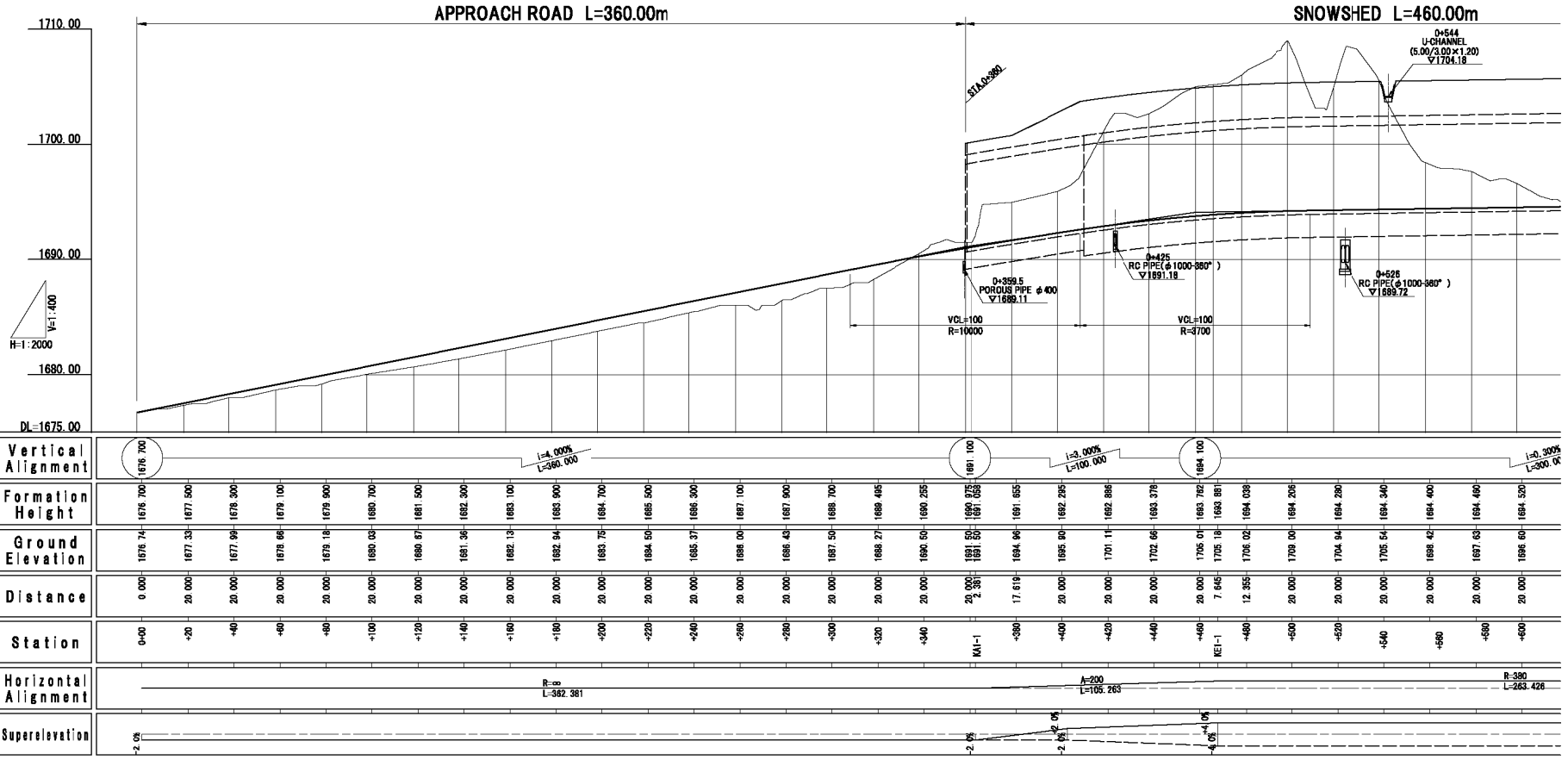
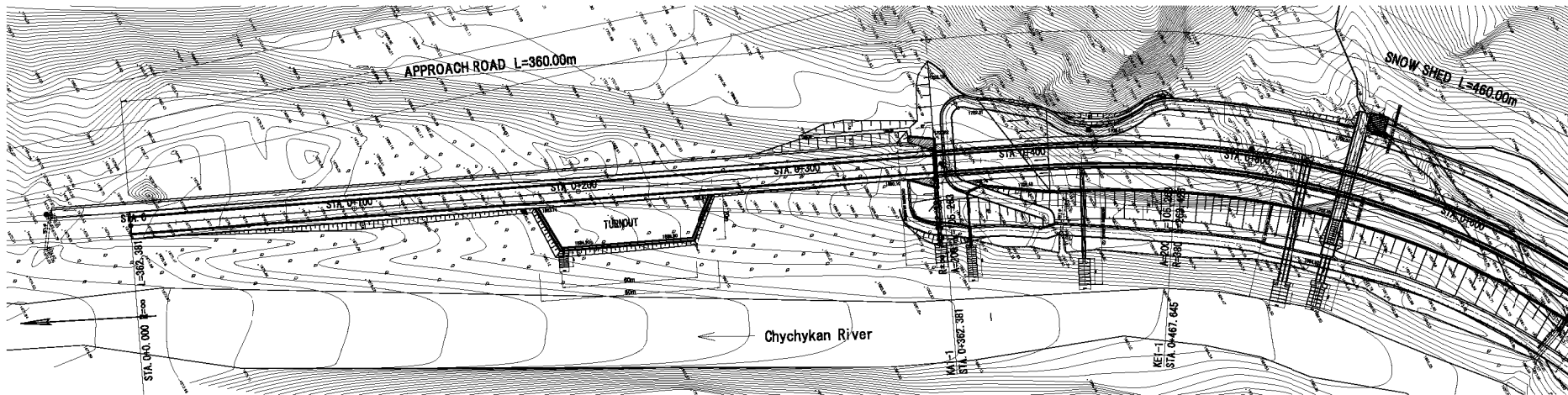
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:

TYPICAL CROSS SECTION
OF SNOWSHED

SCALE	SHEET NO.
S=1:200	TP-02
DATE	



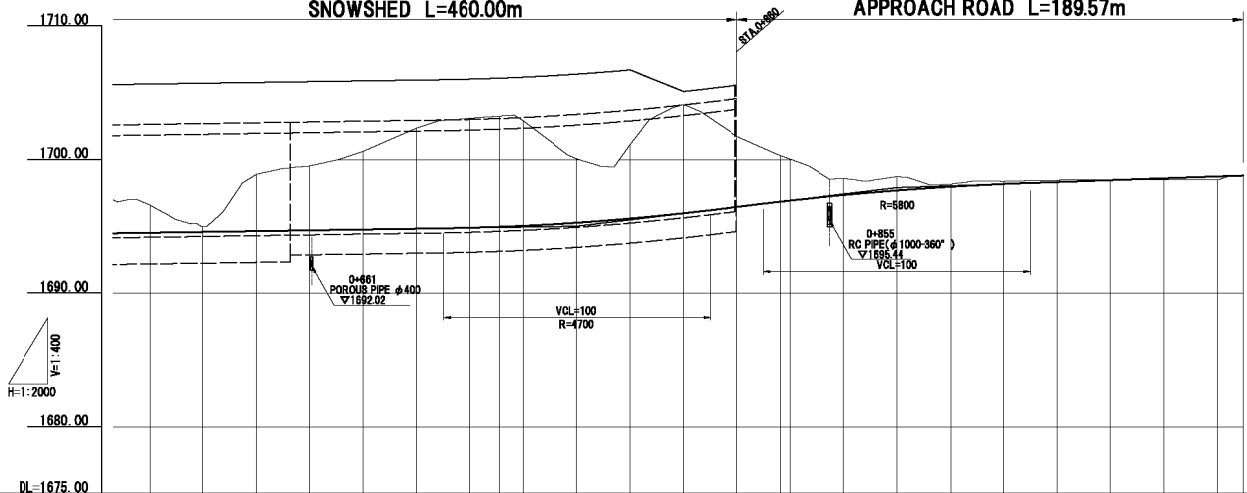
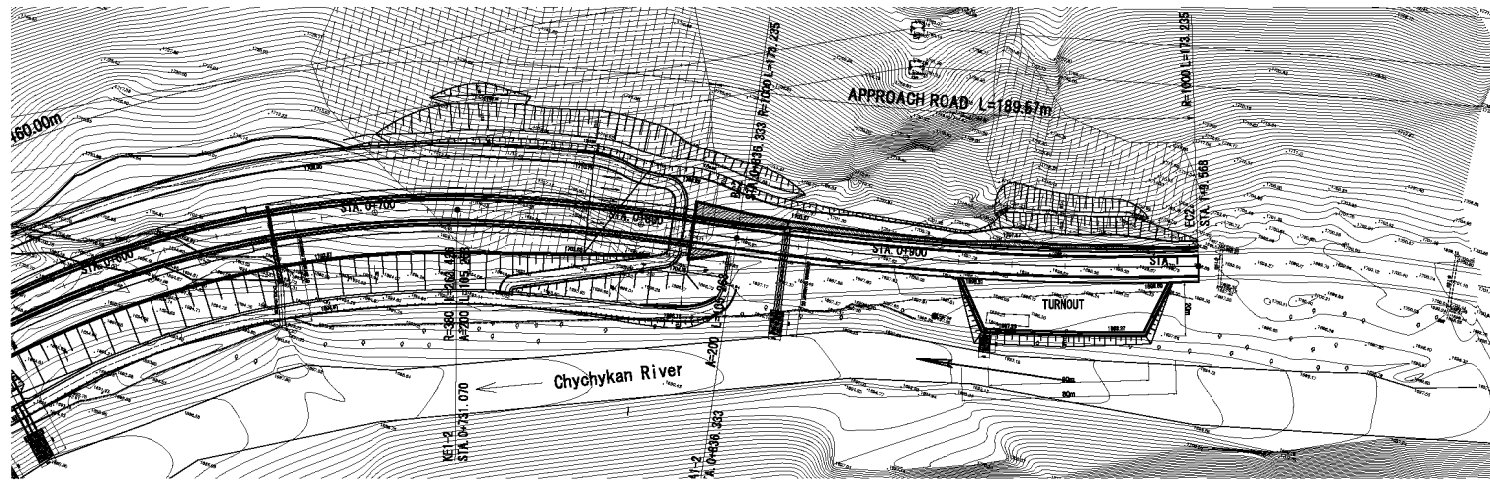
MINISTRY OF TRANSPORT AND COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
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TITLE:
GENERAL DRAWING (1/2)

SCALE
H=1:2,000
V=1:400
DATE
SHEET NO.
GD-01



Vertical Alignment	$i = -0.300\%$ $L = 300.000$																						
Formation Height	1694.520	1694.290	1694.040	1694.700	1694.790	1694.820	1694.891	1694.980	1695.035	1695.265	1695.578	1695.978	1696.450	1696.847	1697.340	1697.992	1698.189	1698.317	1698.456	1698.595	1698.724	1698.800	
Ground Elevation	1695.00	1695.00	1695.00	1695.51	1700.01	1702.35	1703.06	1703.25	1702.89	1700.06	1701.12	1704.12	1701.72	1700.05	1698.00	1696.75	1698.16	1698.37	1698.46	1698.50	1698.50	1698.50	1698.80
Distance	20.000	20.000	20.000	20.000	20.000	20.000	20.000	11.070	8.830	20.000	20.000	20.000	16.833	3.667	20.000	20.000	20.000	20.000	20.000	20.000	20.000	9.566	
Station	-600	-620	-640	-660	-680	-700	-720	-740	-760	-780	-800	-820	-840	-860	-880	-900	-920	-940	-960	-980	1+0	E02	
Horizontal Alignment	$R = 380$ $L = 263.426$																						
Superelevation	$A = 200$ $L = 105.263$																						

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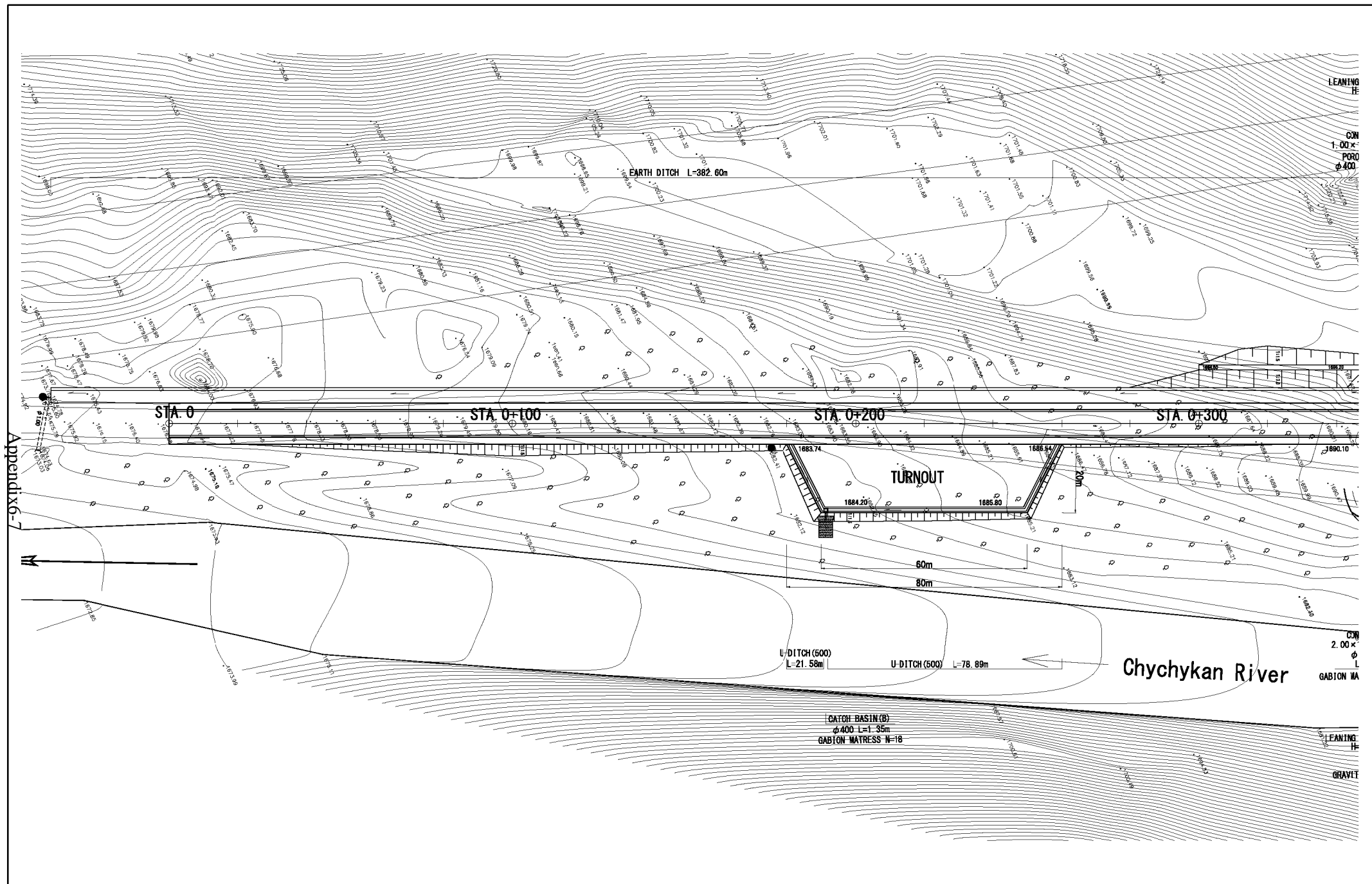
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
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TITLE:

GENERAL DRAWING (2/2)

SCALE	SHEET NO.
H=1:2,000 V=1:400	GD-02
DATE	



Appendix 6-7

MINISTRY OF TRANSPORT AND
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GOVERNMENT OF KYRGYZ REPUBLIC

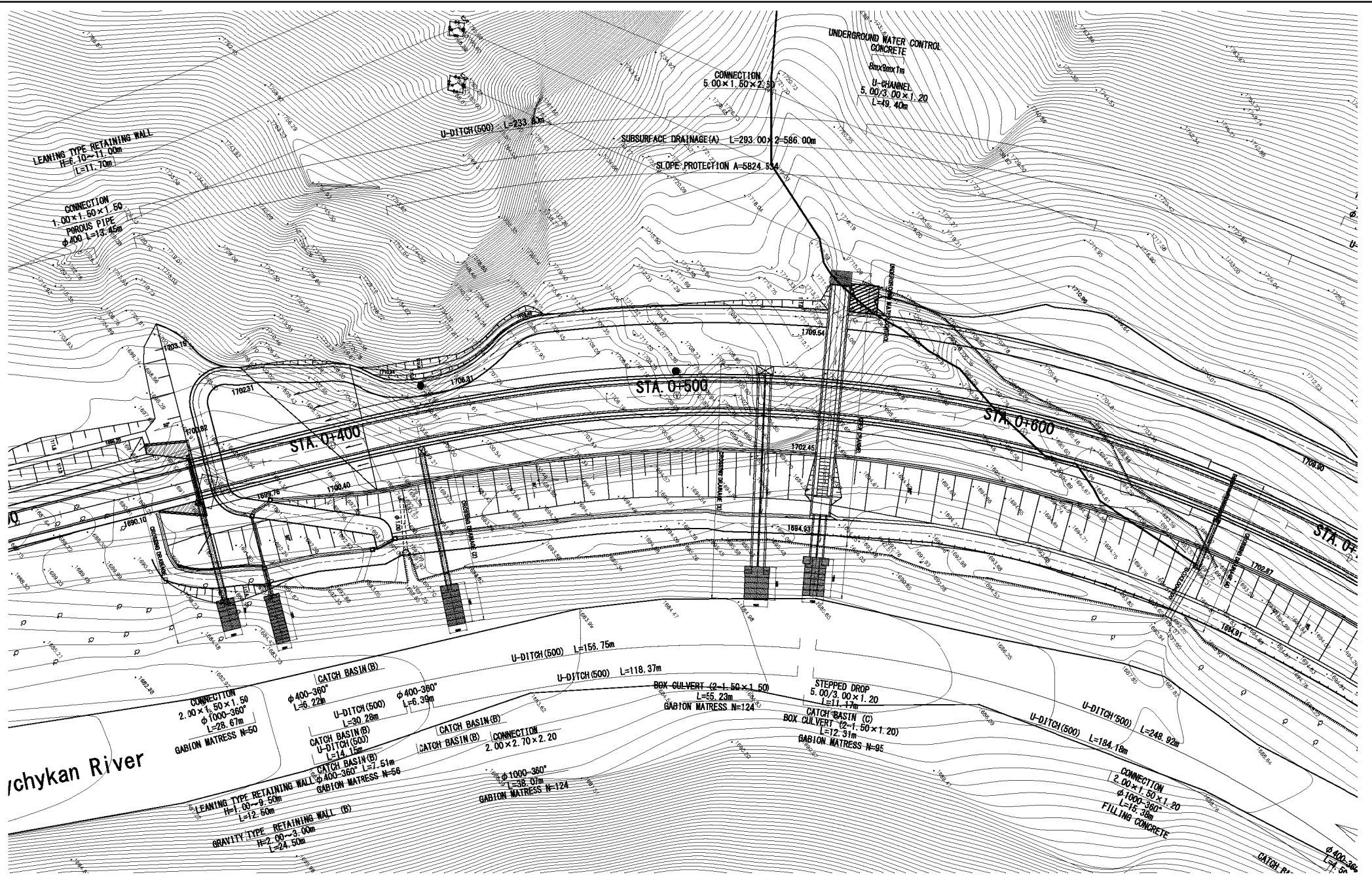
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:

FACILITY PLAN (1/3)
No.1 (STA.0+000~0+340)

SCALE	SHEET NO.
H=1:1,000	FP-01
DATE	



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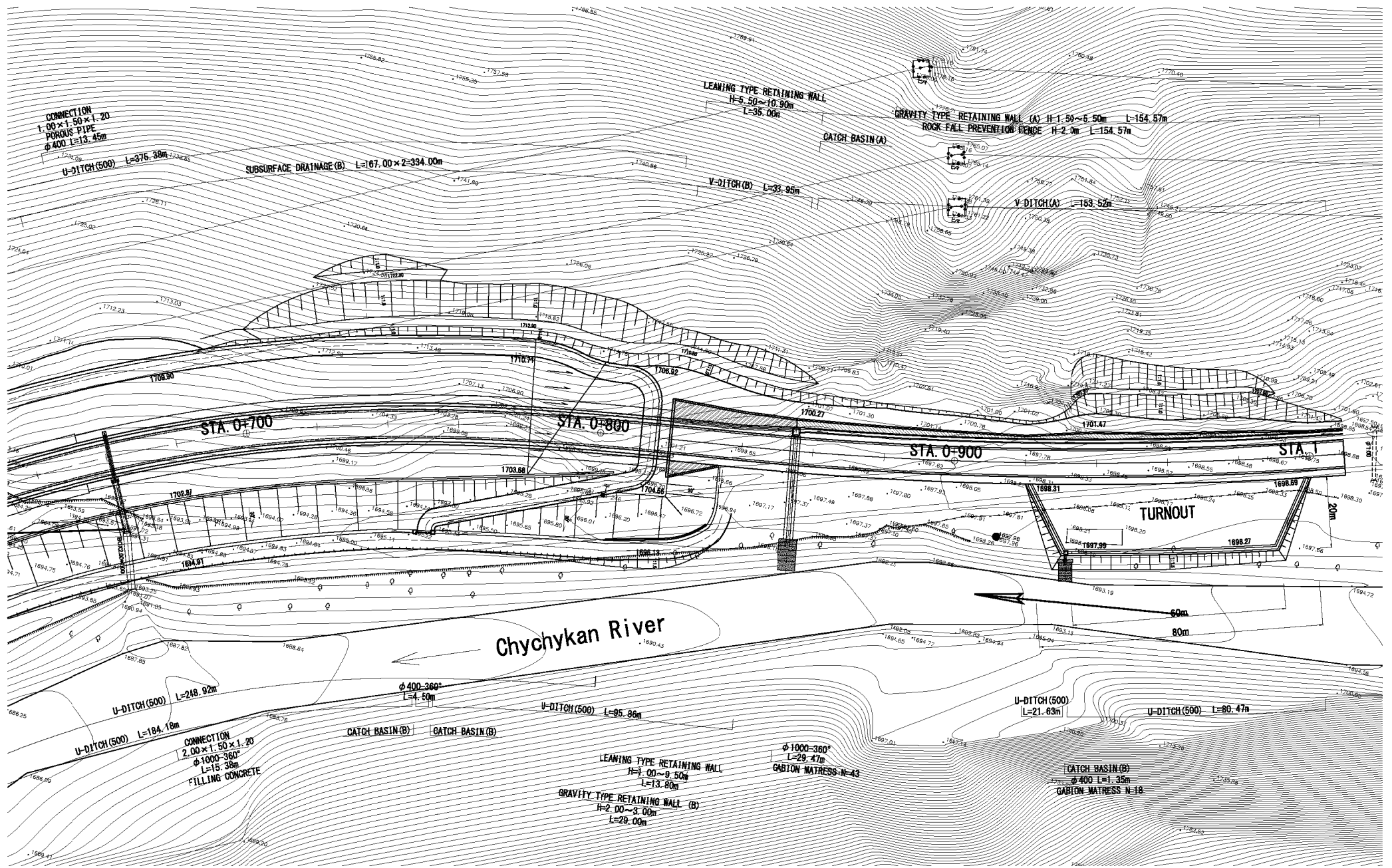
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:

FACILITY PLAN (2/3)
No.2 (STA.0+340~0+680)

SCALE	SHEET NO.
H=1:1,000	FP-02
DATE	



MINISTRY OF TRANSPORT AND
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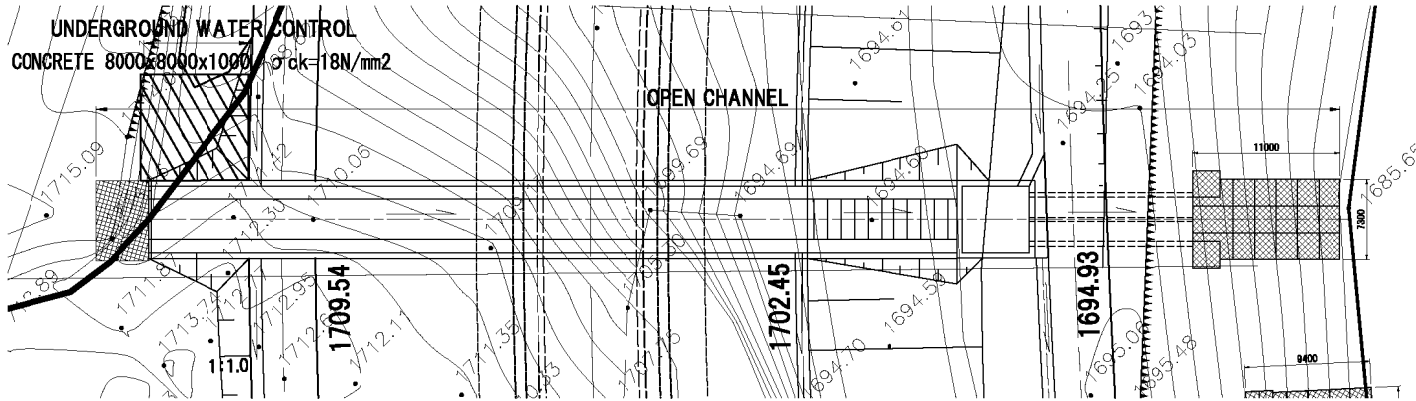
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

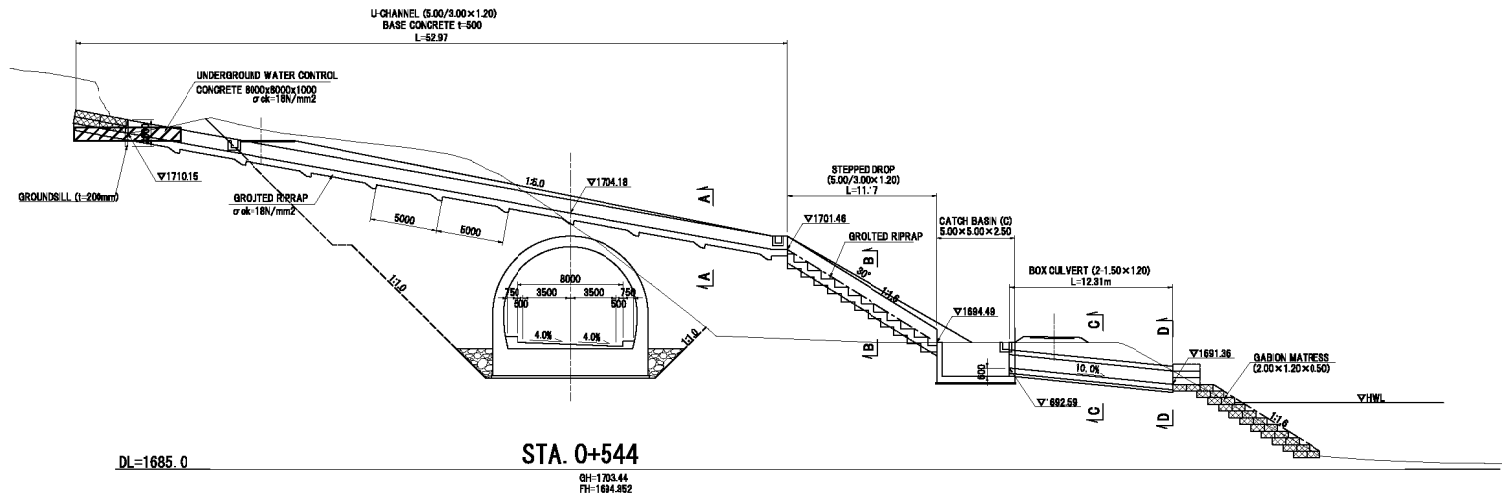
TITLE:

FACILITY PLAN (3/3)
No.3 (STA.0+680~1+009.57)

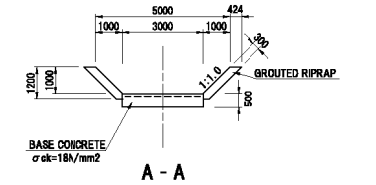
SCALE	SHEET NO.
H=1:1,000	
DATE	FP-03



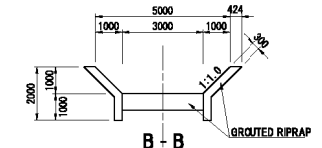
PLAN S=1:400



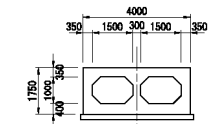
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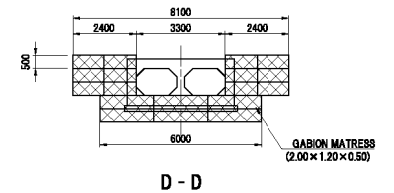
A - A



B - B



C - C



D - D

CROSS SECTION S=1:200

Appendix 6-10

MINISTRY OF TRANSPORT AND
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GOVERNMENT OF KYRGYZ REPUBLIC

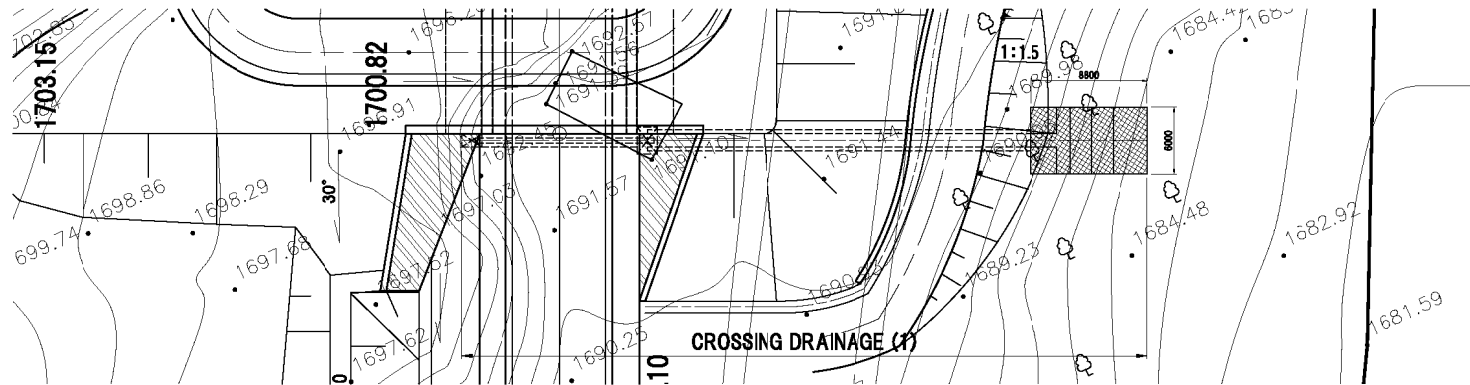
PREPARATORY SURVEY OF THE PROJECT FOR
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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

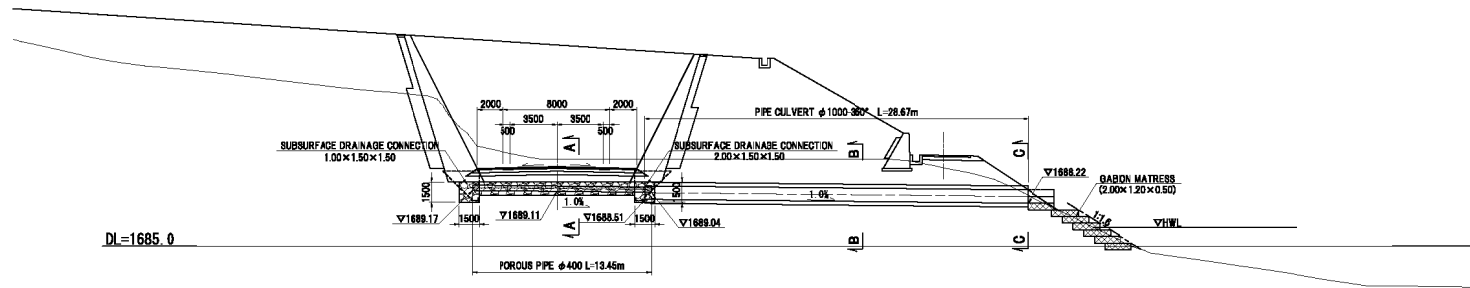
TITLE:

DETAIL OF DRAINAGE STRUCTURE (1/11)
OPEN CHANNEL (STA.0+544)

SCALE	SHEET NO.
AS SHOWN	DS-01
DATE	



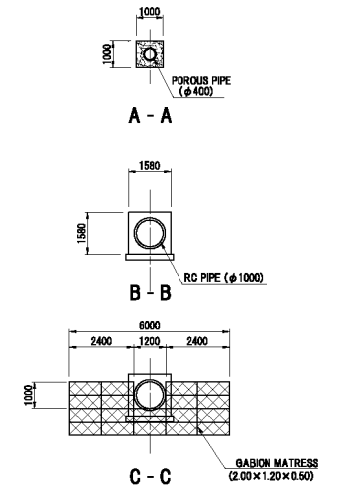
PLAN S=1:400



SECTION S=1:400

GH=1691.50
FH=1690.957

NOTE: SCREEN SHALL BE INSTALLED ON SUBSURFACE DRAINAGE CONNECTION



CROSS SECTION S=1:200

MINISTRY OF TRANSPORT AND
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GOVERNMENT OF KYRGYZ REPUBLIC

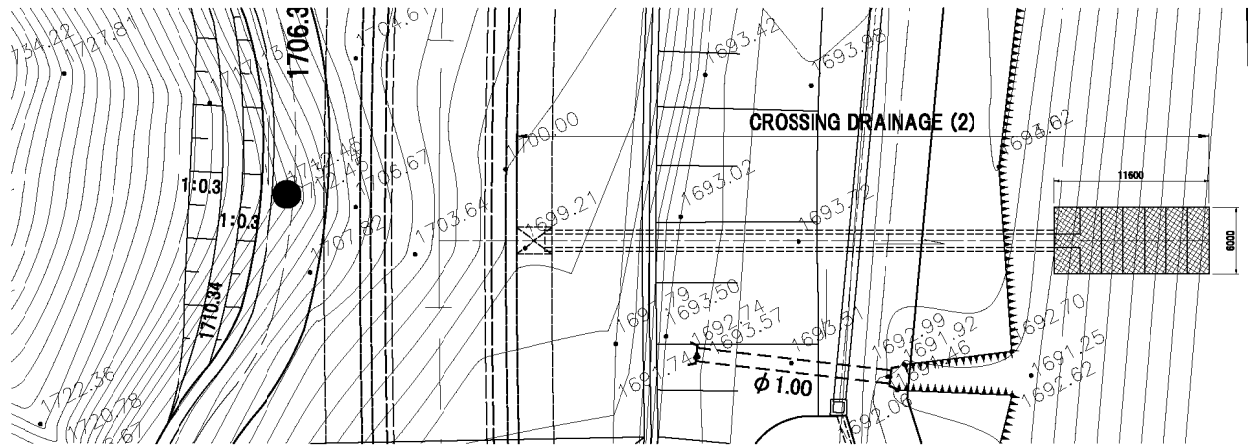
PREPARATORY SURVEY OF THE PROJECT FOR
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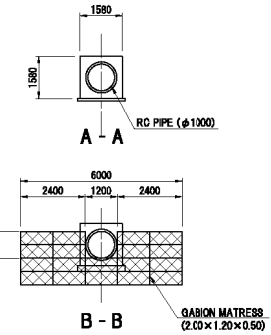
TITLE:

DETAIL OF DRAINAGE STRUCTURE (2/11)
CROSSING DRAINAGE (STA.0+359.5)

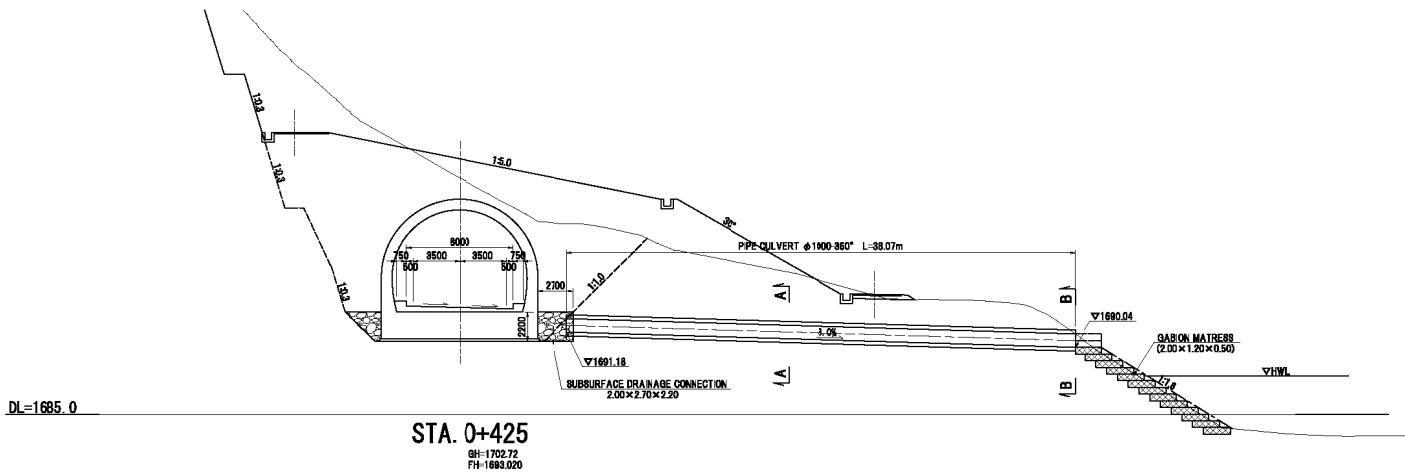
SCALE	SHEET NO.
AS SHOWN	DS-02
DATE	



PLAN S=1:400



CROSS SECTION S=1:200



SECTION S=1:400

NOTE: SCREEN SHALL BE INSTALLED ON SUBSURFACE DRAINAGE CONNECTION

MINISTRY OF TRANSPORT AND COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

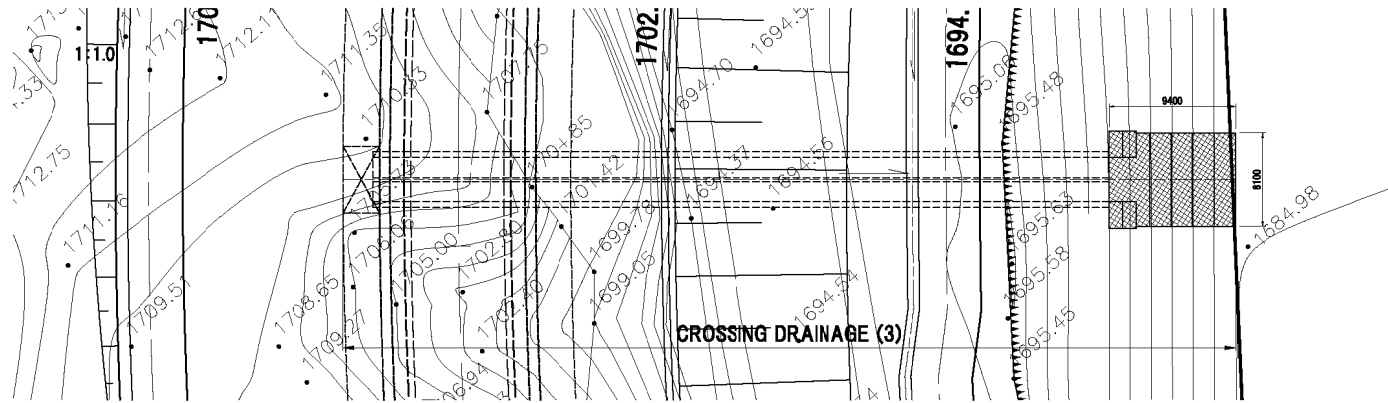
PREPARATORY SURVEY OF THE PROJECT FOR
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JAPAN INTERNATIONAL COOPERATION AGENCY
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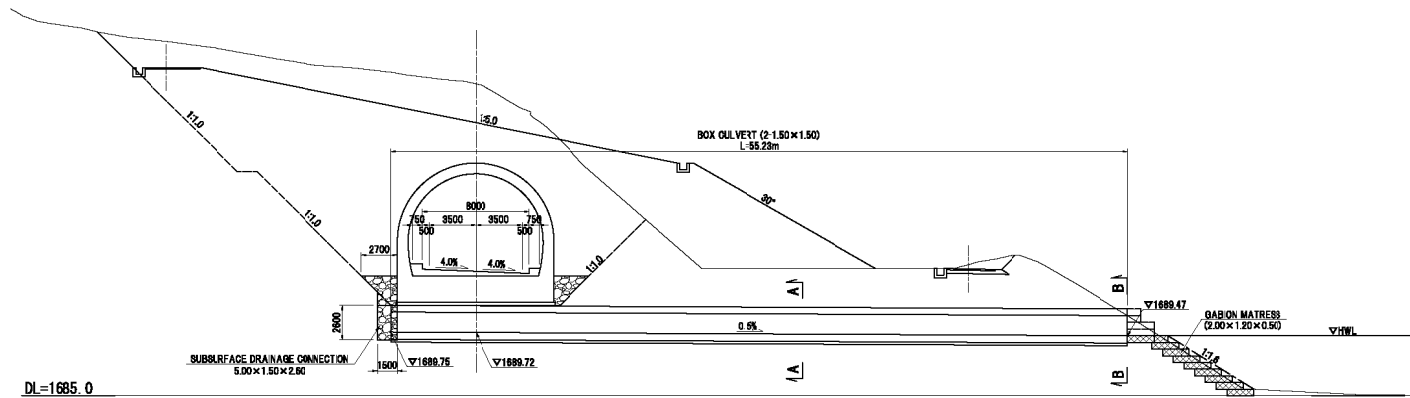
TITLE:

DETAIL OF DRAINAGE STRUCTURE (3/11)
CROSSING DRAINAGE (STA.0+425)

SCALE	SHEET NO.
AS SHOWN	DS-03
DATE	

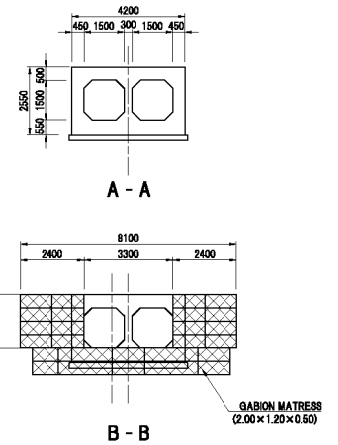


PLAN S=1:400



SECTION S=1:400

NOTE: SCREEN SHALL BE INSTALLED ON SUBSURFACE DRAINAGE CONNECTION



CROSS SECTION S=1:200

MINISTRY OF TRANSPORT AND
COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

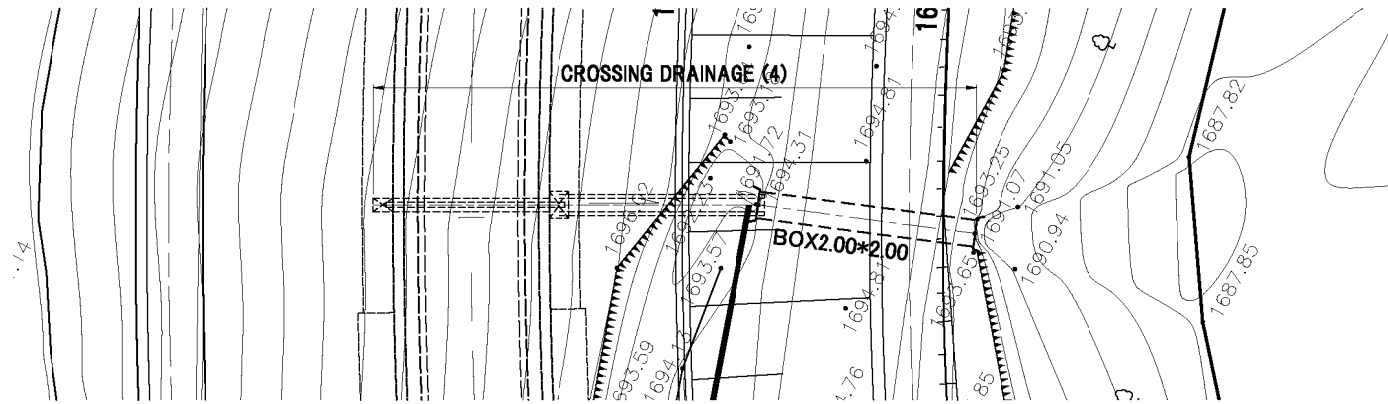
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
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KOKUSAI KOGYO CO., LTD.

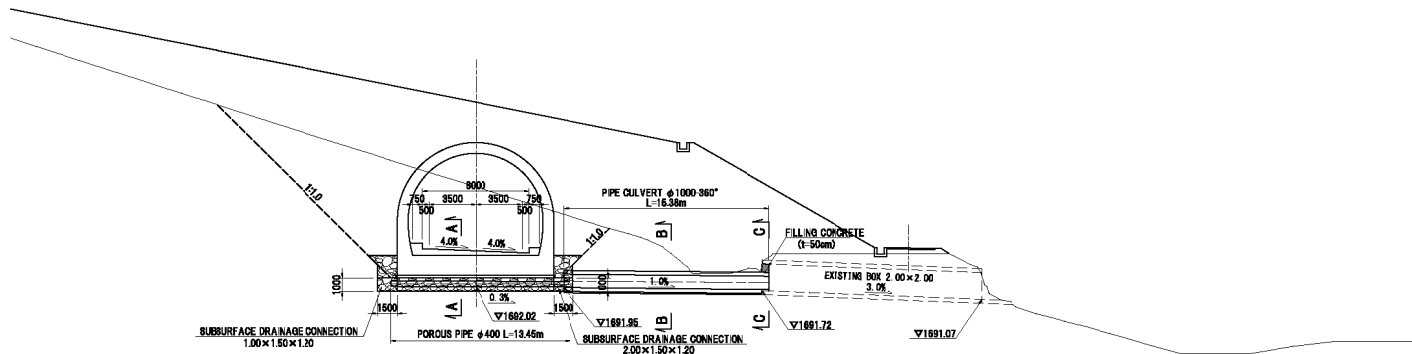
TITLE:

DETAIL OF DRAINAGE STRUCTURE (4/11)
CROSSING DRAINAGE (STA.0+525)

SCALE	SHEET NO.
AS SHOWN	DS-04
DATE	



PLAN S=1:400



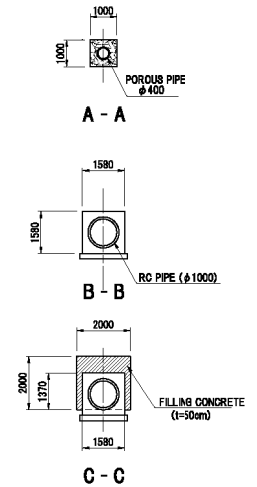
DL=1685.0

STA. 0+661

NOTE: SCREEN SHALL BE INSTALLED ON SUBSURFACE DRAINAGE CONNECTION

BH-1693.51
FH-1694.703

SECTION S=1:400



CROSS SECTION S=1:200

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GOVERNMENT OF KYRGYZ REPUBLIC

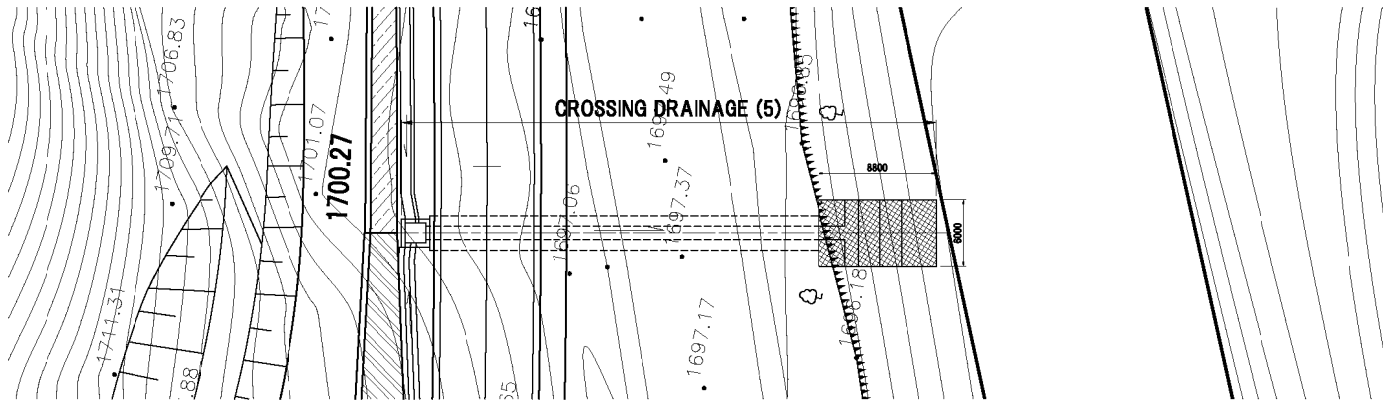
PREPARATORY SURVEY OF THE PROJECT FOR
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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

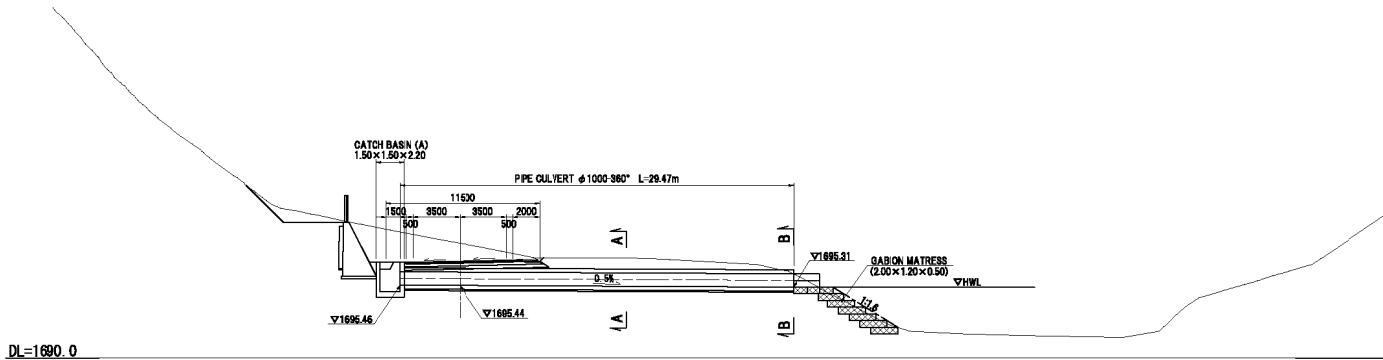
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DETAIL OF DRAINAGE STRUCTURE (5/11)
CROSSING DRAINAGE (STA.0+661)

SCALE	SHEET NO.
AS SHOWN	DS-05
DATE	



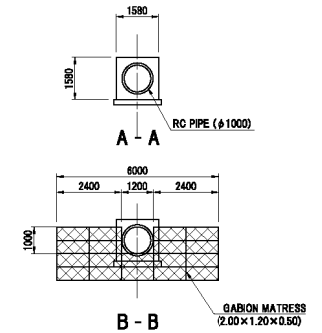
PLAN S=1:400



STA. 0+855

BH=1698.00
FH=1687.241

SECTION S=1:400



CROSS SECTION S=1:200

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COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

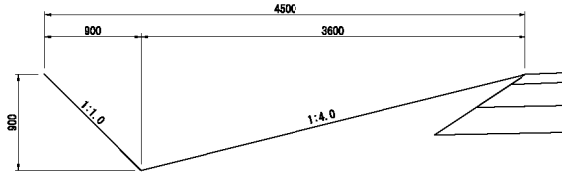
PREPARATORY SURVEY OF THE PROJECT FOR
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IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

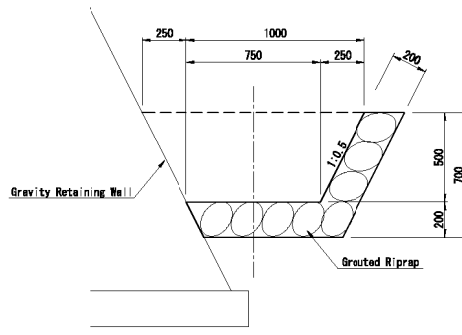
TITLE:

DETAIL OF DRAINAGE STRUCTURE (6/11)
CROSSING DRAINAGE (STA.0+855)

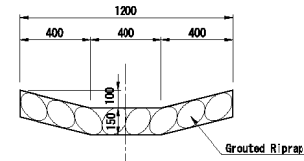
SCALE	SHEET NO.
AS SHOWN	DS-06
DATE	



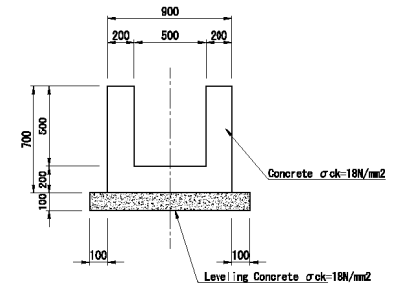
EARTH DITCH S=1:50



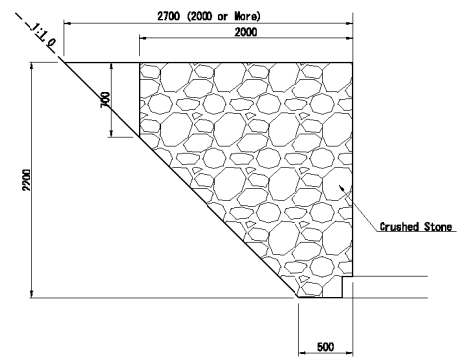
**V-DITCH (A) S=1:30
(1000/750 × 500)**



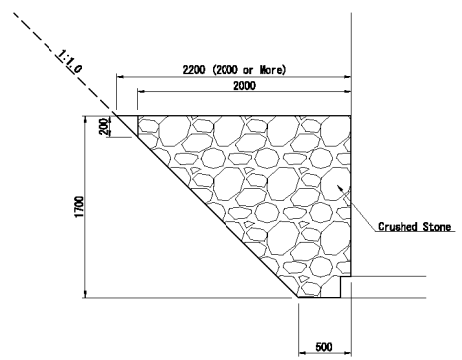
**V-DITCH (B) S=1:30
(1200/400 × 100~500)**



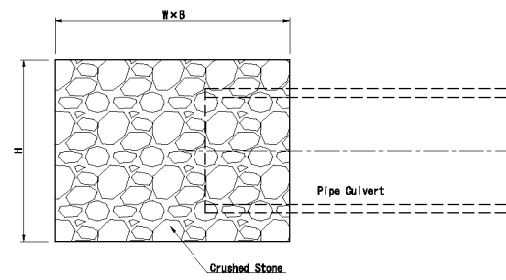
U-DITCH (500 × 500) S=1:30



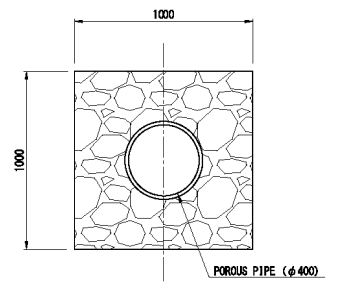
**SUBSURFACE DRAINAGE S=1:50
(2700/500 × 2200)**



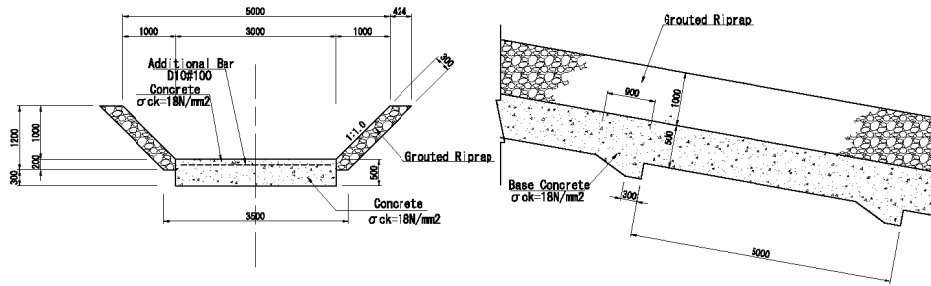
**SUBSURFACE DRAINAGE S=1:50
(2200/500 × 1700)**



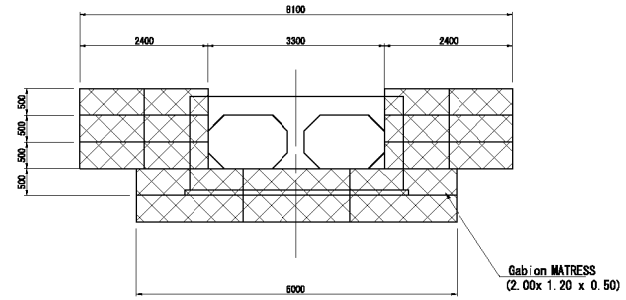
SUBSURFACE DRAINAGE CONNECTION S=1:50



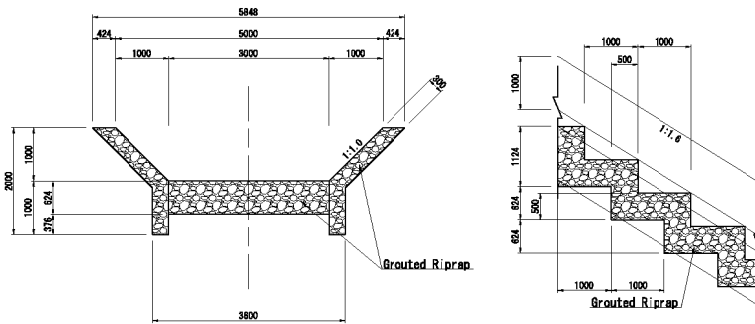
SUBSURFACE DRAINAGE S=1:30



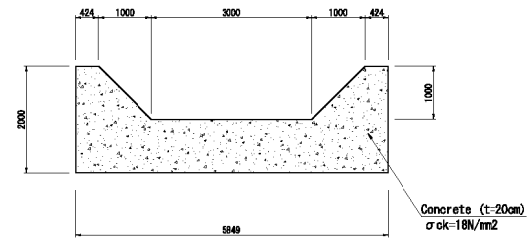
U-CHANNEL (5.00/3.00 × 1.00) S=1:100



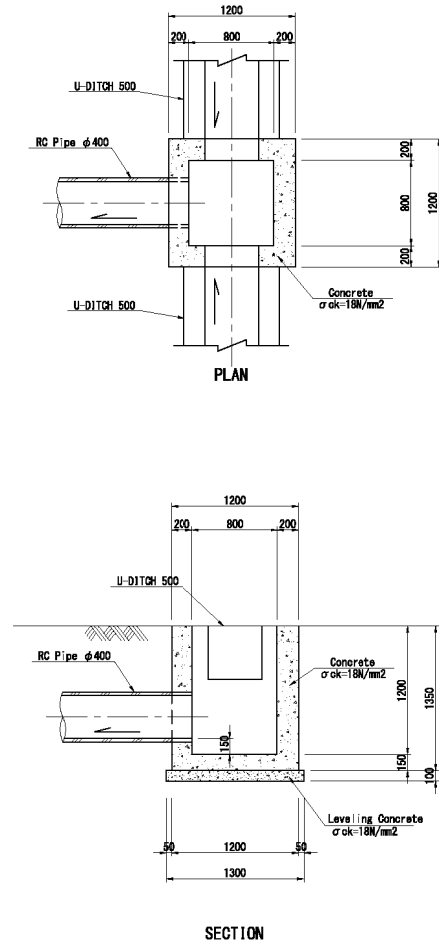
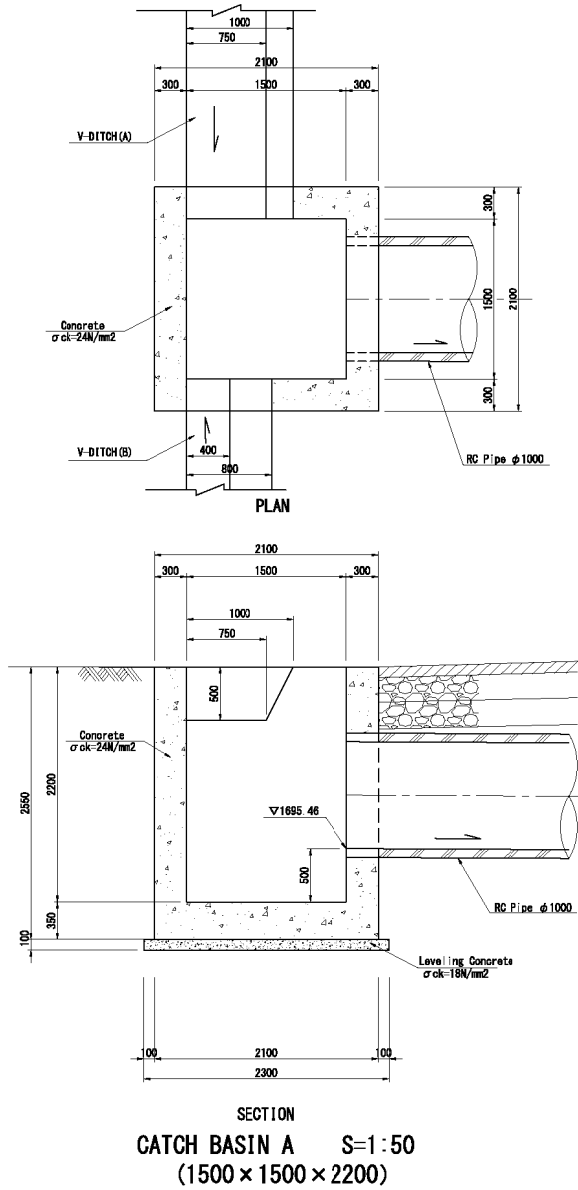
GABION MATRESS (2.00x 1.20 x 0.50) S=1:100



STEPPED DROP (5.00/3.00 × 1.00) S=1:100



GROUNDSILL



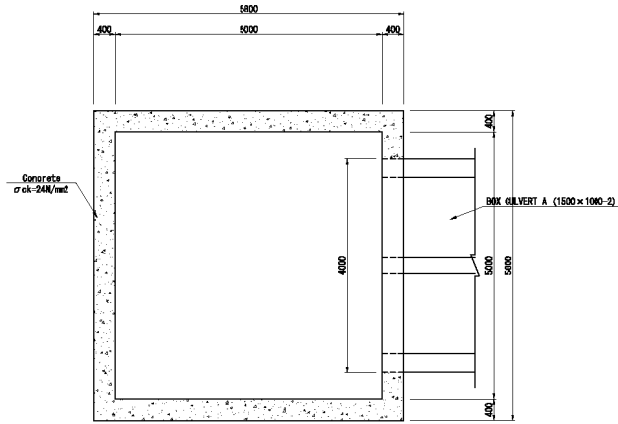
MINISTRY OF TRANSPORT AND
COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

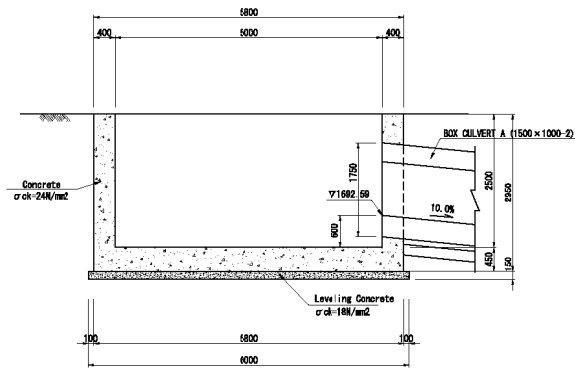
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:
DETAIL OF DRAINAGE STRUCTURE (9/11)
CATCH BASIN

SCALE	SHEET NO.
S=1:50	DS-9
DATE	

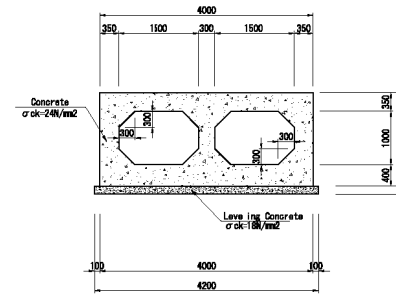


PLAN

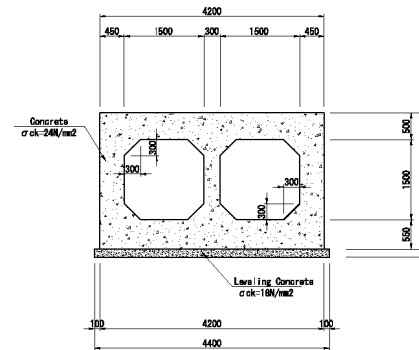


SECTION

CATCH BASIN C S=1:100
(5000 × 5000 × 2500)



BOX CULVERT A S=1:100
(1500 × 1000-2)



BOX CULVERT B S=1:100
(1500 × 1500-2)

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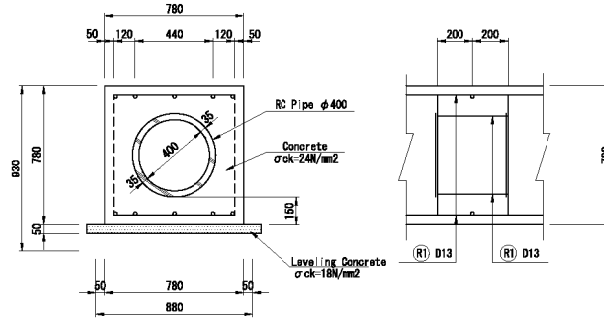
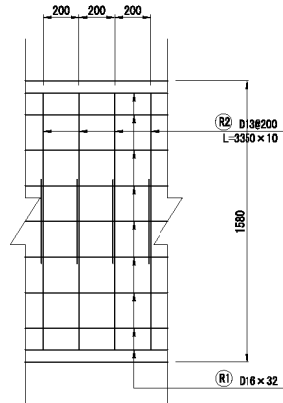
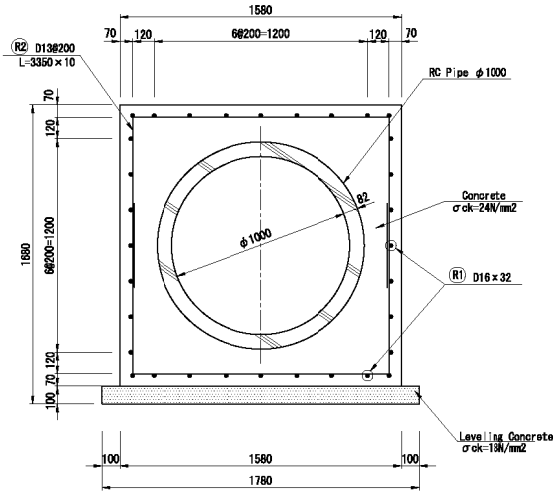
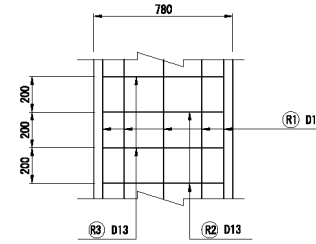
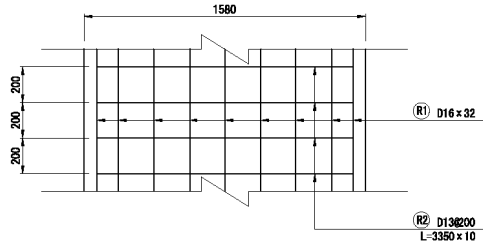
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:

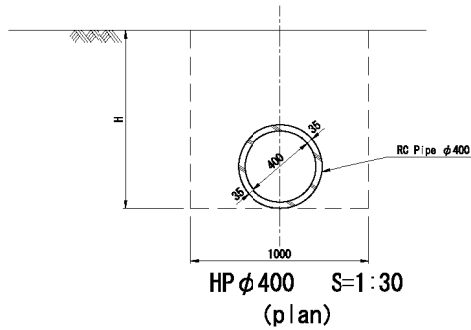
DETAIL OF DRAINAGE STRUCTURE (10/11)
CATCH BASIN (C)
BOX CULVERT

SCALE	SHEET NO.
S=1:100	DS-10
DATE	



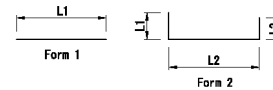
HP φ 400 S=1:30
(360° Base Concrete)

HP φ 1000 S=1:30
(360° Base Concrete)



HP φ 400 S=1:30
(plan)

Reinforcing Bars Processing Table

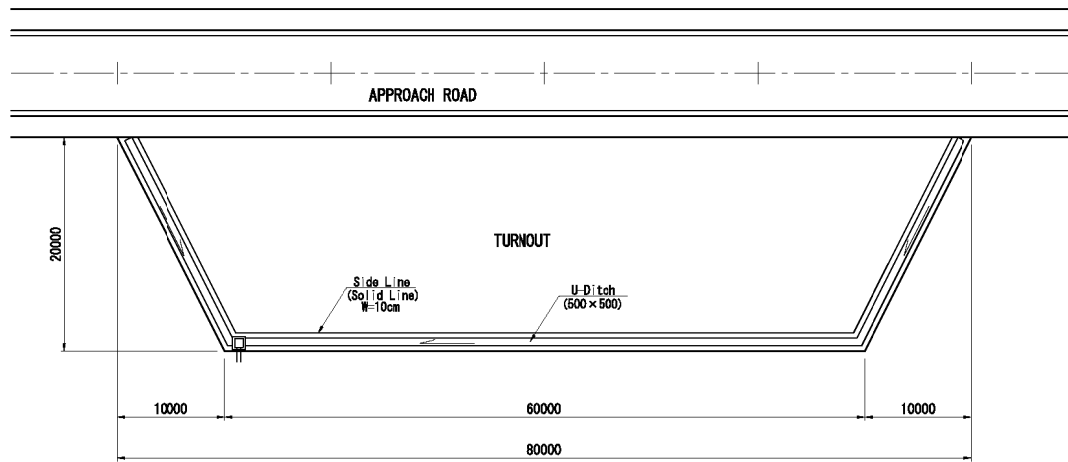


Reinforcement Bar List (HP φ 1000)

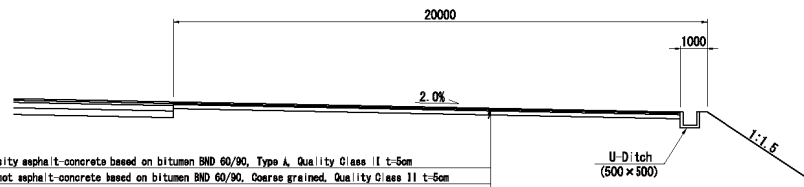
Mark	Form	Size	No.	Length (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Weight/m (kg/m)	Unit Weight (kg)	Weight (kg)	Remarks	
R1	1	D16	32	1,000	1,000			1.580	1.580	49.920		
R2	2	D13	10	3,350	955	1,440	955	0.995	3.333	33.330		
									Total	D16	49.920	
										D13	33.330	

Reinforcement Bar List (HP φ 400)

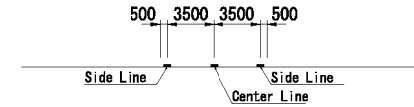
Mark	Form	Size	No.	Length (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Weight/m (kg/m)	Unit Weight (kg)	Weight (kg)	Remarks	
R1	1	D13	10	1,000	1,000			0.995	0.995	9.950		
R2	2	D13	5	1,750	555	640	555	0.995	1.741	8.705		
R3	1	D13	5	640	640			0.995	0.637	3.185		
									Total	D13	21.840	



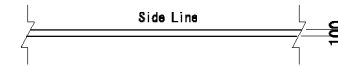
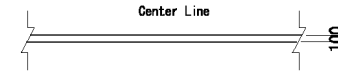
TURNOUT S=1:250



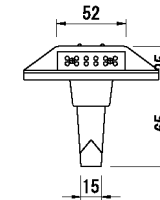
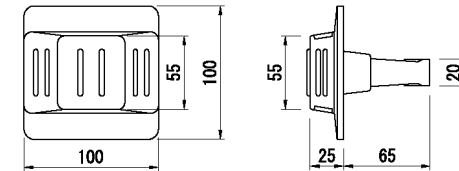
CROSS SECTION S=1:200



PAVEMENT MARKING LAYOUT S=1:200



PAVEMENT MARKING S=1:50



NOTE: REFLECTING ROAD STUD SHALL BE INSTALLED AT 10 METER INTERVAL.

REFLECTING ROAD STUD S=1:2

MINISTRY OF TRANSPORT AND
COMMUNICATION
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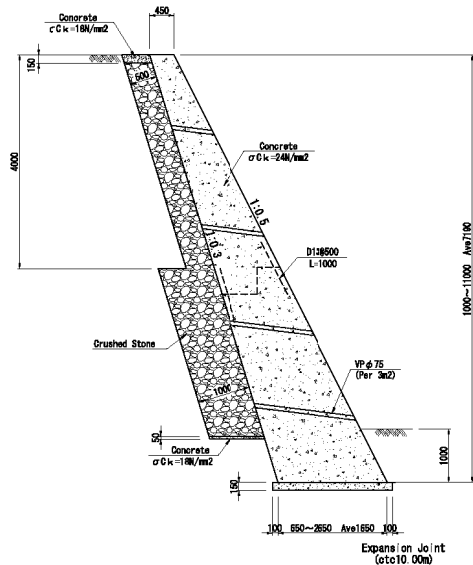
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

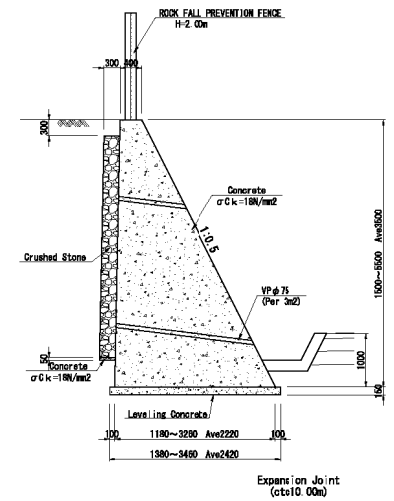
TITLE:

DETAIL OF DRAINAGE STRUCTURE (1/2)
TURNOUT
PAVEMENT MARKING
REFLECTING ROAD STUD

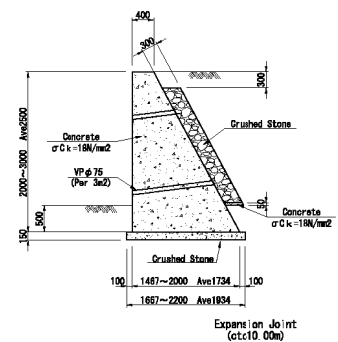
SCALE	SHEET NO.
AS SHOWN	DA-01
DATE	



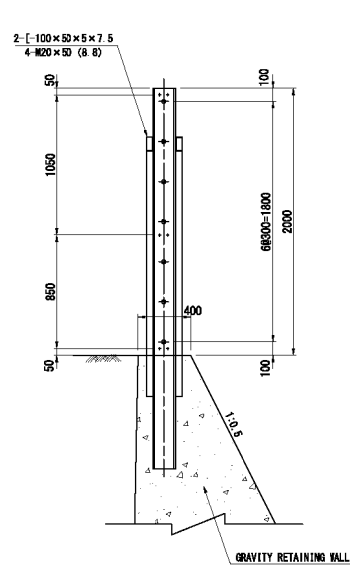
LEANING TYPE RETAINING WALL S=1:100



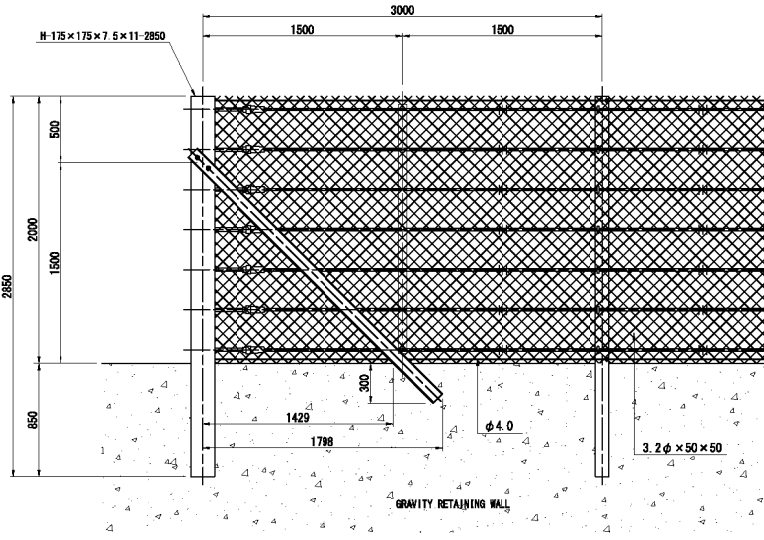
GRAVITY TYPE RETAINING WALL S=1:100
A (H=1.50~5.50)



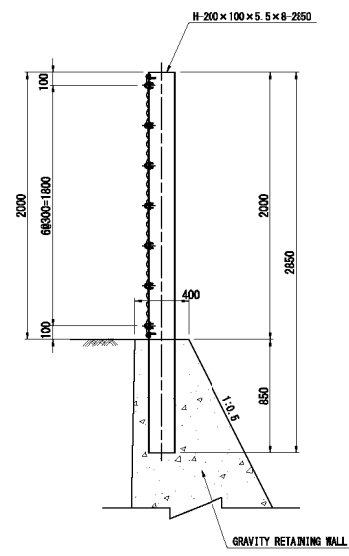
GRAVITY TYPE RETAINING WALL S=1:100
B (H=2.00~3.00)



TYPICAL POST



FRONT VIEW
ROCK FALL PREVENTION FENCE S=1:40



TYPICAL POST

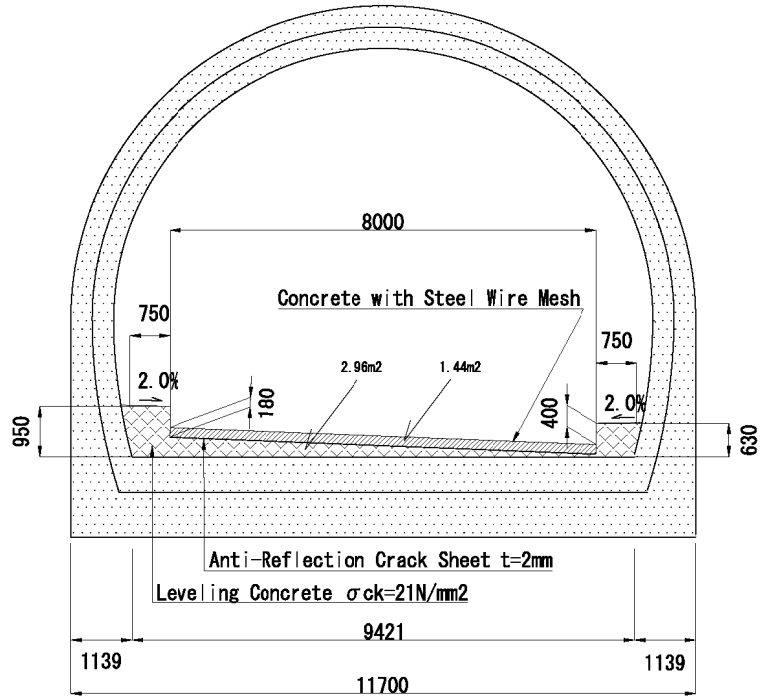
MINISTRY OF TRANSPORT AND
COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

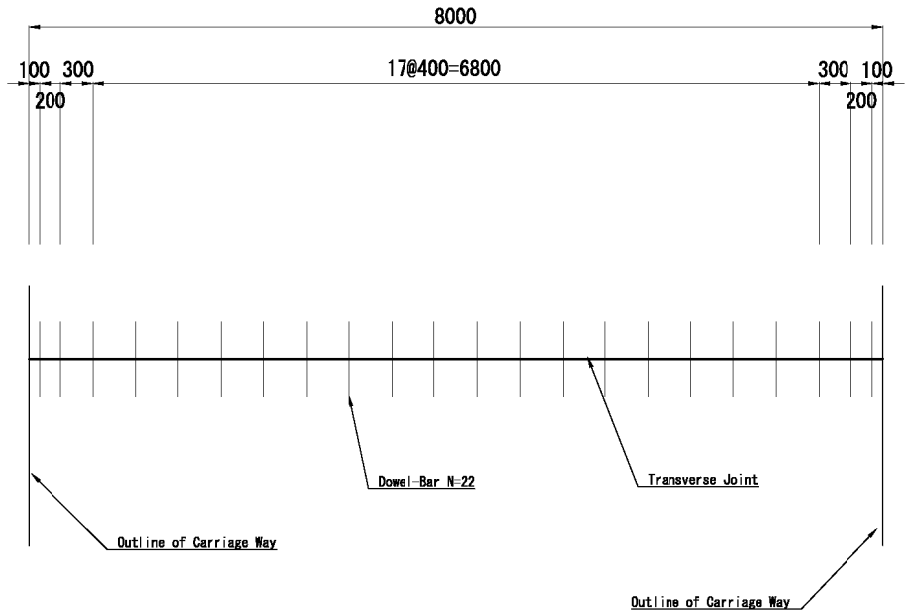
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:
DETAIL OF DRAINAGE STRUCTURE (2/2)
SUPPORTED TYPE RETAINING WALL
GRAVITY TYPE RETAINING WALL
ROCK FALL PREVENTION FENCE

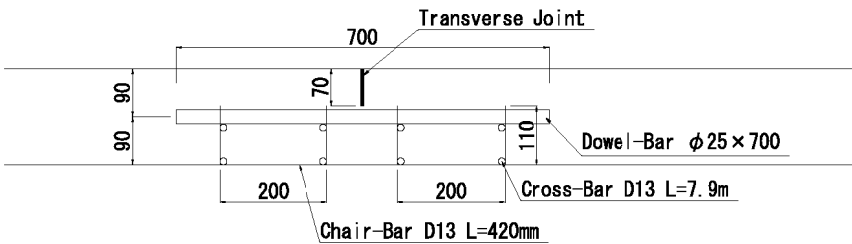
SCALE	SHEET NO.
AS SHOWN	DA-02
DATE	



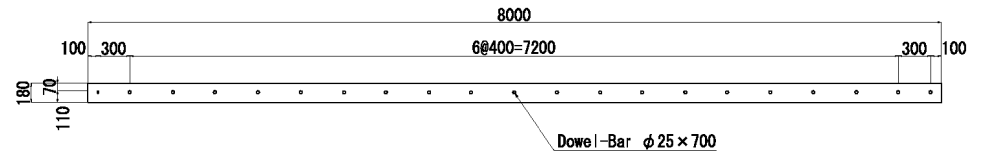
CROSS SECTION S=1:100



DOWEL-BAR LAYOUT (1) S=1:50



JOINT DETAIL S=1:10



DOWEL-BAR LAYOUT (2) S=1:50

MINISTRY OF TRANSPORT AND
COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

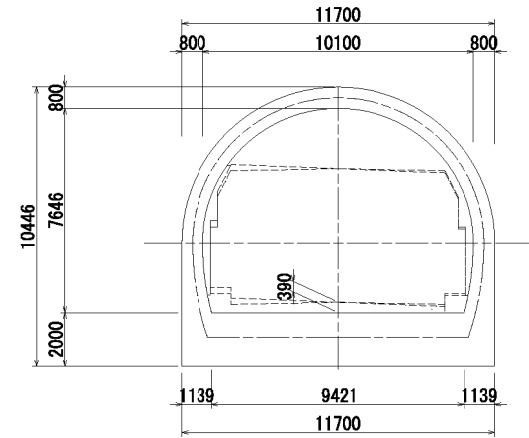
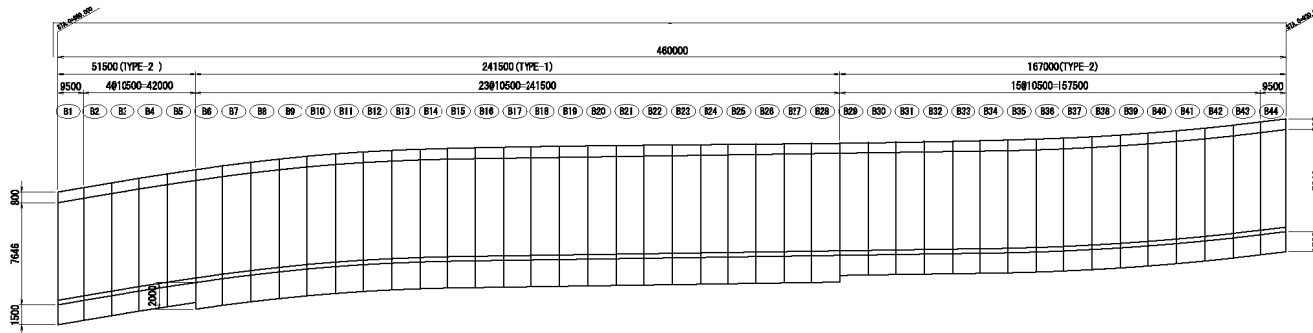
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:

DETAIL OF CONCRETE PAVEMENT

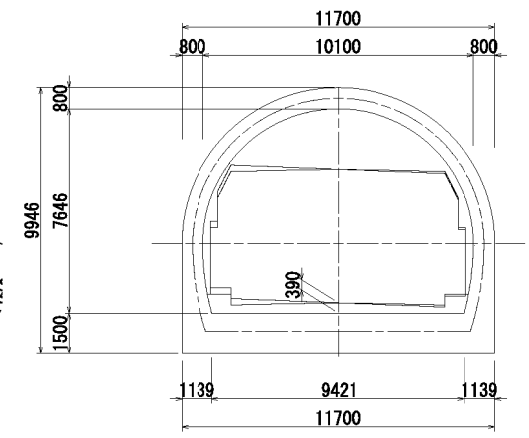
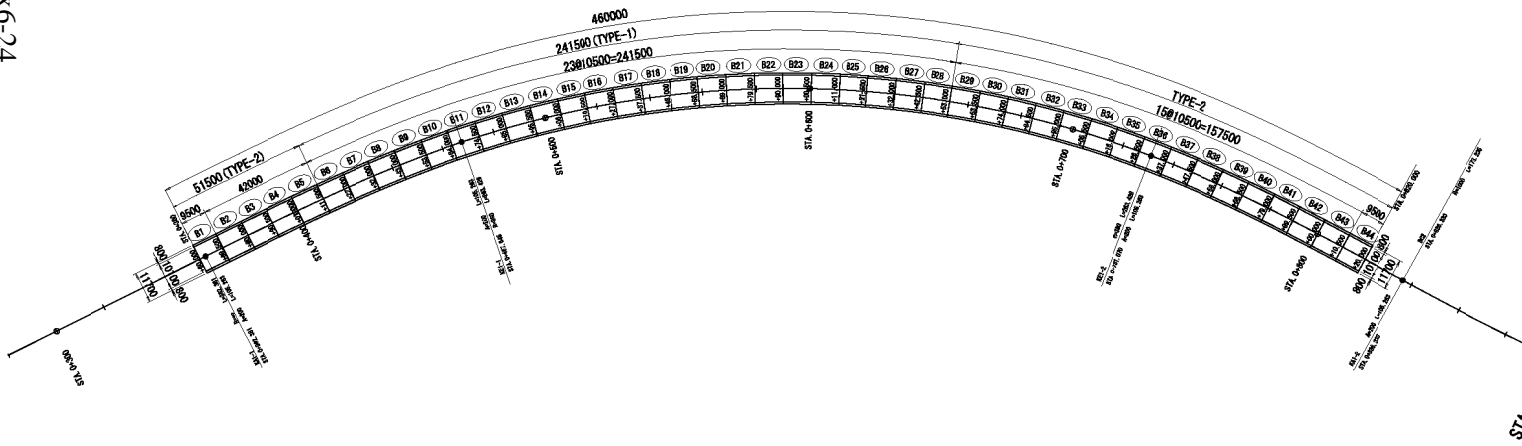
SCALE	SHEET NO.
AS SHOWN	DC-01
DATE	

PROFILE



TYPE-1

PLAN



TYPE-2

Appendix 6-24

MINISTRY OF TRANSPORT AND COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

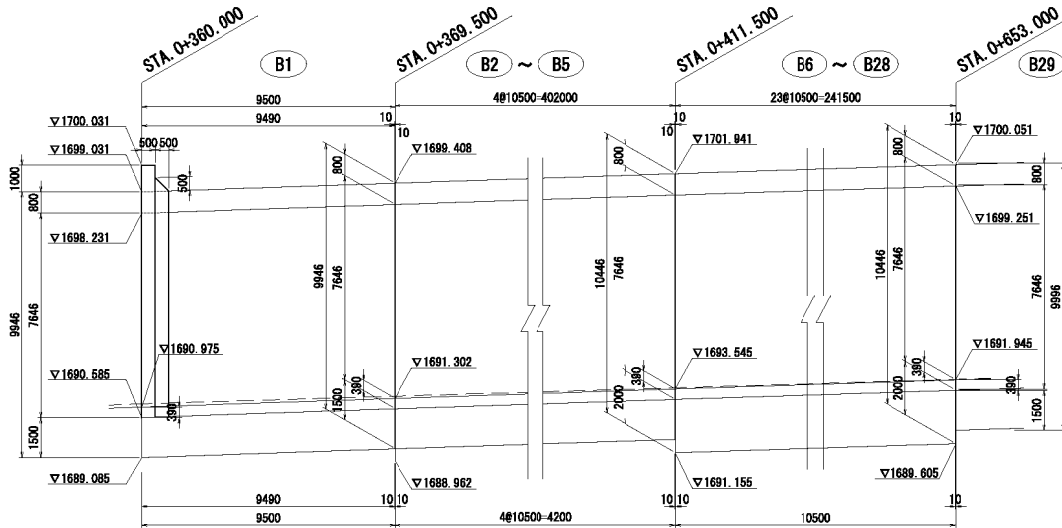
PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

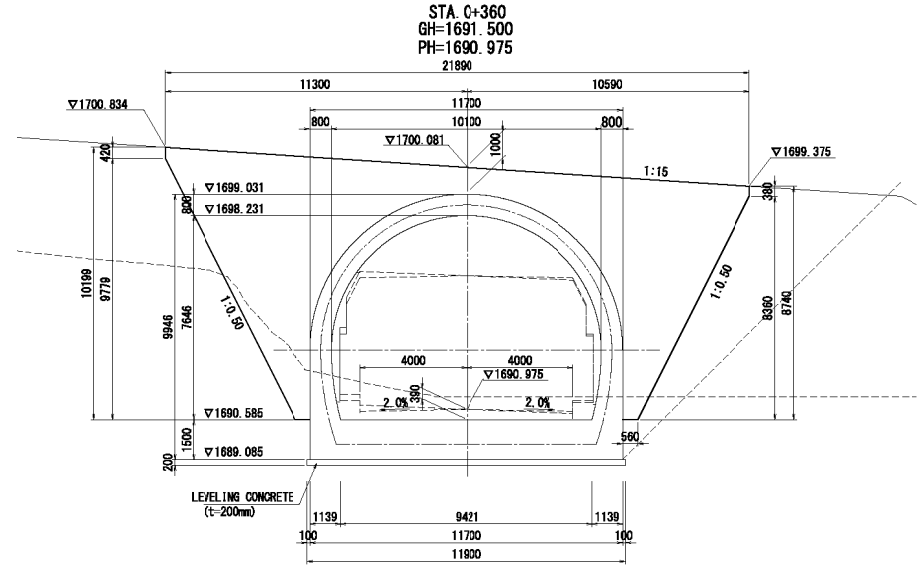
TITLE:
GENERAL LAYOUT OF ARCH CULVERT

SCALE	SHEET NO.
S=1:1000	G.-01
DATE	

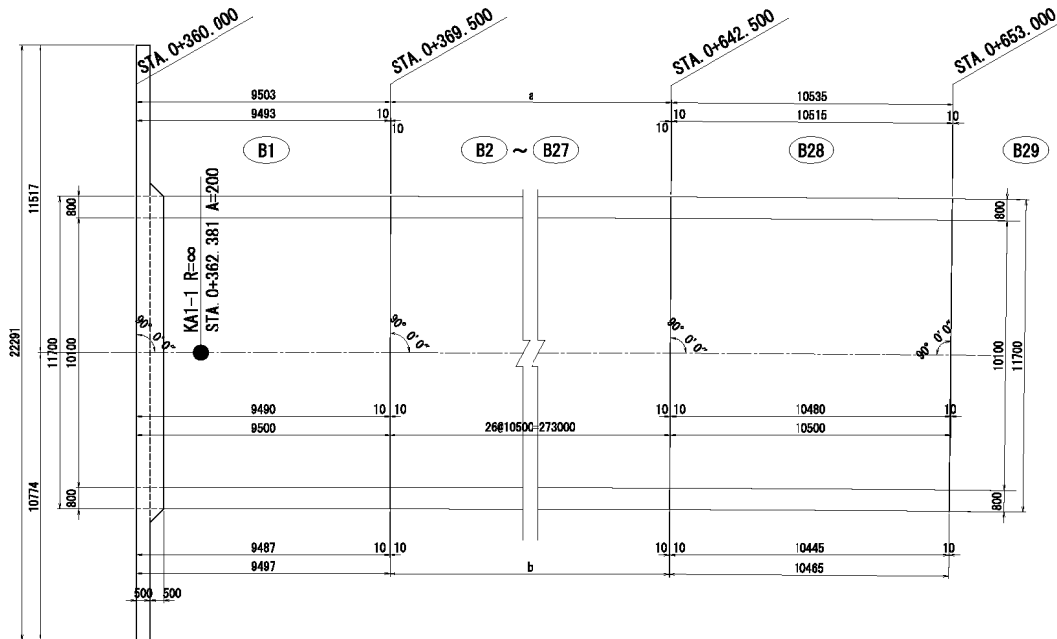
PROFILE



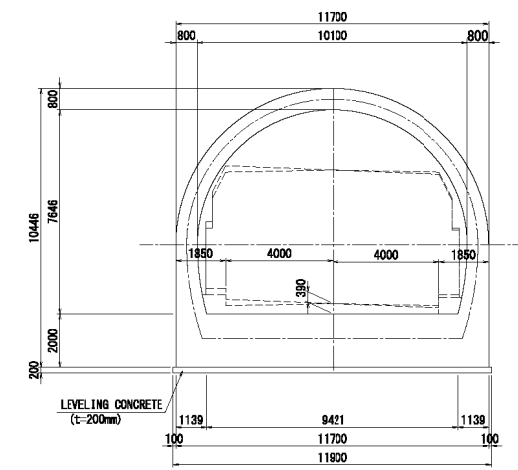
CROSS SECTION



PLAN



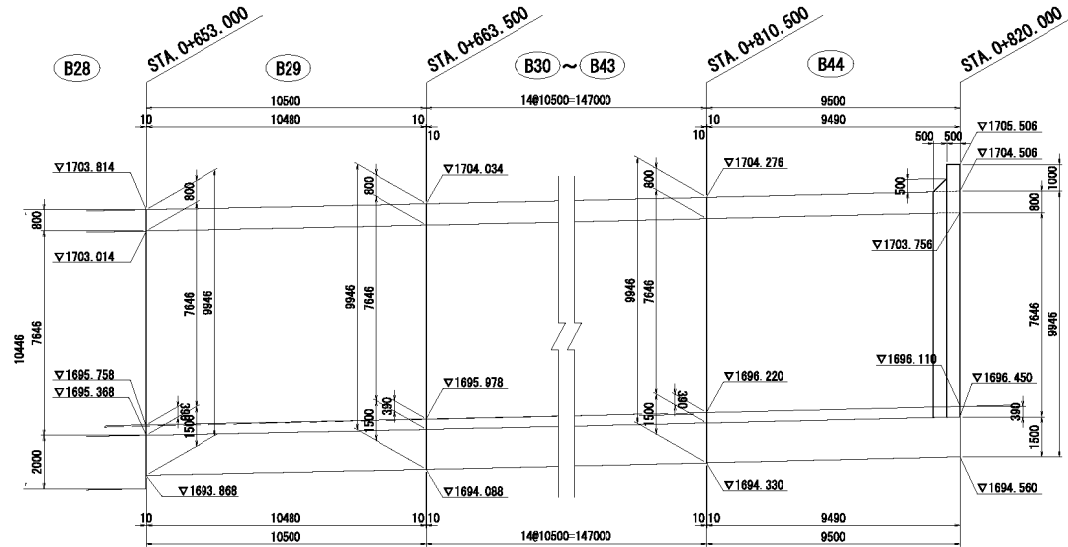
TYPICAL CROSS SECTION
STA. 0+411.5~0+653



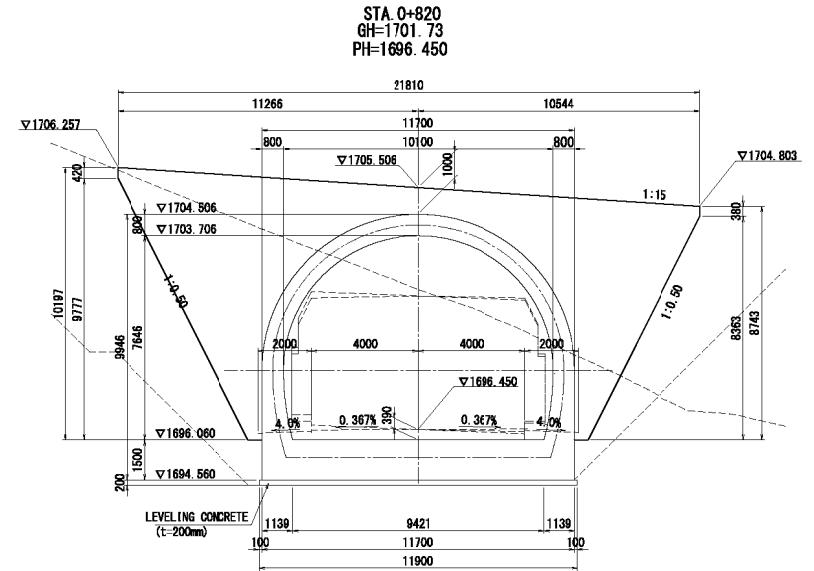
Dimension list table

	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12~B27
a	10522	10535	10548	10564	10596	10596	10610	10625	10689	10645	10661
b	10478	10485	10451	10436	10404	10404	10390	10375	10331	10355	10339

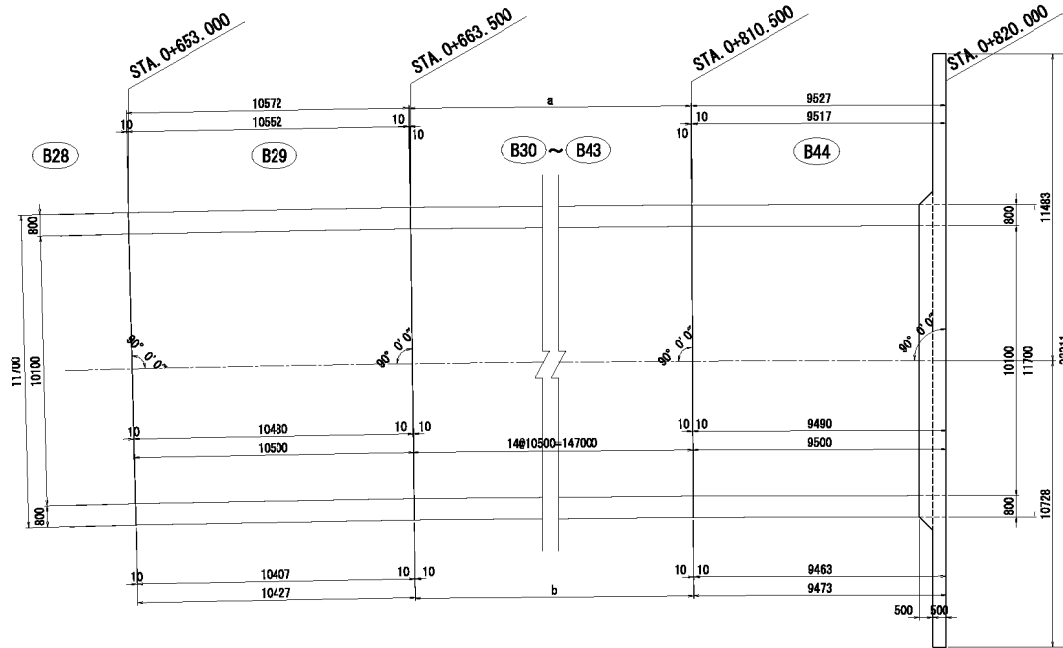
PROFILE



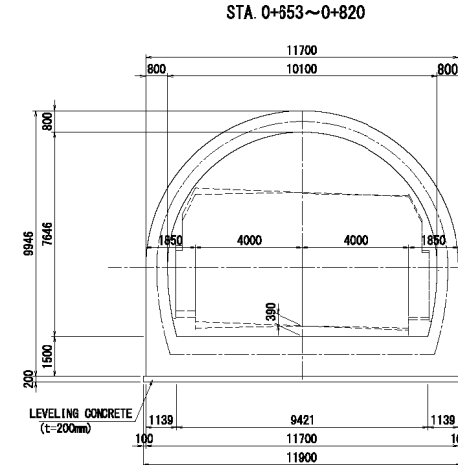
TYPICAL CROSS SECTION



PLAN



TYPICAL CROSS SECTION

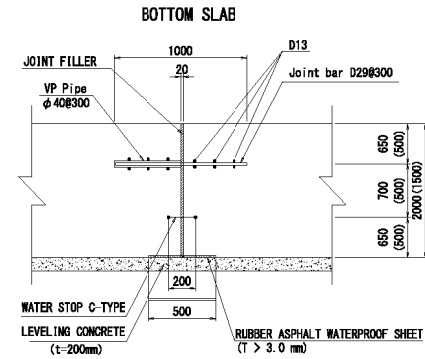
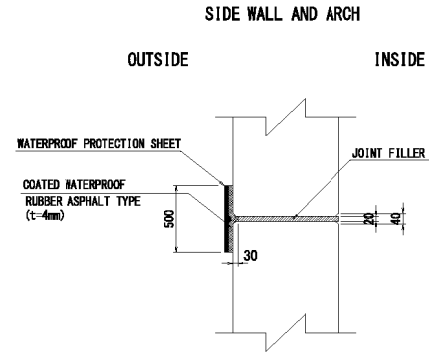
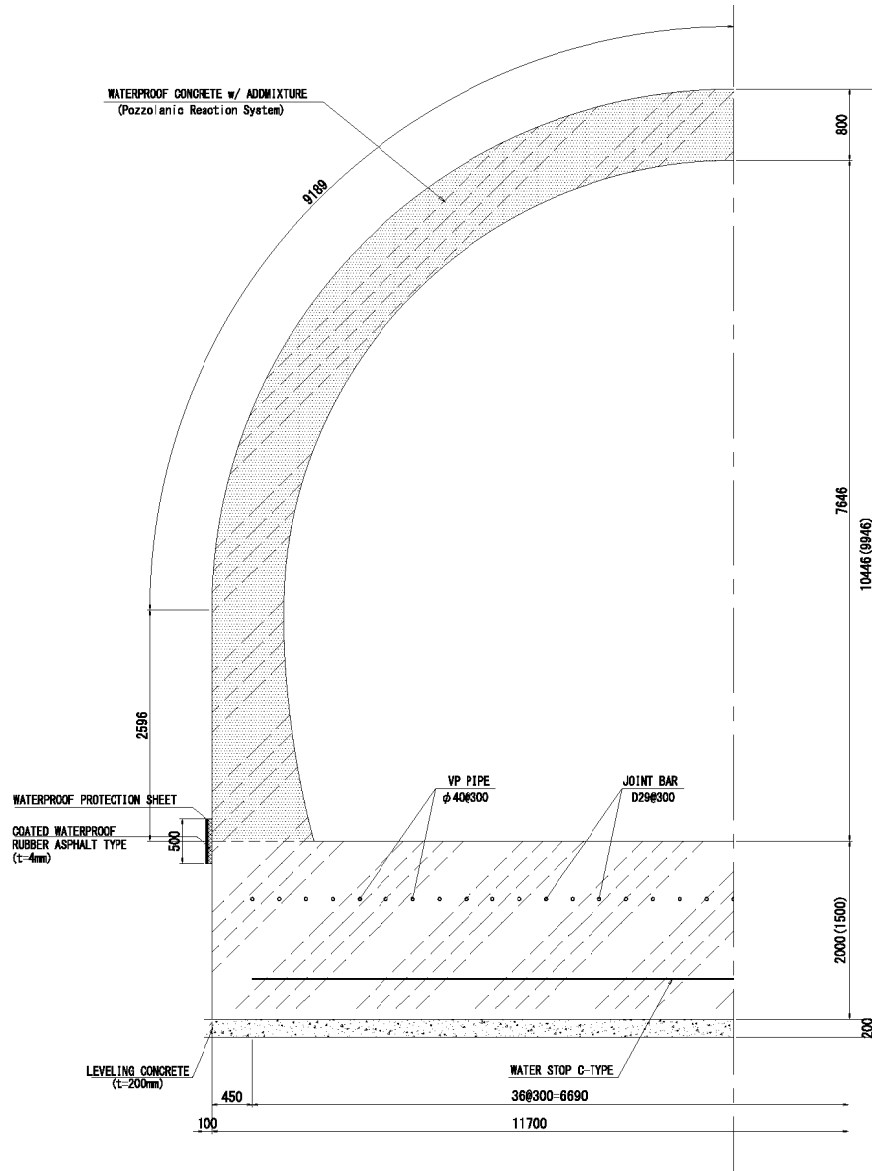


Dimension list table

	B30~B33	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43
a	10661	10657	10665	10659	10638	10646	10606	10591	10576	10572	10544
b	10339	10343	10336	10341	10382	10354	10394	10409	10424	10428	10456

CROSS SECTION S=1:30

JOINT DETAIL S=1:10



MINISTRY OF TRANSPORT AND
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PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

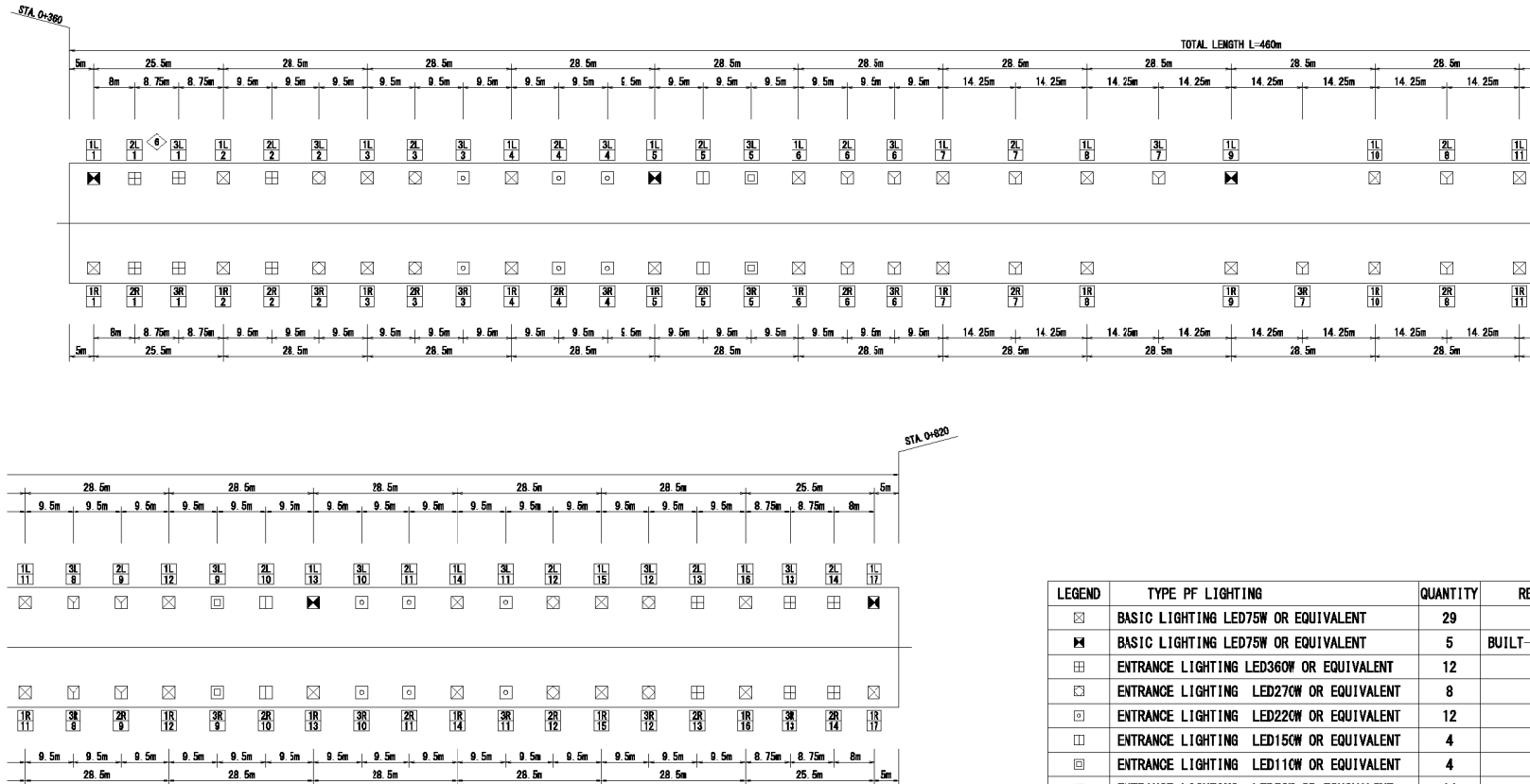
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:

DETAIL OF ARCH CULVERT (3/3)

SCALE	SHEET NO.
AS SHOWN	AC-03
DATE	

LAYOUT OF LIGHTING IN ARCH CULVERT



LEGEND	TYPE PF LIGHTING	QUANTITY	REMARKS
☒	BASIC LIGHTING LED75W OR EQUIVALENT	29	
☒	BASIC LIGHTING LED75W OR EQUIVALENT	5	BUILT-IN BATTERY
☒	ENTRANCE LIGHTING LED360W OR EQUIVALENT	12	
☒	ENTRANCE LIGHTING LED270W OR EQUIVALENT	8	
☒	ENTRANCE LIGHTING LED220W OR EQUIVALENT	12	
☒	ENTRANCE LIGHTING LED150W OR EQUIVALENT	4	
☒	ENTRANCE LIGHTING LED110W OR EQUIVALENT	4	
☒	ENTRANCE LIGHTING LED70W OR EQUIVALENT	14	

DESIGN CONDITION

OUTSIDE LUMINANCE	2500 (cd/m ²)	INTERIOR PLATE	NONE
DESIGN SPEED	60 (km/h)	UTILIZATION FACTOR (BASIC)	U=0.597
PAVEMENT	CONCRETE (ρ=25%)	UTILIZATION FACTOR (ENTRANCE)	U=0.646
AVERAGE ILLUMINANCE CONVERSION FACTOR	K=13 (lx/cd/m ²)	HEIGHT OF LUMP	Ho=5.5 (m)
CARRIAGEWAY WIDTH	W=7.0 (m)	INTERVAL OF BASIC LIGHTING	S=28.5 (m) :FACE TO FACE LAYOUT
MAINTENANCE MODULES	M=0.7	TYPE OF LIGHTING	LED

MINISTRY OF TRANSPORT AND
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PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

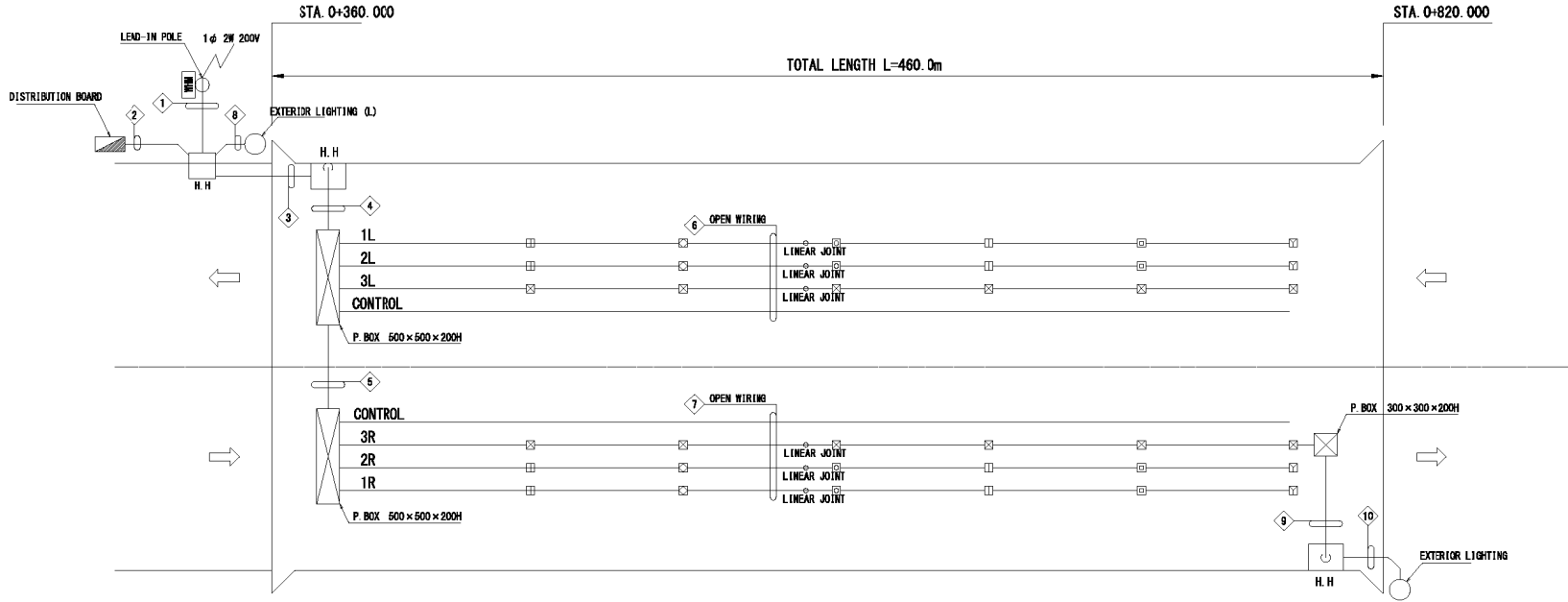
TITLE:

LAYOUT OF LIGHTING IN ARCH CULVERT

SCALE SHEET NO.

DATE LL-01

WIRING SYSTEM OF LIGHTING



TYPE OF WIRING AND CONDUIT

LEGEND	CIRCUIT	WIRING	CONDUIT
1	LEAD-IN	EM-CE 8sq-3C	FEP50

LEGEND	CIRCUIT	WIRING	CONDUIT
2	LEAD-IN	EM-CE 8sq-3C	FEP50
	LIGHTING 1L	EM-CE 3.5sq-2C	FEP50
	LIGHTING 2L	+ 14sq-2C	
	LIGHTING 3L	+ 8sq-2C+1E3.5sq	
	LIGHTING 1R-EXTERIA-R	EM-CE 3.5sq-2C	FEP50
	LIGHTING 2R	+ 14sq-2C	
	LIGHTING 3R	+ 8sq-2C+1E3.5sq	
LIGHTING CONTROL	EM-CEE 2sq-4C	FEP50	
LIGHTING CONTROL	EM-CEE 2sq-4C		
EXTERIA-L	EM-CE 3.5sq-2C+1E3.5sq	FEP30	

LEGEND	CIRCUIT	WIRING	CONDUIT
3	LIGHTING 1L	EM-CE 3.5sq-2C	FEP50
	LIGHTING 2L	+ 3.5sq-2C	
	LIGHTING 3L	+ 3.5sq-2C+1E3.5sq	
	LIGHTING 1R-EXTERIA-R	EM-CE 3.5sq-2C	FEP50
	LIGHTING 2R	+ 3.5sq-2C	
LIGHTING 3R	+ 3.5sq-2C+1E3.5sq	FEP50	
LIGHTING CONTROL	EM-CEE 2sq-4C		
LIGHTING CONTROL	EM-CEE 2sq-4C		

LEGEND	CIRCUIT	WIRING	CONDUIT
4	LIGHTING 1L	EM-CE 3.5sq-2C	G54
	LIGHTING 2L	+ 14sq-2C	
	LIGHTING 3L	+ 8sq-2C+1E3.5sq	
	LIGHTING 1R-EXTERIA-R	EM-CE 3.5sq-2C	G54
	LIGHTING 2R	+ 14sq-2C	
LIGHTING 3R	+ 8sq-2C+1E3.5sq	G54	
LIGHTING CONTROL	EM-CEE 2sq-4C		
LIGHTING CONTROL	EM-CEE 2sq-4C		

LEGEND	CIRCUIT	WIRING	CONDUIT
5	LIGHTING 1R-EXTERIA-R	EM-CE 3.5sq-2C	G54
	LIGHTING 2R	+ 14sq-2C	
	LIGHTING 3R	+ 8sq-2C+1E3.5sq	
LIGHTING CONTROL	EM-CEE 2sq-4C	G54	

LEGEND	CIRCUIT	WIRING	CONDUIT
6	LIGHTING 1L	EM-CE 3.5sq-2C	OPEN WIRING
	LIGHTING 2L	+ 14sq-2C	
	LIGHTING 3L	+ 8sq-2C+1E3.5sq	
	LIGHTING CONTROL	EM-CEE 2sq-4C	

LEGEND	CIRCUIT	WIRING	CONDUIT
7	LIGHTING 1R-EXTERIA-R	EM-CE 3.5sq-2C	OPEN WIRING
	LIGHTING 2R	+ 14sq-2C	
	LIGHTING 3R	+ 8sq-2C+1E3.5sq	
	LIGHTING CONTROL	EM-CEE 2sq-4C	

LEGEND	CIRCUIT	WIRING	CONDUIT
8	EXTERIA-L	EM-CE 3.5sq-2C+1E3.5sq	FEP30

LEGEND	CIRCUIT	WIRING	CONDUIT
9	EXTERIA-R	EM-CE 3.5sq-2C+1E3.5sq	G22

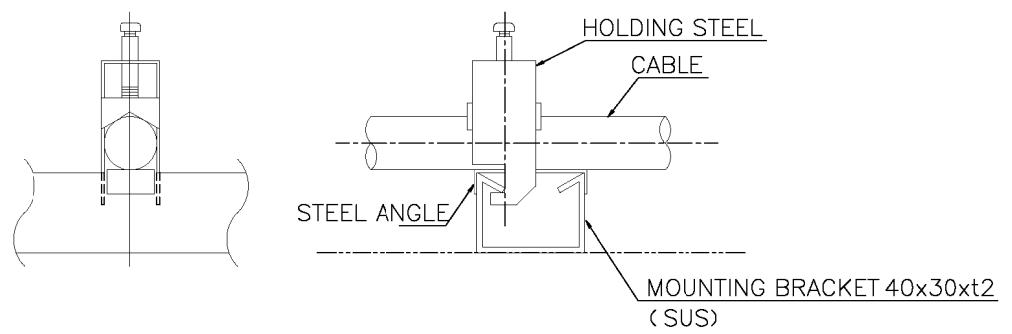
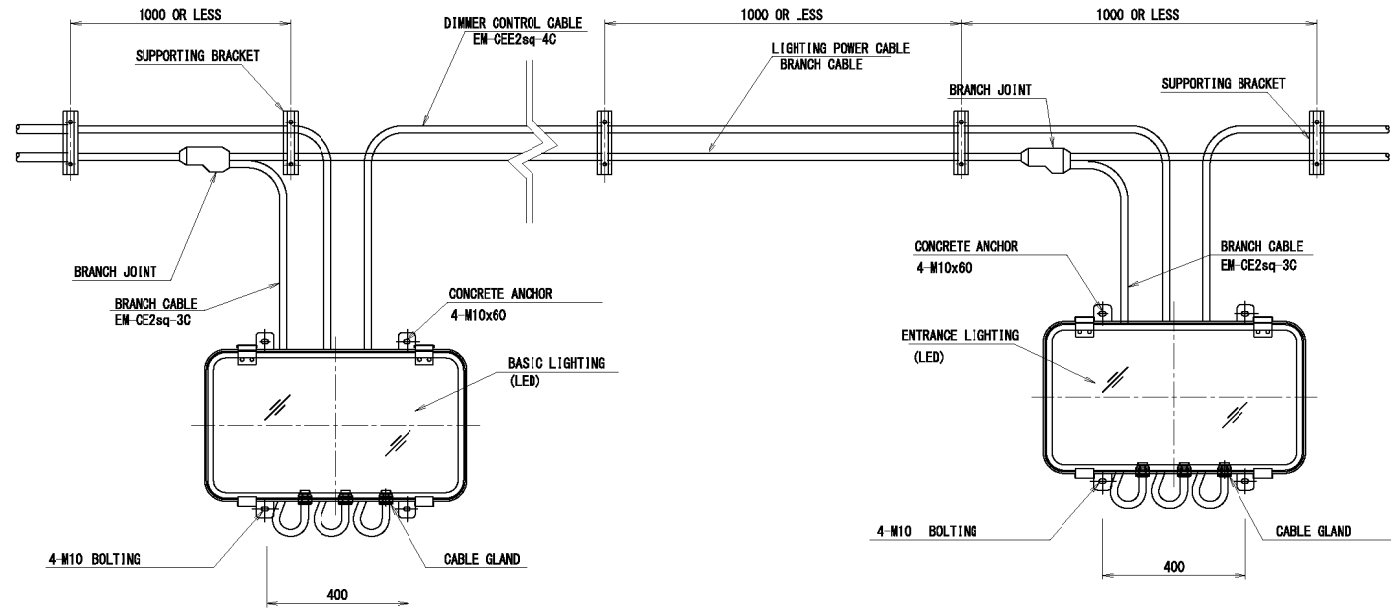
LEGEND	CIRCUIT	WIRING	CONDUIT
10	EXTERIA-R	EM-CE 3.5sq-2C+1E3.5sq	FEP30

TABLE OF LAMPS

LEGEND	LAMP	CIRCUIT	REMARKS	NUMBER OF LAMP							TOTAL
				BASIC LIGHTING			ENTRANCE LIGHTING				
				1L	1R	4	2L	3L	2R	3R	
☒	LED75W OR EQUIVALENT	REGULAR		12	17						29
☒	LED75W OR EQUIVALENT	EMERGENCY		5							5
☒	LED360W OR EQUIVALENT						4	2	4	2	12
☒	LED270W OR EQUIVALENT						2	2	2	2	8
☒	LED220W OR EQUIVALENT						2	4	2	4	12
☒	LED160W OR EQUIVALENT								2		4
☒	LED110W OR EQUIVALENT								2	2	4
☒	LED70W OR EQUIVALENT						4	3	4	3	14
○	LED110W OR EQUIVALENT	EXTERIOR			1	1					2
TOTAL				17	18	1	14	13	14	13	80

Appendix 6-29

INSTALLATION OF LAMP AND WIRING

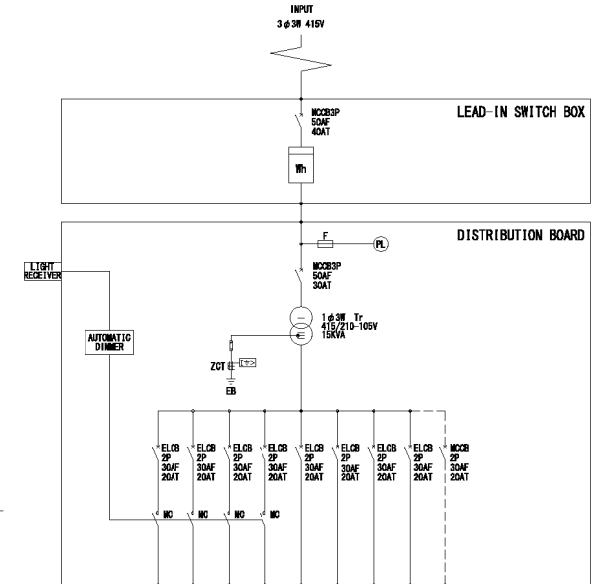
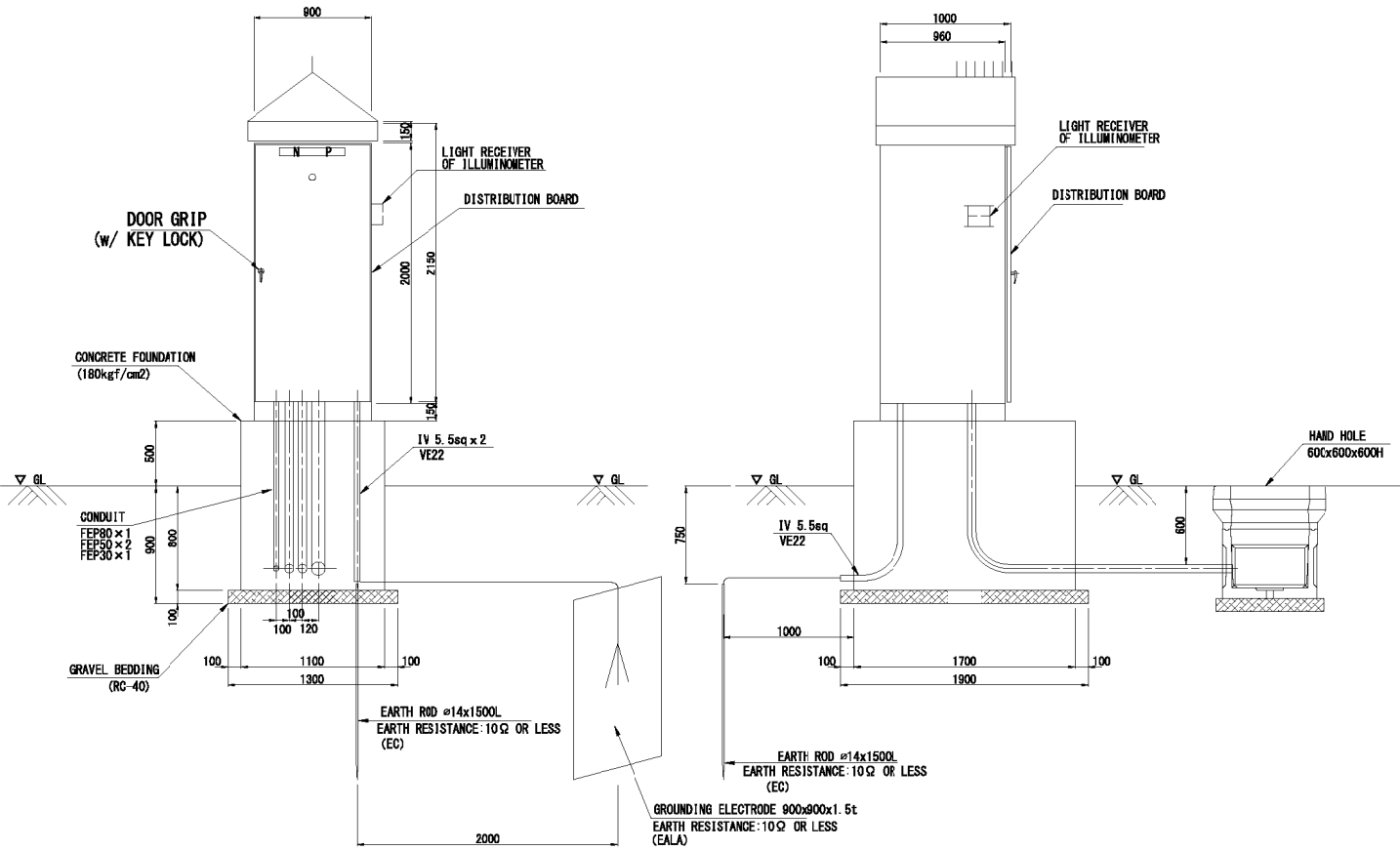


Appendix 6-30

MINISTRY OF TRANSPORT AND COMMUNICATION GOVERNMENT OF KYRGYZ REPUBLIC	PREPARATORY SURVEY OF THE PROJECT FOR AVALANCHE PROTECTION ON BISHKEK-OSH ROAD IN KYRGYZ REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD. KOKUSAI KOGYO CO., LTD.	TITLE: INSTALLATION OF LAMP AND WIRING	SCALE -	SHEET NO. IL-01
				DATE	

DISTRIBUTION BOARD

Appendix 6-31



DISTRIBUTION		1 ϕ 2W 210V								
CIRCUIT		2L	3L	2R	3R	1L	1R	4	—	—
LIGHTING		ENTRANCE LIGHTING	ENTRANCE LIGHTING	ENTRANCE LIGHTING	ENTRANCE LIGHTING	BASIC LIGHTING	BASIC LIGHTING	EXTERIOR LIGHTING	DISTRIBUTION BOARD CONTROL	SPARE
(VA)		2,568	2,182	2,568	2,182	629	709	80	200	—
TOTAL		11,118								

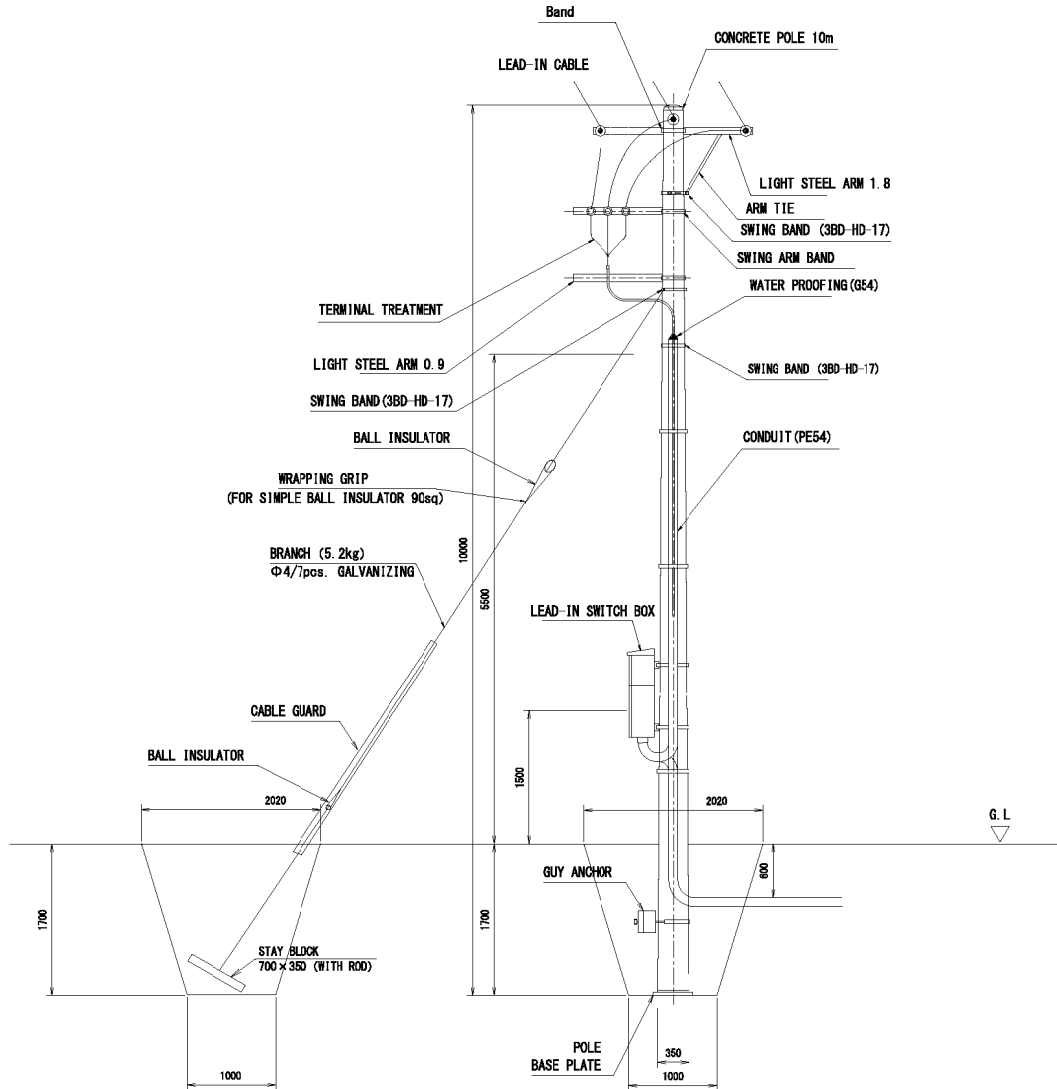
- NOTE:
- EXTERIA LIGHTING ON-OFF SHALL BE CONTROLLED BY AUTOMATIC SELF CONTROLLER.
 - BASIC LIGHTING SHALL BE FULL-TIME LIGHTING.
 - ENTRANCE LIGHTING SHALL BE FULLY LIGHTING DURING DAYTIME (100% MODULATED IN CLEAR DAY, 50% MODULATED IN CLOUDY DAY)

GENERAL VIEW OF DISTRIBUTION BOARD S=1/30

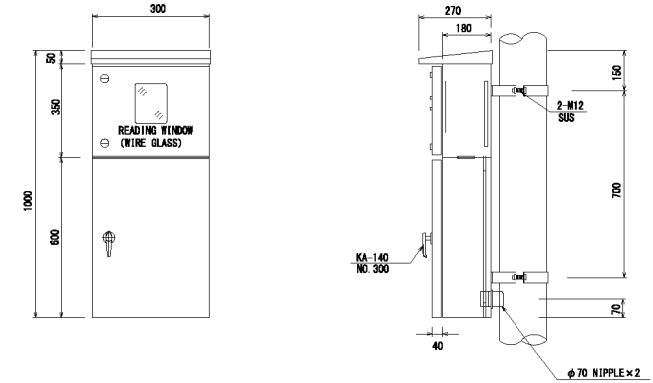
SINGLE LINE DIAGRAM

LEAD-IN POLE AND SWITCH BOX S=1/30

LEAD-IN POLE S=1:30



LEAD-IN SWITCH BOX S=1/10 (REFERENCE ONLY)



Appendix 6-32

MINISTRY OF TRANSPORT AND
COMMUNICATION
GOVERNMENT OF KYRGYZ REPUBLIC

PREPARATORY SURVEY OF THE PROJECT FOR
AVALANCHE PROTECTION ON BISHKEK-OSH ROAD
IN KYRGYZ REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.
KOKUSAI KOGYO CO., LTD.

TITLE:

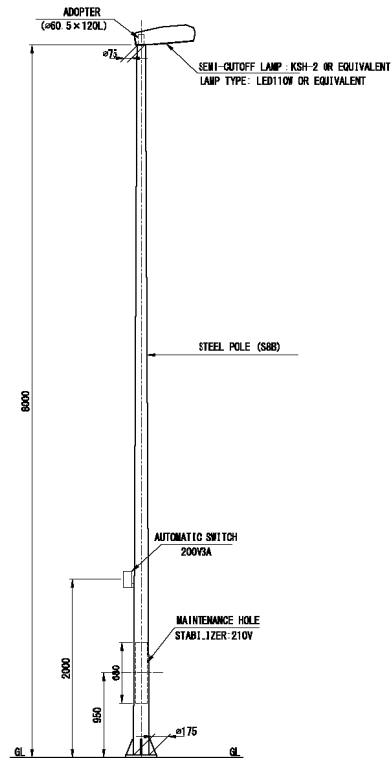
LEAD-IN POLE AND SWITCH BOX

SCALE	SHEET NO.
AS SHOWN	LP-01
DATE	

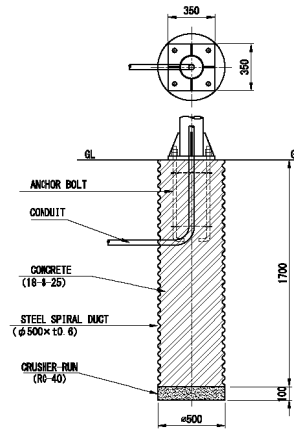
EXTERIOR LIGHT

S=1/30

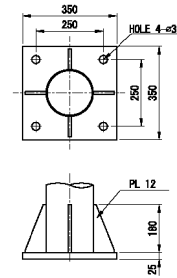
LIGHTING POLE S=1/30



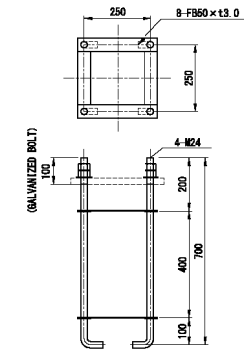
FOUNDATION S=1/20



STEEL BASE PLATE S=1/10



ANCHOR BOLT S=1/10



Appendix 6-33

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KOKUSAI KOGYO CO., LTD.

TITLE:

EXTERIOR LIGHT

SCALE	SHEET NO.
AS SHOWN	EL-01
DATE	