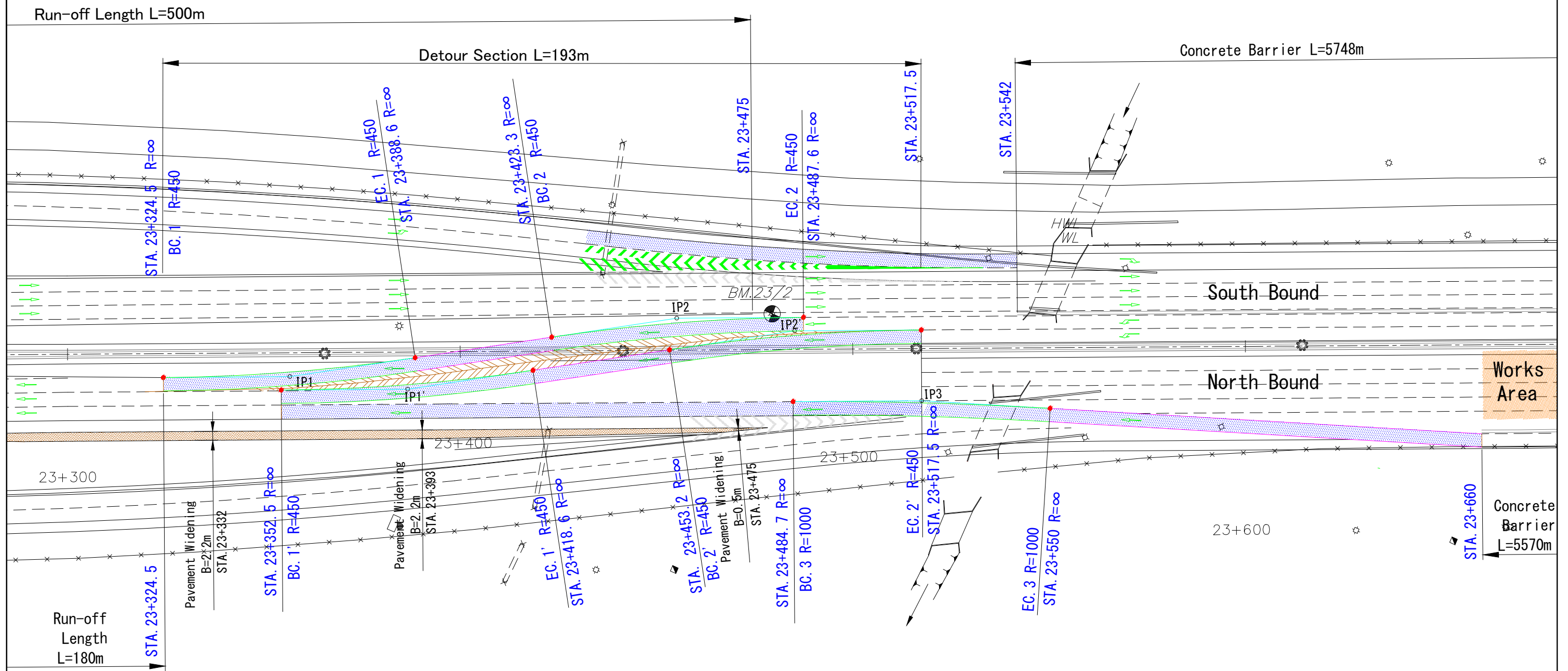


Median Crossover

South Bound To North Bound
Around STA. 23+500 Stage1



IP No.	STA.	Curve Length (m)	IA (dd-mm-ss)	Radius (m)
IP 1	23+398.893	64.373	8-11-46.410	450
IP 2	23+497.553	64.373	8-11-46.410	450
IP 3	23+517.481	65.486	3-45-6.820	1000

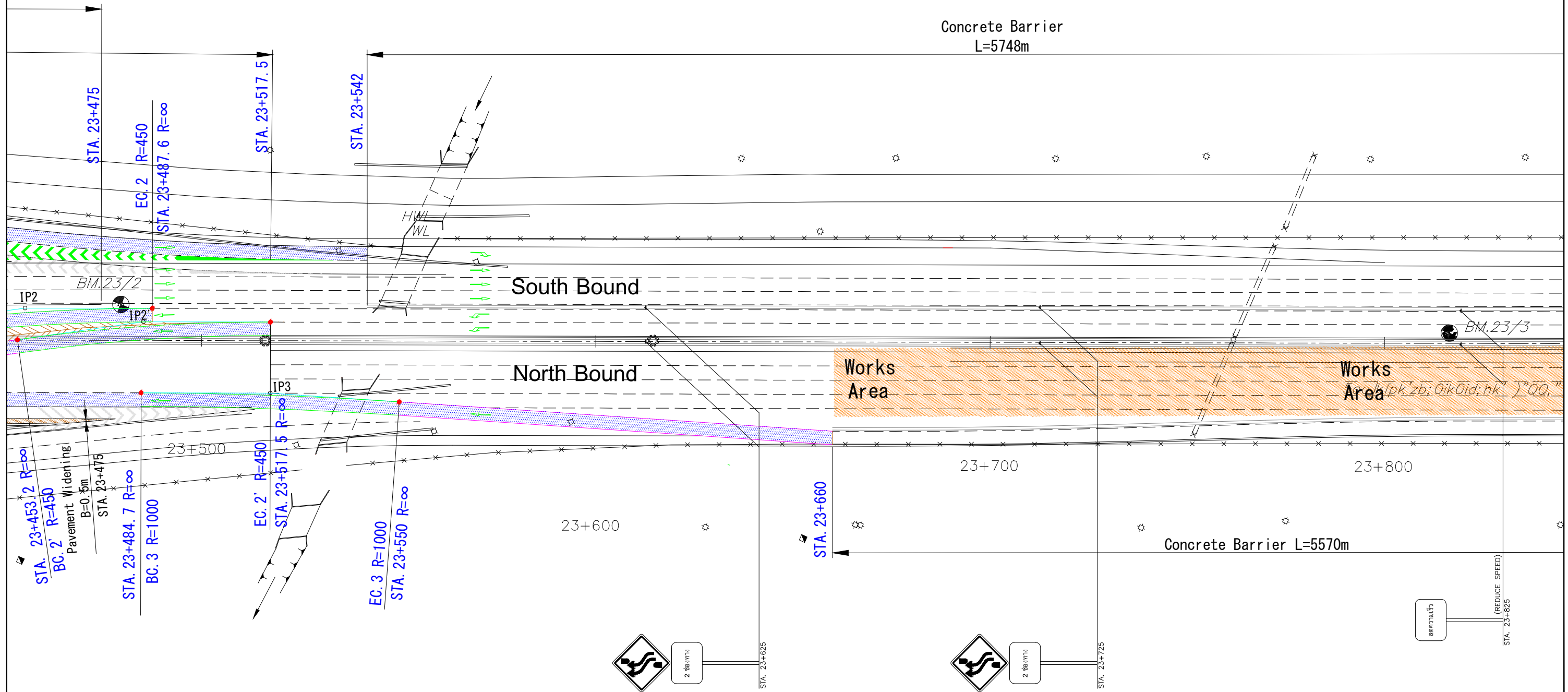
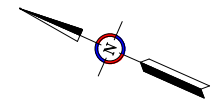
IP No.	STA.	Curve Length (m)	IA (dd-mm-ss)	Radius (m)
IP 1'	23+429.401	64.373	8-11-46.410	450
IP 2'	23+527.546	64.373	8-11-46.410	450

Note :

1. Set 40km/h as maximum speed limit for transition road.
2. Set 60km/h as maximum speed limit for standard road.
3. Install traffic control signs in accordance with the Road Work Guide published by DoH.

Signboard-4

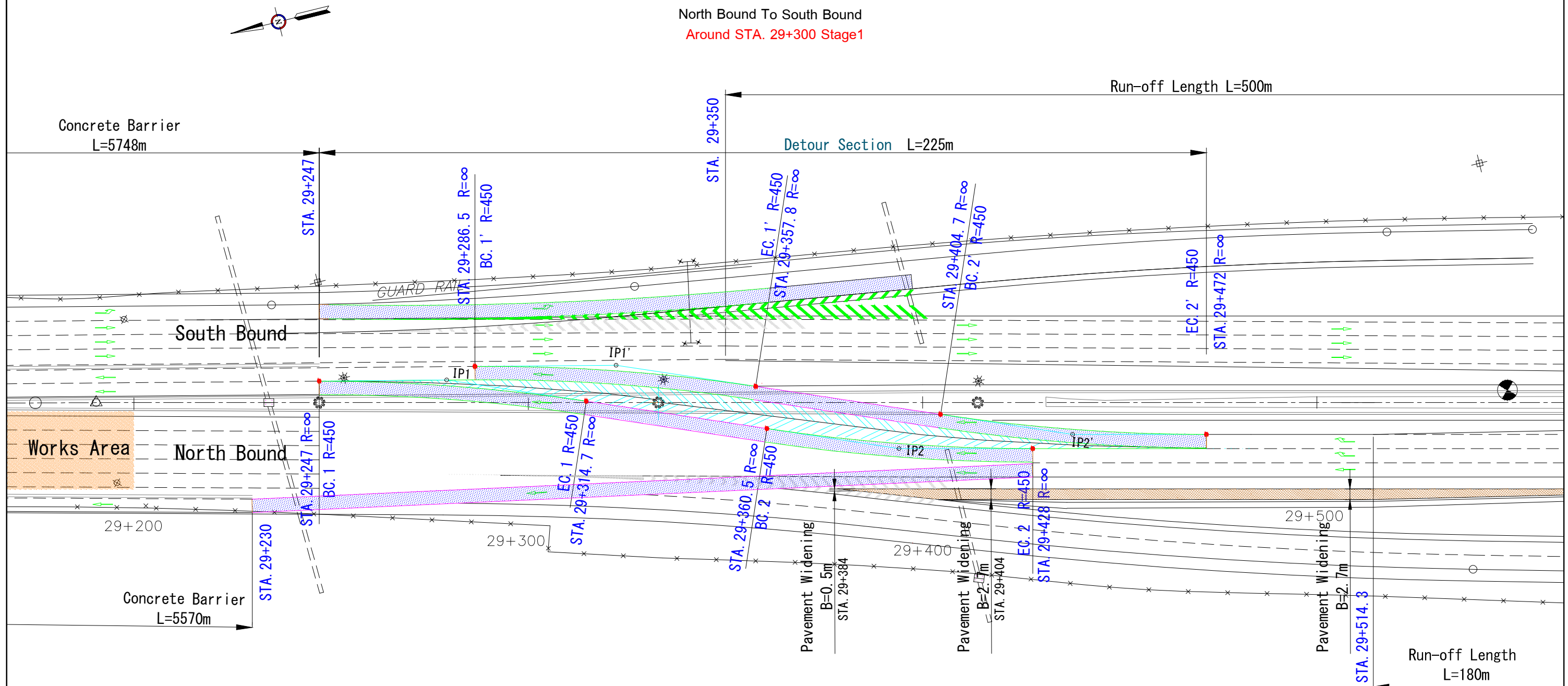
South Bound To North Bound
Around STA. 23+700 Stage1



REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE:	SCALE:
		CHECKED	DATE	CHECKED	DATE									AUGUST 2012	SCALE 1:500
														DWG. NO. TS1-11	SHEET NO. 185

Median Crossover

North Bound To South Bound
Around STA. 29+300 Stage1



Note :

1. Set 40km/h as maximum speed limit for transition road.
2. Set 60km/h as maximum speed limit for standard road.
3. Install traffic control signs in accordance with the Road Work Guide published by DoH.

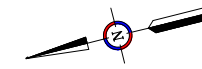
IP No.	STA.	Curve Length	IA	Radius
		(m)	(dd-mm-ss)	(m)
IP 1	29+279.300	67.961	9-5-50.820	450
IP 2	29+394.049	67.680	8-37-2.060	450

IP No.	STA.	Curve Length	IA	Radius
		(m)	(dd-mm-ss)	(m)
IP 1'	29+322.276	67.961	9-5-50.820	450
IP 2'	29+438.086	67.680	8-37-2.060	450

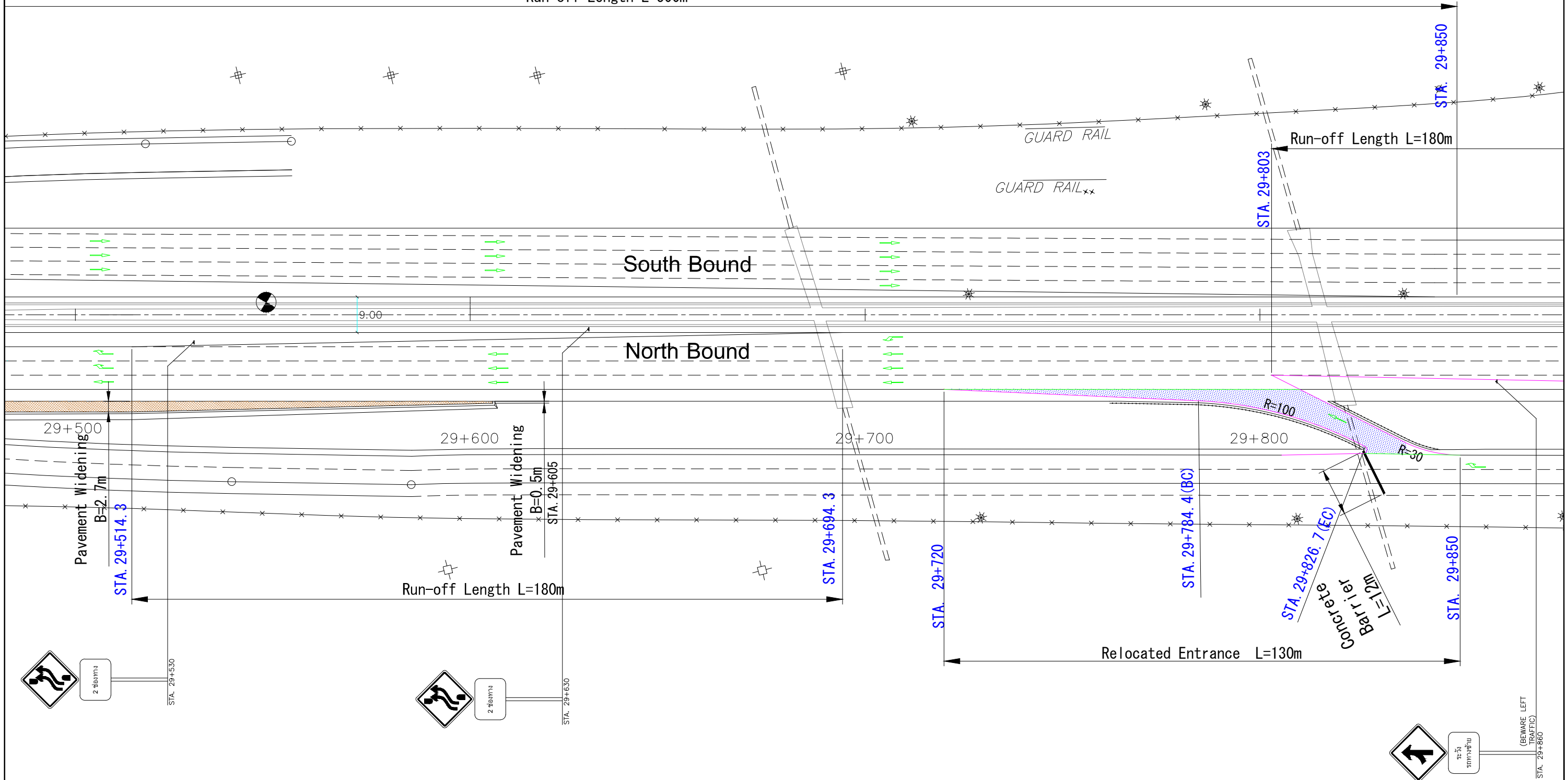
REV. NO.	DESCRIPTION	ENGINEER CHECKED DATE	DOH CHECKED DATE	REV. NO.	APPROVED BY	<p>KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS</p>	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	<p>CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.</p>	DESIGNED BY	CHECKED BY	DATE	SCALE	
							<p>THE INTER-CITY MOTORWAYS DIVISION DEPARTMENT OF HIGHWAYS MINISTRY OF TRANSPORT</p>	<p>The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road</p>	<p>SAGARA Hidetaka ROAD ENGINEER</p>		<p>WATANABE Ryohei CHIEF ENGINEER</p>	<p>AUGUST 2012</p>	<p>SCALE 1:500</p>		
											DWG. NO.	TS1-12		SHEET NO.	186

Relocated Entrance

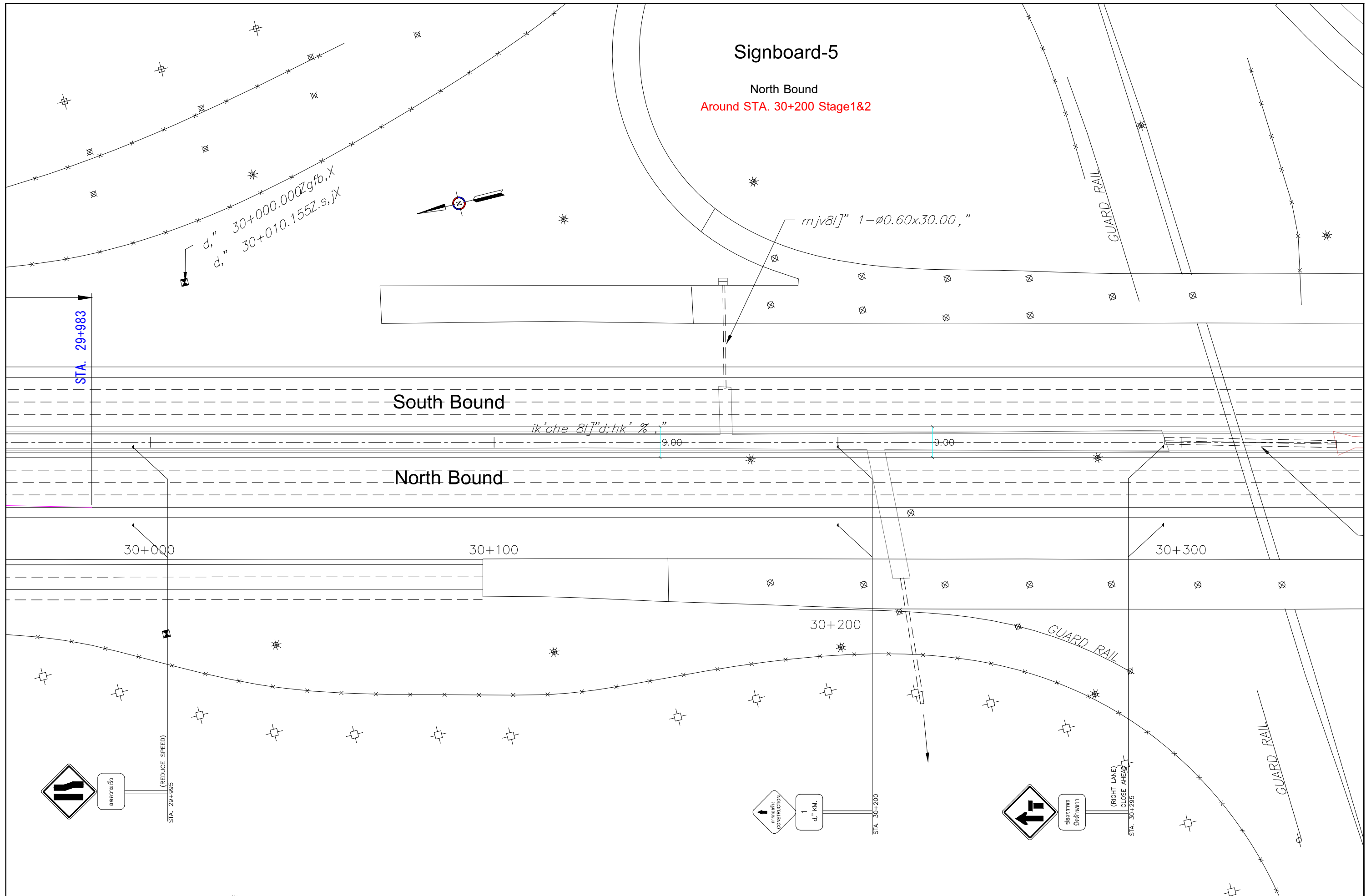
North Bound
Around STA. 29+800 Stage1



Run-off Length L=500m



REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE:	SCALE:
		CHECKED	DATE	CHECKED	DATE									AUGUST 2012	SCALE 1:500
														DWG. NO. TS1-13	SHEET NO. 187

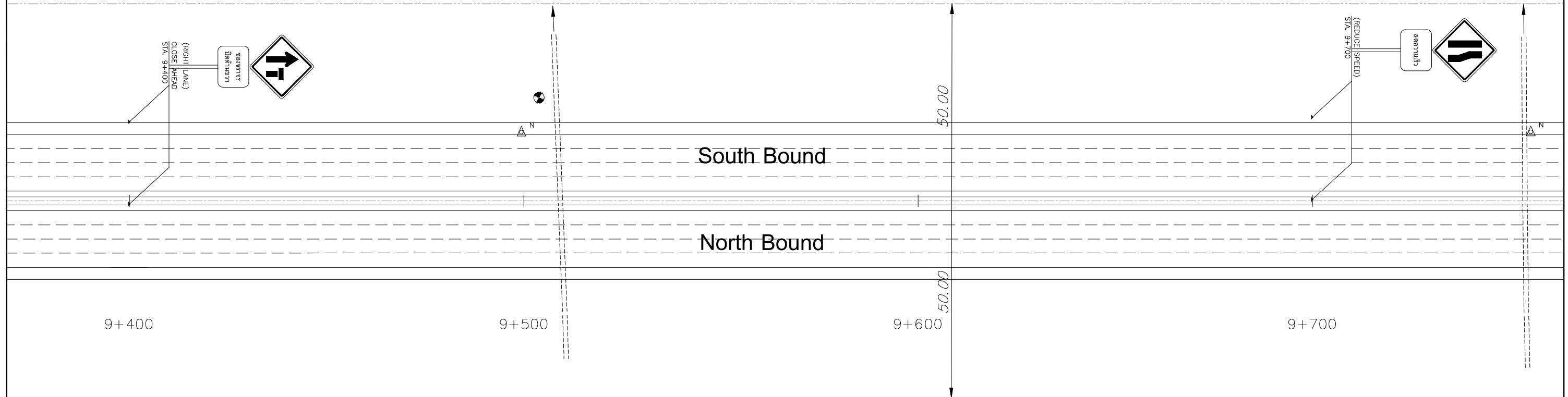
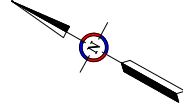


REV. NO.	DESCRIPTION	ENGINEER CHECKED	ENGINEER DATE	DOH CHECKED	DOH DATE	REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE:	SCALE:
									SIGNBOARD-5	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
												DWG. NO.	TS1-14		SHEET NO.	188

3. TRANSITION SECTION

(STAGE 2)

Signboard-1
 South Bound
 Around STA. 9+600 Stage1&2

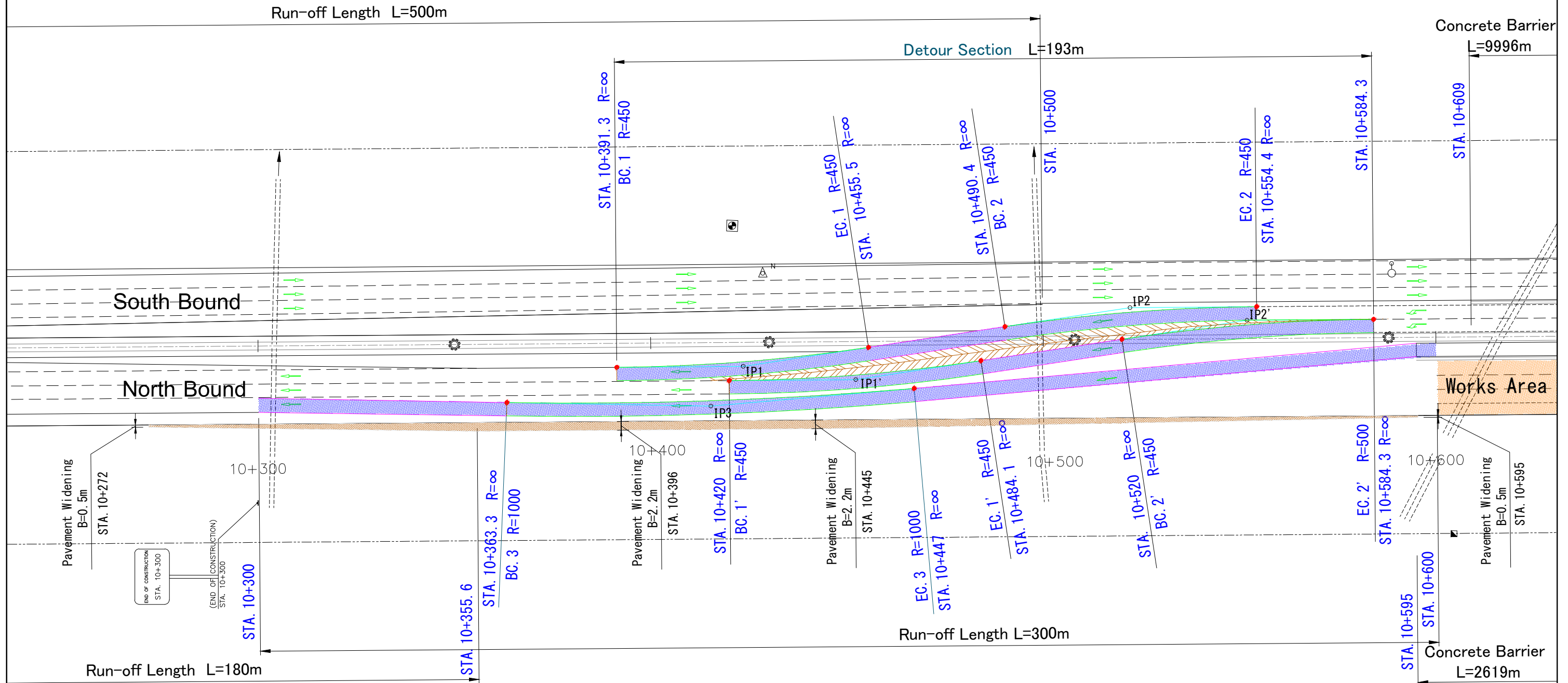
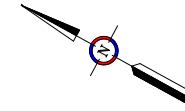


REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE				SIGNBOARD-1	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
														DWG. NO.	SHEET NO.	
														TS2-1	189	

Median Crossover

South Bound To North Bound

Around STA. 10+500 Stage2

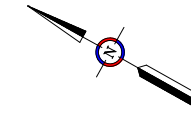


IP No.	STA.	Curve Length	IA	Radius
		(m)	(dd-mm-ss)	(m)
IP 1'	10+452.184	64.358	8-11-39.350	450
IP 2'	10+551.943	64.358	8-11-39.350	450

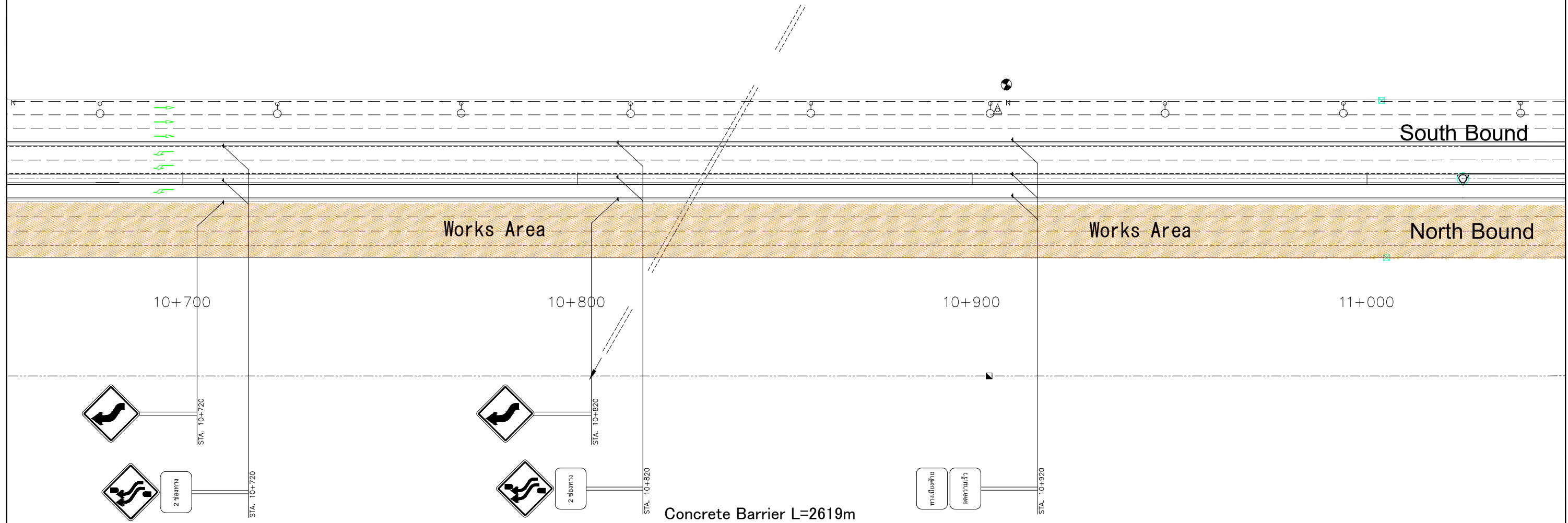
Note :

1. Set 40km/h as maximum speed limit for transition road.
2. Set 60km/h as maximum speed limit for standard road.
3. Install traffic control signs in accordance with the Road Work Guide published by DoH.

Signboard-2
 South Bound To North Bound
 Around STA. 10+800 Stage2



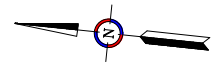
Concrete Barrier L=9996m



REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE				SIGNBOARD-2	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
														DWG. NO.	SHEET NO.	
														TS2-3	191	

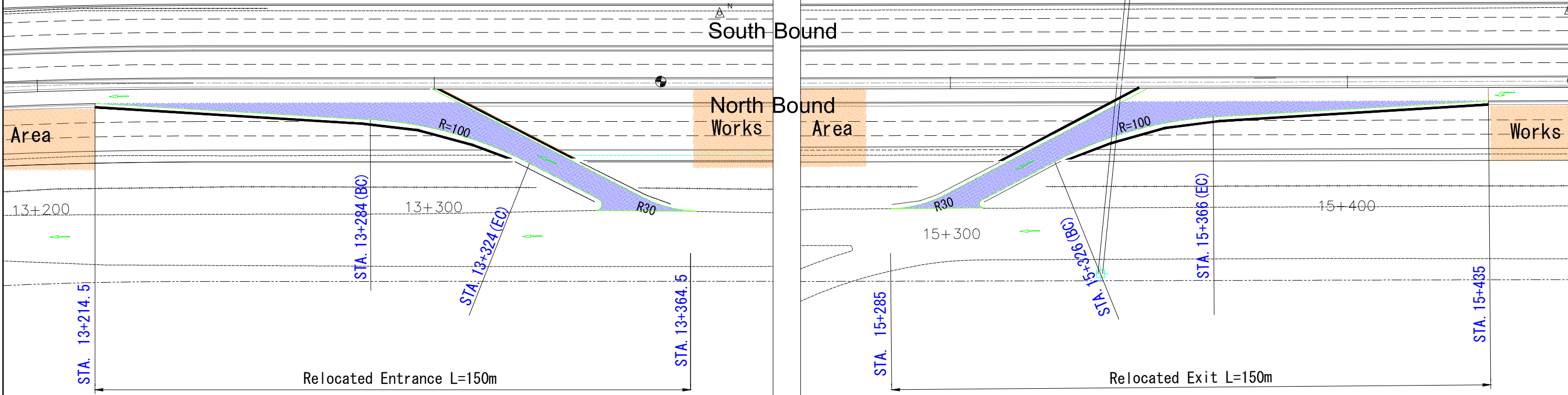
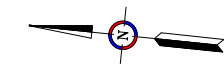
Relocated Entrance

North Bound
Around STA.13+300 Stage2



Relocated Exit

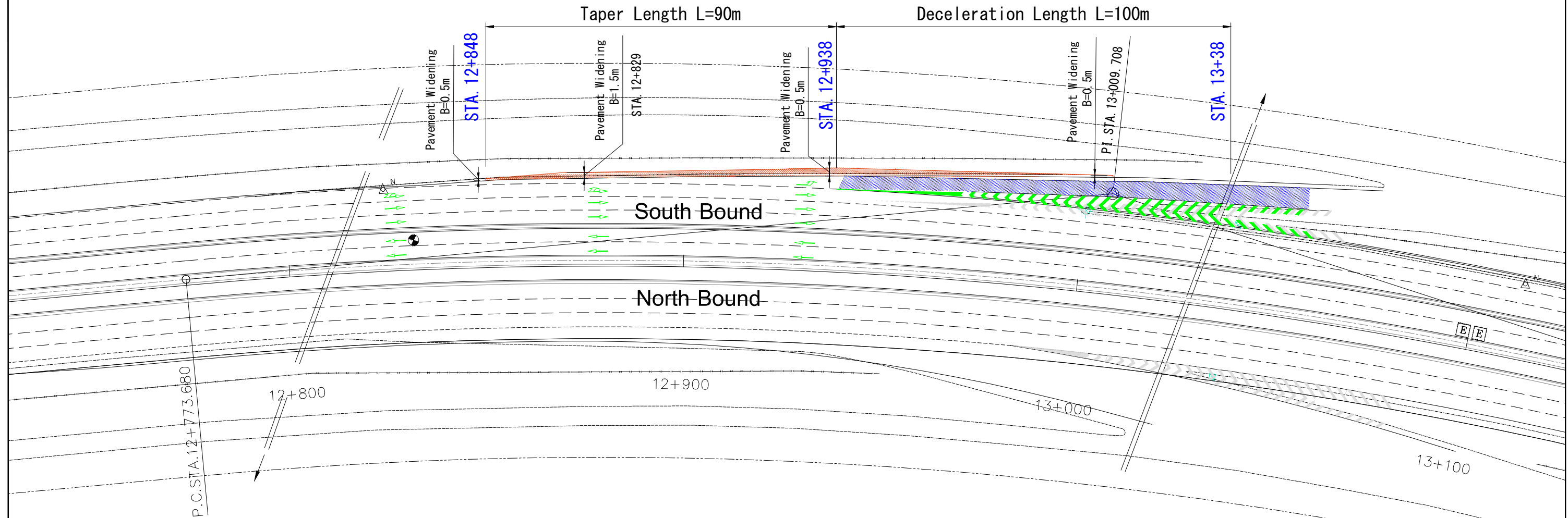
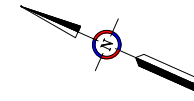
North Bound
Around STA.15+350 Stage2



REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY		HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE		DESIGNED BY	CHECKED BY	DATE:	SCALE:
		CHECKED	DATE	CHECKED	DATE								SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
									The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road			DWG. NO.	SHEET NO.		
													TS2-4	192		

Relocated Exit

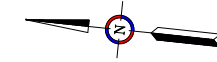
South Bound
Around STA. 12+900 Stage1&2



REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE									AUGUST 2012	SCALE 1:500
														DWG. NO. TS2-5	SHEET NO. 193

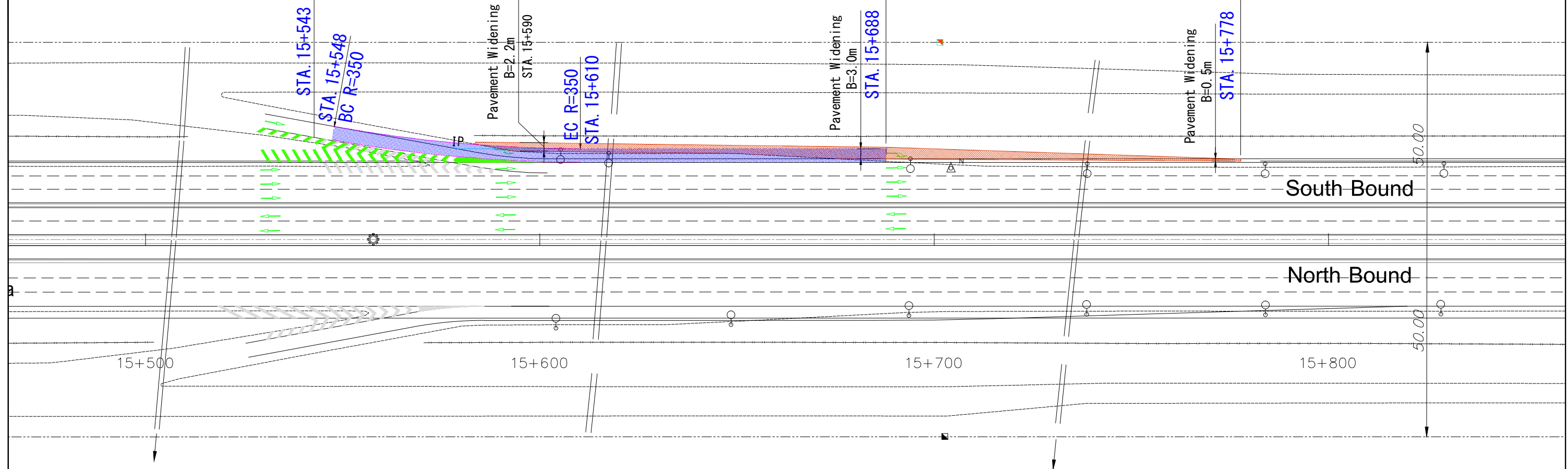
Relocated Entrance

South Bound
Around STA. 15+600 Stage1&2



Acceleration Length L=145m

Taper L=90m



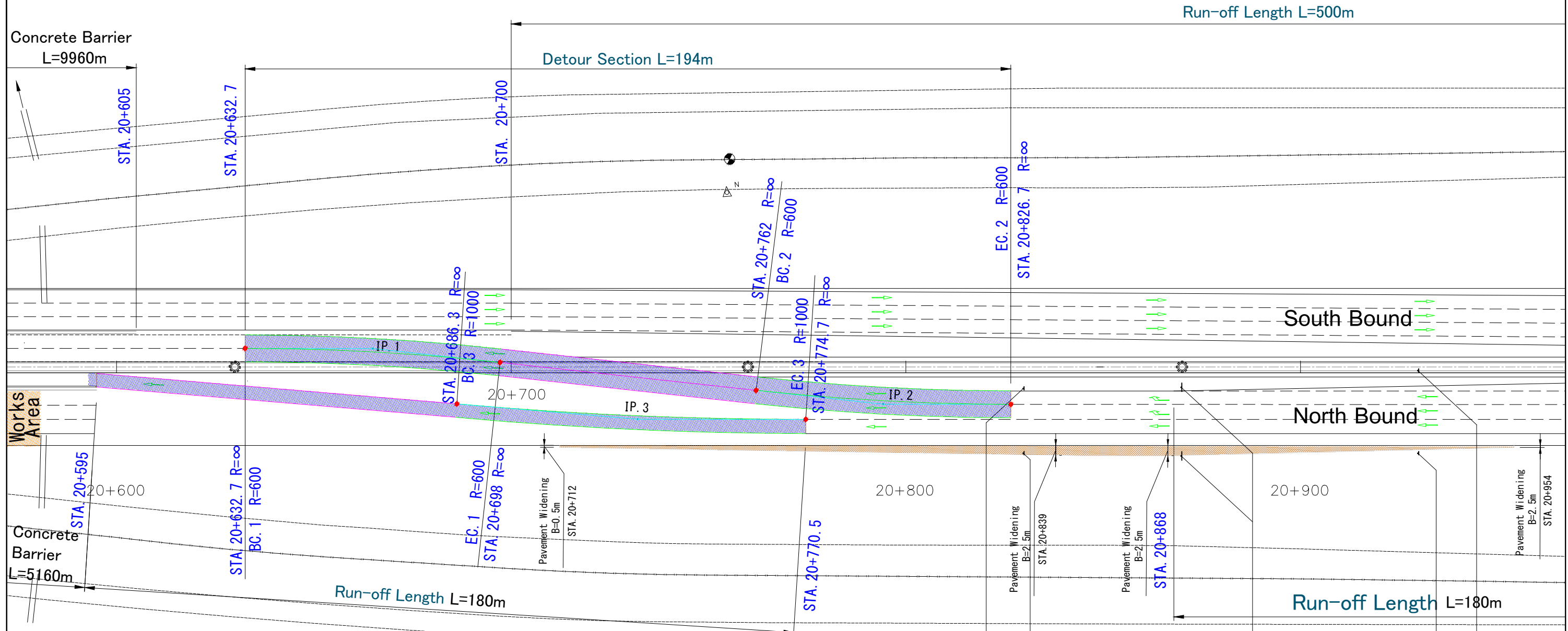
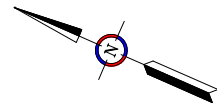
IP No.	STA.	Curve Length	IA	Radius
		(m)	(dd-mm-ss)	(m)
IP	15+578.822	62.758	10-16-25.100	350

REV. NO.	DESCRIPTION	ENGINEER CHECKED DATE	DOH CHECKED DATE	REV. NO.	APPROVED BY	<p>KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS</p>	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE : AUGUST 2012	SCALE : SCALE 1:500
							RELOCATED ENTRANCE(SOUTH BOUND)							DWG. NO. TS2-6

Median Crossover

North Bound To South Bound

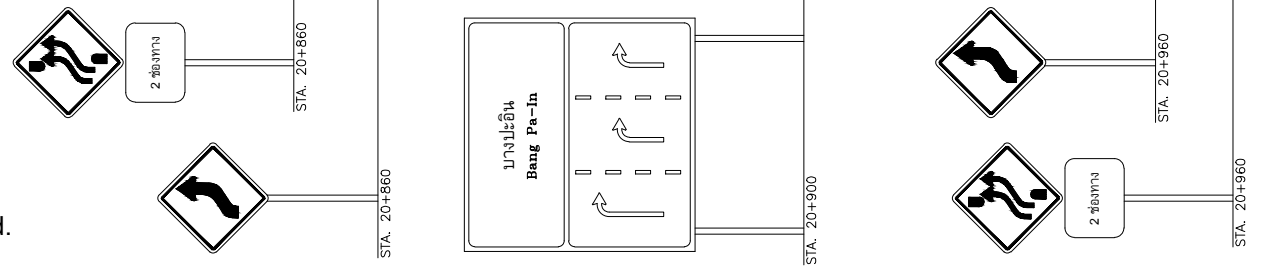
Around STA.20+700 Stage2



IP No.	STA.	Curve Length		IA (dd-mm-ss)	Radius (m)
		(m)	(m)		
IP 1	20+664.987	64.680	64.680	6-10-35.400	600
IP 2	20+794.233	64.680	64.680	6-10-35.400	600
IP 3	20+732.034	88.503	88.503	4-46-39.800	1000

Note :

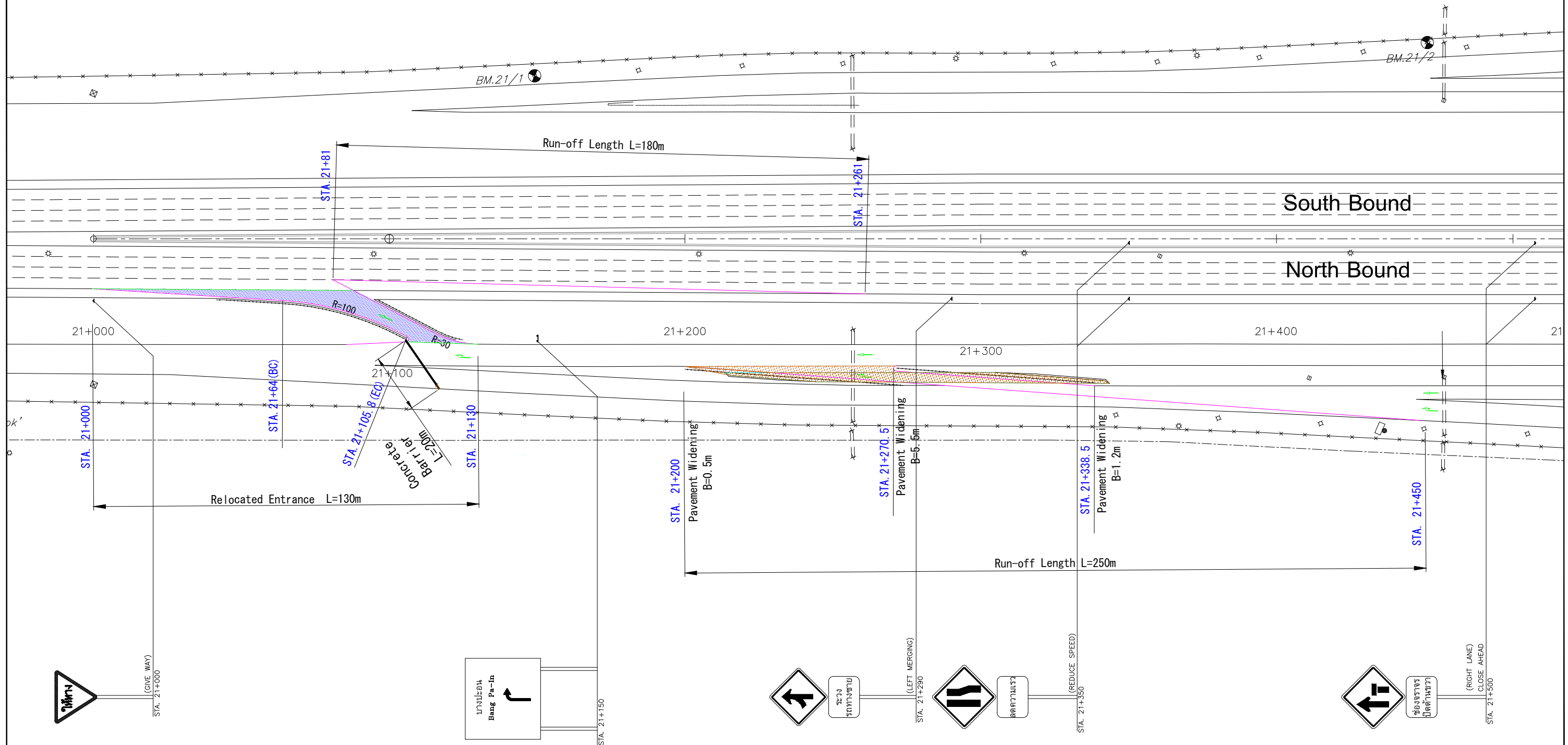
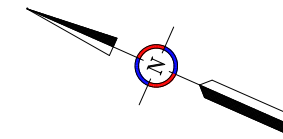
1. Set 40km/h as maximum speed limit for transition road.
2. Set 60km/h as maximum speed limit for stadard road.
3. Install traffic control signs in accordance with the Road Work Guide published by DoH.



Relocated Entrance

North Bound

Around STA.21+200 Stage1&2

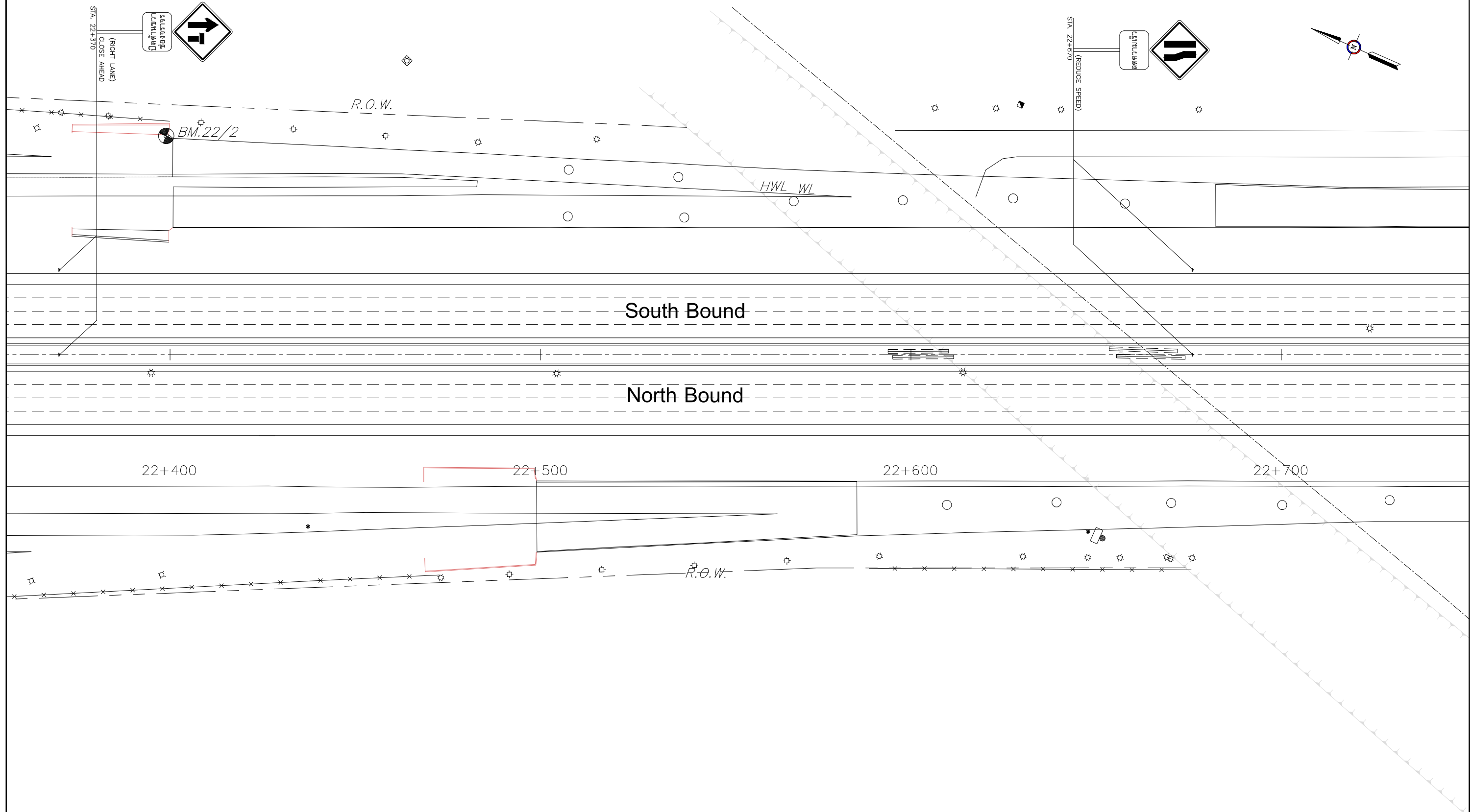







REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE									AUGUST 2012	SCALE 1:750
														DWG. NO. TS2-8	SHEET NO. 196

Signboard-3

South Bound

Around STA. 22+500 Stage1&2



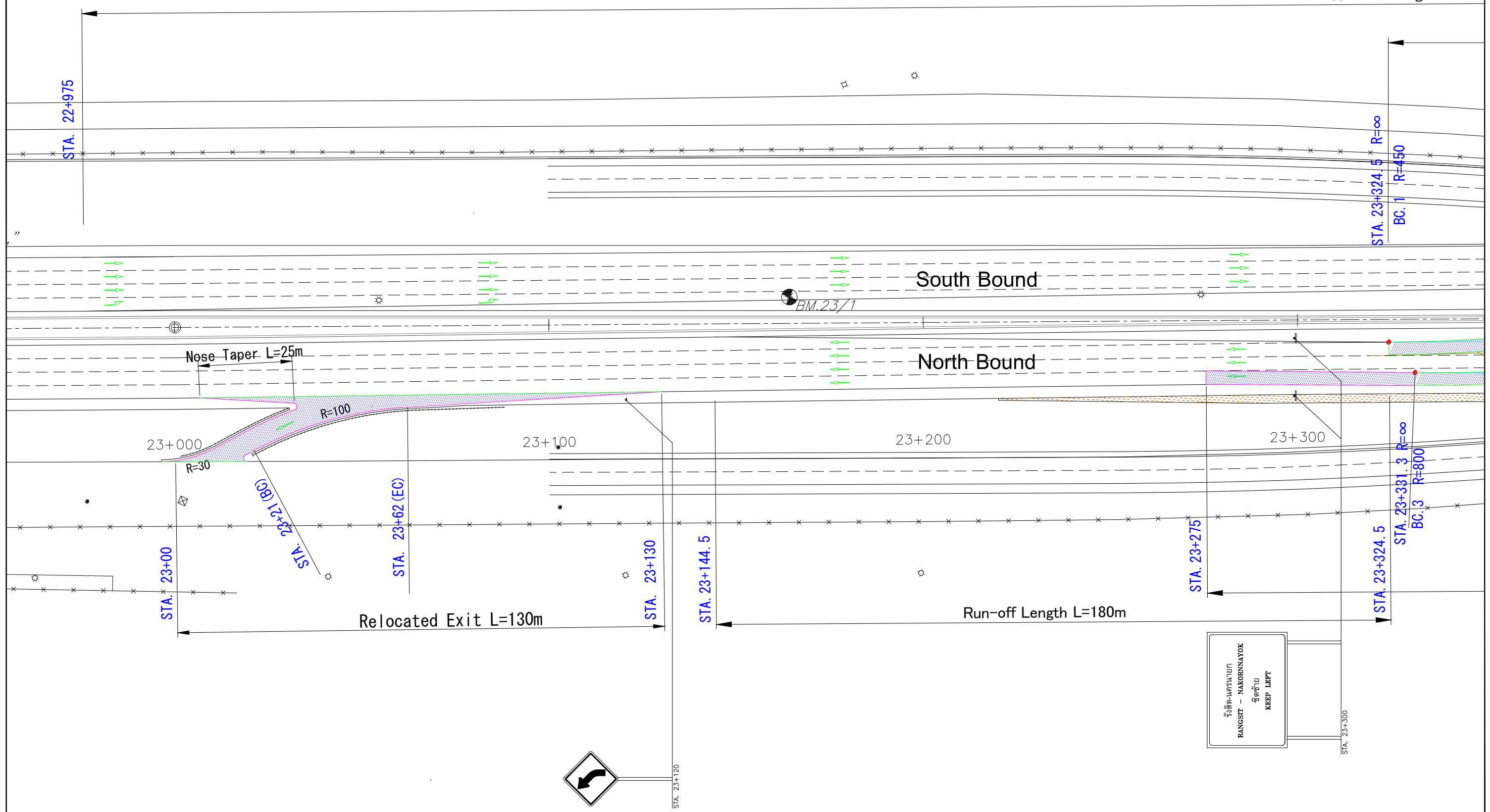
REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	 KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	 CTI ENGINEERING INTERNATIONAL CO., LTD.  ORIENTAL CONSULTANTS CO., LTD.  NIPPON KOEI CO., LTD.  CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE	SCALE
		CHECKED	DATE	CHECKED	DATE				SIGNBOARD-3	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
														DWG. NO.	SHEET NO.	
														TS2-9	197	

Relocated Exit

North Bound

Around STA. 23+100 Stage1&2

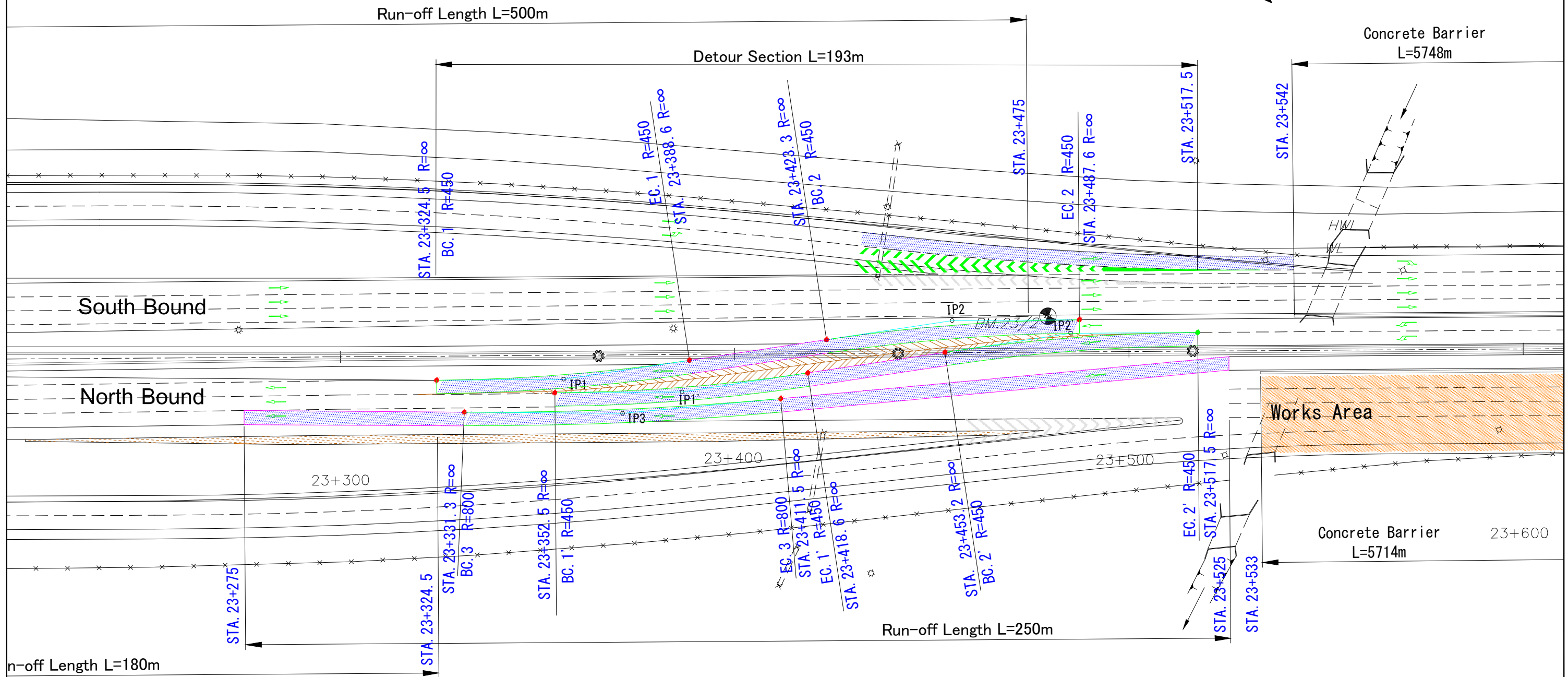
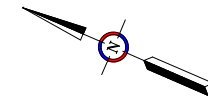
Run-off Length L=500



REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE									AUGUST 2012	SCALE 1:500
														DWG. NO. TS2-10	SHEET NO. 198

Median Crossover

South Bound To North Bound
Around STA. 23+500 Stage2



IP No.	STA.	Curve Length (m)	IA (dd-mm-ss)	Radius (m)
IP 1	23+398.893	64.373	8-11-46.410	450
IP 2	23+497.553	64.373	8-11-46.410	450
IP 3	23+371.589	80.356	5-45-45.070	800

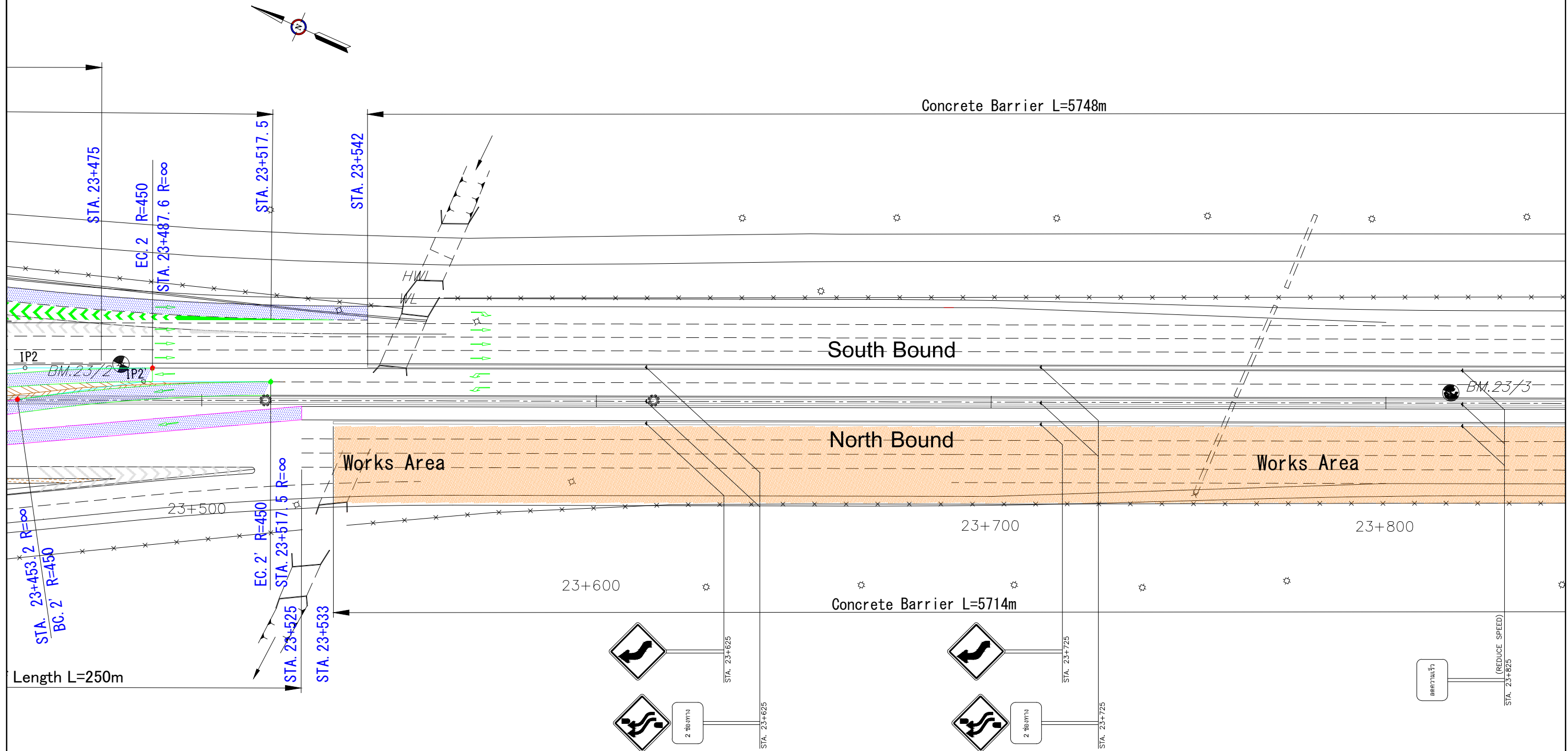
IP No.	STA.	Curve Length (m)	IA (dd-mm-ss)	Radius (m)
IP 1'	23+429.401	64.373	8-11-46.410	450
IP 2'	23+527.546	64.373	8-11-46.410	450

Note :

1. Set 40km/h as maximum speed limit for transition road.
2. Set 60km/h as maximum speed limit for standard road.
3. Install traffic control signs in accordance with the Road Work Guide published by DoH.

Signboard-4

South Bound To North Bound
Around STA. 23+700 Stage2

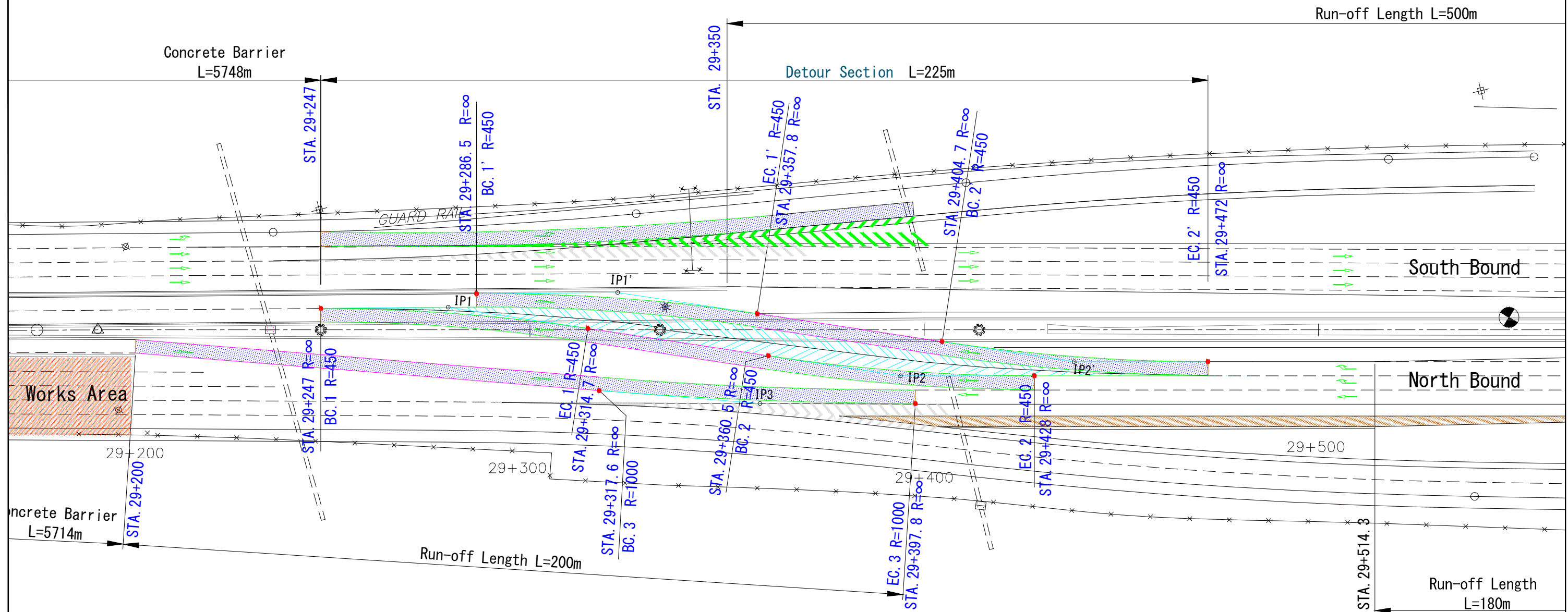
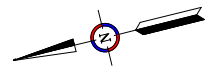


REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE:	SCALE:
		CHECKED	DATE	CHECKED	DATE									AUGUST 2012	SCALE 1:500
														DWG. NO. TS2-12	SHEET NO. 200

CTI ENGINEERING INTERNATIONAL CO., LTD.
ORIENTAL CONSULTANTS CO., LTD.
NIPPON KOEI CO., LTD.
CTI ENGINEERING CO., LTD.

Median Crossover

North Bound To South Bound
Around STA. 29+300 Stage2



Note :

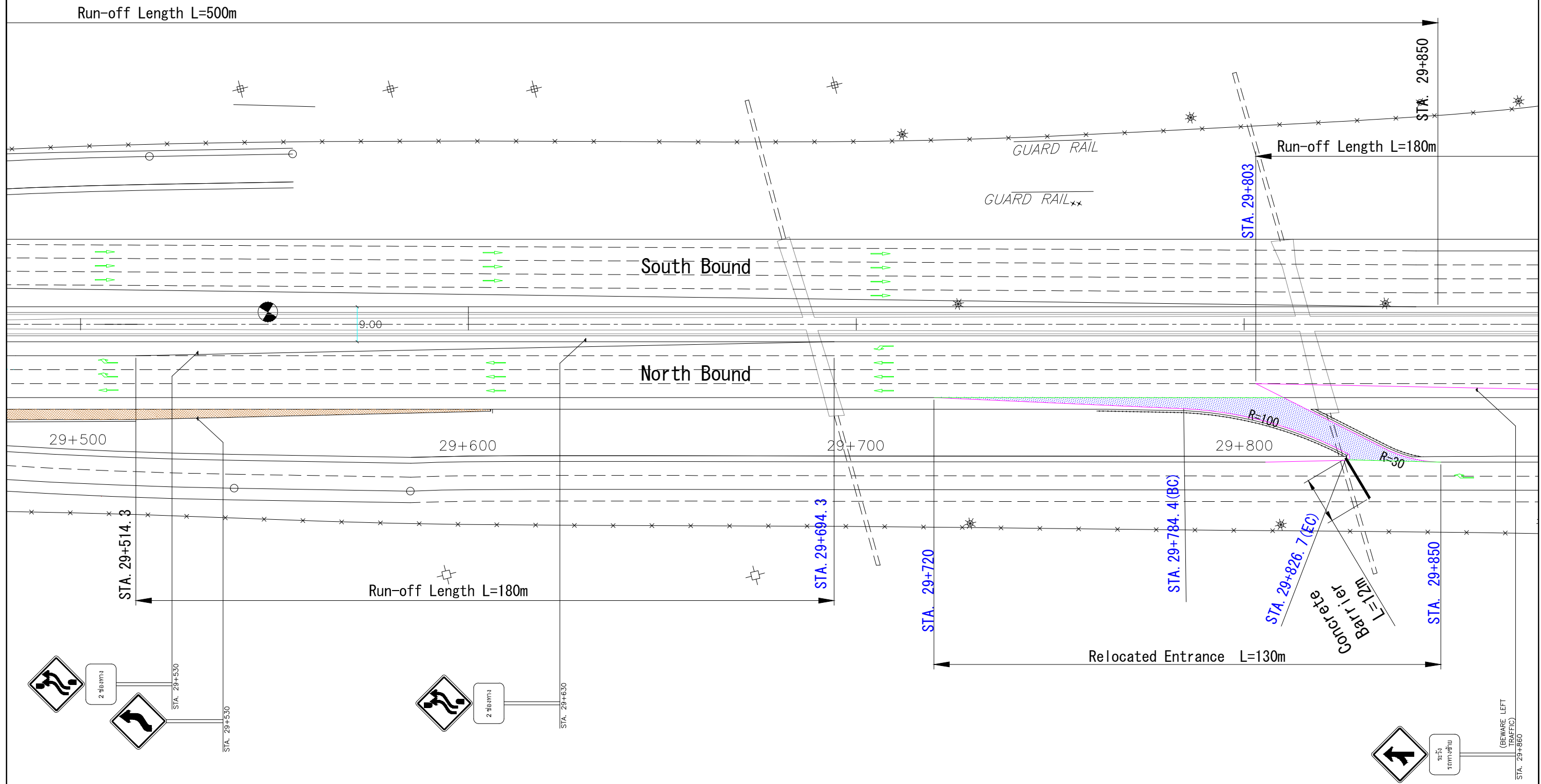
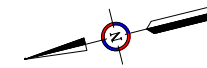
1. Set 40km/h as maximum speed limit for transition road.
2. Set 60km/h as maximum speed limit for standard road.
3. Install traffic control signs in accordance with the Road Work Guide published by DoH.

IP No.	STA.	Curve Length (m)	IA (dd-mm-ss)	Radius (m)
IP 1	29+279.300	67.961	9-5-50.820	450
IP 2	29+394.049	67.680	8-37-2.060	450
IP 3	29+358.372	79.997	4-23-35.210	1000

IP No.	STA.	Curve Length (m)	IA (dd-mm-ss)	Radius (m)
IP 1	29+279.300	67.961	9-5-50.820	450
IP 2	29+394.049	67.680	8-37-2.060	450
IP 1'	29+322.276	67.961	9-5-50.820	450
IP 2'	29+438.086	67.680	8-37-2.060	450

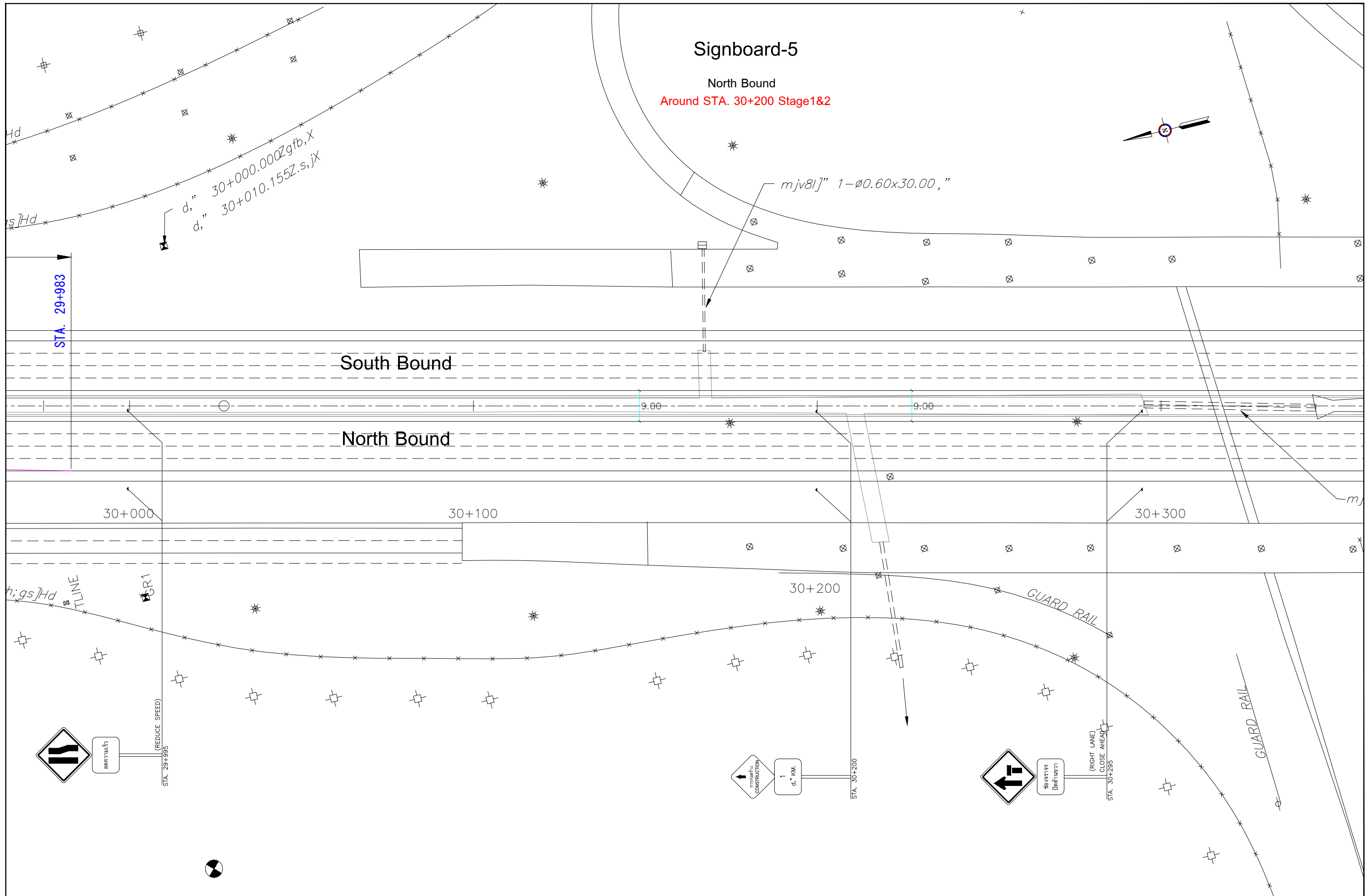
Relocated Entrance

North Bound
Around STA. 29+800 Stage2



REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE:	SCALE:
		CHECKED	DATE	CHECKED	DATE									AUGUST 2012	SCALE 1:500
														DWG. NO. TS2-14	SHEET NO. 202

(BEWARE LEFT TRAFFIC)
STA. 29+860



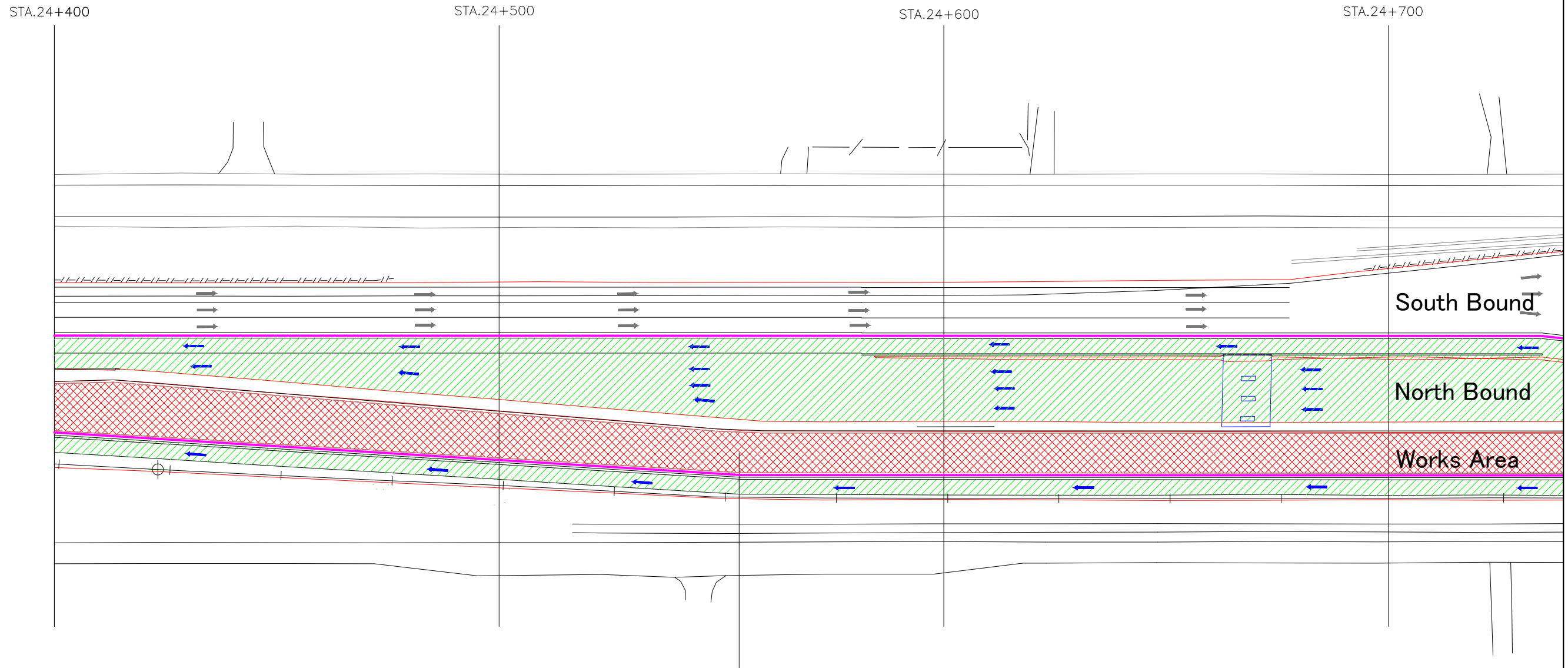
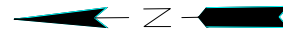
REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE:	SCALE:
		CHECKED	DATE	CHECKED	DATE									AUGUST 2012	SCALE 1:500
														DWG. NO. TS2-15	SHEET NO. 203

4. TOLL GATE TRAFFIC CONTROL

Toll Gate Traffic Control (STAGE I -1/4)

North Bound and South Bound

STA. 24+400 - STA. 25+700



Note :

General

1. Keep six (6) gates for each bound, opening during construction
2. Open one gate as suitable to truck size
3. Install traffic control signs in accordance with the Road Work GUIDE published by DOH

Construction Procedure :

1. Open two gates, No. 1 & 2, in the north bound as shown in the drawing.
2. Demolish eight lanes, No.3 to 10, and reinstall seven new gates, No.3 to 7, 9 & 10 as well as temporary gate, No. 8, as shown in the drawing.

Legend :

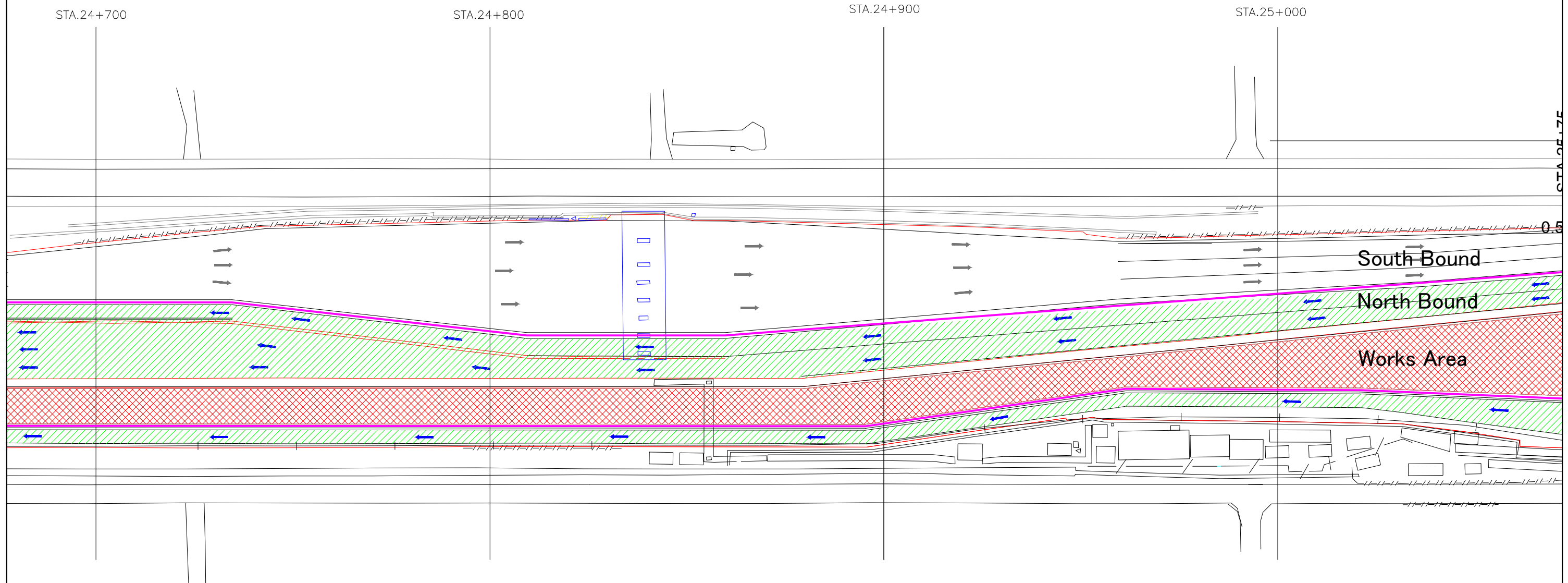
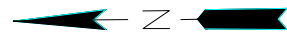
- Service Lanes for North Bound
- Works Area
- Concrete Barriere

REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE				CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road			AUGUST 2012	SCALE 1:500
									STAGE 1					DWG. NO.	SHEET NO.
														TT-1	204

Toll Gate Traffic Control (STAGE I -2/4)

North Bound and South Bound

STA. 24+400 - STA. 25+700



Note :

General

1. Keep six (6) gates for each bound, opening during construction
2. Open one gate as suitable to truck size
3. Install traffic control signs in accordance with the Road Work GUIDE published by DOH

Construction Procedure :

1. Open two gates, No. 1 & 2, in the north bound as shown in the drawing.
2. Demolish eight lanes, No.3 to 10, and reinstall seven new gates, No.3 to 7, 9 & 10 as well as temporary gate, No. 8, as shown in the drawing.

Legend :

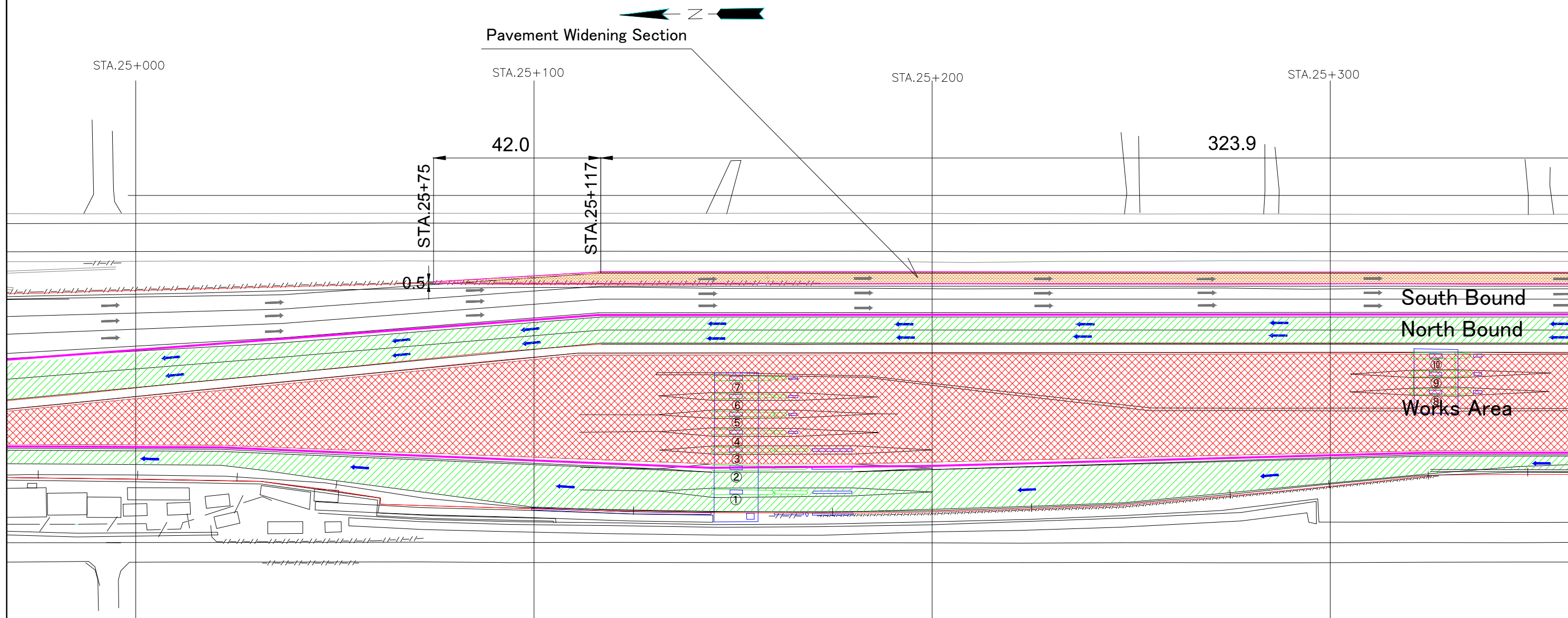
- Service Lanes for North Bound
- Works Area
- Concrete Barriere

REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE				STAGE 1	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
														DWG. NO.	SHEET NO.	
														TT-2	205	

Toll Gate Traffic Control (STAGE I -3/4)

North Bound and South Bound

STA. 24+400 - STA. 25+700



Note :

General

1. Keep six (6) gates for each bound, opening during construction
2. Open one gate as suitable to truck size
3. Install traffic control signs in accordance with the Road Work GUIDE published by DOH

Construction Procedure :

1. Open two gates, No. 1 & 2, in the north bound as shown in the drawing.
2. Demolish eight lanes, No.3 to 10, and reinstall seven new gates, No.3 to 7, 9 & 10 as well as temporary gate, No. 8, as shown in the drawing.

Legend :

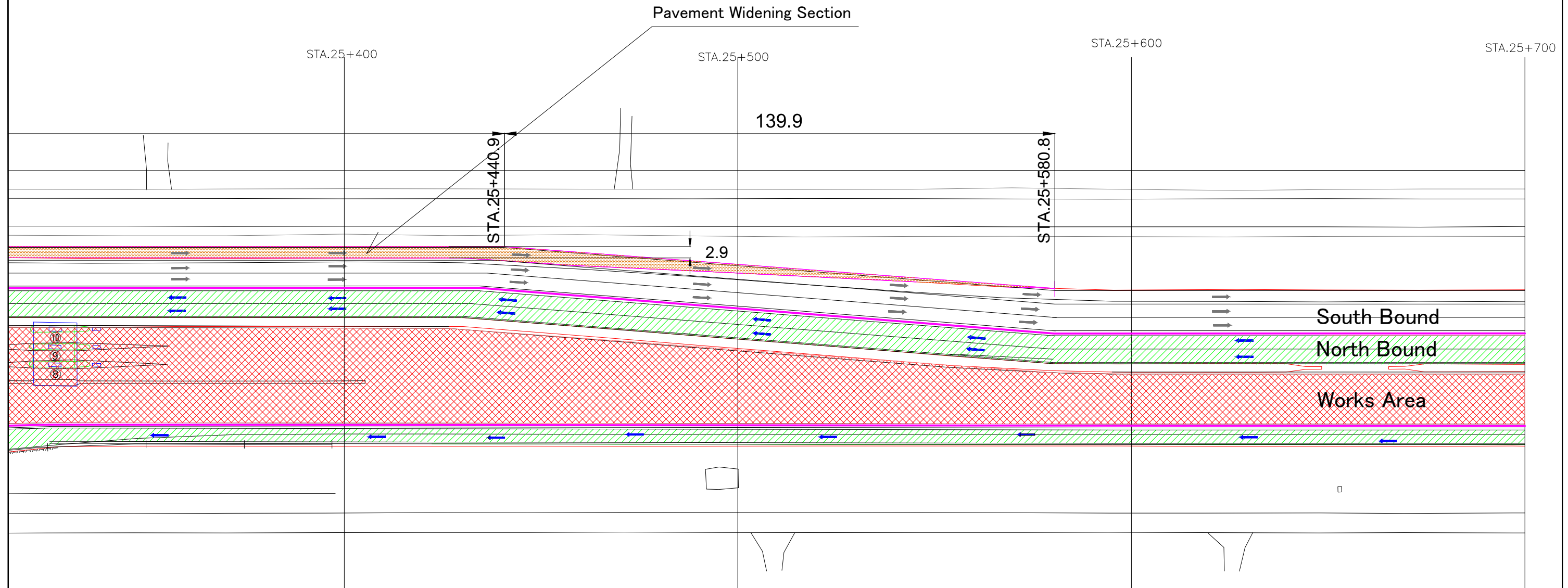
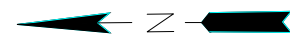
- Service Lanes for North Bound
- Works Area
- Concrete Barriere

REV. NO.	DESCRIPTION	ENGINEER	DOH	REV. NO.	APPROVED BY	 KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE		STAGE 1	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
												TT-3	SHEET NO. 206	

Toll Gate Traffic Control (STAGE I -4/4)

North Bound and South Bound

STA. 24+400 - STA. 25+700



General

1. Keep six (6) gates for each bound, opening during construction
2. Open one gate as suitable to truck size
3. Install traffic control signs in accordance with the Road Work GUIDE published by DOH

Construction Procedure :

1. Open two gates, No. 1 & 2, in the north bound as shown in the drawing.
2. Demolish eight lanes, No.3 to 10, and reinstall seven new gates, No.3 to 7, 9 & 10 as well as temporary gate, No. 8, as shown in the drawing.

Legend :

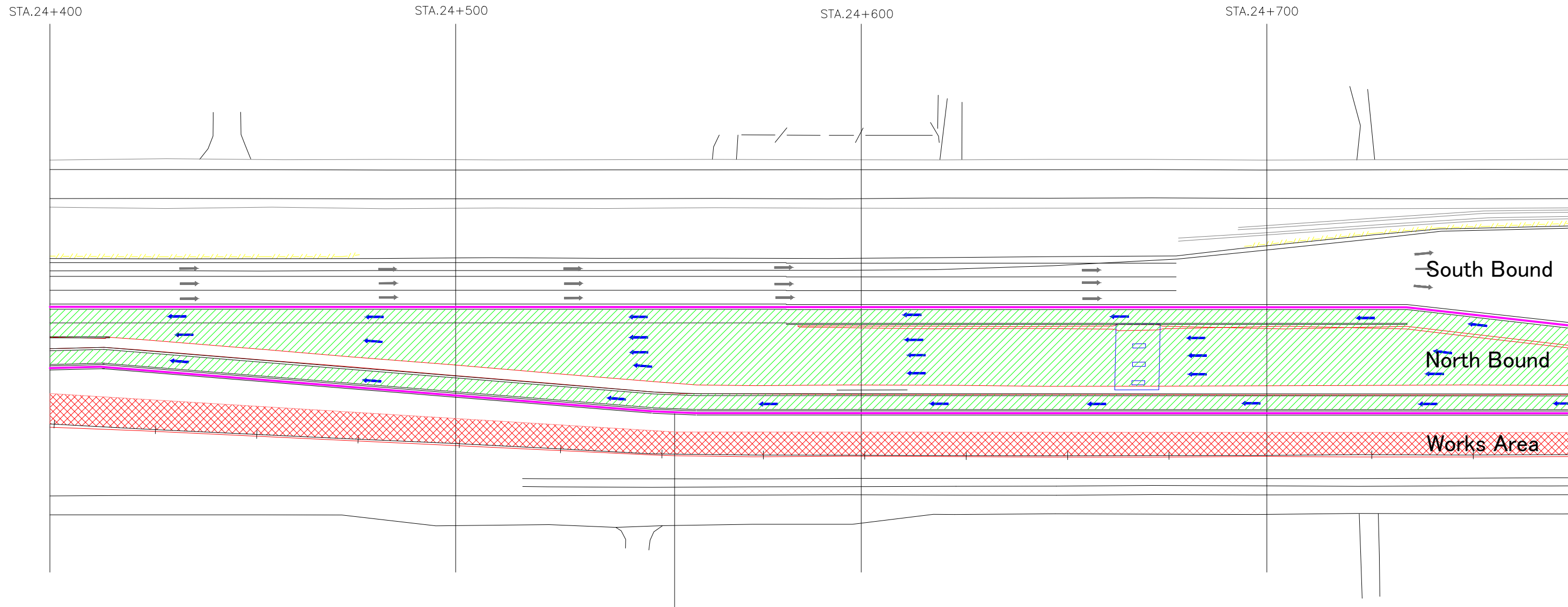
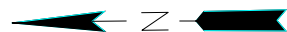
- Service Lanes for North Bound
- Works Area
- Concrete Barriere

REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE				STAGE 1	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
															DWG. NO.	SHEET NO.
															TT-4	207

Toll Gate Traffic Control (STAGE II - 1/4)

North Bound and South Bound

STA. 24+400 - STA. 25+700



Note :

General

1. Keep six (6) gates for each bound, opening during construction
2. Open one gate as suitable to truck size
3. Install traffic control signs in accordance with the Road Work GUIDE published by DOH

Construction Procedure :

1. Open two gates, No. 9 & 10, in the north bound as shown in the drawing.
2. Demolish and reinstall two lanes, No.1 to 2, used during stage I
3. After Stage II, open seven gates, No.1 to 7.
4. Install new gates, No.8.

Legend :

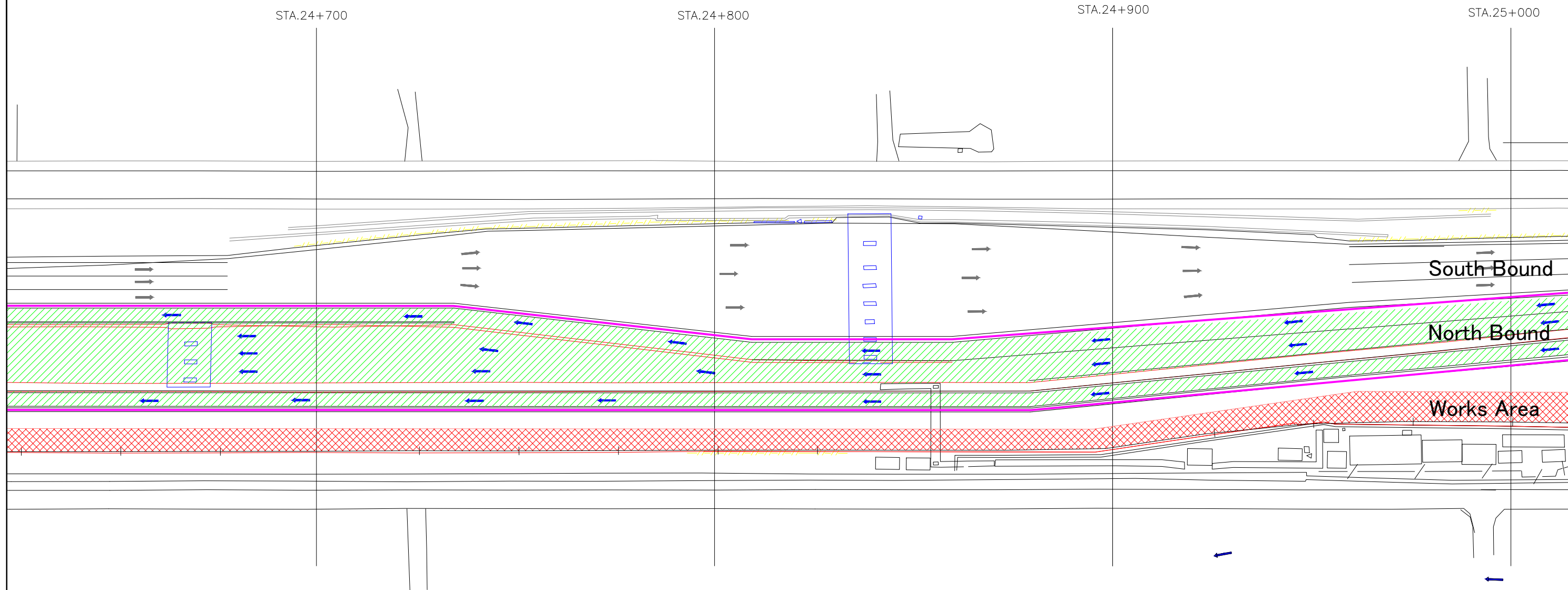
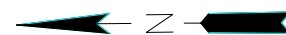
- Service Lanes for North Bound
- Works Area
- Concrete Barriere

REV. NO.	DESCRIPTION	ENGINEER CHECKED	DATE	DOH CHECKED	DATE	REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE	SCALE
									STAGE 2	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
															TT-5	SHEET NO. 208

Toll Gate Traffic Control (STAGE II -2/4)

North Bound and South Bound

STA. 24+400 - STA. 25+700



Note :

General

1. Keep six (6) gates for each bound, opening during construction
2. Open one gate as suitable to truck size
3. Install traffic control signs in accordance with the Road Work GUIDE published by DOH

Construction Procedure :

1. Open two gates, No. 9 & 10, in the north bound as shown in the drawing.
2. Demolish and reinstall two lanes, No.1 to 2, used during stage I
3. After Stage II, open seven gates, No.1 to 7.
4. Install new gates, No.8.

Legend :

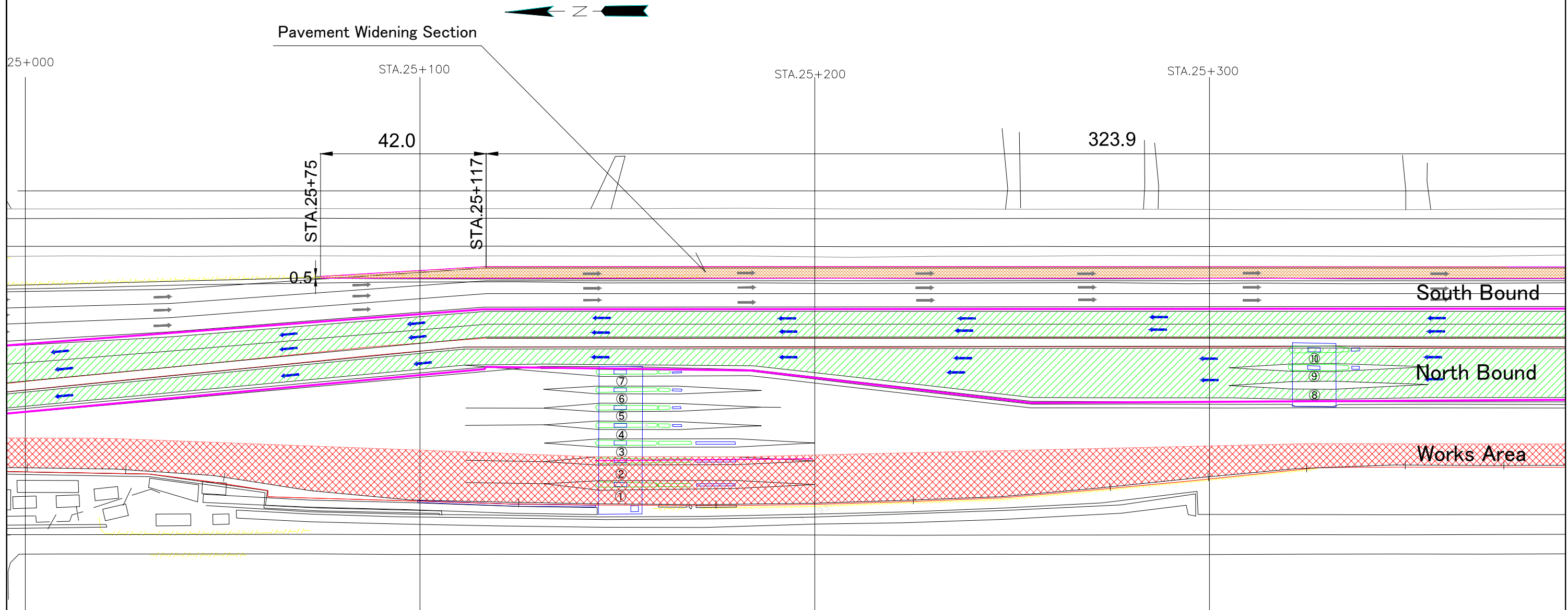
- Service Lanes for North Bound
- Works Area
- Concrete Barriere

REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE				STAGE 2	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road		SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500
														DWG. NO.	SHEET NO.	
														TT-6	209	

Toll Gate Traffic Control (STAGE II - 3/4)

North Bound and South Bound

STA. 24+400 - STA. 25+700



Note :

General

1. Keep six (6) gates for each bound, opening during construction
2. Open one gate as suitable to truck size
3. Install traffic control signs in accordance with the Road Work GUIDE published by DOH

Construction Procedure :

1. Open two gates, No. 9 & 10, in the north bound as shown in the drawing.
2. Demolish and reinstall two lanes, No.1 to 2, used during stage I
3. After Stage II, open seven gates, No.1 to 7.
4. Install new gates, No.8.

Legend :

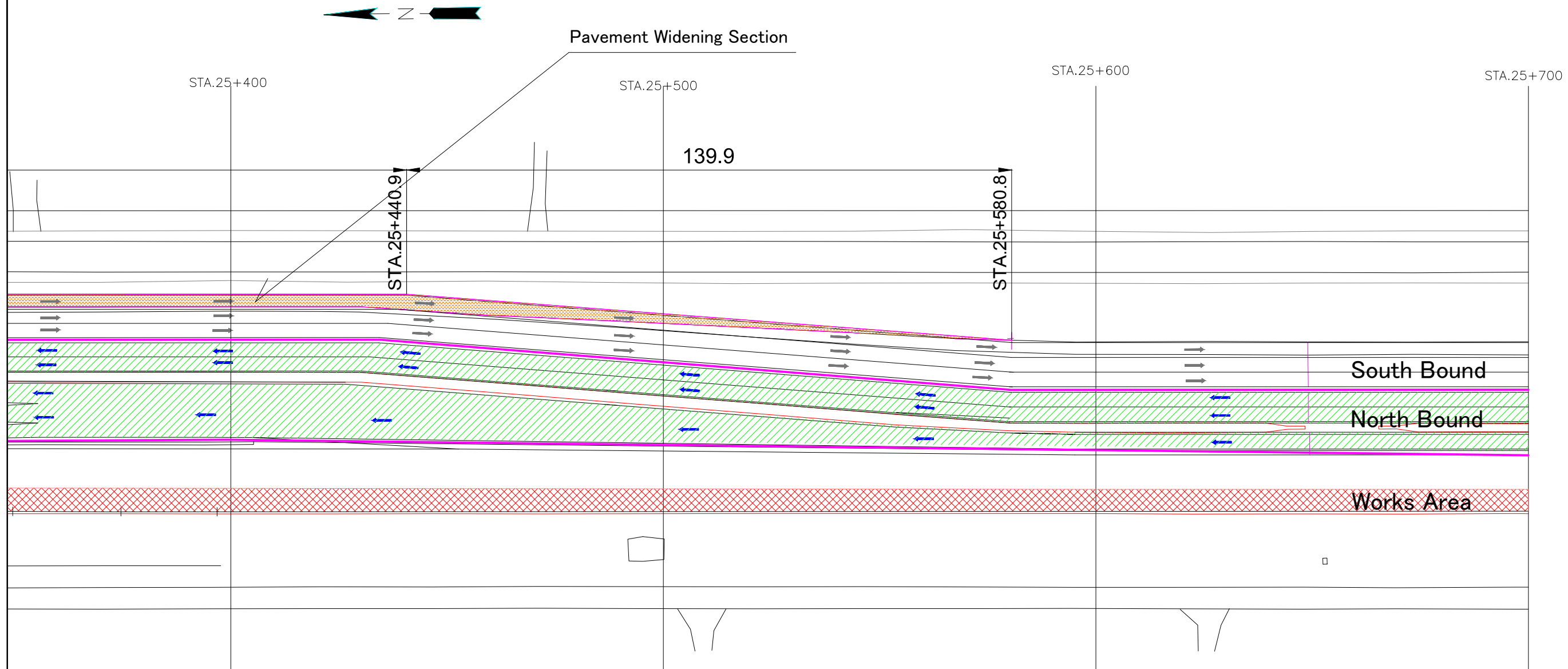
- Service Lanes for North Bound
- Works Area
- Concrete Barriere

REV. NO.	DESCRIPTION	ENGINEER CHECKED	DATE	DOH CHECKED	DATE	REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE	SCALE
									STAGE 2	The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER	AUGUST 2012	SCALE 1:500	
														TT-7	SHEET NO. 210	

Toll Gate Traffic Control (STAGE II -4/4)

North Bound and South Bound

STA. 24+400 - STA. 25+700



Note :

General

1. Keep six (6) gates for each bound, opening during construction
2. Open one gate as suitable to truck size
3. Install traffic control signs in accordance with the Road Work GUIDE published by DOH

Construction Procedure :

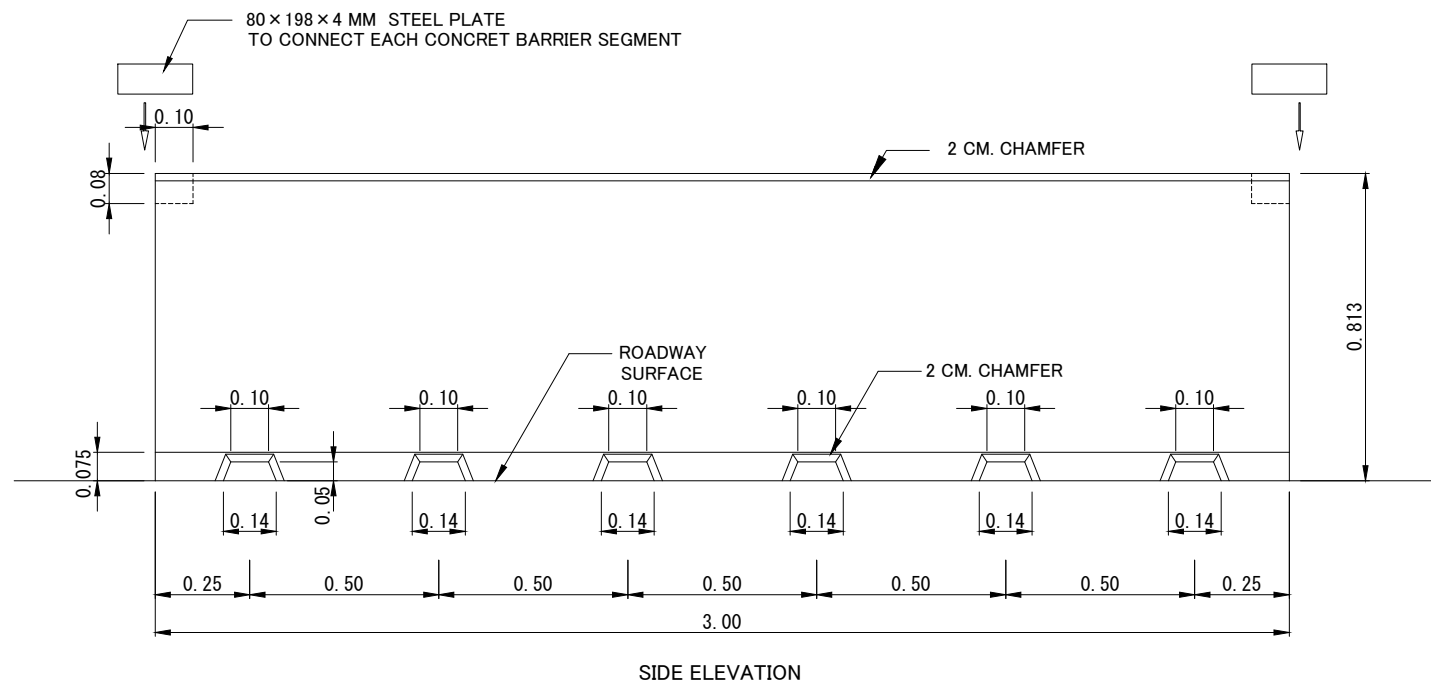
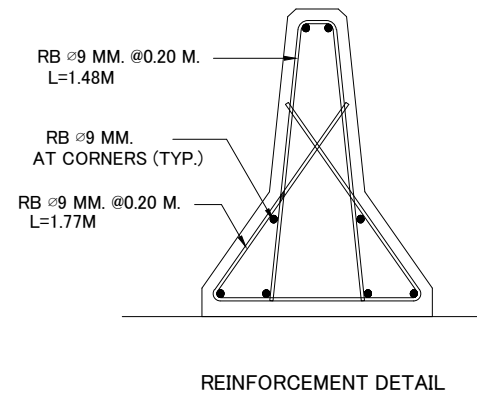
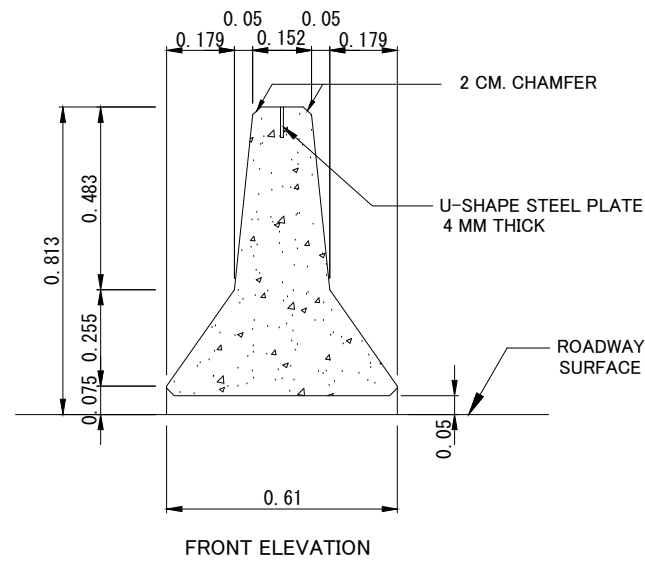
1. Open two gates, No. 9 & 10, in the north bound as shown in the drawing.
2. Demolish and reinstall two lanes, No.1 to 2, used during stage I
3. After Stage II, open seven gates, No.1 to 7.
4. Install new gates, No.8.

Legend :

- Service Lanes for North Bound
- Works Area
- Concrete Barriere

REV. NO.	DESCRIPTION	ENGINEER		DOH		REV. NO.	APPROVED BY	KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS	HIGHWAY ROUTE NO. 9	OWNER	PROJECT TITLE	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY	CHECKED BY	DATE :	SCALE :
		CHECKED	DATE	CHECKED	DATE						STAGE 2		The Inter-City Motorways Division Department of Highways Ministry of Transport	The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	SAGARA Hidetaka ROAD ENGINEER	WATANABE Ryohei CHIEF ENGINEER
															DWG. NO.	SHEET NO.
															TT-8	211

5. TEMPORARY CONCRETE BARRIER



CONCRETE BARRIER (Type2-c)
SCALE 1 : 10

NOTES :

- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE INDICATED.
- CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 210 KSC. FOR 15x15x15 CM. CUBE AT 28 DAYS. AN APPROXIMATE MIX DESIGN PER CUBIC METER IS SUGGESTED AS FOLLOW :

PORTLAND CEMENT TYPE 1	350 KG. (MIN.)
SAND	0.43 M ³
CRUSHED ROCK OR GRAVEL	0.86 M ³
CONCRETE SLUMP	10 CM.
- CLEAR CONCRETE COVER SHALL BE 5 CM.
- REINFORCING STEEL SHALL CONFORM TO TIS.20 GRADE SR24 FOR ROUND BARS AND TIS.24 GRADE SD30 FOR DEFORMED BARS.
- REINFORCEMENT AND OTHER DETAILS OF APPROACH CONCRETE BARRIER SHALL BE THE SAME AS CONCRETE BARRIER.
- CONSTRUCTION JOINT SHALL BE PROVIDED AT 10.00 M. INTERVAL.
- EXPANSION JOINT WITH ONE-EXTRUDING JOINT FILLER SHALL BE PROVIDED AT 60.00 M. INTERVAL.
- APPROACH CONCRETE BARRIER SHALL BE PAINT IN BLACK AND WHITE STRIPE 0.50 M. WIDE. IN TWO COATS. THE PAINT SHALL CONFORM TO TIS.327
- PRE-CAST CONCRETE BARRIER TYPE 1 ACCORDING TO DRAWING NO. RS-504 SHALL BE USED INSTEAD OF CAST-IN-SITU CONCRETE BARRIER.

TABLE OF DIMENSIONS FOR APPROACH CONCRETE BARRIER TYPE (A)

TRANSITION DISTANCE (M.)	DIMENSIONS (M.)				
	a	b	c	d	e
0	0.200	0.150	0.000	0.000	0.300
3	0.302	0.150	0.082	0.013	0.250
6	0.404	0.150	0.161	0.025	0.200
9	0.507	0.151	0.242	0.038	0.150
12	0.609	0.151	0.322	0.050	0.100
15	0.711	0.152	0.403	0.063	0.050
18	0.813	0.152	0.483	0.075	0.000

REMARK :

THIS BARRIER IS SUITABLE ONLY IN SPECIFIC LOCATIONS AND CERTAIN CONDITIONS. IT SHOULD BE APPLIED WITH THE FIRM INFORMATIONS CONCERNED AND RECOMMENDED BY THE ENGINEER.

REV. NO.	DESCRIPTION	ENGINEER CHECKED DATE	DOH CHECKED DATE	REV. NO.	APPROVED BY	<p>KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS</p>	HIGHWAY ROUTE NO. 9	OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport	PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road	CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.	DESIGNED BY SAGARA Hidetaka ROAD ENGINEER	CHECKED BY WATANABE Ryohei CHIEF ENGINEER	DATE : AUGUST 2012	SCALE : AS SHOWN
							CONCRETE BARRIER							DWG. NO. TC-1