E3-2 EXPRESSWAY

INDEX OF DRAWINGS
E3-2

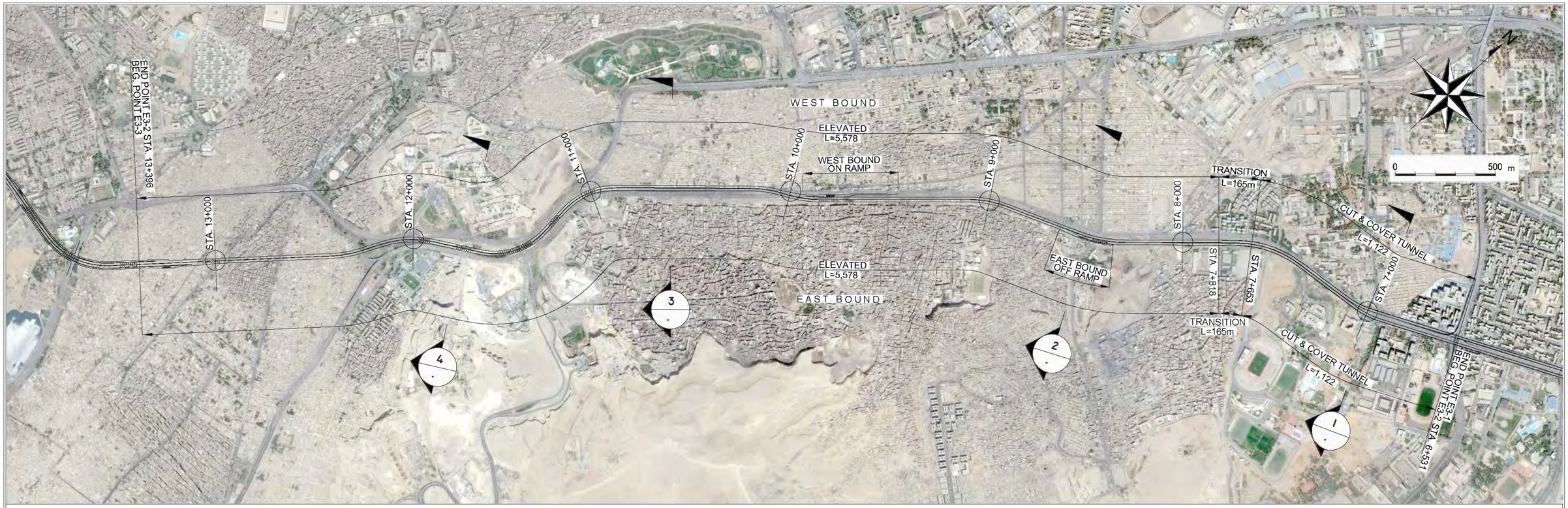
DWG. NO.	DRAWING TITLE	SHEET NO.
ALIGMENT PLAN		
E3-2/A-01	ALIGMENT PLAN	1
LAND PLAN		
E3-2/L-01	LAND PLAN	1
ROADWAY		
E3-2/R-01	PLAN & PROFILE STA. 6+531 – STA. 8+100	1
E3-2/R-02	PLAN & PROFILE STA. 8+100 – STA. 9+800	2
E3-2/R-03	PLAN & PROFILE STA. 9+800 – STA. 11+500	3
E3-2/R-04	PLAN & PROFILE STA. 11+500 – STA. 13+200	4
E3-2/R-05	PLAN & PROFILE STA. 13+200 – STA. 13+400	5
E3-2/R-06	TYPICAL ROAD SECTION	6
E3-2/R-07	CROSS SECTION (1/2)	7
E3-2/R-08	CROSS SECTION (2/2)	8
E3-2/R-09	ON / OFF RAMP NO. 1 PLAN AND PROFILE (11+000 & 12+000)	9
E3-2/R-10	ON / OFF RAMP NO. 1 CROSS SECTION (11+000 & 12+000)	10
E3-2/R-11	ON / OFF RAMP NO. 2 PLAN AND PROFILE (13+000 & 13+400)	11
E3-2/R-12	ON / OFF RAMP NO. 2 CROSS SECTION (13+000 & 13+400)	12
STRUCTURES		
E3-2/S-01	E3-2 OVERALL PLAN & LAYOUTCUT	1
E3-2/S-02	COVER TUNNEL SECTIONS (STA 6+530 TO STA 7+655)	2
E3-2/S-03	TRANSITION STRUCTURE (STA 7+655 TO STA 7+820)	3
E3-2/S-04	APPROACH EMBANKMENT LAYOUT AND RETAINING WALL DETAIL (STA 7+820 TO STA 8+145)	4
E3-2/S-05	ABUTMENT LAYOUT & SECTIONS (STA 8+145)	5
E3-2/S-06	ELEVATED VIADUCT SINGLE COLUMN PIER LAYOUT & SECTIONS (EXPANSION)	6
E3-2/S-07	ELEVATED VIADUCT SINGLE COLUMN PIER LAYOUT & SECTIONS (CONTINUOUS)	7
E3-2/S-08	ELEVATED VIADUCT PORTAL TYPE PIER (EXPANSION)	8
E3-2/S-09	ELEVATED VIADUCT PORTAL TYPE PIER (CONTINUOUS)	9
E3-2/S-10	ELEVATED VIADUCT ALONG RAILWAY PORTAL TYPE 1 PIER (EXPANSION)	10
E3-2/S-11	ELEVATED VIADUCT ALONG RAILWAY PORTAL TYPE 1 PIER (CONTINUOUS)	11
E3-2/S-12	ELEVATED VIADUCT ALONG RAILWAY PORTAL TYPE 2 PIER (EXPANSION)	12
E3-2/S-13	ELEVATED VIADUCT ALONG RAILWAY PORTAL TYPE 2 PIER (CONTINUOUS)	13
E3-2/S-14	ELEVATED VIADUCT ALONG RAILWAY PORTAL TYPE 3 PIER (EXPANSION)	14
E3-2/S-15	ELEVATED VIADUCT ALONG RAILWAY PORTAL TYPE 3 PIER (CONTINUOUS)	15
E3-2/S-16	ELEVATED VIADUCT SUPERSTRUCTURE LAYOUT & SECTIONS 1 OF 4	16
E3-2/S-17	ELEVATED VIADUCT SUPERSTRUCTURE LAYOUT & SECTIONS 2 OF 4	17
E3-2/S-18	ELEVATED VIADUCT SUPERSTRUCTURE LAYOUT & SECTIONS 3 OF 4	18
E3-2/S-19	ELEVATED VIADUCT SUPERSTRUCTURE LAYOUT & SECTIONS 4 OF 4	19

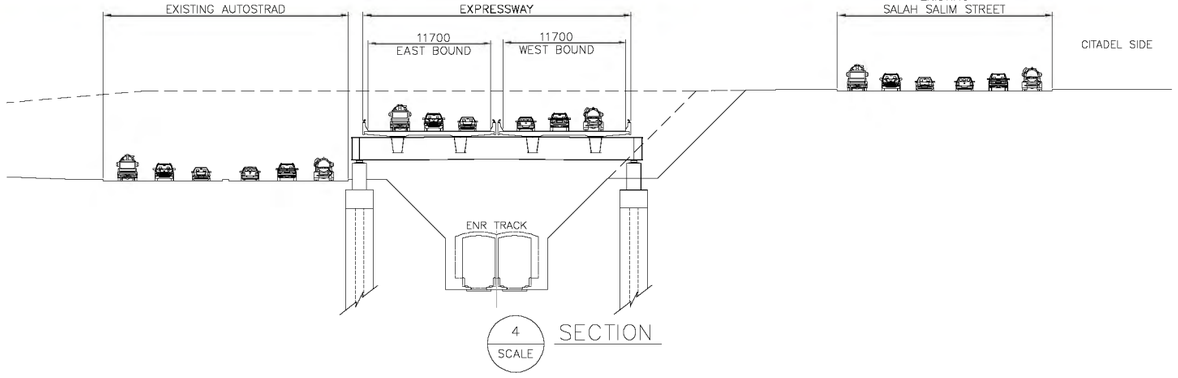
KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL AUTHORITY FOR ROADS
BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO CAIRO, EGYPT	FULL SIZE A3	INDEX OF DRAWINGS E3-2	E3-2/I-01
			SHEET NO : 1/1





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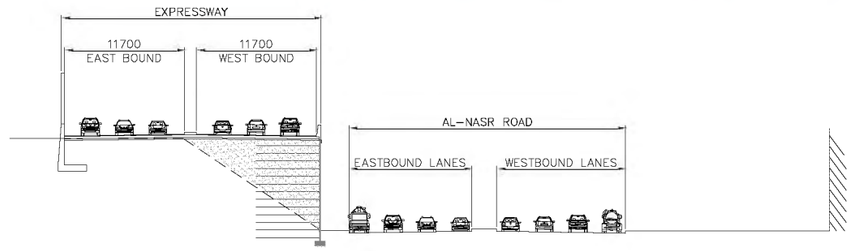

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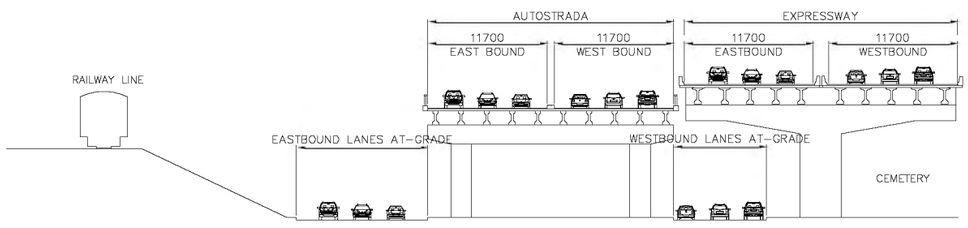

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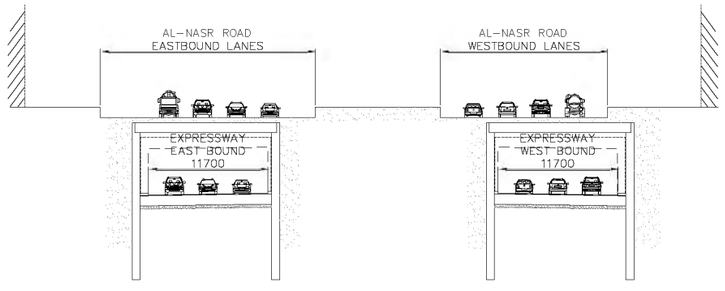


1 SCALE SECTION

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

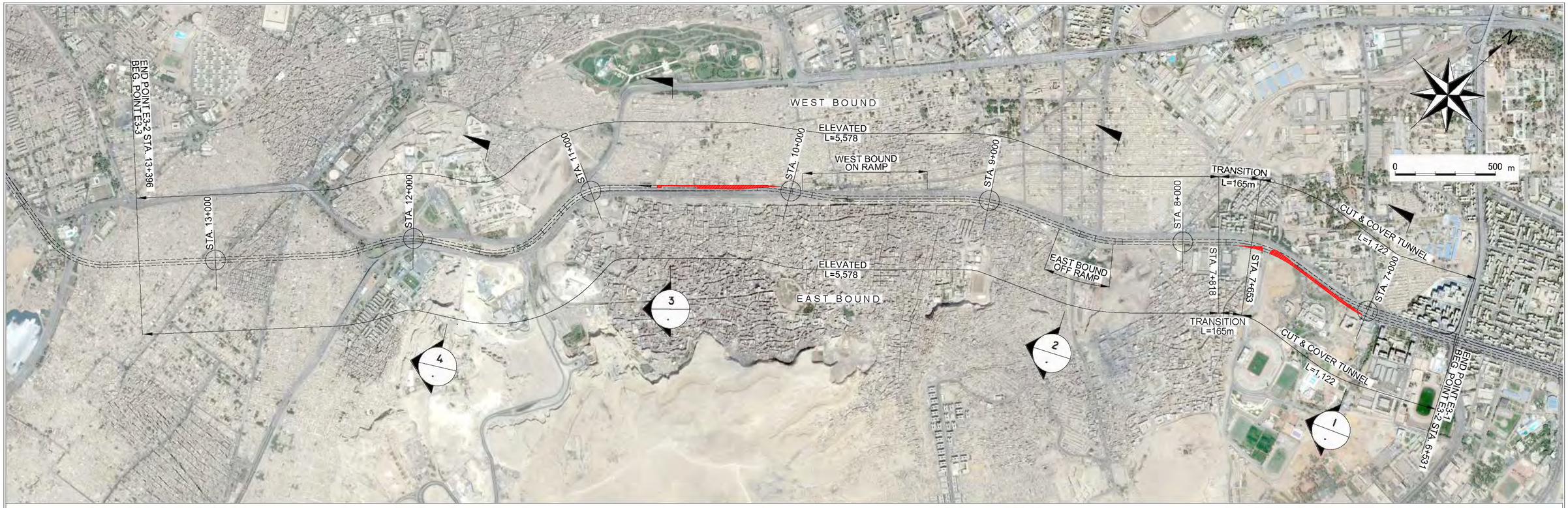
GENERAL AUTHORITY FOR ROADS
BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

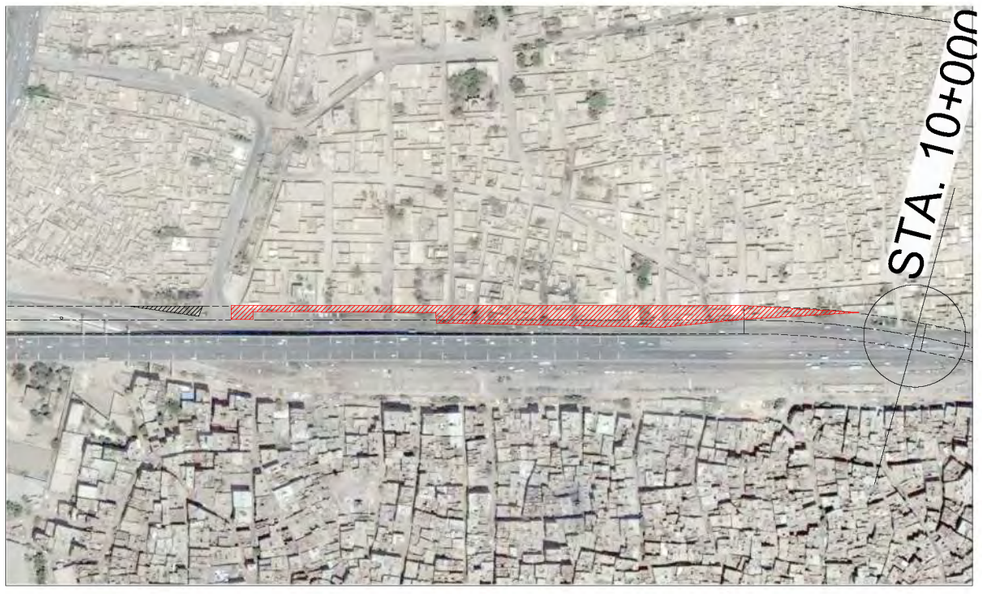
PROJECT AND LOCATION :
FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2

SCALE :
1:20000
FULL SIZE A3

DRAWING TITLE :
E3-2
Alignment PLAN
Sta. 6+530 - Sta. 13+400

DRAWING NO :
E3-2/A-01
SHEET NO :
1/1

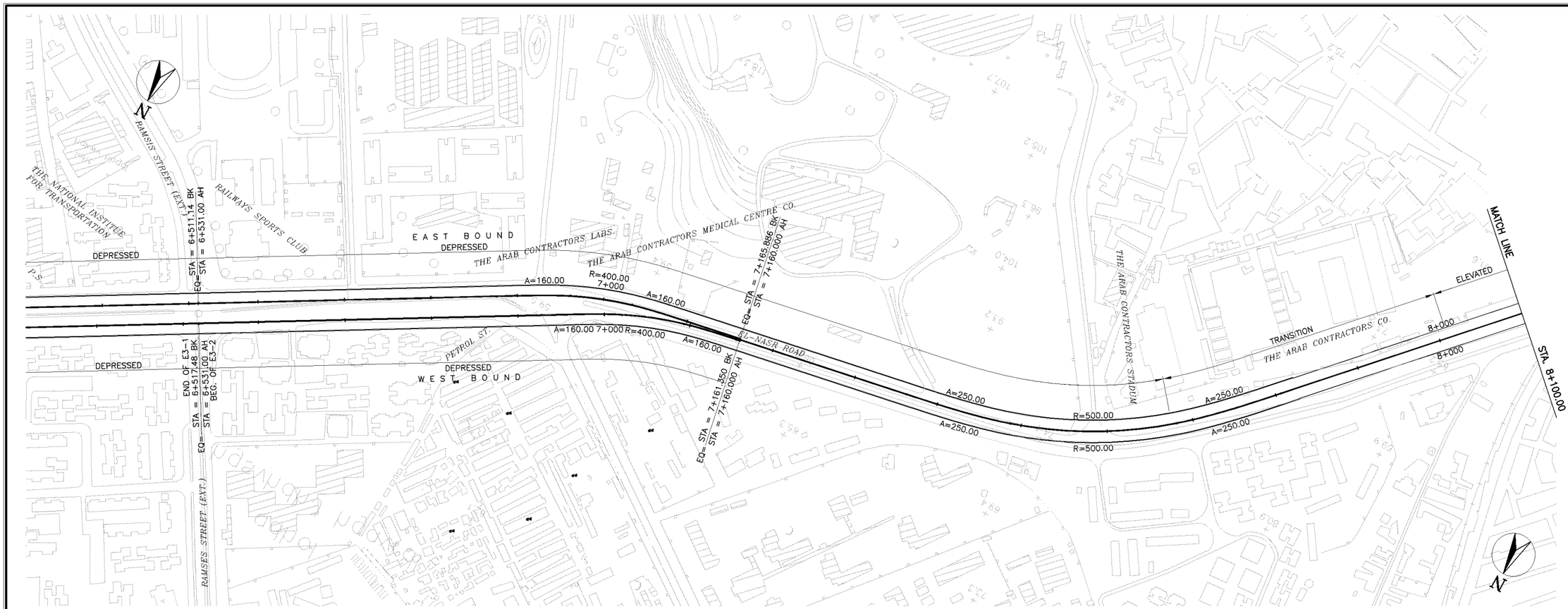


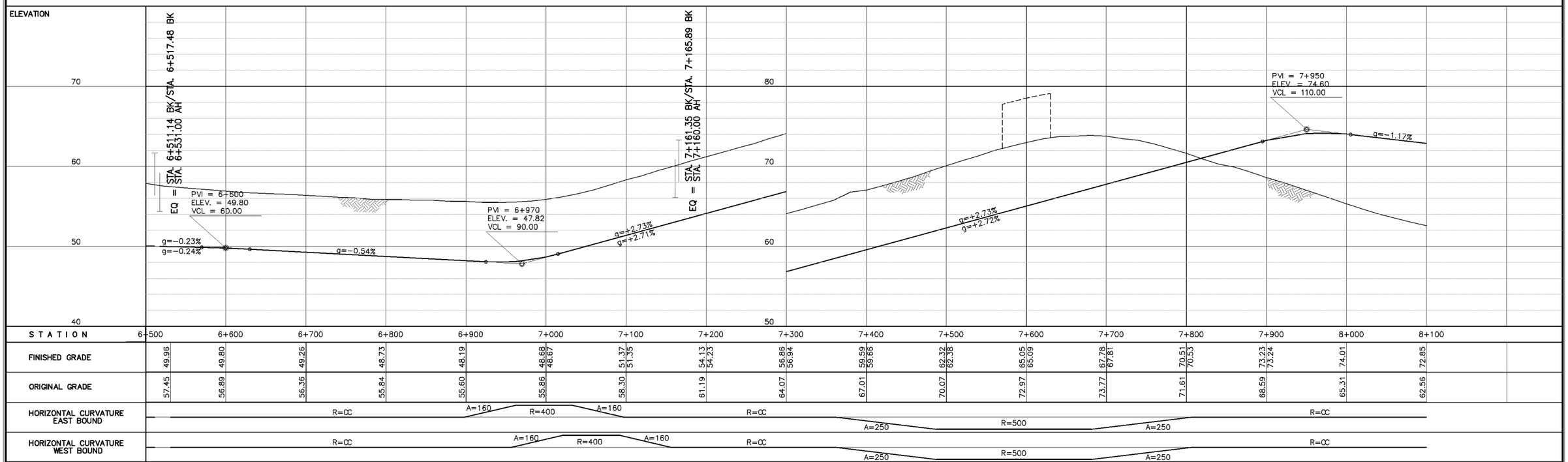


Land required 8,000m^2

Land required 9,000m^2

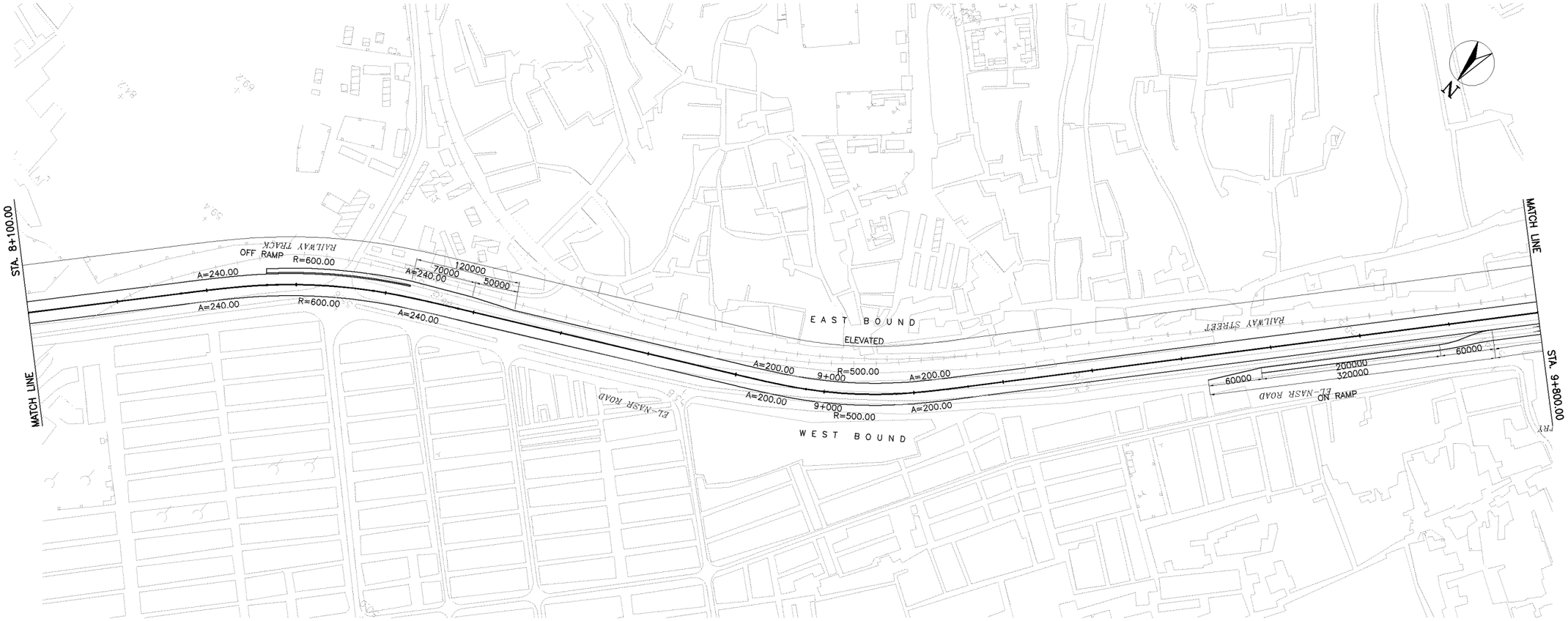
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2	SCALE : 1:20000 FULL SIZE A3	DRAWING TITLE : E3-2 LAND PLAN	DRAWING NO : E3-2/L-01 SHEET NO : 1/1

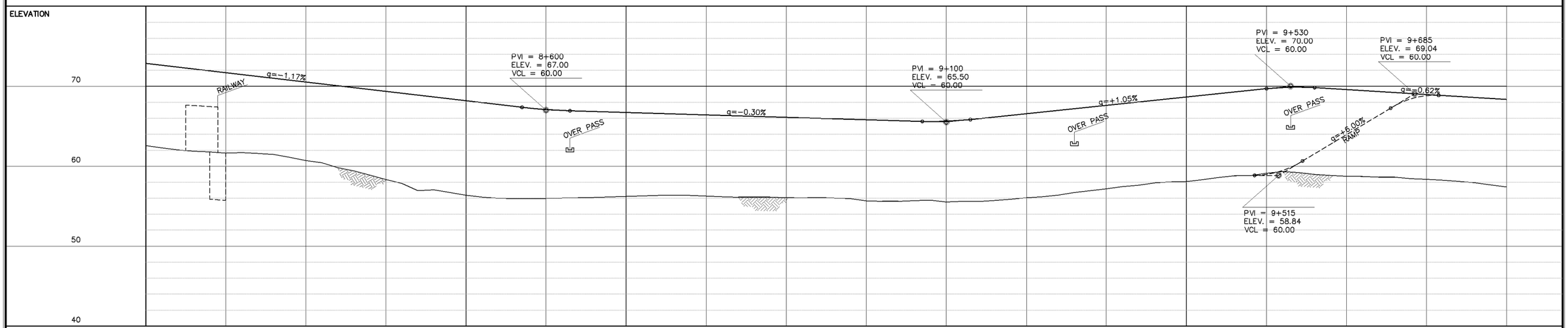




STATION	6+500	6+600	6+700	6+800	6+900	7+000	7+100	7+200	7+300	7+400	7+500	7+600	7+700	7+800	7+900	8+000	8+100
FINISHED GRADE	49.96	49.80	49.26	48.73	48.19	48.68 / 48.67	51.37 / 51.35	54.13 / 54.23	56.85 / 56.94	59.59 / 59.66	62.32 / 62.38	65.05 / 65.09	67.78 / 67.81	70.51 / 70.53	73.23 / 73.24	74.01	72.85
ORIGINAL GRADE	57.45	56.89	56.36	55.84	55.60	55.86	58.30	61.19	64.07	67.01	70.07	72.97	73.77	71.61	68.59	65.31	62.56
HORIZONTAL CURVATURE EAST BOUND	R=∞	A=160	R=400	A=160	R=∞	A=250	R=500	A=250	R=∞								
HORIZONTAL CURVATURE WEST BOUND	R=∞	A=160	R=400	A=160	R=∞	A=250	R=500	A=250	R=∞								

KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : PRE-FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : H = 1/5,000 V = 1/500 FULL SIZE A3
DRAWING TITLE : E3-2 PLAN AND PROFILE Sta. 6+531 - 8+100	DRAWING NO : E3-2/R-01 SHEET NO : 1 / 12			

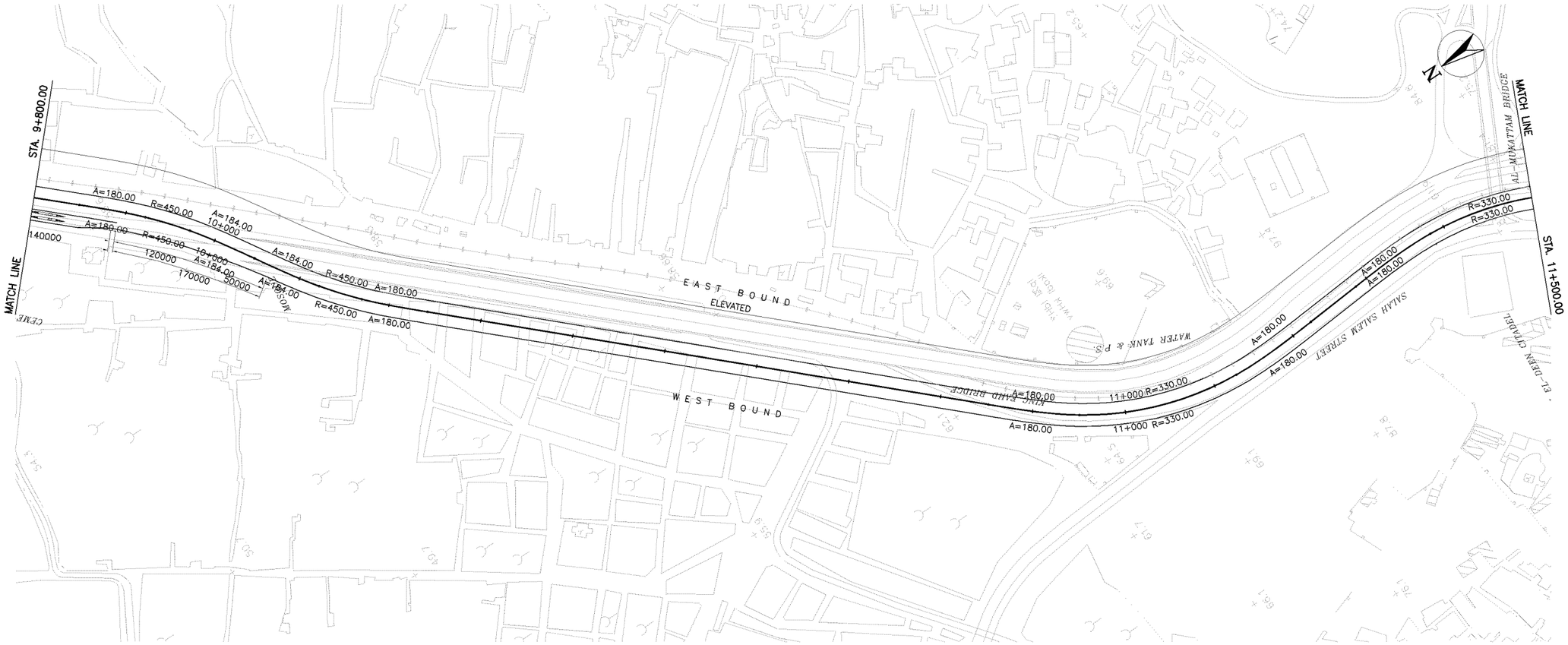


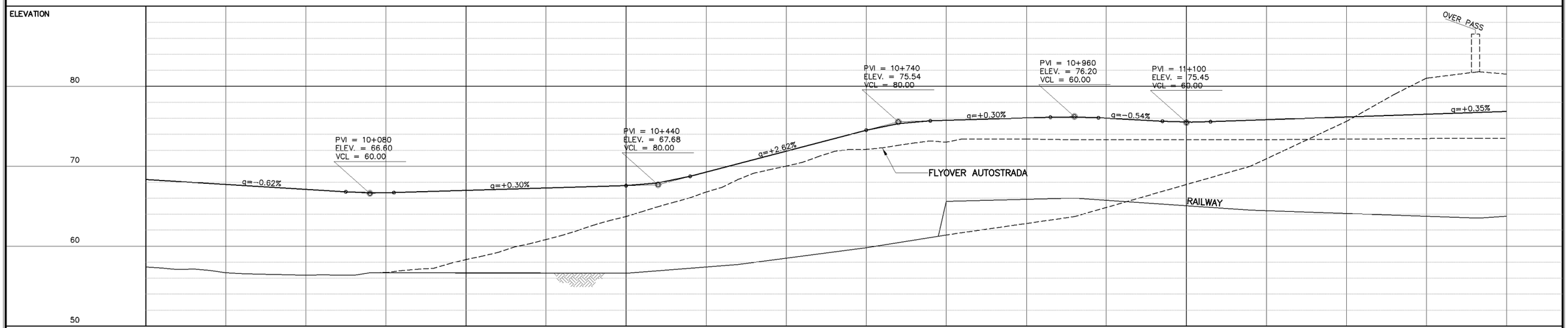


STATION	8+100	8+200	8+300	8+400	8+500	8+600	8+700	8+800	8+900	9+000	9+100	9+200	9+300	9+400	9+500	9+600	9+700	9+800
FINISHED GRADE	72.85	71.68	70.51	69.34	68.17	67.07	66.70	66.40	66.10	65.80	65.60	66.55	67.59	68.64	69.69	69.57	68.95	68.33
ORIGINAL GRADE	62.56	61.62	60.70	58.32	56.36	55.97	56.22	56.25	56.07	55.67	55.51	56.05	57.16	58.07	59.12	58.73	58.35	57.40
HORIZONTAL CURVATURE EAST BOUND			A=240	R=600	A=240		R=∞			A=200	R=500	A=200			R=∞			
HORIZONTAL CURVATURE WEST BOUND			A=240	R=600	A=240		R=∞			A=200	R=500	A=200			R=∞			

KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : PRE-FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : H = 1/5,000 V = 1/500 FULL SIZE A3

DRAWING TITLE :	DRAWING NO :
E3-2 PLAN AND PROFILE Sta. 8+100 - 9+800	E3-2/R-02 SHEET NO : 2 / 12

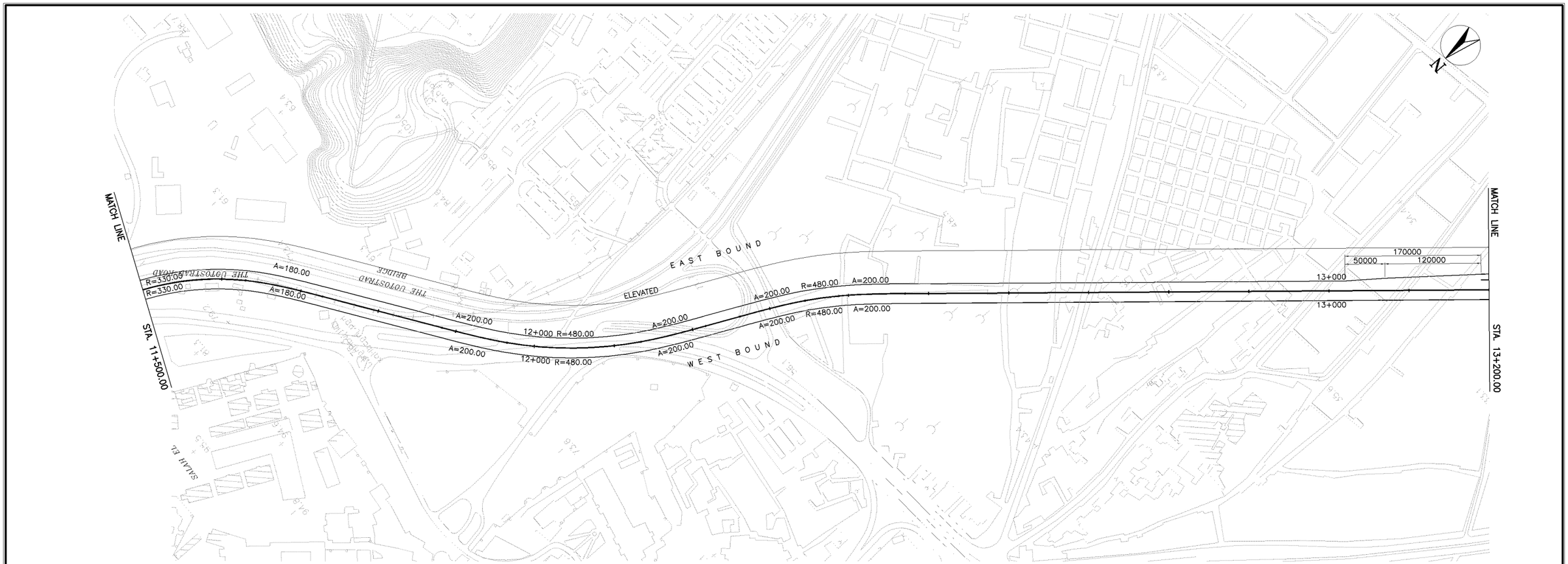


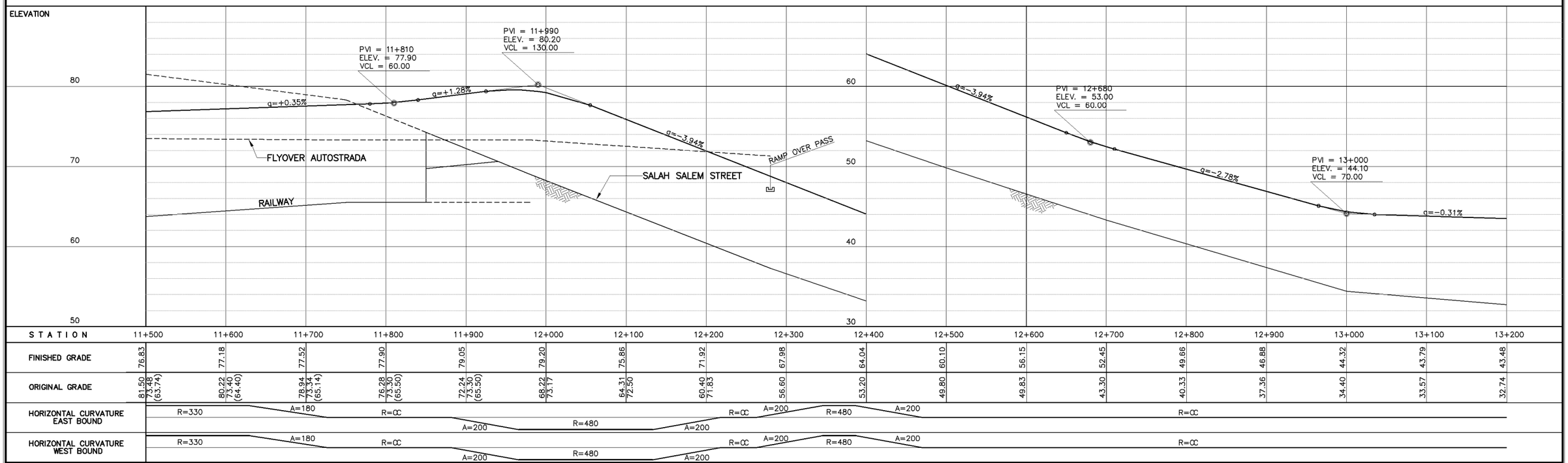


STATION	9+800	9+900	10+000	10+100	10+200	10+300	10+400	10+500	10+600	10+700	10+800	10+900	11+000	11+100	11+200	11+300	11+400	11+500
FINISHED GRADE	68.33	67.71	67.09	66.67	66.96	67.26	67.56	69.25	71.87	74.49	75.72	76.02	75.99	75.52	75.80	76.14	76.49	76.83
ORIGINAL GRADE	57.40	56.68	56.35	56.67 56.70	56.64 58.32	56.62 60.83	56.60 63.70	57.39 66.76	58.49 70.00	59.80 72.10	61.40 73.00 (65.60)	62.83 73.40 (65.85)	64.84 73.30 (65.73)	67.71 73.30 (65.05)	70.93 73.31 (64.43)	75.60 73.38 (64.08)	81.00 73.45 (63.73)	81.50 73.48 (63.74)
HORIZONTAL CURVATURE EAST BOUND	A=180 R=450 A=184			A=184 R=450 A=180			R=∞					A=180	R=330		A=180	R=∞ A=180	R=330	
HORIZONTAL CURVATURE WEST BOUND	A=180 R=450 A=184			A=184 R=450 A=180			R=∞					A=180	R=330		A=180	R=∞ A=180	R=330	

KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : PRE-FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY

SCALE :	DRAWING TITLE :	DRAWING NO :
H = 1/5,000 V = 1/500 FULL SIZE A3	E3-2 PLAN AND PROFILE Sta. 9+800 - 11+500	E3-2/R-03 SHEET NO : 3 / 12





STATION	11+500	11+600	11+700	11+800	11+900	12+000	12+100	12+200	12+300	12+400	12+500	12+600	12+700	12+800	12+900	13+000	13+100	13+200
FINISHED GRADE	76.83	77.18	77.52	77.90	79.05	79.20	75.86	71.92	67.98	64.04	60.10	56.15	52.45	49.66	46.88	44.32	43.79	43.48
ORIGINAL GRADE	81.50 / 73.48 (63.74)	80.22 / 73.40 (64.40)	78.94 / 73.34 (65.14)	76.28 / 73.50 (65.50)	72.24 / 73.30 (65.50)	68.22 / 73.17	64.31 / 72.50	60.40 / 71.83	56.60	53.20	49.80	49.83	43.30	40.33	37.36	34.40	33.57	32.74
HORIZONTAL CURVATURE EAST BOUND	R=330	A=180	R=∞	A=200	R=480	R=∞	A=200	R=480	A=200	R=480	A=200	R=∞						
HORIZONTAL CURVATURE WEST BOUND	R=330	A=180	R=∞	A=200	R=480	R=∞	A=200	R=480	A=200	R=480	A=200	R=∞						

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL AUTHORITY FOR ROADS
BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

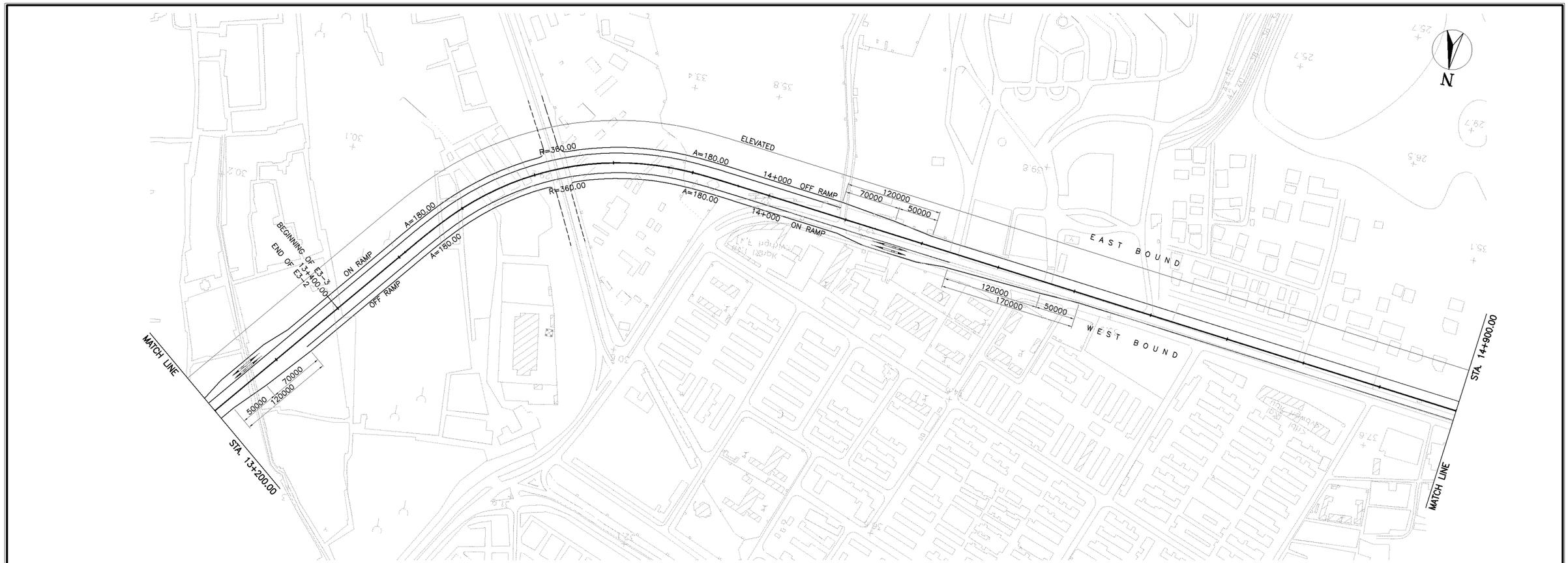
PROJECT AND LOCATION :
PRE-FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

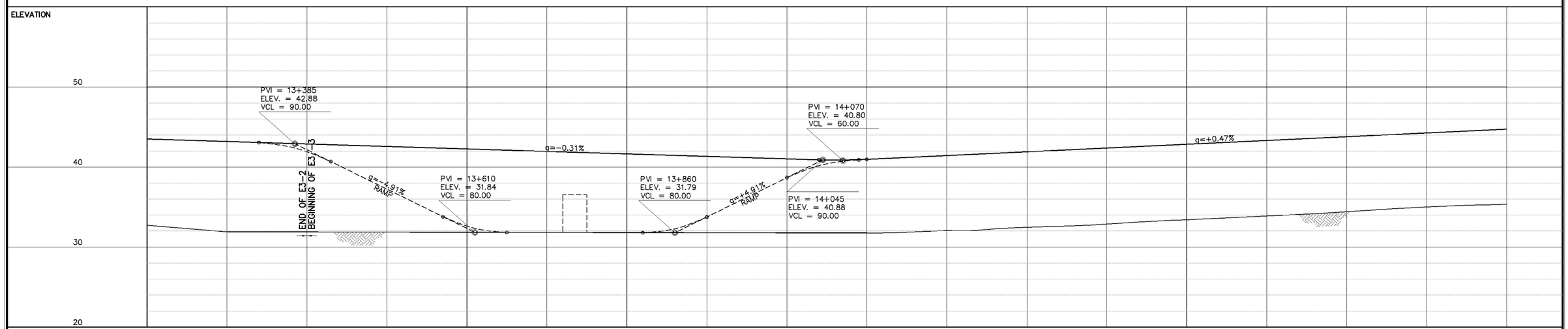
SCALE :
H = 1/5,000
V = 1/500
FULL SIZE A3

DRAWING TITLE :
E3-2
PLAN AND PROFILE
Sta. 11+500 - 13+200

DRAWING NO :
E3-2/R-04

SHEET NO :
4 / 22





STATION	13+200	13+300	13+400	13+500	13+600	13+700	13+800	13+900	14+000	14+100	14+200	14+300	14+400	14+500	14+600	14+700	14+800	14+900
FINISHED GRADE	43.48	43.17	42.87	42.56	42.25	41.94	41.63	41.32	41.02	40.94	41.42	41.89	42.36	42.83	43.31	43.78	44.25	44.73
ORIGINAL GRADE	32.74	31.90	31.88	31.86	31.84	31.82	31.80	31.78	31.76	31.74	32.08	32.46	32.87	33.40	33.88	34.41	35.01	35.34
HORIZONTAL CURVATURE EAST BOUND	R=∞		A=180		R=360			A=180			R=∞							
HORIZONTAL CURVATURE WEST BOUND	R=∞		A=180		R=360			A=180			R=∞							

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GENERAL AUTHORITY FOR ROADS
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MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

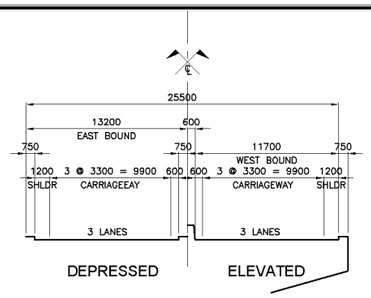
PROJECT AND LOCATION :
PRE-FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

SCALE :
H = 1/5,000
V = 1/500
FULL SIZE A3

DRAWING TITLE :
E3-2
PLAN AND PROFILE
Sta. 13+200 - 13+400

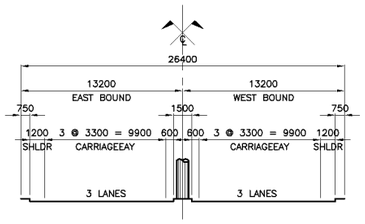
DRAWING NO :
E3-2/R-05

SHEET NO :
5 / 22



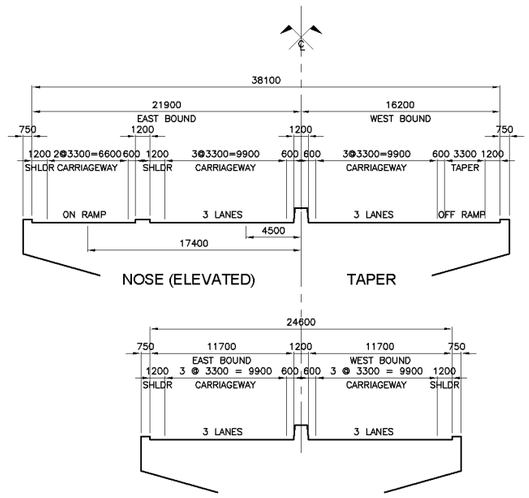
TRANSITION (DEPRESSED TO ELEVATED)
Sta. 7+675 - Sta. 8+010

SCALE: 1 : 500 M.



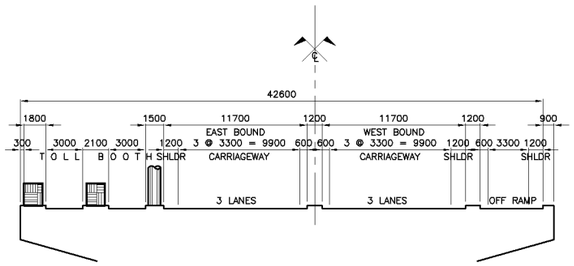
DEPRESSED
Sta. 7+160 - Sta. 7+675

SCALE: 1 : 500 M.



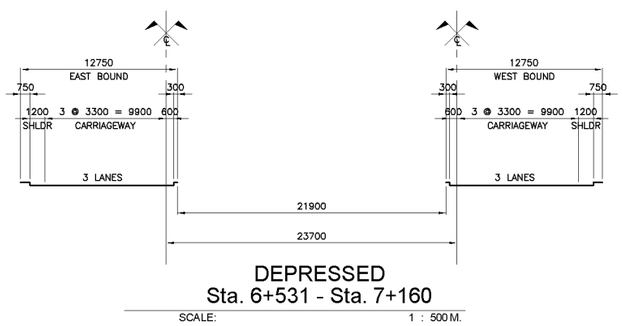
ELEVATED
Sta. 8+010 - Sta. 13+400

SCALE: 1 : 500 M.



ELEVATED TOLL BOOTH

SCALE: 1 : 500 M.

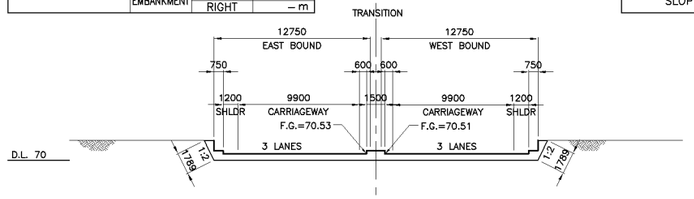


DEPRESSED
Sta. 6+531 - Sta. 7+160

SCALE: 1 : 500 M.

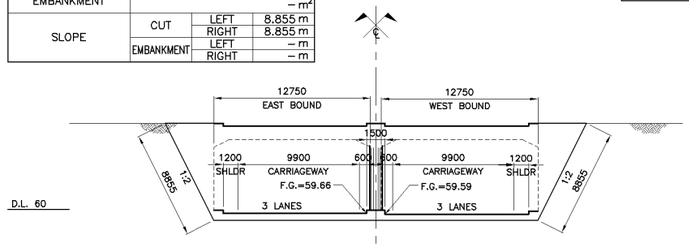
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : PRE-FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1 : 500 FULL SIZE A3	DRAWING TITLE : TYPICAL ROAD SECTION	DRAWING NO : E3-2/R-06 SHEET NO : 6 / 12

CUT			15.524 m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	1.789 m
		RIGHT	1.789 m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



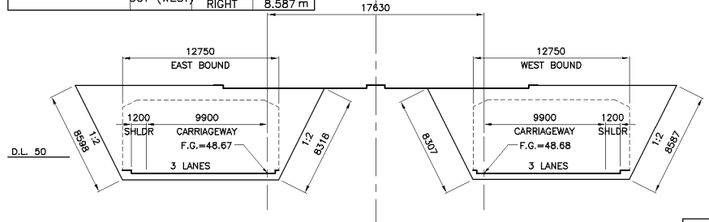
STA. 7+800
O.G. = 71.61

CUT			234.601 m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	8.855 m
		RIGHT	8.855 m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



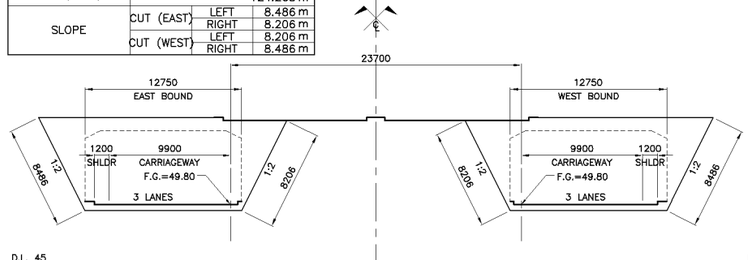
STA. 7+400
O.G. = 67.01

CUT (EAST)			125.536 m²
CUT (WEST)			125.333 m²
SLOPE	CUT (EAST)	LEFT	8.598 m
		RIGHT	8.318 m
	CUT (WEST)	LEFT	8.307 m
		RIGHT	8.587 m



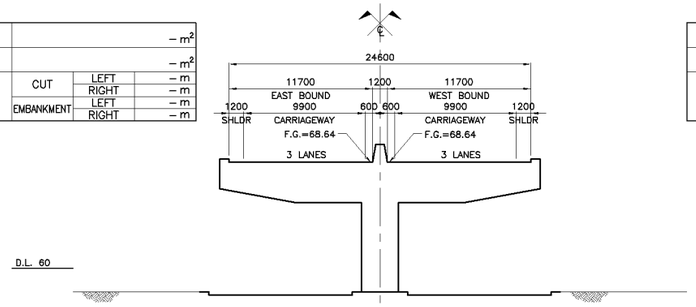
STA. 7+000
O.G. = 55.86

CUT (EAST)			124.268 m²
CUT (WEST)			124.268 m²
SLOPE	CUT (EAST)	LEFT	8.486 m
		RIGHT	8.206 m
	CUT (WEST)	LEFT	8.206 m
		RIGHT	8.486 m



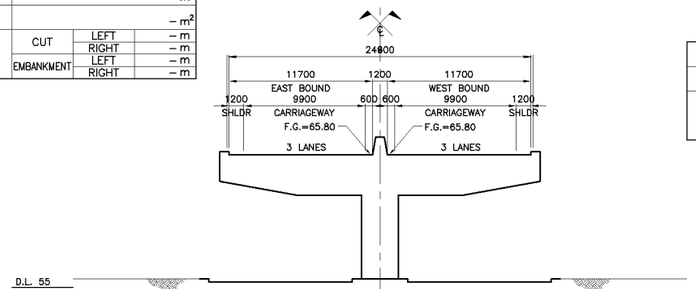
STA. 6+600
O.G. = 56.89

CUT			– m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	– m
		RIGHT	– m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



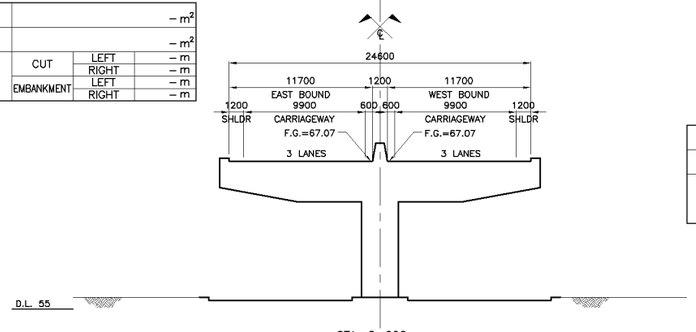
STA. 9+400
O.G. = 58.07

CUT			– m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	– m
		RIGHT	– m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



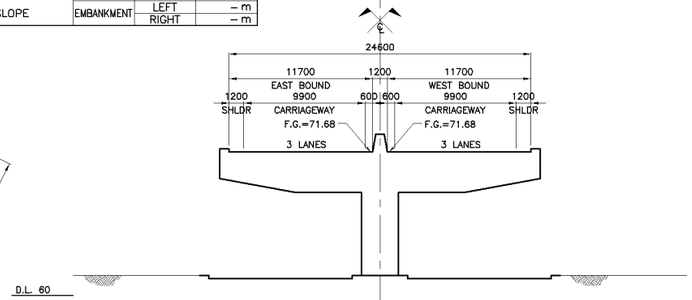
STA. 9+000
O.G. = 55.67

CUT			– m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	– m
		RIGHT	– m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



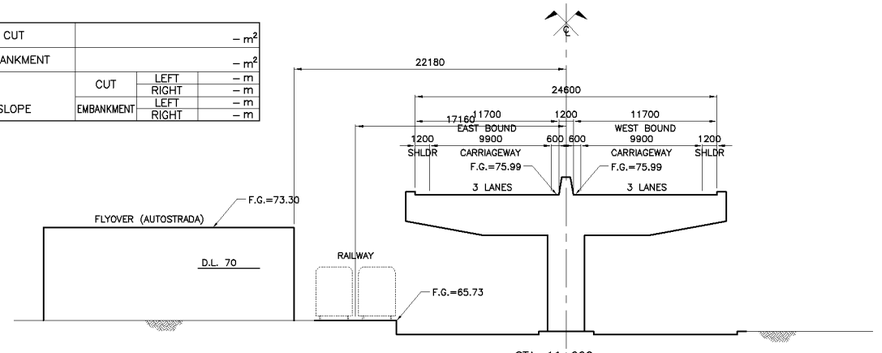
STA. 8+600
O.G. = 55.97

CUT			– m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	– m
		RIGHT	– m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



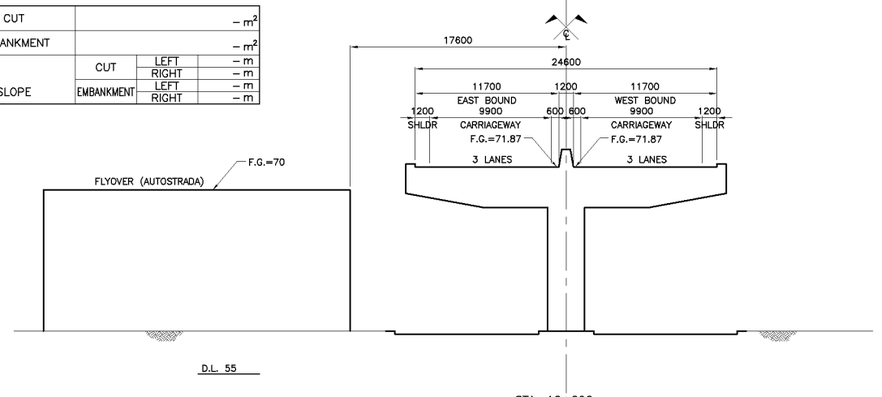
STA. 8+200
O.G. = 61.62

CUT			– m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	– m
		RIGHT	– m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



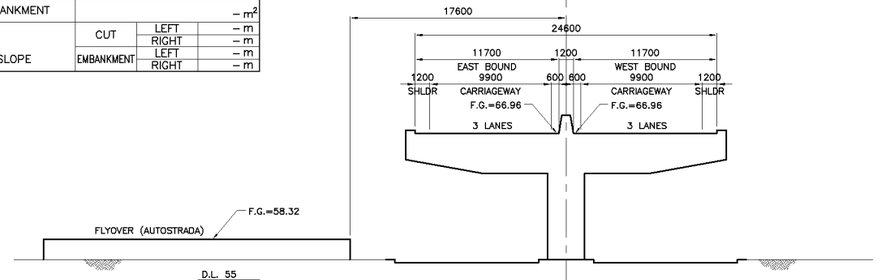
STA. 11+000
O.G. = 64.84

CUT			– m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	– m
		RIGHT	– m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



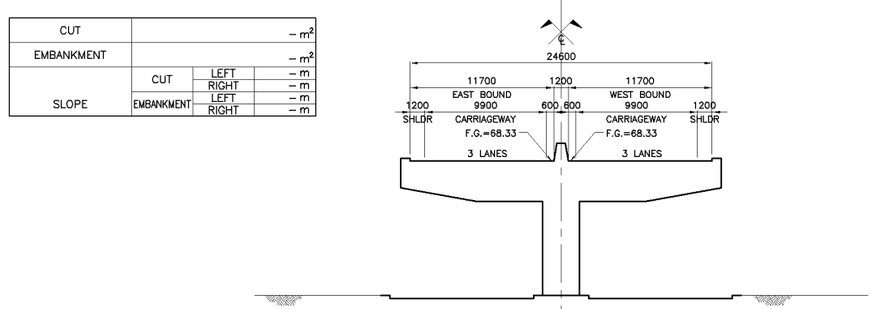
STA. 10+600
O.G. = 58.49

CUT			– m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	– m
		RIGHT	– m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



STA. 10+200
O.G. = 56.64

CUT			– m²
EMBANKMENT			– m²
SLOPE	CUT	LEFT	– m
		RIGHT	– m
	EMBANKMENT	LEFT	– m
		RIGHT	– m



STA. 9+800
O.G. = 57.40

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL AUTHORITY FOR ROADS
BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

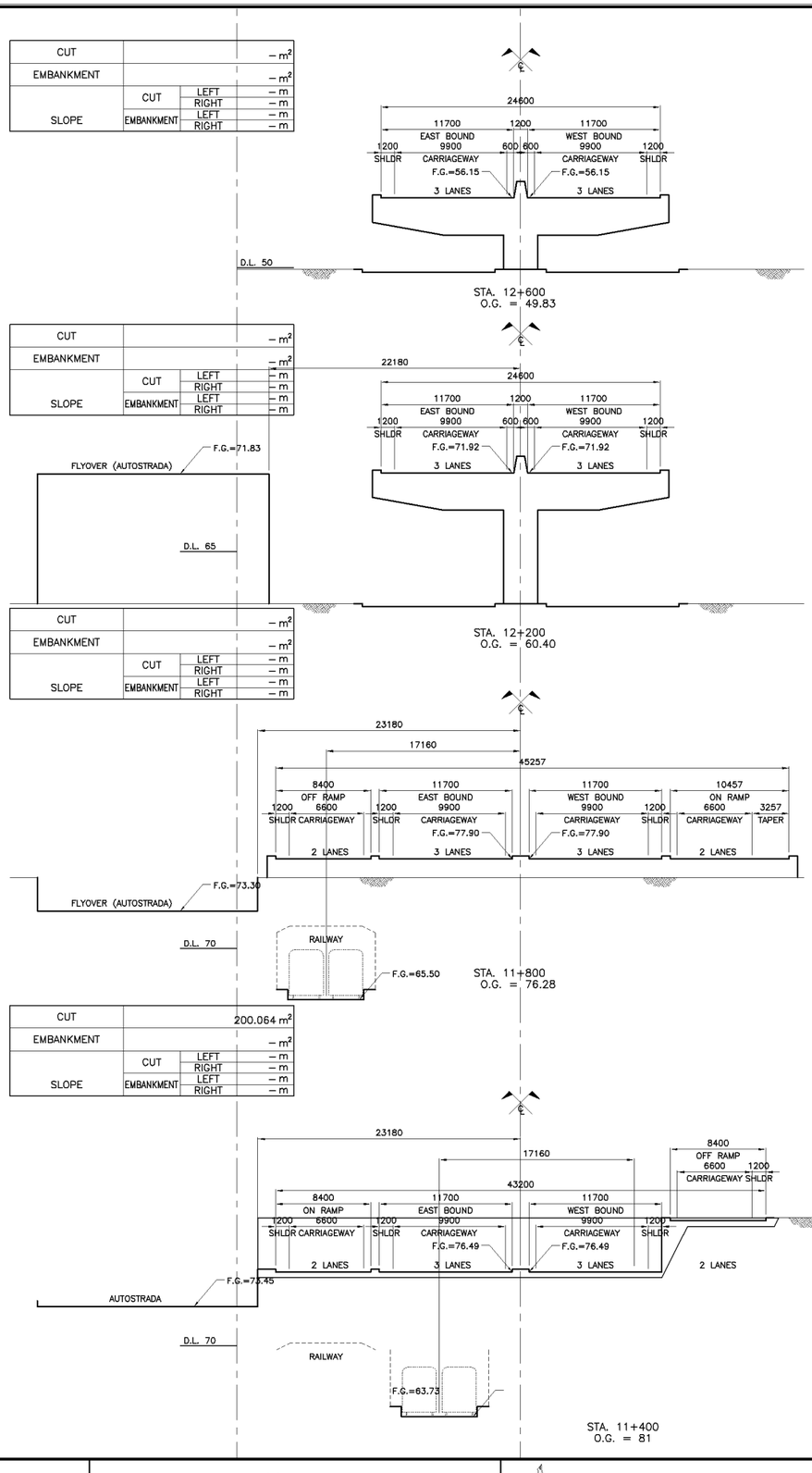
PROJECT AND LOCATION :
PRE-FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

SCALE :
1 : 500
FULL SIZE A3

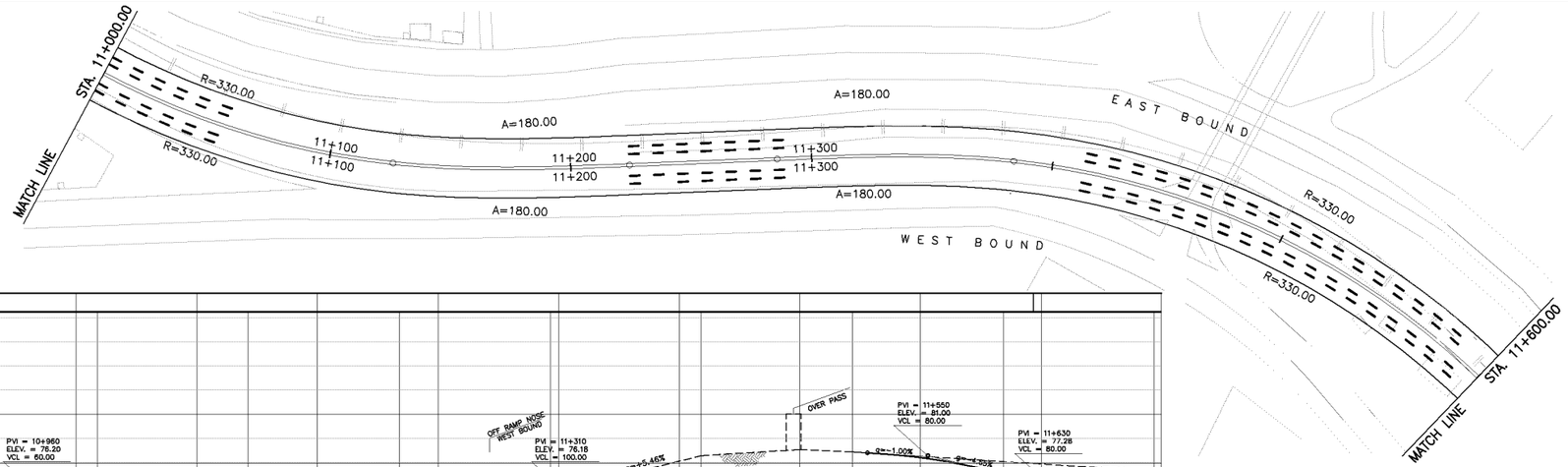
DRAWING TITLE :
CROSS SECTION
Sta. 6+600 - Sta. 11+000

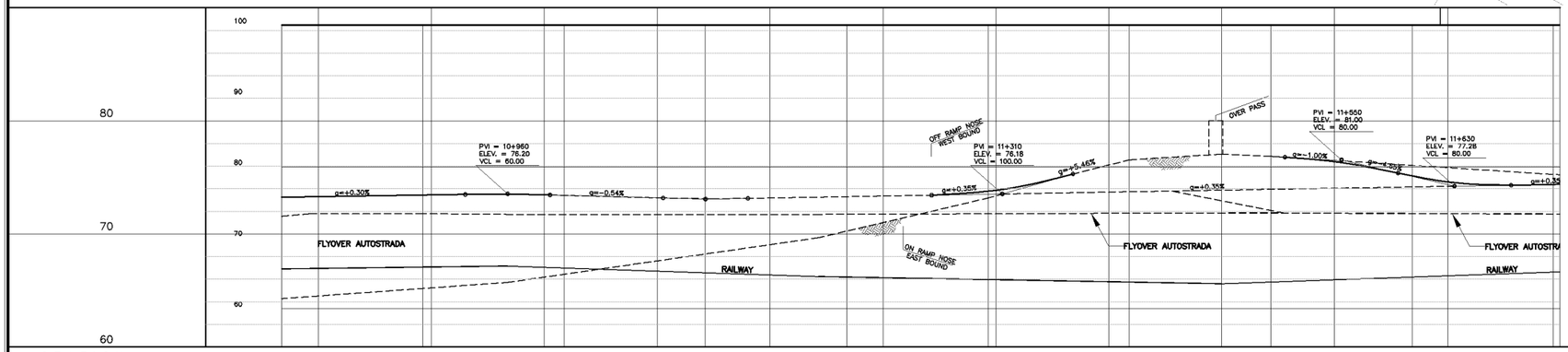
DRAWING NO :
E3-2/R-07

SHEET NO :
7 / 12

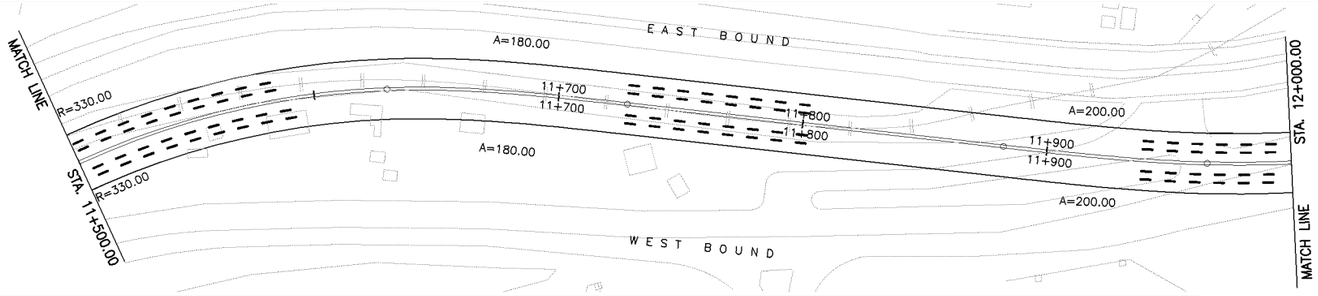


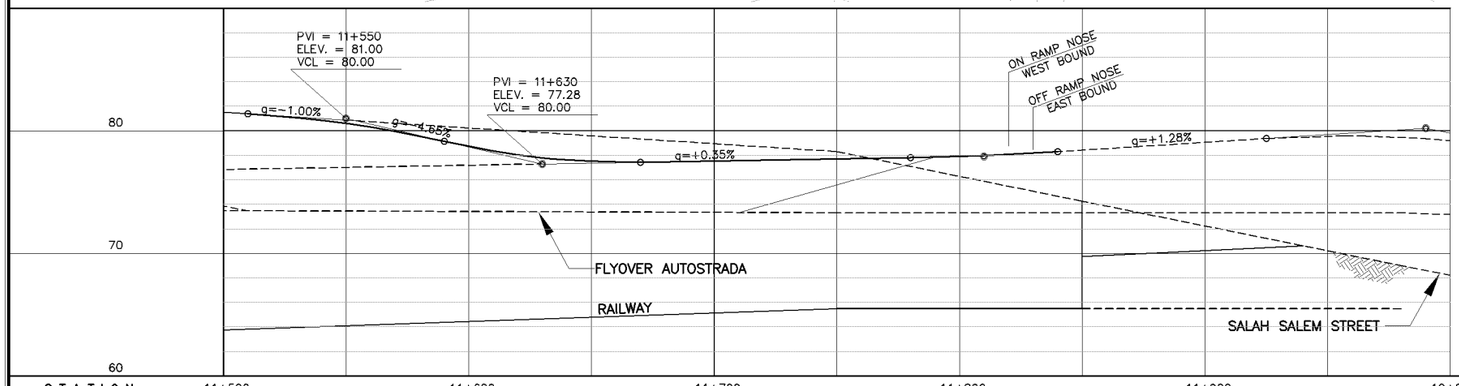
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY
GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : PRE-FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY
SCALE : 1 : 500 FULL SIZE A3	DRAWING TITLE : CROSS SECTION Sta. 11+400 - Sta. 13+400
DRAWING NO : E3-2/R-08 SHEET NO : 8 / 22	





STATION	11+000	11+100	11+200	11+300	11+400	11+500	11+600
FINISHED GRADE				76.00 76.56	81.00	81.40	78.68
ORIGINAL GRADE	64.84 73.30 (65.73)	67.71 73.30 (65.05)	70.93 73.31 (64.43)	75.60 73.38 (64.08)	81.00 73.45 (63.73)	81.50 73.48 (63.74)	80.22 73.40 (64.40)





STATION	11+500	11+600	11+700	11+800	11+900	12+000
FINISHED GRADE	81.40	78.68	77.42 77.52	77.90	79.05	79.20
ORIGINAL GRADE	81.50 73.48 (63.74)	80.22 73.40 (64.40)	78.94 73.34 (65.14)	76.28 73.30 (65.50)	72.24 73.30 (65.50)	68.22 73.17

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

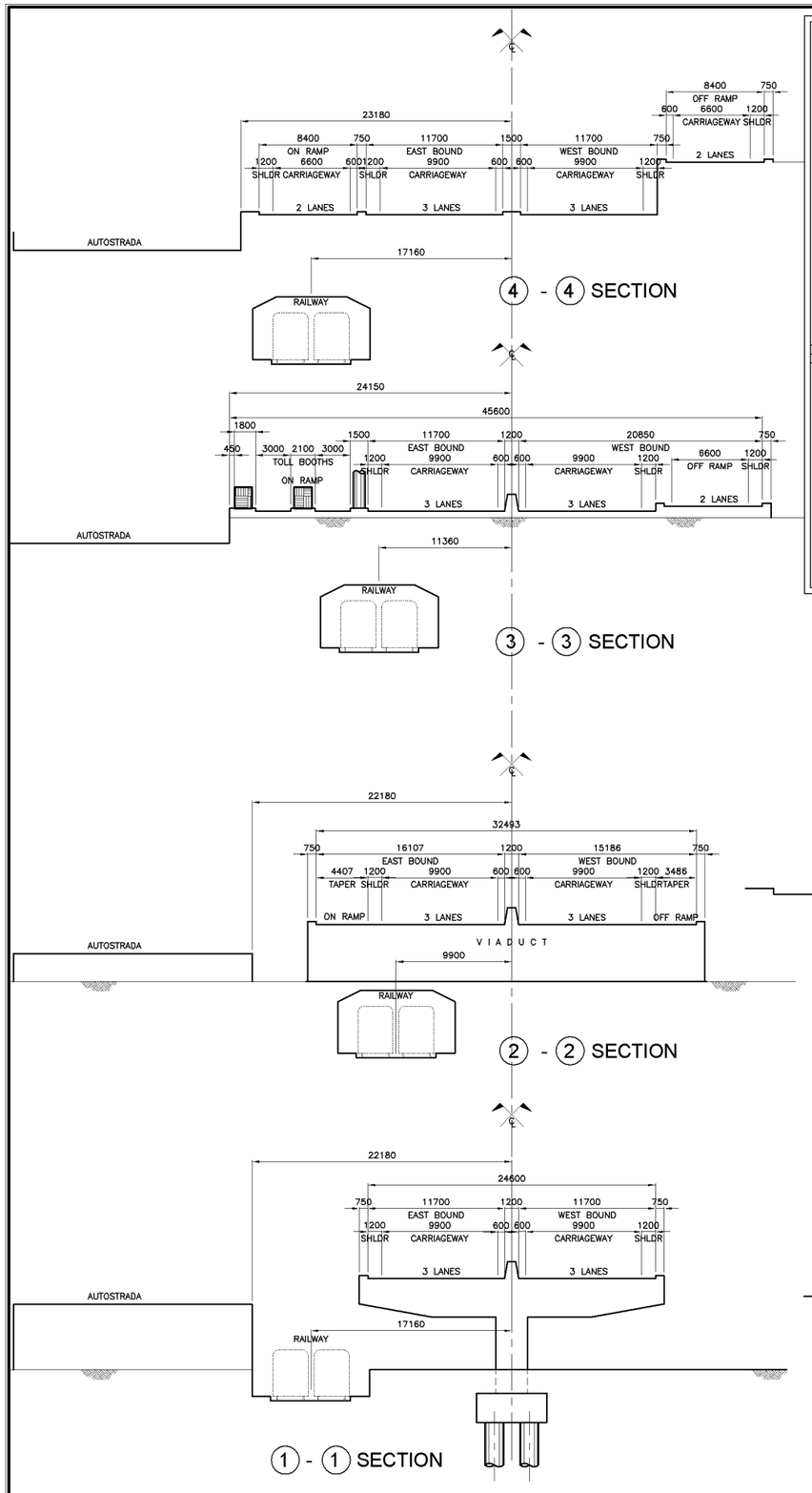
PROJECT AND LOCATION :
PRE-FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

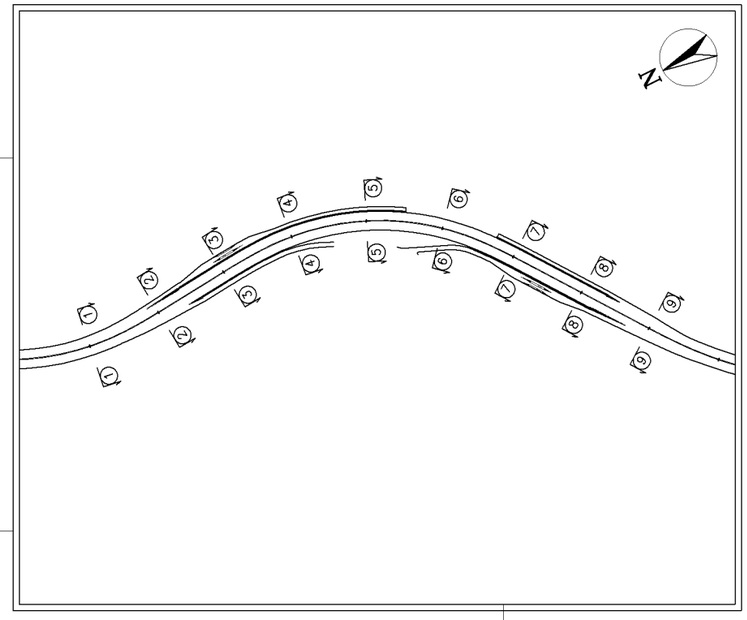
SCALE :
H = 1/2,500
V = 1/500
FULL SIZE A3

DRAWING TITLE :
ON/OFF RAMP NO. 1
PLAN AND PROFILE
Sta. 11+000 - 12+000

DRAWING NO :
E3-2/R-09

SHEET NO :
9 / 12



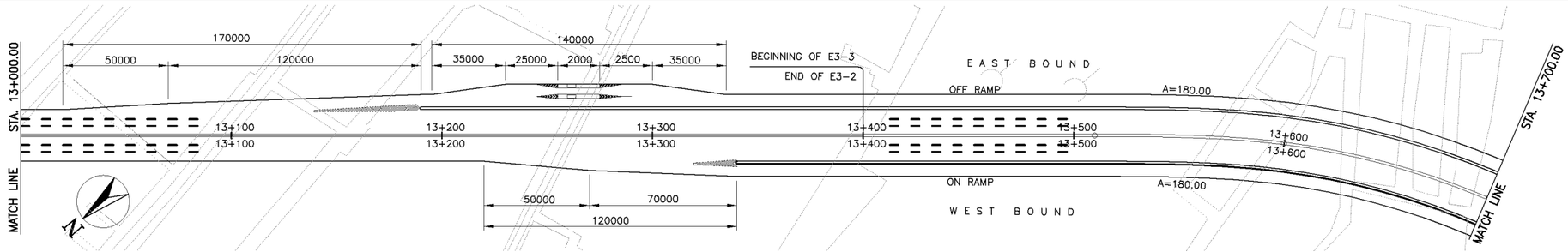


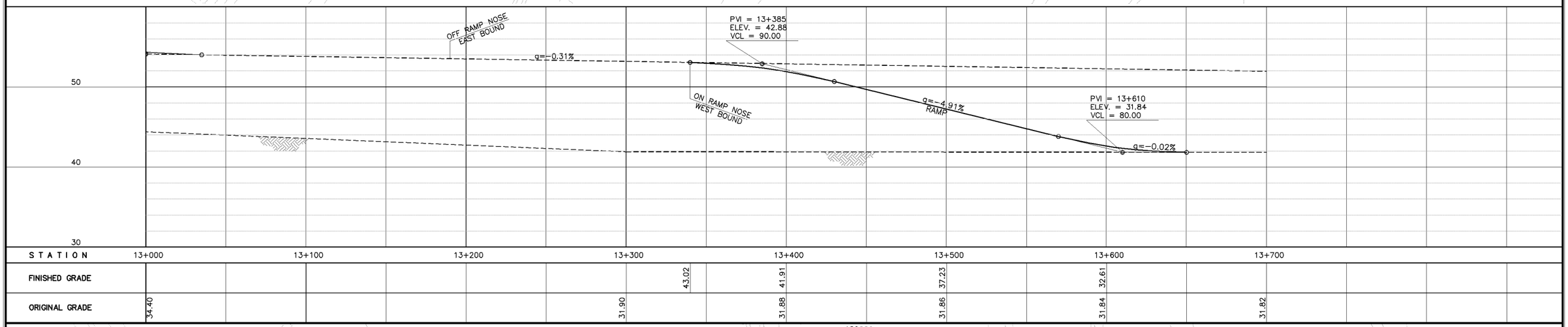
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : PRE-FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : SECTION 1 : 500 PLAN 1 : 8000 FULL SIZE A3

DRAWING TITLE :
ON / OFF RAMP NO. 1
CROSS SECTION
Sta. 11+000 - Sta. 12+000

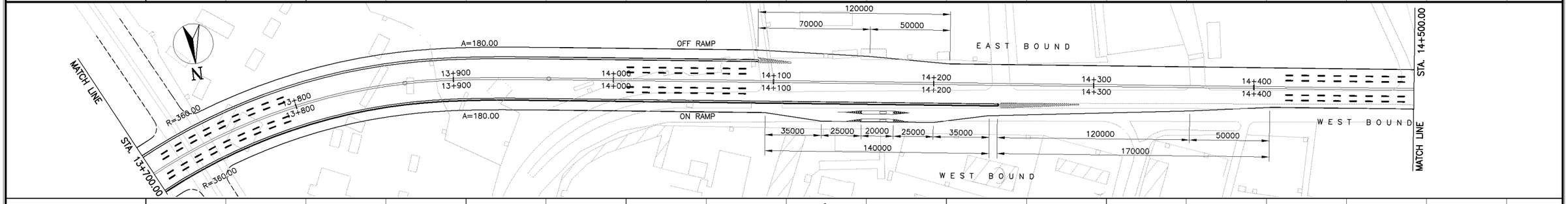
DRAWING NO : E3-2/R-10

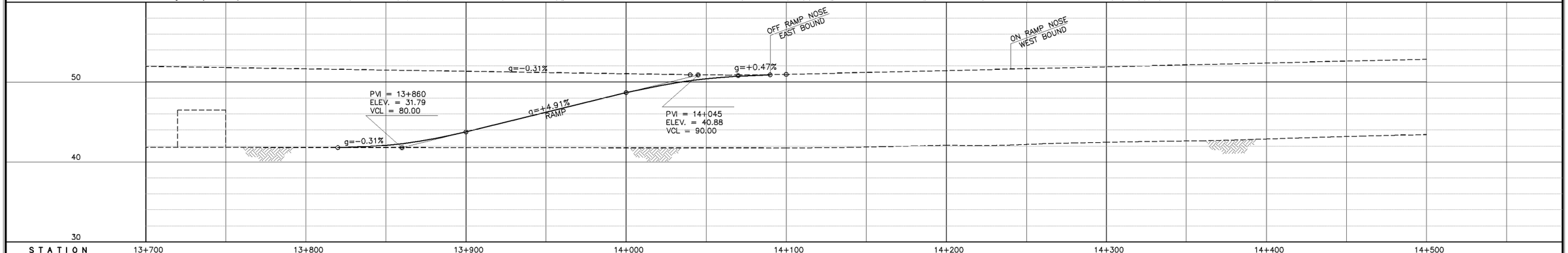
SHEET NO : 10 / 12





STATION	13+000	13+100	13+200	13+300	13+400	13+500	13+600	13+700
FINISHED GRADE				43.02	41.91	37.23	32.61	
ORIGINAL GRADE	34.40			31.90	31.88	31.86	31.84	31.82





STATION	13+700	13+800	13+900	14+000	14+100	14+200	14+300	14+400	14+500
FINISHED GRADE		31.78	33.75	38.66			41.89	42.36	42.83
ORIGINAL GRADE	31.82	31.80	31.78	31.76	31.74	32.08	32.46	32.87	33.40

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

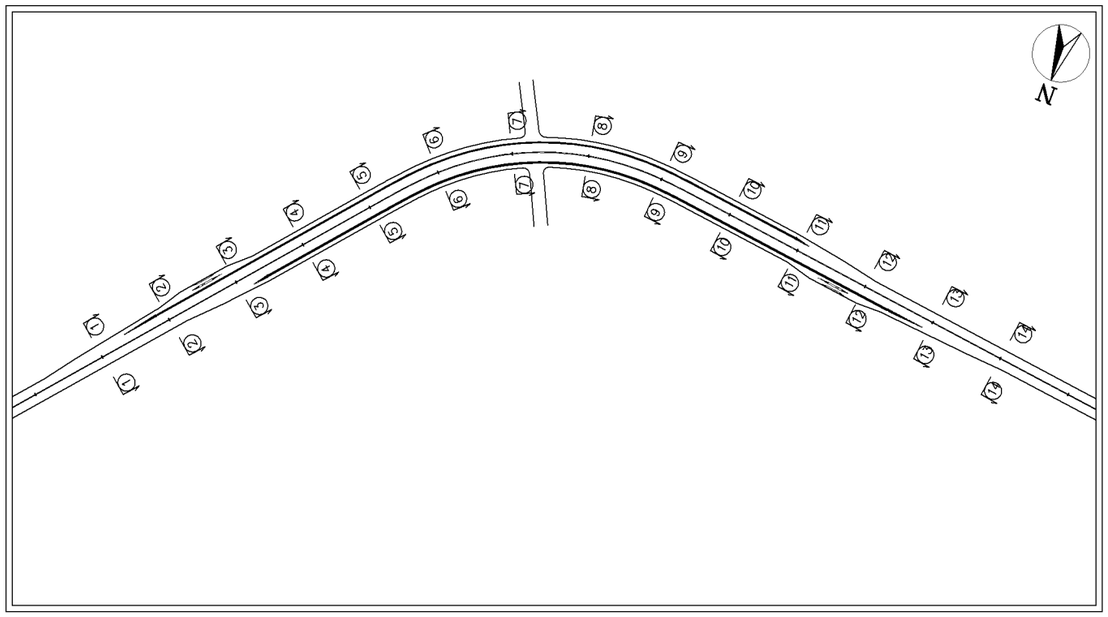
PROJECT AND LOCATION :
PRE-FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

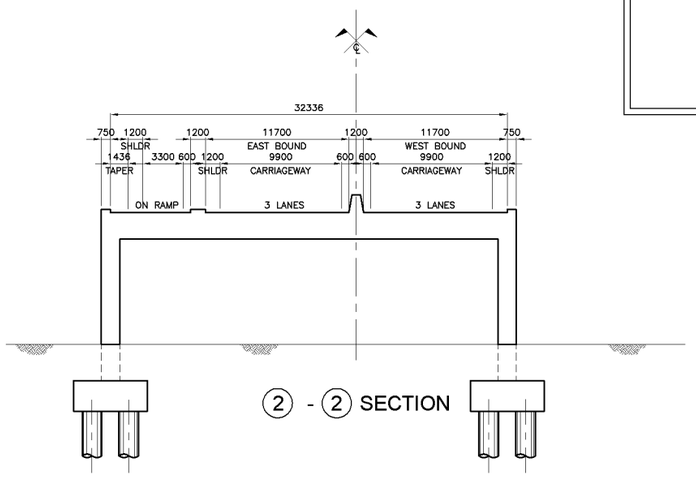
SCALE :
H = 1/2,500
V = 1/500
FULL SIZE A3

DRAWING TITLE :
ON/OFF RAMPS NO. 2
PLAN AND PROFILE
Sta. 13+000 - 13+400

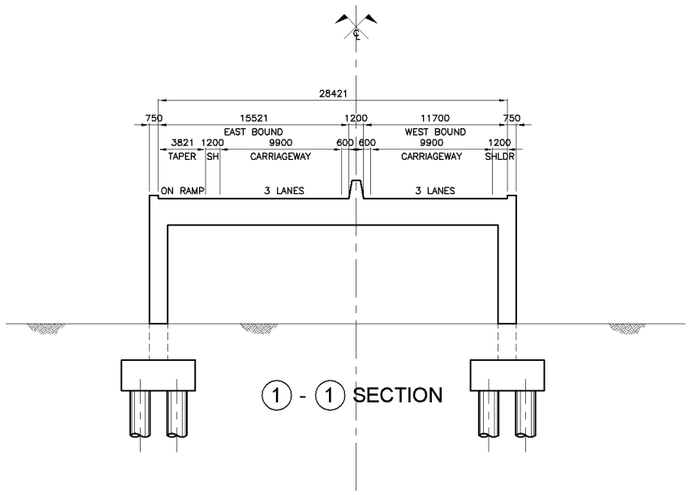
DRAWING NO :
E3-2/R-11

SHEET NO :
11 / 12

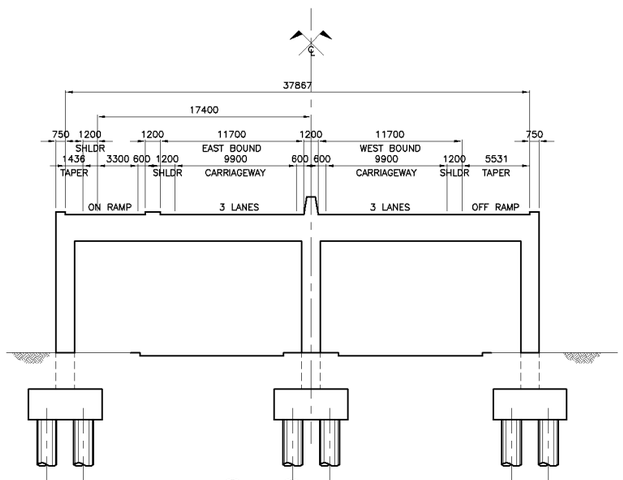




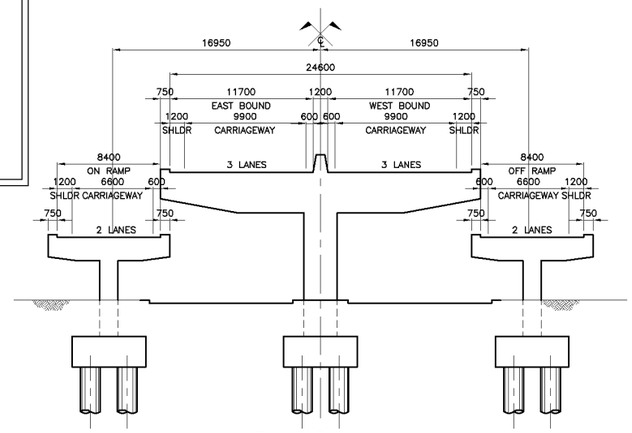
② - ② SECTION



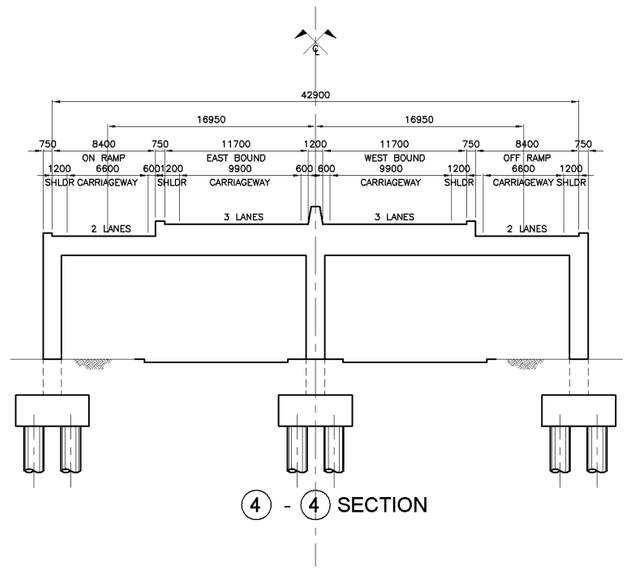
① - ① SECTION



③ - ③ SECTION



⑤ - ⑤ SECTION



④ - ④ SECTION

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL AUTHORITY FOR ROADS
BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

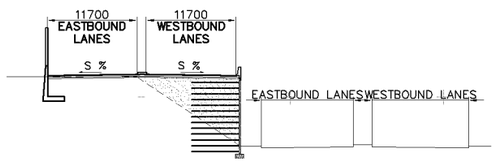
PROJECT AND LOCATION :
PRE-FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

SCALE :
SECTION 1 : 500
PLAN 1 : 8000
FULL SIZE A3

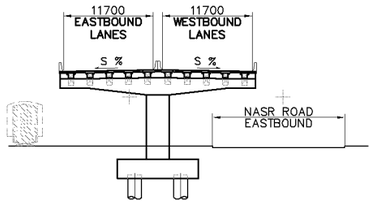
DRAWING TITLE :
ON / OFF RAMP NO. 2 (1/2)
CROSS SECTION
Sta. 13+000 - Sta. 13+400

DRAWING NO :
E3-2/R-12

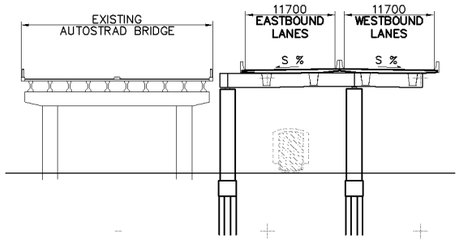
SHEET NO :
12 / 12



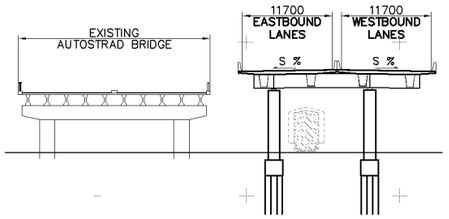
5 SCALE **APPROACH SECTION** 1:800



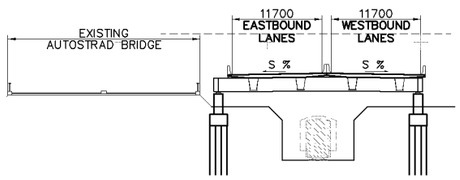
6 SCALE **TYPICAL SINGLE PIER SECTION** 1:800



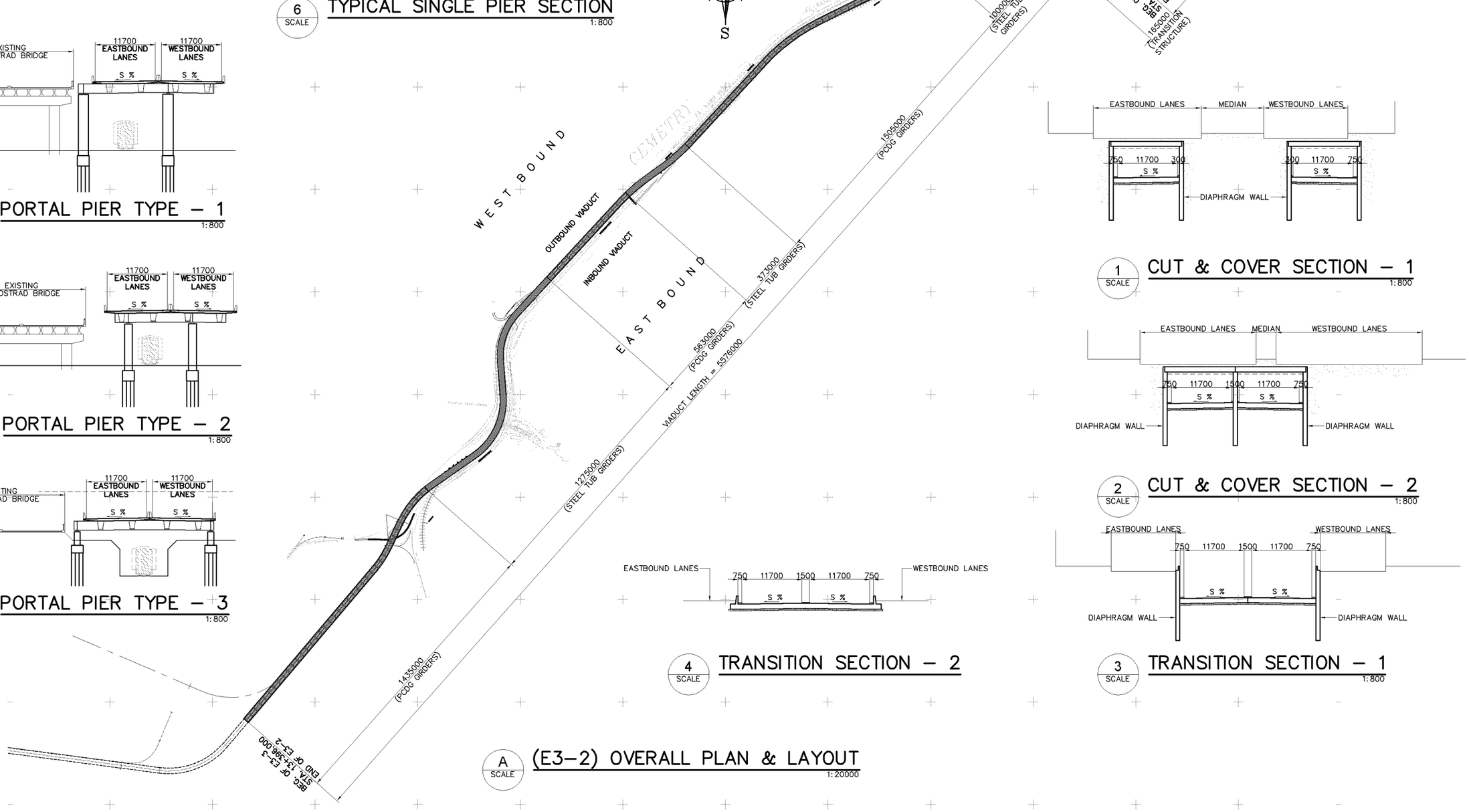
7 SCALE **PORTAL PIER TYPE – 1** 1:800



8 SCALE **PORTAL PIER TYPE – 2** 1:800



9 SCALE **PORTAL PIER TYPE – 3** 1:800



A SCALE **(E3–2) OVERALL PLAN & LAYOUT** 1:20000

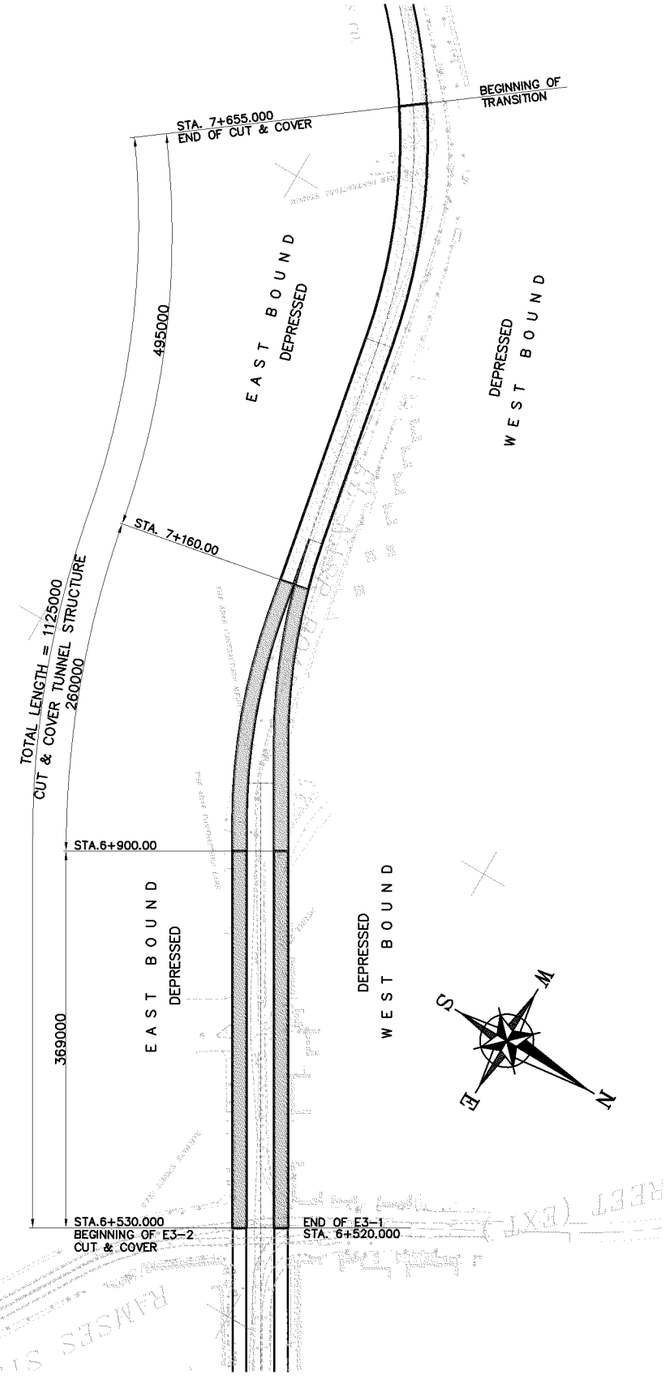
4 SCALE **TRANSITION SECTION – 2**

1 SCALE **CUT & COVER SECTION – 1** 1:800

2 SCALE **CUT & COVER SECTION – 2** 1:800

3 SCALE **TRANSITION SECTION – 1** 1:800

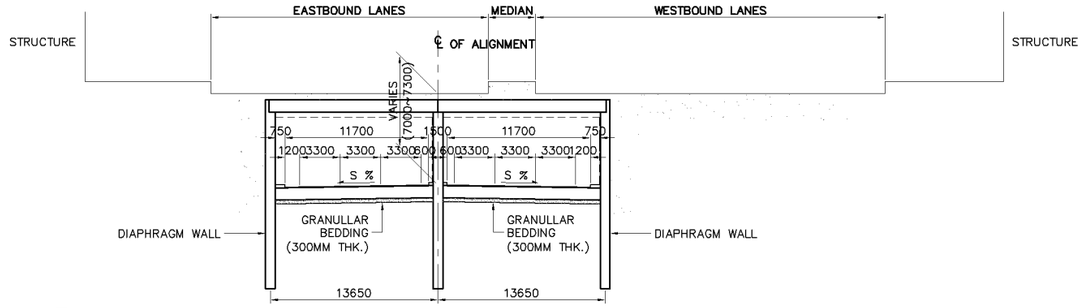
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:20000 FULL SIZE A3	DRAWING TITLE : (E3-2) OVERALL PLAN & LAYOUT	DRAWING NO : E3-2/S-01 SHEET NO : 01 / 19



A SCALE

PLAN DEPRESSED (EASTBOUND – WESTBOUND) STA. 6+531.000 TO STA. 7+654.004

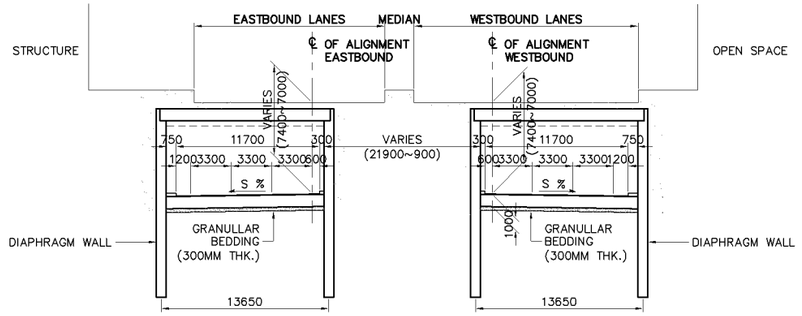
SCALE : 1:6000



3 SCALE

TYPICAL SECTION – STA. 7+160.000 TO 7+655.000

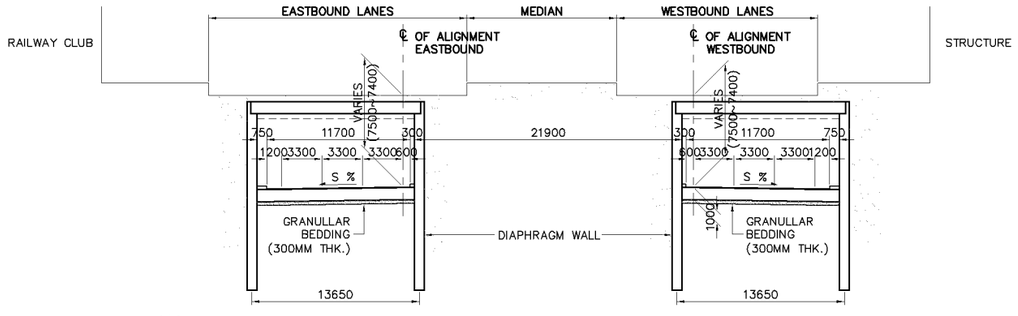
1:500



2 SCALE

TYPICAL SECTION – STA. 6+900.000 TO 7+160.000

1:500



1 SCALE

TYPICAL SECTION – STA. 6+530.000 TO 6+900.000

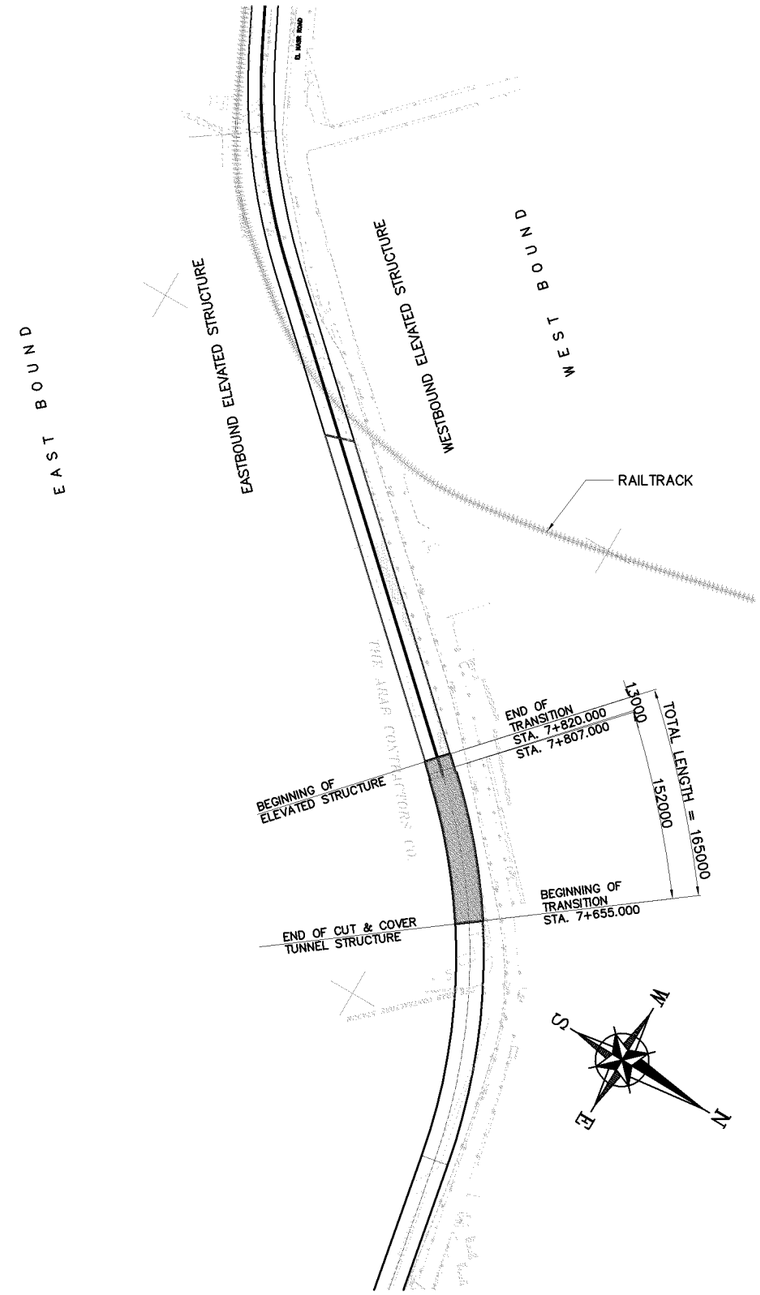
1:500

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

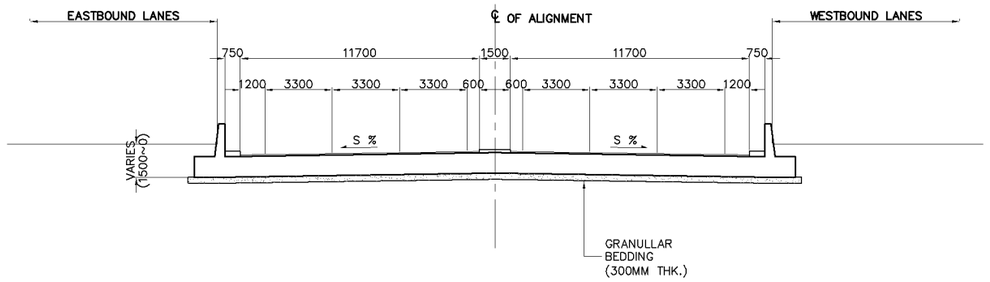
GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

PROJECT AND LOCATION :	SCALE :	DRAWING TITLE :	DRAWING NO :
FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	1:6000 1:500 FULL SIZE A3	CUT AND COVER TUNNEL SECTIONS (STA. 6+530 TO - STA. 7+655)	E3-2/S-2
			SHEET NO : 2 / 19



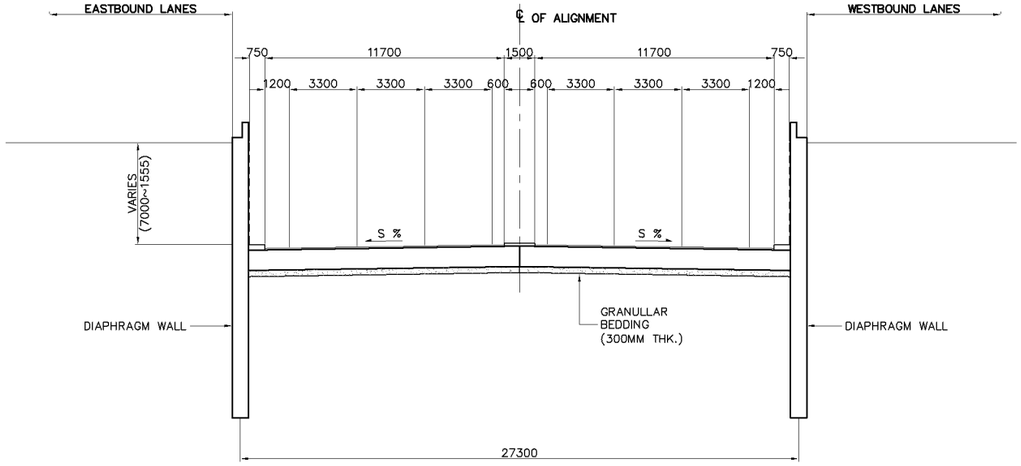
A SCALE — PLAN – STA. 7+654.004 TO STA. 7+818.620

SCALE : 1:6000



2 SCALE — TYPICAL SECTION – STA. 7+807.000 TO 7+820.000

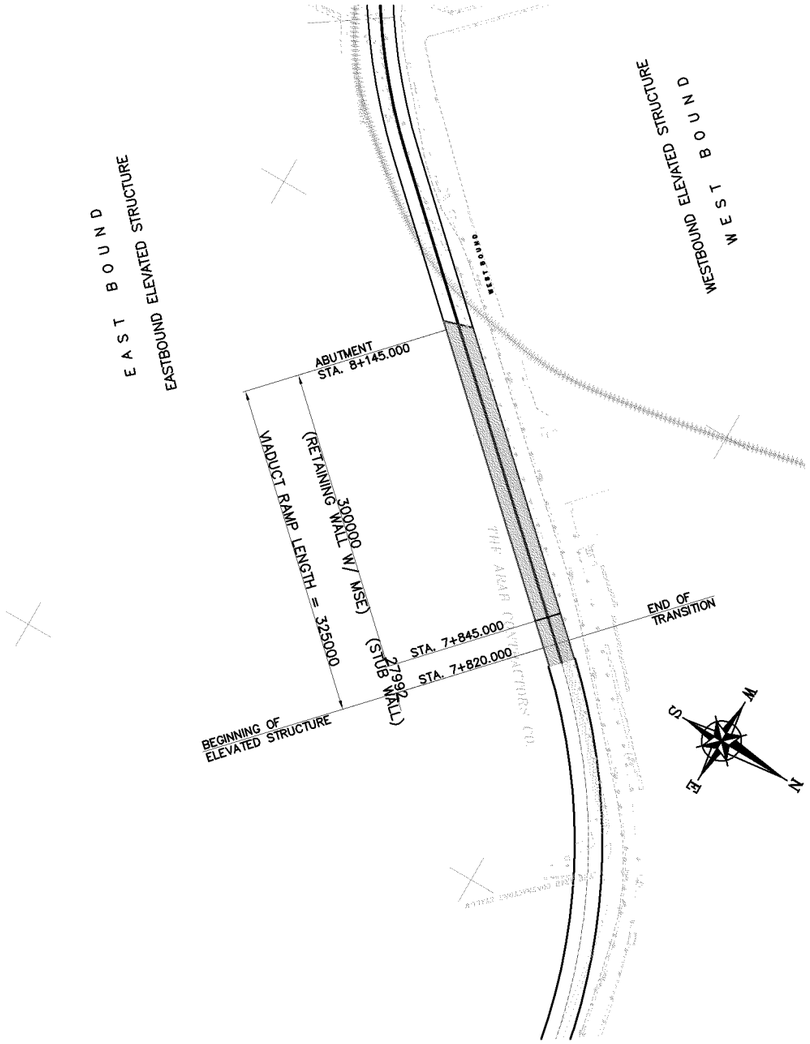
1:300



1 SCALE — TYPICAL SECTION – STA. 7+655.000 TO 7+807.000

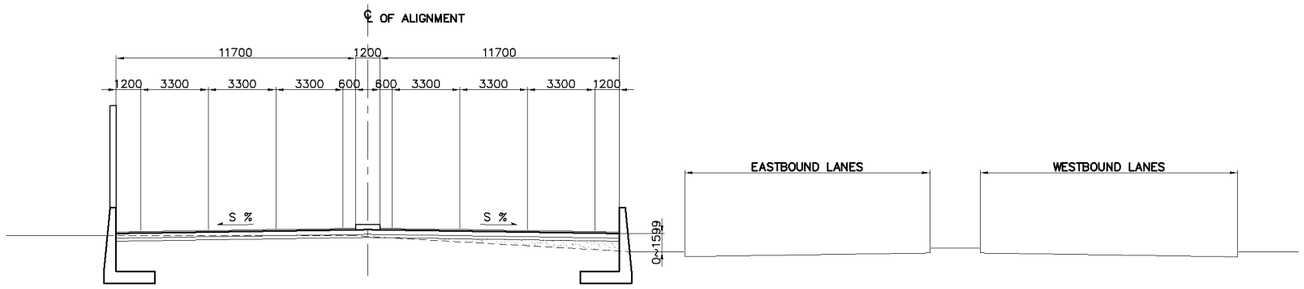
1:300

KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:6000 1:300 FULL SIZE A3	DRAWING TITLE : TRANSITION STRUCTURE (STA. 7+655 TO - STA. 7+820)	DRAWING NO : E3-2/S-3 SHEET NO : 3 / 19



A SCALE — PLAN — STA. 7+820.000 TO STA. 8+145.000

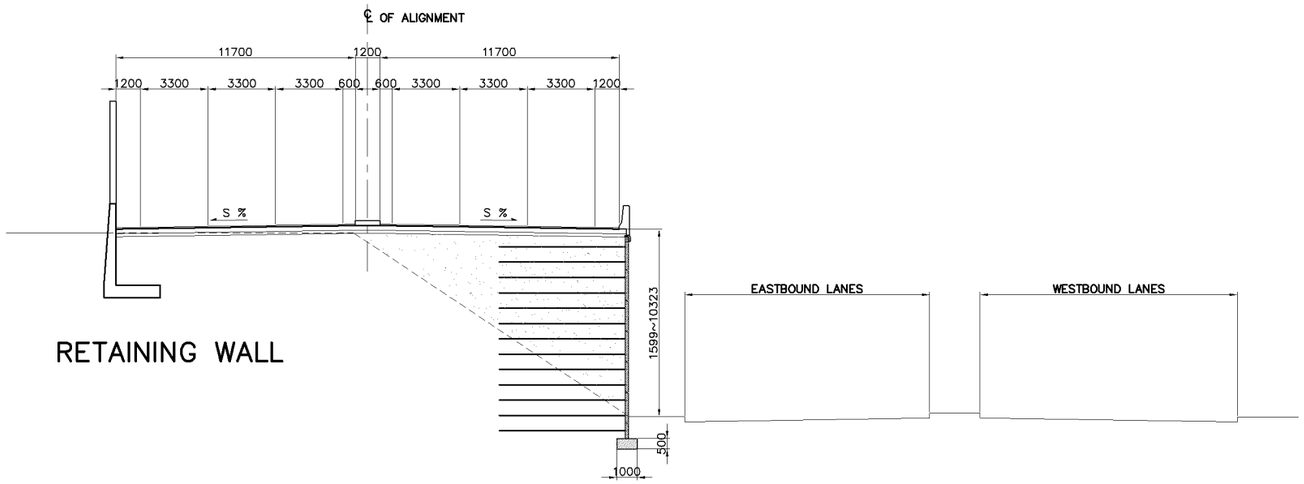
SCALE : 1:6000



RETAINING WALL

1 SCALE — TYPICAL SECTION — STA. 7+820.000 TO 7+845.000

1:300

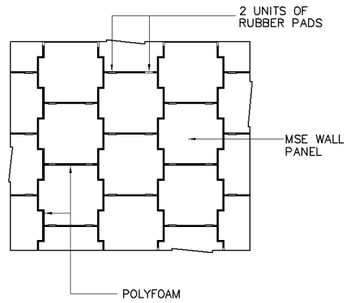


RETAINING WALL

MECHANICALLY STABILIZED EARTH WALL (MSE)

2 SCALE — TYPICAL SECTION — STA. 7+845.000 TO 8+145.000

1:300

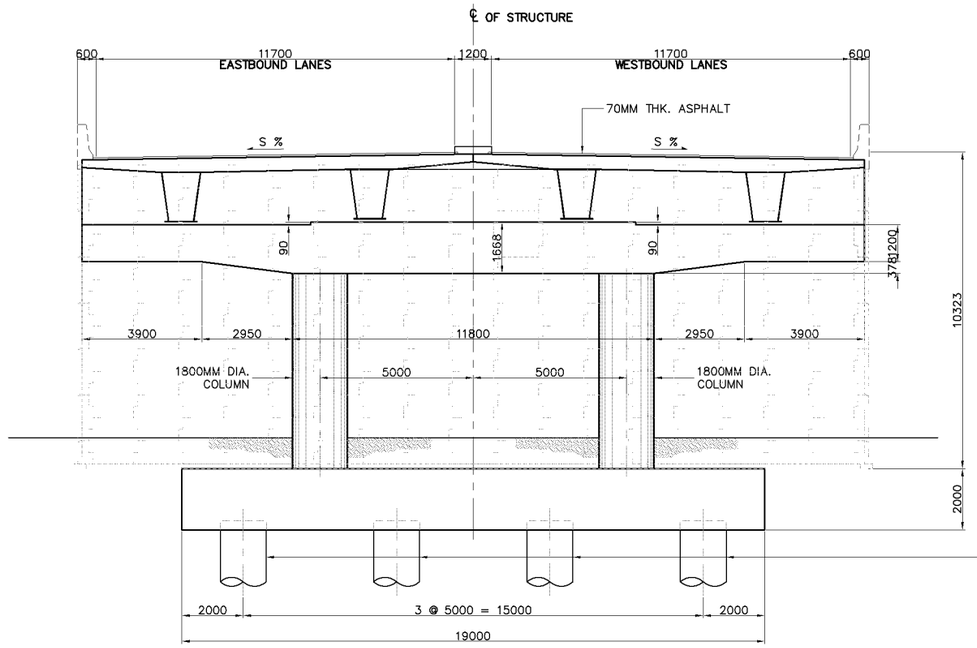


3 SCALE — TYPICAL DETAIL

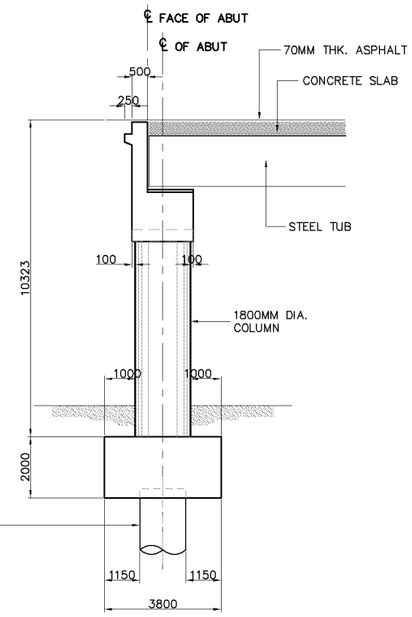
NTS

TYPICAL MSE WALL PANEL LAYOUT

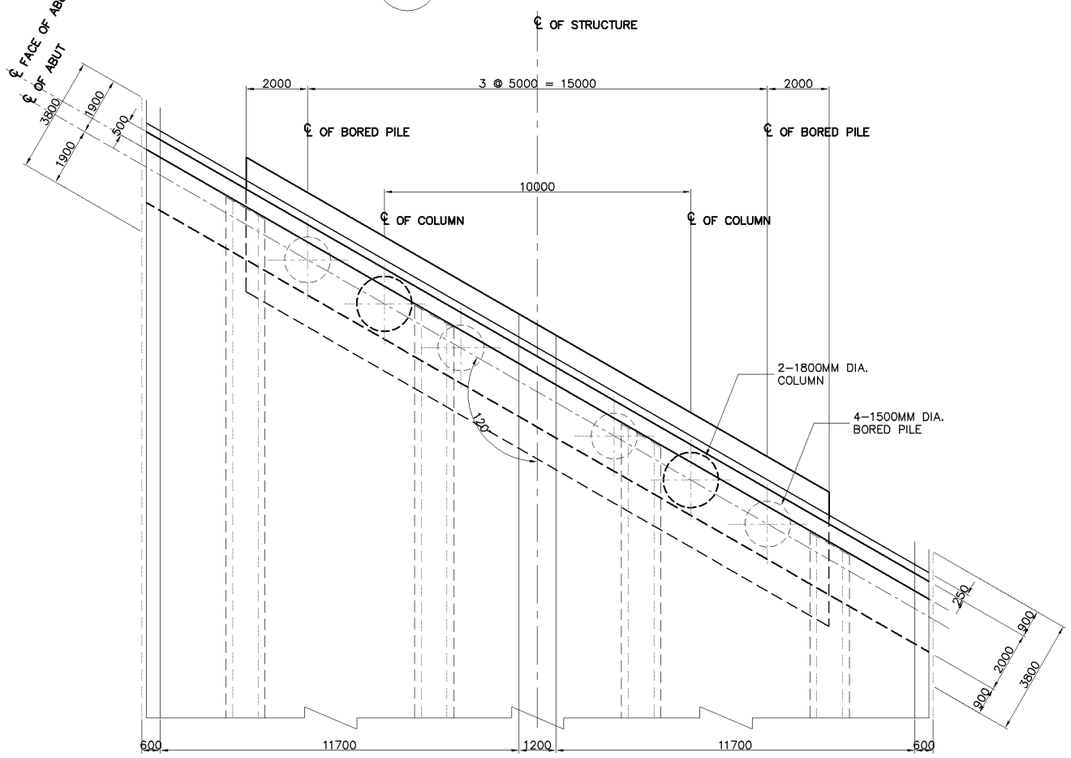
KEI KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:6000 1:300 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT APPROACH EMBANKMENT LAYOUT AND RETAINING WALL DETAIL	DRAWING NO : E3-2/S-4 SHEET NO : 4 / 19



1 SCALE **FRONT ELEVATION** 1:200

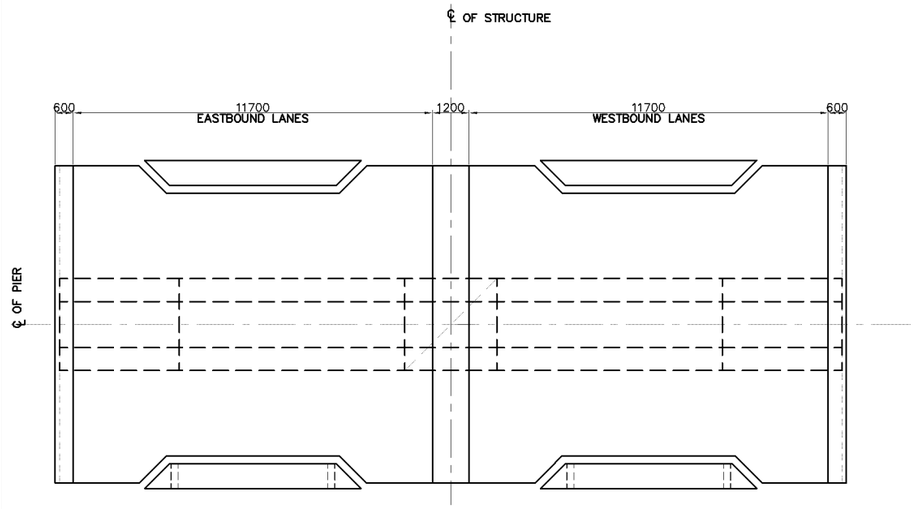


2 SCALE **SIDE ELEVATION** 1:200

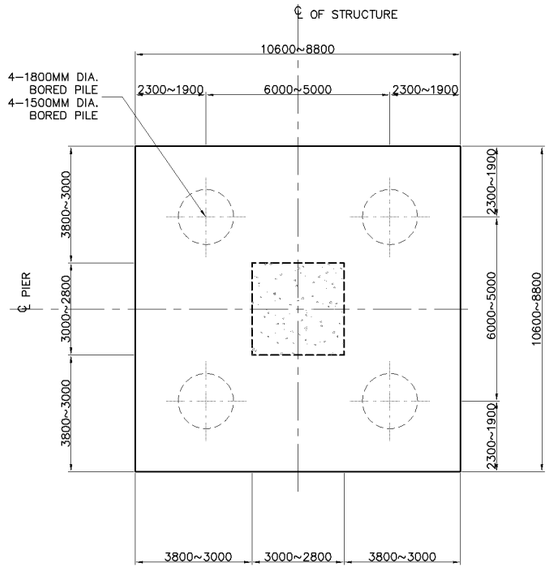


3 SCALE **PLAN ON PILE CAP** 1:200

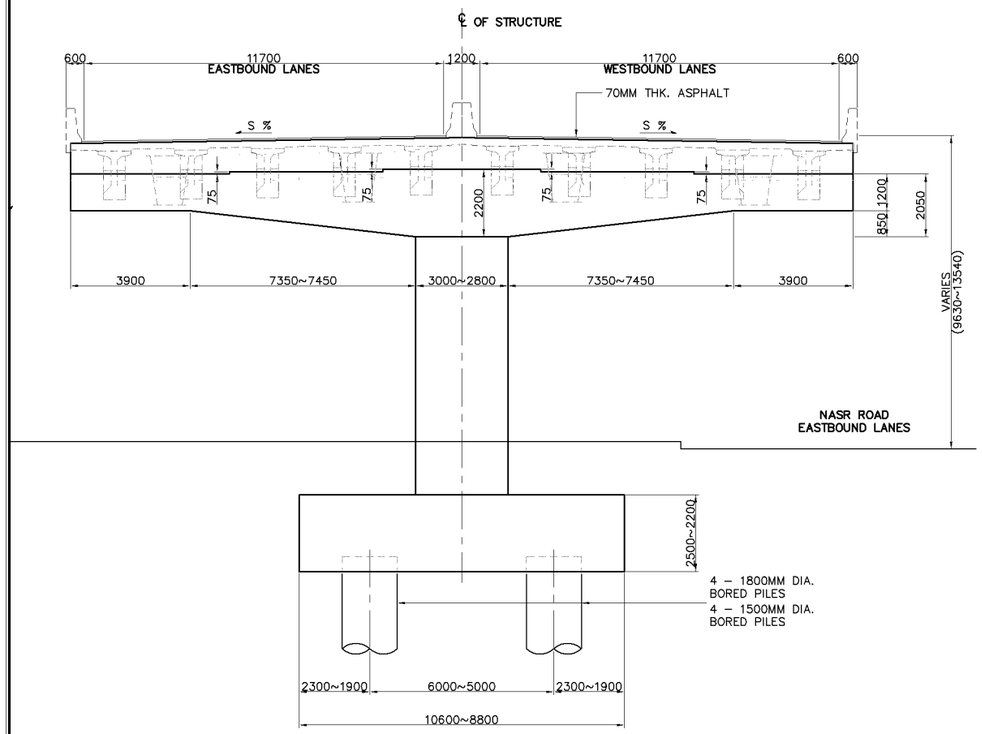
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT ABUTMENT LAYOUT & SECTIONS (STA. 8+145)	DRAWING NO : E3-2/S-5 SHEET NO : 5 / 19



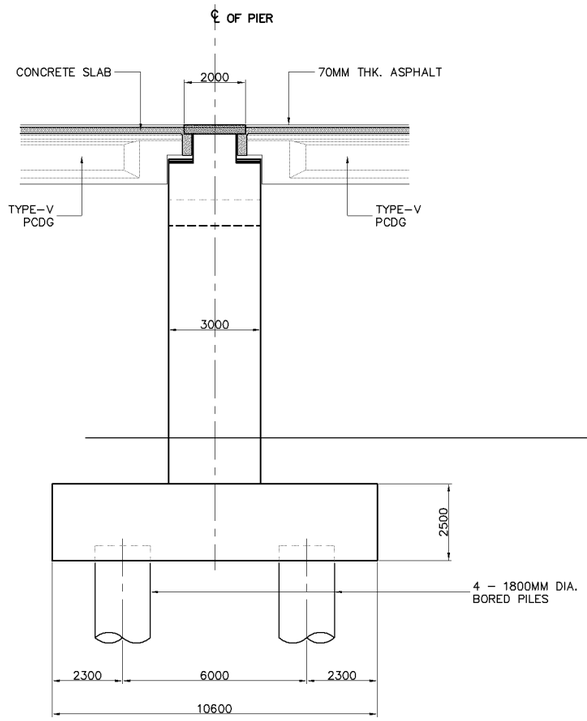
1 SCALE **P L A N** 1:200



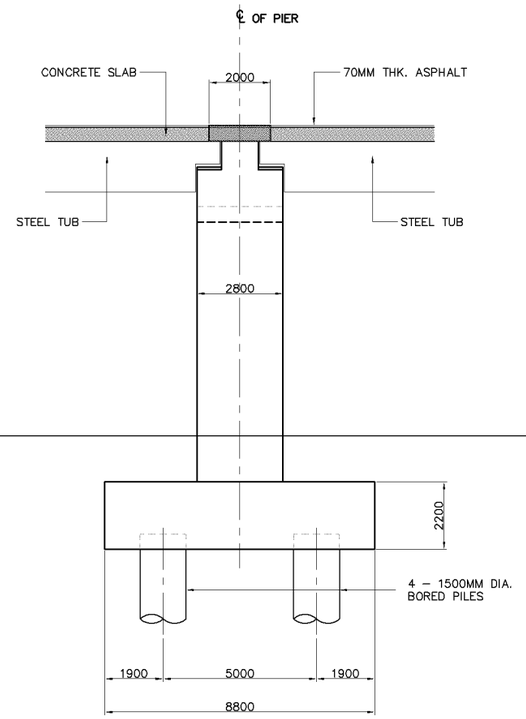
4 SCALE **PLAN ON PILE CAP** 1:200



2 SCALE **TYPICAL PIER ELEVATION (SINGLE COLUMN (EXPANSION))** 1:200

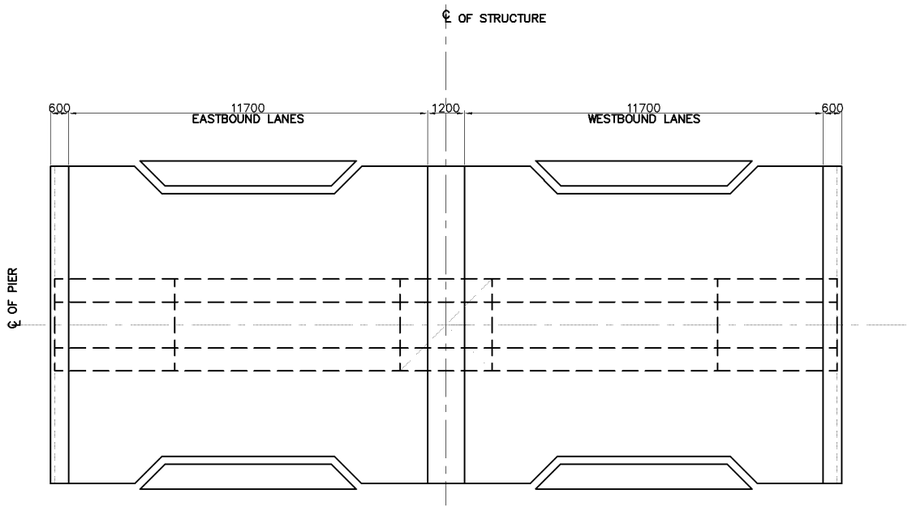


3 SCALE **SIDE ELEVATION (PCDG)** 1:200

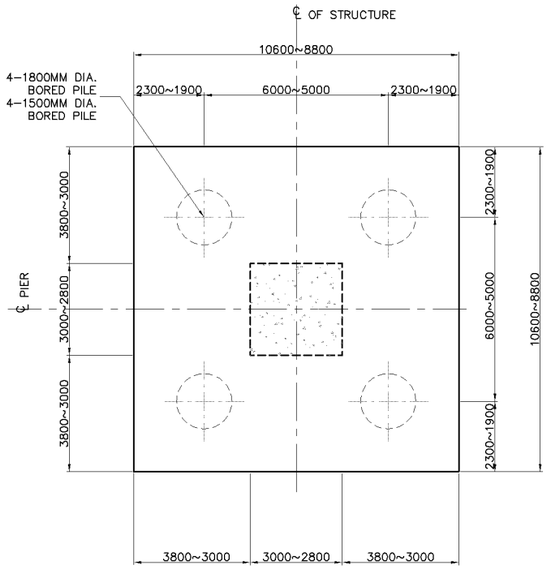


4 SCALE **SIDE ELEVATION STEEL)** 1:200

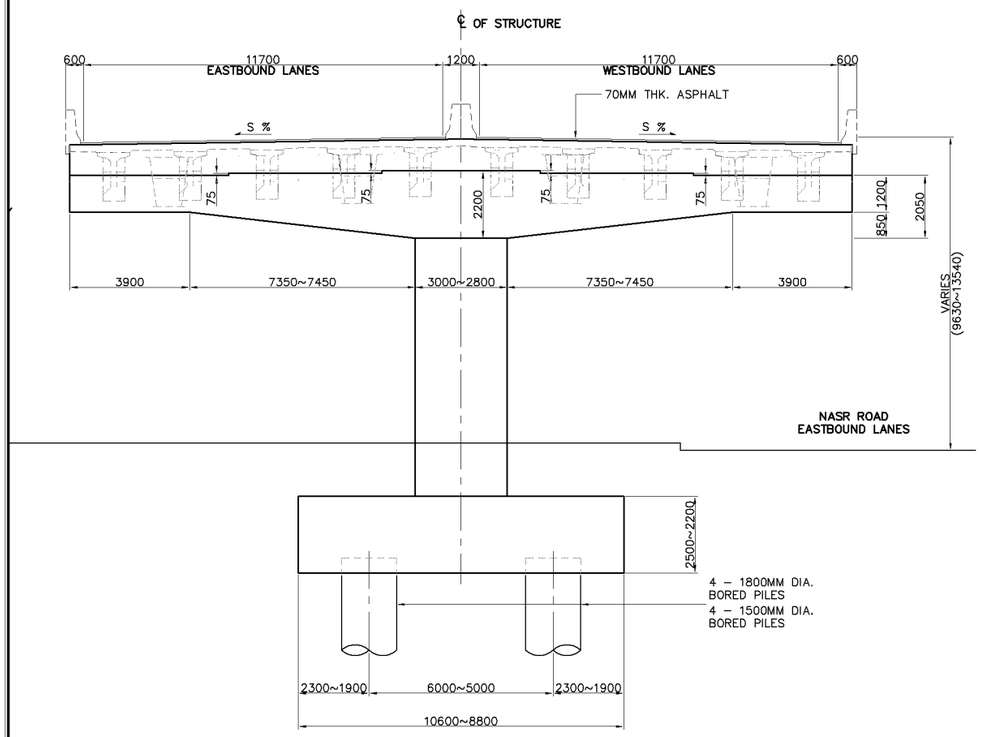
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:6000 1:200 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS SINGLE COLUMN PIER (EXPANSION)	DRAWING NO : E3-2/S-6 SHEET NO : 6 / 19



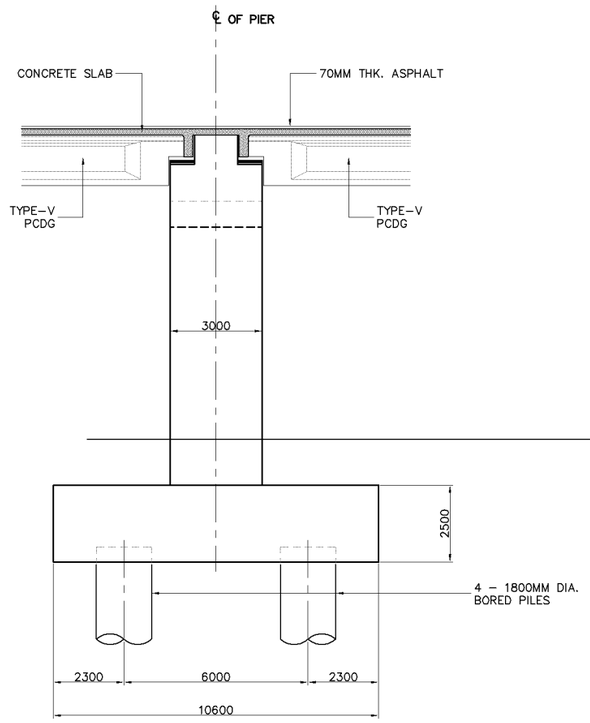
1 SCALE **P L A N** 1:200



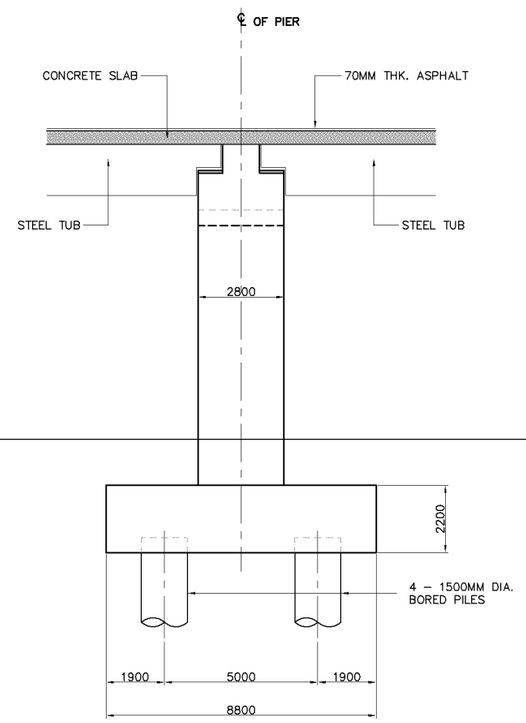
4 SCALE **PLAN ON PILE CAP** 1:200



2 SCALE **TYPICAL PIER ELEVATION (SINGLE COLUMN (CONTINUOUS))** 1:200



3 SCALE **SIDE ELEVATION (PCDG)** 1:200



4 SCALE **SIDE ELEVATION STEEL)** 1:200

KATAHIRA & ENGINEERS INTERNATIONAL
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JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL AUTHORITY FOR ROADS
BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

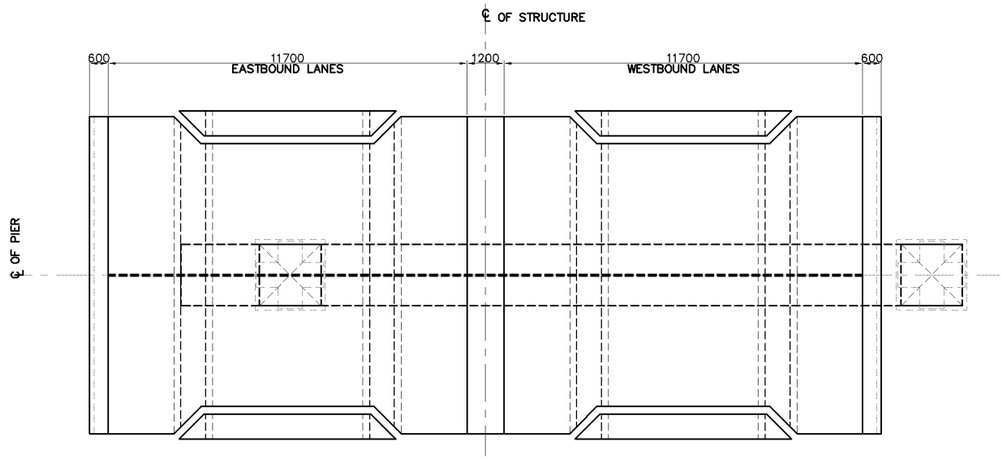
PROJECT AND LOCATION :
FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

SCALE :
1:6000
1:200
FULL SIZE A3

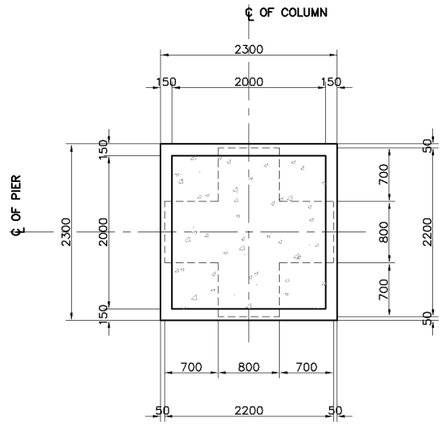
DRAWING TITLE :
ELEVATED VIADUCT
PIER LAYOUT & SECTIONS
SINGLE COLUMN PIER (CONTINUOUS)

DRAWING NO :
E3-2/S-7

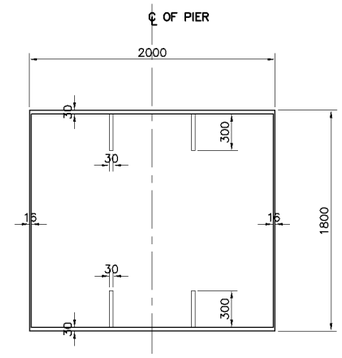
SHEET NO :
7 / 19



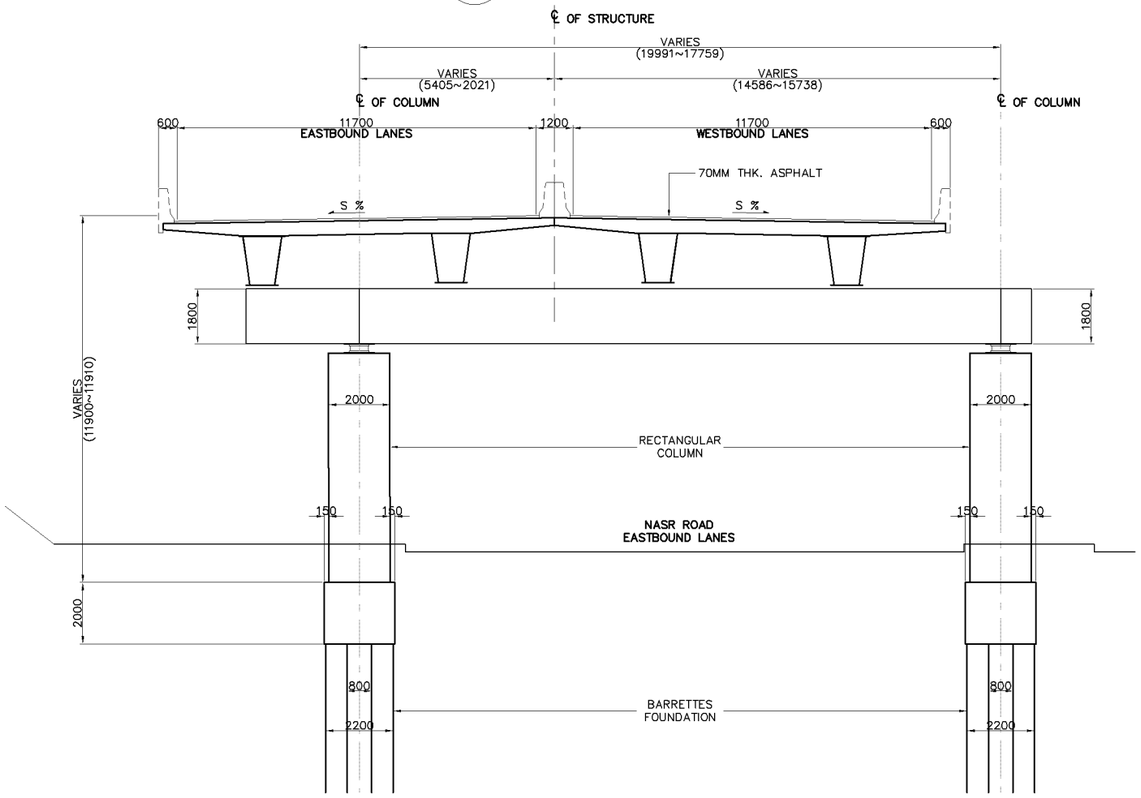
1 SCALE **PLAN** 1:200



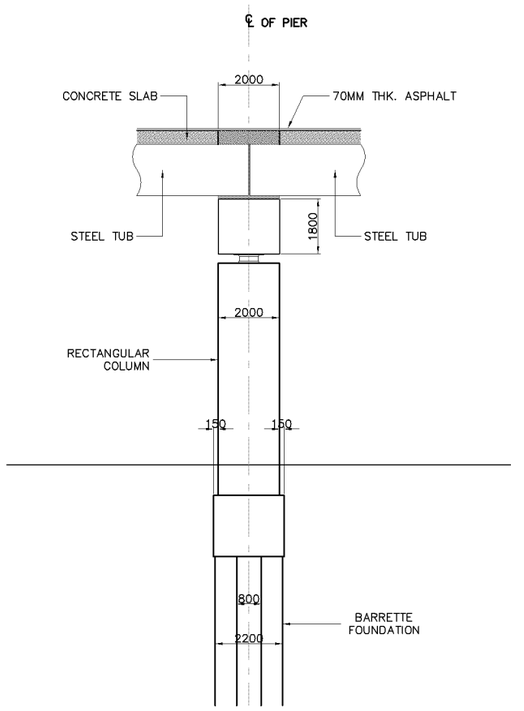
4 SCALE **COLUMN SECTION** 1:80



5 SCALE **COPING BEAM SECTION** 1:50

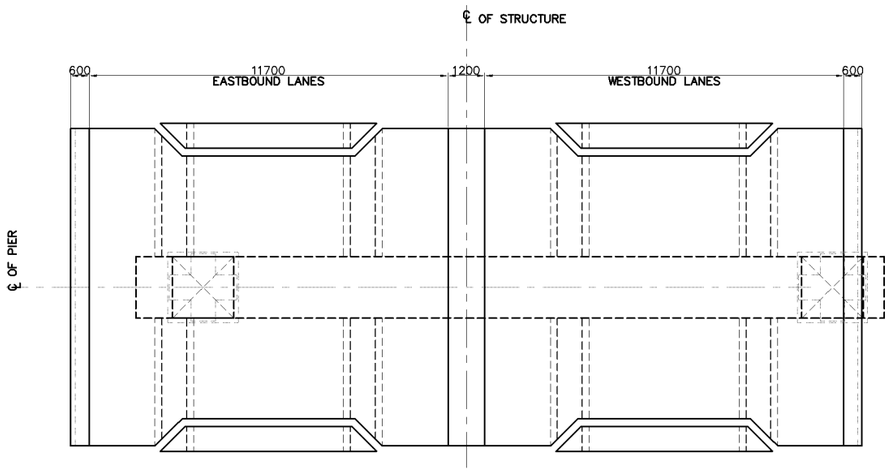


2 SCALE **PORTAL PIER ELEVATION (TYPE – 1 (EXPANSION))** 1:200

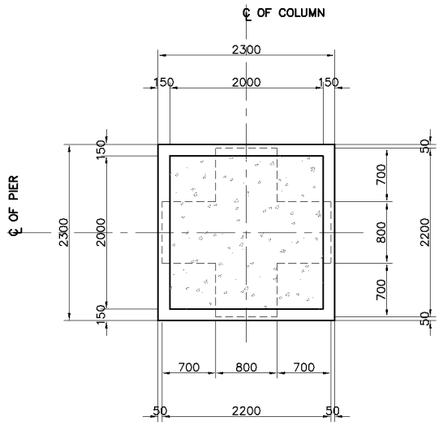


3 SCALE **SIDE ELEVATION** 1:200

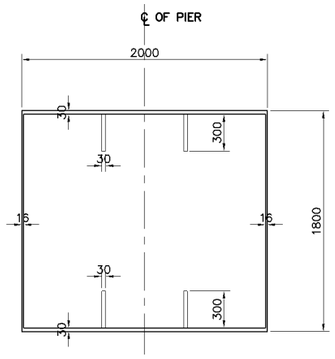
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 1:80 1:50 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS PORTAL TYPE PIER (EXPANSION)	DRAWING NO : E3-2/S-8 SHEET NO : 8 / 19



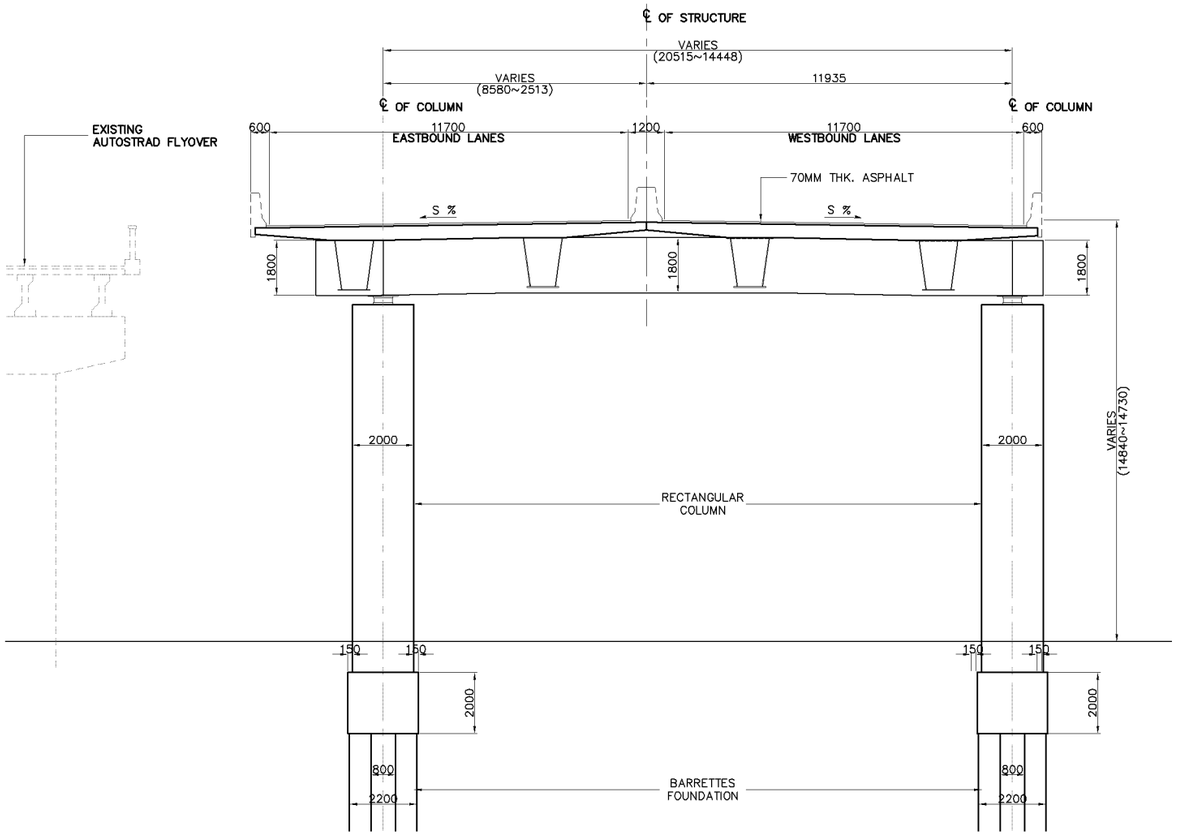
1 SCALE **PLAN** 1:200



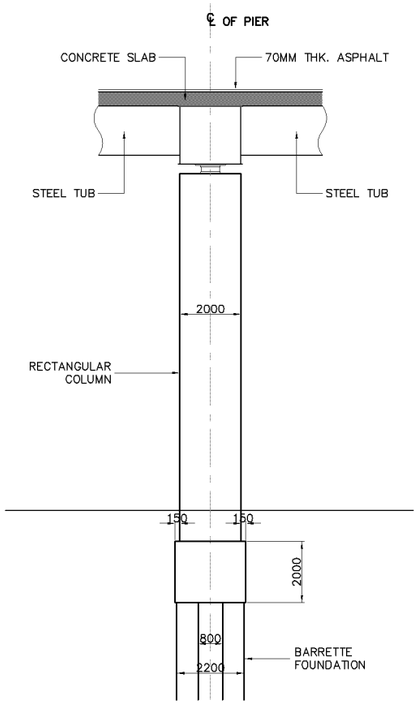
3 SCALE **COLUMN SECTION** 1:80



5 SCALE **COPING BEAM SECTION** 1:50

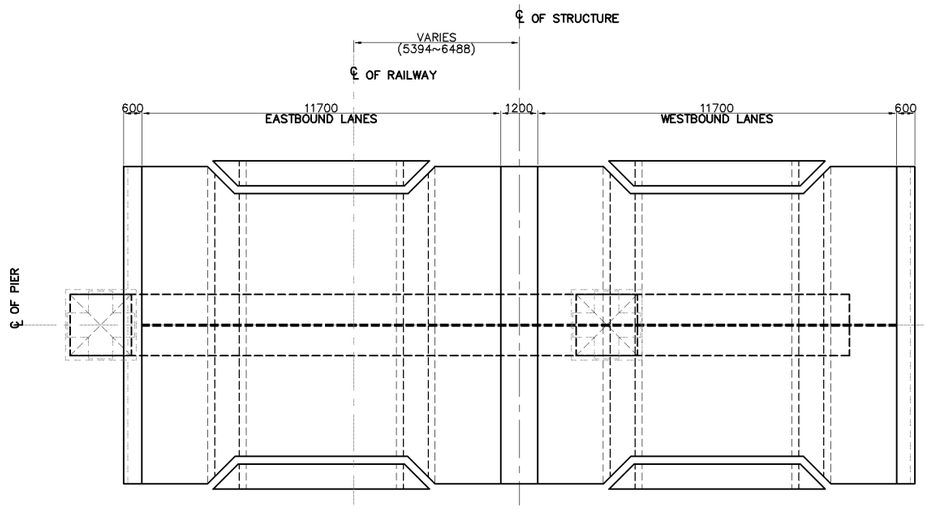


1 SCALE **PORTAL PIER ELEVATION (TYPE – 1 (CONTINUOUS)** 1:200

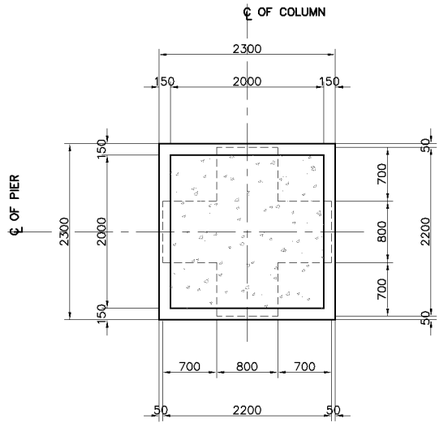


2 SCALE **SIDE ELEVATION** 1:200

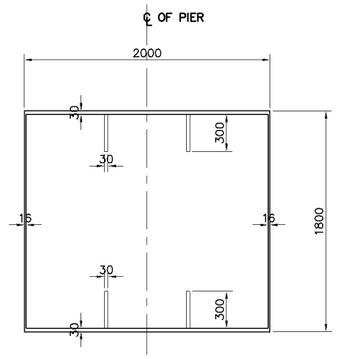
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 1:80 1:50 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS PORTAL TYPE PIER (CONTINUOUS)	DRAWING NO : E3-2/S-9 SHEET NO : 9 / 19



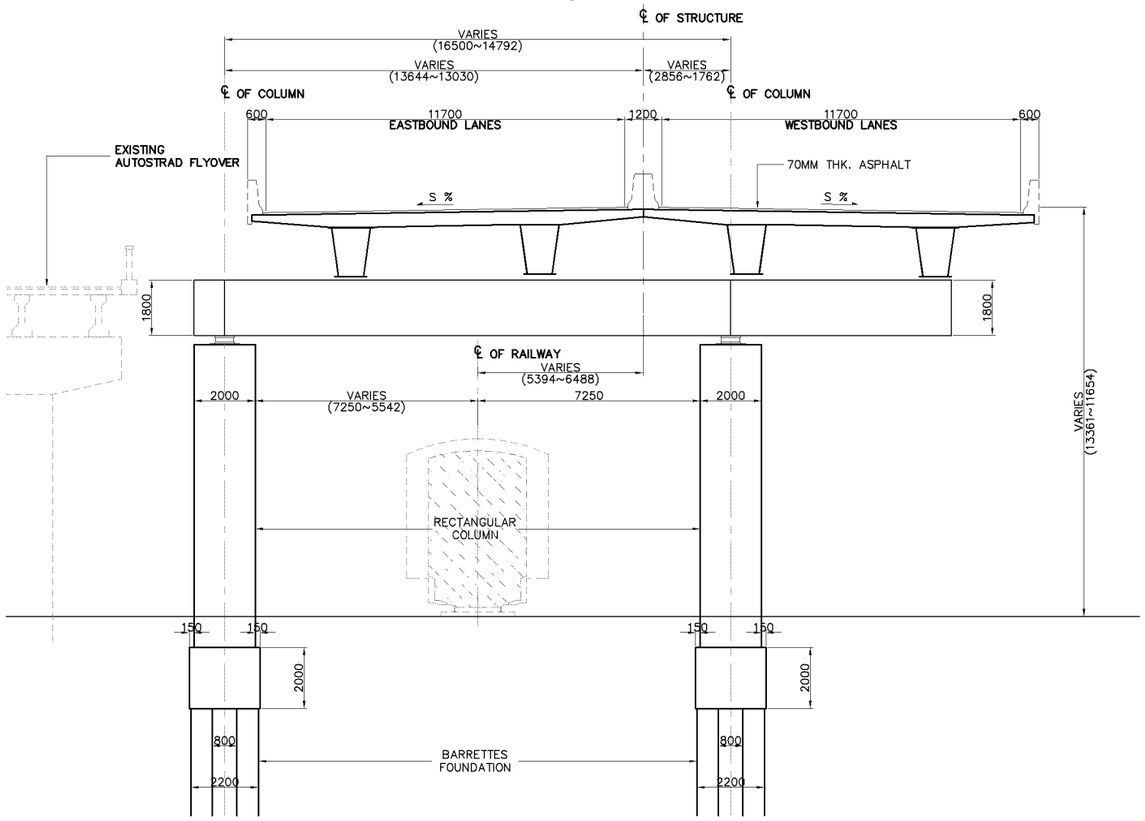
1 SCALE **PLAN** 1:200



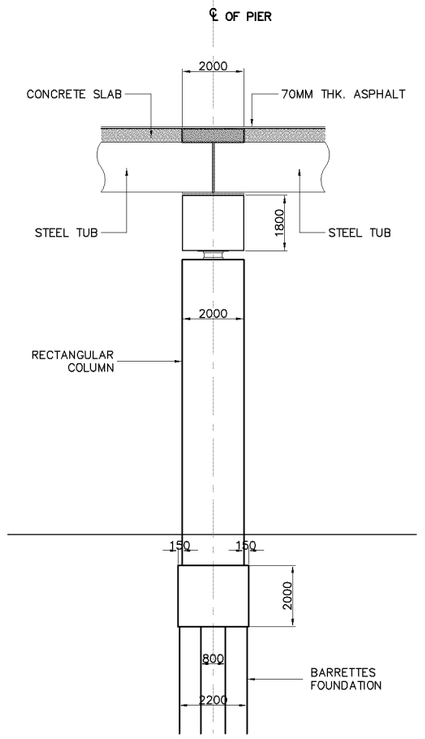
3 SCALE **COLUMN SECTION** 1:80



4 SCALE **COPING BEAM SECTION** 1:50

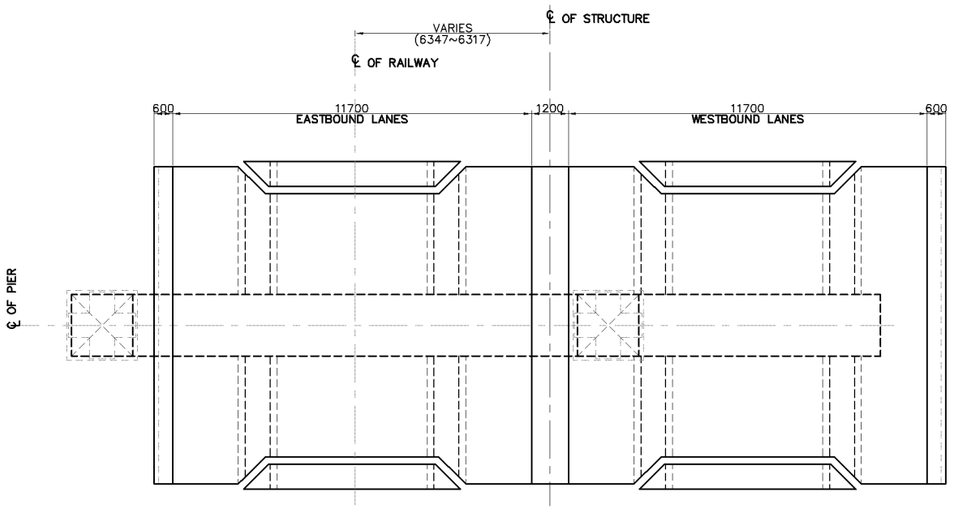


1 SCALE **PORTAL PIER ELEVATION (TYPE – 1 (EXPANSION)** 1:200

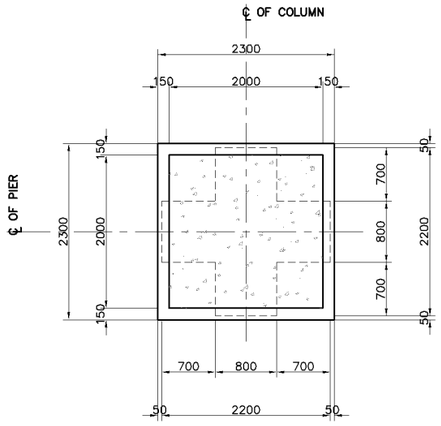


2 SCALE **SIDE ELEVATION** 1:200

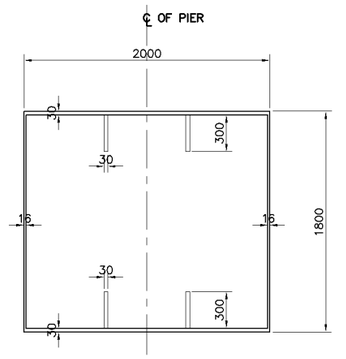
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 1:80 1:50 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS ALONG RAILWAY PORTAL TYPE 1 PIER (EXPANSION)	DRAWING NO : E3-2/S-10 SHEET NO : 10 / 19



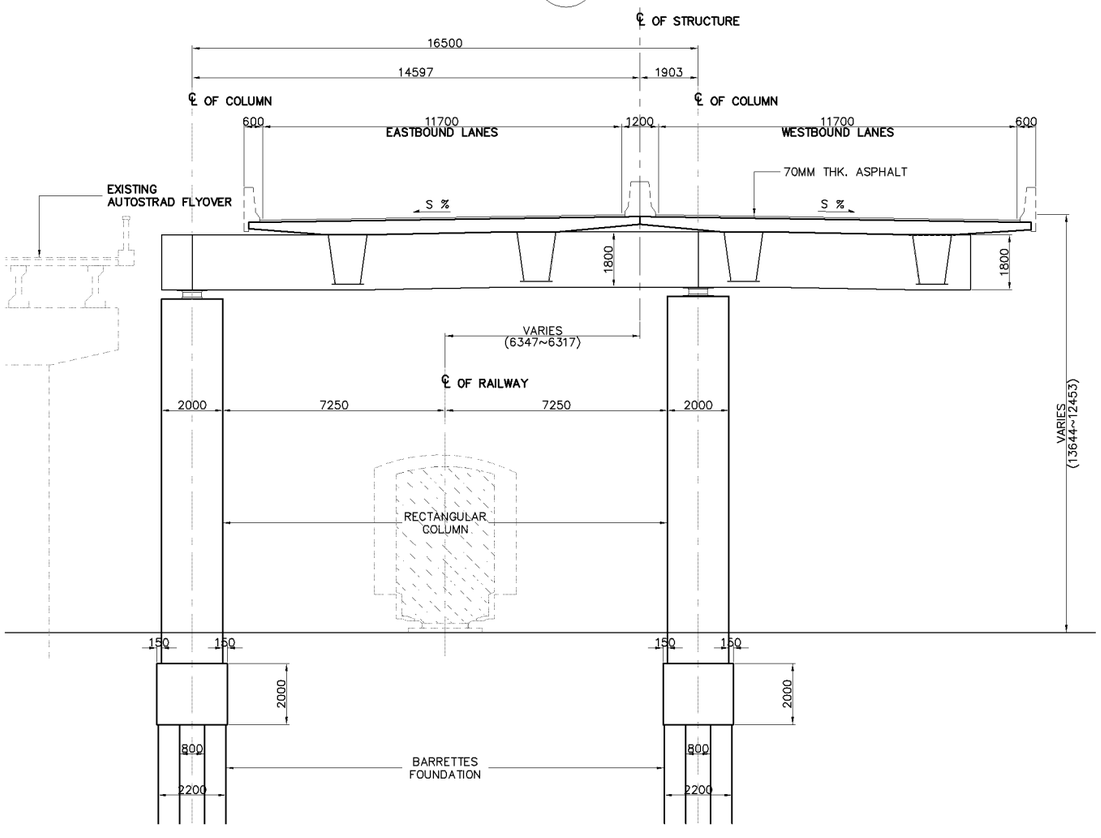
1 SCALE **P L A N** 1:200



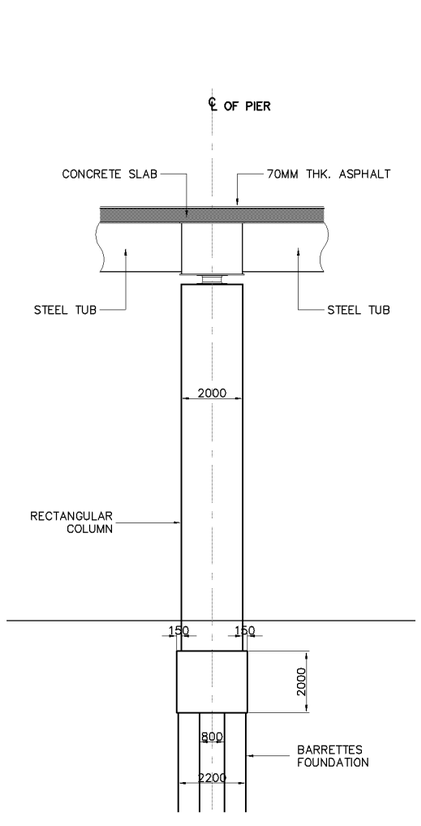
4 SCALE **COLUMN SECTION** 1:80



5 SCALE **COPING BEAM SECTION** 1:50

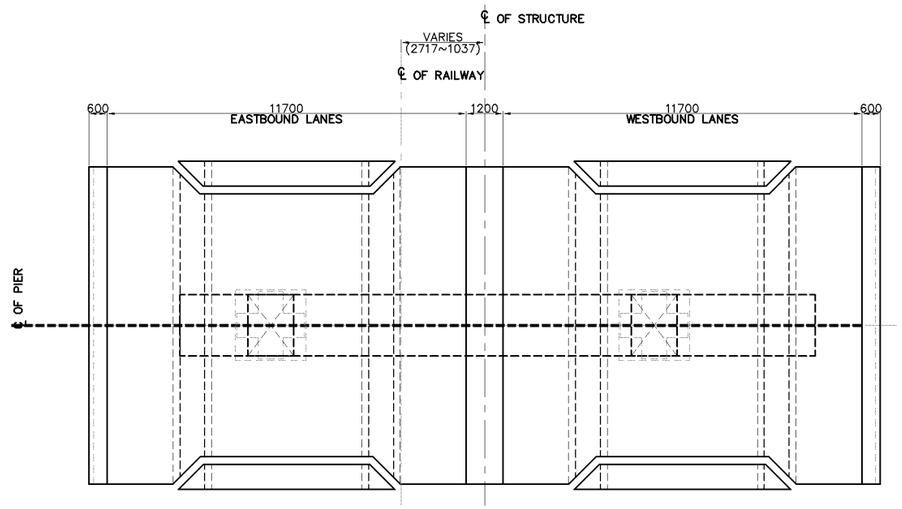


2 SCALE **PORTAL PIER ELEVATION (TYPE – 1 (CONTINUOUS)** 1:200

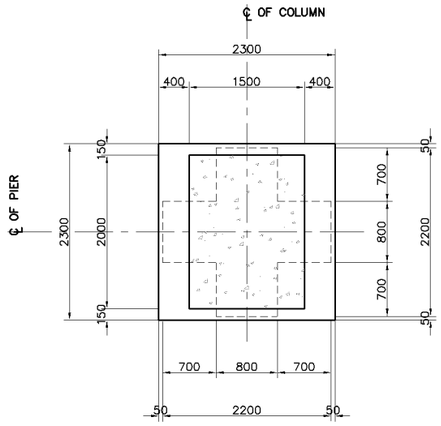


3 SCALE **SIDE ELEVATION** 1:200

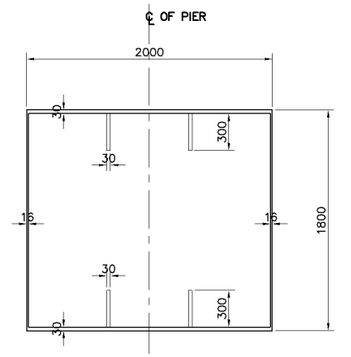
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 1:80 1:50 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS ALONG RAILWAY PORTAL TYPE 1 PIER (CONTINUOUS)	DRAWING NO : E3-2/S-11 SHEET NO : 11 / 19



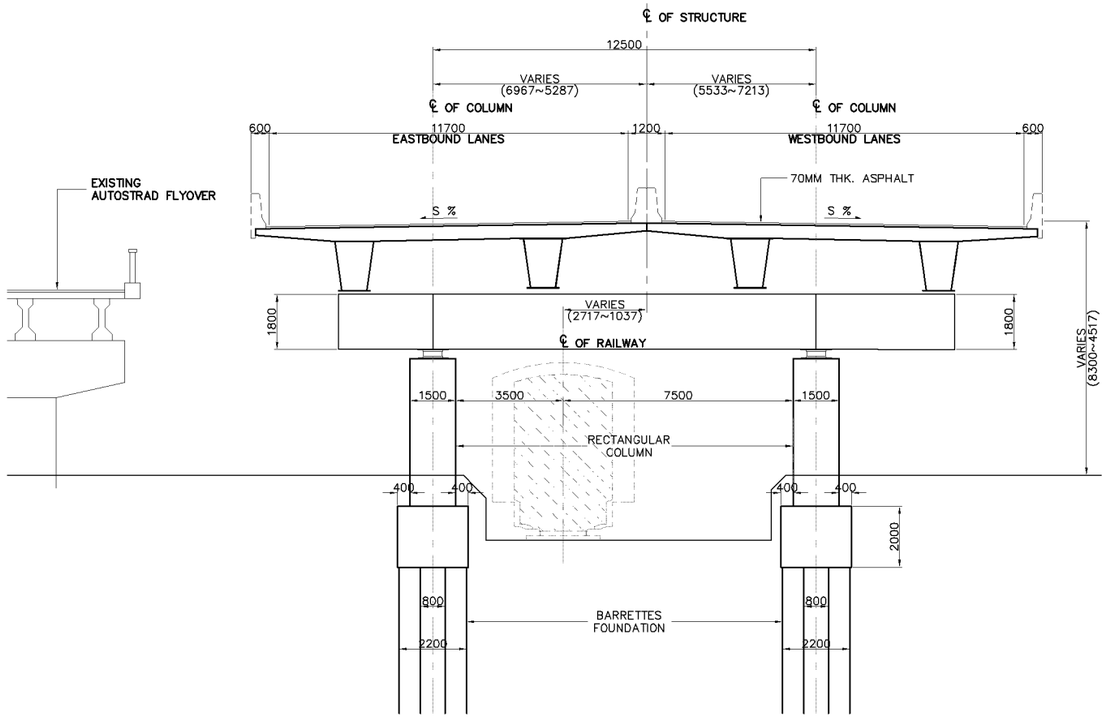
1 SCALE **P L A N** 1:200



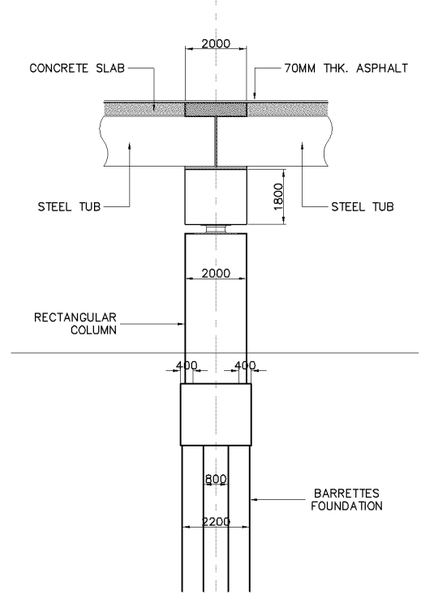
4 SCALE **COLUMN SECTION** 1:80



5 SCALE **COPING BEAM SECTION** 1:50

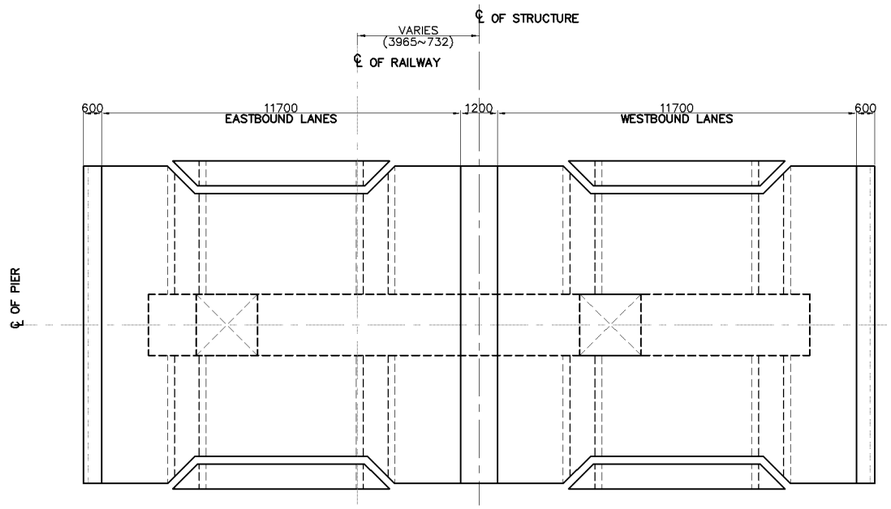


2 SCALE **PORTAL PIER ELEVATION (TYPE – 2 (EXPANSION)** 1:200

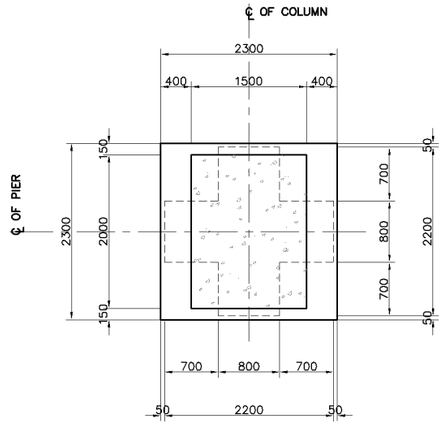


3 SCALE **SIDE ELEVATION** 1:200

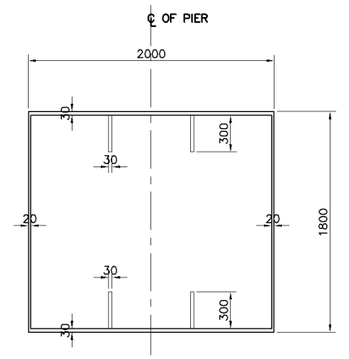
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 1:80 1:50 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS ALONG RAILWAY PORTAL TYPE 2 PIER (EXPANSION)	DRAWING NO : E3-2/S-12 SHEET NO : 12 / 19



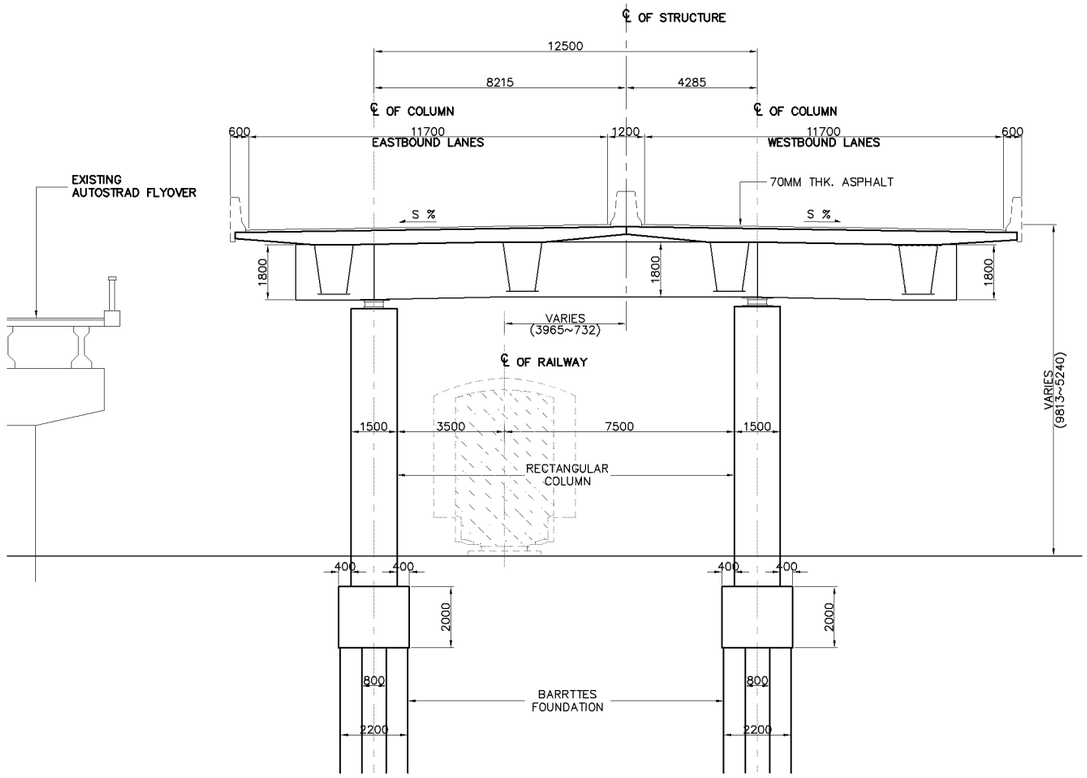
1 SCALE **P L A N** 1:200



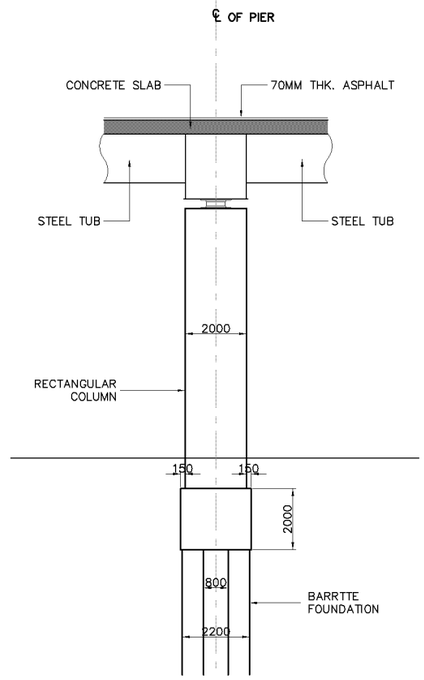
4 SCALE **COLUMN SECTION** 1:80



5 SCALE **COPING BEAM SECTION** 1:50

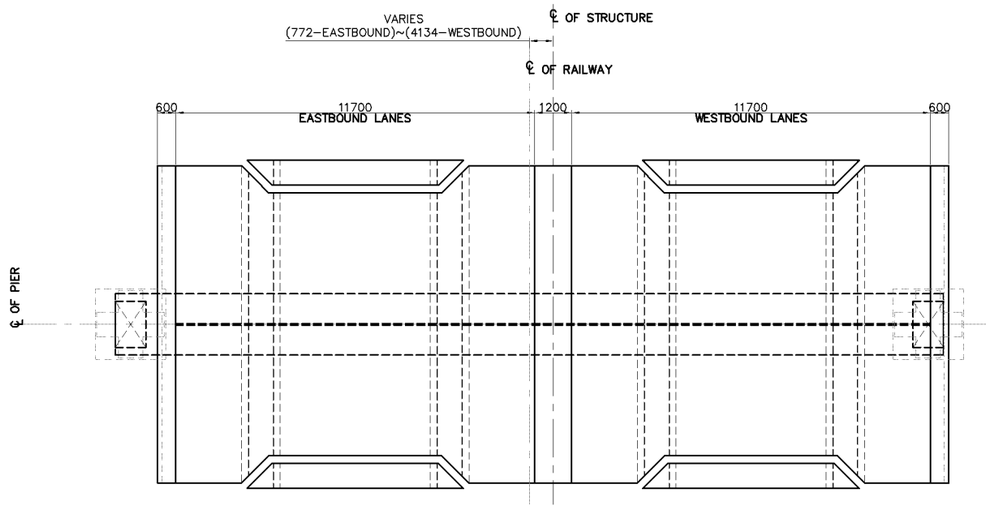


2 SCALE **PORTAL PIER ELEVATION (TYPE – 2 (CONTINUOUS)** 1:200

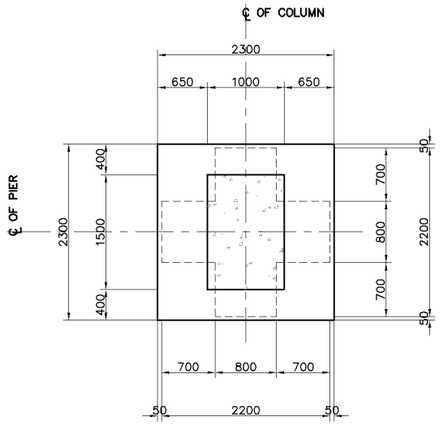


3 SCALE **SIDE ELEVATION** 1:200

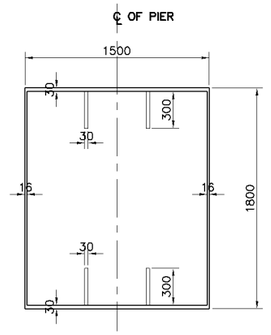
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 1:80 1:50 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS ALONG RAILWAY PORTAL TYPE 2 PIER (CONTINUOUS)	DRAWING NO : E3-2/S-13 SHEET NO : 13 / 19



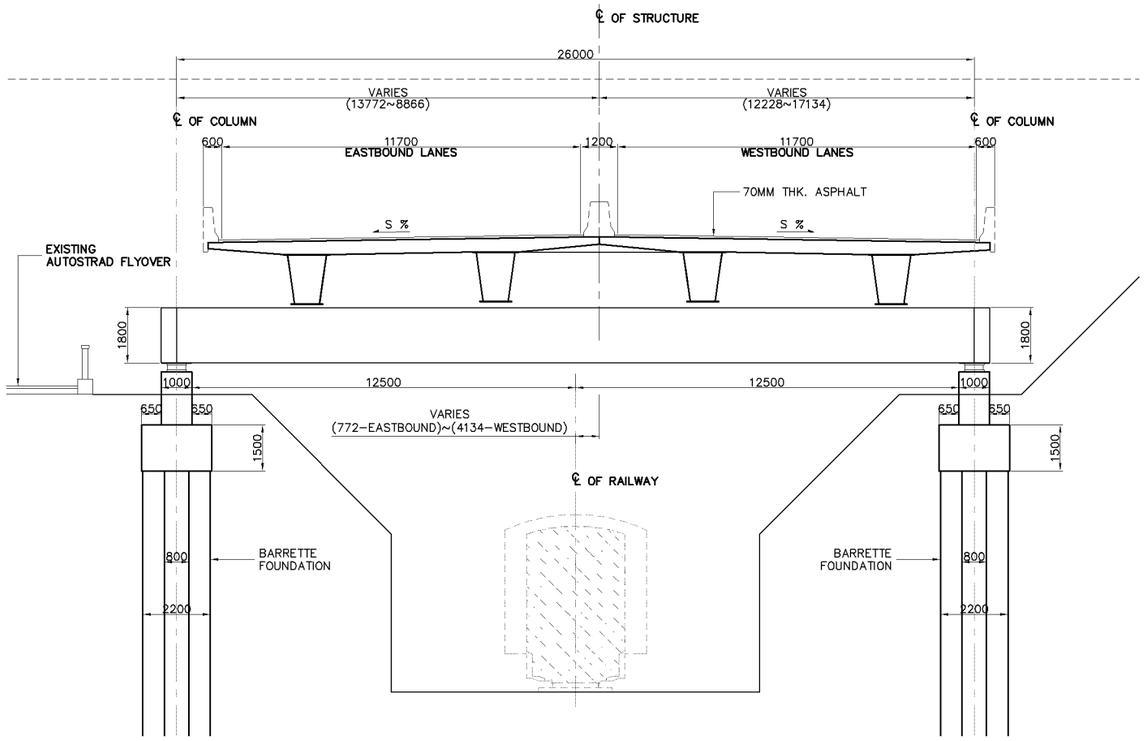
1 SCALE **P L A N** 1:200



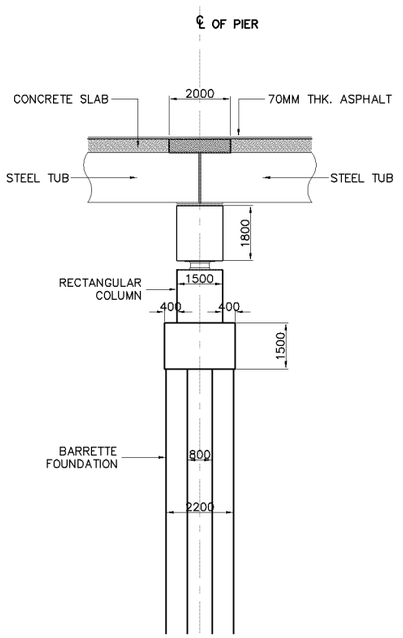
3 SCALE **COLUMN SECTION** 1:80



4 SCALE **COPING BEAM SECTION** 1:50

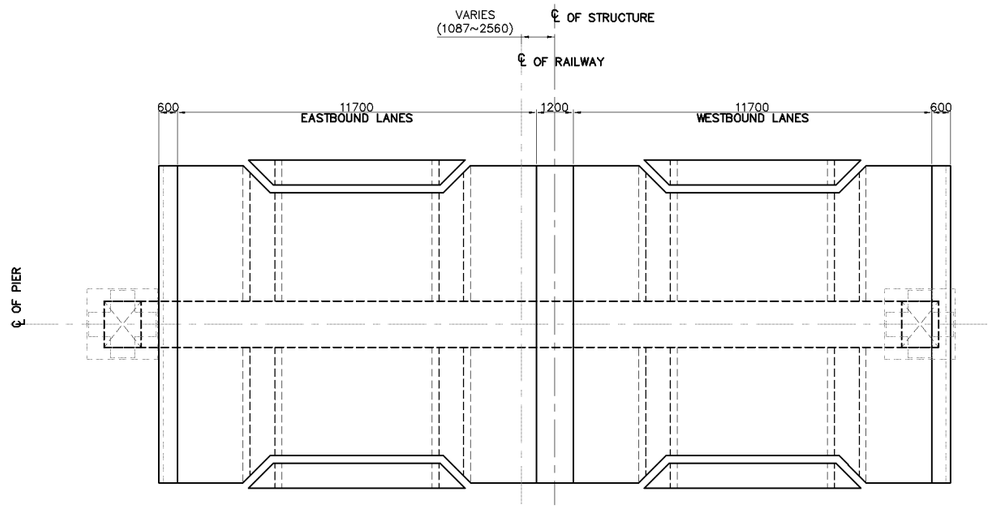


1 SCALE **PORTAL PIER ELEVATION TYPE – 3 (EXPANSION)** 1:200

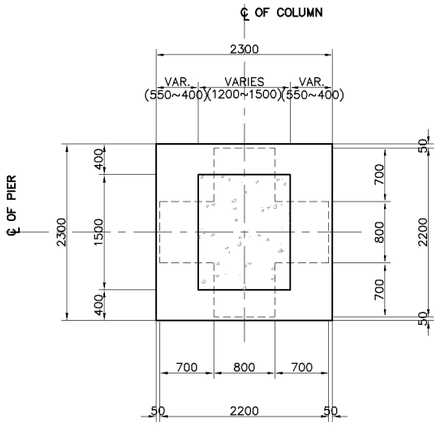


2 SCALE **SIDE ELEVATION** 1:200

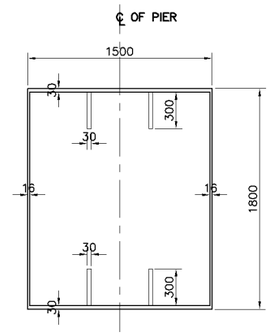
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 1:80 1:50 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS ALONG RAILWAY PORTAL TYPE 3 PIER (EXPANSION)	DRAWING NO : E3-2/S-14 SHEET NO : 14 / 19



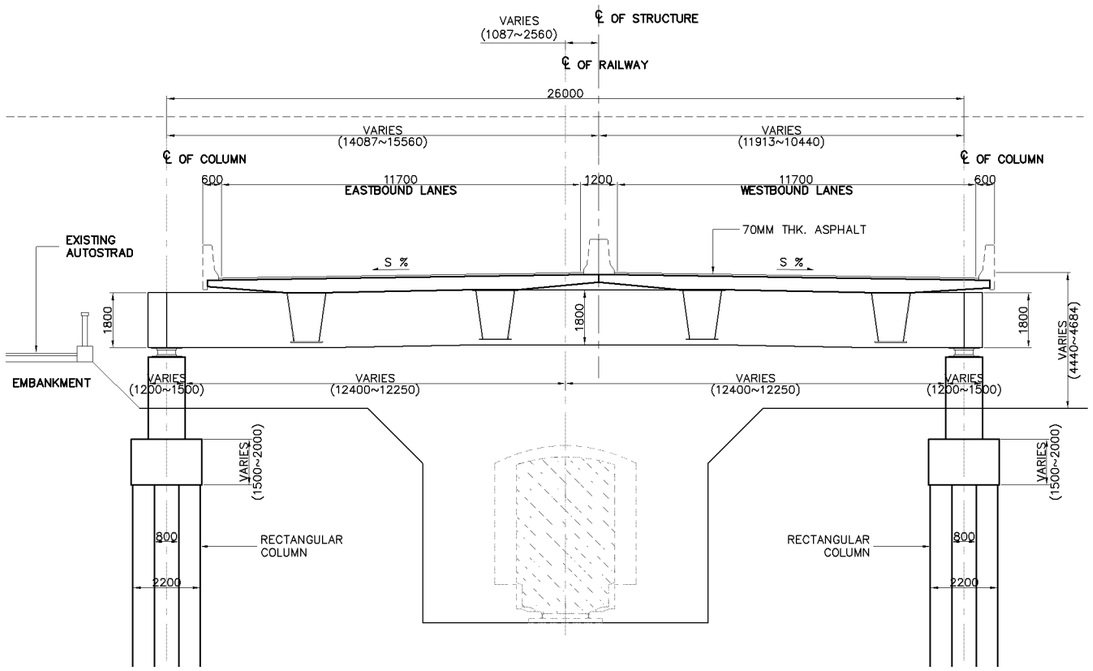
1 SCALE **PLAN** 1:200



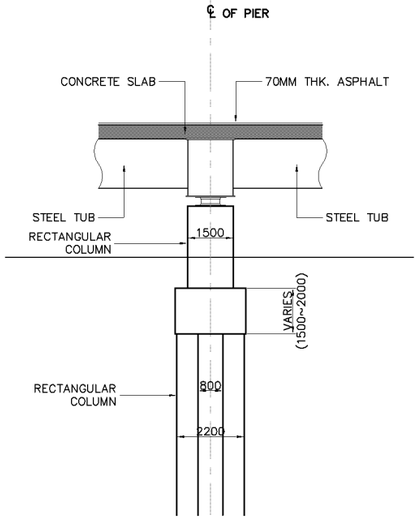
4 SCALE **COLUMN SECTION** 1:80



5 SCALE **COPING BEAM SECTION** 1:50

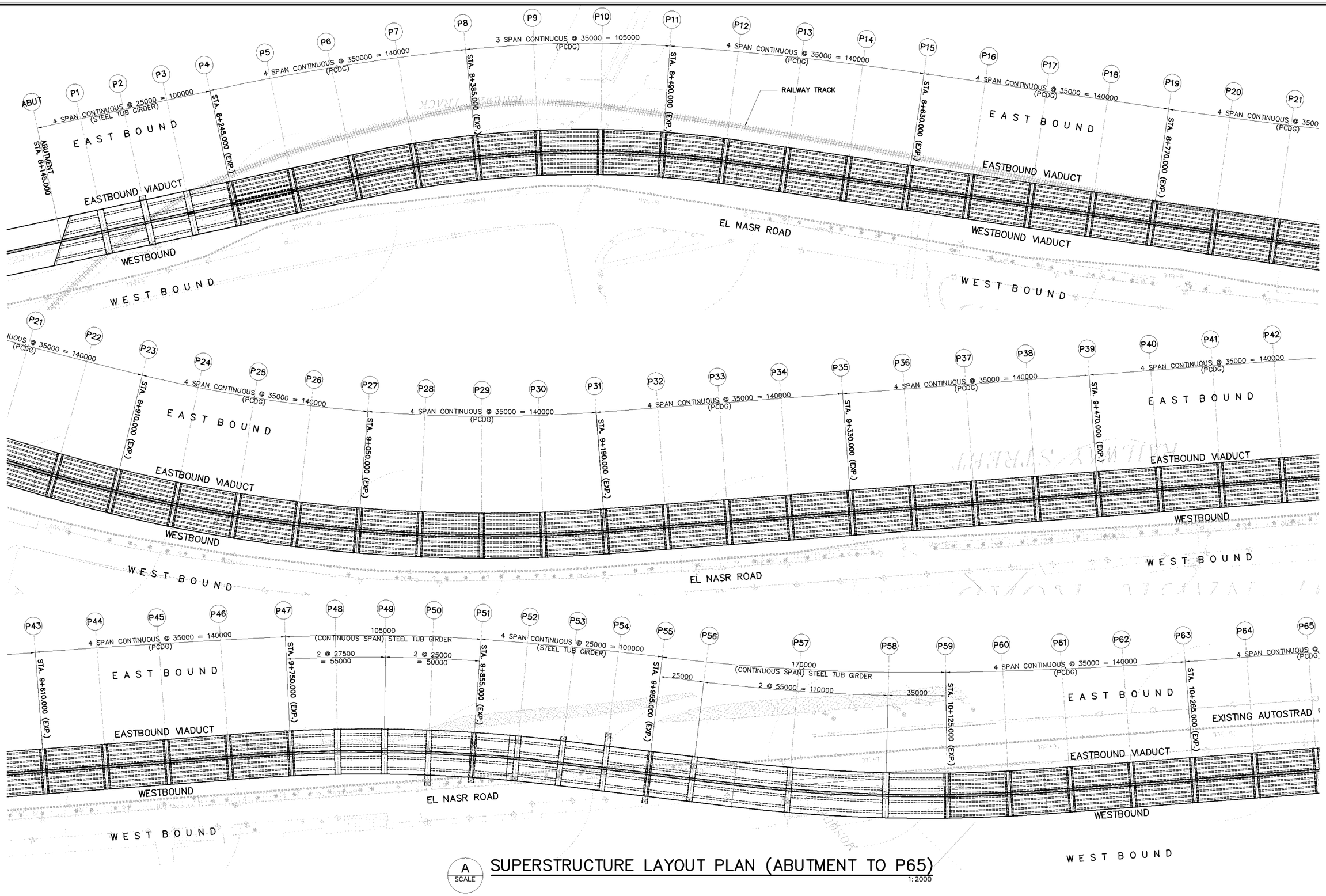


2 SCALE **PORTAL PIER ELEVATION (TYPE – 3 (CONTINUOUS)** 1:200



3 SCALE **SIDE ELEVATION** 1:200

KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:200 1:80 1:50 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT PIER LAYOUT & SECTIONS ALONG RAILWAY PORTAL TYPE 3 PIER (CONTINUOUS)	DRAWING NO : E3-2/S-15 SHEET NO : 15 / 19



A SCALE

SUPERSTRUCTURE LAYOUT PLAN (ABUTMENT TO P65)

1:2000

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

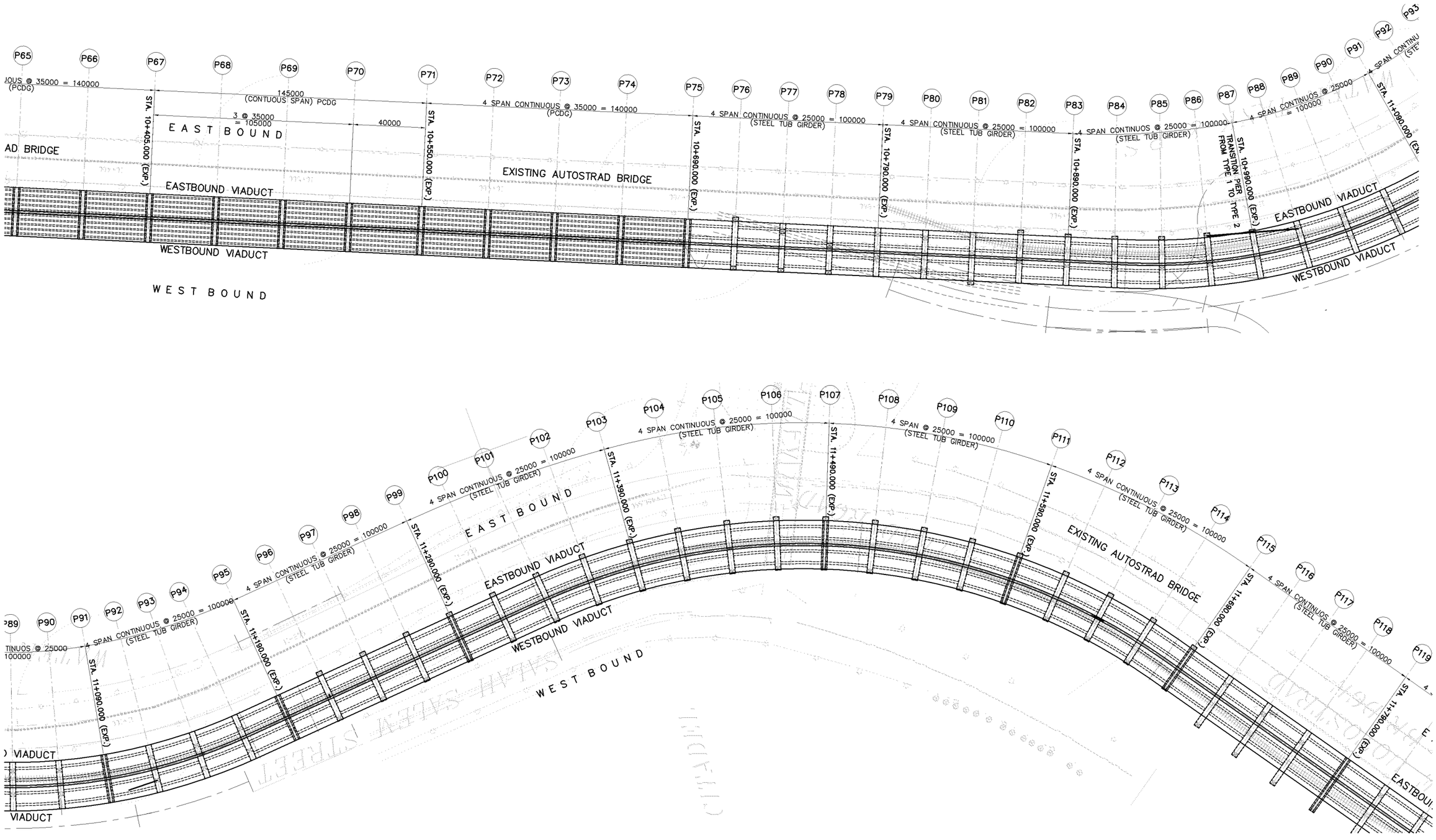
GENERAL AUTHORITY FOR ROADS
BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

PROJECT AND LOCATION :
FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

SCALE :
1:2000
FULL SIZE A3

DRAWING TITLE :
ELEVATED VIADUCT
SUPERSTRUCTURE LAYOUT & SECTIONS
(ABUTMENT TO P65) 1 OF 4

DRAWING NO :
E3-2/S-16
SHEET NO :
16 / 19

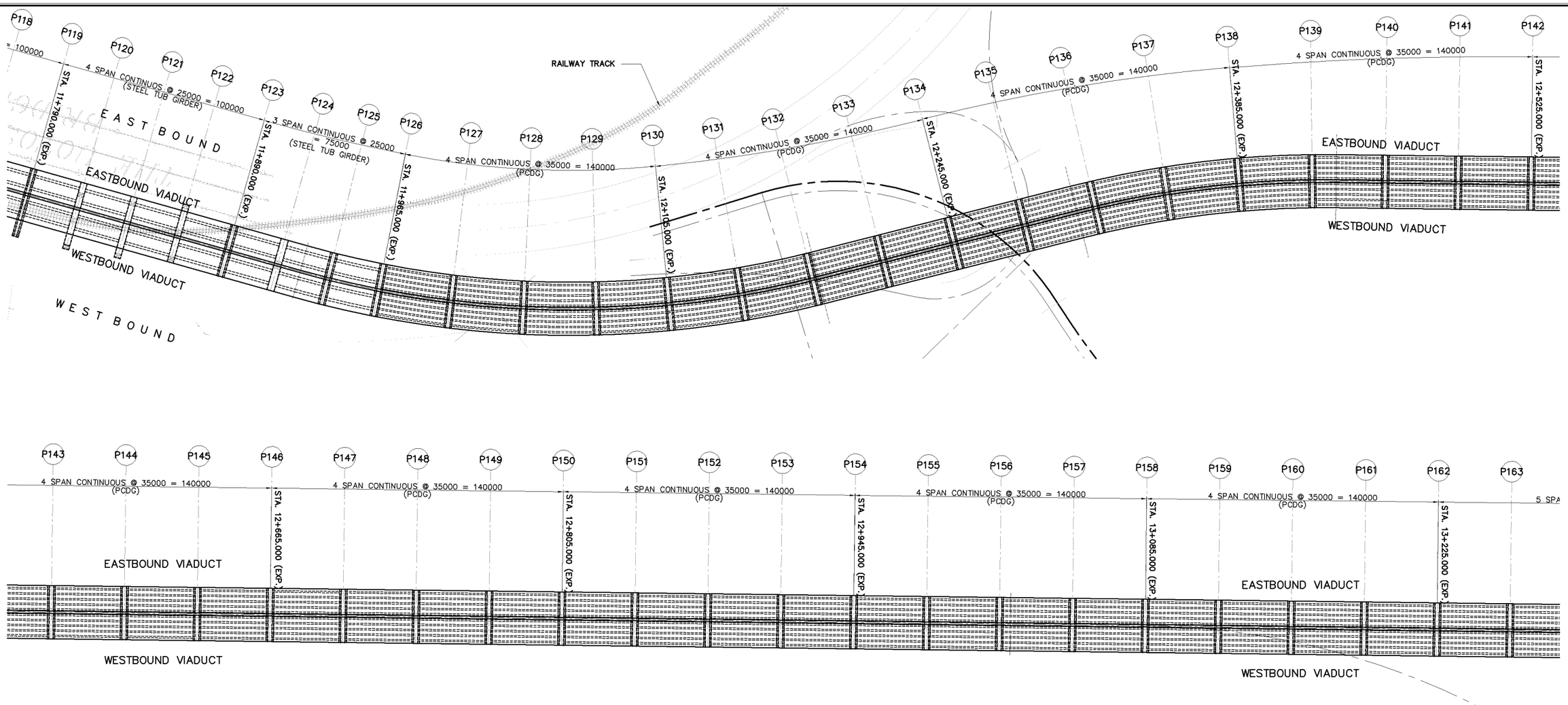


A SCALE

SUPERSTRUCTURE LAYOUT PLAN (P65 TO P119)

1: 2000

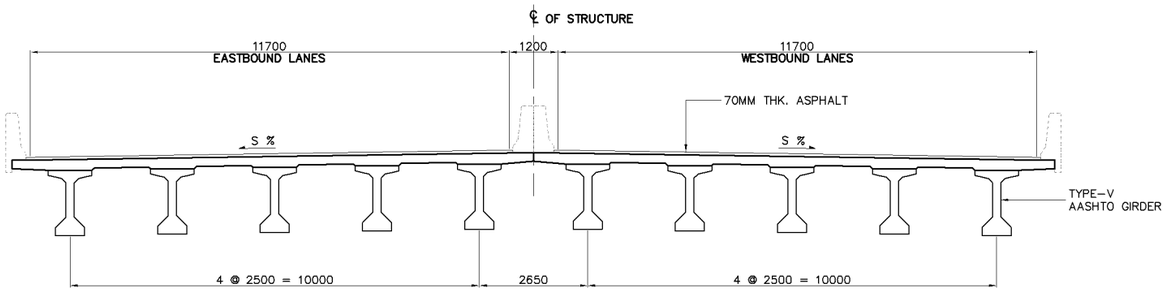
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:2000 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT SUPERSTRUCTURE LAYOUT & SECTIONS (P65 TO P119) 2 OF 4	DRAWING NO : E3-2/S-17 SHEET NO : 17 / 19



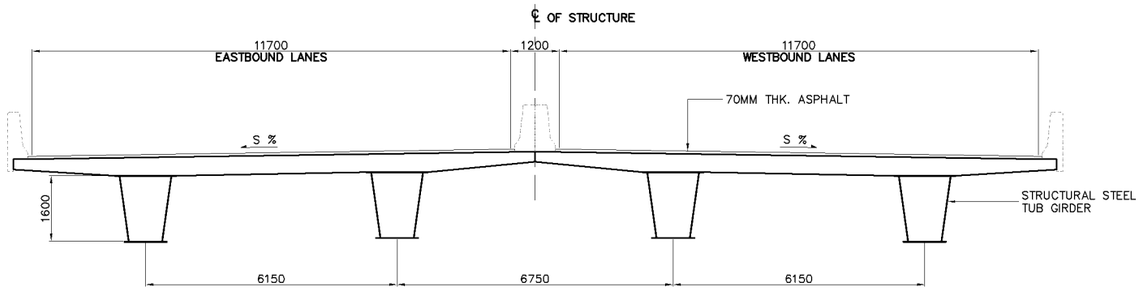
A SCALE 1:2000

SUPERSTRUCTURE LAYOUT PLAN (P119 TO P167)

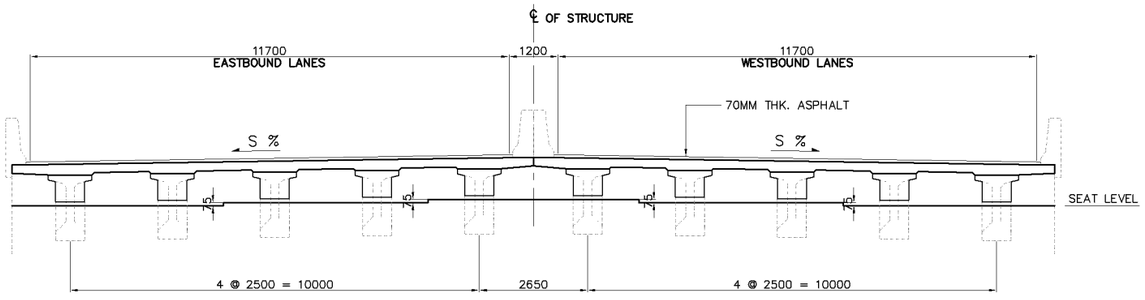
KATAHIRA & ENGINEERS INTERNATIONAL PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.	JAPAN INTERNATIONAL COOPERATION AGENCY	GENERAL AUTHORITY FOR ROADS BRIDGES AND LAND TRANSPORT (GARBLT) MINISTRY OF TRANSPORT ARAB REPUBLIC OF EGYPT	PROJECT AND LOCATION : FEASIBILITY STUDY ON HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO E3-2 EXPRESSWAY	SCALE : 1:2000 FULL SIZE A3	DRAWING TITLE : ELEVATED VIADUCT SUPERSTRUCTURE LAYOUT & SECTIONS (P119 TO P167) 3 OF 4	DRAWING NO : E3-2/S-18 SHEET NO : 18 / 19



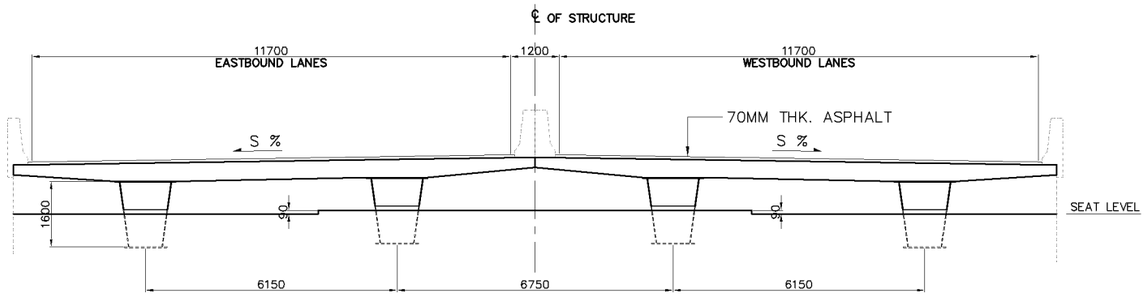
1b SCALE **TYPICAL SECTION IN SPAN** 1:150



2b SCALE **TYPICAL SECTION IN SPAN** 1:150



1a SCALE **TYPICAL SECTION @ PIER SUPPORT** 1:150



2a SCALE **TYPICAL SECTION @ PIER SUPPORT** 1:150

1 SCALE **PRE–CAST GIRDER** 1:150

2 SCALE **STRUCTURAL STEEL TUB GIRDER** 1:150

KATAHIRA & ENGINEERS INTERNATIONAL
PRICE WATERHOUSE COOPERS ADVISORY CO., LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL AUTHORITY FOR ROADS
BRIDGES AND LAND TRANSPORT (GARBLT)
MINISTRY OF TRANSPORT
ARAB REPUBLIC OF EGYPT

PROJECT AND LOCATION :
FEASIBILITY STUDY ON
HIGH PRIORITY URBAN TOLL EXPRESSWAYS IN CAIRO
E3-2 EXPRESSWAY

SCALE : 1:150
FULL SIZE A3

DRAWING TITLE :
ELEVATED VIADUCT
SUPERSTRUCTURE LAYOUT & SECTIONS
4 OF 4

DRAWING NO : E3-2/S-19

SHEET NO : 19 / 19