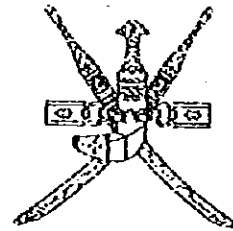




SULTANATE OF OMAN
MINISTRY OF COMMUNICATIONS
DIRECTORATE GENERAL OF ROADS



CONSTRUCTION OF FLYOVER
AT
AL MULADDAH ROUNDABOUT
BATINAH HIGHWAY

TENDER DOCUMENT

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MARCH, 1997

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DRAWING SCHEDULE
(FO3 - R/A5 AL MULADDAH)

SHEET NO.	TITLE	SHEET NO.	TITLE	SHEET NO.	TITLE
A	GENERAL	B	STRUCTURE - BRIDGE	W	STRUCTURE - RETAINING WALL
G-1	Drawing Schedule	B-1	General View (A-Line)	W-1	General View (1)-1
G-2	General Note	B-2	General View (B-Line)	W-2	General View (1)-2
R	ROAD	B-3	Framing Plan (A-Line)	W-3	Re-bar Arrangement (1)
R-1	Alignment Layout	B-4	Co-ordinate List (A-Line)	W-4	Re-bar Arrangement (2)
R-2	Setting Out Details	B-5	Framing Plan (B-Line)	W-5	Re-bar Arrangement (3)
R-3	Plan	B-6	Co-ordinate List (B-Line)	W-6	Re-bar Arrangement (4)
R-4	Profile-Highway	B-7	General View of Bridge (A-Line)	W-7	Re-bar Arrangement (5)
R-5	Typical Cross Section	B-8	Structural Detail of Main Girder (A-Line)	W-8	Re-bar Arrangement (6)
R-6	Detailed Plan	B-9	Detail of Tendons (A-Line)	W-9	Re-bar Arrangement (7)
R-7	Pavement Details	B-10	Re-bar Arrangement (A-Line) (1/2)	W-10	Re-bar Arrangement (8)
R-8	Drainage Structure (1/4)	B-11	Re-bar Arrangement (A-Line) (2/2)	W-11	Re-bar Arrangement (9)
R-9	Drainage Structure (2/4)	B-12	Bar Schedule of Main Girder (A-Line)	W-12	Re-bar Arrangement (10)
R-10	Drainage Structure (3/4)	B-13	Railing and Cantilever Slab (A-Line)	W-13	Re-bar Arrangement (11)
R-11	Drainage Structure (4/4) and Service Ducts	B-14	Detail of Shoe and Anchor Bar (A-Line)	W-14	Re-bar Arrangement (12)
R-12	Retaining Wall	B-15	General View of Bridge (B-Line)	W-15	Re-bar Arrangement (13)
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		B-31	Structural Details of P1~P2 and P9~P10 (A,B-Line) (1/2)	W-31	Re-bar Arrangement (7)
		B-32	Re-bar Arrangement of A1 (A,B-Line) (1/3)	W-32	Re-bar Arrangement (8)
		B-33	Re-bar Arrangement of A1 (A,B-Line) (2/3)	W-33	Re-bar Arrangement (9)
		B-34	Re-bar Arrangement of A1 (A,B-Line) (3/3)	W-34	Re-bar Arrangement (10)
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		B-36	Re-bar Arrangement of A2 (A,B-Line) (2/3)	W-36	Re-bar Arrangement (12)
		B-37	Re-bar Arrangement of A2 (A,B-Line) (3/3)	W-37	Re-bar Arrangement (13)
		B-38	Re-bar Arrangements of P3~P8 (A,B-Line) (1/2)	W-38	Re-bar Arrangement (14)
		B-39	Re-bar Arrangements of P3~P8 (A,B-Line) (2/2)	W-39	Re-bar Arrangement (15)
		B-40	Re-bar Arrangements of P1~P2 and P9~P10 (A,B-Line) (1/2)	W-40	Re-bar Arrangement (16)
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		B-42	Re-bar Arrangement of Approach Slab		
		B-43	Bar Bending Diagram	T	TEMPORARY WORKS
				T-1	Construction Sequence
				T-2	Detour Layout (1/2)
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JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT : D/D ON ROAD DEVELOPMENT PROJECT ON BATHAH HIGHWAY

TITLE : DRAWING SCHEDULE

DATE : DWG NO. G - 1

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GENERAL NOTES

LOADING SPECIFICATIONS

The loading specifications used for the design of structures are as follows:

- HIGHWAY DESIGN MANUAL, February 1994, Sultanate of Oman
- STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1990, American Association of State Highway and Transportation Officials
- SPECIFICATIONS FOR HIGHWAY BRIDGES, February 1994, Japan Road Association

According to the above specifications, basic design condition are as follows:

1. CLASSIFICATION OF LIVE LOAD

- Special truck type A (Oman)
- Special truck type B (Oman)
- HS20-44 increased 100% (AASHTO)
- TL-25 (Japan)

2. SEISMIC LOAD

0.1g of acceleration coefficient for seismic loads is applied in accordance with the Highway Design Manual in the Sultanate of Oman.

3. DESIGN METHOD

Allowable stress design is applied for this detailed design study in accordance with Specifications for Highway Bridges by Japan Road Association. Allowable stress design is similar to service load design by AASHTO.

4. STRUCTURAL ANALYSIS

The load distribution is calculated by using of Guyon - Masonnet's method based on orthotropic plate theory.

MATERIALS FOR STRUCTURES

1. CONCRETE

Design strength of concrete is specified as follows:

Class of concrete (28days)	Specified strength		Characteristic strength at 28 days		Application	
	Cylinders	Cubes	Cylinders	Cubes		
	(kgf/cm ²)	(N/mm ²)	(kgf/cm ²)	(N/mm ²)	(kgf/cm ²)	
16	160	16	163	20	204	Blinding(leveling), Stone masonry
24	240	24	245	30	306	Substructure, Retaining wall, Box culvert
32	320	32	326	40	408	Floor slab, Cross beam, Felloe guard & parapet (precast), Cast-in-place concrete pile
40 ^A	400	40	408	50	510	Prestressed concrete girder

^A Concrete class 40 is not prescribed in General Specification for Roads in the Sultanate of Oman, however, it is necessary for prestressed concrete girder.

2. REINFORCING STEEL

Reinforcing bars are deformed bars according to AASHTOM31/M31M.

Grades and tensile requirements are specified as follows:

Grade	Tensile strength, min (kgf/cm ²)	Yield strength, min (kgf/cm ²)
Grade40	4921	2812
Grade60	6327	4218

Bar designation numbers used in this design are correspond to ones by AASHTO as follows:

AASHTO No.	3	4	5	6	7	8	9	10
This design	D9	D13	D16	D19	D22	D25	D28	D32

3. PRESTRESSING TENDON

Prestressing strand comply with the requirements of AASHTOM203, M204 and M275 or BS5896 and BS4486. Prestressing strands for this design are based on Japanese specifications prescribed as follows:

Type	Area (mm ²)	Designation	Ultimate strength (kgf/mm ²)	Yield strength (kgf/mm ²)
12T15.2	1664.40	SWPR7B	190	160
1T15.2	138.70	SWPR7B	190	160

ALLOWABLE STRESSES

1. CONCRETE

The allowable stresses in concrete for each class and type are as follows:

(1) Prestressed concrete structures (kgf/cm ²)	Class32	Class40
Allowable compressive stress		
- Temporary stress before losses due to creep and shrinkage	140	180
- Stress at service load after losses have occurred	110	140
Allowable tensile stress		
- Temporary stress before losses due to creep and shrinkage	-12	-15
- Stress at service load after losses have occurred at dead load	0	0
- Stress at service load after losses have occurred at service load	-12	-15
Allowable shearing stress		
- Stress at service load after losses have occurred at service load		5.5
- Stress at service load after losses have occurred at ultimate load		53
Allowable diagonal stress		
- Stress at service load after losses have occurred at service load		-10

(2) Reinforced concrete structures (kgf/cm²)

	Class20	Class24	Class28	Class32
Allowable compressive stress				
- Flexural compressive stress	65	80	90	100
- Axial compressive stress	50	65	75	85
Allowable shear stress				
- only by concrete	3.5	3.9	4.2	4.5
- with diagonal reinforcement	15	17	18	19
- Punching shear stress	8.0	9.0	9.5	10.0
Allowable bond stress				
- with round bar	7.0	8.0	8.5	9.0
- with deformed bar	14	16	17	18

(3) Cast-in-place concrete pile

Cast-in-concrete piles are constructed by concrete class32, but its allowable stresses are for concrete class24.

(4) Reinforcing Bar

Allowable stresses(kgf/cm²) for each grade of reinforcing bar are as follows:

	Grade40	Grade60
General use	1400	1800
Under water	1400	1600

OTHER DESIGN CONDITIONS

- Lap splicing is applied for all reinforcing bars
- Minimum N-value of bearing layer is 30.

OTHERS

- Elevations, stations and coordinates are shown in meters.
- Other dimensions are shown in millimeters

NOTES:

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JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT : MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

TITLE GENERAL NOTES

DATE

DWG NO.

G - 2

ROAD

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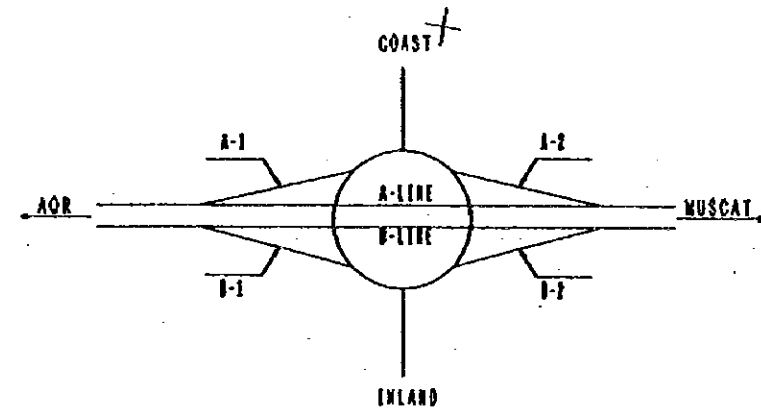
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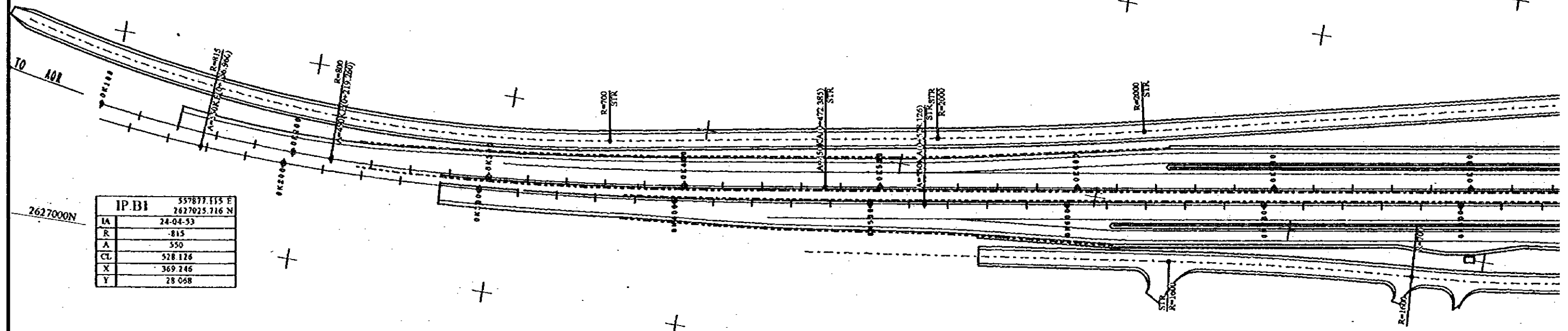
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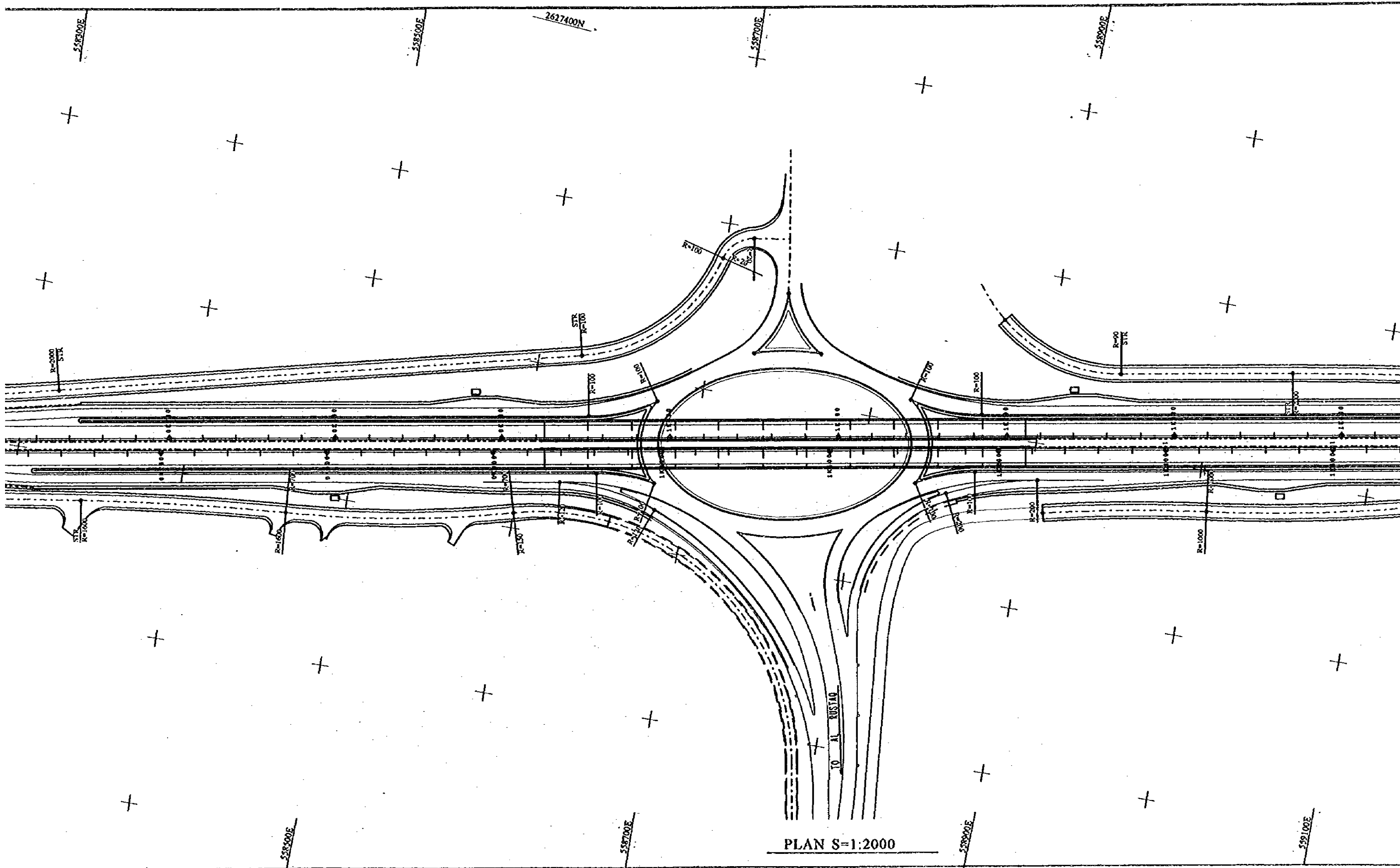
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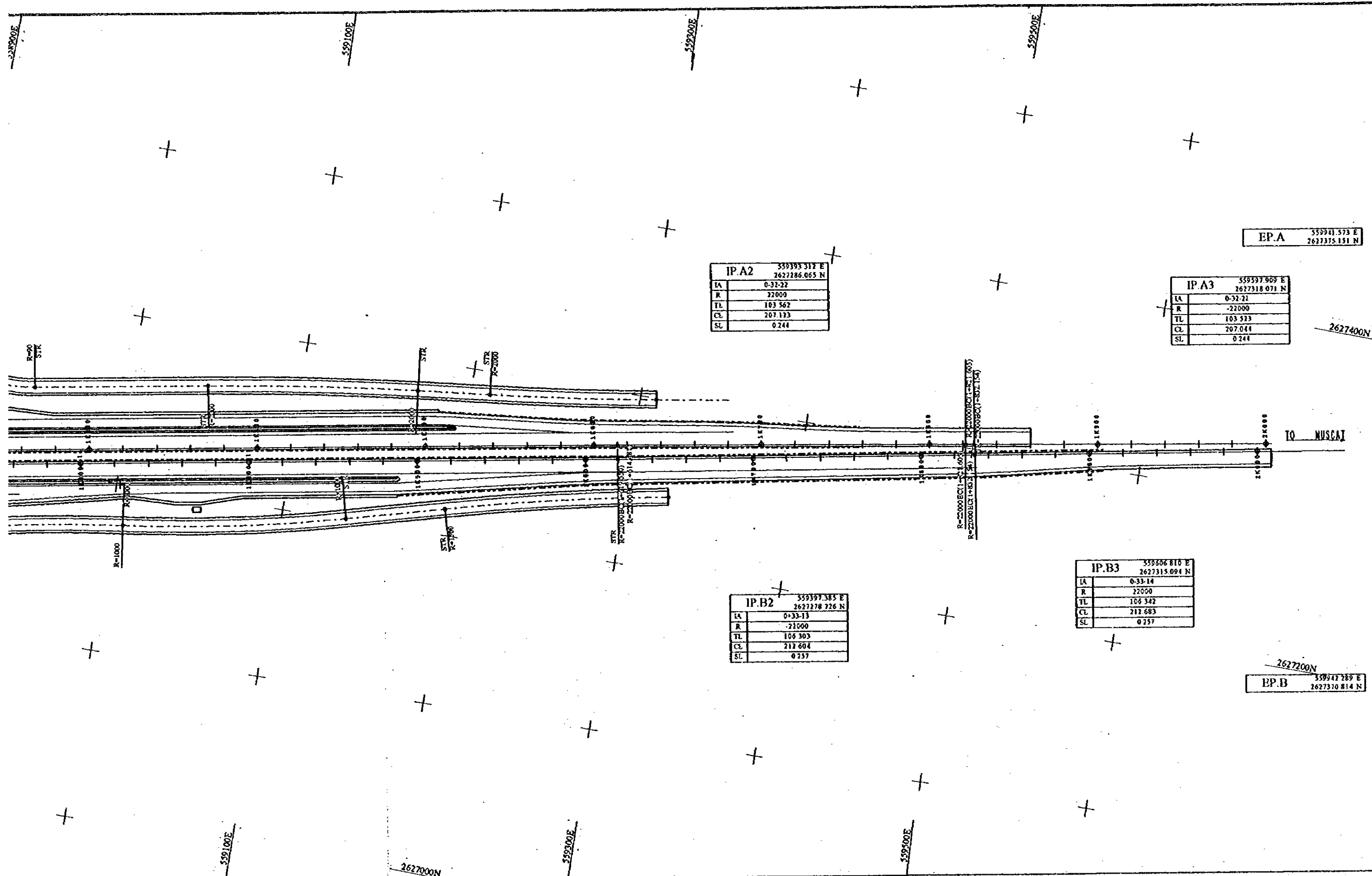


NOTES:
(1) FINAL CONTROL COORDINATES, WGS84 DATUM, ZONE 40 UTM, CM 57.





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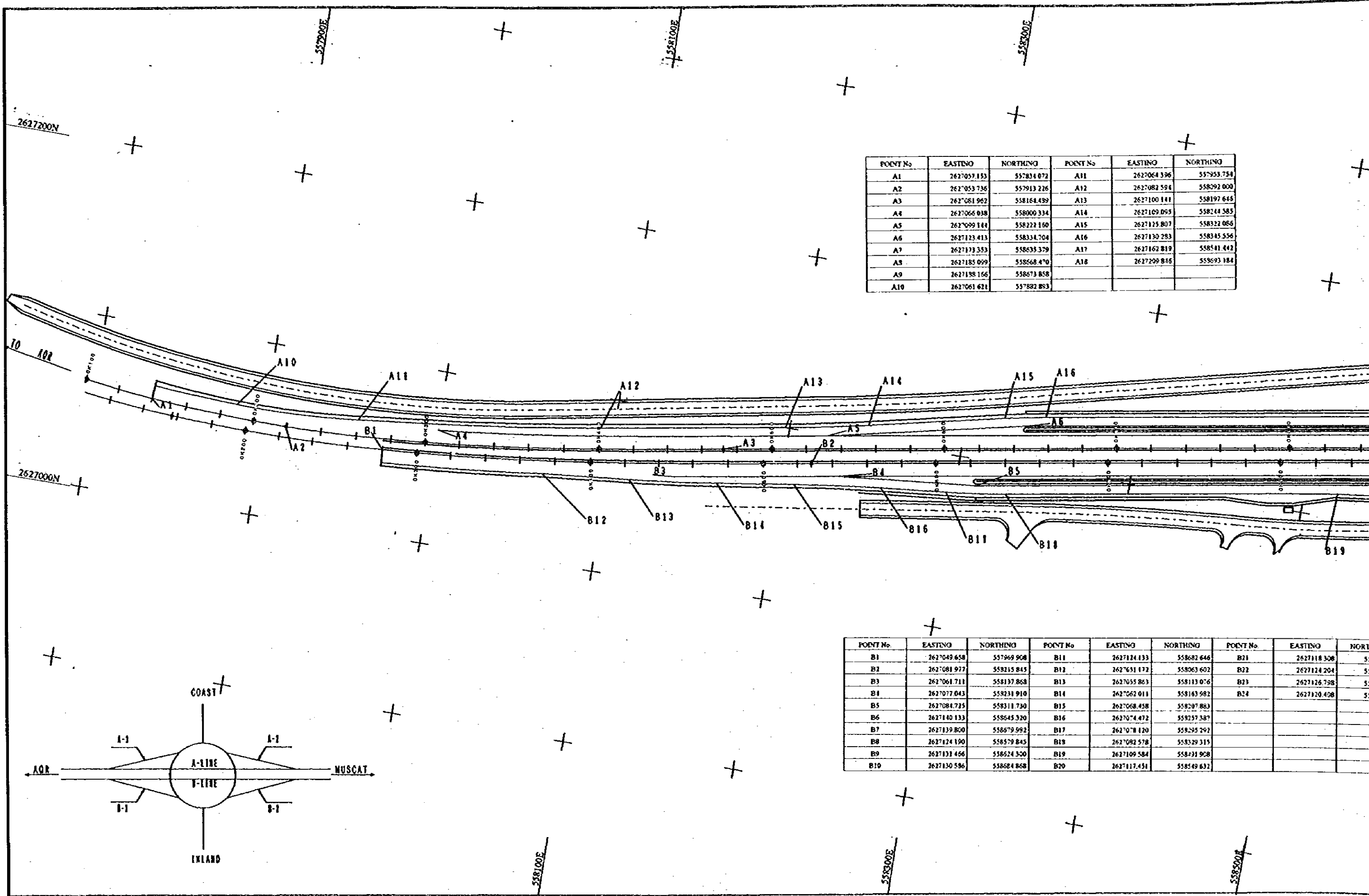
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R	-22000	
TL	103.573	
CL	207.044	
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IP.B2		559397.385 E 2627278.226 N
IA	0+33-13	
R	-22000	
TL	104.303	
CL	212.604	
SL	0.257	

IP.B3		559606.810 E 2627315.094 N
IA	0-33-14	
R	22000	
TL	104.342	
CL	212.683	
SL	0.257	

BP.B	559941.289 E 2627370.814 N
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	TITLE: RA/5 AL MULADDAH ALIGNMENT LAYOUT
DATE:	DWGNO. R-1



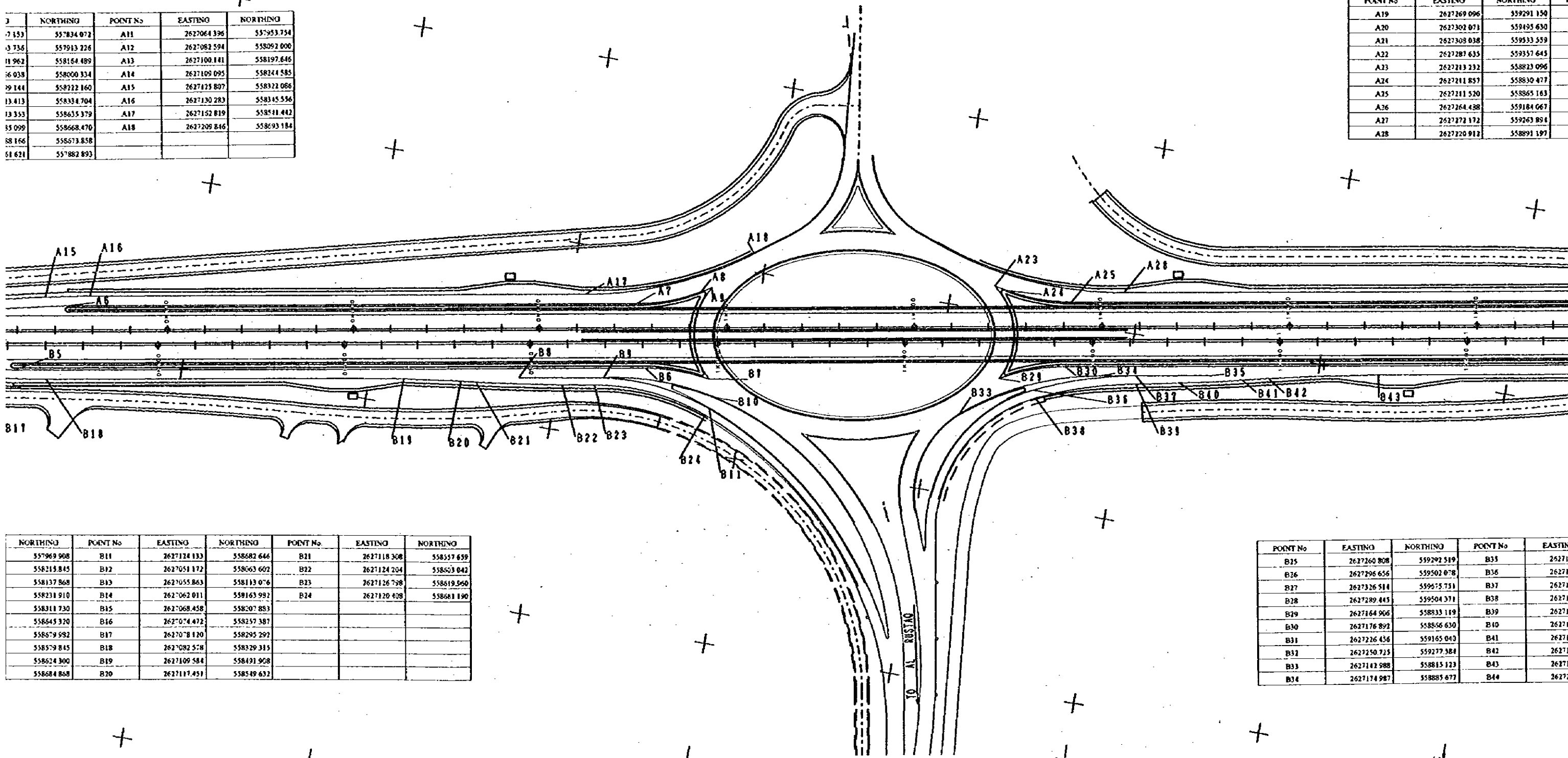
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A3	2627081.962	558164.439	A13	2627100.141	558197.645
A4	2627066.038	558009.334	A14	2627109.055	558244.583
A5	2627099.144	558222.160	A15	2627125.807	558322.066
A6	2627123.413	558334.704	A16	2627130.293	558345.556
A7	2627133.353	558335.379	A17	2627162.819	558541.442
A8	2627185.099	558568.470	A18	2627209.816	558693.184
A9	2627188.156	558673.858			
A10	2627061.621	557882.853			

POINT No.	EASTING	NORTHING	POINT No.	EASTING	NORTHING	POINT No.	EASTING	NORTHING
B1	2627049.658	557969.908	B11	2627124.133	558682.646	B21	2627118.308	558711.308
B2	2627081.977	558215.845	B12	2627051.172	558063.602	B22	2627124.204	558711.308
B3	2627061.711	558137.868	B13	2627055.863	558113.076	B23	2627126.798	558711.308
B4	2627077.043	558231.910	B14	2627062.011	558163.982	B24	2627120.408	558711.308
B5	2627084.725	558311.730	B15	2627068.458	558207.883			
B6	2627140.133	558645.320	B16	2627074.472	558257.387			
B7	2627139.800	558679.992	B17	2627078.120	558295.297			
B8	2627124.190	558579.845	B18	2627082.578	558329.315			
B9	2627131.466	558624.320	B19	2627109.584	558431.908			
B10	2627130.596	558684.868	B20	2627117.451	558549.632			

NOTES:
 (1) FINAL CONTROL COORDINATES, WGS84 DATUM, ZONE 48 UTM, CM57.

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7 133	557834 072	A11	2627064 396	557953 754	
3 736	557913 726	A12	2627082 594	558092 000	
11 962	558164 489	A13	2627100 141	558197 646	
6 038	558000 334	A14	2627109 095	558244 585	
9 144	558222 160	A15	2627125 807	558322 086	
13 413	558334 704	A16	2627130 283	558345 536	
13 353	558635 379	A17	2627152 819	558541 442	
35 099	558668 470	A18	2627209 846	558693 184	
88 166	558673 858				
61 621	557882 893				

POINT No	EASTING	NORTHING	POINT No	EASTING	NORTHING
A19	2627269 096	559291 150			
A20	2627302 071	559495 630			
A21	2627308 038	559333 559			
A22	2627287 635	559357 645			
A23	2627213 232	558823 096			
A24	2627211 857	558830 477			
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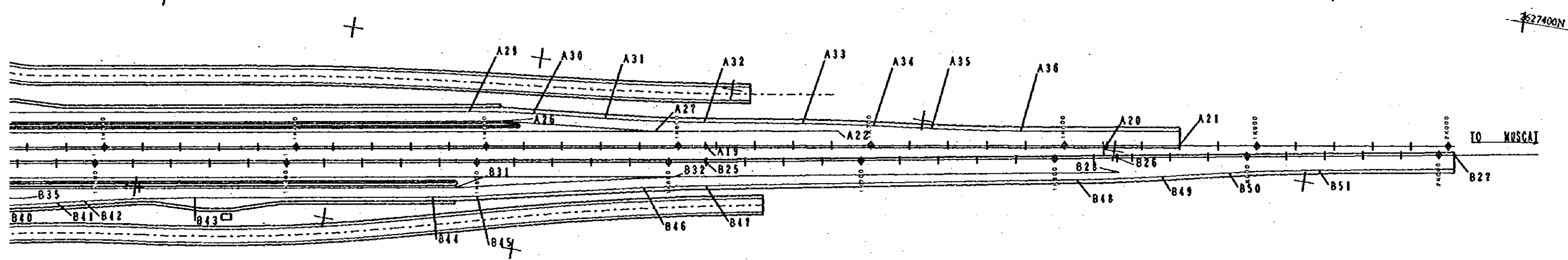


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558137 868	B13	2627055 863	558113 076	B23	2627126 798	558619 560
558231 910	B14	2627062 011	558163 992	B24	2627120 408	558681 190
558311 730	B15	2627068 458	558207 883			
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558579 845	B18	2627082 578	558329 315			
558624 300	B19	2627109 584	558431 908			
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POINT No	EASTING	NORTHING	POINT No	EASTING	NORTHING
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B26	2627296 656	559502 078	B36	26271	559271
B27	2627326 514	559675 751	B37	26271	559271
B28	2627289 445	559504 371	B38	26271	559271
B29	2627164 906	558833 119	B39	26271	559271
B30	2627176 892	558856 630	B40	26271	559271
B31	2627226 436	559165 040	B41	26271	559271
B32	2627250 725	559277 984	B42	26271	559271
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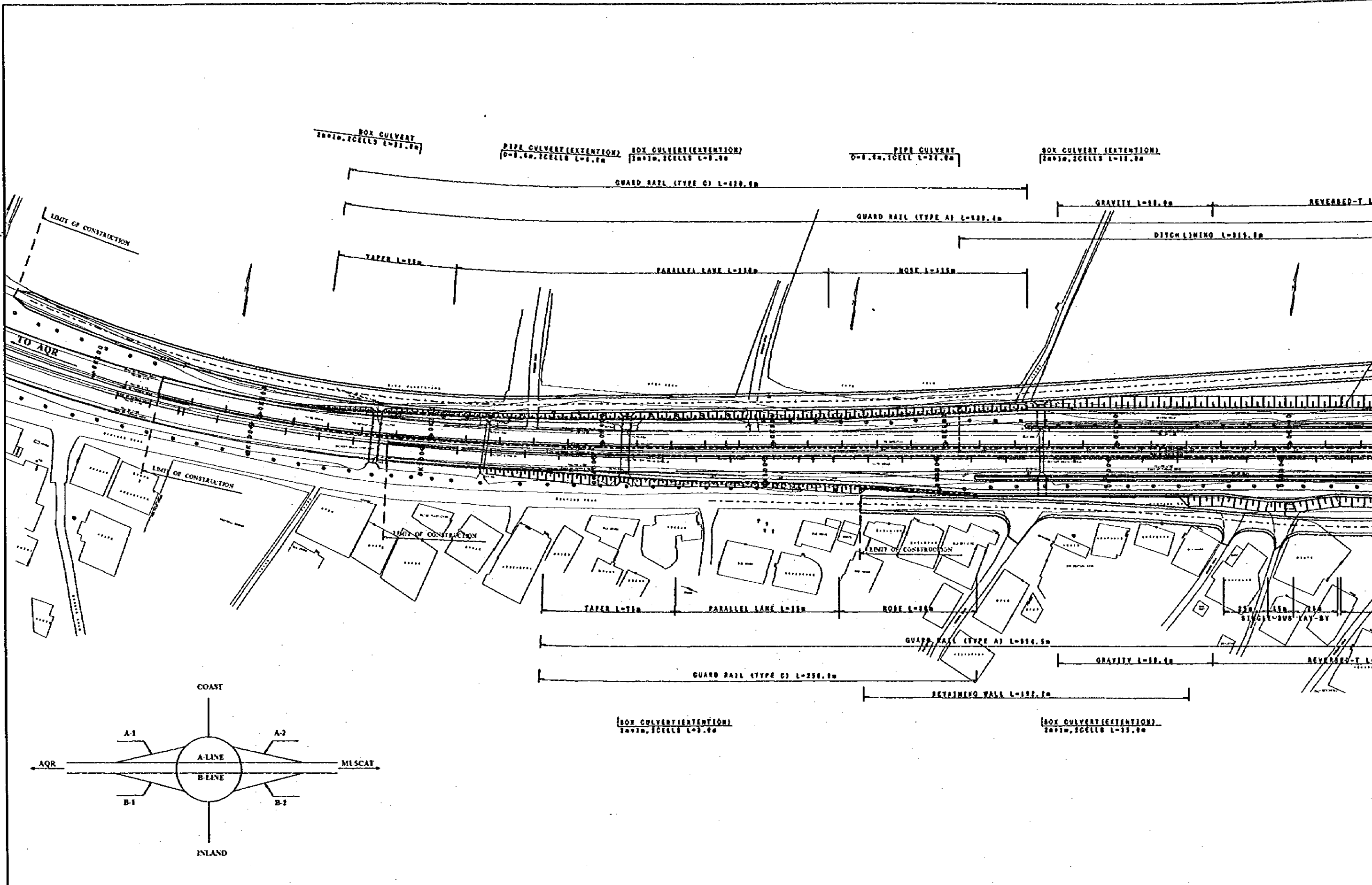
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A22	2627287 635	559357 645	A32	2627280 910	559288 656
A23	2627213 232	558823 096	A33	2627288 400	559339 007
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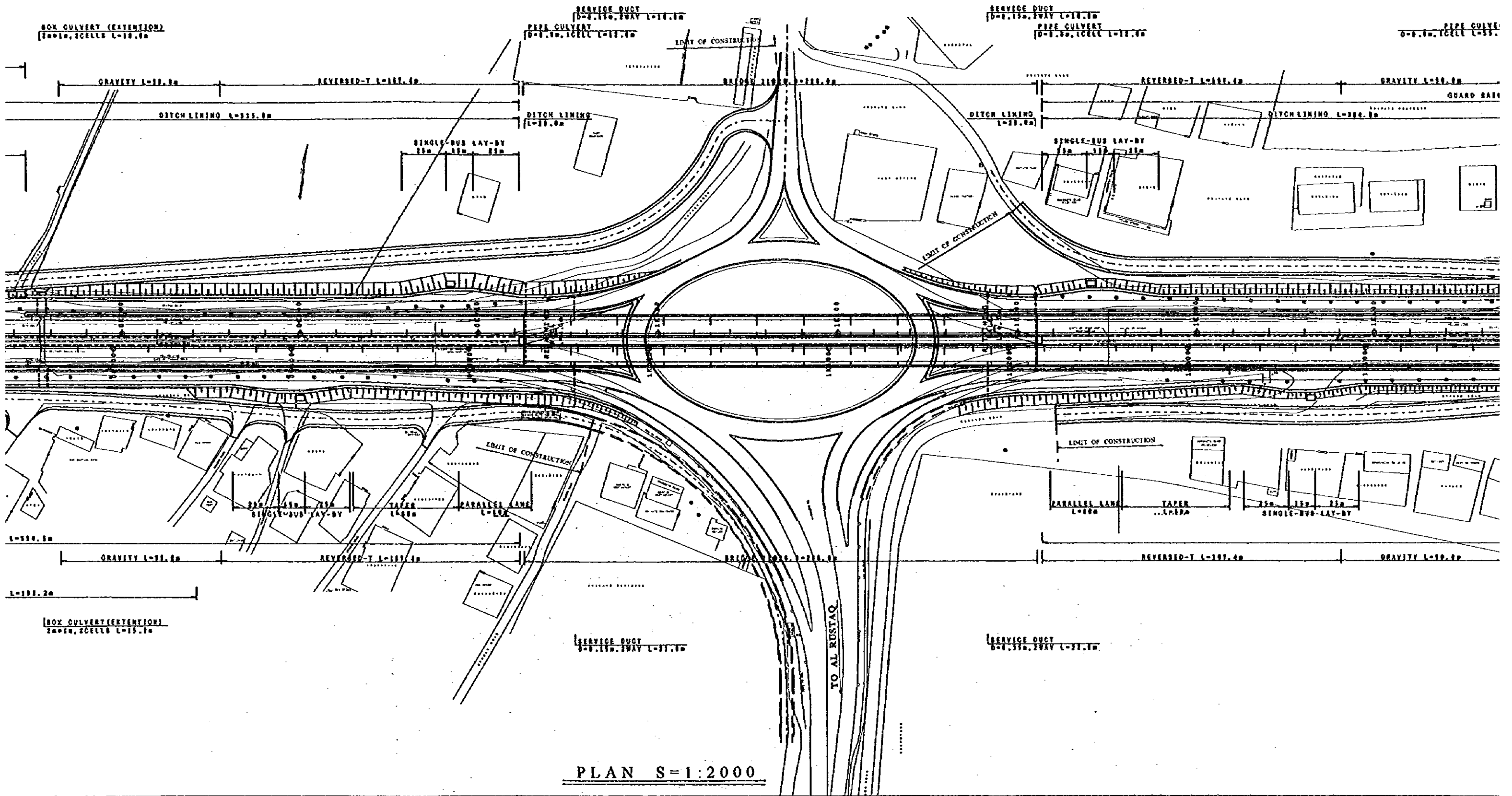
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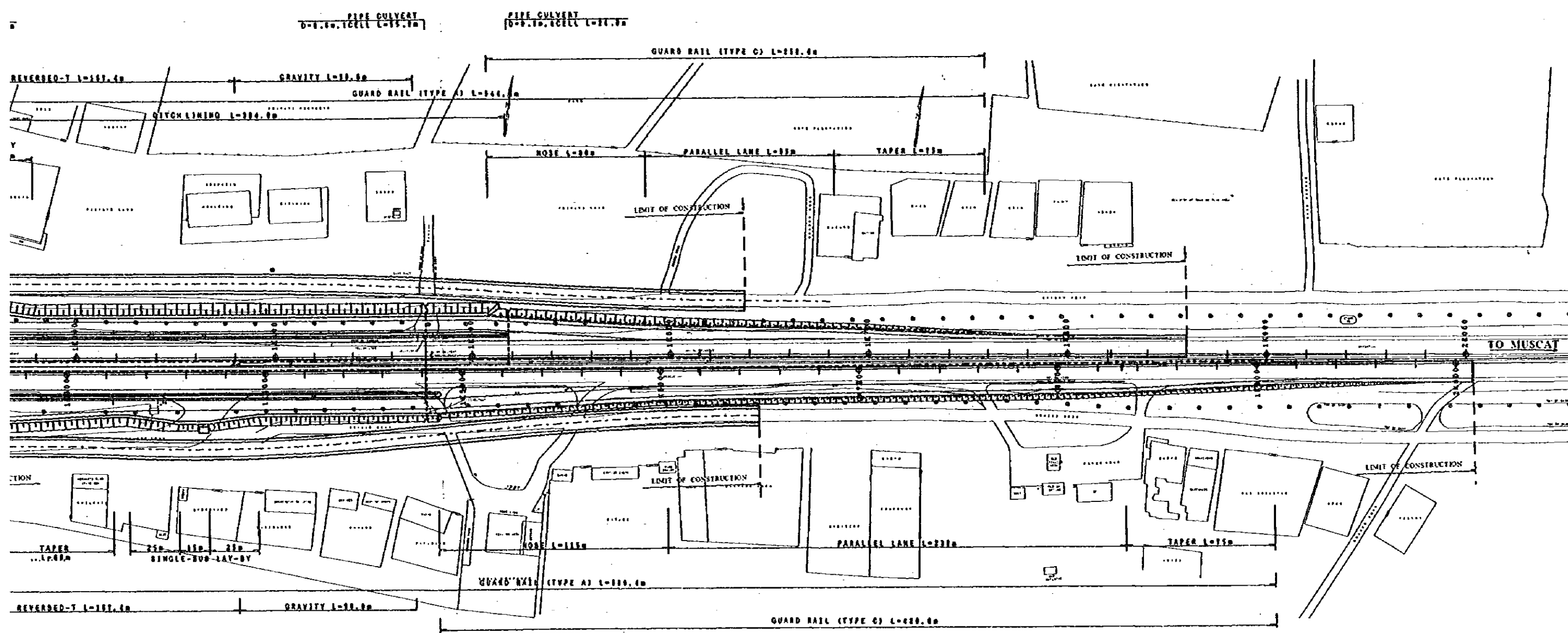
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PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RA/S AL MULADDAH SETTING OUT DETAILS
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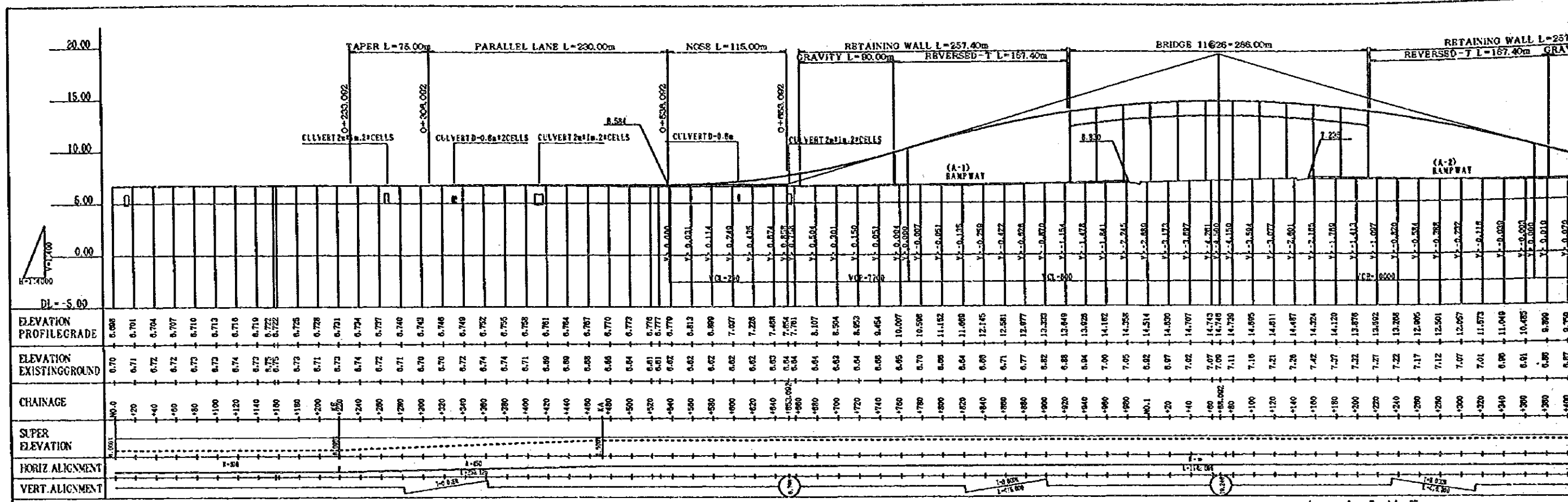


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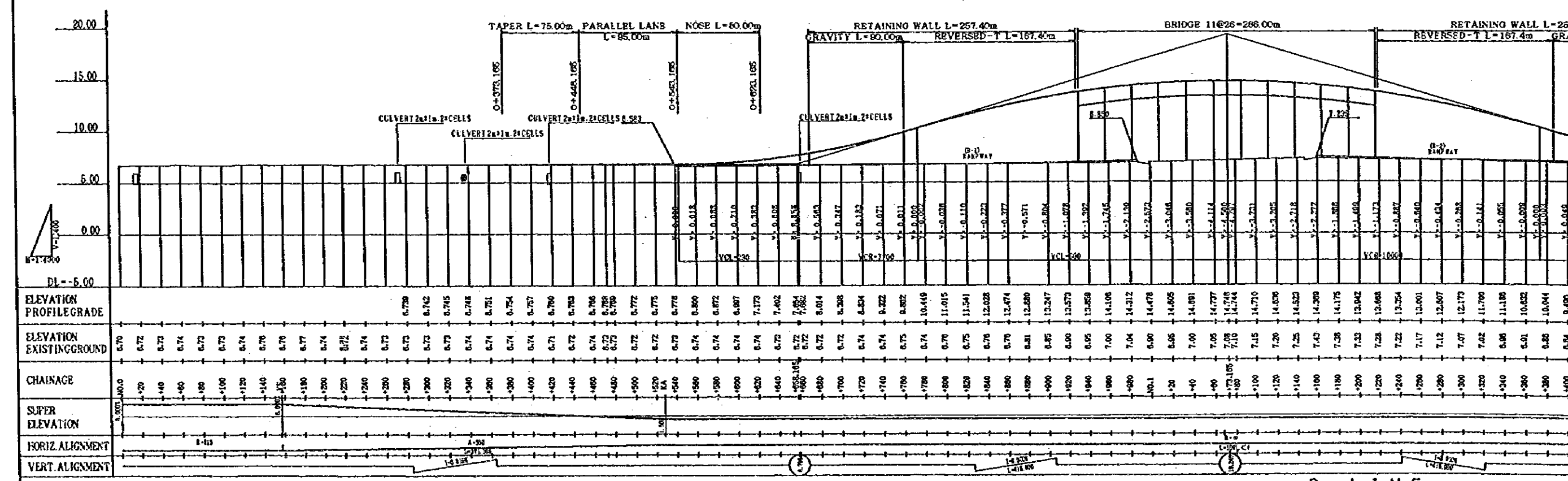


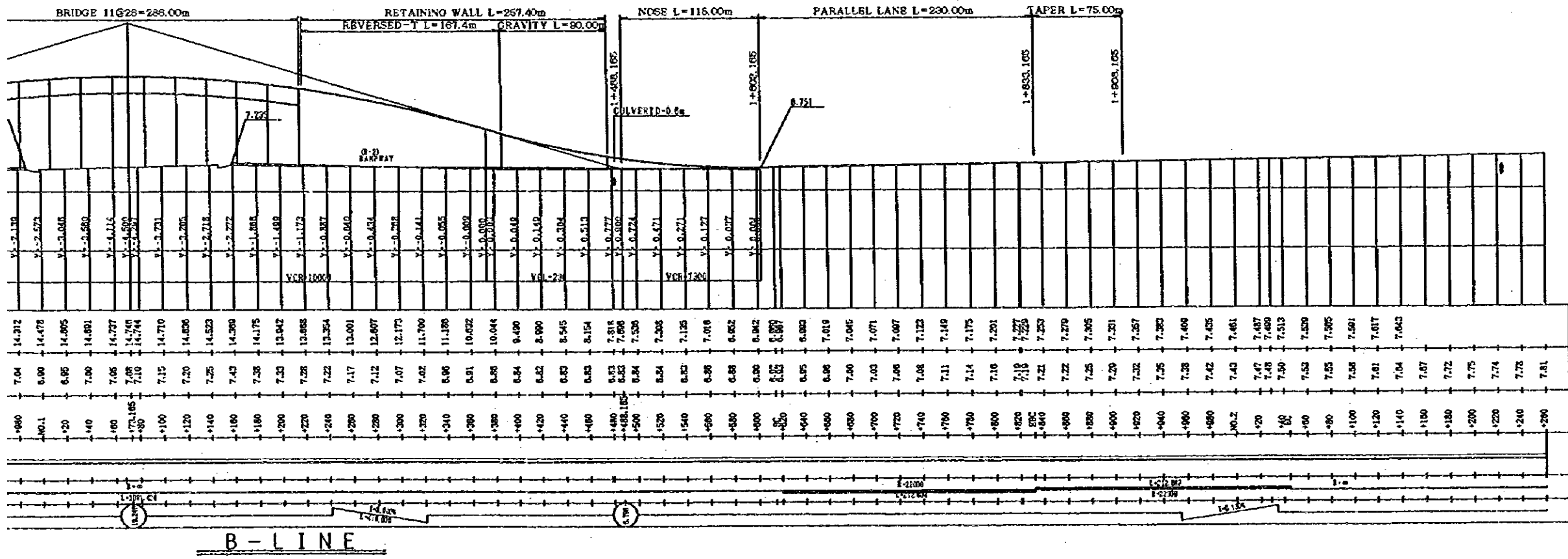
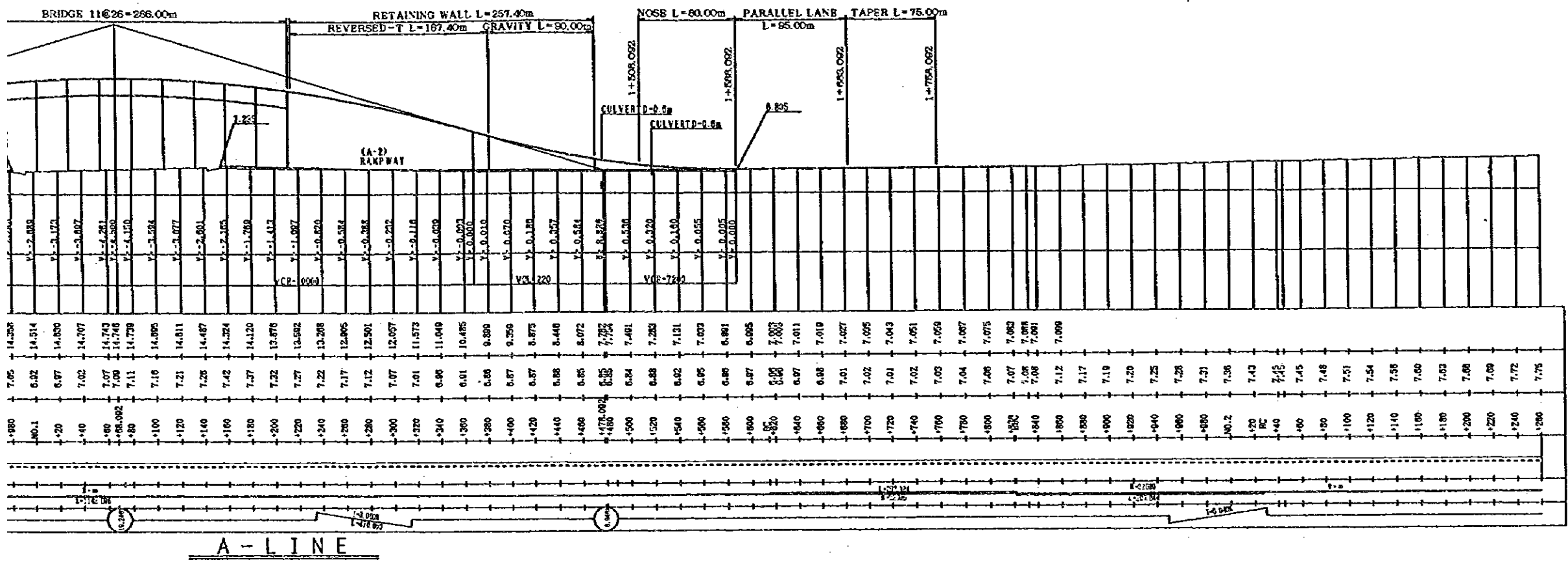


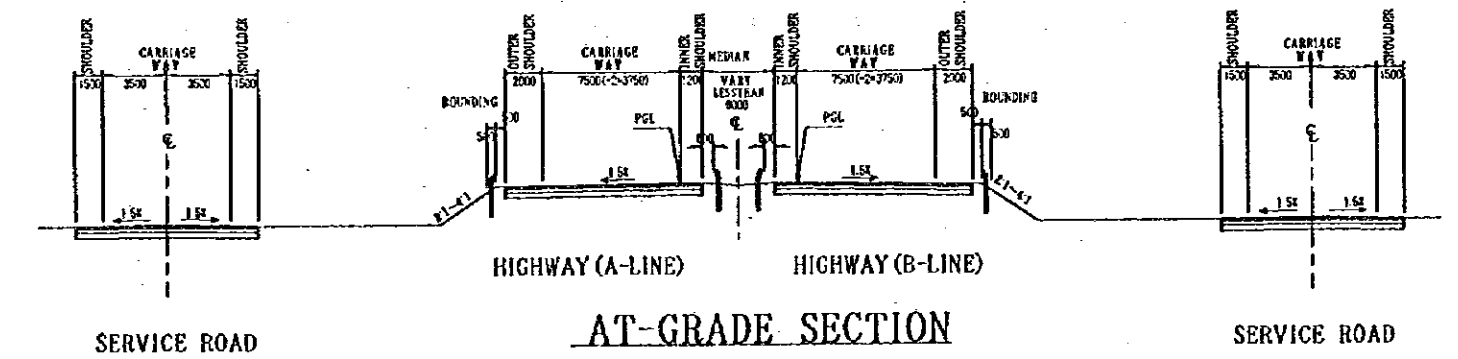
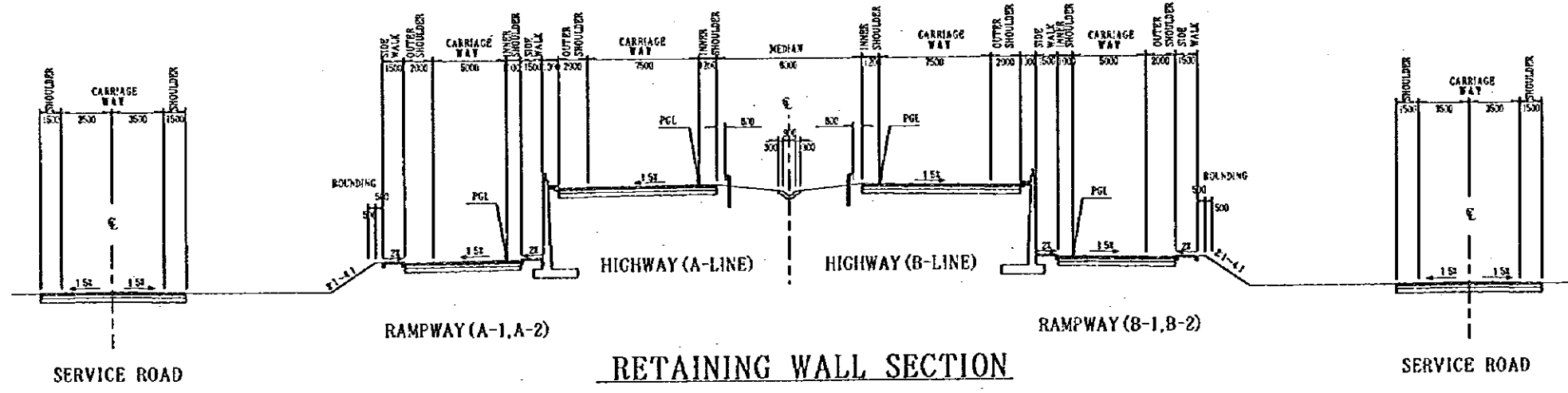
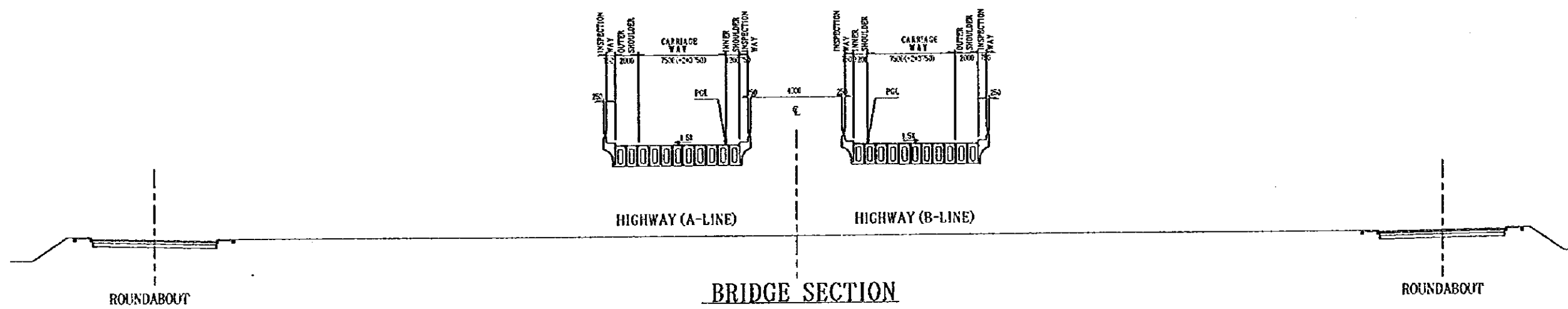
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS		
	PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY		
	TITLE RA/S AT MULADDAH PLAN		
DATE	DWGNO.	R-3	



A - LINE



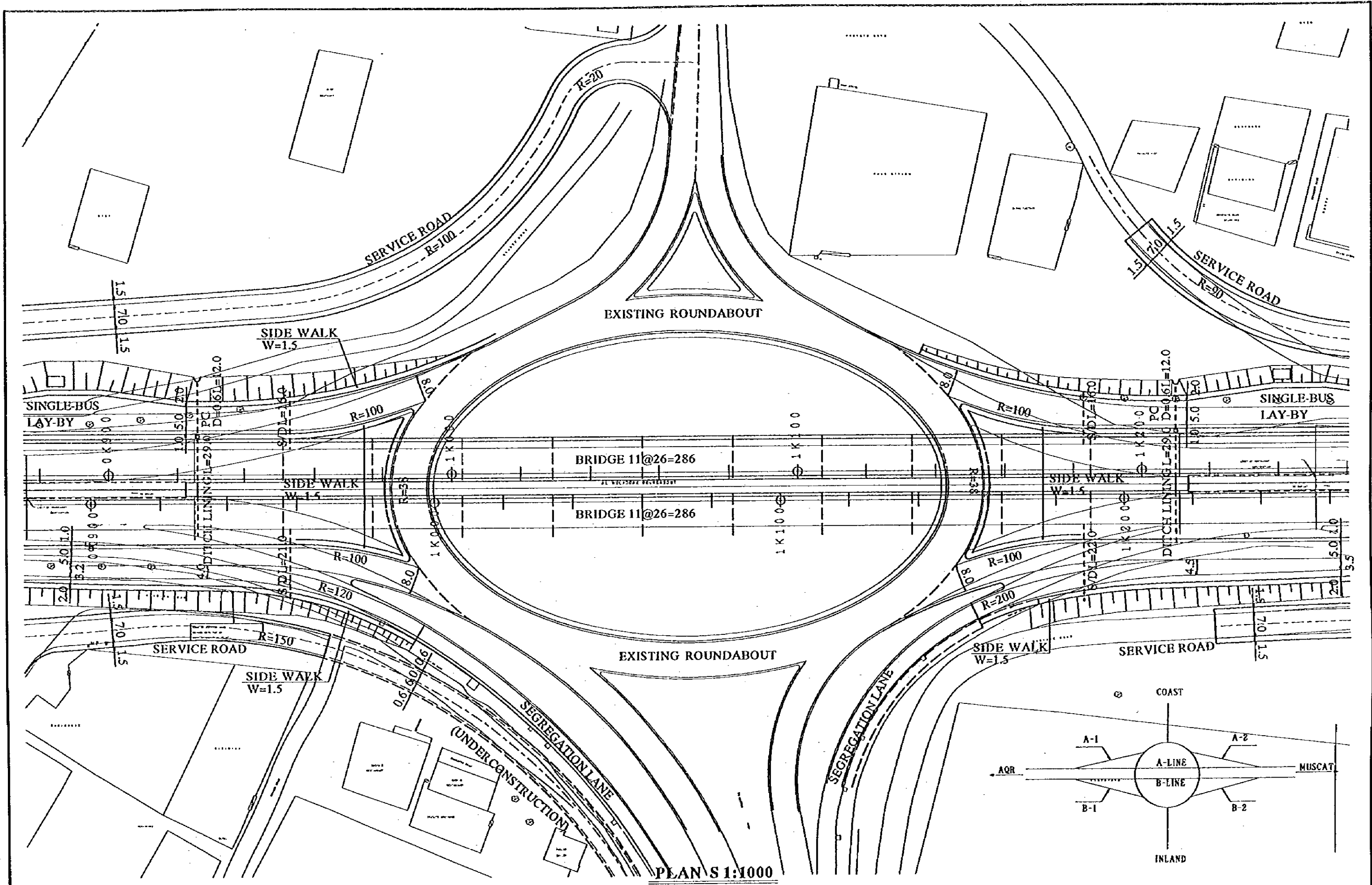




NOTES:
 (1) SCALE 1:400
 (2) DIMENSIONS IN MILLIMETER UNLESS OTHERWISE INDICATED.
 (3) THE TRANSITIONAL STRETCH FOR WIDTH AND CROSS FALL ADJUSTMENT SHOULD BE PROVIDED AT THE BEGINING AND THE END.

JAPAN INTERNATIONAL COOPERATION AGENCY
 (JICA)
 JICA STUDY TEAM
 PACIFIC CONSULTANTS INTERNATIONAL
 FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
 PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
 TITLE: RA/S A1 MULADDAH TYPICAL CROSS SECTION
 DATE: _____
 DWG NO.: R-5



NOTES:

- (1) ALL DIMENSIONS ARE IN METER.
- (2) S/D INDICATES SERVICE DUCT (D=0.15m, 2WAY)
- (3) PC AND BC REPRESENTS PIPE CULVERT AND BOX CULVERT RESPECTIVELY.

JAPAN INTERNATIONAL COOPERATION AGENCY
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PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

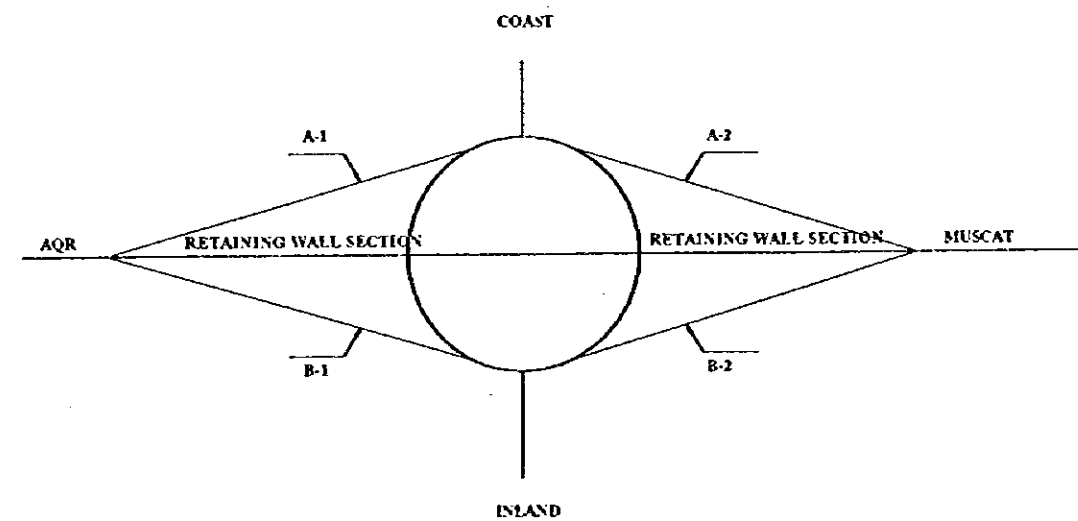
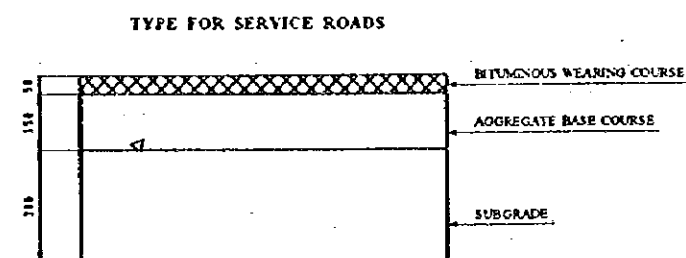
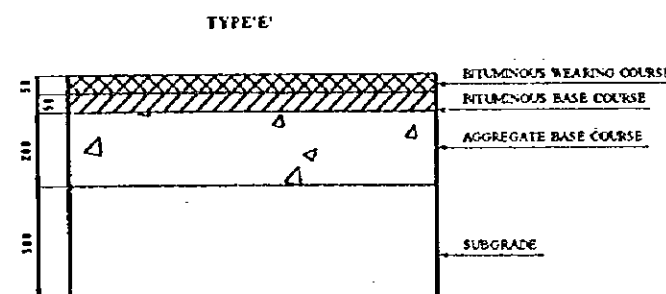
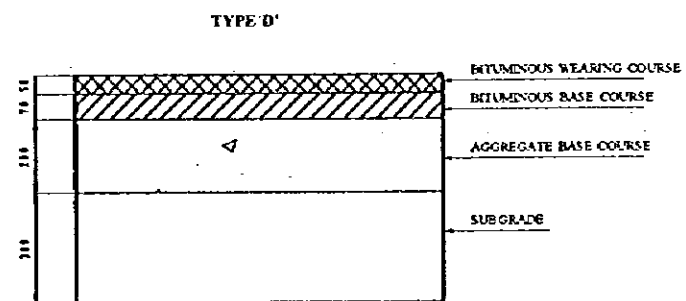
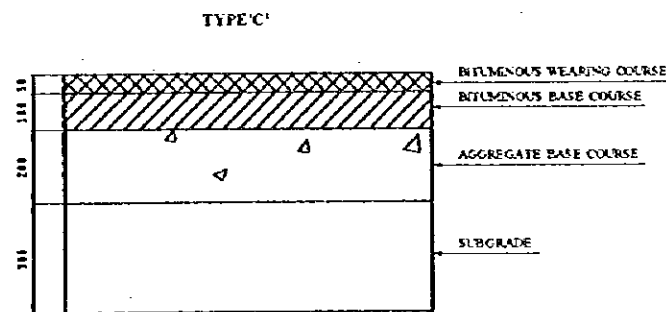
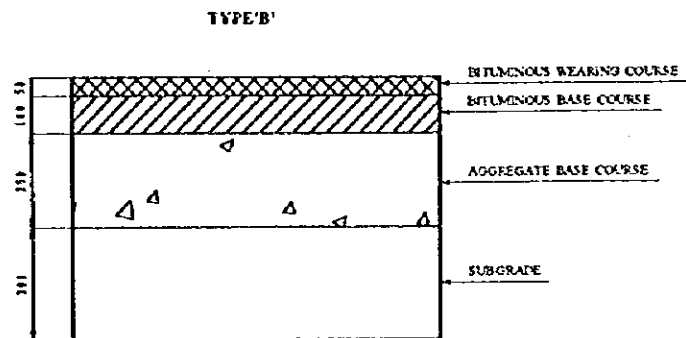
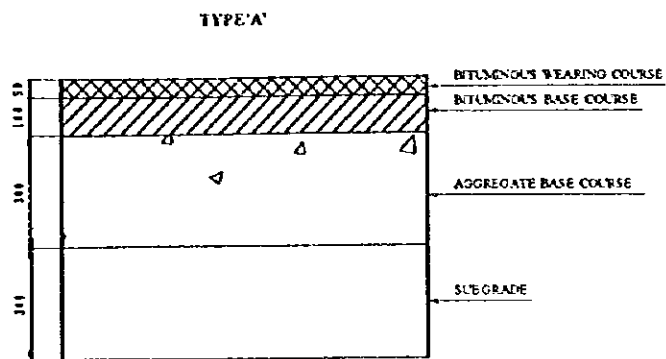
CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

TITLE: RA/S AL MULADDAH DETAILED PLAN

DATE:

DWG NO.: R-6



CLASSIFICATION OF PAVEMENT STRUCTURE

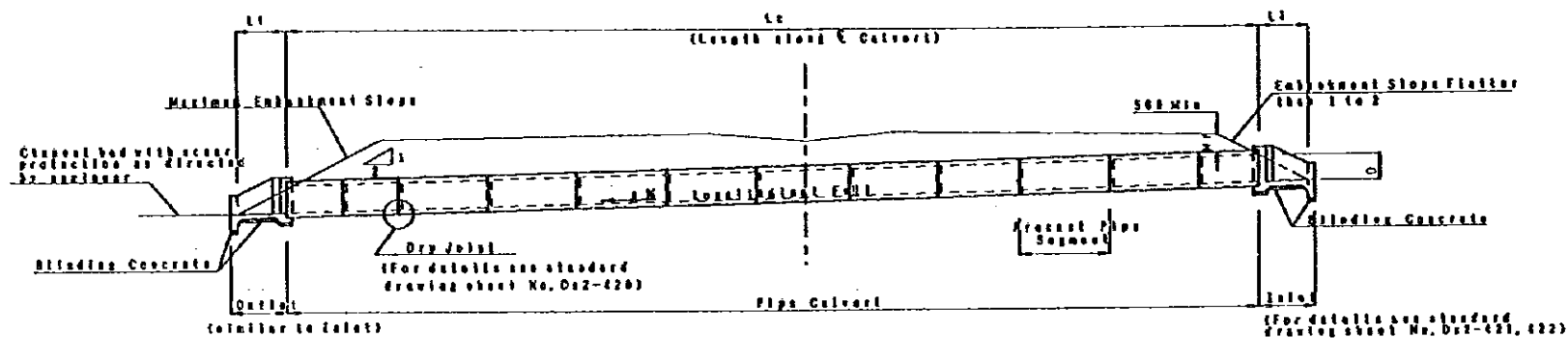
HIGHWAY				RAMPWAY				CROSSROAD	
AT-GRADE		RETAINING WALL	ROUNDABOUT	A-1	B-1	A-1	B-1	INLAND	COAST
AQR	MUSCAT								
C	C	C	-	D	D	C	C	-	-

NOTES:

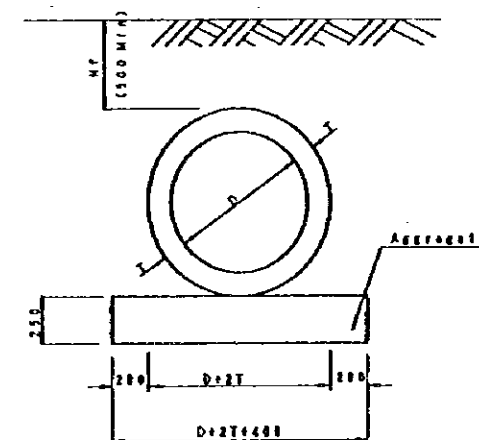
- (1) DIMENSIONS IN MILLIMETER UNLESS OTHERWISE INDICATED.
- (2) PRIME COATING PRECEDES BITUMINOUS WEARING COURSE AND TACK COATING PRECEDES BITUMINOUS BASE COURSE.

JAPAN INTERNATIONAL COOPERATION AGENCY
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FUKUYAMA CONSULTANTS INTERNATIONAL

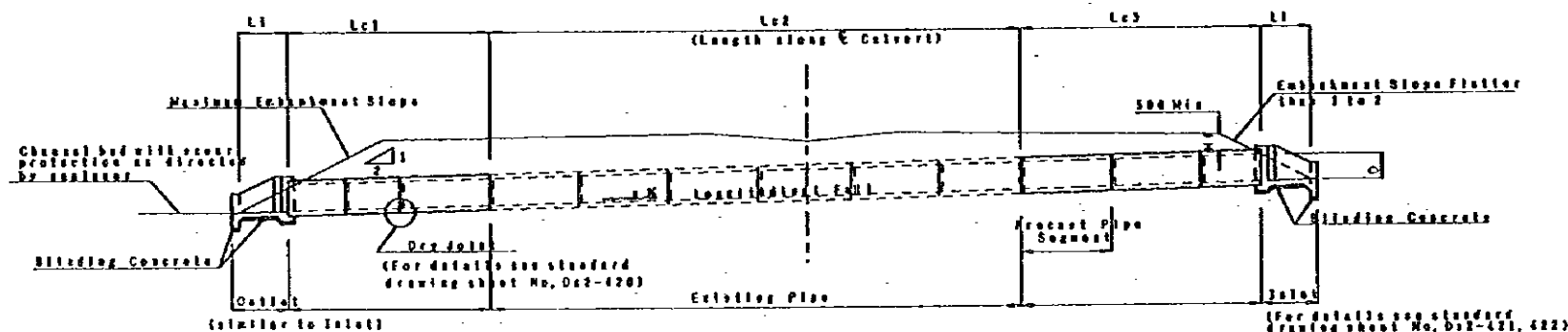
CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RA/5 AL MULADDAH PAVEMENT DETAILS
DATE: _____ DWG NO.: R-7



SECTION A — A



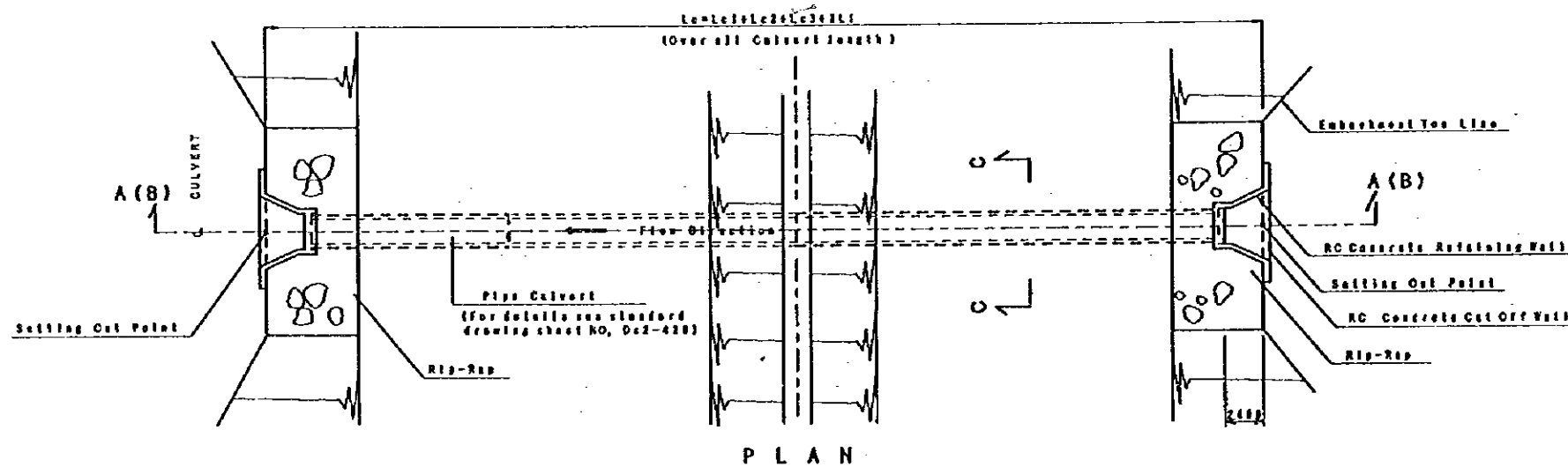
SECTION C — C



SECTION B — B

LIST OF PIPE CULVERT

STA	LINE	DIMENSION (m)	PIPE CLASS	LONGITUDINAL FALL: %	LENGTH (m)	REMARK
OK332	A	φ0.60x2CELL	M	0.85%	4.0	Extension
1K477	A.B	φ0.60x1CELL	M	0.91%	55.0	New Construction



PLAN

NOTES:

- (1) DIMENSIONS IN MILLIMETER UNLESS OTHERWISE INDICATED.
- (2) D; INTERNAL DIAMETER OF THE PIPE.
- (3) H; HEIGHT OF FILL FROM ABOVE THE PIPE TO THE TOP OF PAVEMENT.

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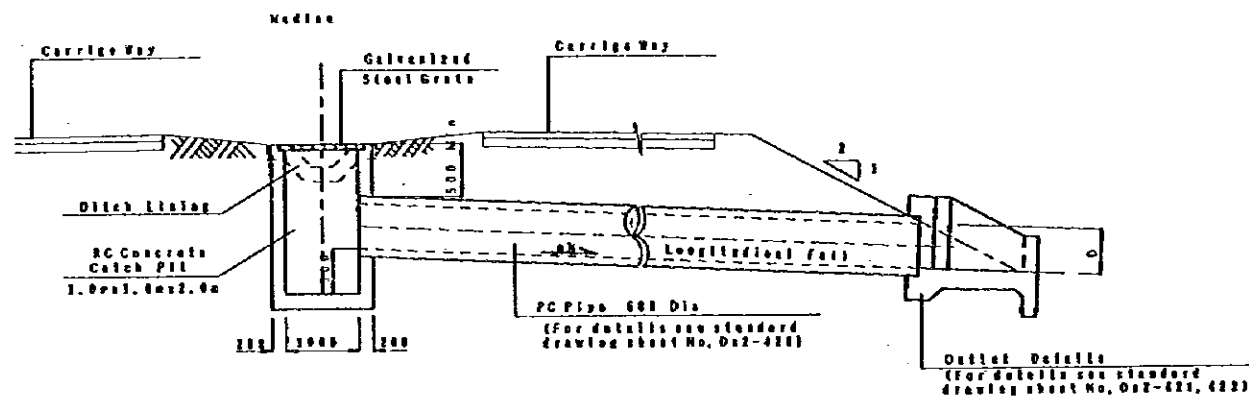
CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY

TITLE: RA/S AL MULADDAH DRAINAGE STRUCTURE (1/4)

DATE:

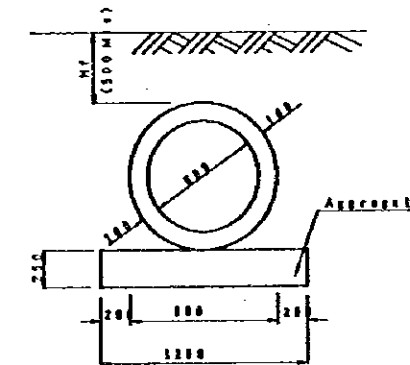
DWG NO.: R-8



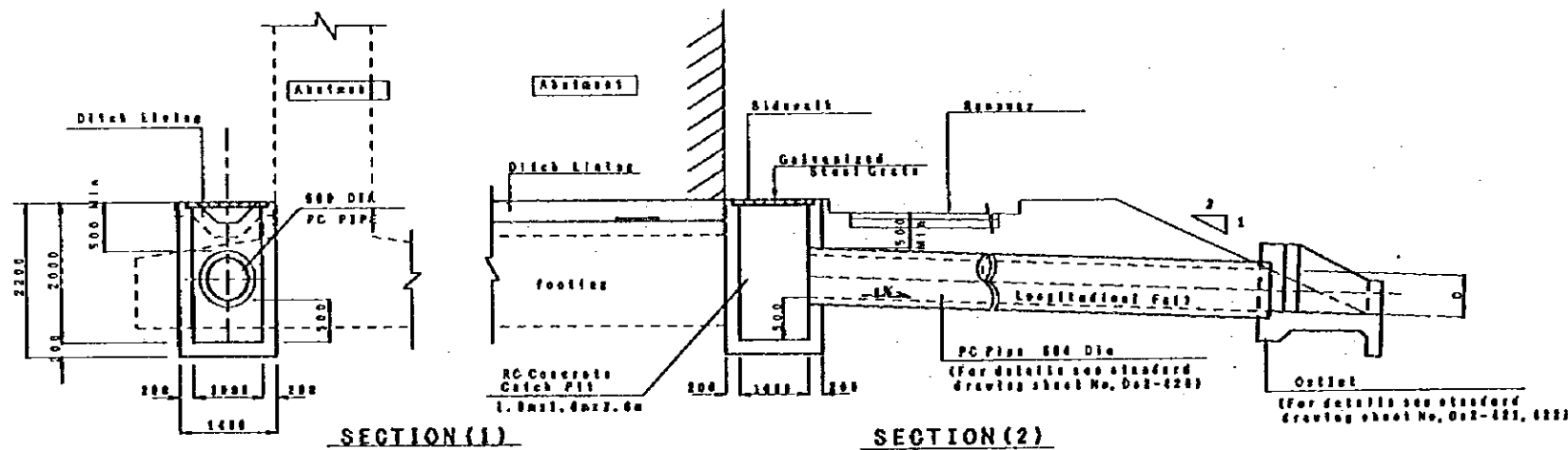
SECTION

DRAIN SYSTEM OF MEDIAN

STA	ABR LINE	DIMENSION (m)	PIPE CLASS	LONGITUDINAL FALL: %	LENGTH (m)	REMARK
OK908	A	φ0.60x1CELL	M	0.3%	24.0	



TYPICAL CROSS SECTION



SECTION (1)

SECTION (2)

DRAIN SYSTEM IN FRONT OF ABUTMENT

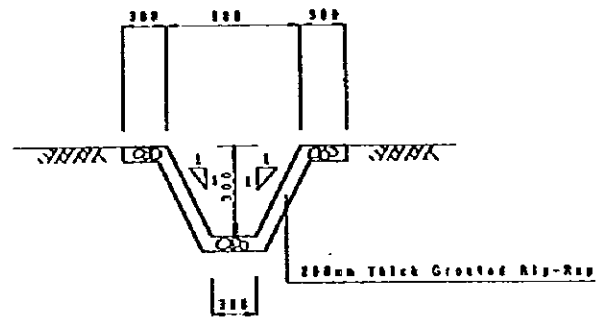
STA	ABR LINE	DIMENSION (m)	PIPE CLASS	LONGITUDINAL FALL: %	LENGTH (m)	REMARK
OK928(A1)	A	φ0.60x1CELL	M	0.3%	12.0	
1K210(A2)	A	φ0.60x1CELL	M	0.3%	12.0	

NOTES:

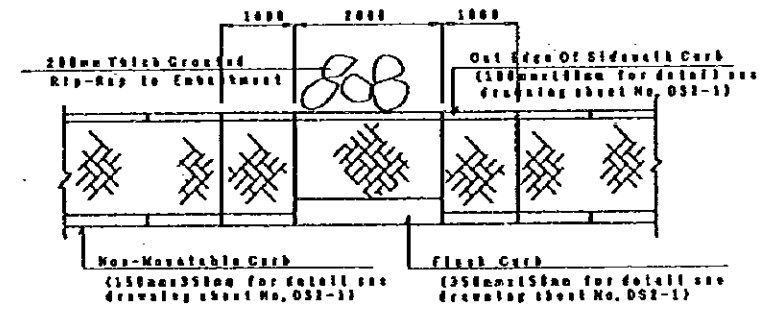
- (1) DIMENSIONS IN MILLIMETER UNLESS OTHERWISE INDICATED.
- (2) D: INTERNAL DIAMETER OF THE PIPE IN MILLIMETER.
- (3) H: HEIGHT OF FILL FROM ABOVE THE PIPE TO THE TOP OF PAVEMENT.

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FUKUYAMA CONSULTANTS INTERNATIONAL

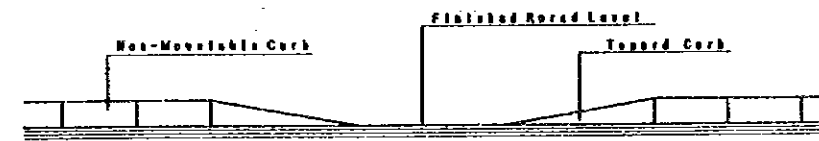
CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RA/5 AL MULADDAH DRAINAGE STRUCTURE (3/4)
DATE: _____ DWG NO.: R-10



DITCH LINING

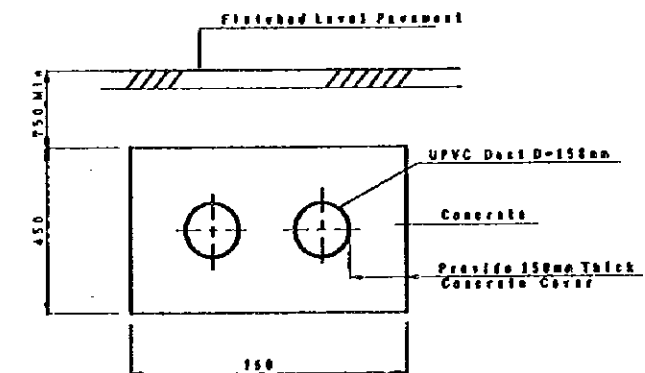


P L A N



Elevation

DROPPED SIDEWALK



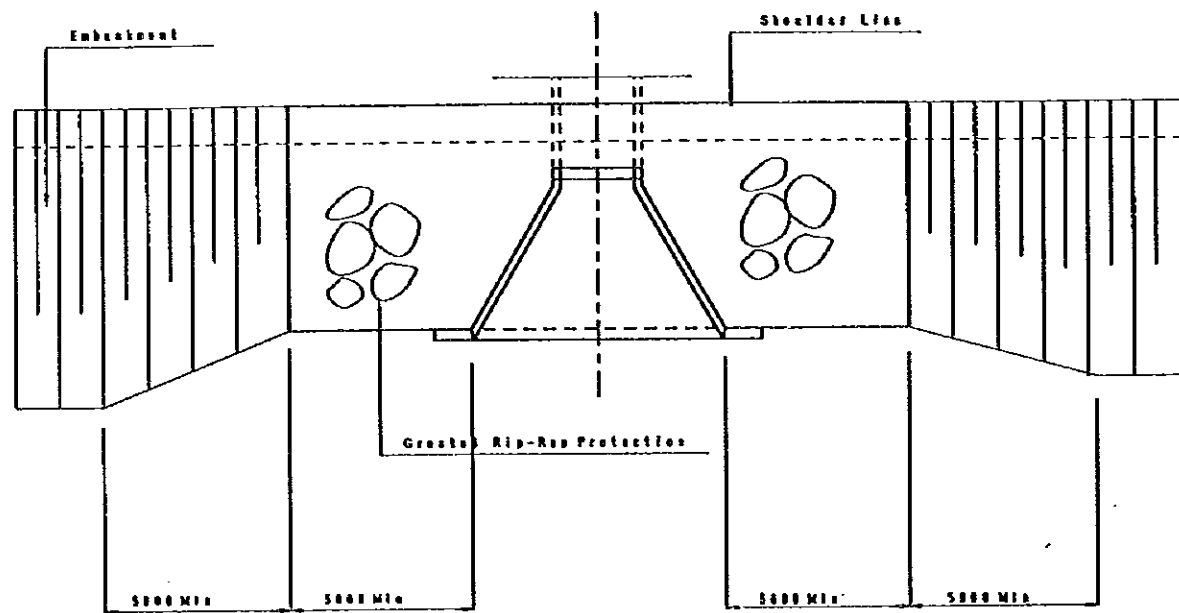
SECTION

SERVICE DUCTS

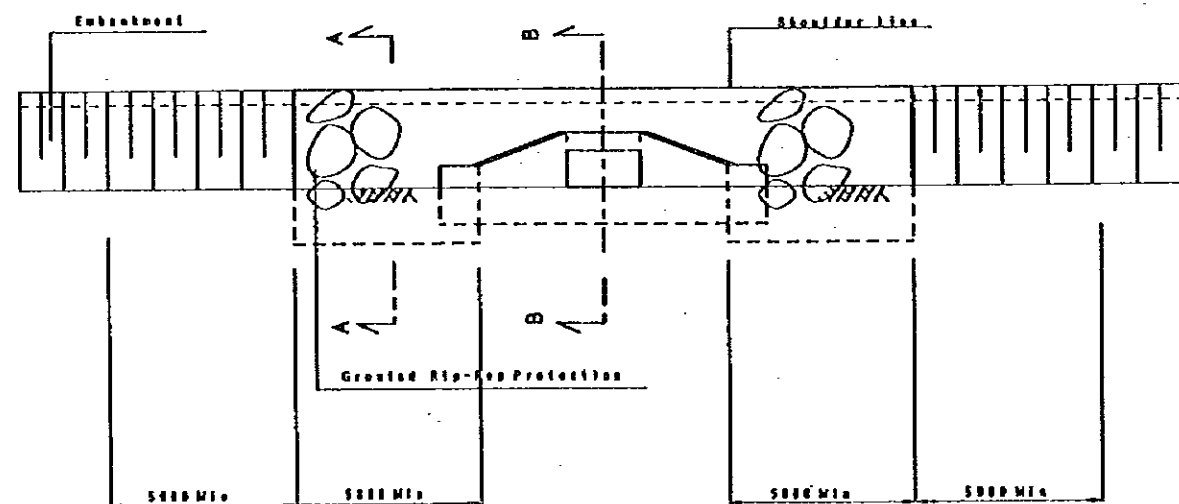
NOTES:
 (1) DIMENSIONS IN MILLIMETER UNLESS OTHERWISE INDICATED.
 (2) THE DROPPED SIDEWALK IS INSTALLED ALONG RAMPWAYS AT AN INTERVAL OF 50m.

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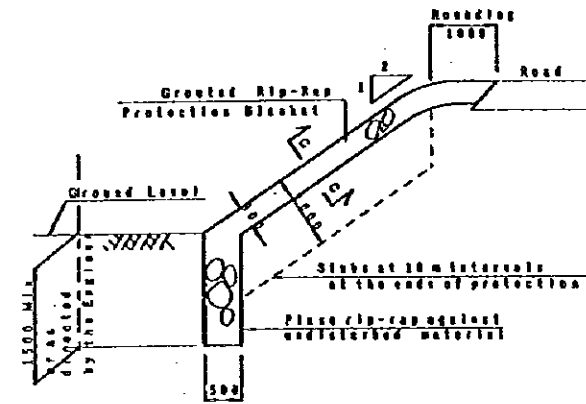
CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
 PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
 TITLE: RAJS AL MULADDAH DRAINAGE STRUCTURE (4/4) AND SERVICE DUCTS
 DATE: DWG NO.: R-11



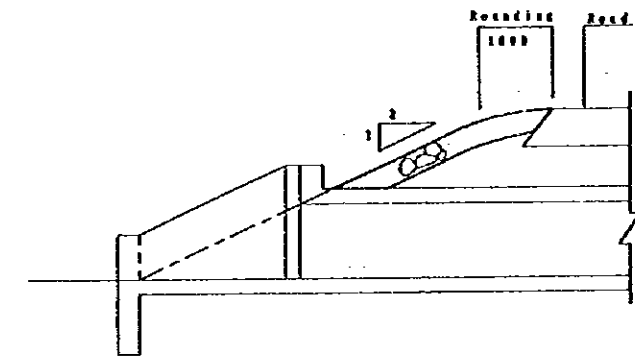
PLAN



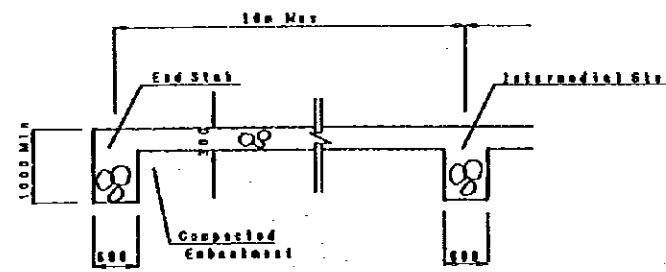
FRONT VIEW



SECTION A - A



SECTION B - B



SECTION C - C

NOTES:
(1) DIMENSIONS IN MILLIMETER UNLESS OTHERWISE INDICATED.

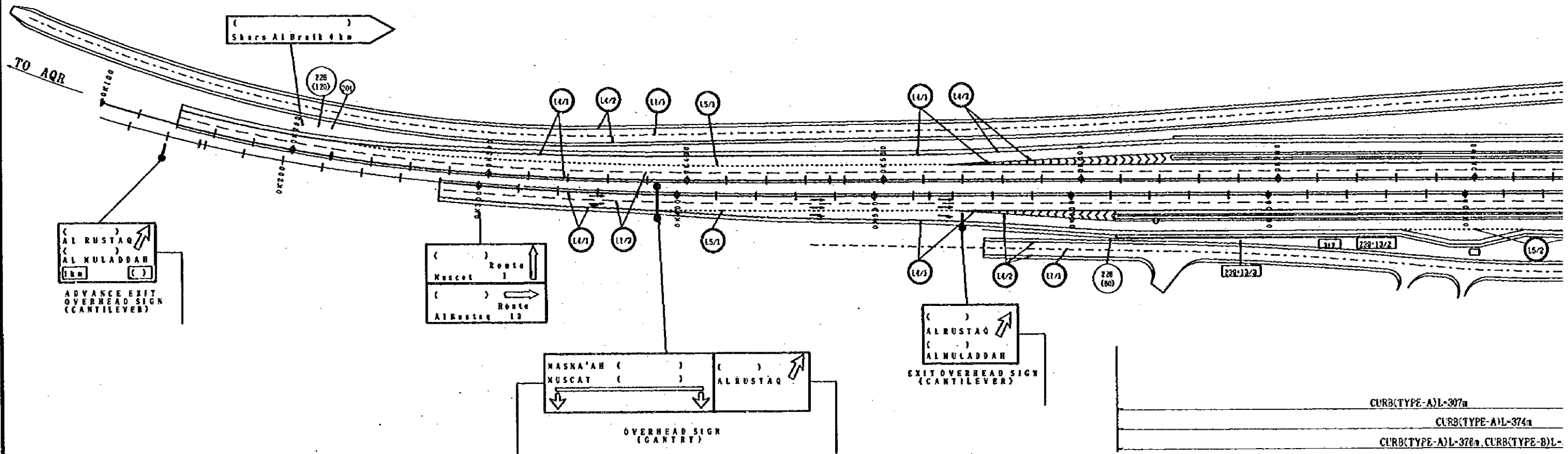
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RA/5 AL MULADDAH SLOPE PROTECTION
DATE: DWG NO.: R-13

CURB(TYPE-A)L-372m, CURB(T

CURB(TYPE-A)L-348m

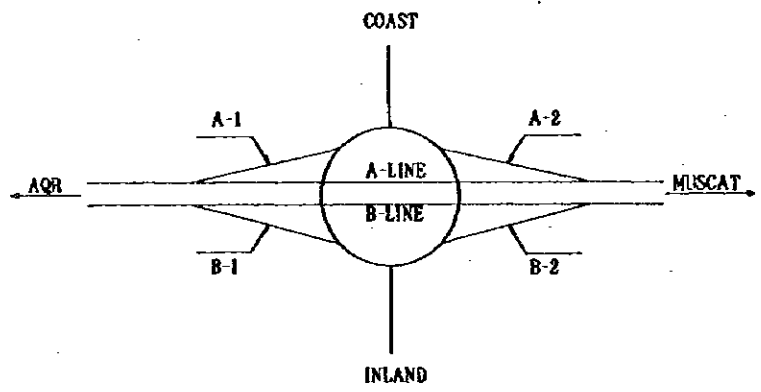
CURB(TYPE-A)L-278m



CURB(TYPE-A)L-307m

CURB(TYPE-A)L-374m

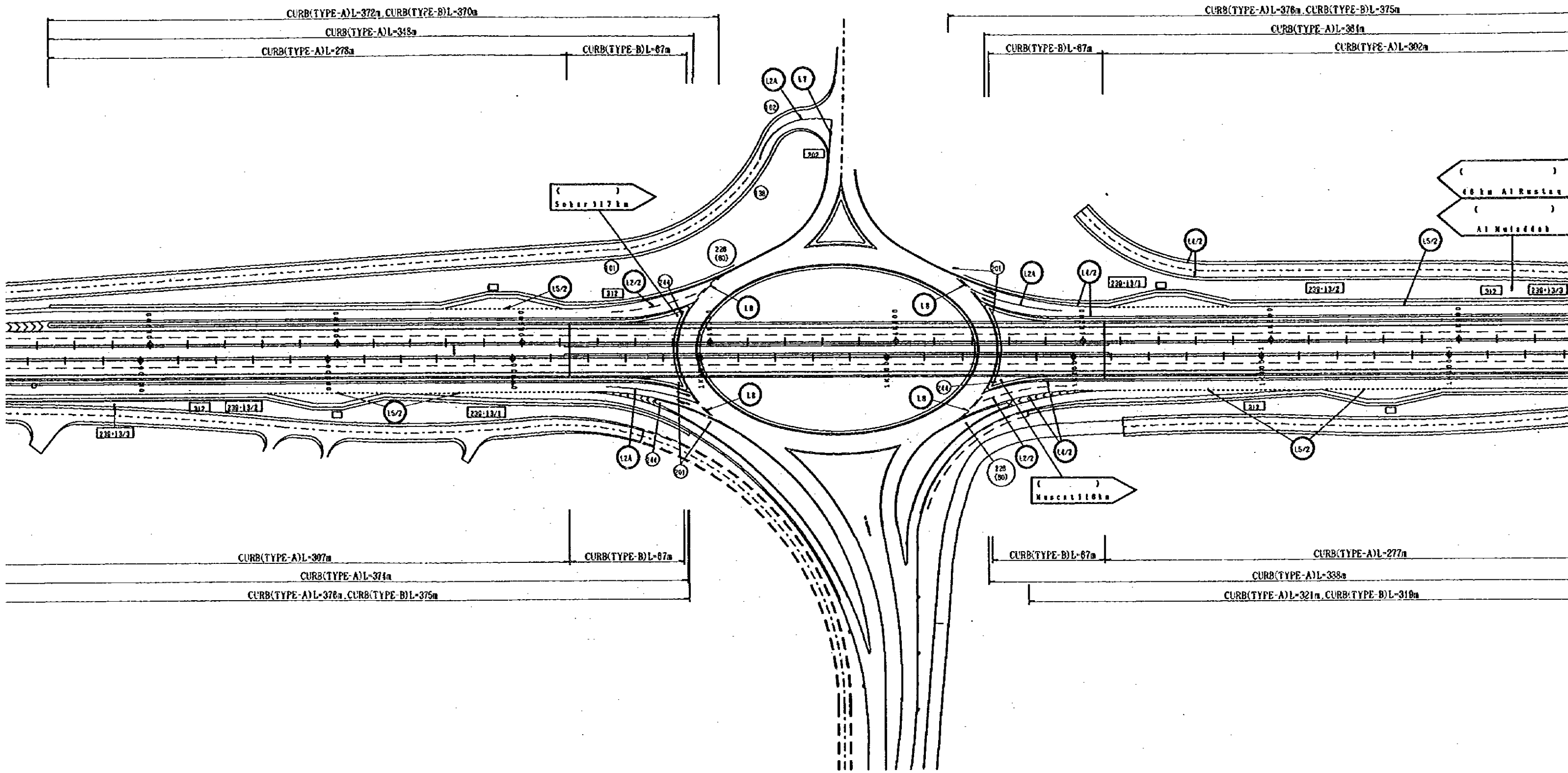
CURB(TYPE-A)L-378m, CURB(TYPE-B)L-



NOTES:

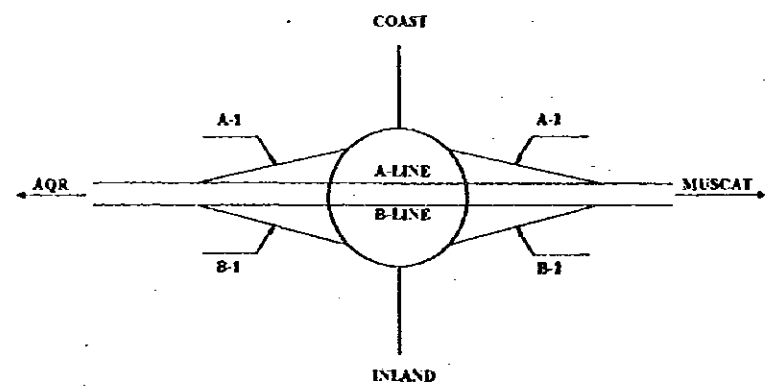
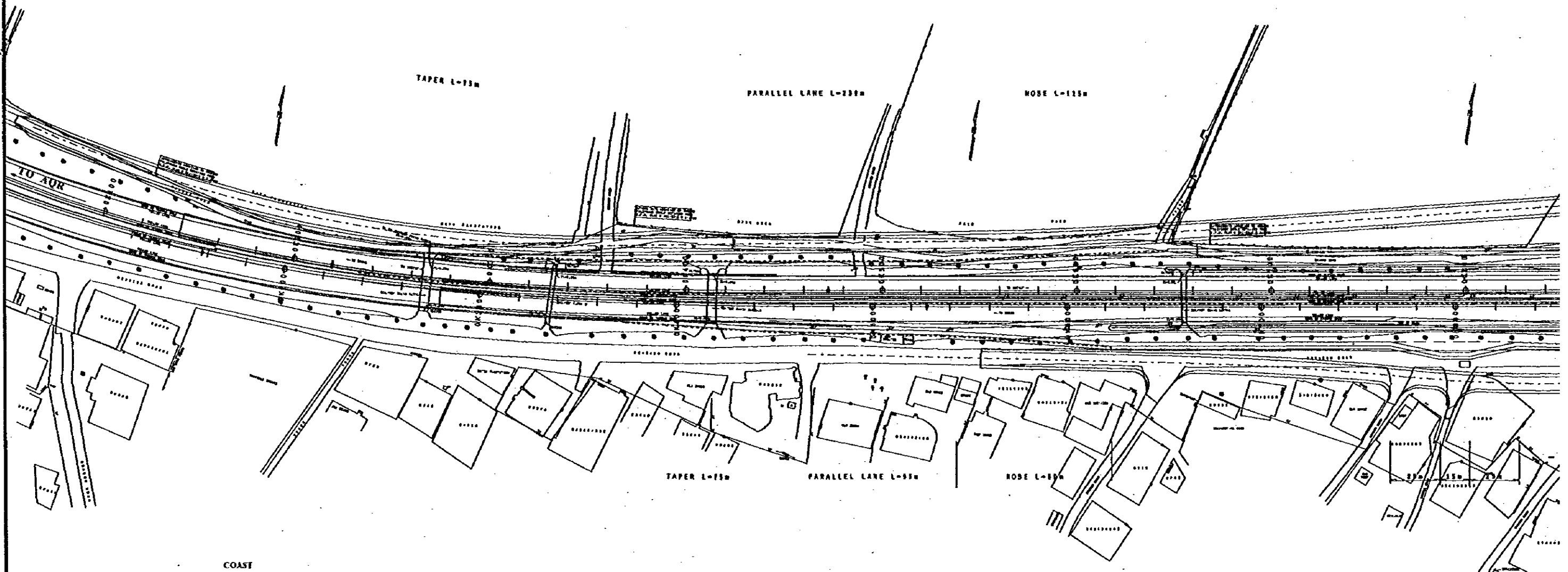
- (1) FOR DETAILS OF ROAD SIGNS, ROAD MARKINGS REFER TO THE HIGHWAY DESIGN MANUAL.
- (2) DIMENSIONS OF CURB TYPE-A AND TYPE-B ARE 150mm x 350mm AND 100mm x 200mm RESPECTIVELY. FOR DETAILS REFER STANDARD DRAWING SHEET NO. SCD2.1
- (3) PAINTING (YELLOW AND BLACK) IS APPLIED TO CURB TYPE-A.
- (4) FOR DETAILS OF INFORMATION SIGNBOARDS CONFIRM WITH DGR OR THE RELEVANT AUTHORITIES.

- (5) FINAL LOCATION OF ROAD SIGNS AND ARABIC NAMES ARE TO BE FINALIZED DURING CONSTRUCTION.
- (6) ADVANCE EXIT OVERHEAD SIGN SHALL BE PROVIDED AT APPROPRIATE LOCATION 300-1000m AHEAD FROM OVERHEAD SIGN.



> DURING CONSTRUCTION
 300-1000m AHEAD FROM OVERHEAD SIGN.

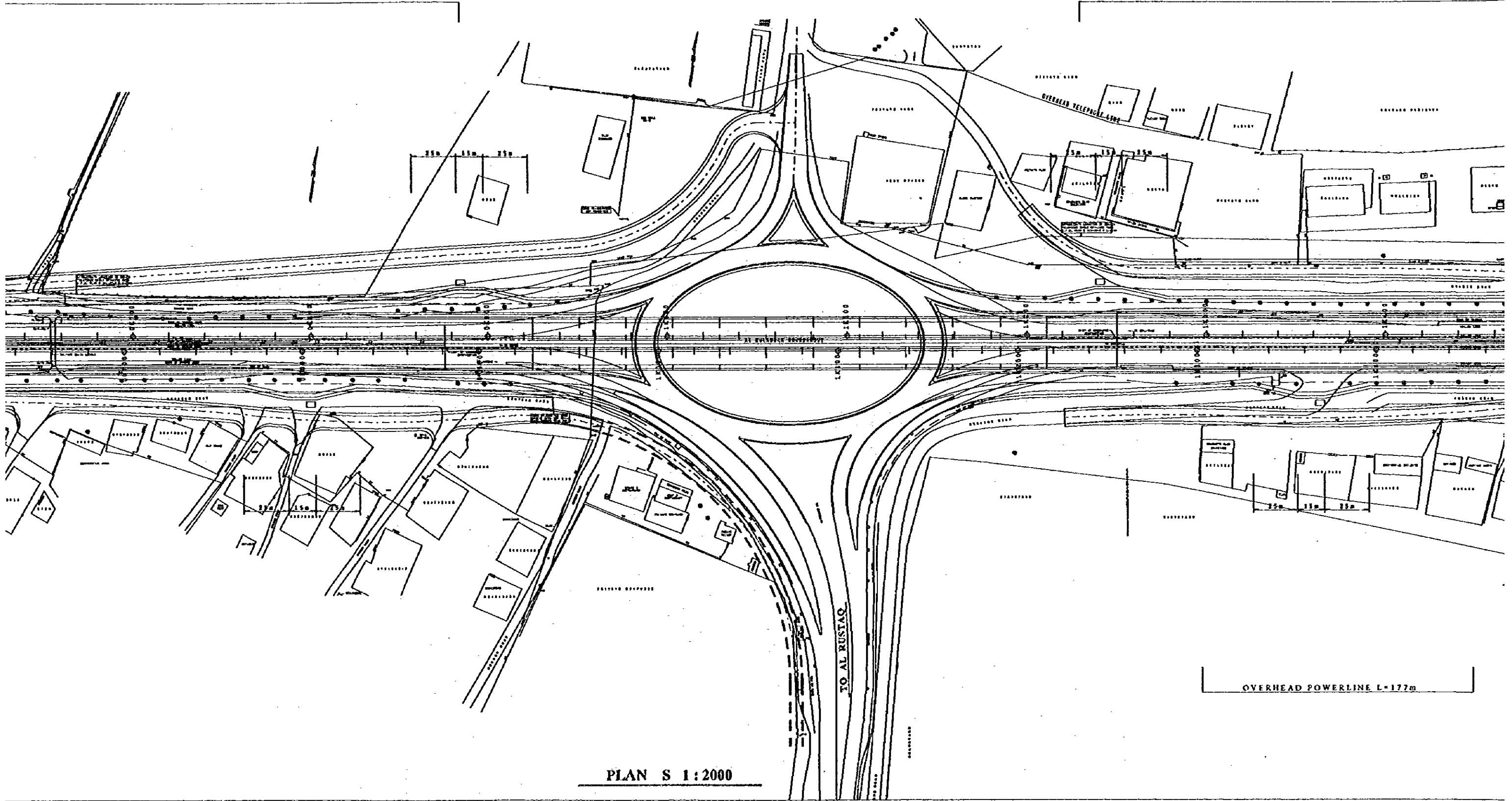
OVERHEAD POWERLINE L-892m



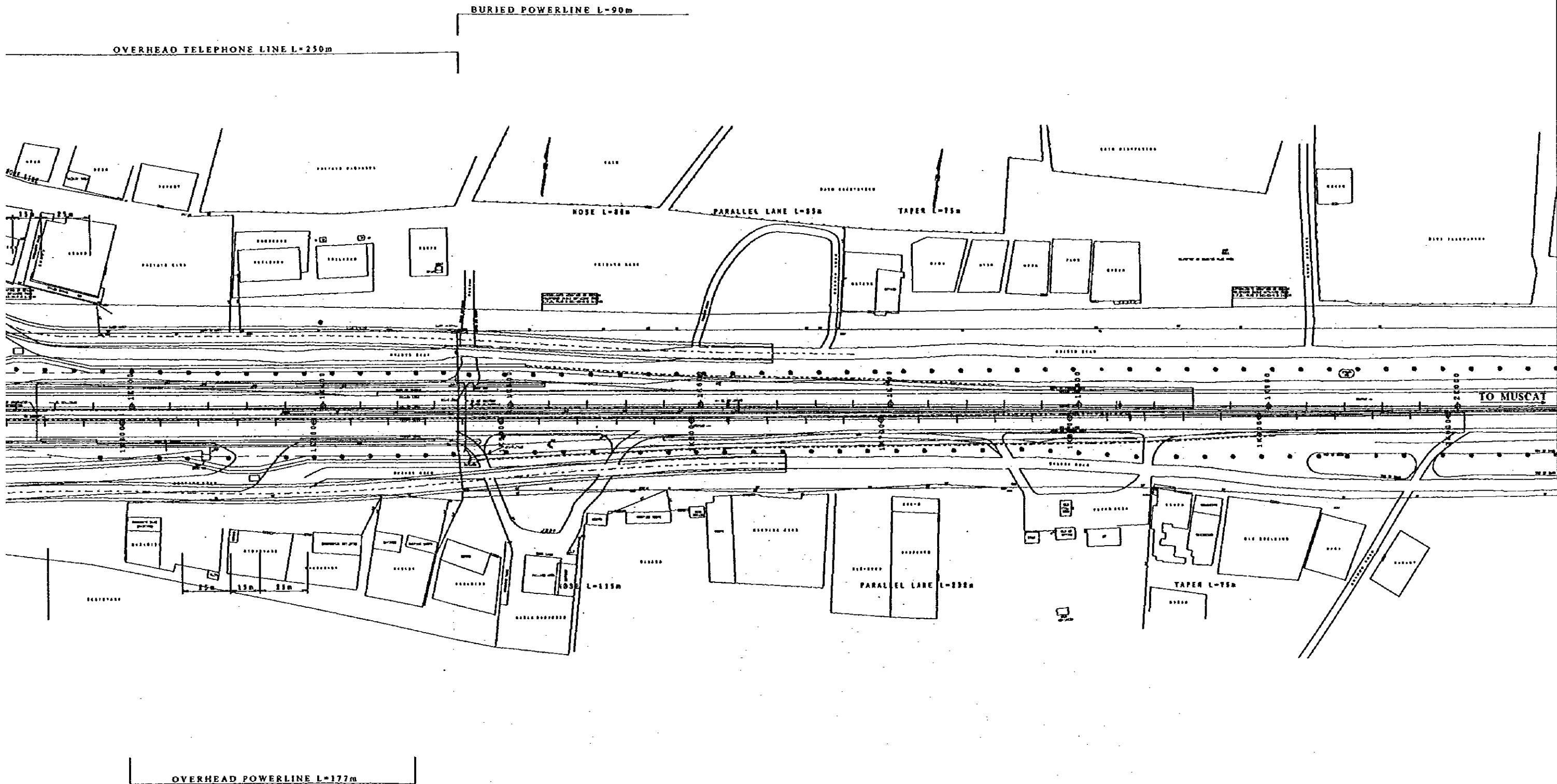
NOTES:

BURIED POWERLINE L=103m

OVERHEAD TELEPHONE LINE L=250m



PLAN S 1:2000

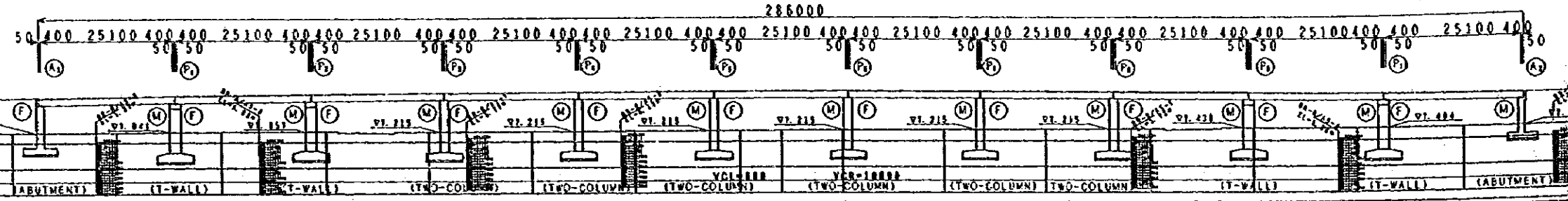


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) JICA STUDY TEAM PACIFIC CONSULTANTS INTERNATIONAL FUKUYAMA CONSULTANTS INTERNATIONAL	CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
	PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: RA/5 Al MULADDAH REMOVAL & RELOCATION OF UTILITIES	DATE:
DWGNO. R-15	

STRUCTURE
-BRIDGE

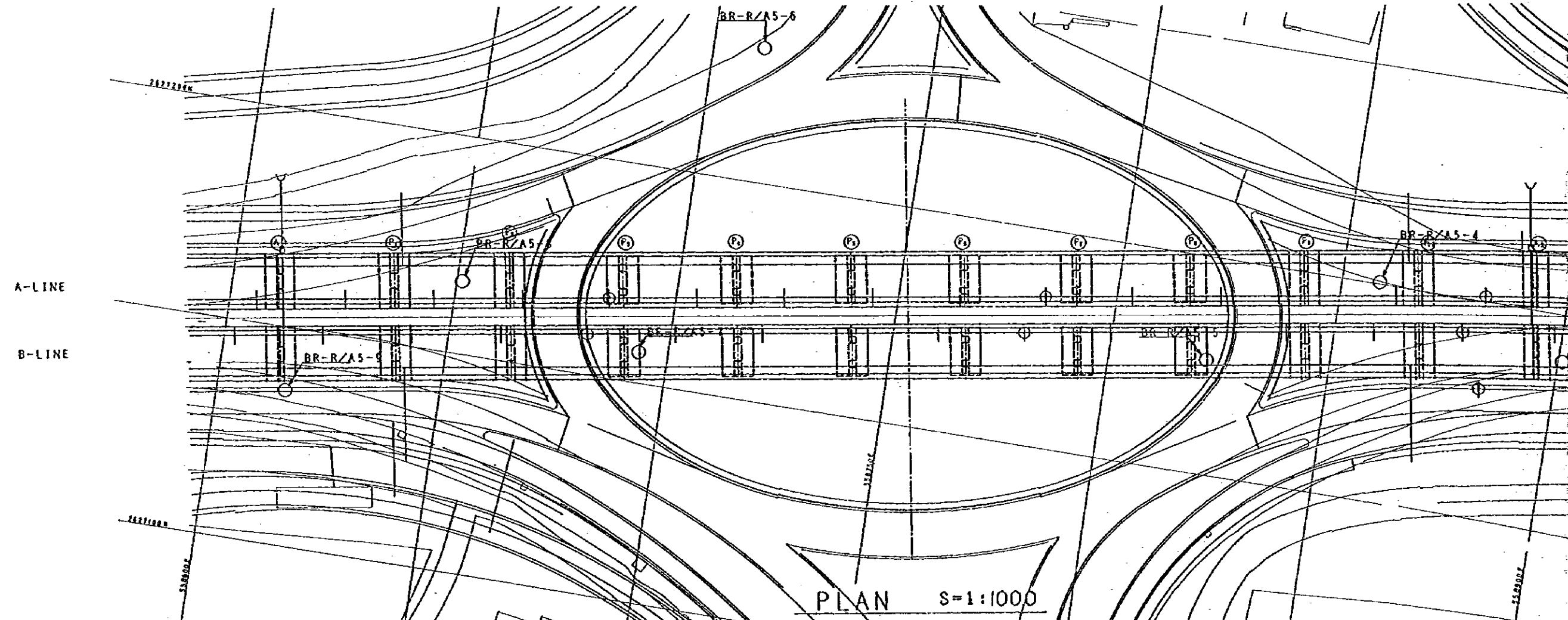
GENERAL VIEW RA/5 AL N

20.00
15.00
10.00
5.00
0.00
DL = -5.00



VERT. ALIGNMENT	1 = 3.000% L = 415.000		11.216										1 = 3.000% L = 410.000																	
ELEVATION PROFILE GRADE	12.977	13.333	13.649	13.724	13.926	14.062	14.162	14.332	14.358	14.514	14.630	14.670	14.707	14.738	14.753	14.746	14.739	14.738	14.695	14.670	14.611	14.535	14.487	14.332	14.120	14.062	13.876	13.724		
ELEVATION EXISTING GROUND	6.95	7.00	7.82	7.82	7.83	7.84	7.85	7.86	7.88	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.11	7.22	7.22	7.22	7.22	7.22	7.22	7.28	7.43	7.43	7.41	7.40	7.38	7.38
CHAINAGE	+800	+900	+920	+925.092	+948	+951.092	+960	+977.092	+980	+0.1	+3.092	+20	+25.092	+40	+55.092	+60	+66.092	+80	+81.092	+100	+107.092	+120	+133.092	+140	+159.092	+160	+180	+185.092	+200	+211.092
SUPER ELEVATION	11.900%																													
HORIZONTAL ALIGNMENT	R = ∞ L = 1091.424																													

PROFILE (A-LINE) S=1:1000

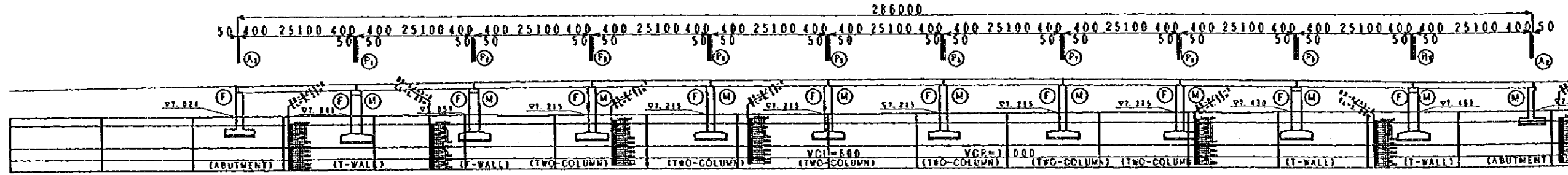


PLAN S=1:1000

NOTES:

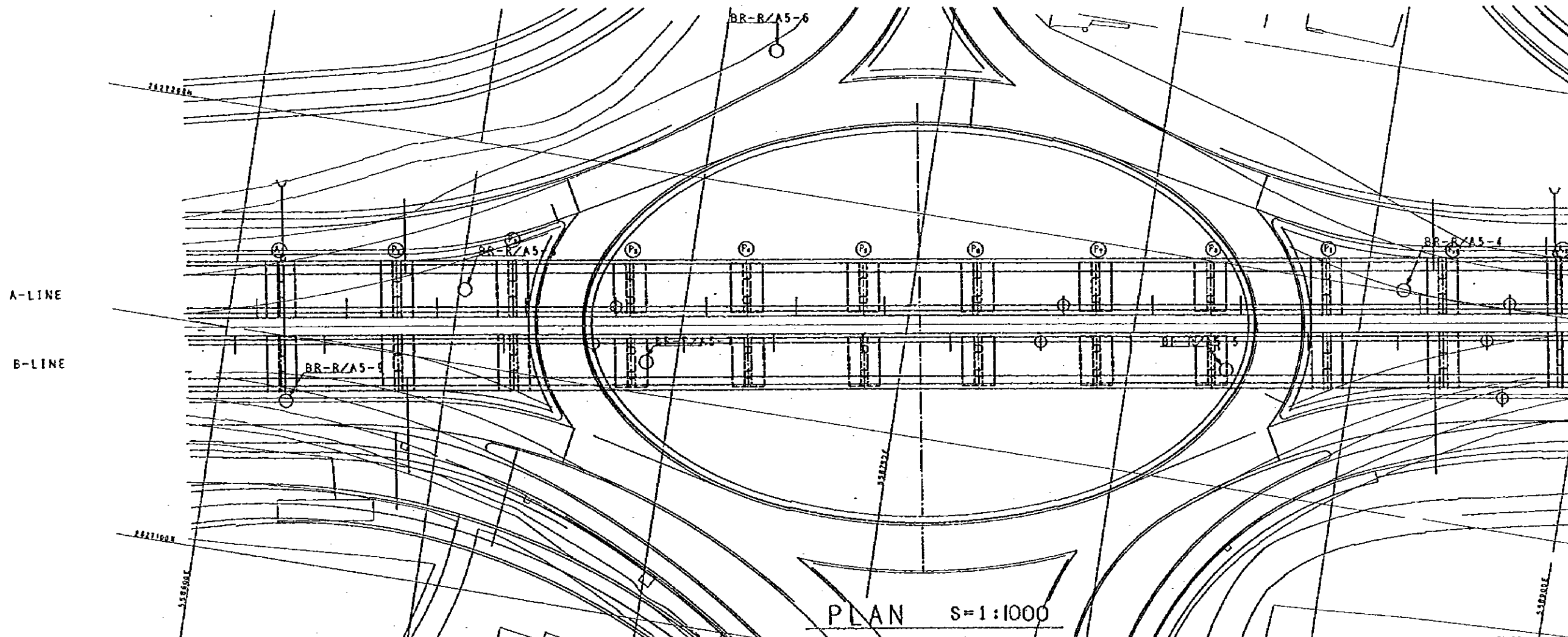
GENERAL VIEW RA/5 AL

20.00
15.00
10.00
5.00
0.00
DL = -5.00



VERT. ALIGNMENT	$i = 3.000\%$ $L = 415.000$																															
ELEVATION PROFILE GRADE	12.280	13.247	13.573	13.724	13.858	14.062	14.106	14.312	14.332	14.478	14.535	14.605	14.579	14.651	14.737	14.738	14.746	14.714	14.778	14.810	14.670	14.536	14.535	14.523	14.389	14.332	14.175	14.062	13.942	13.736	13.688	
ELEVATION EXISTING GROUND	6.95	7.00	7.01	7.02	7.03	7.04	7.04	7.05	7.05	7.17	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.22	7.24	7.40	7.43	7.45	7.46	7.43	7.37	7.36
CHAINAGE	480	490	4920	4930.165	4940	4956.165	4960	4980	4982.165	1001	48.165	420	434.165	440	460	460.165	473.165	480	486.165	490	4912.165	4920	4930.165	4940	4956.165	4960	4974.165	4980	4982.165	4990	4996.165	5000
SUPER ELEVATION	L.S.M.M																															
HORIZ. ALIGNMENT	$R = \infty$ $L = 1142.096$																															

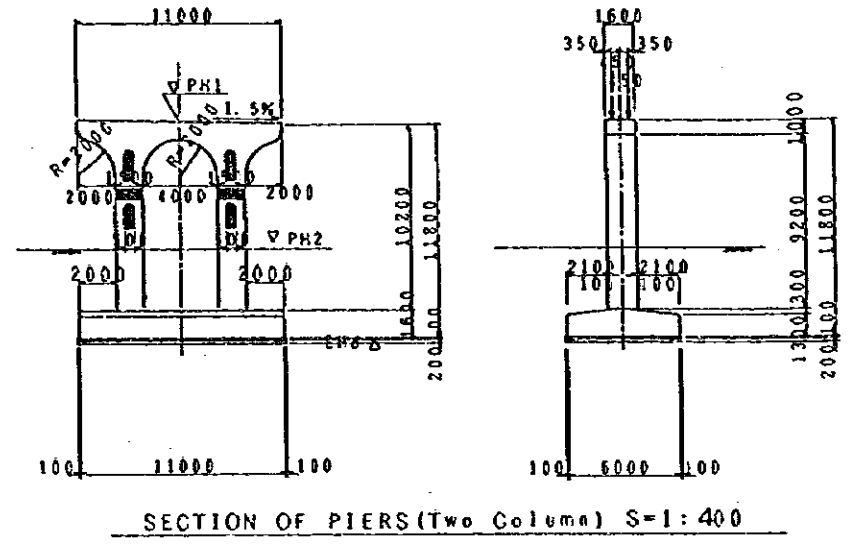
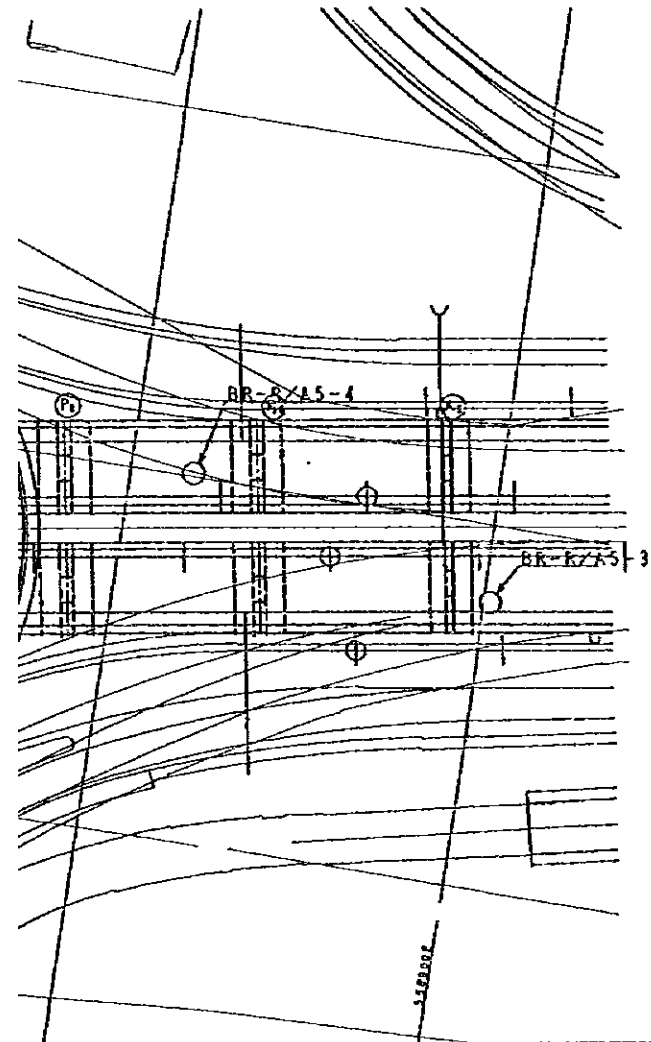
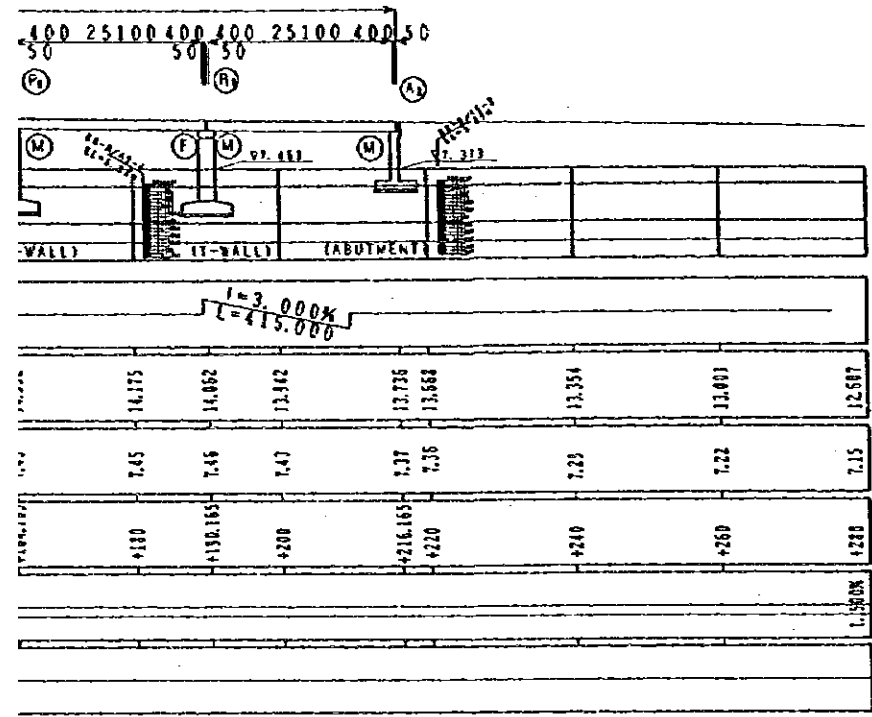
PROFILE (B-LINE) S=1:1000



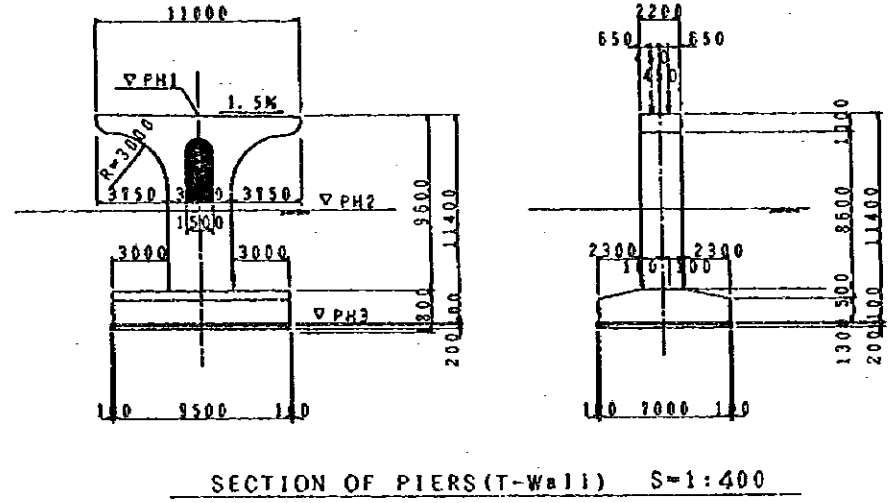
PLAN S=1:1000

NOTES:

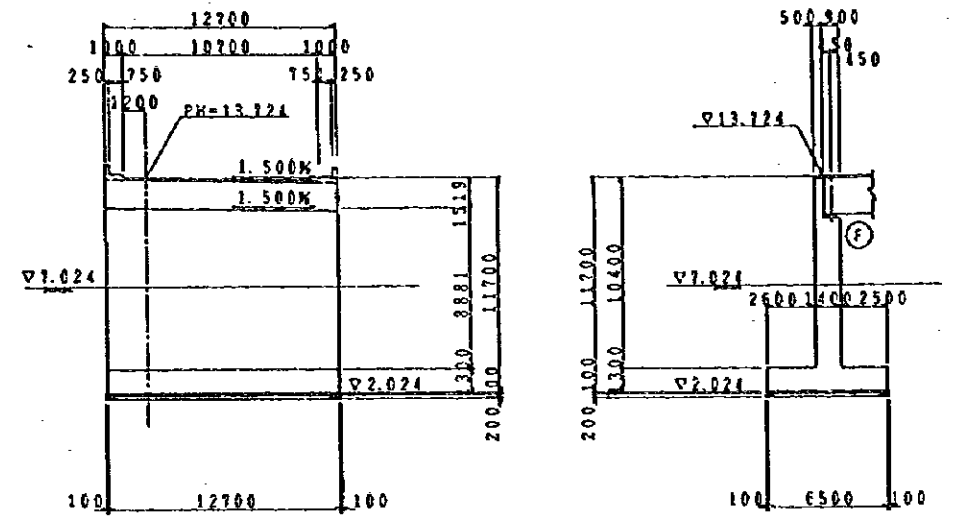
EW RA/5 AL MULADDAH (B-LINE)



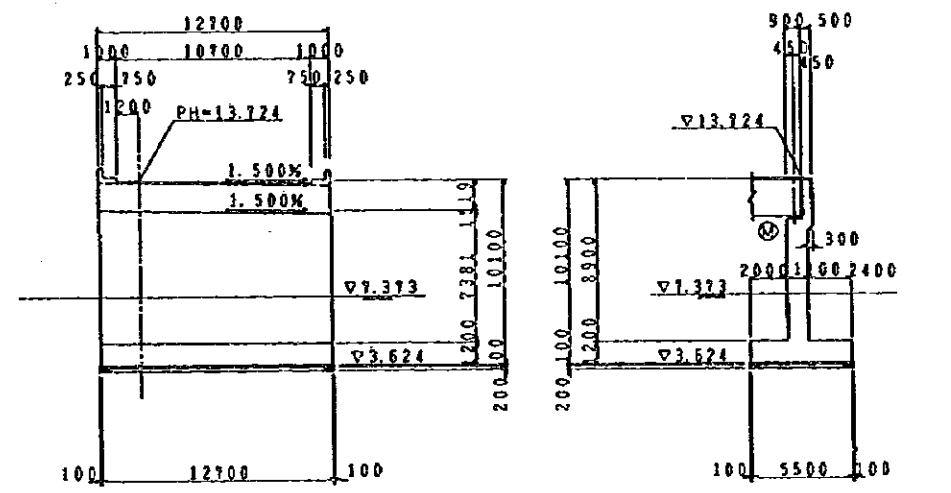
SECTION OF PIERS (Two Column) S=1:400



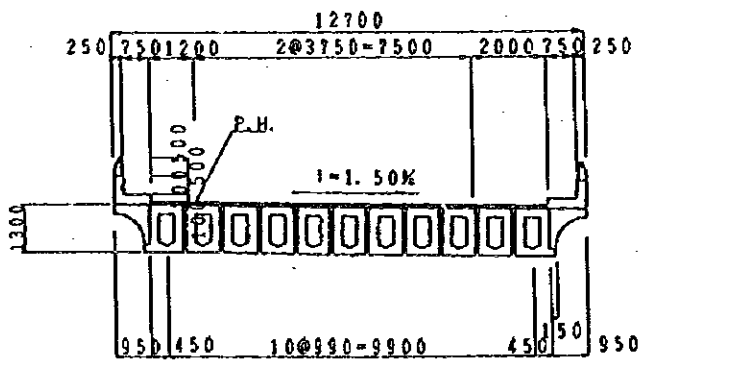
SECTION OF PIERS (T-Wall) S=1:400



SECTION OF A1 ABUTMENT S=1:400



SECTION OF A2 ABUTMENT S=1:400

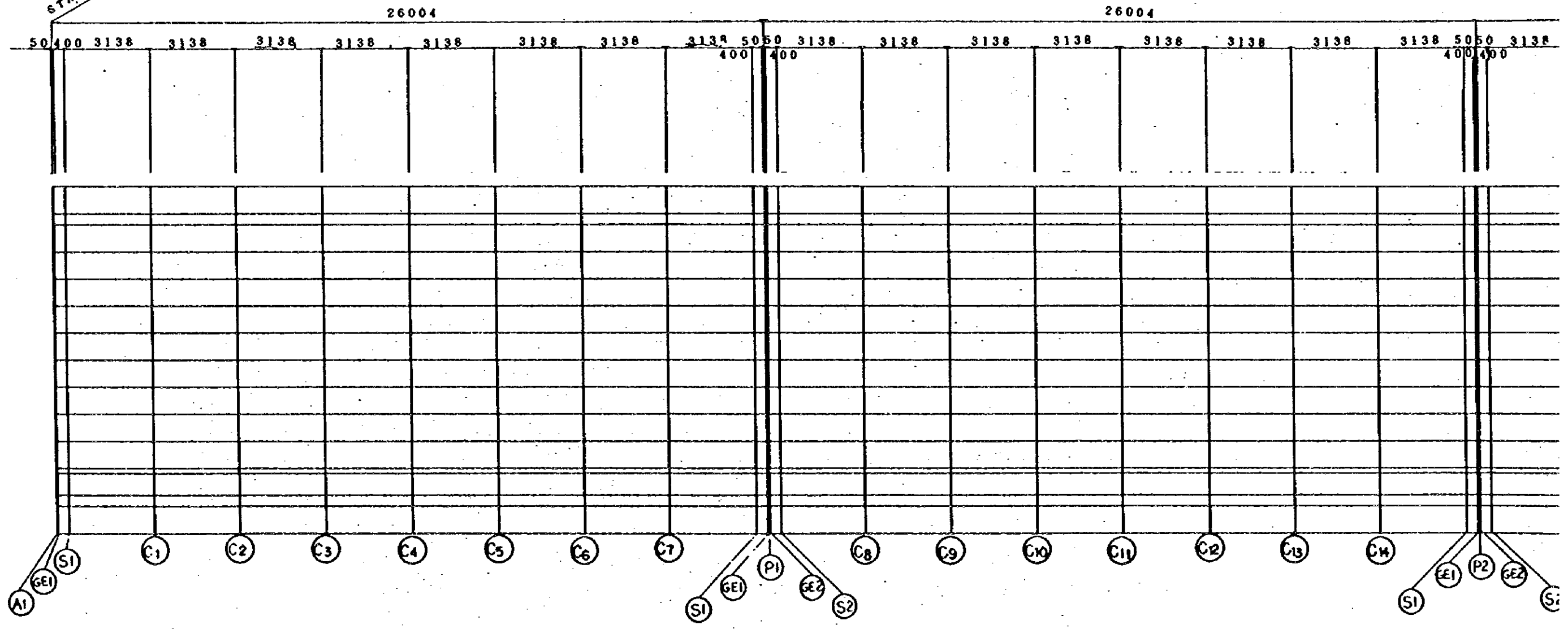


SECTION OF PC BOX GIRDER S=1:200

LIST OF PIER ELEVATION

	PH1	PH1	PH1	REMARKS
P1	12.465	7.041	1.065	T-Wall
P2	12.735	7.057	1.335	"
P3	12.938	7.215	1.138	TWO Column
P4	13.073	7.215	1.273	"
P5	13.141	7.215	1.341	"
P6	13.141	7.215	1.341	"
P7	13.073	7.215	1.273	"
P8	12.938	7.215	1.138	"
P9	12.735	7.430	1.335	T-Wall
P10	12.465	7.404	1.065	"

STA. NO. 0+930.165

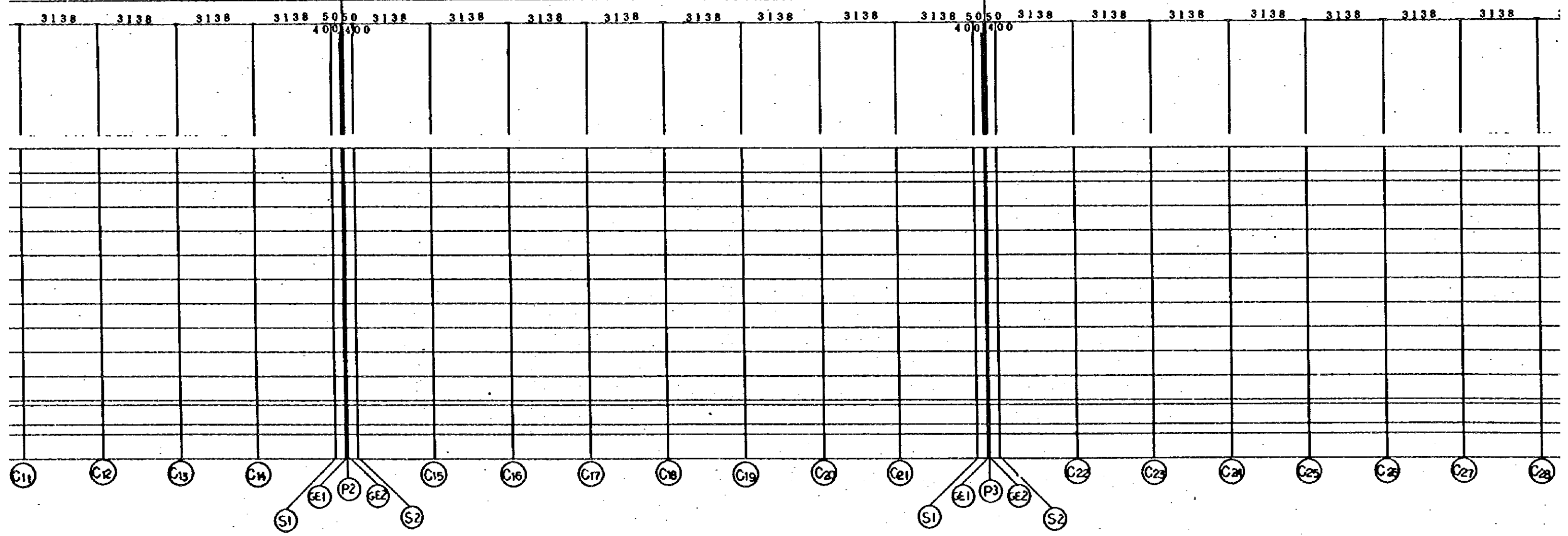


NOTES:

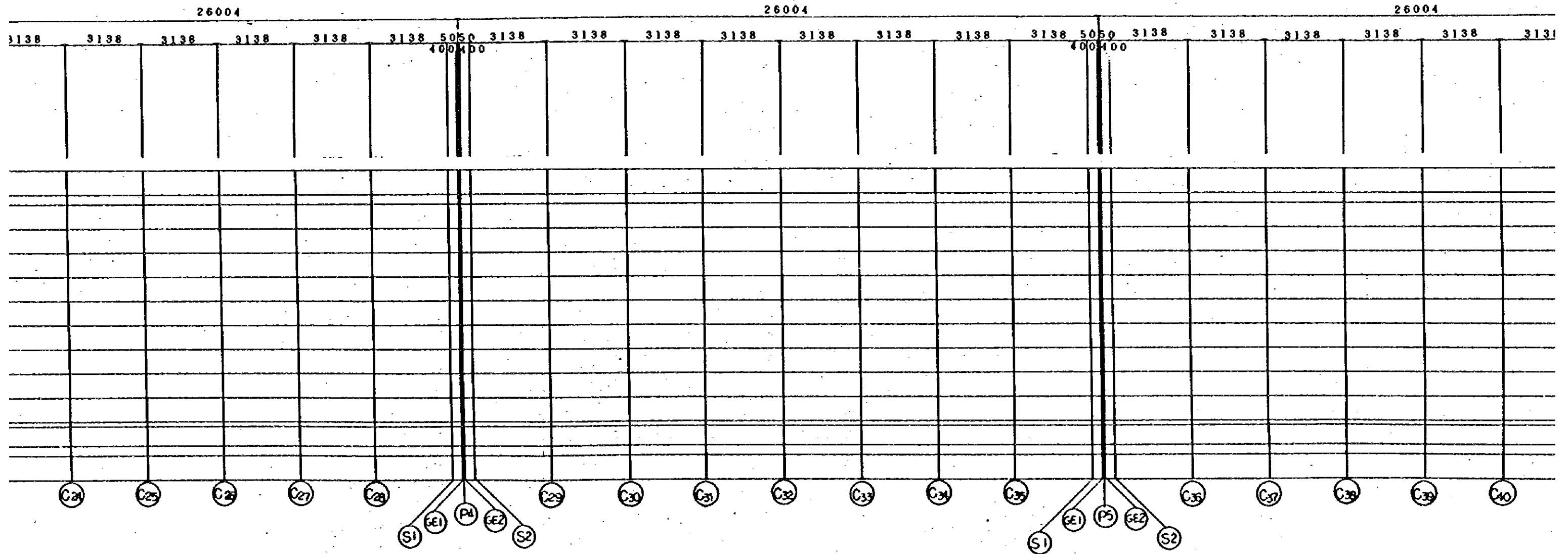
26004

26004

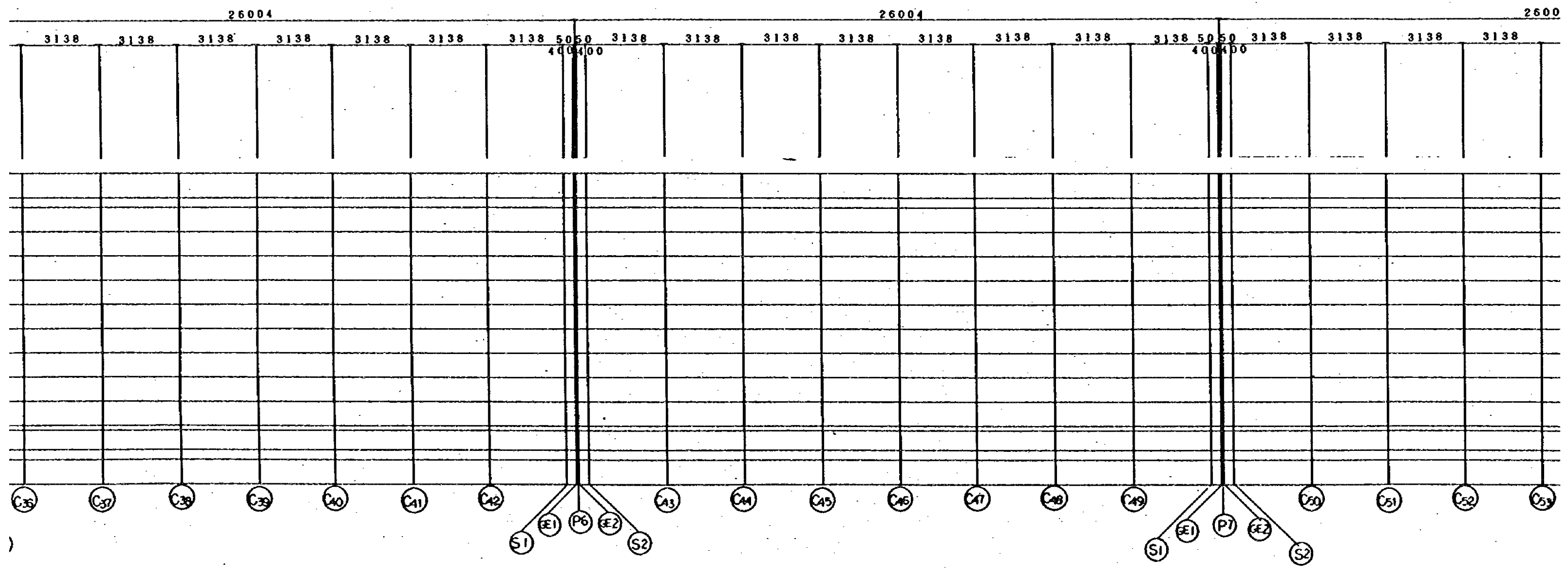
26004

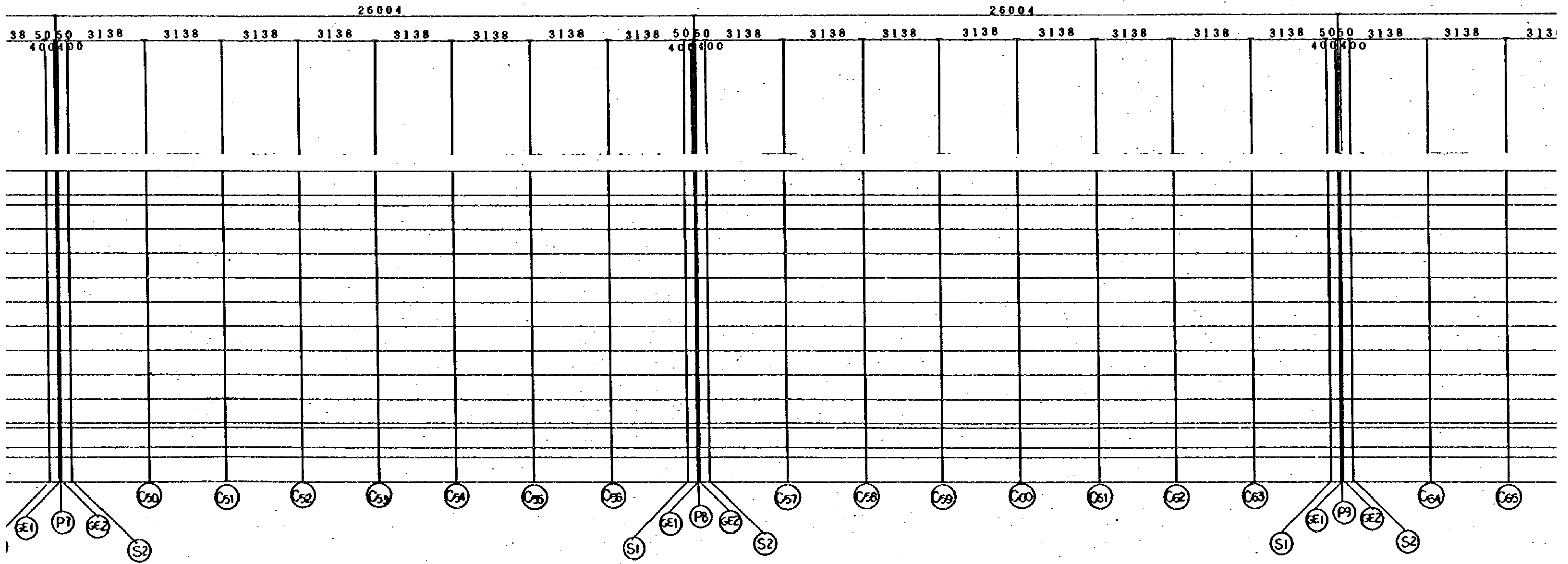


R/A-5 ALMULAD



- 5 ALMULADDAH





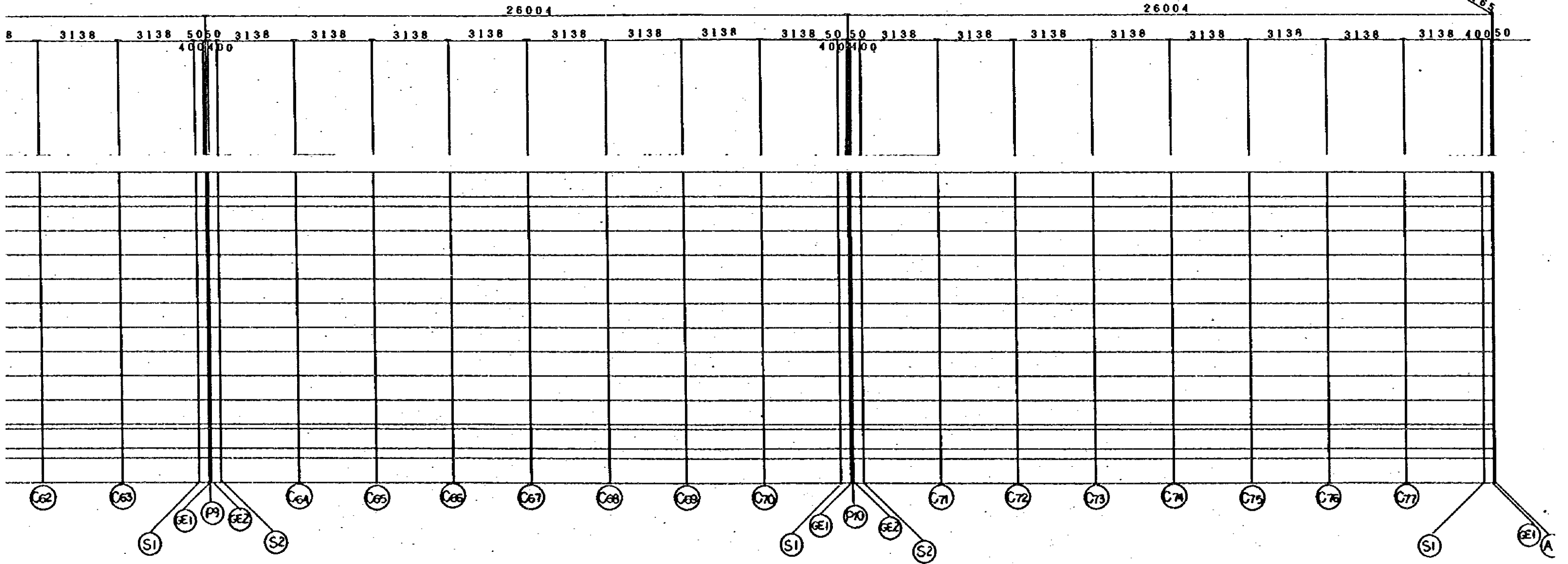
26004

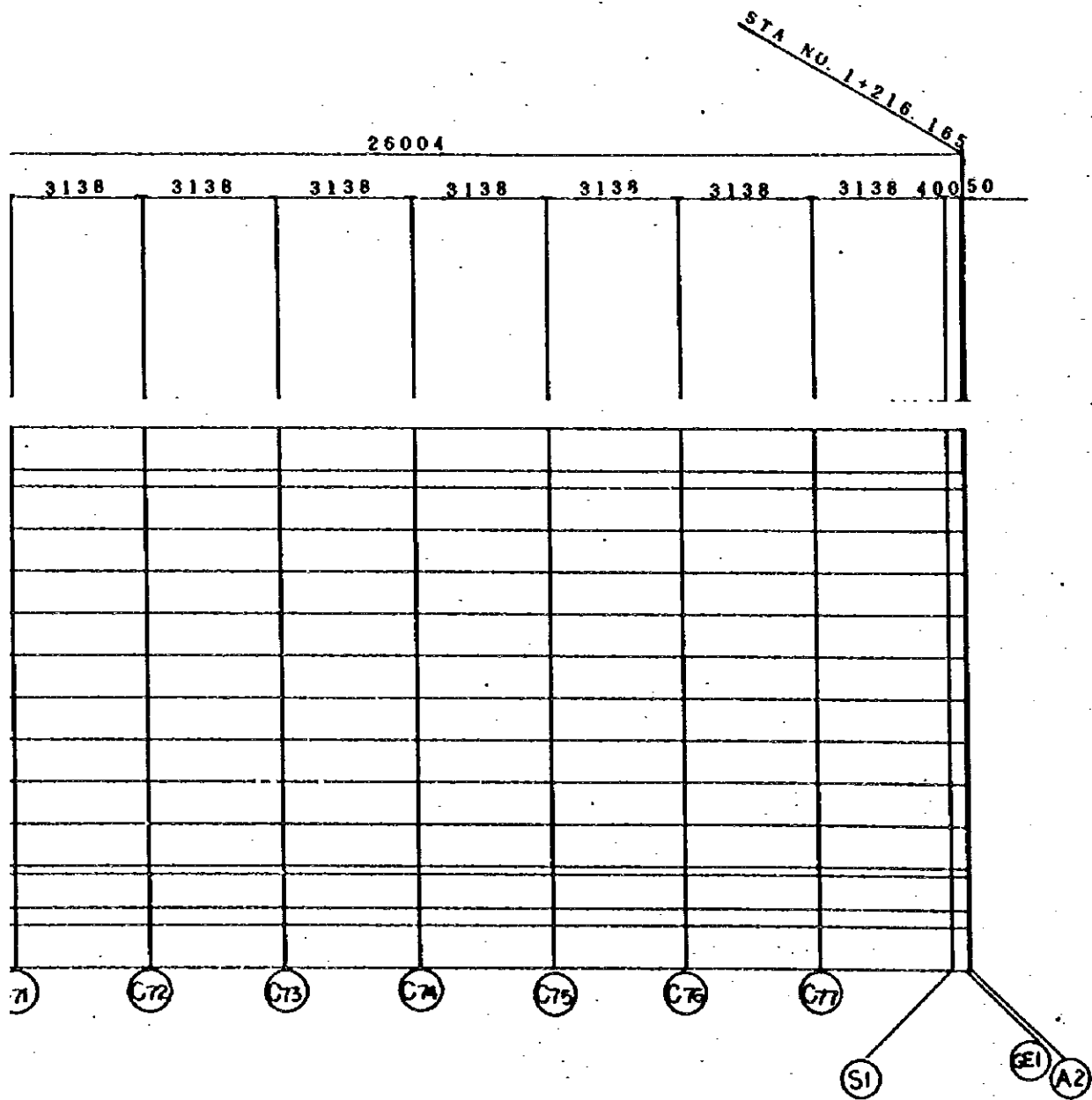
26004

38 50 50 3138 3138 3138 3138 3138 3138 3138 50 50 3138 3138 3138 3138 3138 3138 3138 50 50 3138 3138 3138

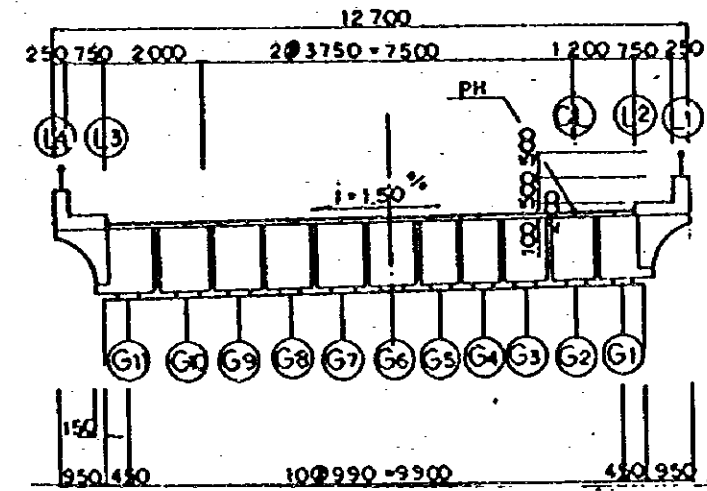
(E1) (P1) (E2) (S2) (C50) (C51) (C52) (C53) (C54) (C55) (C56) (S1) (E1) (P8) (E2) (S2) (C57) (C58) (C59) (C60) (C61) (C62) (C63) (S1) (E1) (P9) (E2) (S2) (C64) (C65)

STA NO. 1+216.165





A-LINE



JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS
PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATINAH HIGHWAY
TITLE: FRAMING PLAN RA05 AT A-LINE
DATE: _____ DWGNO. B-3

AL MULADDAH(A)

SECTION		A1	A1-GE1	A1-S1	C4	P1-S1	P1-GE1	P1	P1-GE2	P1-S2	C11	P2-S1	P2-GE1	P2
STATION		0 + 925.0920	0 + 925.1420	0 + 925.5420	0 + 938.0920	0 + 950.6420	0 + 951.0420	0 + 951.0920	0 + 951.1420	0 + 951.5420	0 + 984.0920	0 + 978.6420	0 + 977.0420	0 + 977.0920
L4	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	51.95	51.95
	Y	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
	Z	13.4661	13.4668	13.4725	13.6435	13.7988	13.8035	13.8041	13.8046	13.8093	13.9477	14.0703	14.074	14.074
L3	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	51.95	51.95
	Y	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
	Z	13.5811	13.5818	13.5875	13.7585	13.9138	13.9185	13.9191	13.9196	13.9243	14.0627	14.1853	14.189	14.189
G6(PIER CENTER)	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	51.95	51.95
	Y	0	0	0	0	0	0	0	0	0	0	0	0	0
	Z	13.6613	13.662	13.6677	13.8388	13.994	13.9987	13.9993	13.9999	14.0046	14.143	14.2656	14.2692	14.269
CL	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	51.95	51.95
	Y	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15
	Z	13.7236	13.7243	13.73	13.901	14.0563	14.061	14.0616	14.0621	14.0668	14.2052	14.3278	14.3315	14.331
L2	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	51.95	51.95
	Y	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
	Z	13.7416	13.7423	13.748	13.919	14.0743	14.079	14.0796	14.0801	14.0848	14.2232	14.3458	14.3495	14.349
L1	X	0	0.05	0.45	13	25.55	25.95	26	26.05	26.45	39	51.55	51.95	51.95
	Y	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
	Z	13.6566	13.6573	13.663	13.834	13.9893	13.994	13.9946	13.9951	13.9998	14.1382	14.2608	14.2645	14.26

NOTES:

1-GE2	PI-S2	C11	P2-S1	P2-GE1	P2	P2-GE2	P2-S2	C18	P3-S1	P3-GE1	P3	P3-GE2	P3-S2	C25	P4-S1	P4-GE1	P4	P4-GE2	P4-S2	
951.1420	0 + 951.5420	0 + 984.0920	0 + 976.6420	0 + 977.0420	0 + 977.0920	0 + 977.1420	0 + 977.5420	0 + 990.0920	1 + 2.6420	1 + 3.0420	1 + 3.0920	1 + 3.1420	1 + 3.5420	1 + 16.0920	1 + 28.6420	1 + 29.0420	1 + 29.0920	1 + 29.1420	1 + 29.5420	1 +
26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05	104.45	
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
13.8046	13.8093	13.9477	14.0703	14.074	14.0745	14.0749	14.0785	14.1843	14.2743	14.2769	14.2773	14.2776	14.2802	14.3533	14.4107	14.4123	14.4124	14.4126	14.4142	
26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05	104.45	
5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
13.9196	13.9243	14.0627	14.1853	14.189	14.1895	14.1899	14.1935	14.2993	14.3893	14.3919	14.3923	14.3926	14.3952	14.4683	14.5257	14.5273	14.5274	14.5276	14.5292	
26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05	104.45	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13.9999	14.0046	14.143	14.2656	14.2692	14.2697	14.2702	14.2738	14.3796	14.4696	14.4722	14.4725	14.4728	14.4754	14.5486	14.6059	14.6075	14.6077	14.6079	14.6094	
26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05	104.45	
-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15
14.0621	14.0668	14.2052	14.3278	14.3315	14.332	14.3324	14.336	14.4418	14.5318	14.5344	14.5348	14.5351	14.5377	14.6108	14.6682	14.6698	14.67	14.6701	14.6717	
26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05	104.45	
-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
14.0801	14.0848	14.2232	14.3458	14.3495	14.3499	14.3504	14.354	14.4598	14.5498	14.5524	14.5527	14.5531	14.5557	14.6288	14.6862	14.6878	14.6879	14.6881	14.6897	
26.05	26.45	39	51.55	51.95	52	52.05	52.45	65	77.55	77.95	78	78.05	78.45	91	103.55	103.95	104	104.05	104.45	
-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
13.9951	13.9998	14.1382	14.2608	14.2645	14.265	14.2654	14.269	14.3748	14.4648	14.4674	14.4678	14.4681	14.4707	14.5438	14.6012	14.6028	14.603	14.6031	14.6047	

FRAMING PLAN AT RA/05 AL MULADDAH (A-LINE)

P4-S1	P4-GE1	P4	P4-GE2	P4-S2	C32	P5-S1	P5-GE1	P5	P5-GE2	P5-S2	C39	P6-S1	P6-GE1	P6	P6-GE2	P6-S2	C46	P7-S1	P7-GE1
1 + 28.6420	1 + 29.0420	1 + 29.0920	1 + 29.1420	1 + 29.5420	1 + 42.0920	1 + 54.6420	1 + 55.0420	1 + 55.0920	1 + 55.1420	1 + 55.5420	1 + 68.0920	1 + 80.6420	1 + 81.0420	1 + 81.0920	1 + 81.1420	1 + 81.5420	1 + 94.0920	1 + 106.6420	1 + 107.0420
103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.55	181.95
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
14.4107	14.4123	14.4124	14.4126	14.4142	14.4547	14.4795	14.48	14.4801	14.4801	14.4806	14.4885	14.4806	14.4801	14.4801	14.48	14.4795	14.4547	14.4142	14.4126
103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.55	181.95
5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
14.5257	14.5273	14.5274	14.5276	14.5292	14.5697	14.5945	14.595	14.595	14.5951	14.5956	14.6035	14.5956	14.5951	14.595	14.595	14.5945	14.5697	14.5292	14.5276
103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.55	181.95
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.6059	14.6075	14.6077	14.6079	14.6094	14.65	14.6747	14.6752	14.6753	14.6754	14.6759	14.6838	14.6759	14.6754	14.6753	14.6752	14.6747	14.65	14.6094	14.6079
103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.55	181.95
-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15
14.6682	14.6698	14.67	14.6701	14.6717	14.7122	14.737	14.7375	14.7376	14.7376	14.7381	14.746	14.7381	14.7376	14.7376	14.7375	14.737	14.7122	14.6717	14.6701
103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.55	181.95
-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
14.6862	14.6878	14.6879	14.6881	14.6897	14.7302	14.755	14.7555	14.7555	14.7556	14.7561	14.764	14.7561	14.7556	14.7555	14.7555	14.755	14.7302	14.6897	14.6881
103.55	103.95	104	104.05	104.45	117	129.55	129.95	130	130.05	130.45	143	155.55	155.95	156	156.05	156.45	169	181.55	181.95
-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
14.6012	14.6028	14.603	14.6031	14.6047	14.6452	14.67	14.6705	14.6706	14.6706	14.6711	14.679	14.6711	14.6706	14.6706	14.6705	14.67	14.6452	14.6047	14.6031

P6	P6-GE2	P6-S2	C46	P7-S1	P7-GE1	P7	P7-GE2	P7-S2	C53	P8-S1	P8-GE1	P8	P8-GE2	P8-S2	C60	P9-S1	P9-GE1	P9	P9-GE2	P9
81.0920	1 + 81.1420	1 + 81.5420	1 + 94.0920	1 + 106.6420	1 + 107.0420	1 + 107.0920	1 + 107.1420	1 + 107.5420	1 + 120.0920	1 + 132.6420	1 + 133.0420	1 + 133.0920	1 + 133.1420	1 + 133.5420	1 + 146.0920	1 + 158.6420	1 + 159.0420	1 + 159.0920	1 + 159.1420	1 +
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05	
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
14.4801	14.48	14.4795	14.4547	14.4142	14.4126	14.4124	14.4123	14.4107	14.3533	14.2802	14.2776	14.2772	14.2769	14.2743	14.1843	14.0785	14.0749	14.0744	14.074	
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05	
5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
14.595	14.595	14.5945	14.5697	14.5292	14.5276	14.5274	14.5273	14.5257	14.4683	14.3952	14.3926	14.3922	14.3919	14.3893	14.2993	14.1935	14.1899	14.1894	14.189	
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.6753	14.6752	14.6747	14.65	14.6094	14.6079	14.6077	14.6075	14.6059	14.5485	14.4754	14.4728	14.4725	14.4722	14.4696	14.3796	14.2738	14.2702	14.2697	14.2692	
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05	
-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15
14.7376	14.7375	14.737	14.7122	14.6717	14.6701	14.67	14.6698	14.6682	14.6108	14.5377	14.5351	14.5348	14.5344	14.5318	14.4418	14.336	14.3324	14.3319	14.3315	
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05	
-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
14.7555	14.7555	14.755	14.7302	14.6897	14.6881	14.6879	14.6878	14.6862	14.6288	14.5557	14.5531	14.5527	14.5524	14.5498	14.4598	14.354	14.3504	14.3499	14.3495	
156	156.05	156.45	169	181.55	181.95	182	182.05	182.45	195	207.55	207.95	208	208.05	208.45	221	233.55	233.95	234	234.05	
-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
14.6706	14.6705	14.67	14.6452	14.6047	14.6031	14.603	14.6028	14.6012	14.5438	14.4707	14.4681	14.4678	14.4674	14.4648	14.3748	14.269	14.2654	14.265	14.2645	

C60	P9-S1	P9-GE1	P9	P9-GE2	P9-S2	C67	P10-S1	P10-GE1	P10	P10-GE2	P10-S2	C74	A2-S1	A2-GE1	A2
+ 146.0920	+ 158.6420	+ 159.0420	+ 159.0920	+ 159.1420	+ 159.5420	+ 172.0920	+ 184.6420	+ 185.0420	+ 185.0920	+ 185.1420	+ 185.5420	+ 198.0920	+ 210.6420	+ 211.0420	+ 211.0920
221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	288
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
14.1843	14.0785	14.0749	14.0744	14.074	14.0703	13.9477	13.8093	13.8046	13.8041	13.8035	13.7988	13.6435	13.4725	13.4668	13.466
221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	288
5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
14.2993	14.1935	14.1899	14.1894	14.189	14.1853	14.0627	13.9243	13.9196	13.919	13.9185	13.9138	13.7585	13.5875	13.5818	13.581
221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	288
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14.3796	14.2738	14.2702	14.2697	14.2692	14.2656	14.143	14.0046	13.9999	13.9993	13.9987	13.994	13.8388	13.6677	13.662	13.6613
221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	288
-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15
14.4418	14.336	14.3324	14.3319	14.3315	14.3278	14.2052	14.0668	14.0621	14.0616	14.061	14.0563	13.901	13.73	13.7243	13.7236
221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	288
-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
14.4598	14.354	14.3504	14.3499	14.3495	14.3458	14.2232	14.0848	14.0801	14.0795	14.079	14.0743	13.919	13.748	13.7423	13.7415
221	233.55	233.95	234	234.05	234.45	247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	288
-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
14.3748	14.269	14.2654	14.265	14.2645	14.2608	14.1382	13.9998	13.9951	13.9946	13.994	13.9893	13.834	13.663	13.6573	13.6566

	P10-S1	P10-GE1	P10	P10-GE2	P10-S2	C74	A2-S1	A2-GE1	A2
0920	1 + 184.6420	1 + 185.0420	1 + 185.0920	1 + 185.1420	1 + 185.5420	1 + 198.0920	1 + 210.6420	1 + 211.0420	1 + 211.0920
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
477	13.8093	13.8046	13.8041	13.8035	13.7988	13.6435	13.4725	13.4668	13.466
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35
1627	13.9243	13.9196	13.919	13.9185	13.9138	13.7585	13.5875	13.5818	13.581
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
0	0	0	0	0	0	0	0	0	0
143	14.0046	13.9999	13.9993	13.9987	13.994	13.8388	13.6677	13.662	13.6613
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15	-4.15
2052	14.0668	14.0621	14.0616	14.061	14.0563	13.901	13.73	13.7243	13.7236
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35	-5.35
2232	14.0848	14.0801	14.0795	14.079	14.0743	13.919	13.748	13.7423	13.7415
247	259.55	259.95	260	260.05	260.45	273	285.55	285.95	286
-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35	-6.35
1382	13.9998	13.9951	13.9946	13.994	13.9893	13.834	13.663	13.6573	13.6566

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

JICA STUDY TEAM
PACIFIC CONSULTANTS INTERNATIONAL
FUKUYAMA CONSULTANTS INTERNATIONAL

CLIENT: MINISTRY OF COMMUNICATIONS, DIRECTORATE GENERAL OF ROADS

PROJECT: D/D ON ROAD DEVELOPMENT PROJECT ON BATIMAN HIGHWAY

TITLE: CO-ORDINATE LIST RA/05 AT A-LINE

DATE

DWGNO. B-4