



ADMA BRIDGE REHABILITATION STUDY

ADMA, CAZA KESROUANE

PROJECT DRAWINGS

MARCH, 2019

LIST OF DRAWINGS

DRAWING NO:

DRAWING TITLE

SCALE

GENERAL

P-1709-GEN-001
P-1709-GEN-002

LIST OF DRAWINGS
GENERAL LOCATION PLAN

N/A
N.T.S

TOPOGRAPHICAL SURVEY

P-1709-TOP-100
P-1709-TOP-101
P-1709-TOP-102
P-1709-TOP-103
P-1709-TOP-104
P-1709-TOP-105
P-1709-TOP-106
P-1709-TOP-107

TRAFFIC DIVERSION PLAN DURING EXECUTION
TOP VIEW PLAN
GIRDER FRAMING PLAN
ELEVATION VIEW NORTH SIDE
ELEVATION VIEW SOUTH SIDE
SECTION VIEW EAST SIDE
SECTION VIEW WEST SIDE
TOP VIEW PLAN

N.T.S
1/100
1/100
1/50
1/50
1/50
1/50
1/50
1/100

PLANS AND PROFILES

P-1709-PLN-201
P-1709-PLP-210

LOCATIONS OF REPARATIONS - PLAN VIEW
NORTHBOUND AND SOUTHBOUND - SOUTHBOUND APPROACH MODIFICATION

1/100
V:1/100, H:1/1000

CROSS SECTIONS

P-1709-XSC-301
P-1709-XSC-302
P-1709-XSC-303

SOUTHBOUND APPROACH MODIFICATION FROM STA. 0+020 TO 0+200
SOUTHBOUND APPROACH MODIFICATION FROM STA. 0+220 TO 0+380
SOUTHBOUND APPROACH MODIFICATION FROM STA. 0+400 TO 0+460

1/100
1/100
1/100

TYPICAL DETAILS

P-1709-DET-400
P-1709-DET-401
P-1709-DET-402
P-1709-DET-403
P-1709-DET-404
P-1709-DET-405
P-1709-DET-406

EXPANSION JOINT DETAILS
TRANSITION SLAB DETAIL AND TYPICAL JERSEY BARRIER DETAIL
TRAFFIC CONTROL DEVICES MARKING DETAILS SHEET 1 OF 2
TRAFFIC CONTROL DEVICES MARKING DETAILS SHEET 2 OF 2 & DELINEATORS DETAILS
TRAFFIC CONTROL DEVICES SIGNS DETAILS
SIGN MOUNTING DETAILS
LETTERING AND SYMBOLS SIZES DETAILS

N.T.S.
N.T.S.
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AS SHOWN
N.T.S.
AS SHOWN
AS SHOWN

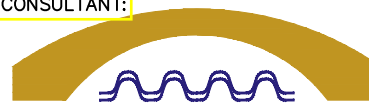
NOTES:

4		
3		
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1		
No.	REVISION	DATE

CLIENT:

REPUBLIC OF LEBANON
COUNCIL FOR DEVELOPMENT
AND RECONSTRUCTION

CONSULTANT:



KREDO SAL
CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:

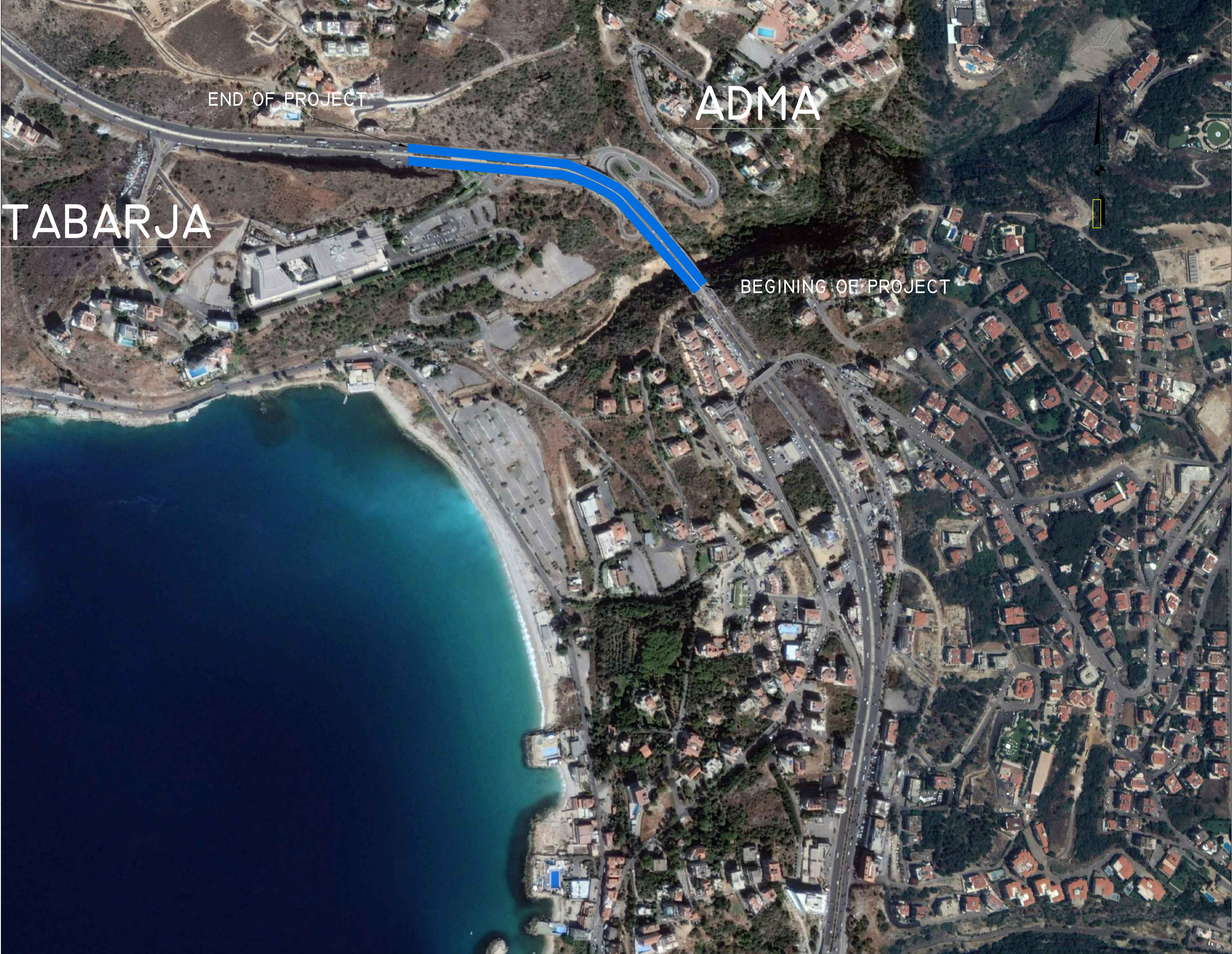
ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

DRAWING TITLE:

LIST OF DRAWING

DRAWN:	DESIGNED:	CHECKED:	C.B.	APPROVED:	G.K.
DATE:	MARCH-2019	SCALE:	N.T.S.		

FILE NAME:	
DRAWING No.:	REVISION:
P-1709-GEN-001	



NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.

2. COORDINATES ARE TIED TO THE NATIONAL DATUM OF LEBANON.

LEGENDS:

PROJECT ALIGNMENT

04.		
03.		
02.		
01.		
No.	REVISION	DATE

CLIENT:

REPUBLIC OF LEBANON

MINISTRY OF PUBLIC WORKS AND TRANSPORT

DIRECTORATE GENERAL OF ROADS AND BUILDINGS

CONSULTANT:

KREDO

SAL

CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:

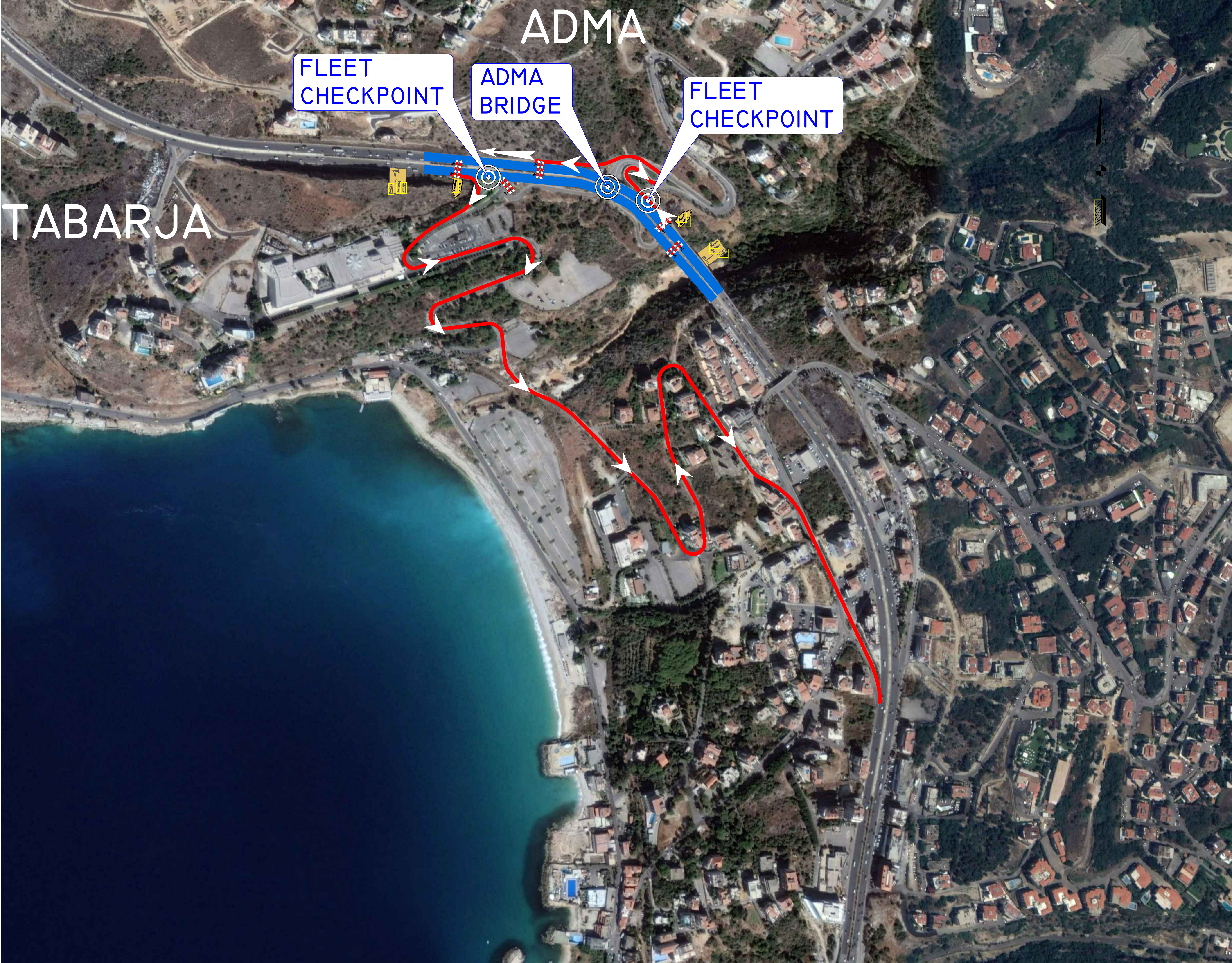
ADMA BRIDGE REHABILITATION STUDY

ADMA, CAZA KESROUANE

DRAWING TITLE:

GENERAL LOCATION PLAN

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
E. C.	E. C.	C. B.	G. K.
DATE:	MARCH 2019	SCALE:	N.T.S
FILE NAME:	P-1709-DRAWINGS		
DRAWING No:	P-1709-GEN-002	REVISION:	-



NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.

2. COORDINATES ARE TIED TO THE NATIONAL DATUM OF LEBANON.

LEGENDS:

PROJECT ALIGNMENT

DIVERSION ALIGNMENT

PORTABLE BARRIER

DEVIATION SIGN

04.		
03.		
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01.		
No.	REVISION	DATE

CLIENT:

REPUBLIC OF LEBANON
MINISTRY OF PUBLIC WORKS AND TRANSPORT
DIRECTORATE GENERAL OF ROADS AND BUILDINGS

CONSULTANT:

KREDO

SAL

CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE:

P-1709

PROJECT NAME:

ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

DRAWING TITLE:

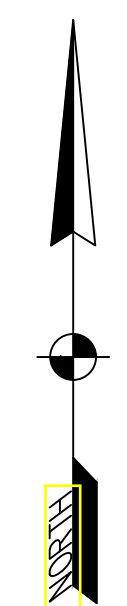
TRAFFIC DIVERSION PLAN DURING EXECUTION

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
E. C.	E. C.	C. B.	G. K.

DATE:	MARCH 2019	SCALE:	N.T.S
FILE NAME:	P-1709-DRAWINGS		
DRAWING No:	P-1709-TOP-100	REVISION:	-

TOWARDS
TRIPOLI

ADMA



TABARJA

TOWARDS
BEIRUT

- NOTES:
- ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
 - COORDINATES ARE TIED TO THE NATIONAL DATUM OF LEBANON.

04		
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No.	REVISION	DATE

CLIENT:

REPUBLIC OF LEBANON
MINISTRY OF PUBLIC WORKS AND TRANSPORT
DIRECTORATE GENERAL OF ROADS
AND BUILDINGS

CONSULTANT:

 **KREDO** SAL
CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:

ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

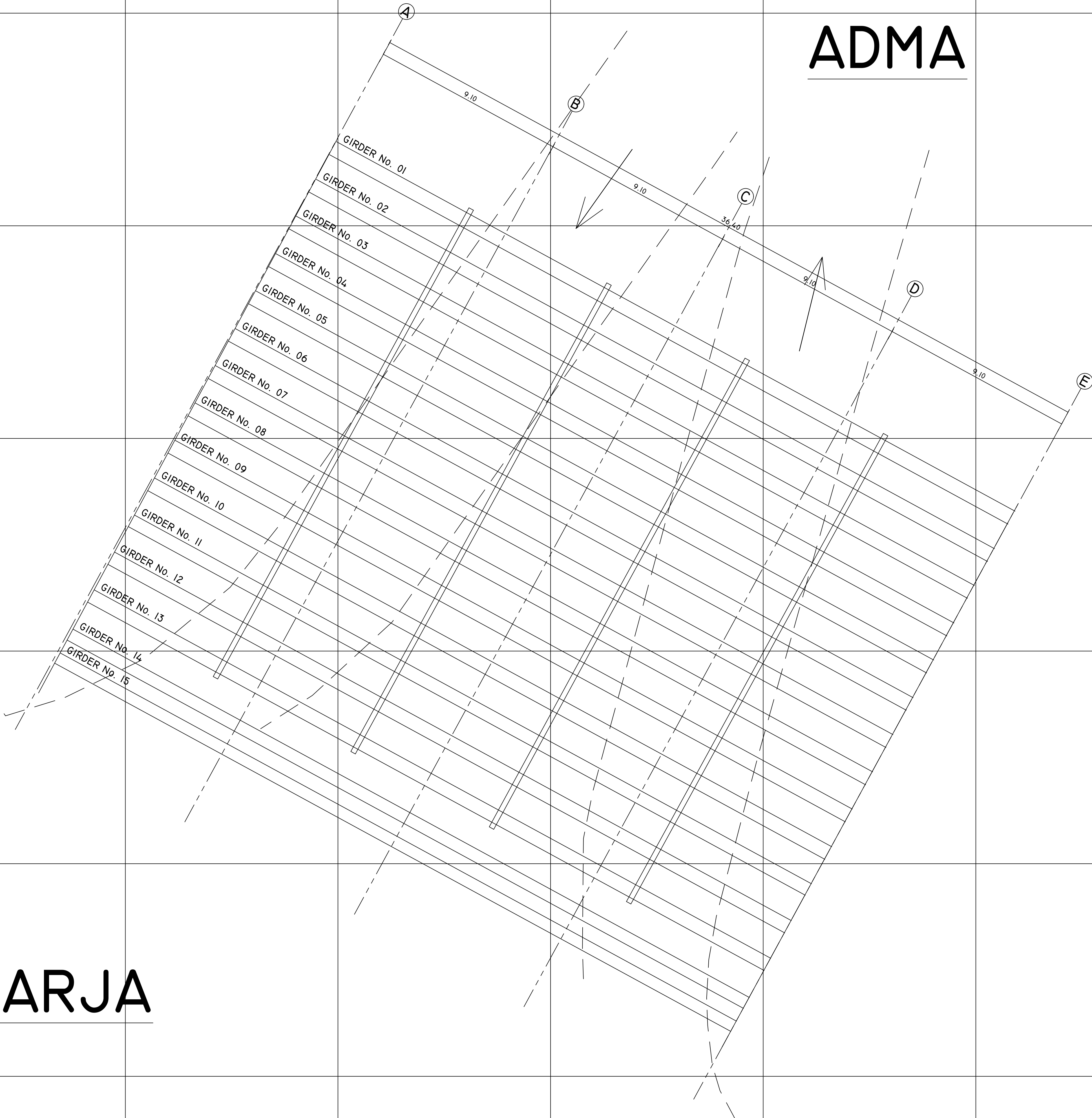
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TOP VIEW PLAN

DRAWN:	E.C.	DESIGNED:	E.C.	CHECKED:	C.B.	APPROVED:	G.K.
DATE:	MARCH 2019			SCALE:		1/100	
FILE NAME:	P-1709-DRAWINGS						
DRAWING No:	P-1709-TOP-101						REVISION:
							-

TABARJA

ADMA



NOTES:

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MINISTRY OF PUBLIC WORKS AND TRANSPORT
DIRECTORATE GENERAL OF ROADS
AND BUILDINGS

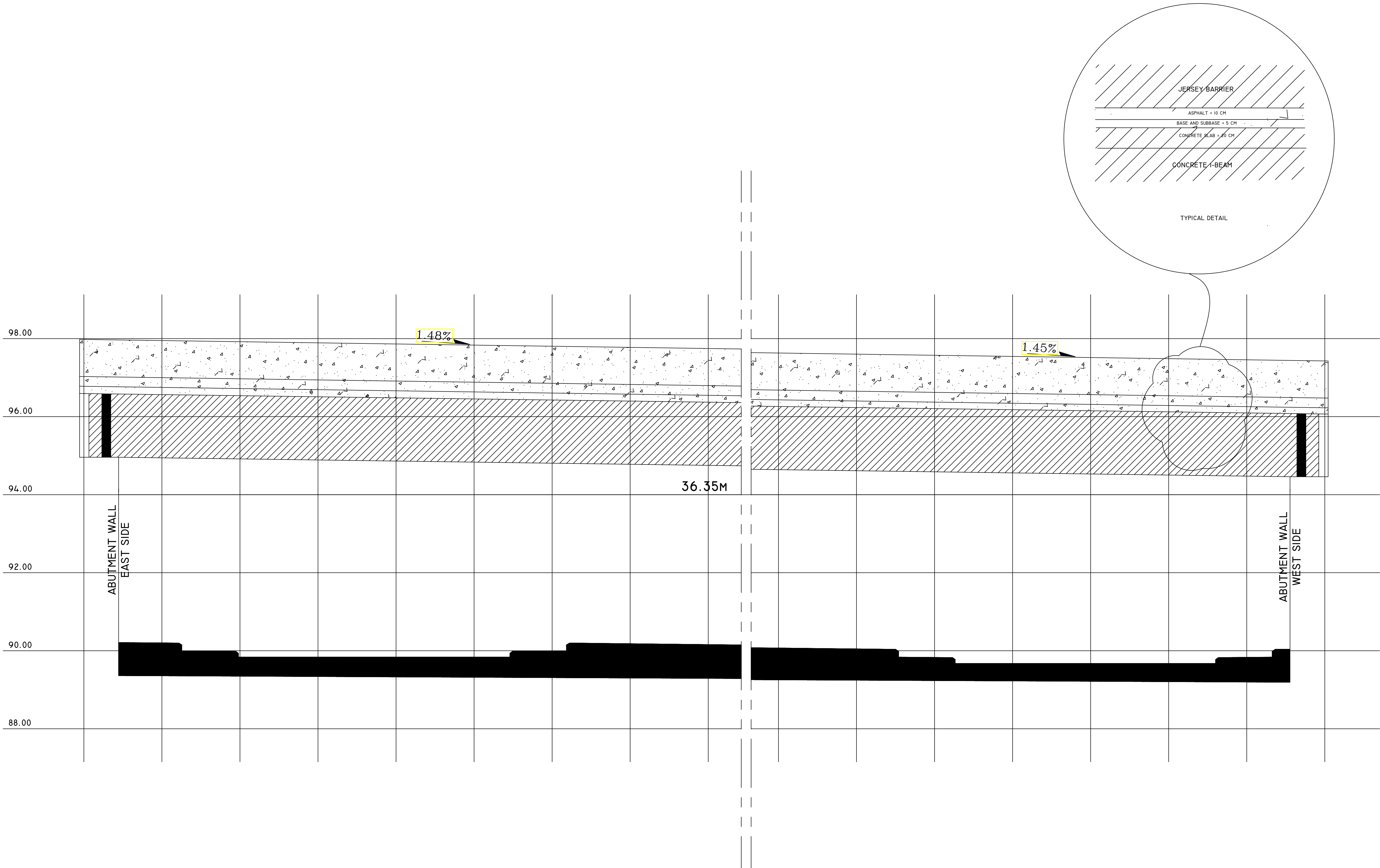
CONSULTANT:
 **KREDO** SAL
CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:
ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

DRAWING TITLE:
GIRDER FRAMING PLAN

DRAWN:	E.C.	DESIGNED:	E.C.	CHECKED:	C.B.	APPROVED:	G.K.
DATE:	MARCH 2019			SCALE:		1/100	
FILE NAME:	P-1709-DRAWINGS						
DRAWING No:	P-1709-TOP-102						REVISION:
						-	



ELEVATION VIEW - NORTH SIDE

- NOTES:
- ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
 - ELEVATIONS ARE TIED TO THE NATIONAL DATUM OF LEBANON.

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No.	REVISION	DATE

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DIRECTORATE GENERAL OF ROADS
AND BUILDINGS

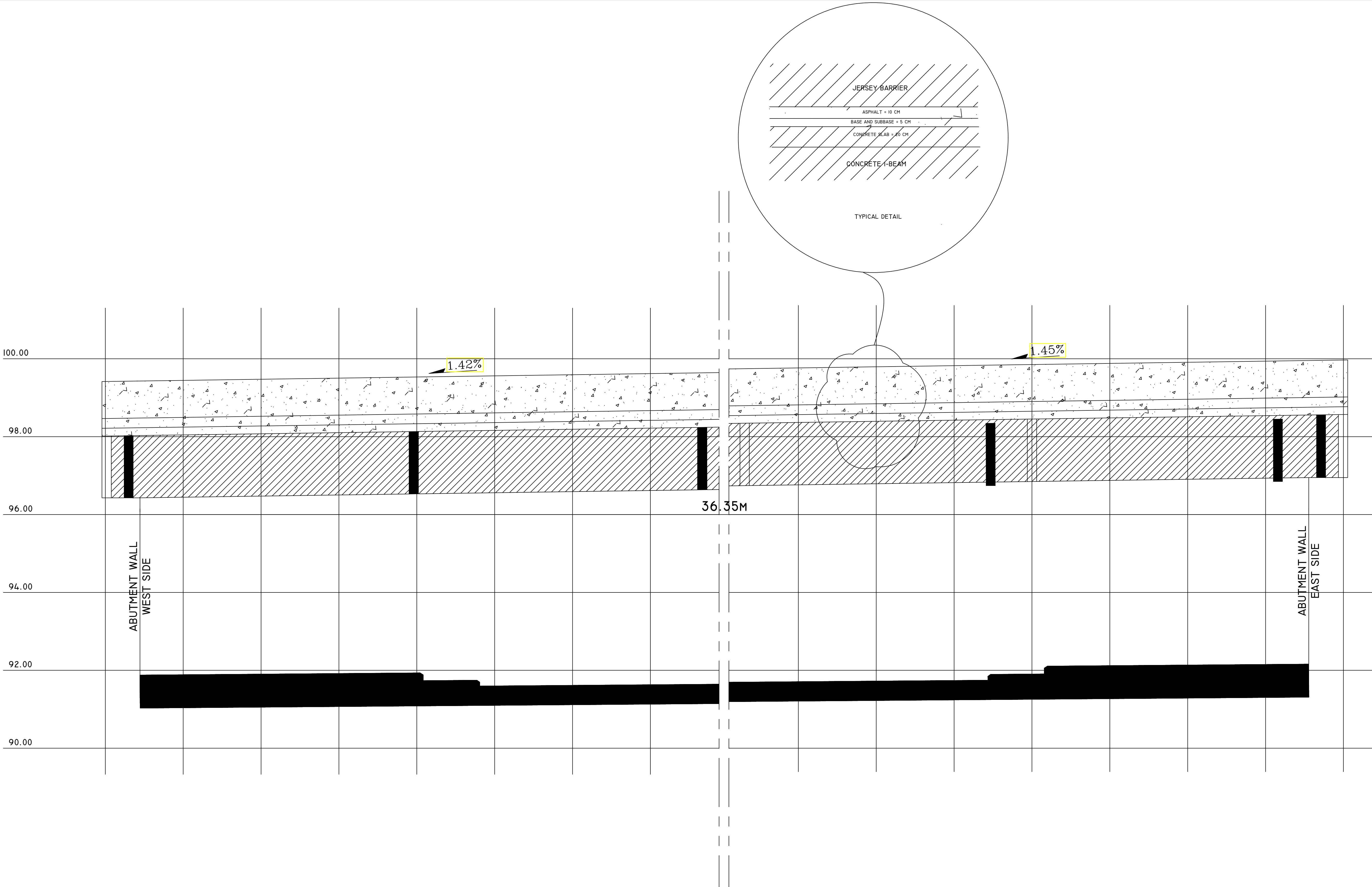
CONSULTANT:
 **KREDO** SAL
CARMEL BLDG., SAYDEH ST., ACHRAFAIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:
ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

DRAWING TITLE:
ELEVATION VIEW - NORTH SIDE

DRAWN:	E.C.	DESIGNED:	E.C.	CHECKED:	C.B.	APPROVED:	G.K.
DATE:	MARCH 2019			SCALE:		1/50	
FILE NAME:	P-1709-DRAWINGS						
DRAWING No:	P-1709-TOP-103						REVISION:
							-



ELEVATION VIEW - SOUTH SIDE

- NOTES:
- ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
 - ELEVATIONS ARE TIED TO THE NATIONAL DATUM OF LEBANON.

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No.	REVISION	DATE

CLIENT:

REPUBLIC OF LEBANON

MINISTRY OF PUBLIC WORKS AND TRANSPORT

DIRECTORATE GENERAL OF ROADS AND BUILDINGS

CONSULTANT:

KREDO

SAL

CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:

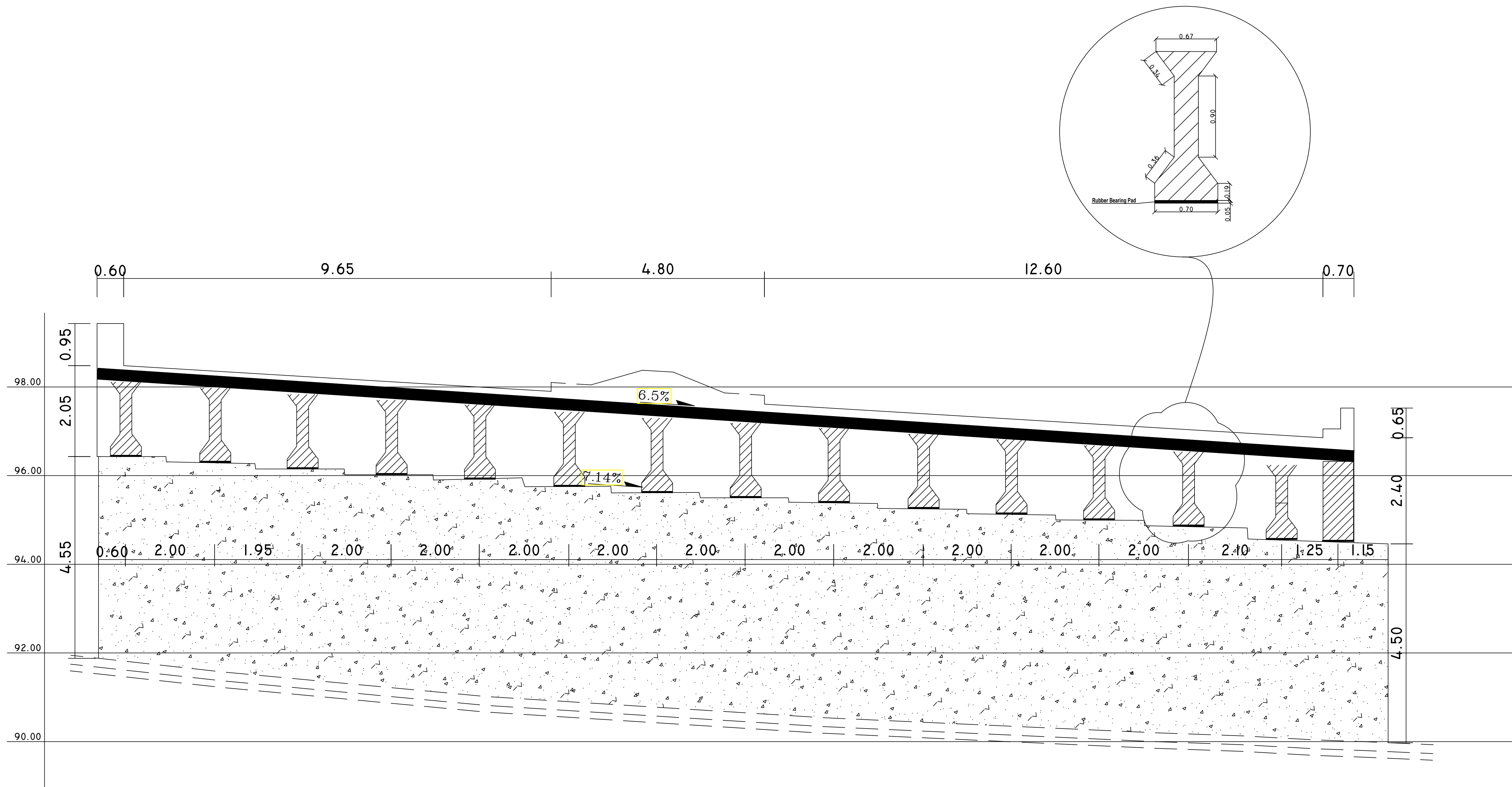
ADMA BRIDGE REHABILITATION STUDY

ADMA, CAZA KESROUANE

DRAWING TITLE:

ELEVATION VIEW - SOUTH SIDE

DRAWN:	E.C.	DESIGNED:	E.C.	CHECKED:	C.B.	APPROVED:	G.K.
DATE:	MARCH 2019			SCALE:		1/50	
FILE NAME:	P-1709-DRAWINGS						
DRAWING No:	P-1709-TOP-104						REVISION:
							-



SECTION VIEW - EAST SIDE

- NOTES:
1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
 2. ELEVATIONS ARE TIED TO THE NATIONAL DATUM OF LEBANON.

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No.	REVISION	DATE

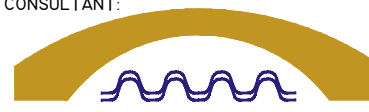
CLIENT:

REPUBLIC OF LEBANON

MINISTRY OF PUBLIC WORKS AND TRANSPORT

DIRECTORATE GENERAL OF ROADS AND BUILDINGS

CONSULTANT:

KREDO

SAL

CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:

ADMA BRIDGE REHABILITATION STUDY

ADMA, CAZA KESROUANE

DRAWING TITLE:

SECTION VIEW - EAST SIDE

DRAWN:	E.C.	DESIGNED:	E.C.	CHECKED:	C.B.	APPROVED:	G.K.
DATE:	MARCH 2019	SCALE:	1/50				
FILE NAME:	P-1709-DRAWINGS						
DRAWING No:	P-1709-TOP-105	REVISION:	-				

TOWARDS
TRIPOLI

ADMA

TABARJA

FARO-3D MODELING

STA.01

STA.03

STA.02

TOWARDS
BEIRUT

NOTES:

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LEGENDS:

-  FARO-3D MODELING
-  STA.01

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No.	REVISION	DATE

CLIENT:
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MINISTRY OF PUBLIC WORKS AND TRANSPORT
DIRECTORATE GENERAL OF ROADS
AND BUILDINGS

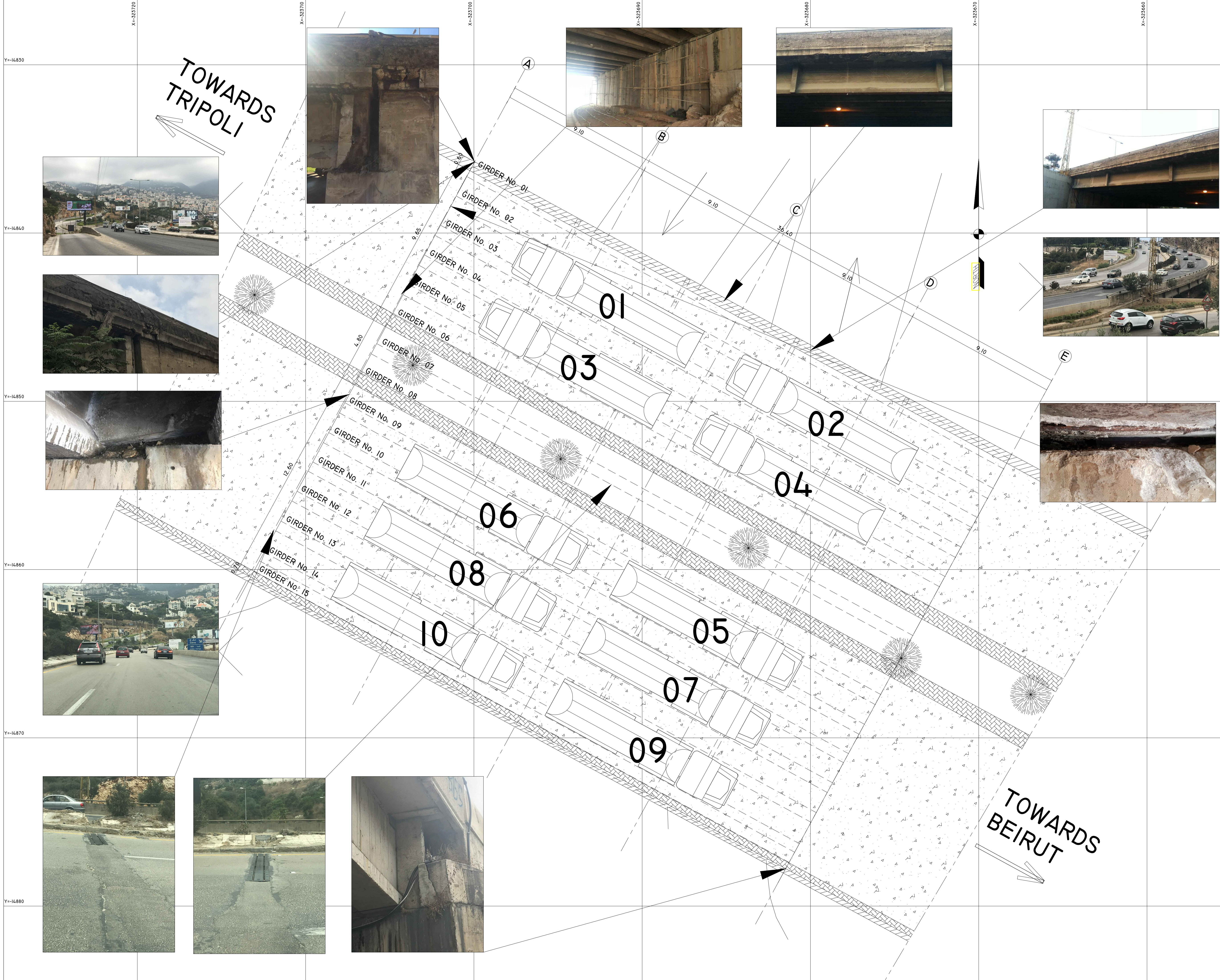
CONSULTANT:
 **KREDO** SAL
CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:
ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

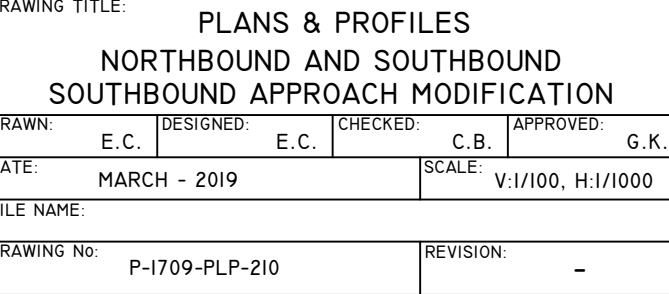
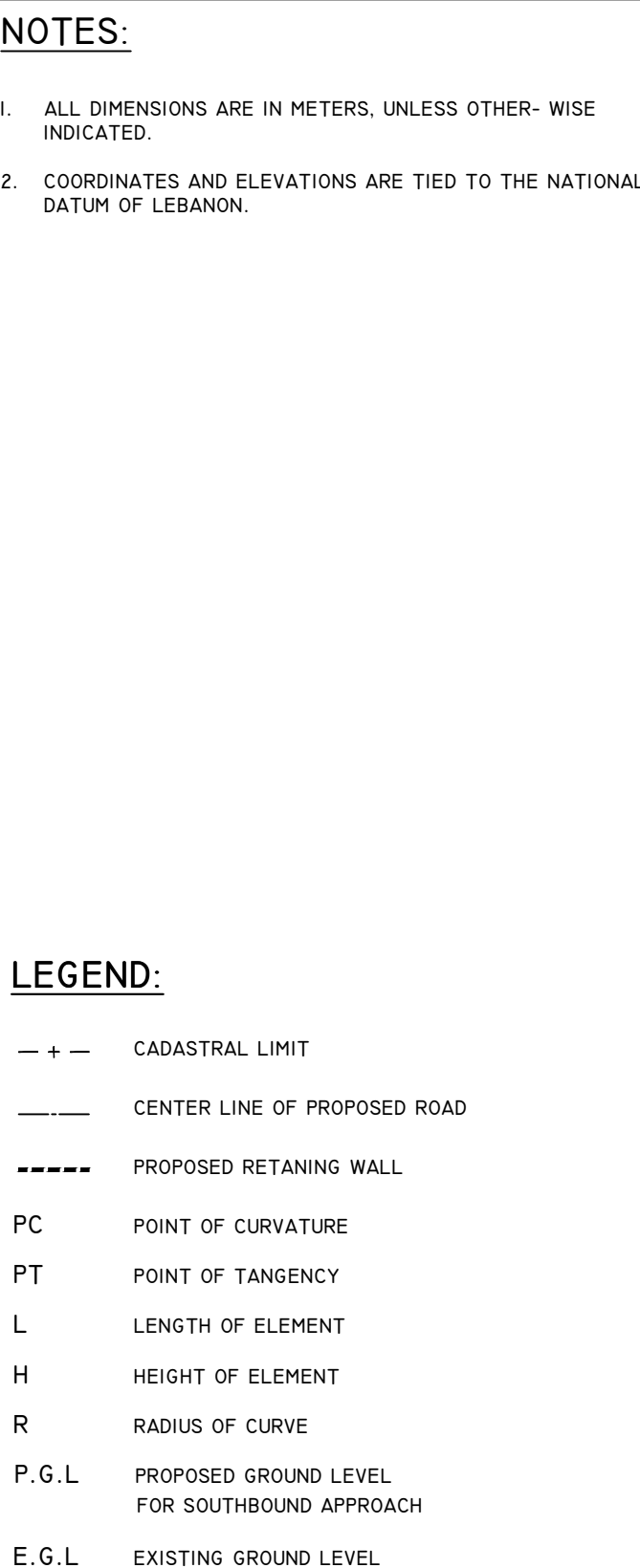
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TOP VIEW PLAN
MONITORING EQUIPMENT

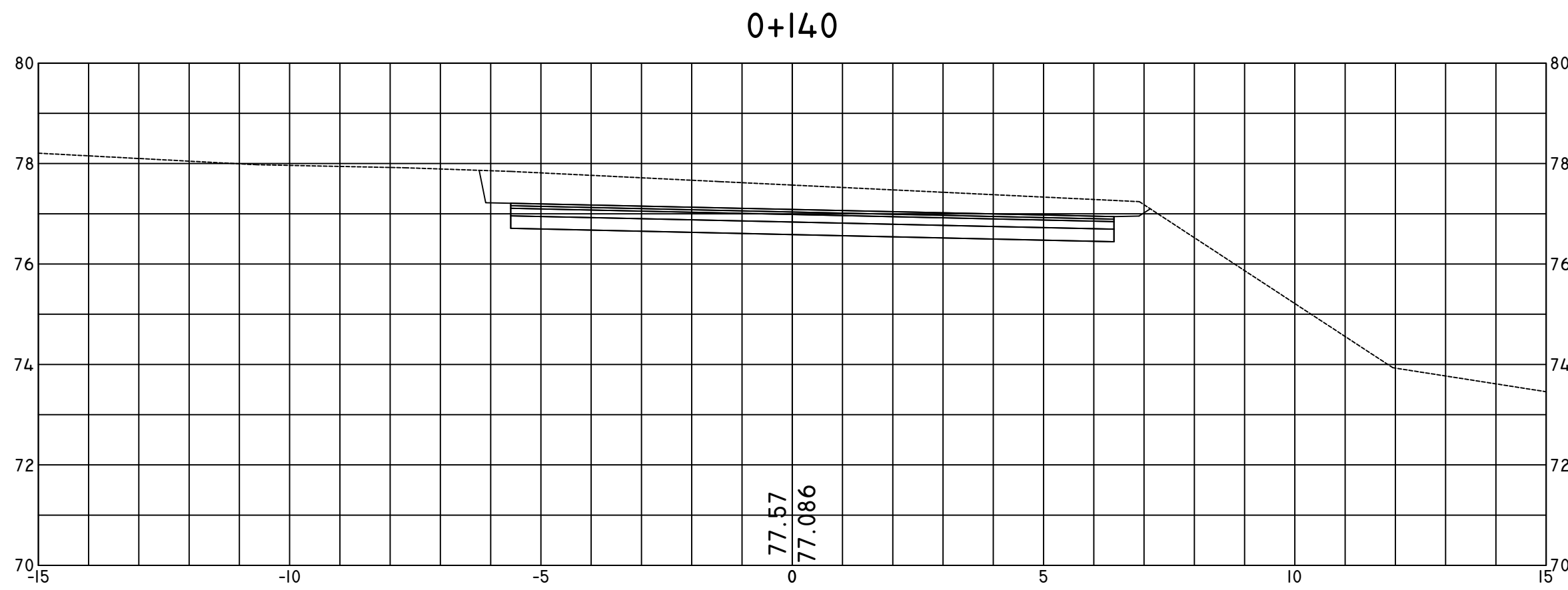
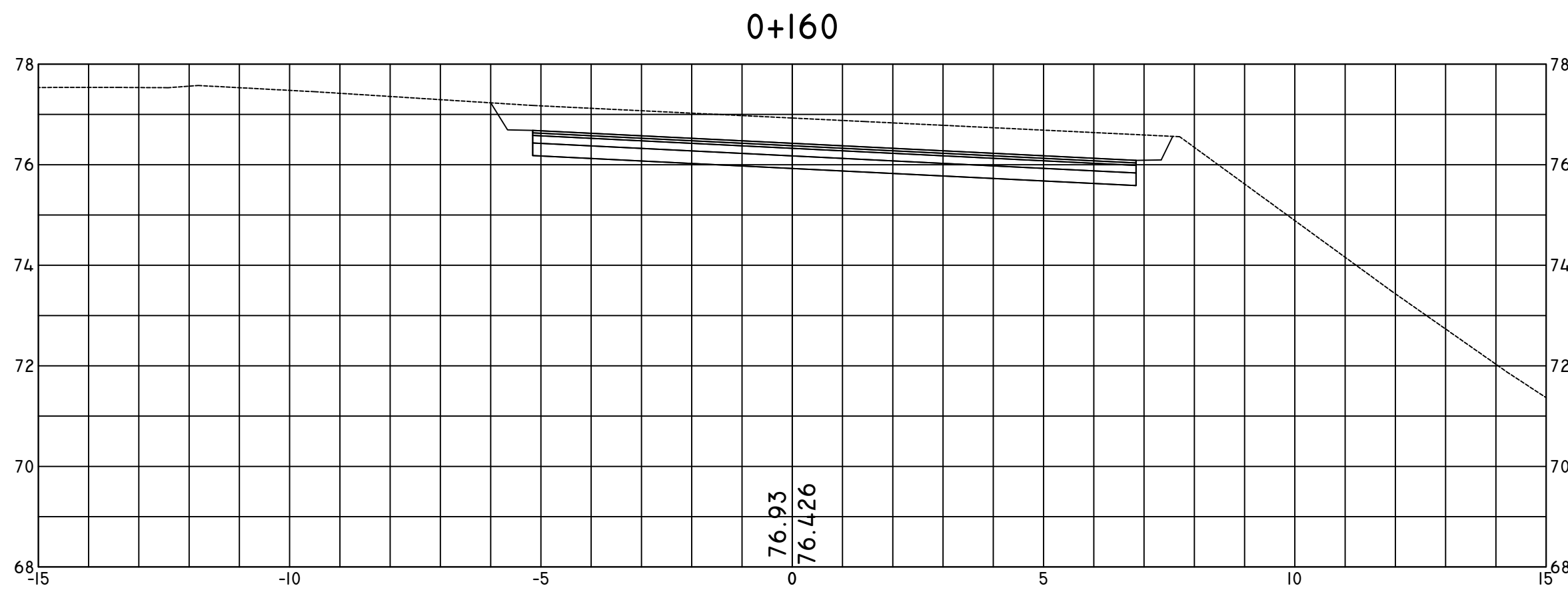
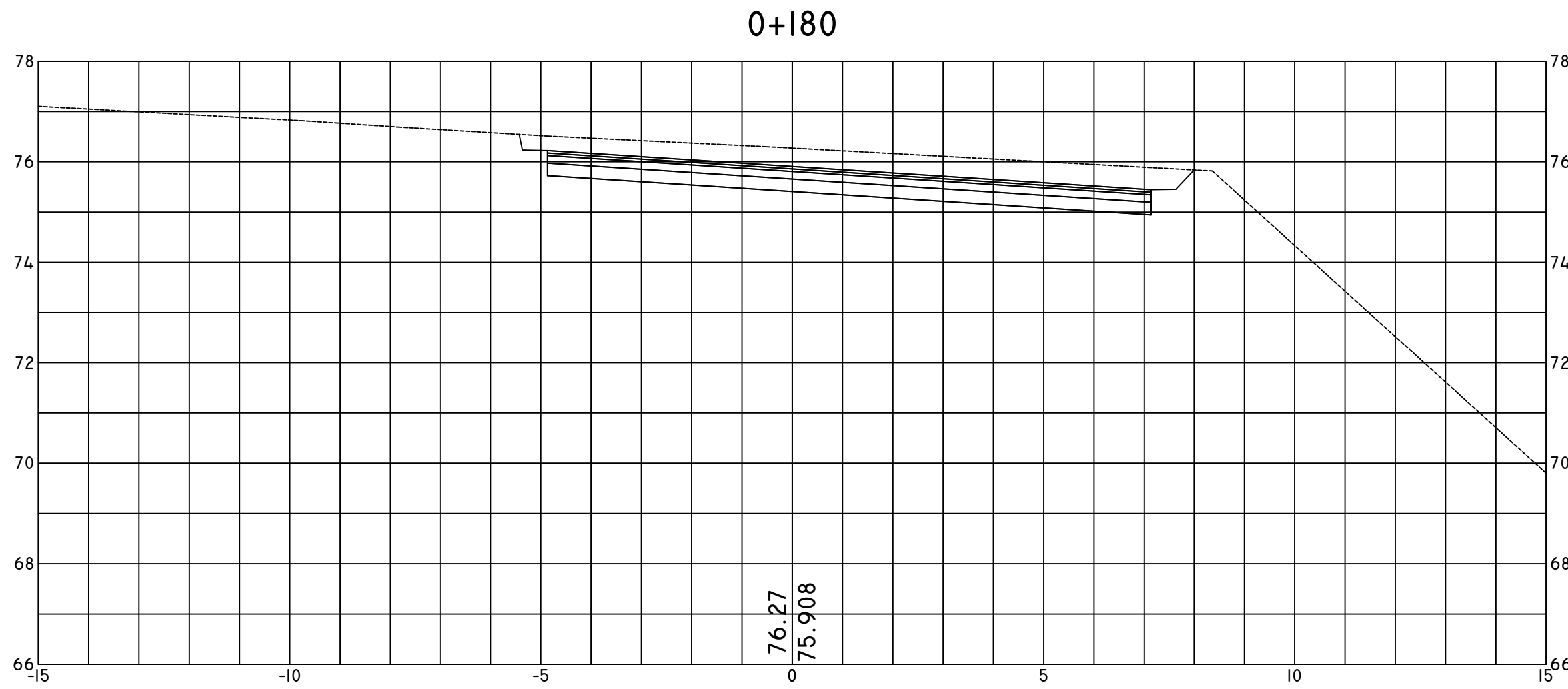
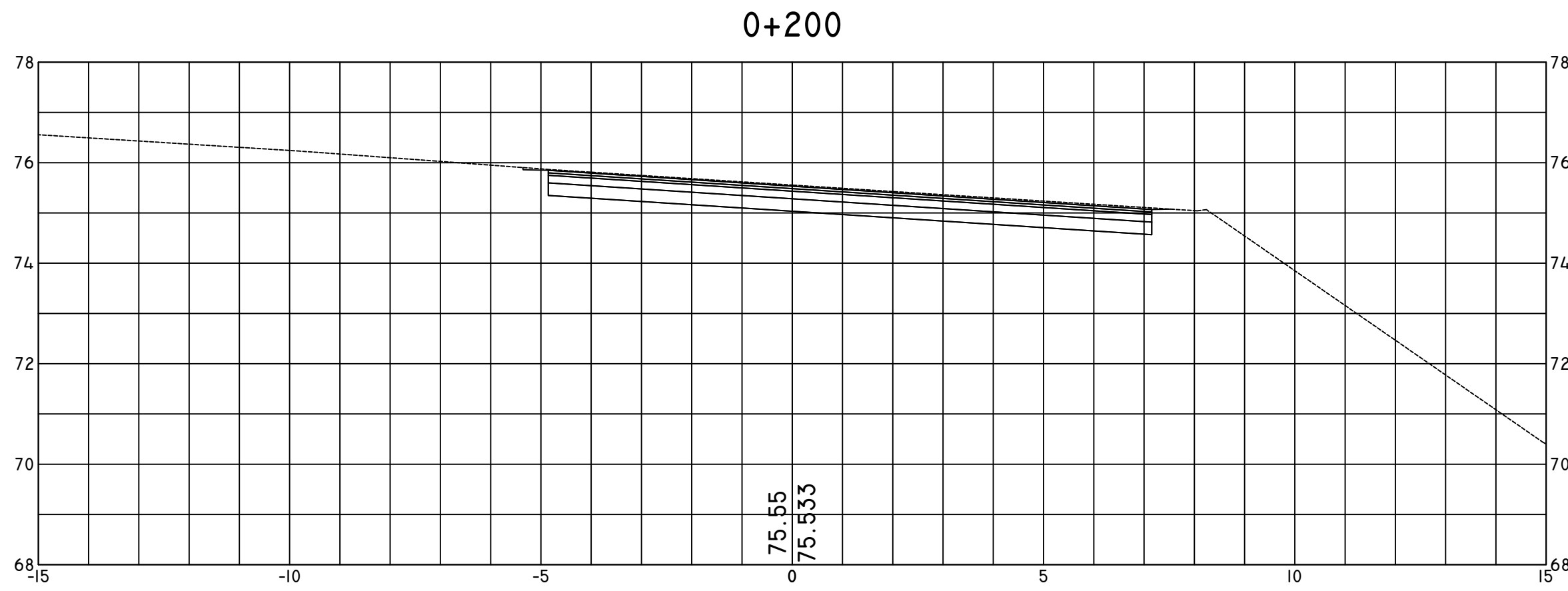
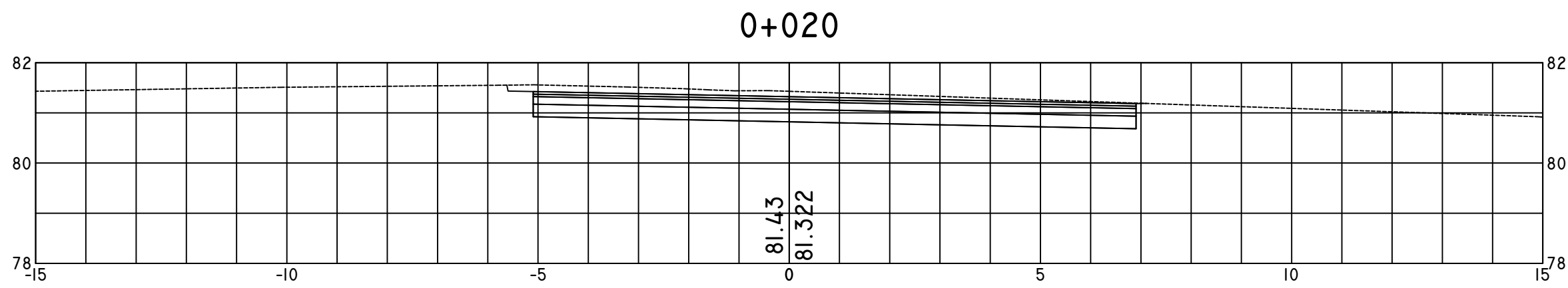
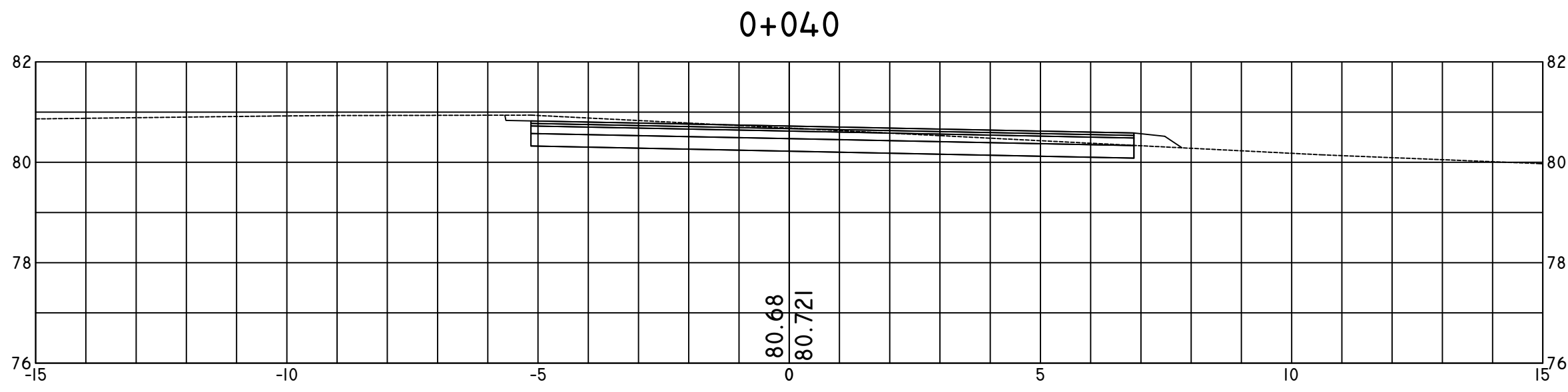
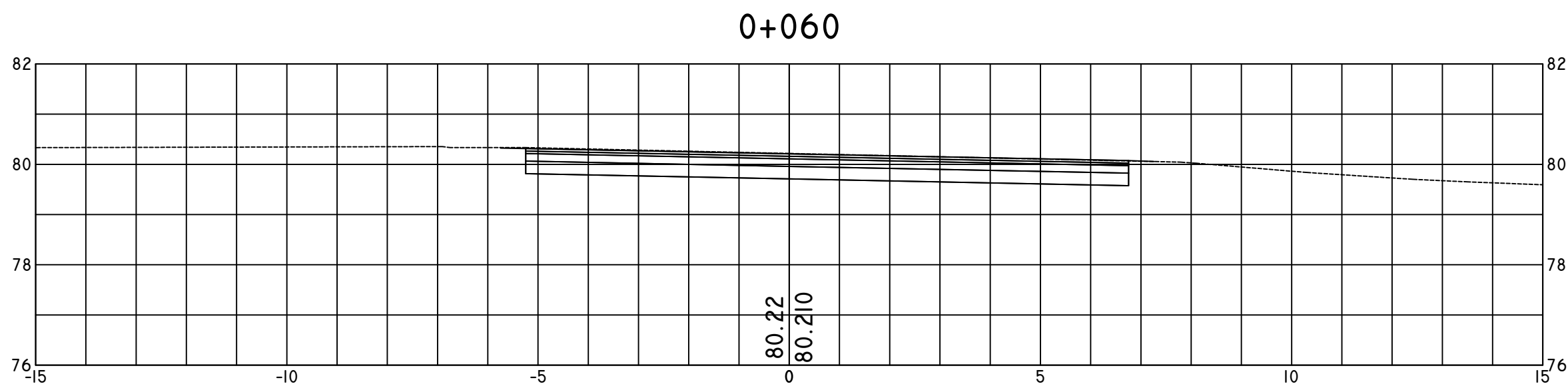
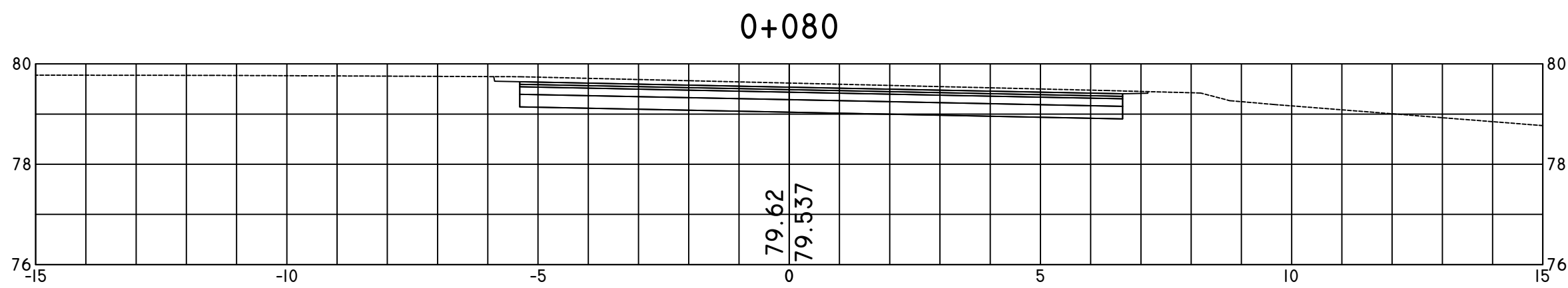
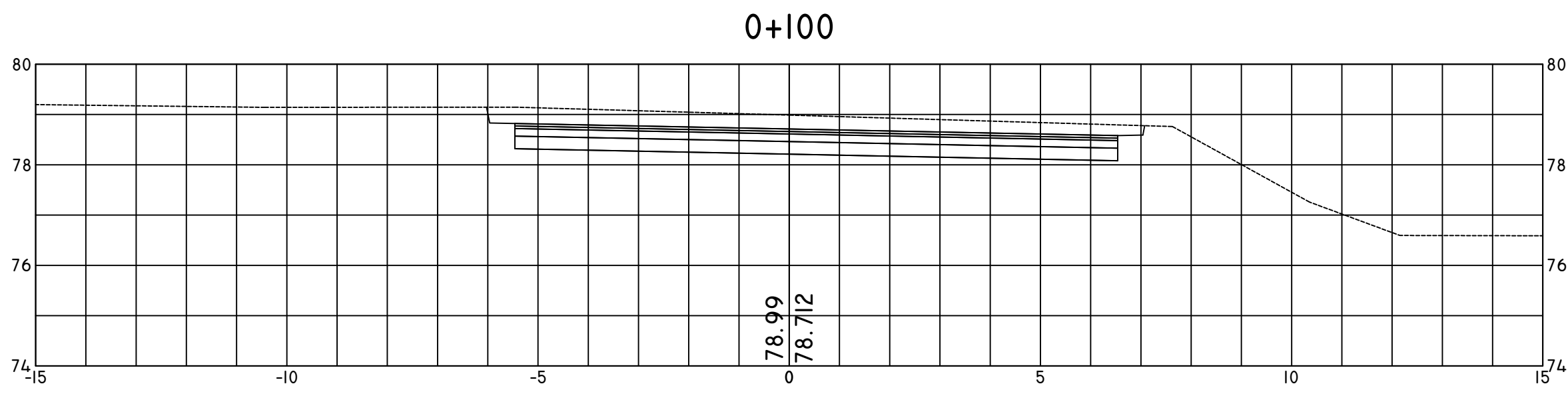
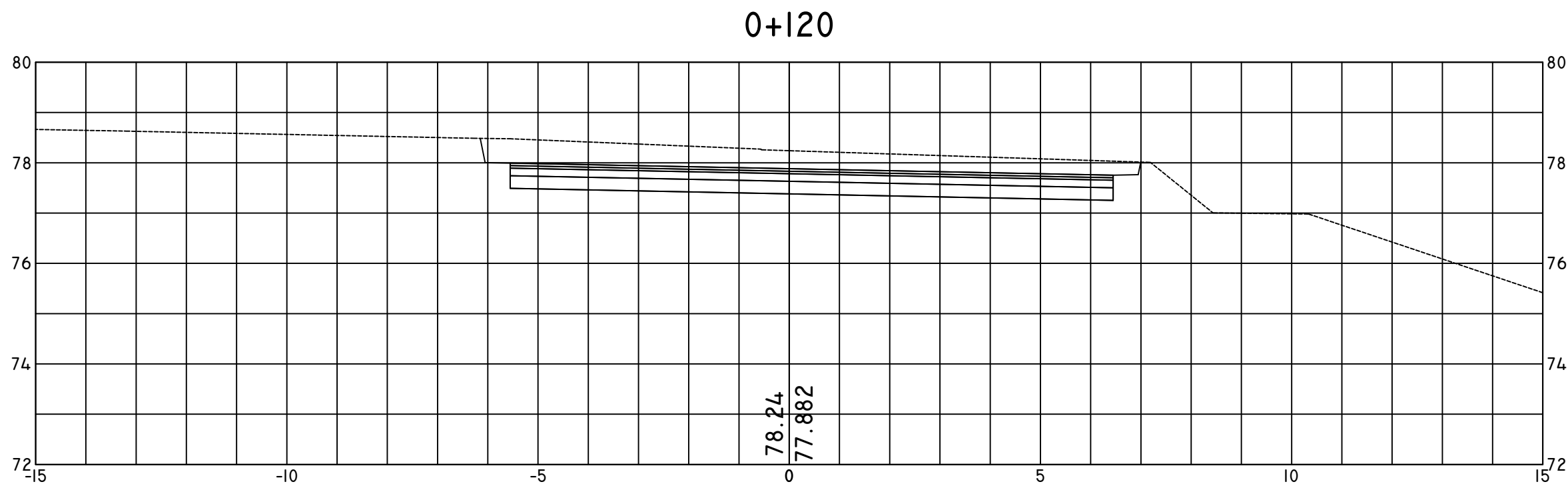
DRAWN:	E.C.	DESIGNED:	E.C.	CHECKED:	C.B.	APPROVED:	G.K.
DATE:	MARCH 2019			SCALE:		1/100	
FILE NAME:	P-1709-DRAWINGS						
DRAWING No:	P-1709-TOP-107						REVISION: -



- NOTES:
1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
 2. COORDINATES ARE TIED TO THE NATIONAL DATUM OF LEBANON.

04		
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No.	REVISION	DATE
CLIENT:		
REPUBLIC OF LEBANON		
MINISTRY OF PUBLIC WORKS AND TRANSPORT		
DIRECTORATE GENERAL OF ROADS AND BUILDINGS		
CONSULTANT:		
 Kredo SAL		
CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON		
PROJECT REFERENCE: P-1709		
PROJECT NAME:		
ADMA BRIDGE REHABILITATION STUDY		
ADMA, CAZA KESROUANE		
DRAWING TITLE:		
LOCATIONS OF DAMAGES		
PLAN VIEW		
DRAWN:	DESIGNED:	CHECKED:
E.C.	E.C.	C.B.
DATE:	MARCH 2019	SCALE:
FILE NAME:	P-1709-DRAWINGS	I/100
DRAWING No:	P-1709-PLN-201	REVISION:
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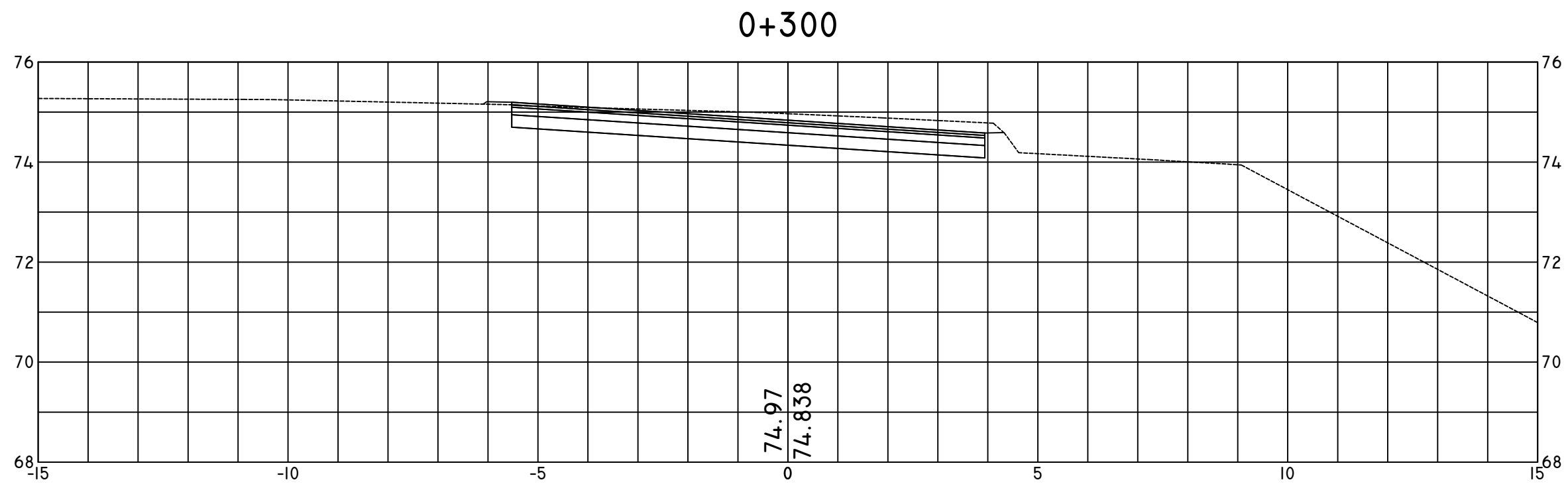
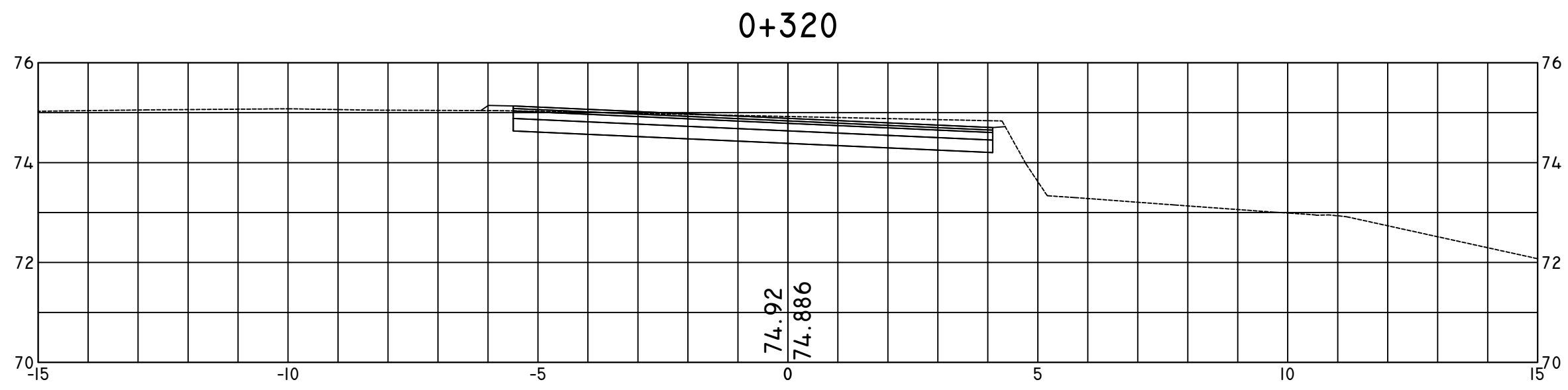
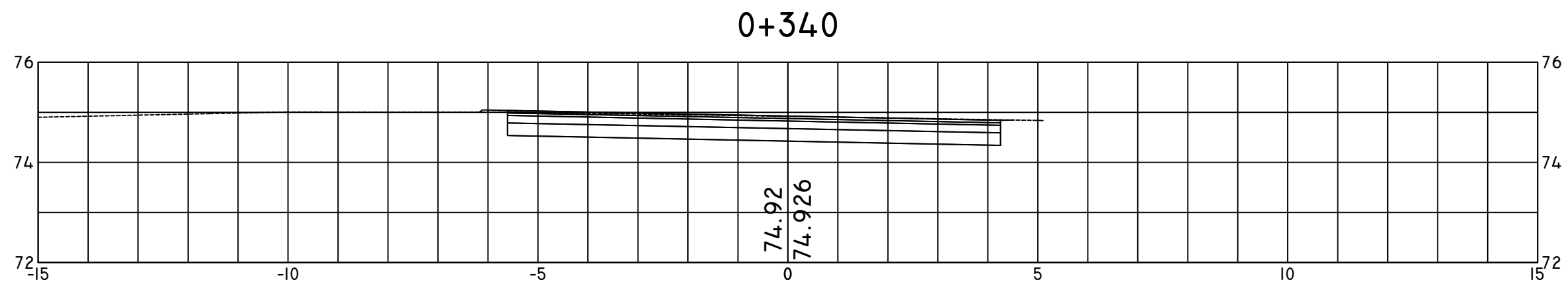
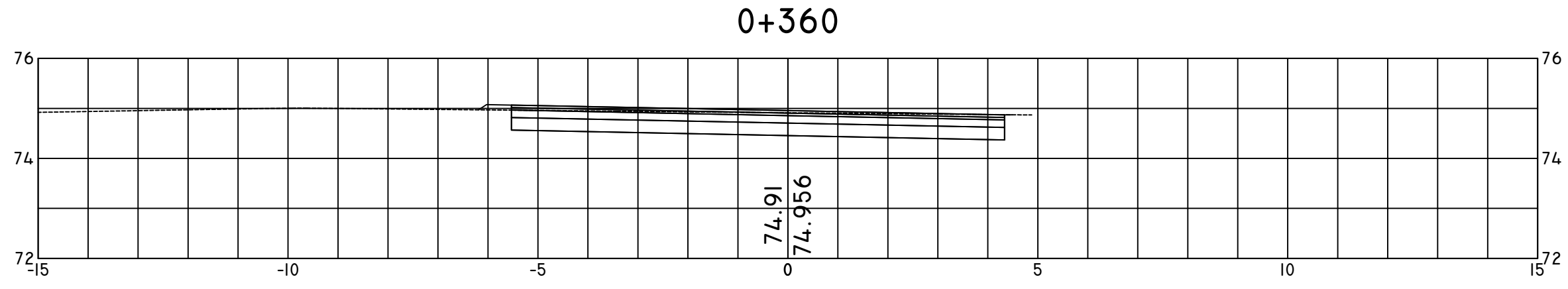
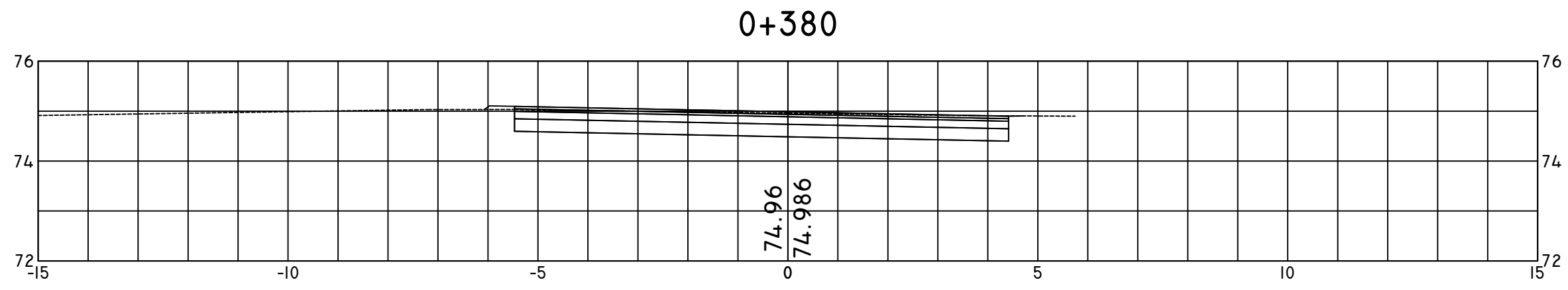
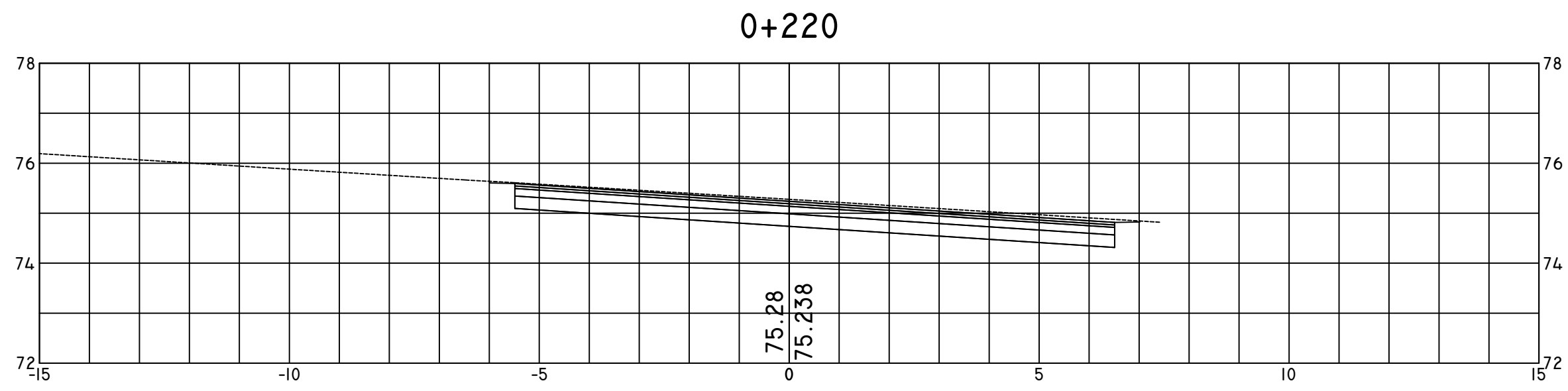
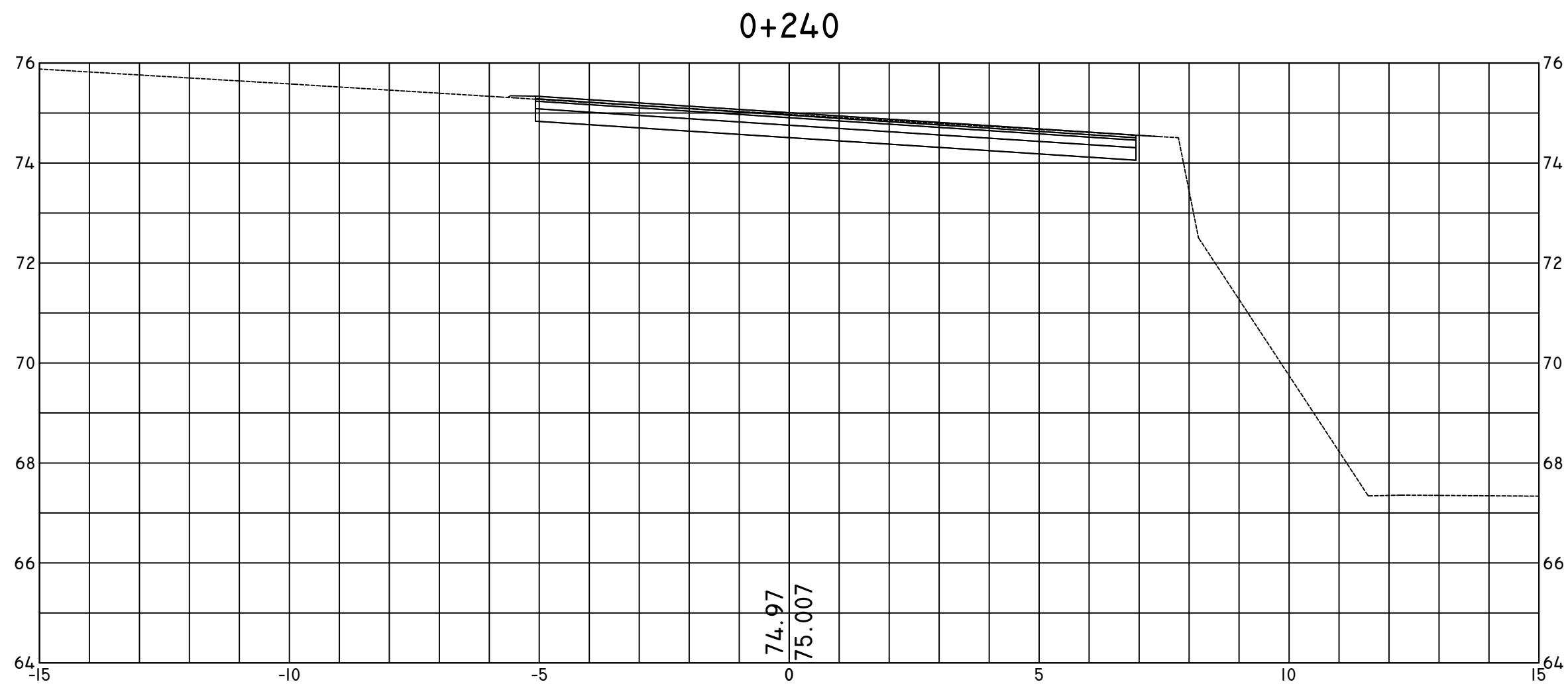
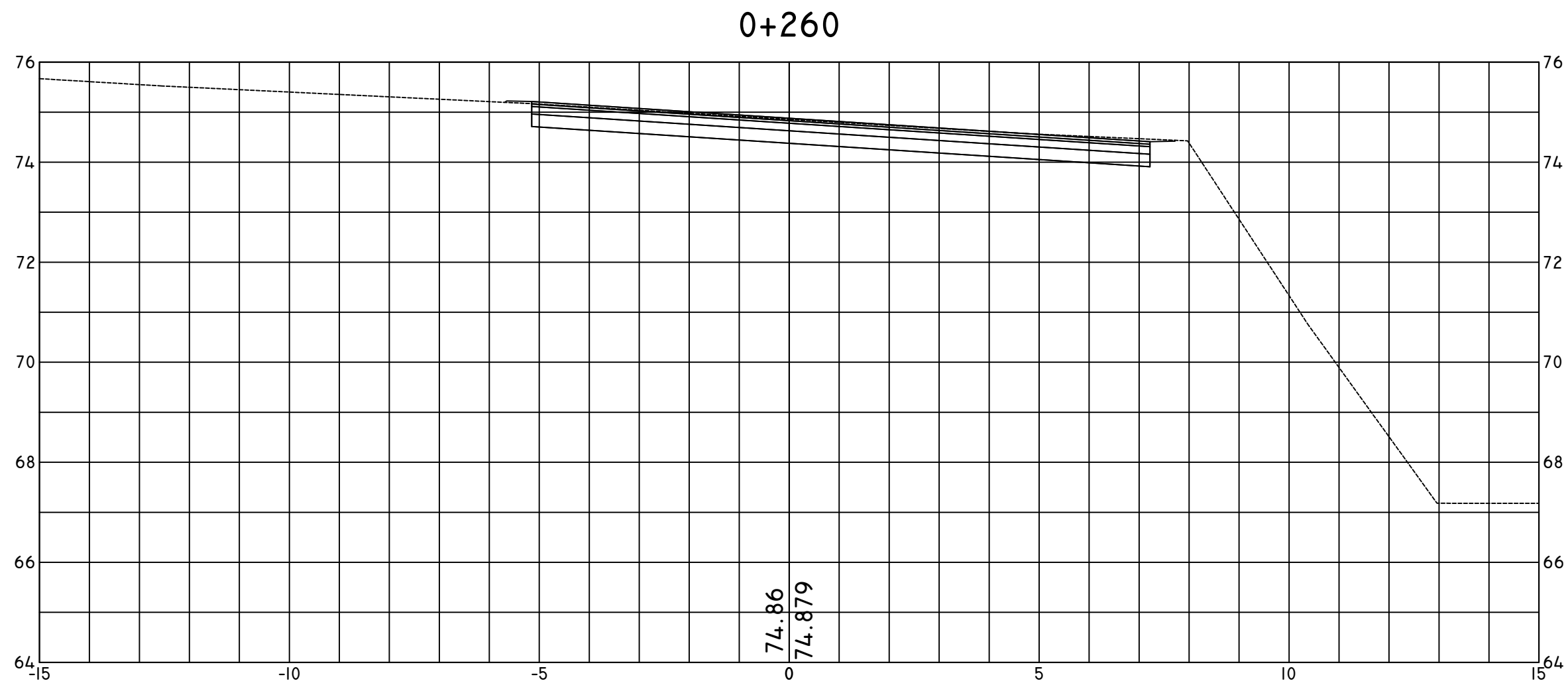
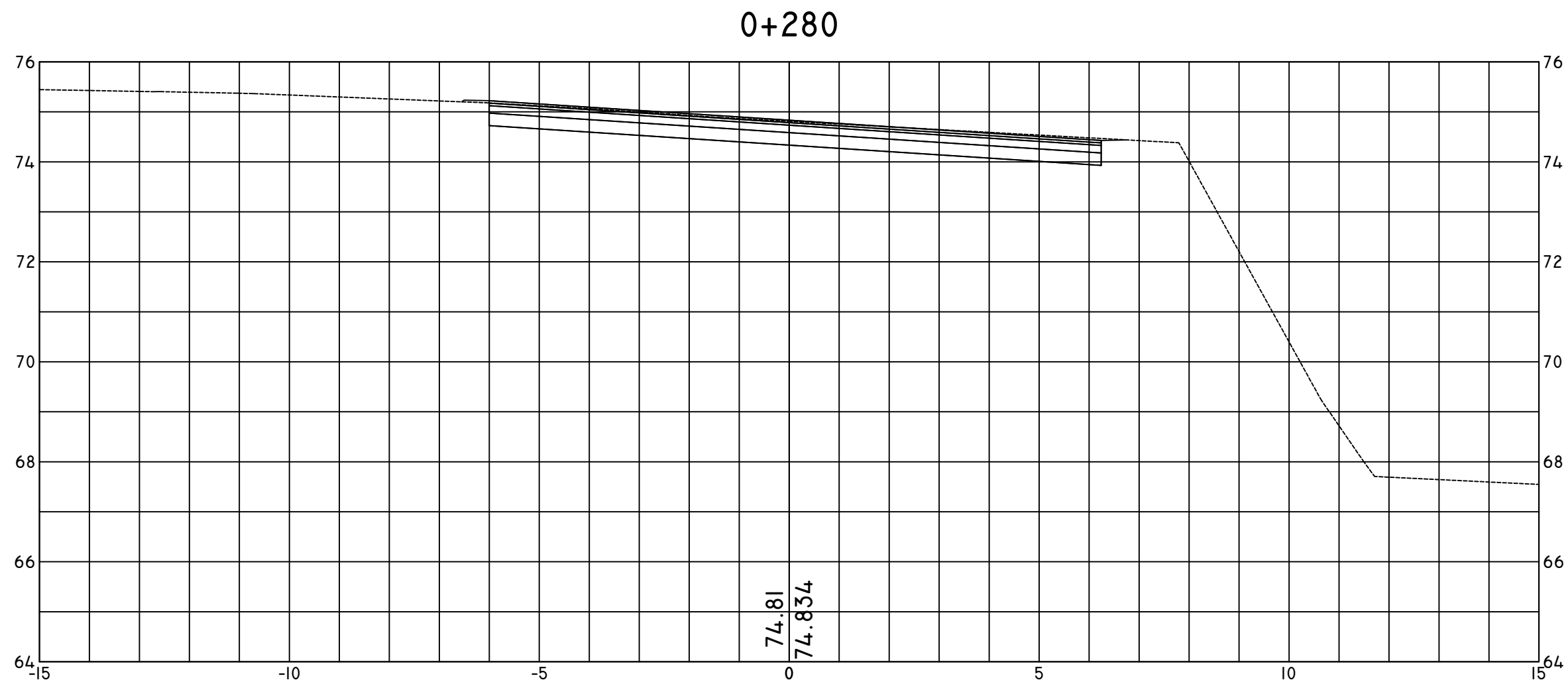
NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
2. ELEVATIONS ARE TIED TO THE NATIONAL DATUM OF LEBANON.

LEGEND:

- EXISTING GROUND LEVEL
- PROPOSED ROAD SECTION

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No.	REVISION	DATE
CLIENT:		
REPUBLIC OF LEBANON		
MINISTRY OF PUBLIC WORKS AND TRANSPORT		
DIRECTORATE GENERAL OF ROADS AND BUILDINGS		
CONSULTANT:		
 KREDO SAL.		
CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON		
PROJECT REFERENCE: P-1709		
PROJECT NAME:		
ADMA BRIDGE REHABILITATION STUDY		
ADMA, CAZA KESROUANE		
DRAWING TITLE:		
CROSS SECTIONS		
SOUTHBOUND APPROACH MODIFICATION		
DRAWN:	DESIGNED:	CHECKED:
E.C.	E.C.	C.B.
DATE:	MARCH - 2019	SCALE:
FILE NAME:		1/100
DRAWING No:	P-1709-XSC-301	REVISION:
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NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
2. ELEVATIONS ARE TIED TO THE NATIONAL DATUM OF LEBANON.

LEGEND:

- EXISTING GROUND LEVEL
- PROPOSED ROAD SECTION

04		
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No.	REVISION	DATE

CLIENT:

REPUBLIC OF LEBANON
MINISTRY OF PUBLIC WORKS AND TRANSPORT
DIRECTORATE GENERAL OF ROADS
AND BUILDINGS

CONSULTANT:

 **KREDO** SAL.
CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:

ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

DRAWING TITLE:

CROSS SECTIONS
SOUTHBOUND APPROACH MODIFICATION

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
E.C.	E.C.	C.B.	G.K.

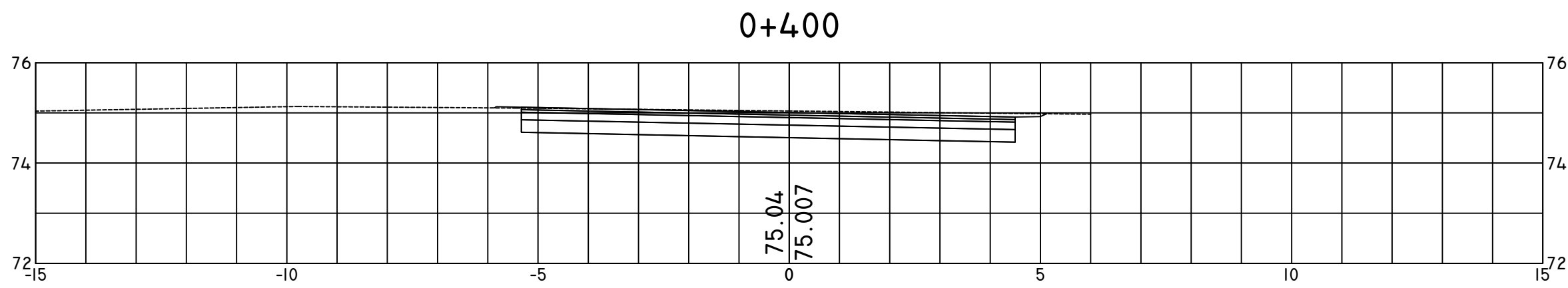
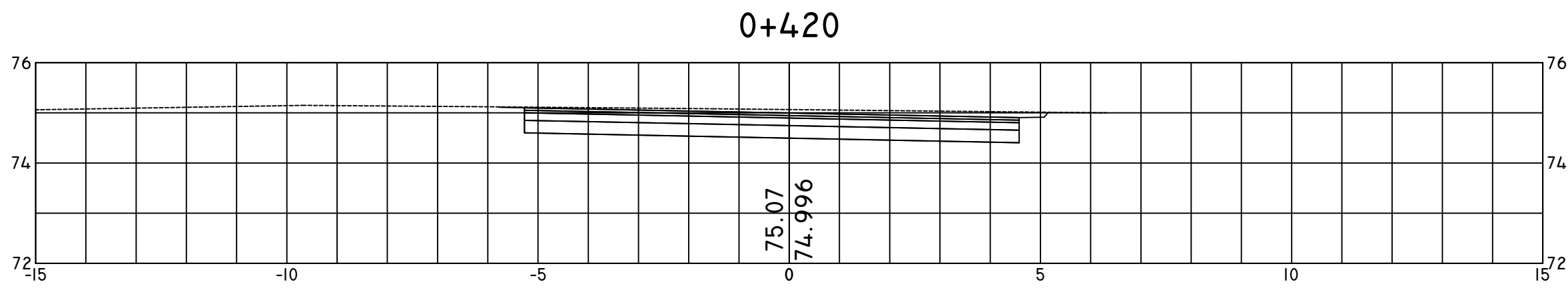
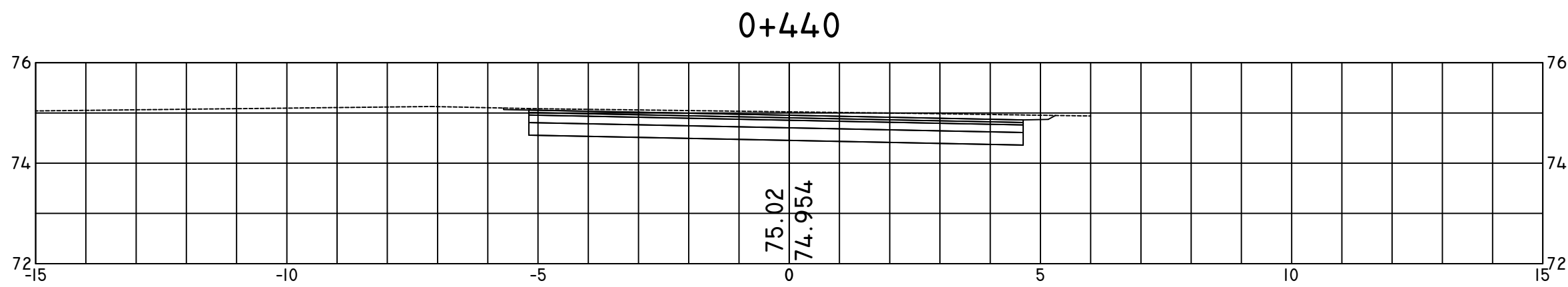
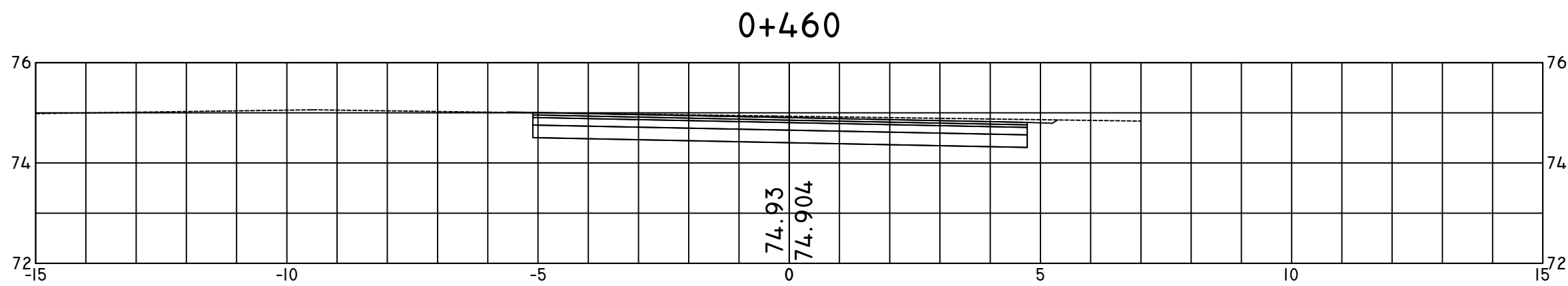
DATE: MARCH - 2019

SCALE: 1/100

FILE NAME:

DRAWING No: P-1709-XSC-302

REVISION: -



NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
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LEGEND:

- EXISTING GROUND LEVEL
- PROPOSED ROAD SECTION

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MINISTRY OF PUBLIC WORKS AND TRANSPORT
DIRECTORATE GENERAL OF ROADS
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PROJECT REFERENCE: P-1709

PROJECT NAME:

ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

DRAWING TITLE:

CROSS SECTIONS
SOUTHBOUND APPROACH MODIFICATION

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
E.C.	E.C.	C.B.	G.K.

DATE: MARCH - 2019

SCALE: 1/100

FILE NAME:

DRAWING No: P-1709-XSC-303

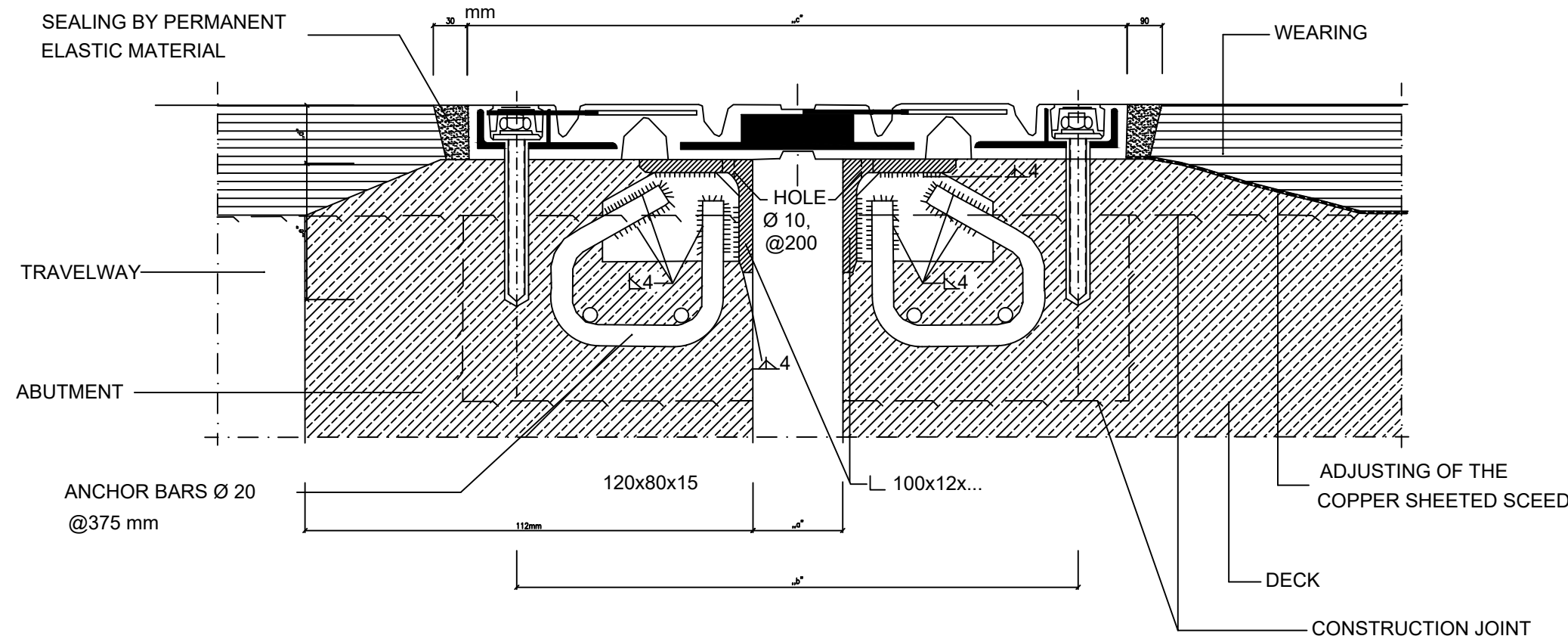
REVISION: -

BRIDGE EXPANSION JOINT – CROSS SECTION

METALLIC FINGER JOINT

SCALE : 1/10

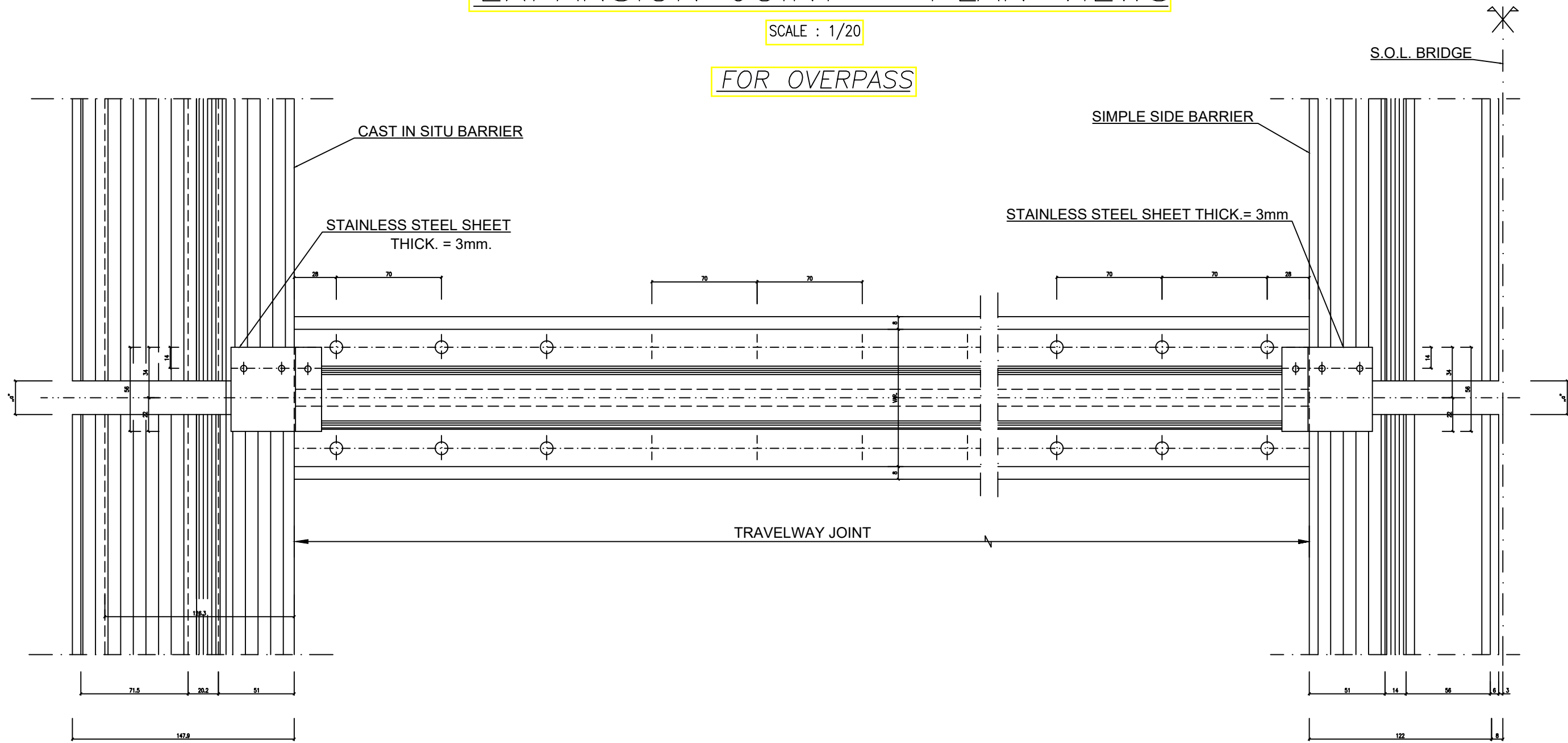
TYPE J-3



EXPANSION JOINT – PLAN VIEWS

SCALE : 1/20

FOR OVERPASS



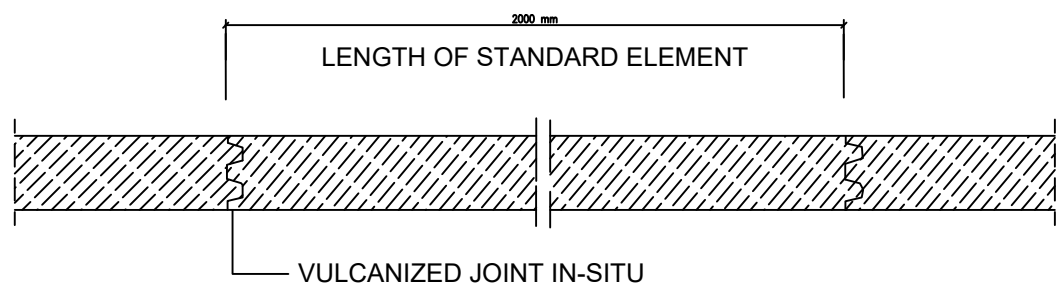
DIMENSIONS OF BRIDGE EXPANSION JOINTS (IN mm)

TYPE "J-3"

JOINT	TYPE J-3			
EXTREME EXPANSION	±50	±80	±115	±165
JOINTS' FABRICATION				
CRACK WIDTH „a”	80	120	160	220
DISTANCE OF BOLTS „b”	500	615	780	1080
WIDTH „c”	591	726	901	1211
THICKNESS „d”	55	80	95	135
SUPPORTS' FABRICATION				
WIDTH OF THE RESERVE	300	350	450	600
RESERVE DISTANCE	150	150	150	150
WIDTH „a” T=+10°	57	83	107	144
(FUNCTION OF T=+20°	48	68	85	113
TEMPERATURE)	38	53	64	82
JOINTS' INSTALLATION				
WIDTH „b” T=±0°	487	593	749	1035
(FUNCTION OF THE T=+10°	477	578	727	1004
MEAN TEMPERATURE T=+20°	468	563	705	973
OF THE DECK T=+30°	458	548	683	942
BOLTS				
Ø	M16	M20	M20	M20
„e”	125	180	180	180

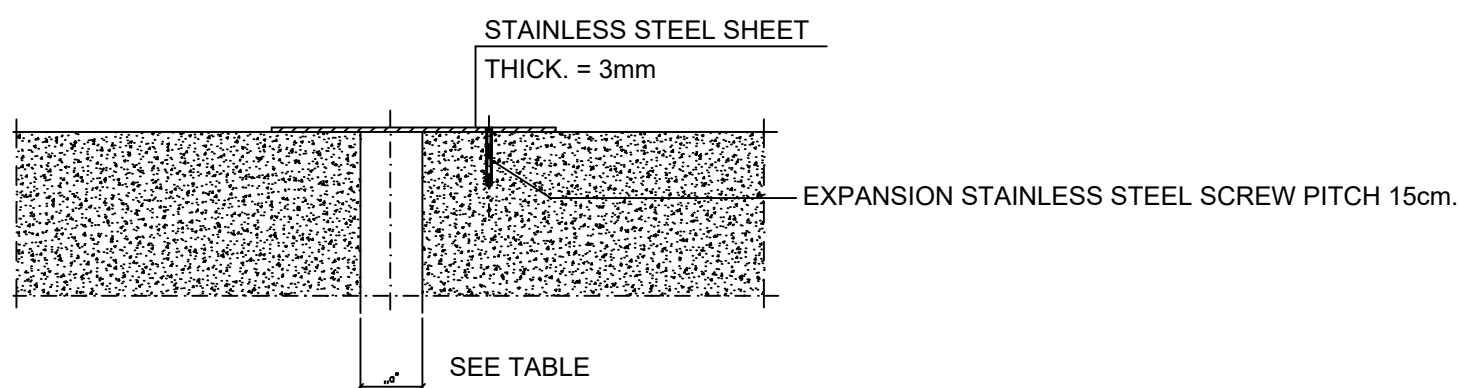
STANDARD ELEMENT

SCALE : N.T.S



DETAIL "II"

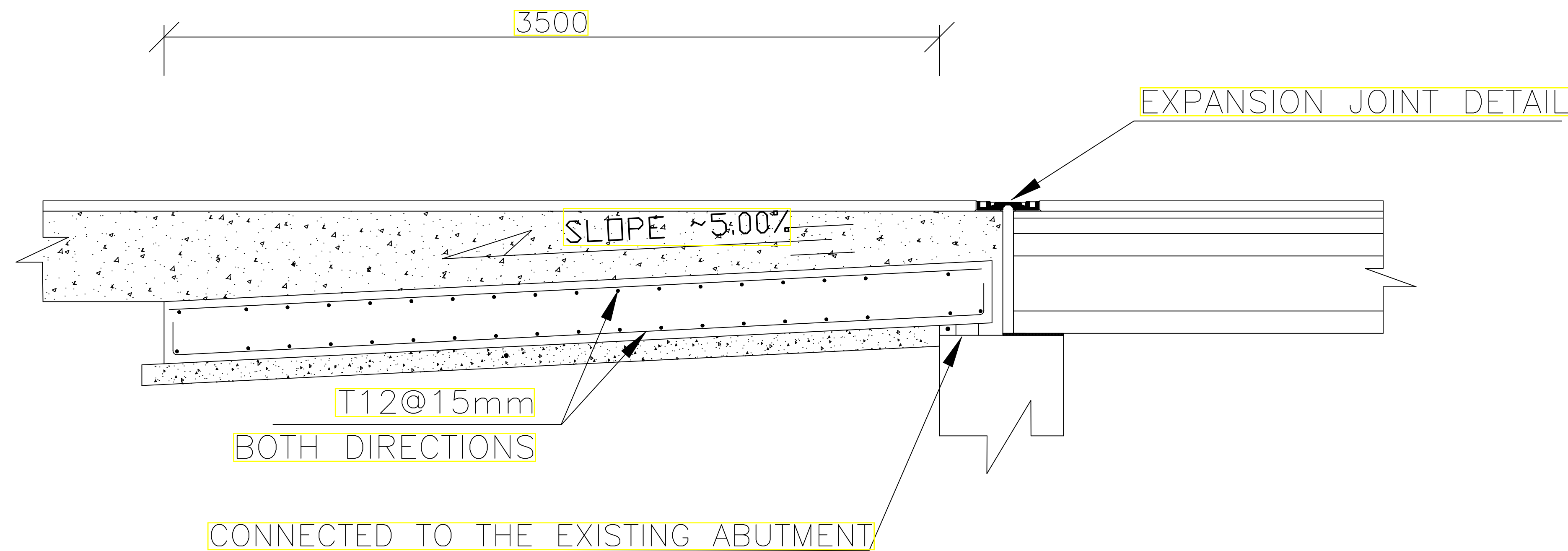
SCALE : N.T.S



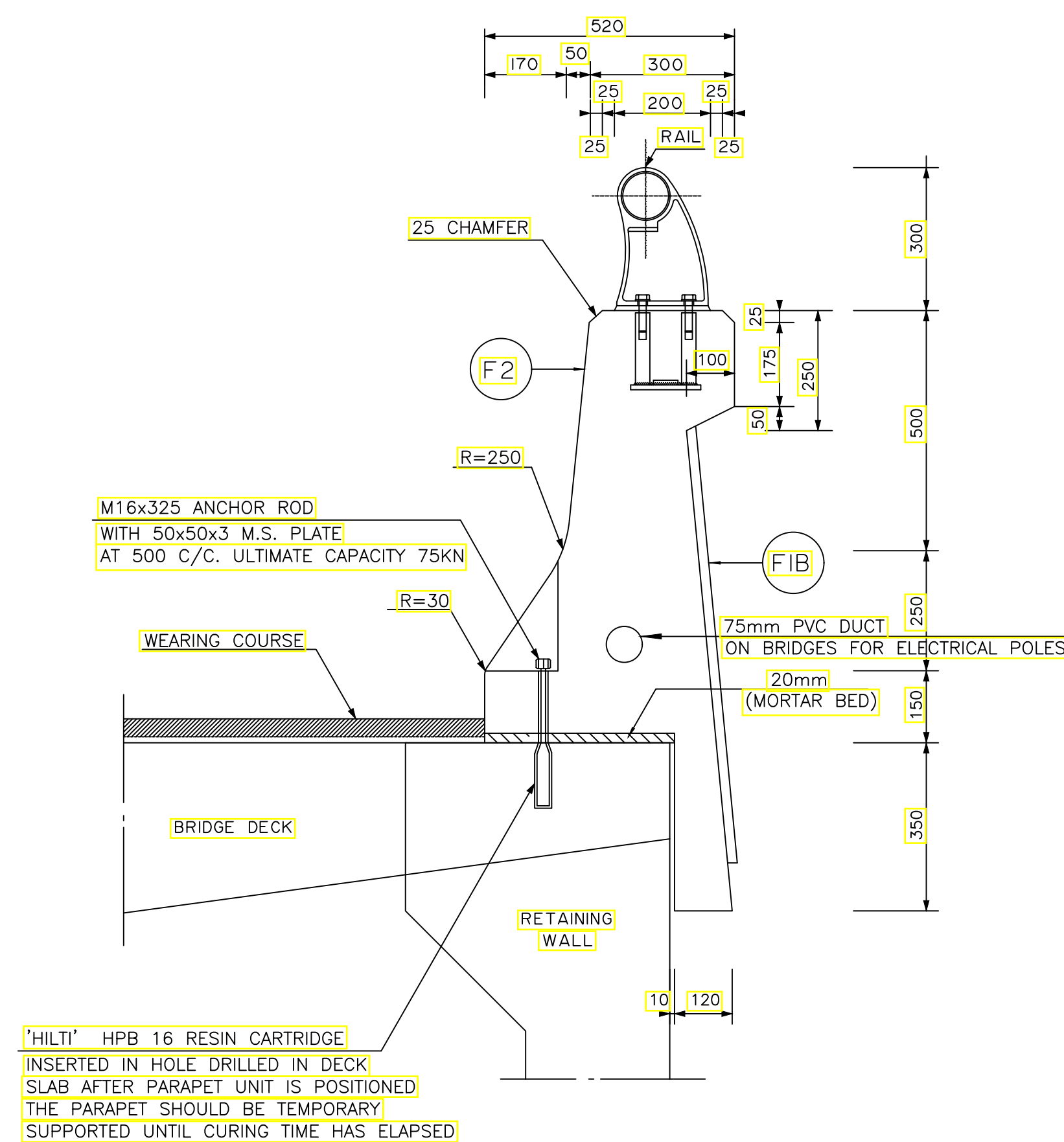
NOTES:

1-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.

4			
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No.	REVISION	DATE	
CLIENT:			
REPUBLIC OF LEBANON COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION			
CONSULTANT:			
 KREDO SAL CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON			
PROJECT REFERENCE: P-1709			
PROJECT NAME:			
ADMA BRIDGE REHABILITATION STUDY ADMA, CAZA KESROUANE			
DRAWING TITLE:			
EXPANSION JOINT DETAIL			
DRAWN:	DESIGNED:	CHECKED:	APPROVED:
E.C.	E.C.	C.B.	G.K.
DATE:	MARCH-2019	SCALE:	N.T.S.
FILE NAME:			
DRAWING No.:	P-1709-DET-400	REVISION:	



TYPICAL SECTION VIEW AT TRANSITION SLAB
(SOUTHBOUND APPROACH)



SINGLE FACE NEW JERSEY BARRIER
TYPE 2 FIXED ON BRIDGE DECK/RETAINING WALL

NOTES:

1-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.

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No.	REVISION	DATE

CLIENT:

REPUBLIC OF LEBANON
COUNCIL FOR DEVELOPMENT
AND RECONSTRUCTION

CONSULTANT:

KREDO SAL.
CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON

PROJECT REFERENCE: P-1709

PROJECT NAME:

ADMA BRIDGE REHABILITATION STUDY
ADMA, CAZA KESROUANE

DRAWING TITLE:

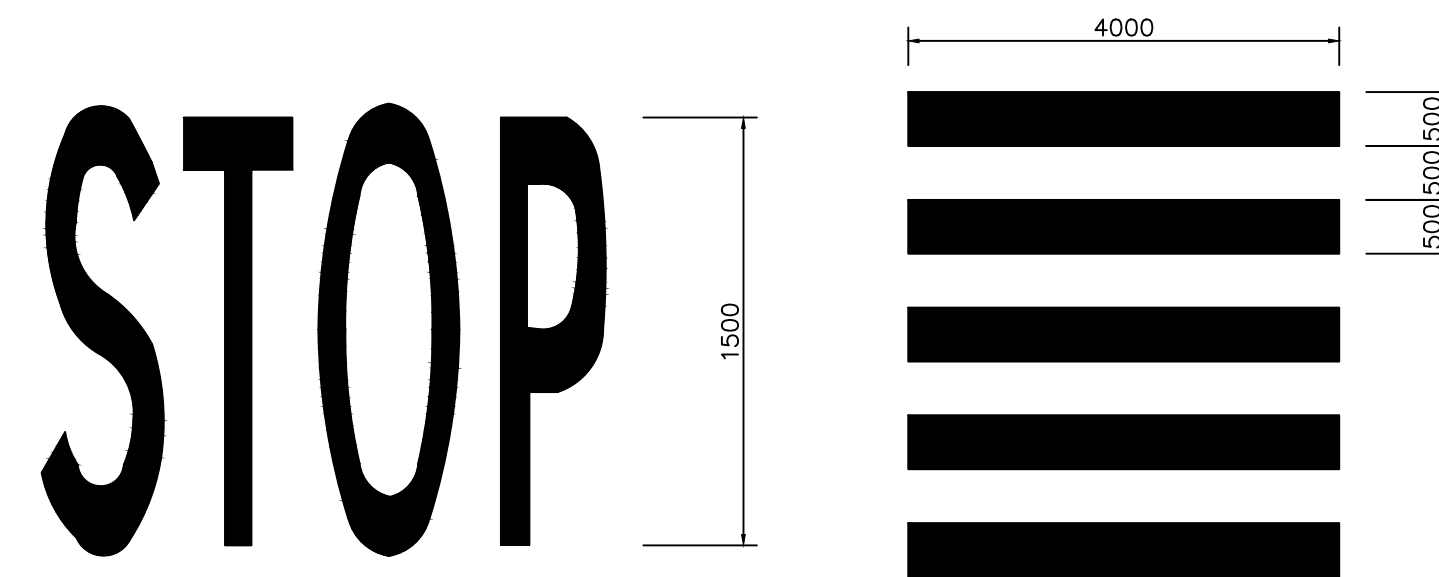
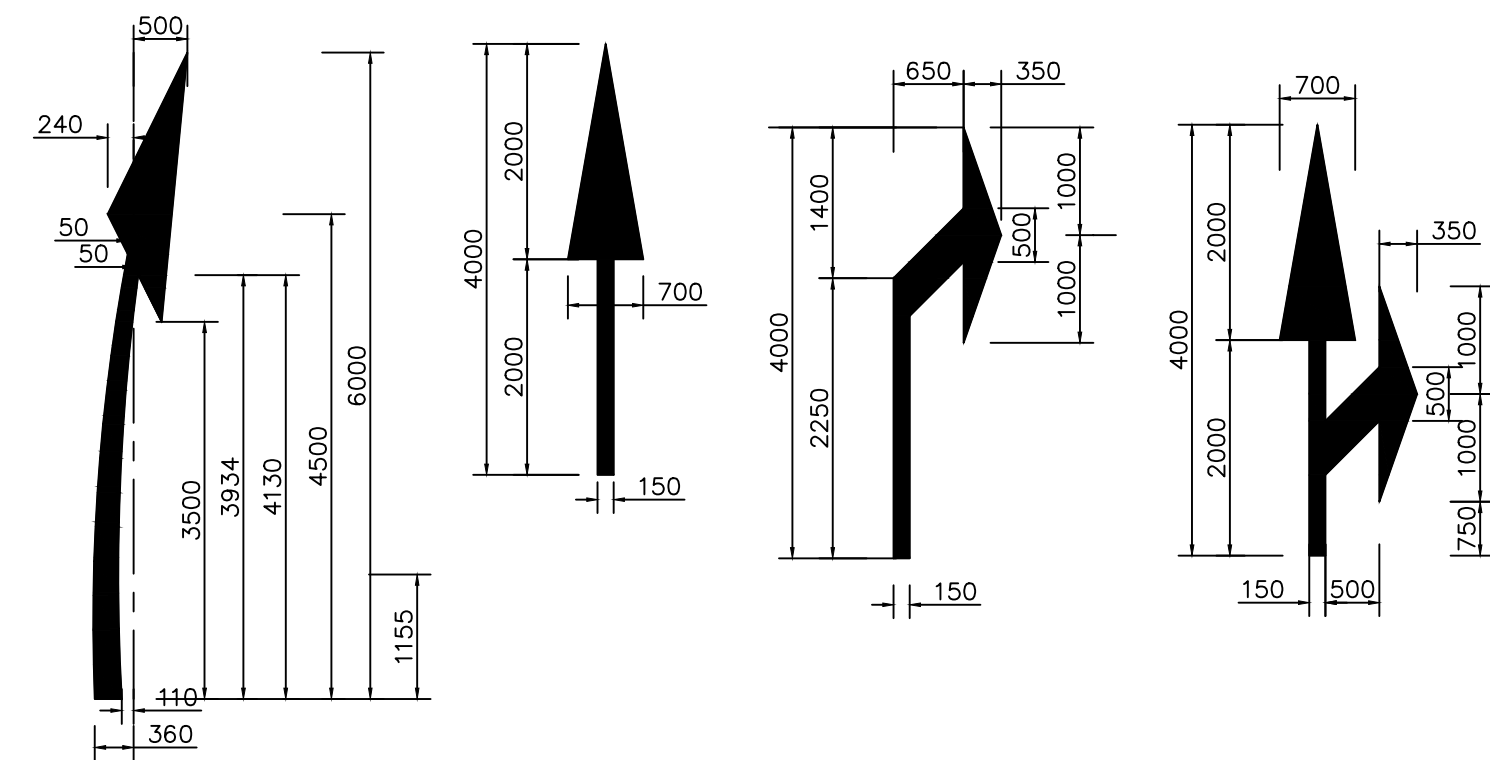
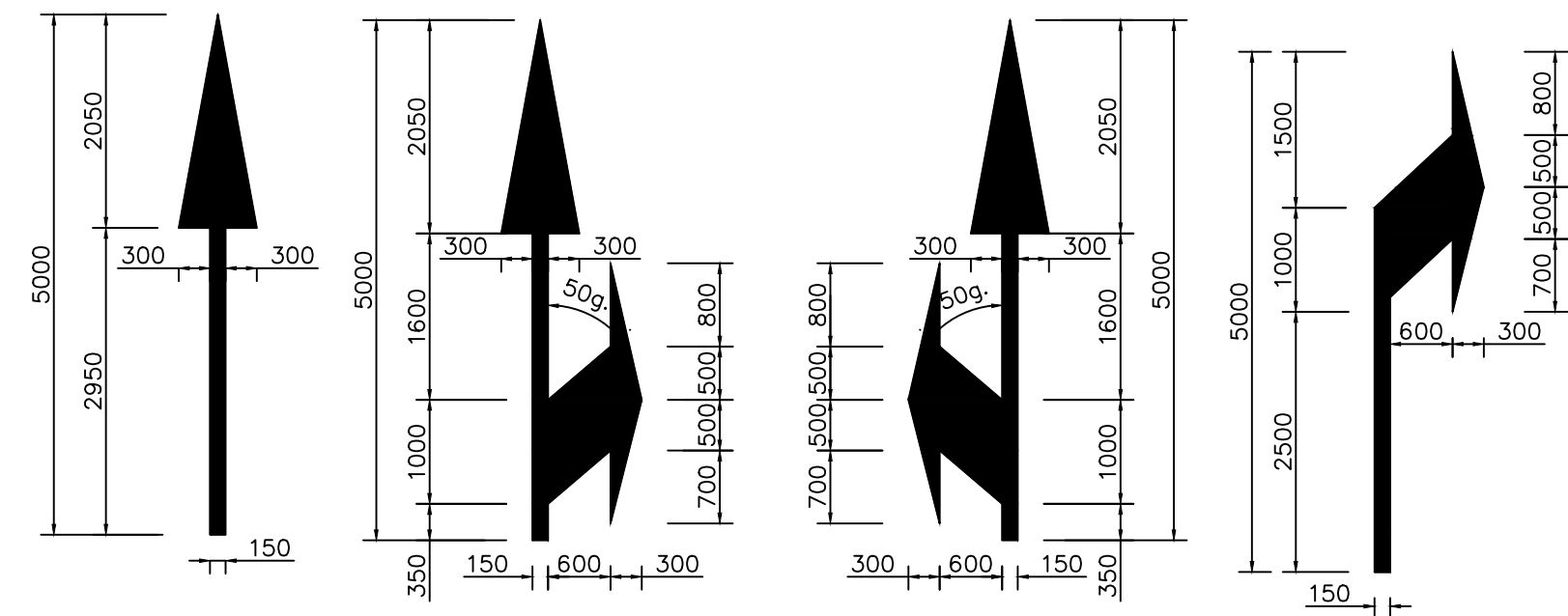
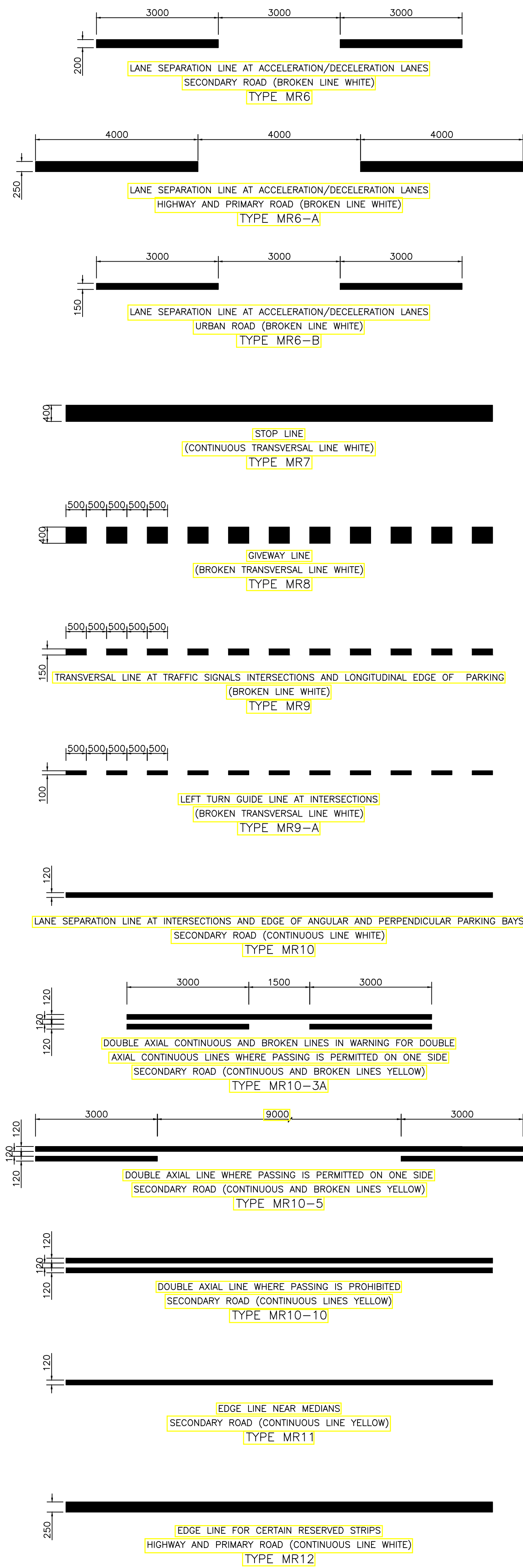
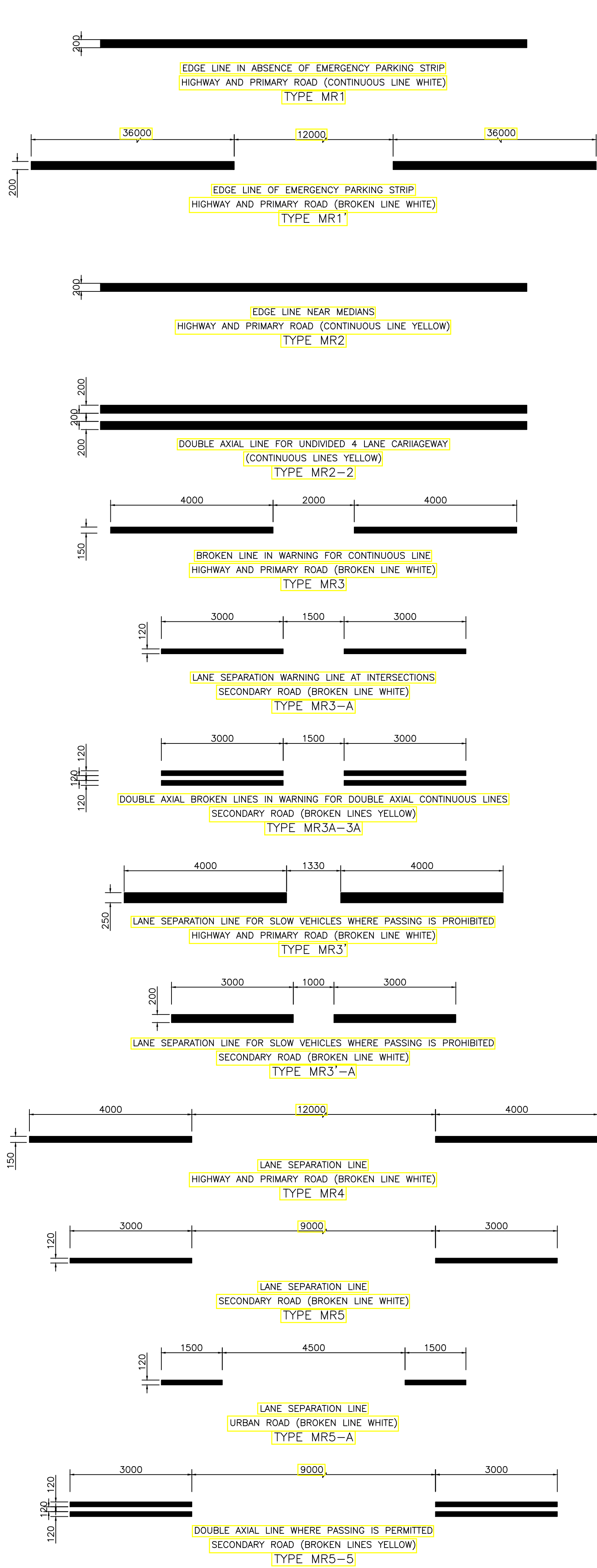
TRANSITION SLAB DETAIL
TYPICAL JERSEY BARRIER DETAIL

DRAWN: E.C. DESIGNED: E.C. CHECKED: C.B. APPROVED: G.K.

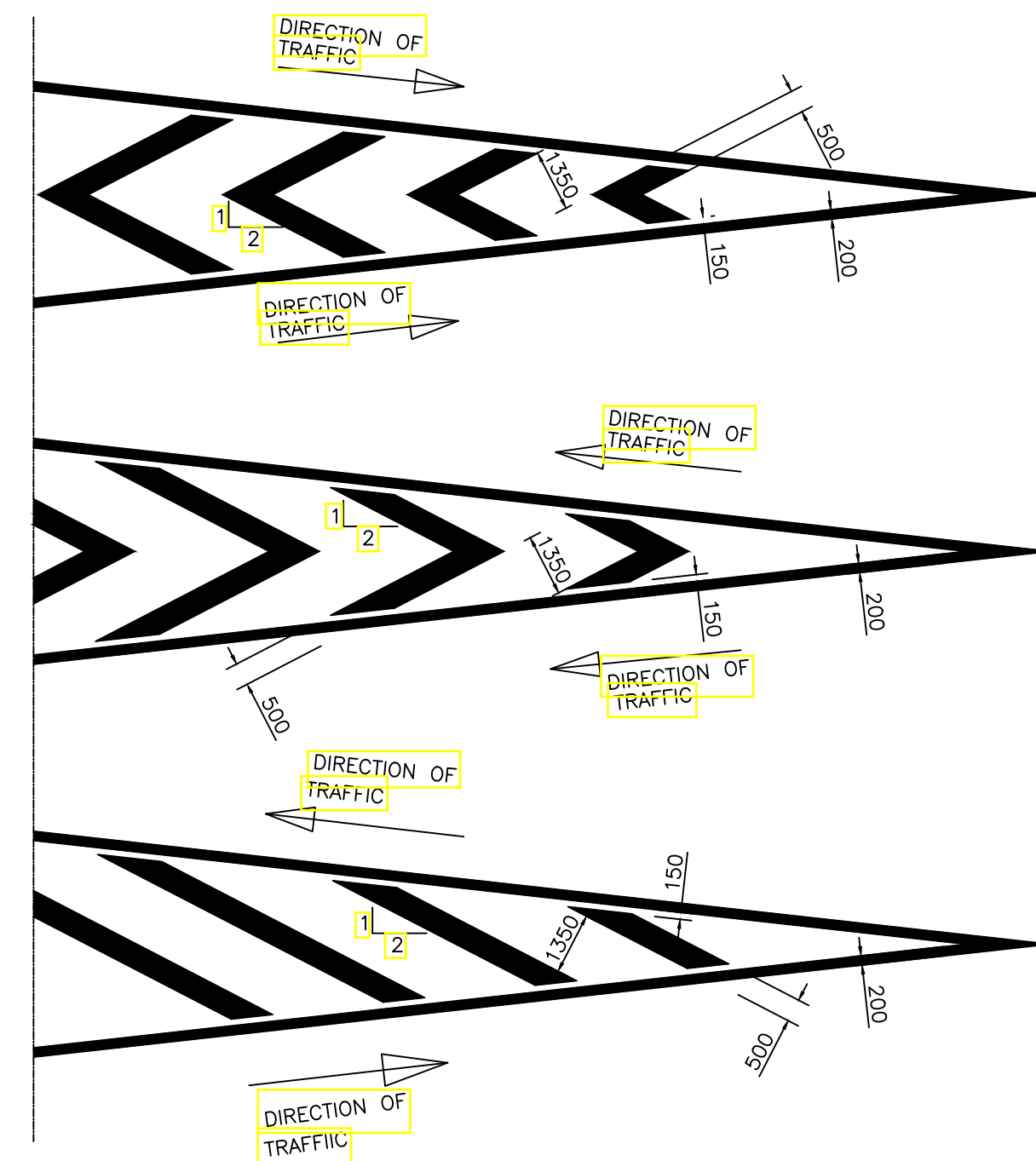
DATE: MARCH-2019 SCALE: N.T.S.

FILE NAME:

DRAWING No.: P-1709-DET-401 REVISION:



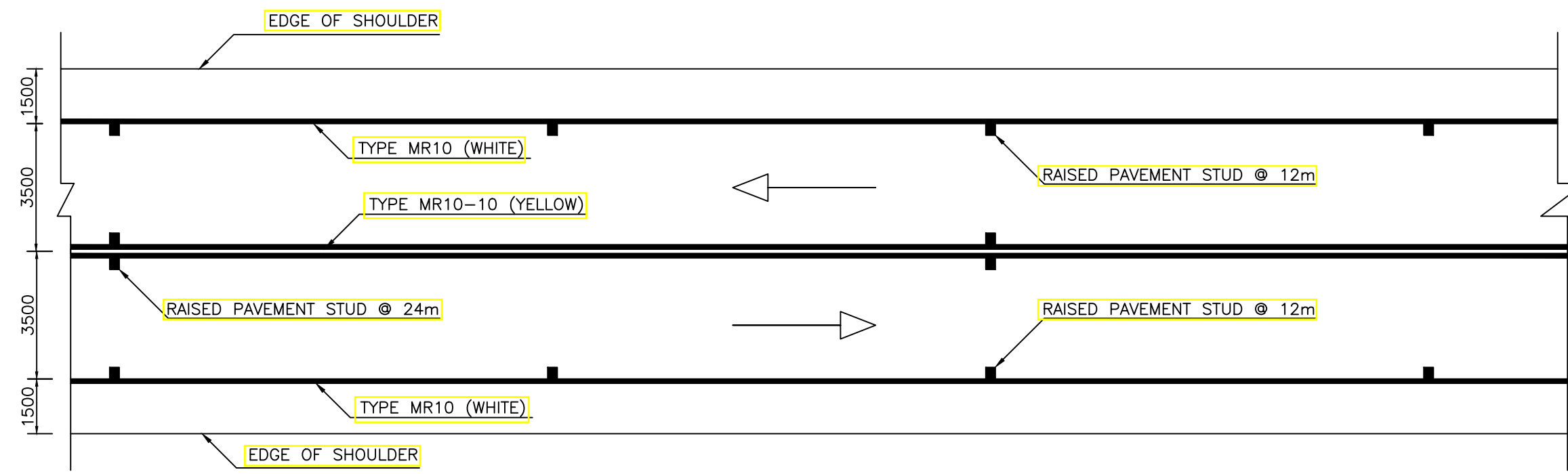
TYPICAL PAVEMENT MARKING LINES AND PATTERNS (WHITE)



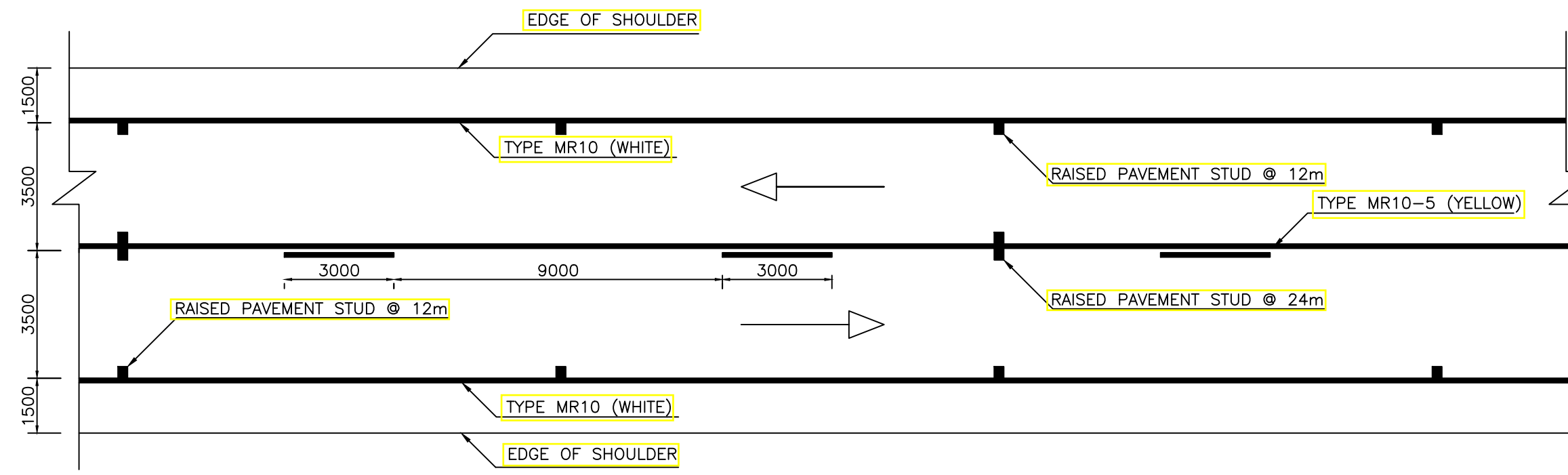
NOTES:

- 1-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
- 2-ALL TRAFFIC MARKINGS SHALL CONFORM TO THE LATEST LIBNOR STANDARDS ROAD EQUIPMENT (ROAD MARKING FASCICULE II).
- 3-EXACT LOCATION OF PEDESTRIAN CROSSING MARKING SHOULD BE DETERMINED ON SITE WITH THE APPROVAL OF RESIDENT ENGINEER OR HIS REPRESENTATIVE.

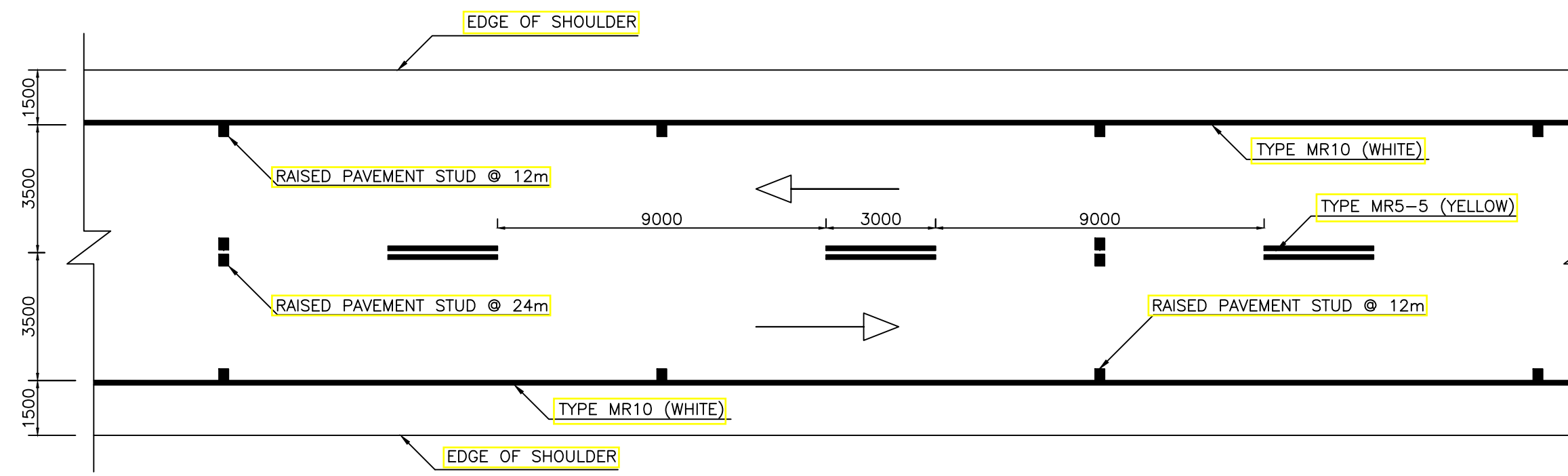
4		
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No.	REVISION	DATE
CLIENT:		
REPUBLIC OF LEBANON COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION		
CONSULTANT:		
KREDO SAL CARMEL BLDG., SAYDEH ST., ACHRAFAH, BEIRUT - LEBANON		
PROJECT REFERENCE: P-1709		
PROJECT NAME:		
ADMA BRIDGE REHABILITATION STUDY ADMA, CAZA KESROUANE		
DRAWING TITLE:		
TRAFFIC CONTROL DEVICES MARKING DETAILS SHEET 1 OF 2		
DRAWN:	E.C.	DESIGNED: E.C.
DATE:	MARCH-2019	CHECKED: C.B.
FILE NAME:		APPROVED: G.K.
DRAWING No.:	P-1709-DET-402	SCALE: N.T.S.



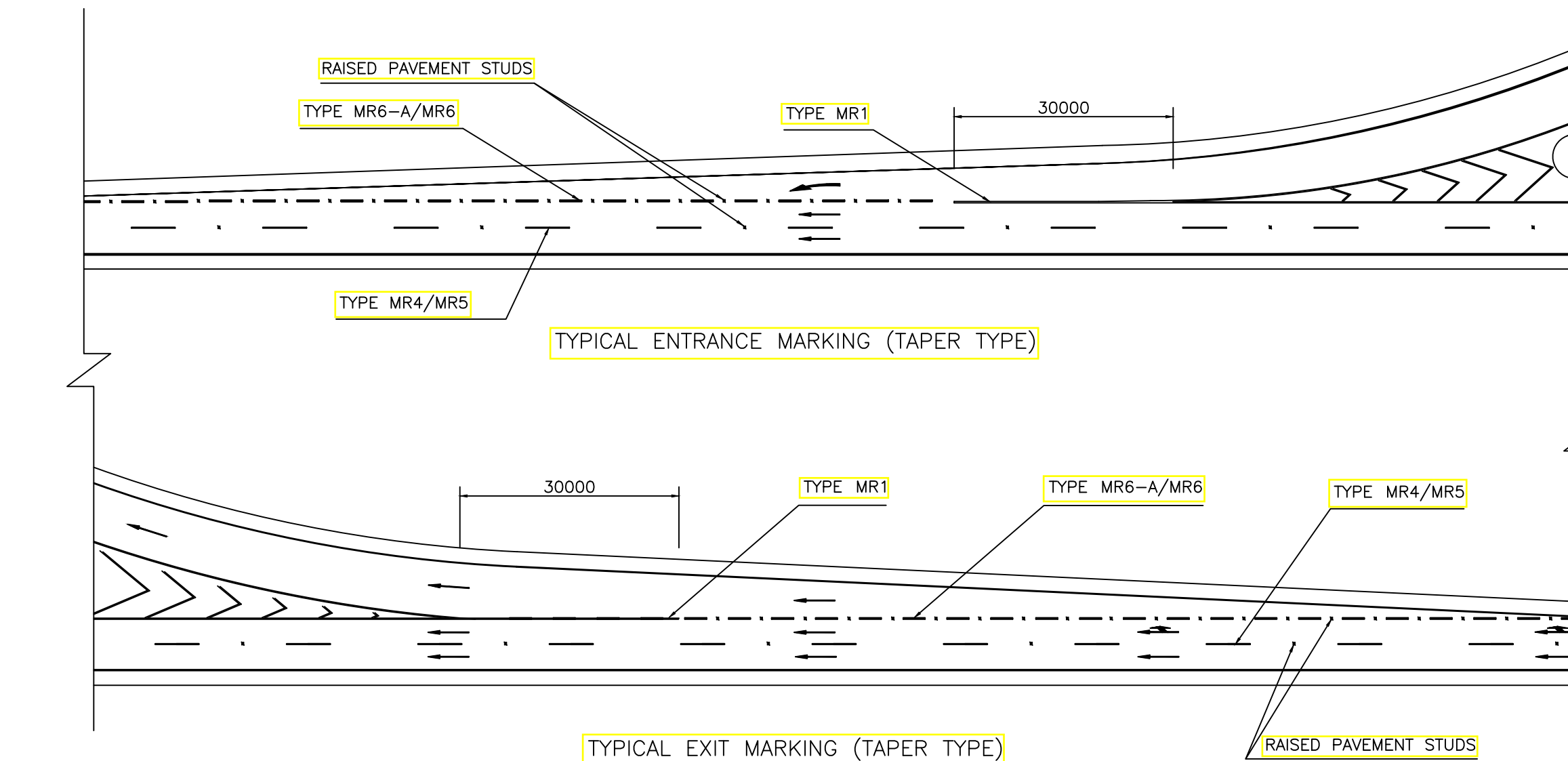
TYPICAL MARKING LAYOUT ALONG TWO WAY ROAD WHERE OVERTAKING IS PROHIBITED



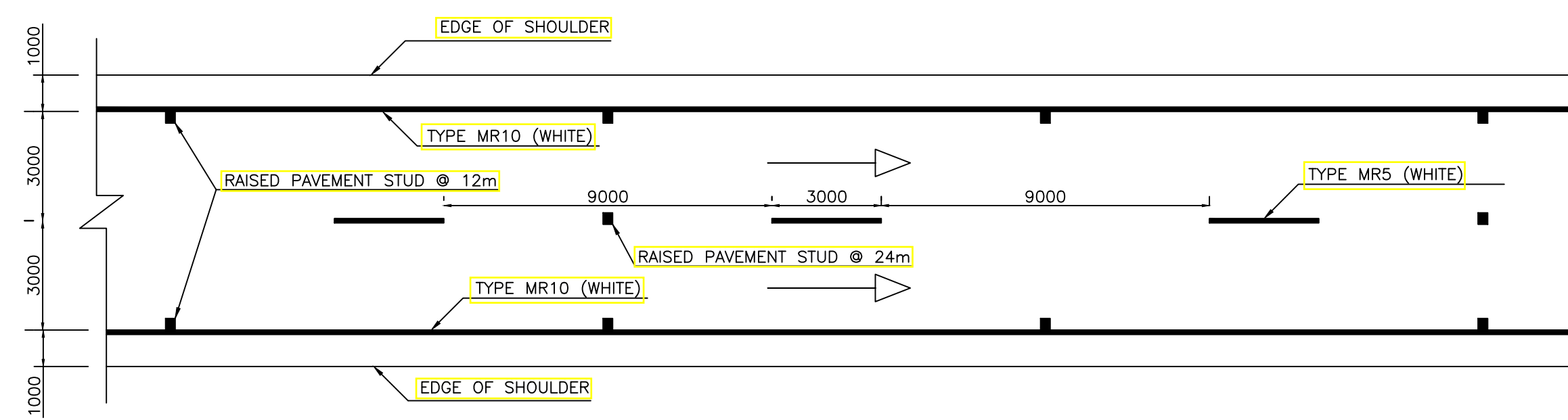
TYPICAL MARKING LAYOUT ALONG TWO WAY ROAD WHERE OVERTAKING IS ALLOWED ON ONE SIDE



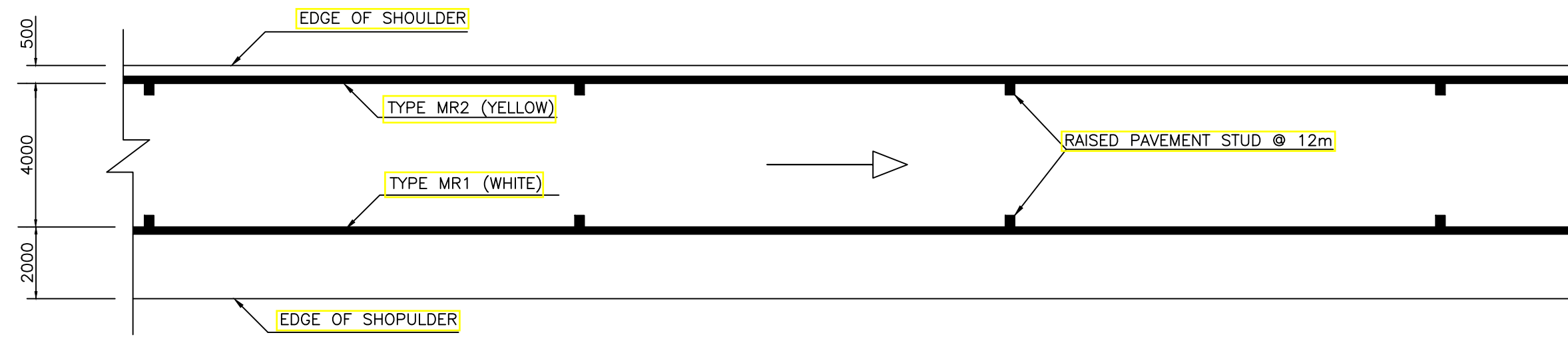
TYPICAL MARKING LAYOUT ALONG TWO WAY ROAD WHERE OVERTAKING IS ALLOWED ON BOTH SIDES



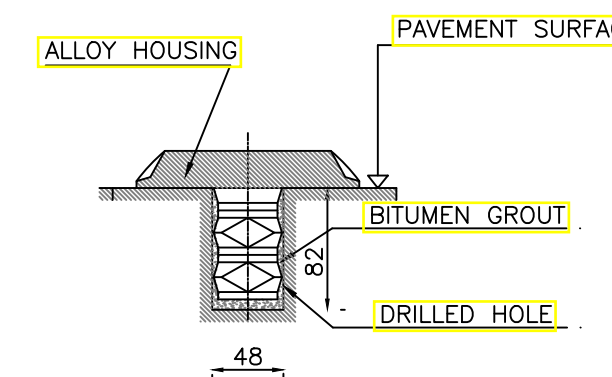
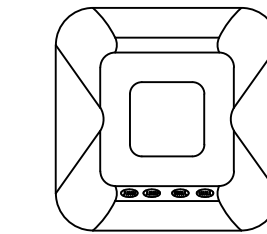
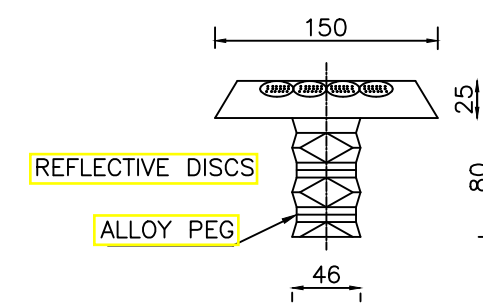
TYPICAL EXIT MARKING (TAPER TYPE)



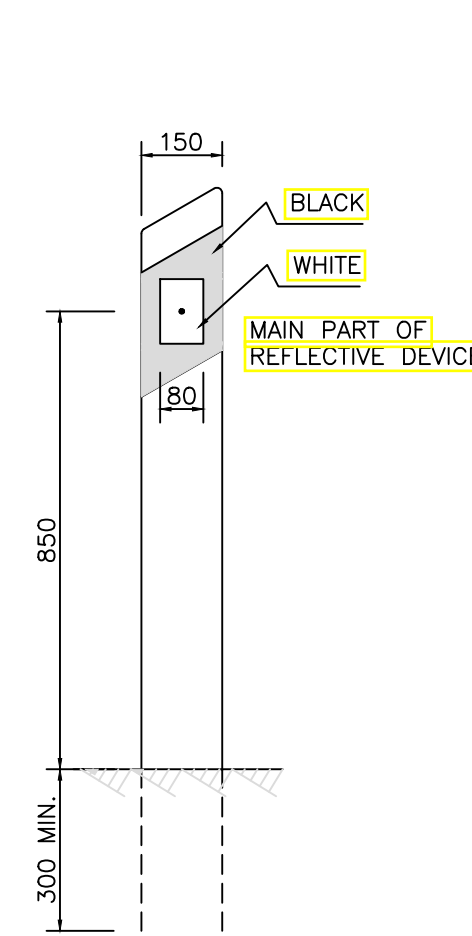
TYPICAL MARKING LAYOUT ALONG TWO LANE ONE WAY ROAD



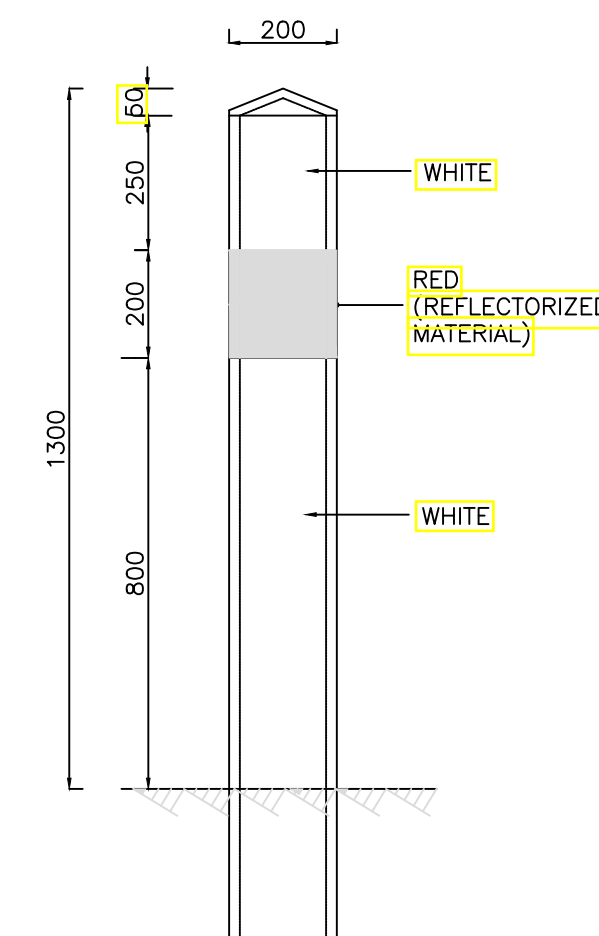
TYPICAL MARKING LAYOUT ALONG ONE LANE RAMP



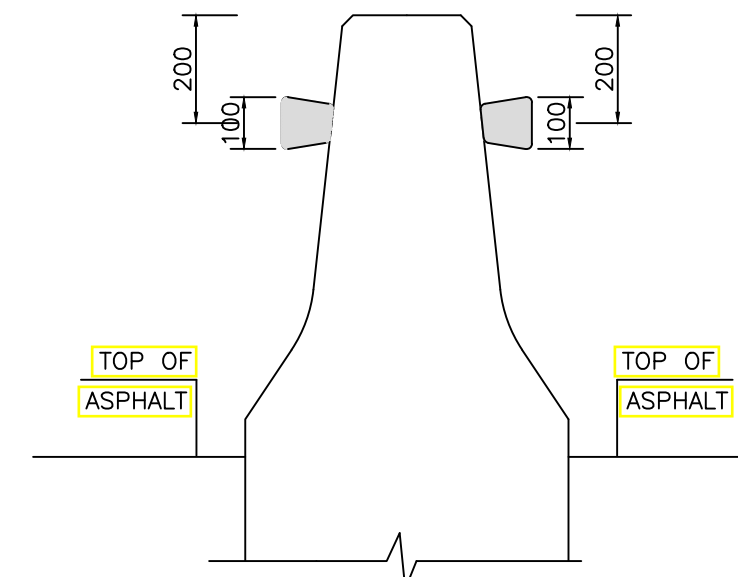
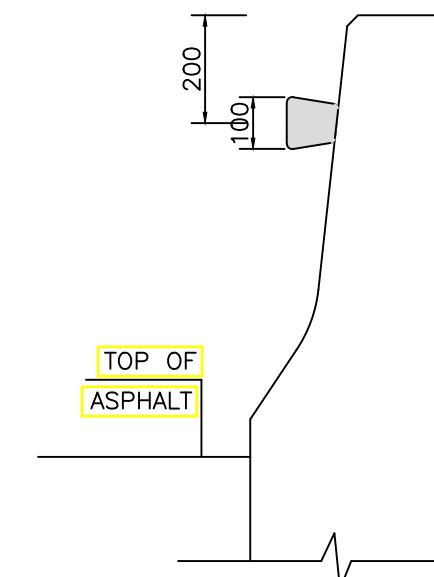
DETAIL OF TYPICAL RAISED PAVEMENT STUD



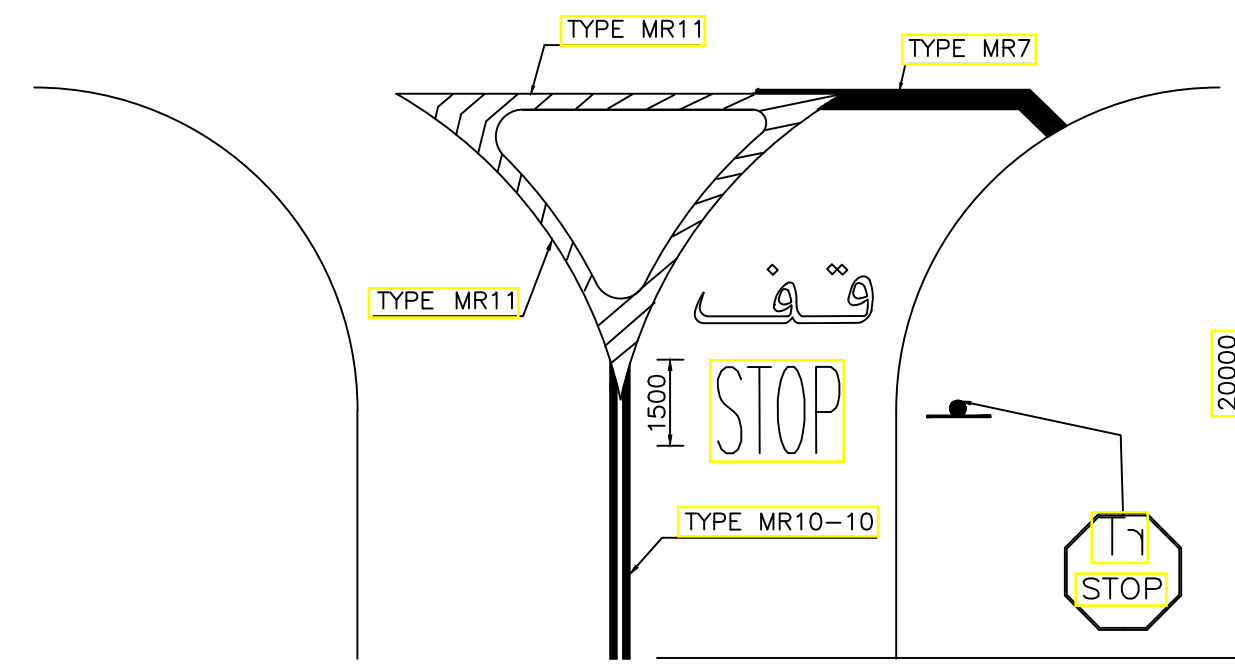
DELINEATOR



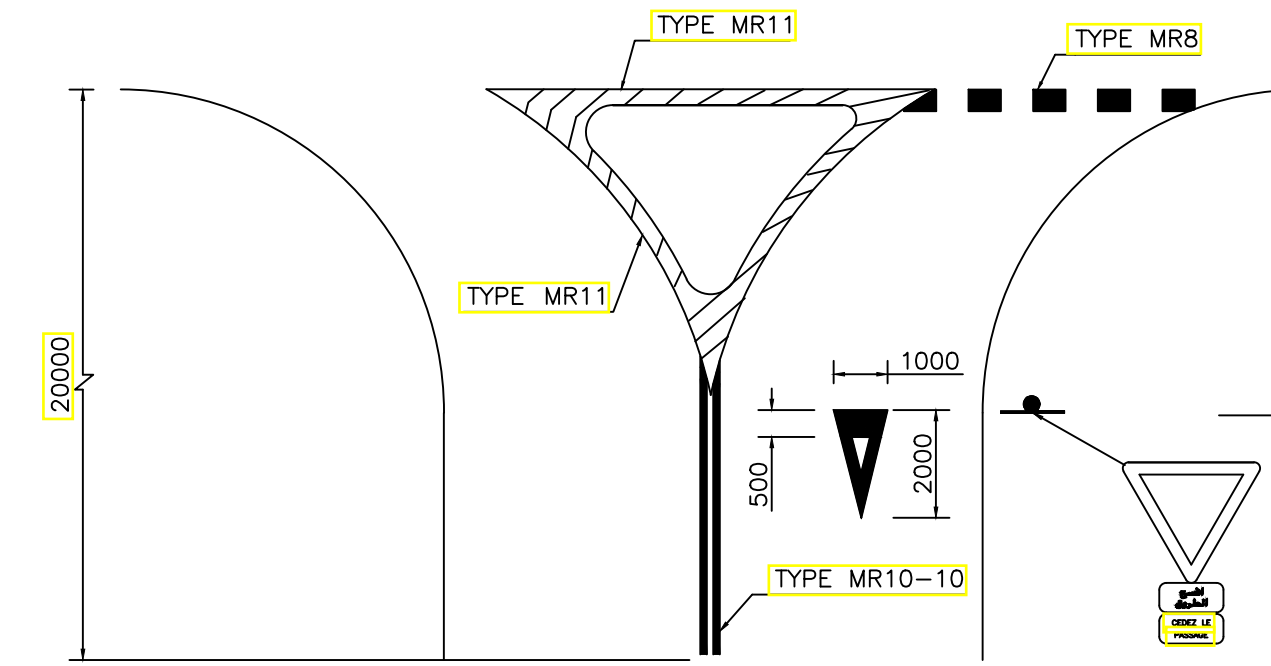
BOLLARD DELINEATOR AT INTERSECTION



BARRIER DELINEATORS



MARKING AT STOP CONDITION INTERSECTING ROADS



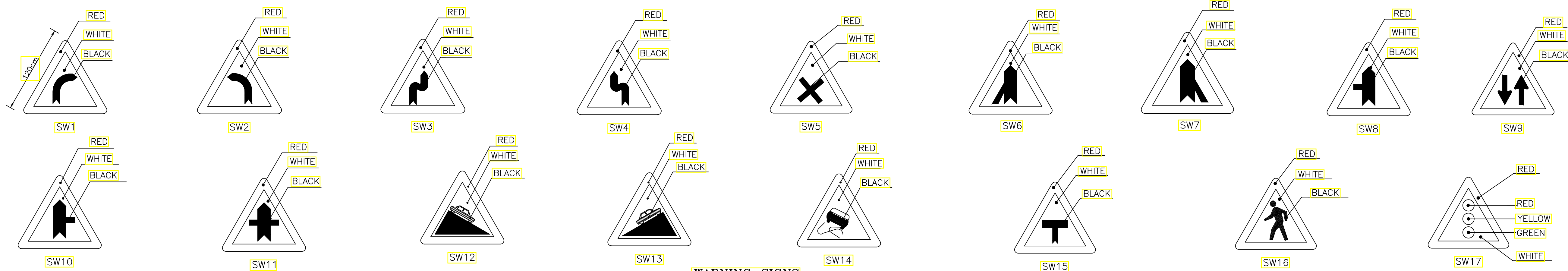
MARKING AT GIVE WAY CONDITION INTERSECTING ROADS

NOTES:

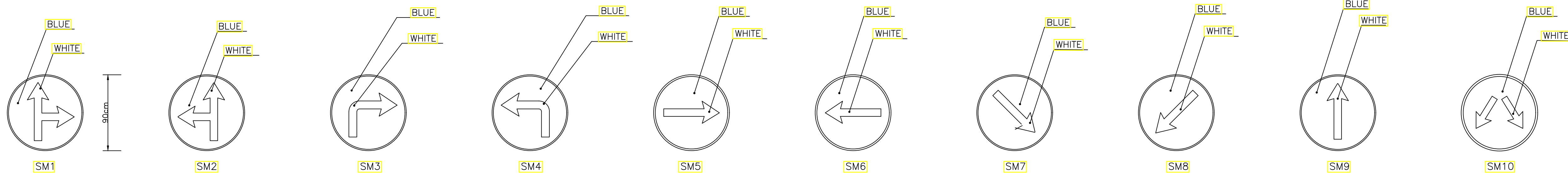
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
- ALL TRAFFIC MARKINGS SHALL CONFORM TO THE LATEST LIBNOR STANDARDS ROAD EQUIPMENT (ROAD MARKING FASCICULE II).
- DELINEATORS
 - SHALL BE PROPOSED AT THE LEFT AND RIGHT OUTER EDGES OF ROADWAY CURVES AND TAPERS.
 - SHALL BE PLACED AT THE OUTER EDGE OF THE SHOULDER
 - SHALL BE SPACED AS PER THE LISTED-BELOW TABLE
 - WHERE CONCRETE EDGE BARRIER IS PROPOSED, DELINEATOR SHALL BE SUBSTITUTED BY BARRIER DELINEATORS AS DETAILED IN THIS DRAWING, AND SHALL HAVE THE SAME SPACING AS LISTED IN THE TABLE BELOW
 - WHERE SIDEWALK IS PROPOSED, NO DELINEATORS SHALL BE PROPOSED

CURVES RADIUS (METERS)	SPACING (METERS)
15	6
30	7.5
45	9
60	10.5
75	12
90	13.5
120	16.5
150	19.5
180	21
210	22.5
240	24
270	25.5
300	27
> 300	30
STRAIGHT	30

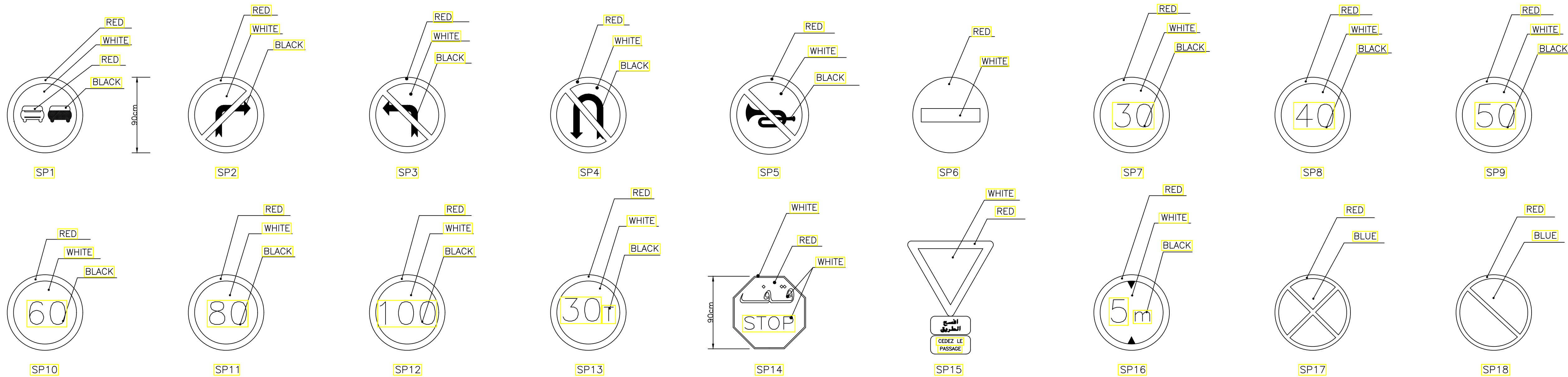
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No.	REVISION	DATE
CLIENT:		
REPUBLIC OF LEBANON COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION		
CONSULTANT: KREDO SAL. CARMEL BLDG., SAYDEH ST., ACHRAFAIEH, BEIRUT - LEBANON		
PROJECT REFERENCE: P-1709		
PROJECT NAME: ADMA BRIDGE REHABILITATION STUDY ADMA, CAZA KESROUANE		
DRAWING TITLE: TRAFFIC CONTROL DEVICES MARKING DETAILS SHEET 2 OF 2 & DELINEATORS DETAILS		
DRAWN:	DESIGNED:	CHECKED:
DATE:	MARCH-2019	SCALE:
FILE NAME:		AS SHOWN
DRAWING No.:	P-1709-DET-403	REVISION:



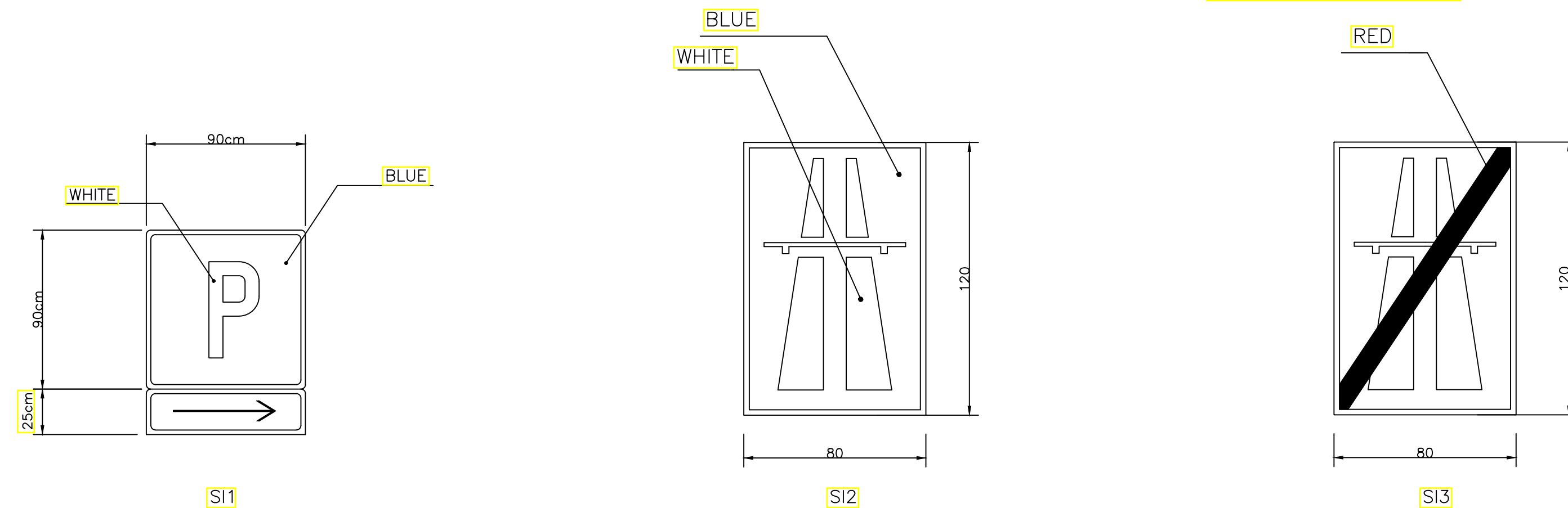
WARNING SIGNS



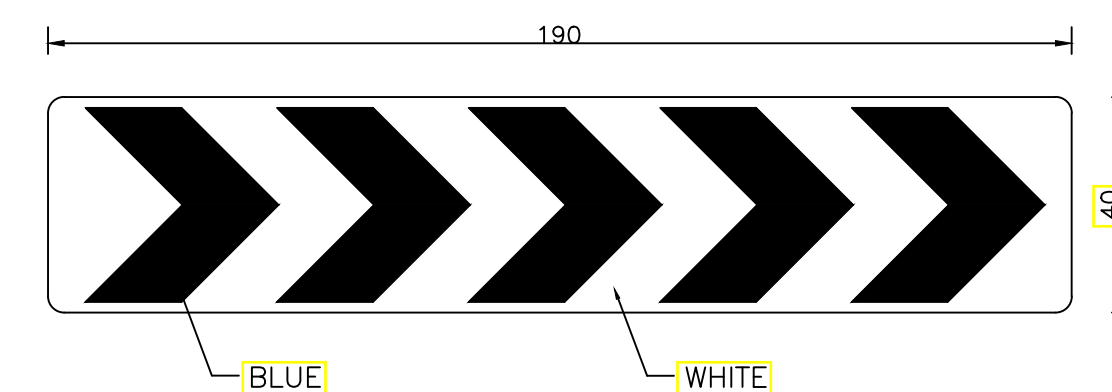
MANDATORY SIGNS



PROHIBITORY SIGNS



INFORMATORY SIGNS



SHARP DEVIATION SIGNS

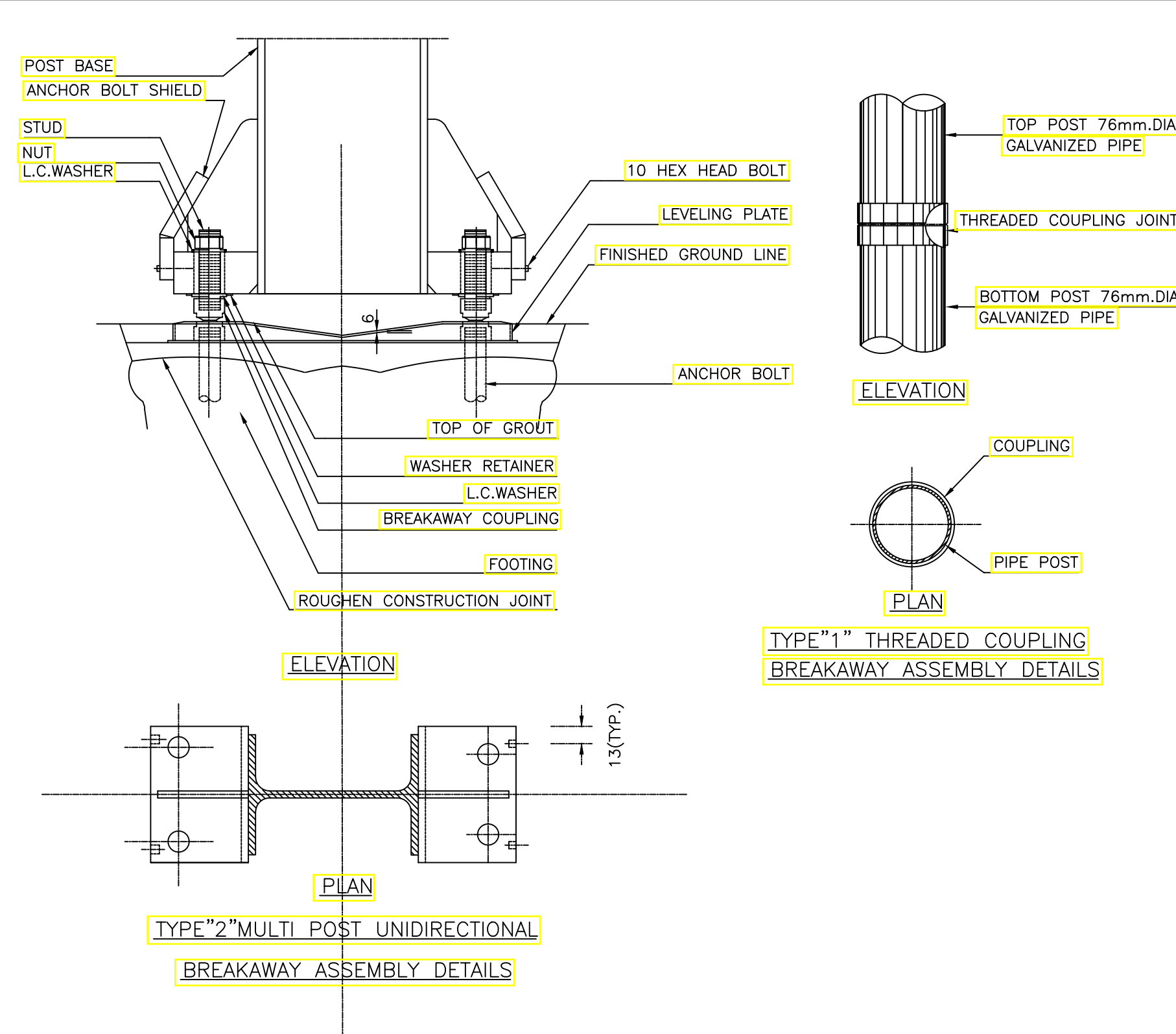
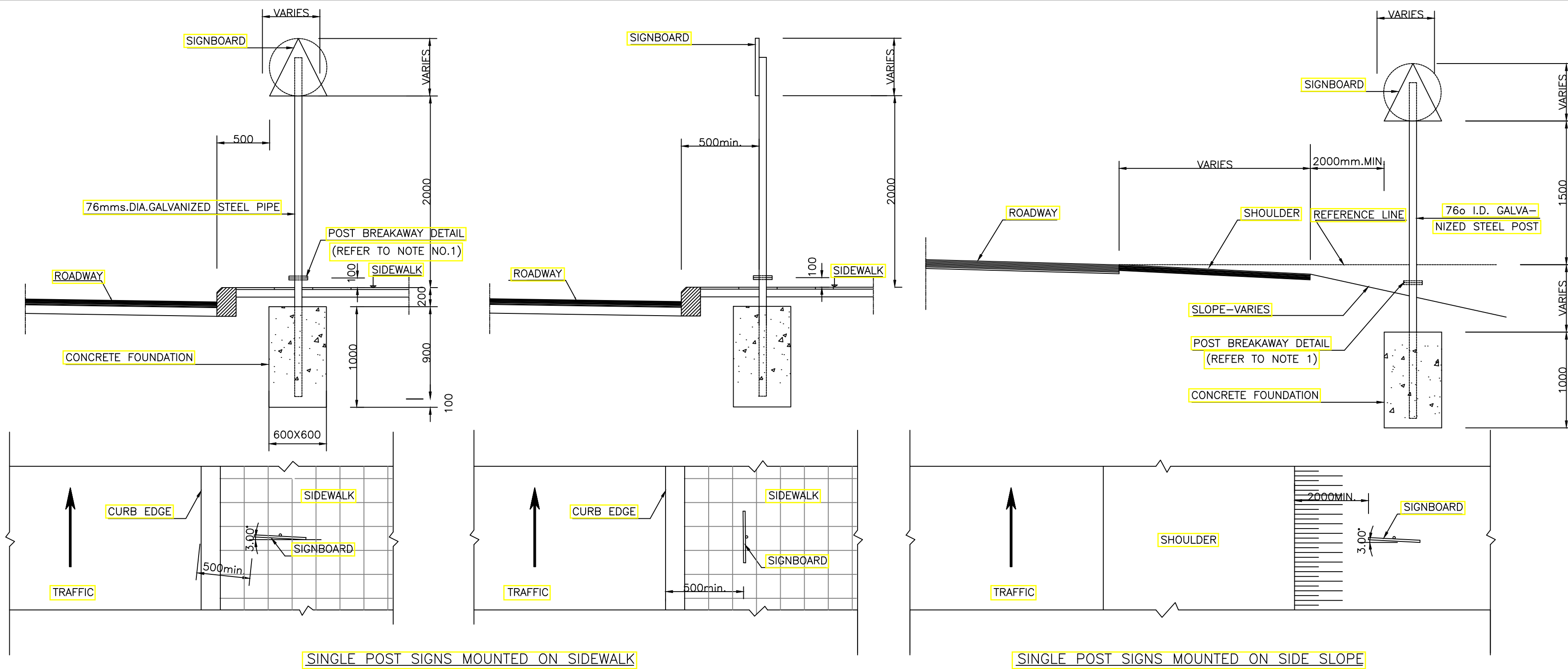
NOTES:

1-ALL TRAFFIC SIGNS SHALL CONFORM TO THE LATEST LIBNOR STANDARDS, ROAD EQUIPMENT (ROAD TRAFFIC SIGNS FASCICULE 2).

2-THE SIGN MOUNTING DETAILS & BREAKAWAY ASSEMBLY DETAILS SHOULD BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL. (NO WELDING ON POST IS ALLOWED).

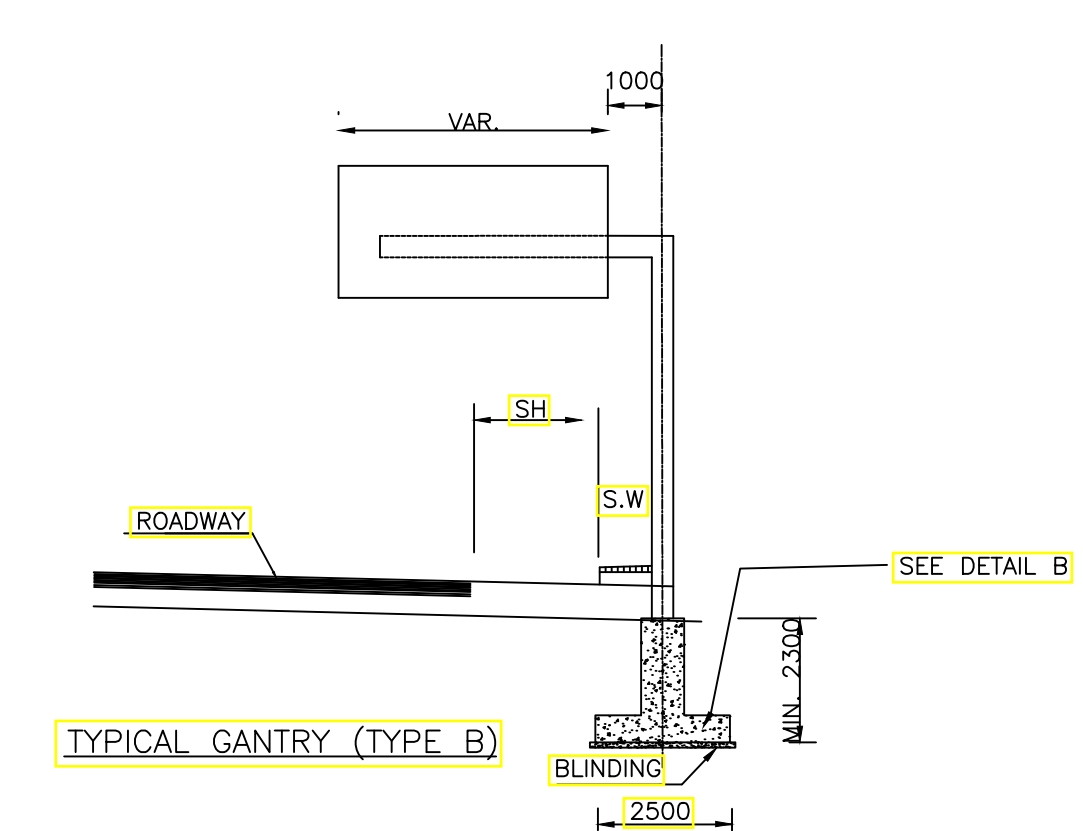
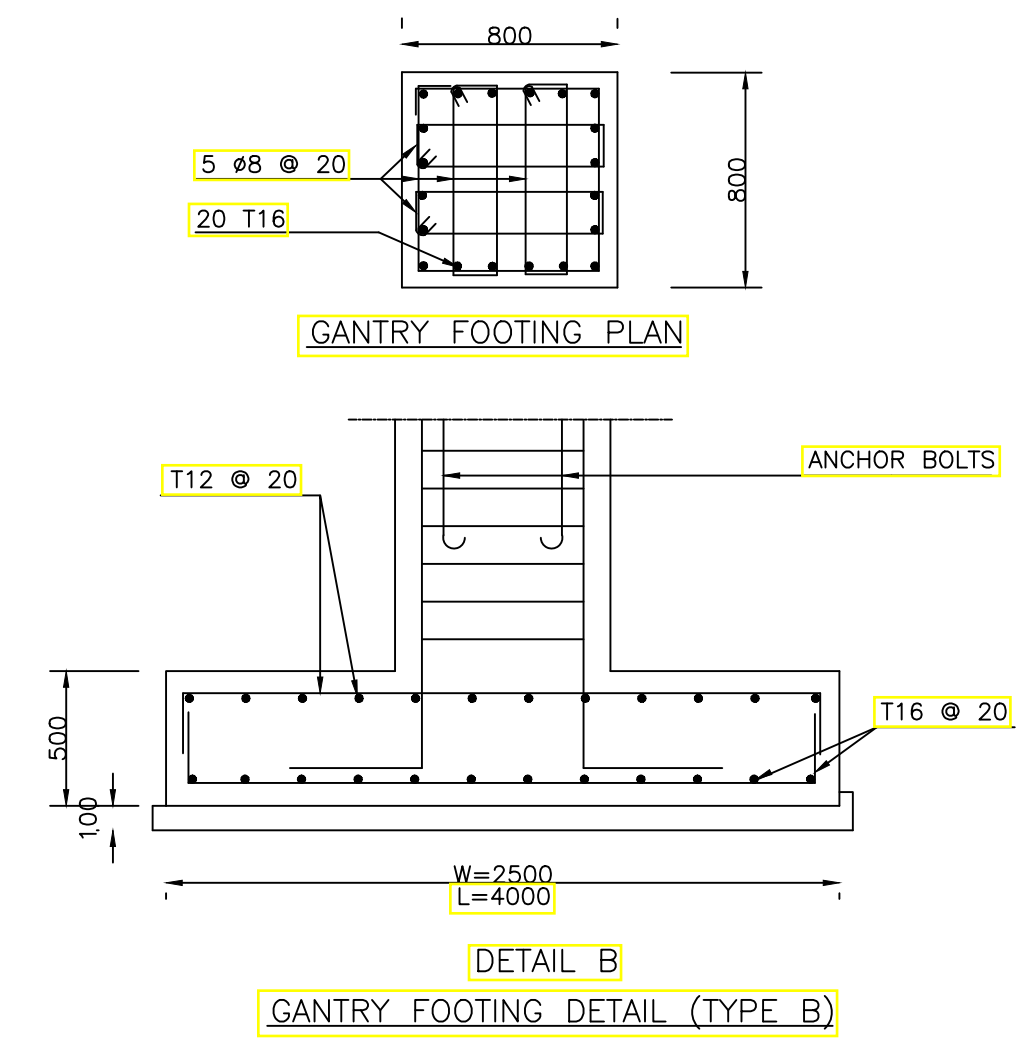
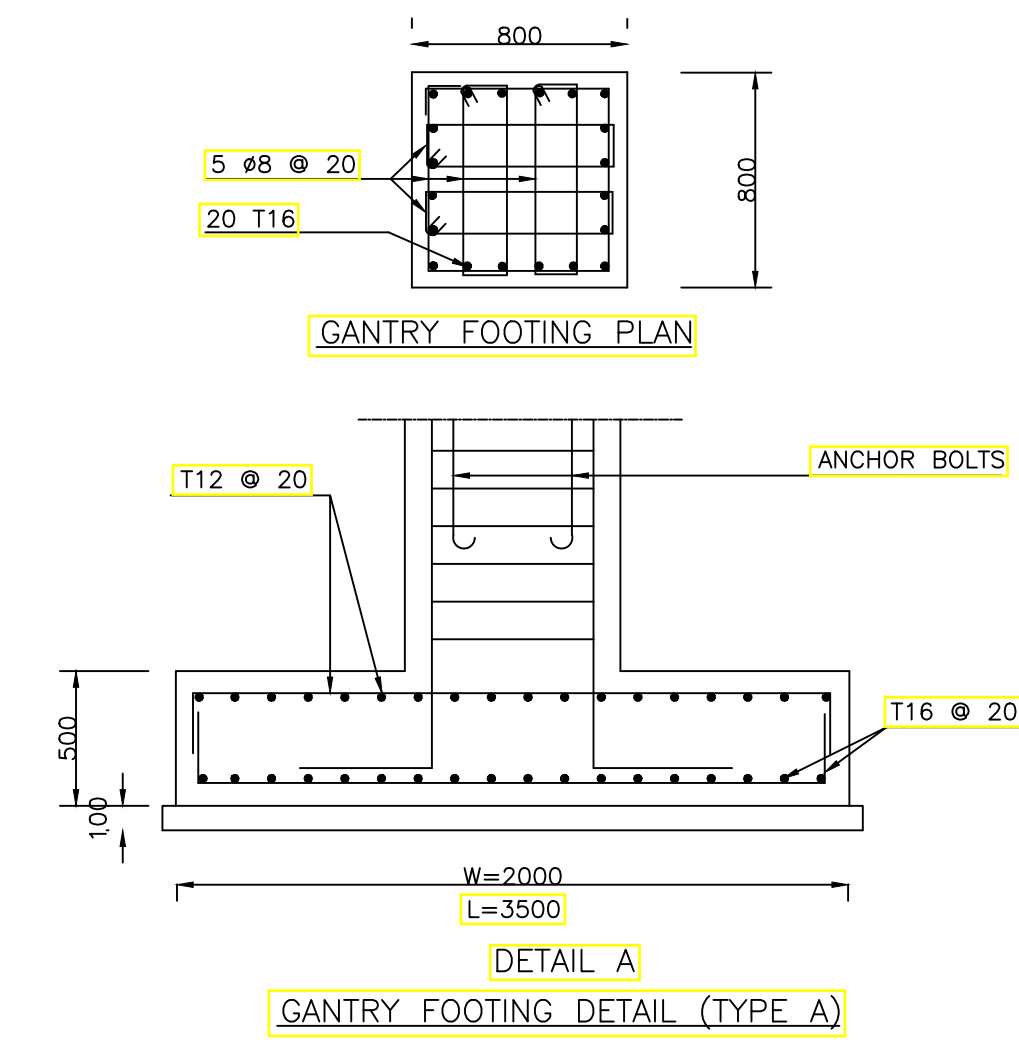
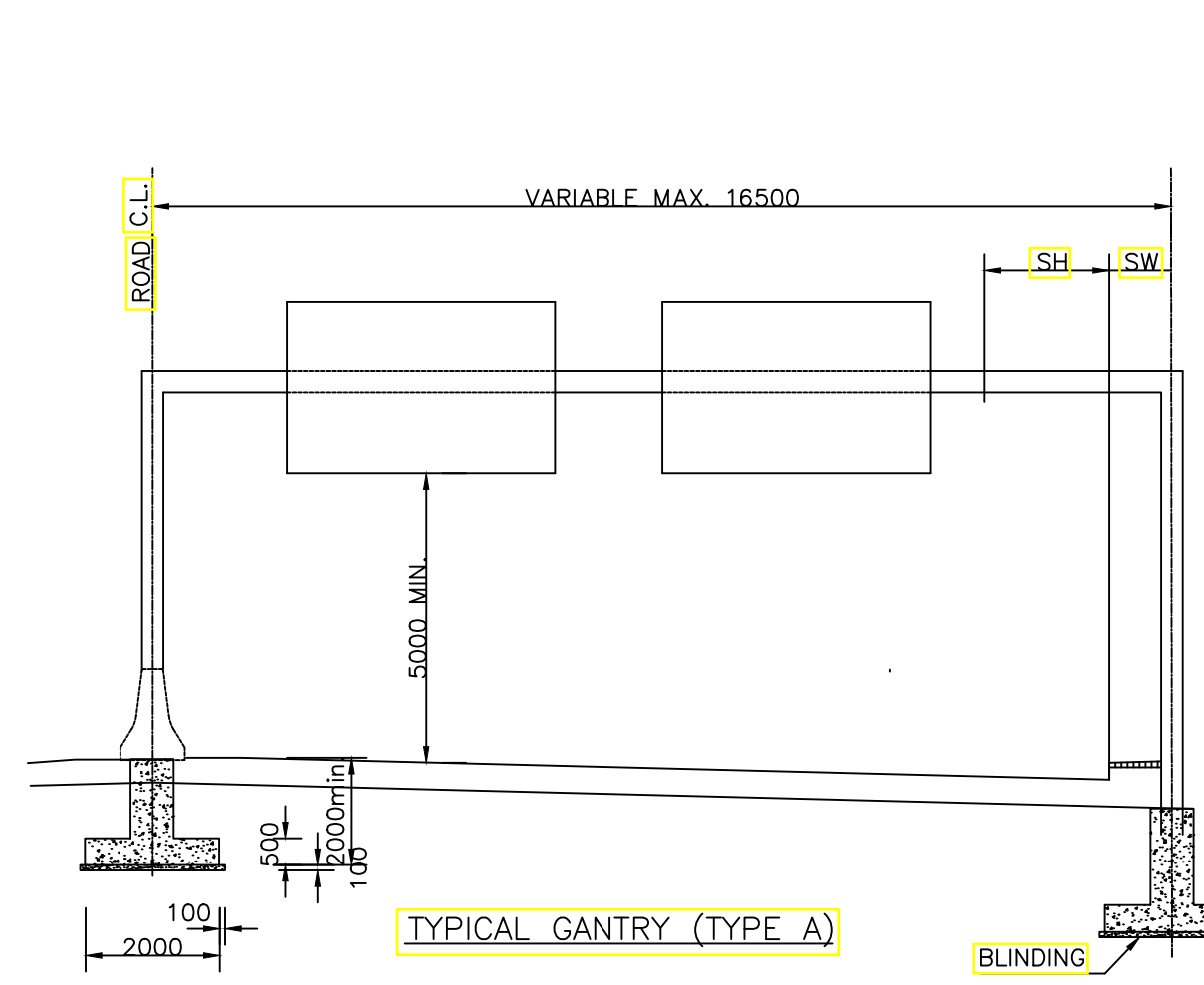
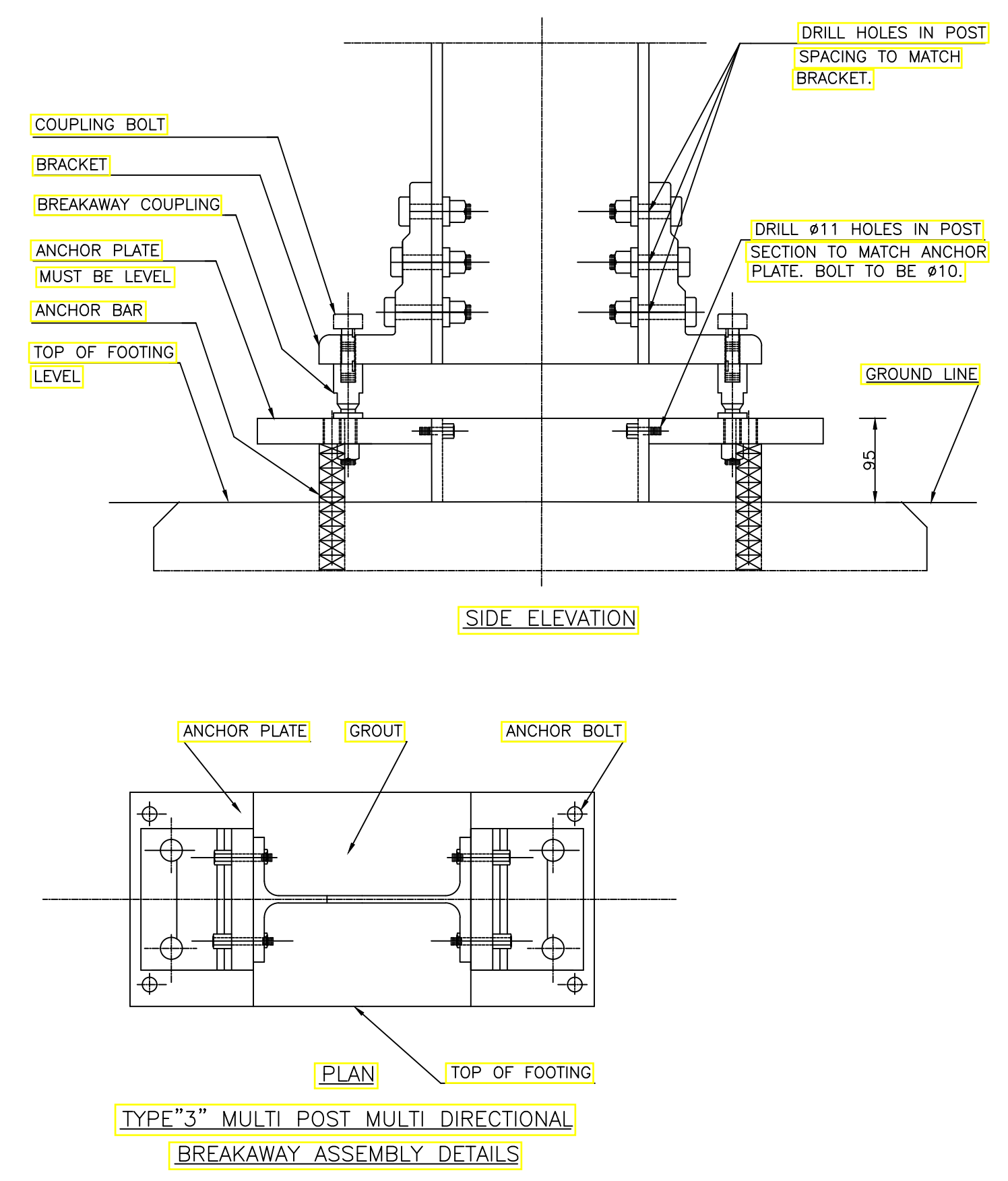
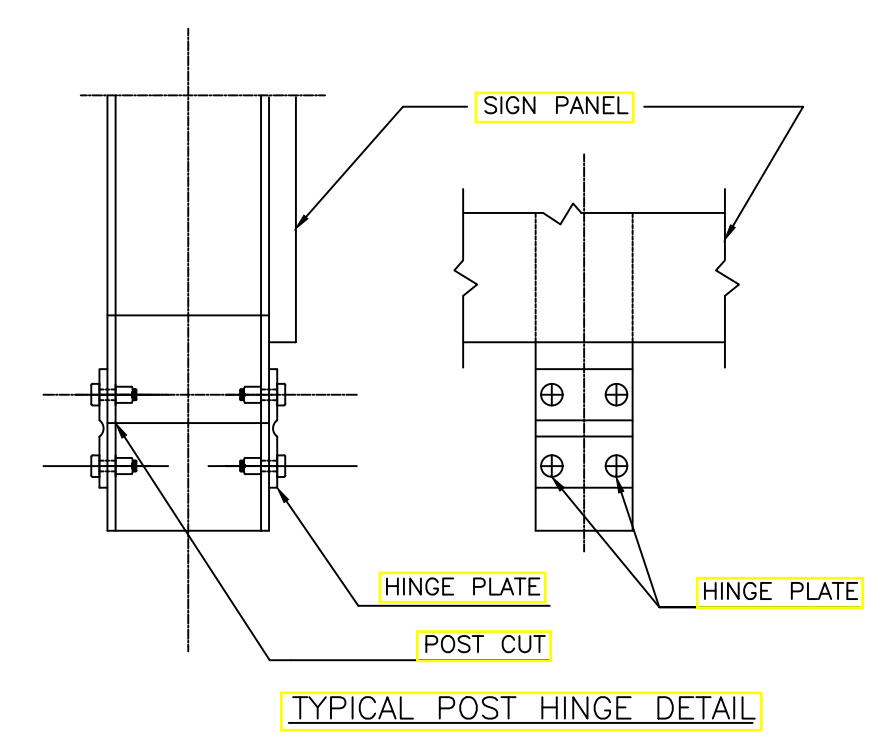
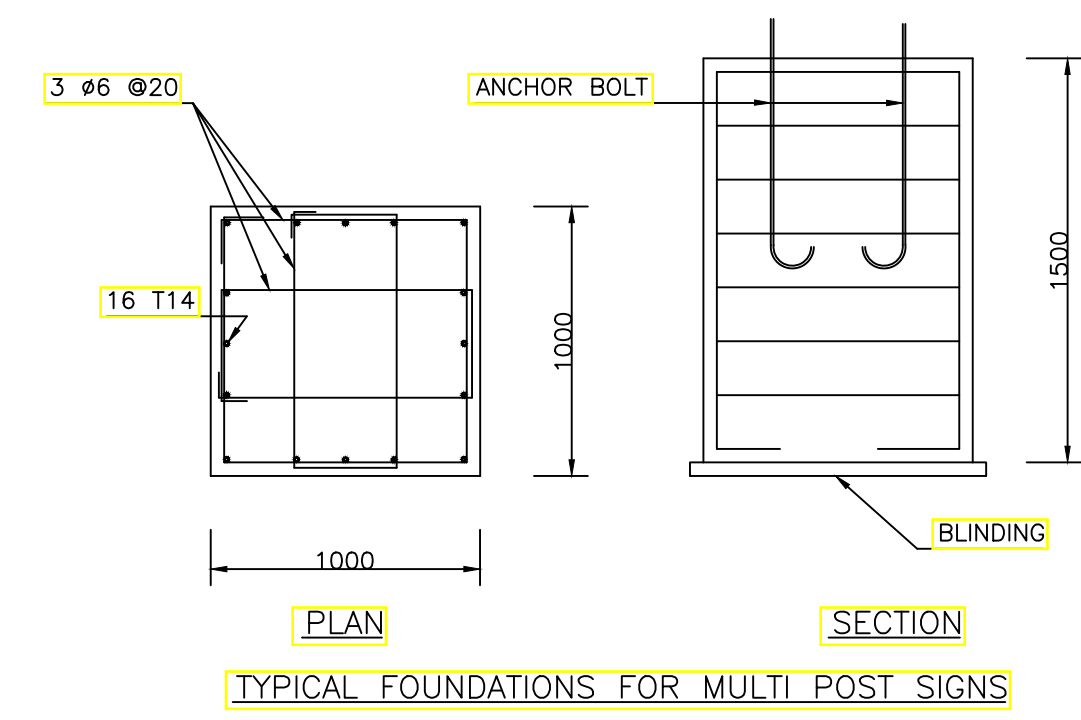
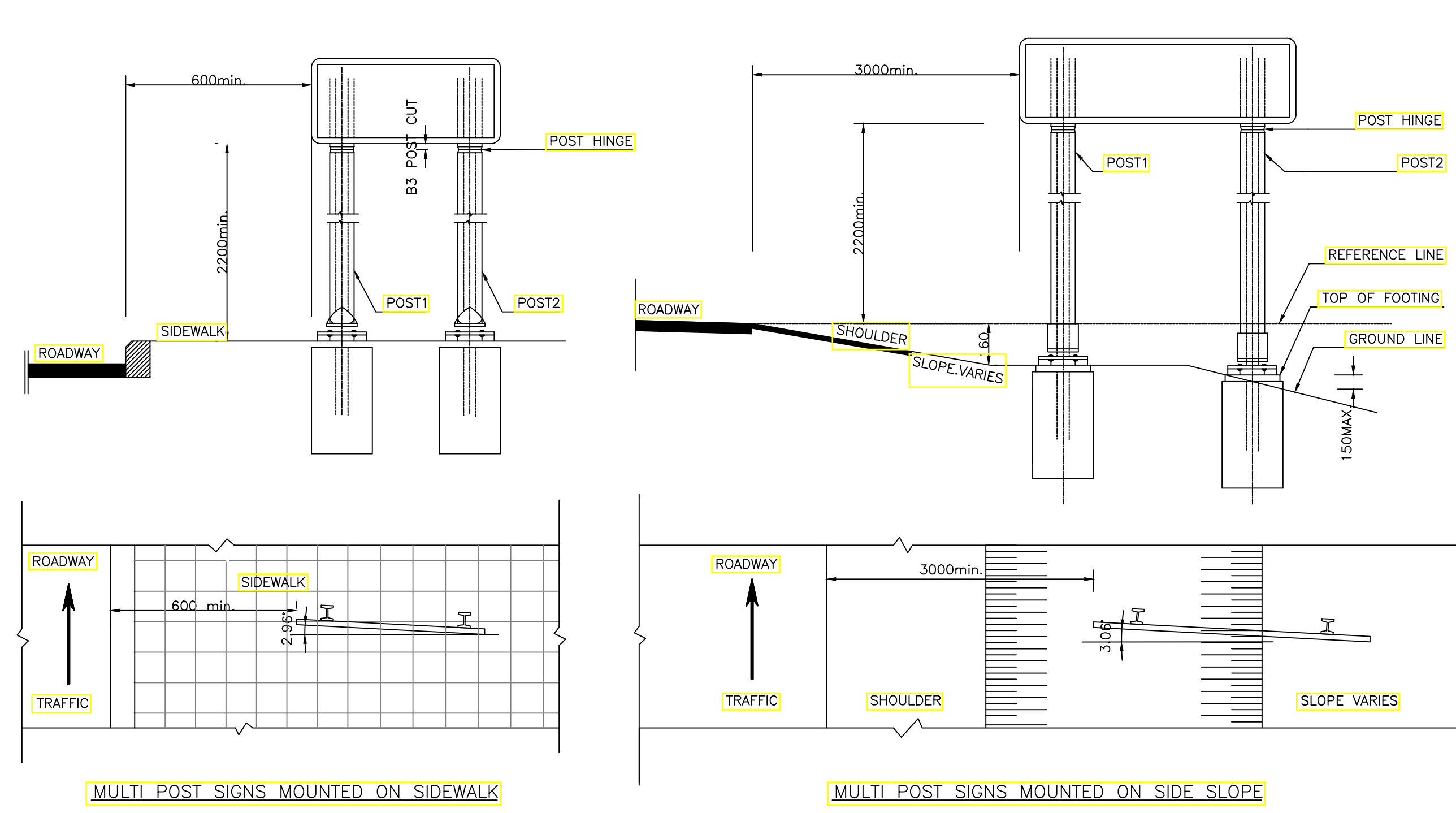
3-THE SIGNS EXACT LOCATION SHOULD BE DETERMINED BY THE RESIDENT ENGINEER OR HIS REPRESENTATIVE ON SITE.

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No.	REVISION	DATE
CLIENT:		
REPUBLIC OF LEBANON COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION		
CONSULTANT:		
KREDO SAL CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON		
PROJECT REFERENCE: P-1709		
PROJECT NAME:		
ADMA BRIDGE REHABILITATION STUDY ADMA, CAZA KESROUANE		
DRAWING TITLE:		
TRAFFIC CONTROL DEVICES SIGNS DETAILS		
DRAWN:	E.C.	DESIGNED: E.C.
CHECKED:	C.B.	APPROVED: G.K.
DATE:	MARCH-2019	SCALE: N.T.S.
FILE NAME:		
DRAWING No.: P-1709-DET-404		
REVISION:		



NOTES:

- 1-BREAKAWAY ASSEMBLY DETAILS SHALL BE AS FOLLOWS:
a-TYPE 1. THREADED COUPLING BREAKAWAY: USED FOR ALL SINGLE POST.
b-TYPE 2. MULTI POST UNIDIRECTIONAL BREAKAWAY: USED ON HIGHWAYS FOR ROAD SIDE SIGNS.
c-TYPE 3. MULTI POST MULTIDIRECTIONAL BREAKAWAY: USED ON HIGHWAYS FOR MEDIAN SIGNS AND WHERE SIGN LOCATION IS SUBJECTED TO POSSIBLE ACCIDENTS FROM DIFFERENT DIRECTIONS.
- 2-ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT IF OTHERWISE INDICATED.
- 3-GANTRY SIGN FOUNDATION IN MEDIAN SHOULD BE POURED SEPARATLY FROM THE N.J BARRIER.
- 4-ALL STEEL SECTIONS SHALL CONFORM TO B.S. STANDARDS IN SIZE AND MATERIAL.
- 5-FULL DEPTH FILLET WELDS SHALL BE USED FOR WELDING BETWEEN DIFFERENT STEEL SECTIONS.
- 6-FOR REINFORCED CONCRETE DESIGN CRITERIA AND SPECIFICATIONS REFER TO STRUCTURAL DRAWINGS.



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No.	REVISION	DATE	
CLIENT:			
REPUBLIC OF LEBANON COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION			
CONSULTANT:			
KREDO SAL CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON			
PROJECT REFERENCE: P-1709			
PROJECT NAME:			
ADMA BRIDGE REHABILITATION STUDY ADMA, CAZA KESROUANE			
DRAWING TITLE:			
SIGN MOUNTING DETAILS			
DRAWN:	E.C.	DESIGNED:	E.C.
CHECKED:	E.C.	APPROVED:	G.K.
DATE:	MARCH-2019	SCALE:	AS SHOWN
FILE NAME:			
DRAWING No.:	P-1709-DET-405	REVISION:	

TILE WIDTHS EXPRESSED AS A PERCENTAGE OF LOWER CASE

LETTERING HEIGHT

UPPER CASE

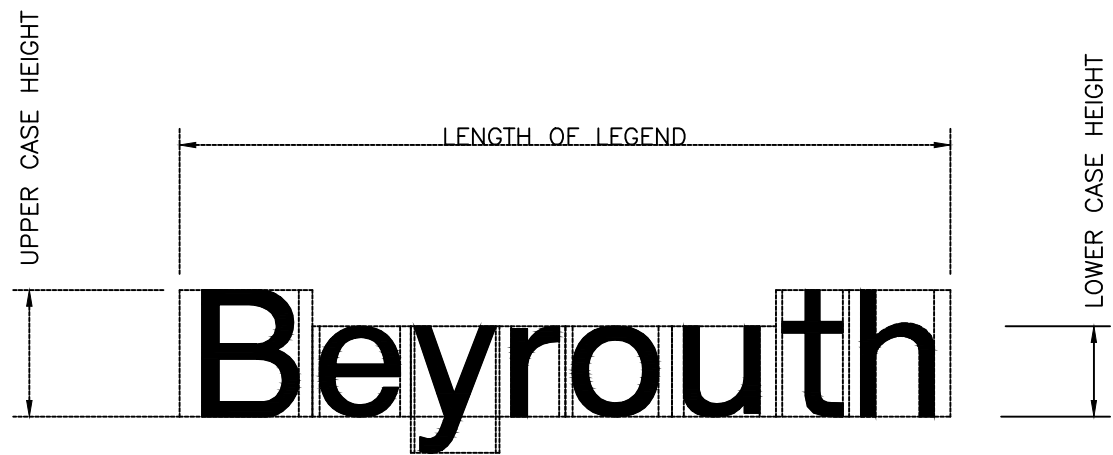
LETTER	TILE WIDTH	H1	H2
A	136	08	08
B	147	25	15
C	148	14	14
D	154	25	15
E	132	25	20
F	119	25	12
G	155	14	20
H	160	25	25
I	73	25	25
J	93	02	25
K	138	25	06
L	107	25	04
M	184	25	25
N	168	25	25
O	156	15	15
P	130	25	10
Q	158	15	15
R	141	25	15
S	137	13	15
T	109(105)	04	04
U	154	25	25
V	130(120)	10	10
W	183(189)	12	12
X	128	12	12
Y	123(118)	05	06
Z	119	12	12

LOWER CASE

LETTER	TILE WIDTH	H1	H2
a	111(104)	07	12
b	117	13	12
c	103	06	08
d	119	08	18
e	109(102)	08	12
f	75	06	06
g	114(107)	08	18
h	112	13	18
i	54	15	21
j	58	02	18
k	108	13	06
l	62	15	29
m	164	13	18
n	112	13	18
o	118(111)	08	15
p	118	13	15
q	118	08	18
r	73(59)	13	07
s	97(95)	05	12
t	81	07	07
u	115(101)	13	18
v	98	06	06
w	147(145)	06	06
x	104	04	04
y	98(96)	04	04
z	97	08	08

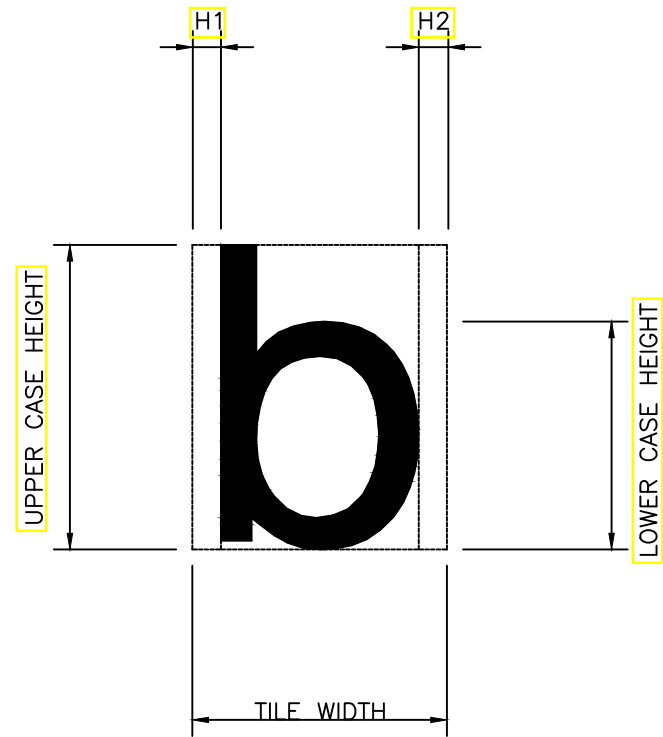
NUMERALS AND PUNCTUATION MARKS etc.

LETTER	TILE WIDTH	H1	H2
1	79	11	23
2	120	10	16
3	127	11	18
4	132	06	10
5	122	12	12
6	126	15	15
7	104	05	05
8	130	16	16
9	128	14	14
0	133	13	13
—	66	10	10
(	105	13	24
)	105	24	13
.	53		
,	39		
%	160		
&	126		

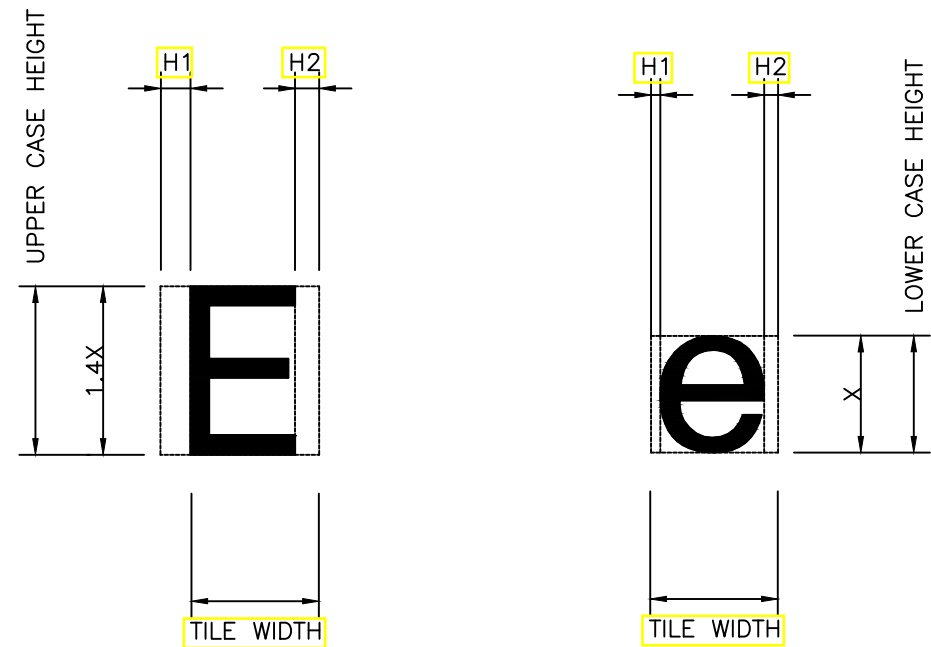


EXAMPLES:

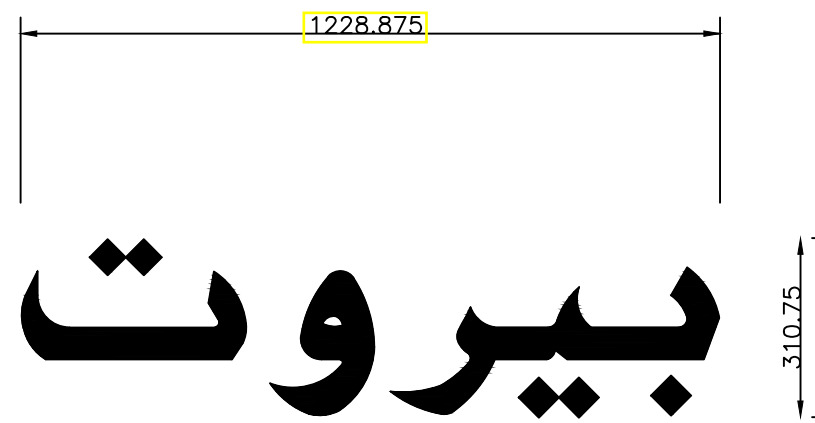
1- LENGTH OF WORD FOR 150mm. LOWER CASE HEIGHT
 $150(147+109+98+73+118+115+81+112) = 1279.50$



EXAMPLE OF TILE



TILE DEFINITION



LENGTH OF ARABIC WORD FOR A STROKE WIDTH C=56.5
CORRESPONDING TO A FRENCH 150mm LOWER CASE HEIGHT
 $(3.5+3.5+3.25+0.5+3.25+0.75+7)*56.5=1228.875$
HEIGHT OF ARABIC WORD FOR A STROKE WIDTH C=56.5
CORRESPONDING TO AN FRENCH 150mm LOWER CASE HEIGHT
 $(3.75+1.75)*56.5=310.75$

WHERE:

—THE LETTERS DIMENSIONS ARE THE NUMBER OF SQUARES
OCCUPIED BY EACH LETTER AS SHOWN IN THE LATEST LIBNOR
STANDARDS : ROAD EQUIPMENT (ROAD TRAFFIC SIGNS FASCICULE 2)

NOTES:

1-ALL DIMENSIONS ARE IN
MILLIMETERS UNLESS
OTHERWISE INDICATED.

2-ALL THE LETTERING FONTS AND
SIZES SHALL CONFIRM TO THE
LATEST LIBNOR STANDARDS:
ROAD EQUIPMENT (ROAD TRAFFIC
SIGNS FASCICULE 2)

3-WHEN T,V OR Y ARE FOLLOWED
BY a, e, g, o, r, u, w, OR y,
SPECIAL TILES OR LESSER
WIDTH ARE USED FOR BOTH
THE UPPER CASE AND LOWER
CASE LETTERS AS SHOWN IN
BRACKETS.

4-UPPER CASE HEIGHT OF FRENCH
LETTERING SHALL BE 1.4 THE
LOWER CASE HEIGHT.

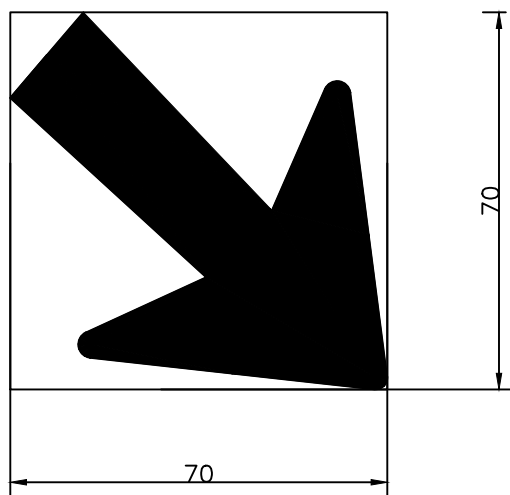
5-STROKE WIDTH (S/W) OF
FRENCH LETTERING SHALL BE
1/4 THE LOWER CASE HEIGHT.

6-STROKE WIDTH (C) OF ARABIC
LETTERING SHALL BE 0.375 THE
LOWER CASE HEIGHT OF FRENCH
LETTERING.

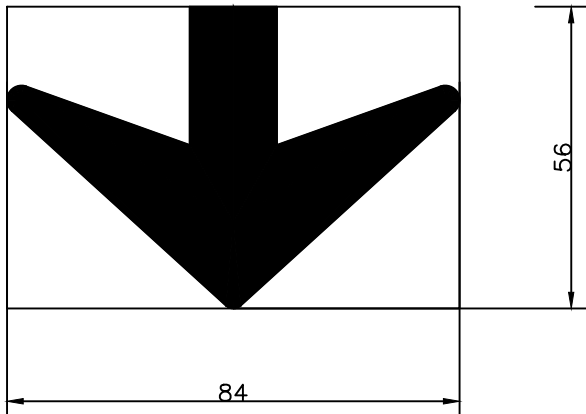
7-SPACING BETWEEN RELATED
ARABIC WORDS OF THE SAME
LEGEND SHALL BE 4C.

8-SPACING BETWEEN RELATED
FRENCH WORDS OF THE SAME
LEGEND SHALL EQUAL THE
UPPER CASE LETTER HEIGHT.

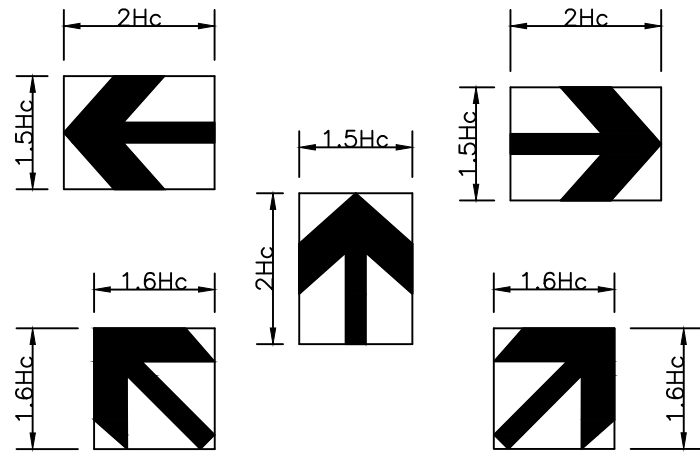
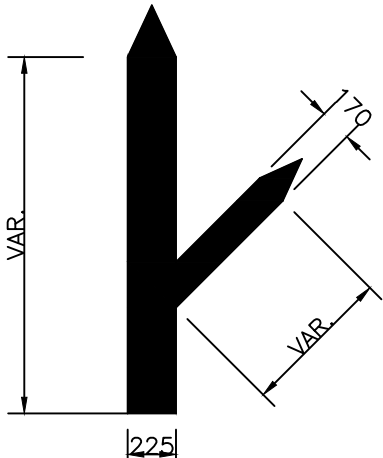
9-SPACING BETWEEN PREFIX AND
FOLLOWING WORD SHALL EQUAL
1/2 THE UPPER CASE LETTER
HEIGHT.



ARROWS FOR OVERHEAD EXIT AND INTERMEDIARY SIGNS
ON EXPRESSWAY



ARROWS FOR ADVANCE DIRECTION SIGNS
ON EXPRESSWAY



ARROWS FOR GROUND MOUNTED SIGNS

4		
3		
2		
1		
No.	REVISION	DATE
CLIENT:		
REPUBLIC OF LEBANON COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION		
CONSULTANT:		
KREDO SAL CARMEL BLDG., SAYDEH ST., ACHRAFIEH, BEIRUT - LEBANON		
PROJECT REFERENCE: P-1709		
PROJECT NAME:		
ADMA BRIDGE REHABILITATION STUDY ADMA, CAZA KESROUANE		
DRAWING TITLE:		
LETTERING & SYMBOLS SIZES DETAILS		
DRAWN:	DESIGNED:	CHECKED:
E.C.	E.C.	E.C.
DATE:	MARCH-2019	SCALE:
FILE NAME:		AS SHOWN
DRAWING No.:	P-1709-DET-406	REVISION: