



**WORKS AND SERVICES DEPARTMENT
GOVERNMENT OF SINDH**



Asian Development Bank

**LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD
ASSISTANCE PROJECT (EFAP)**

PACKAGE No. 13

SB-2

**IMPROVEMENT / REHABILITATION OF ROAD
FROM 60th MILE TO CONNECT 3 CHAK VIA 68th
MILE AND CHAUDHARY NAZEER ROAD**

(Length: 31.905 kms, Width: 5.5 m)



Engineering Consultant Int'l. (Pvt.) Ltd.
A.A.ASSOCAITES

JULY - 2023

TENDER DRAWING

GENERAL DRAWINGS

LIST OF DRAWINGS

GENERAL DRAWINGS





<u>DWG. NO.</u>	<u>TITLE</u>
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SB-2 GEN-03	GENERAL NOTES
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SB-2 GEN-07A	TYPICAL PAVEMENT MARKING (SHEET 2 OF 3)
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SB-2 GEN-08	DETAIL OF MERGING/DIVERGING AND ROAD STUDS
SB-2	TYPICAL CROSS SECTION RD. 0+000 TO END (REHABILITATION 5.5)
PW-SB-2	PROTECTION WORK SCHEDULE

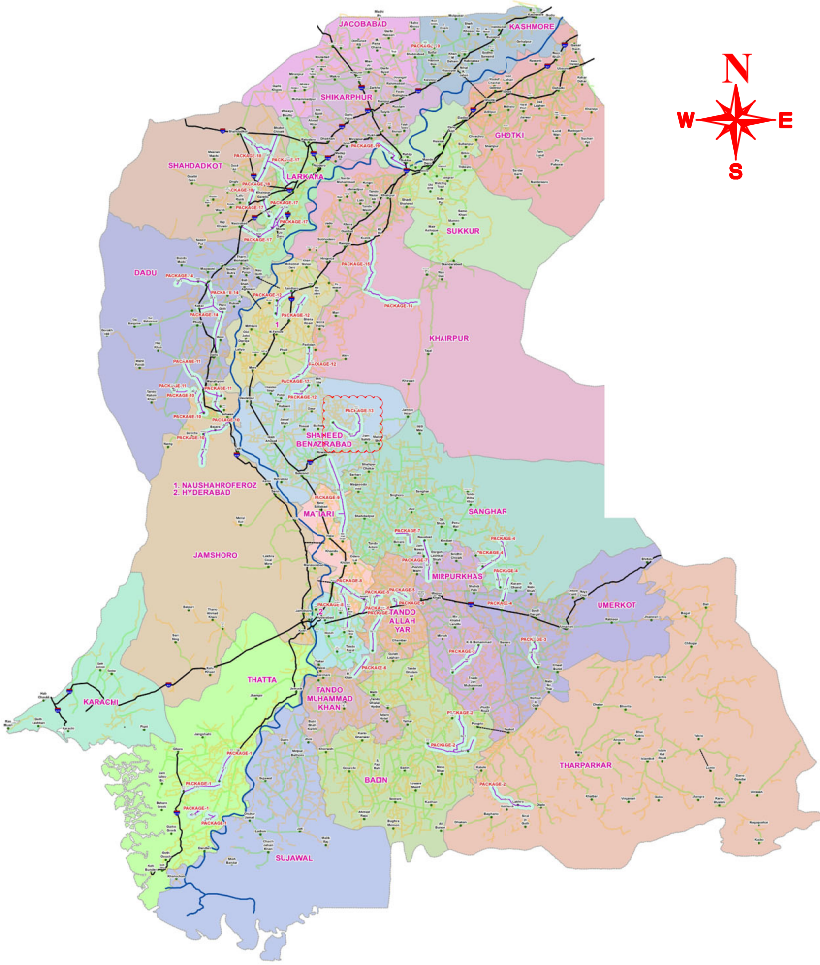
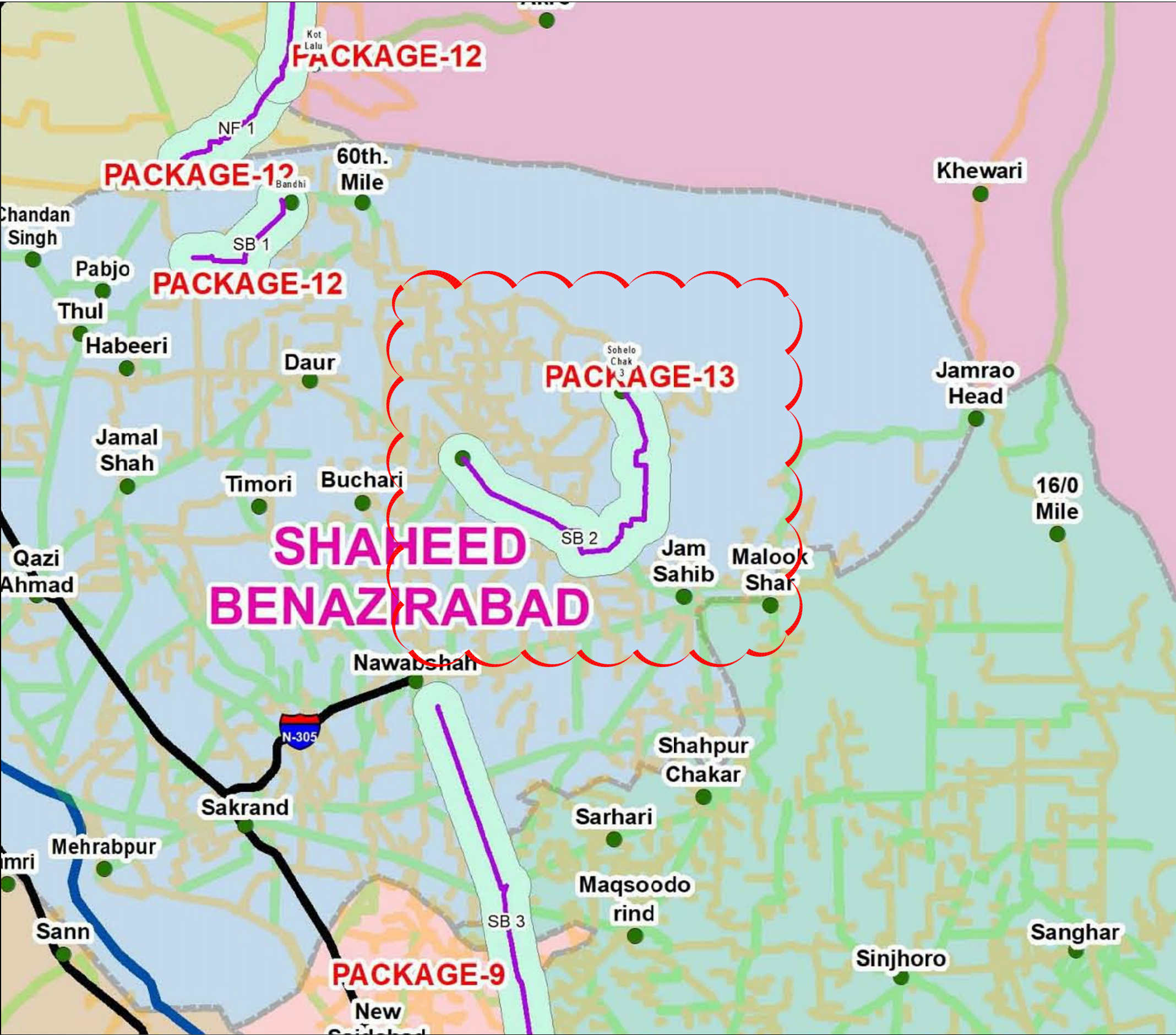
GENERAL DRAWINGS





<u>DWG. NO.</u>	<u>TITLE</u>
SB-2 PP-01	PLAN AND PROFILE (RD. 0+000 TO RD. 1+000)
SB-2 PP-02	PLAN AND PROFILE (RD. 1+000 TO RD. 2+000)
SB-2 PP-03	PLAN AND PROFILE (RD. 2+000 TO RD. 3+000)
SB-2 PP-04	PLAN AND PROFILE (RD. 3+000 TO RD. 4+000)
SB-2 PP-05	PLAN AND PROFILE (RD. 4+000 TO RD. 5+000)
SB-2 PP-06	PLAN AND PROFILE (RD. 5+000 TO RD. 6+000)
SB-2 PP-07	PLAN AND PROFILE (RD. 6+000 TO RD. 7+000)
SB-2 PP-08	PLAN AND PROFILE (RD. 7+000 TO RD. 8+000)
SB-2 PP-09	PLAN AND PROFILE (RD. 8+000 TO RD. 9+000)
SB-2 PP-10	PLAN AND PROFILE (RD. 9+000 TO RD. 10+000)

GENERAL DRAWINGS

<u>DWG. NO.</u>	<u>TITLE</u>
SB-2 PP-11	PLAN AND PROFILE (RD. 10+000 TO RD. 11+000)
SB-2 PP-12	PLAN AND PROFILE (RD. 11+000 TO RD. 12+000)
SB-2 PP-13	PLAN AND PROFILE (RD. 12+000 TO RD. 13+000)
SB-2 PP-14	PLAN AND PROFILE (RD. 13+000 TO RD. 14+000)
SB-2 PP-15	PLAN AND PROFILE (RD. 14+000 TO RD. 15+000)
SB-2 PP-16	PLAN AND PROFILE (RD. 15+000 TO RD. 16+000)
SB-2 PP-17	PLAN AND PROFILE (RD. 16+000 TO RD. 17+000)
SB-2 PP-18	PLAN AND PROFILE (RD. 17+000 TO RD. 18+000)
SB-2 PP-19	PLAN AND PROFILE (RD. 18+000 TO RD. 19+000)
SB-2 PP-20	PLAN AND PROFILE (RD. 19+000 TO RD. 20+000)
SB-2 PP-21	PLAN AND PROFILE (RD. 20+000 TO RD. 21+000)
SB-2 PP-22	PLAN AND PROFILE (RD. 21+000 TO RD. 22+000)
SB-2 PP-23	PLAN AND PROFILE (RD. 22+000 TO RD. 23+000)
SB-2 PP-24	PLAN AND PROFILE (RD. 23+000 TO RD. 24+000)
SB-2 PP-25	PLAN AND PROFILE (RD. 24+000 TO RD. 25+000)
SB-2 PP-26	PLAN AND PROFILE (RD. 25+000 TO RD. 26+000)
SB-2 PP-27	PLAN AND PROFILE (RD. 26+000 TO RD. 27+000)
SB-2 PP-28	PLAN AND PROFILE (RD. 27+000 TO RD. 28+000)
SB-2 PP-29	PLAN AND PROFILE (RD. 28+000 TO RD. 29+000)
SB-2 PP-30	PLAN AND PROFILE (RD. 29+000 TO RD. 30+000)
SB-2 PP-31	PLAN AND PROFILE (RD. 30+000 TO RD. 31+000)
SB-2 PP-32	PLAN AND PROFILE (RD. 31+000 TO RD. 31+817.037)

CLIENT:- <div>Asian Development Bank</div>	PROJECT:- LOAN NO. 4279 (COL): EMERGENCY FLOOD ASSISTANT PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- SB - 2 Improvement / Rehabilitation of road from 60th Mile to connect 3 Chak via 68th Mile and Chaudhary Nazeer road	ED. NO.	DATE:-	DESCRIPTION	DRAWN: N.S.SIDDIQUI	DRAWING NO. SB-2 GEN-02
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>			TITLE:- LIST OF DRAWINGS				DESIGN: HINA ZEESHAN	Scale:- N.T.S.
							CHECKED: NAVEED HASSAN	Edition:-
							DATE: JUNE, 2023	0







CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- PACKAGE - 13 (SB-2)	ED.NO.	DATE	DESCRIPTION	DRAWN:	DRAWING NO.
							M. NOMAN SIDDIQUI	
EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH			TITLE:- KEY PLAN				DESIGNED:	Scale:- N.T.S.
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							BUX ALI ABRO	
							DATE:	
							JULY, 2023	

GENERAL NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2. GEOMETRIC DESIGN CRITERIA OF THE PROJECT IS BASED ON "CLIENT INSTRUCTIONS WHICH IS NOT MEETING CRITERIA MENTIONED IN REQUEST FOR PROPOSAL (RFP).
3. ROADWAY PLANS (SCALE 1:1000 FOR A1-SHEET/1:2000 APPROX. FOR A3 SHEET) HAVE BEEN PREPARED FROM THE FIELD SURVEY (CARRIED OUT IN YEAR NOVEMBER-2017) DATA BASED UPON COORDINATES AND LEVELS CONFORM TO SOP PATTERN.
4. CROSS SECTIONS OF THE EXISTING AND NEW ROAD HAVE BEEN TAKEN AT INTERVALS OF 25M. OR LESS IF REQUIRED.
5. PAVEMENT DESIGN HAS BEEN PREPARED BY CONSULTANTS FOR EXISTING ROAD AND NEW ROAD BASED ON CBR VALUES AND TRAFFIC LOADS AS PER RECOMMENDATIONS UNDER TRL & AASHTO.
6. TYPICAL CROSS SECTION HAS BEEN PREPARED FOR EACH PAVEMENT DESIGN/STRATEGY.
7. LOCATION OF ALL EXISTING STRUCTURES HAVE BEEN MARKED ON ROADWAY PLAN DRAWINGS.
8. QUANTITIES HAVE BEEN CALCULATED FOR EARTH WORK AND OTHER WORK'S ITEMS FOR ESTIMATION PURPOSES.
9. BASED ON ROAD SAFETY AUDITS IN FIELD, FOLLOWING DETAILS WITH TYPICAL DESIGNED DRAWINGS HAVE BEEN PROVIDED ACCORDING TO SITE REQUIREMENTS.
 - TRAFFIC SIGNS.
 - PAVEMENT MARKING DETAILS.
 - CROSS SECTION OF PLAIN AND MOUNTAINOUS AREA, DRAIN IN DETAIL.
10. ROADWAY PLAN DRAWINGS (1:2000) SHOULD BE READ IN CONJUNCTION WITH ROAD FURNITURE DRAWINGS (TYPICAL), STRUCTURES AND DRAINAGE DRAWINGS, ETC.
11. ACTUAL QUANTUM OF REHABILITATION WORK FOR EXISTING STRUCTURES SHALL BE DETERMINED BY THE RESIDENT ENGINEER AT THE TIME OF EXECUTION FOR EACH STRUCTURE.
12. EXISTING LEVELS, DIMENSIONS AND TOPOGRAPHY REPRESENT CONDITIONS AT THE TIME OF SURVEY DONE IN NOVEMBER-2017.
13. EACH DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER DRAWINGS, WHERE NECESSARY.
14. NOTES GIVEN ON DRAWINGS ADJACENT TO A SECTION PERTAIN TO THE PARTICULAR DETAIL.
15. THE SOAKED C.B.R OF EMBANKMENT MATERIAL SHALL NOT BE LESS THAN 10% AT MODIFIED AASHTO DENSITY IN ACCORDANCE WITH COMPACTION ZONE OF EMBANKMENT AS SPECIFIED.
16. THE SUBGRADE MATERIAL/WHERE USED, SHALL HAVE A MINIMUM C.B.R. (SOAKED) OF 20% AT 95% M.D.D. AASHTO T-180.
17. BEFORE STARTING PAVEMENT MARKING, CONTRACTOR SHALL SUBMIT WORKING DETAILS SHOWING EXACT LOCATION, TYPE AND SIZE OF MARKING FOR APPROVAL OF ENGINEER.
18. FOR AVOIDING ABRUPT CHANGE IN PROFILE AT BOP AND EOP OVERLAY IS TO BE REDUCED GRADUALLY BEFORE BOP AND AFTER EOP TO MATCH THE ADJOINING PROFILE IN TRANSITION WITHIN 30 TO 40 M. LENGTH WITHOUT FORMING ANY KINK AS SHOWN ON DRAWINGS OR AS DIRECTED BY THE RESIDENT ENGINEER. FOR ALL SECTIONS AND STRETCHES.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION OF DIVERSIONS FOR TRAFFIC AND ITS MAINTENANCE, SIGNS AND ALL SAFETY MEASURES DURING THE CONSTRUCTION AT NO ADDITIONAL COST TO THE CLIENT.
20. THE EMBANKMENT SLOPES SHALL BE TRIMMED AND DRESSED TO DESIGN LINE AS SHOWN ON DRAWINGS.
21. ANY DAMAGE DONE TO THE UTILITIES DURING EXCAVATION/EXECUTION OF WORK SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST TO THE CLIENT.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DIVERSIONS OF WATER AT STRUCTURES LOCATIONS INCLUDING DYKES AND TRENCHES ETC. WITHOUT ANY ADDITIONAL COST.
23. THE ROAD CONSTRUCTION SHALL BE PLANNED IN A MANNER THAT A MAXIMUM STRETCH OF 3-4 Km SHALL BE TAKEN IN HAND FOR CONSTRUCTION AT A TIME, AND TRAFFIC IS PROVIDED WITH A PROPER AND WELL MAINTAINED DIVERSION.
24. THE EXISTING LOCALIZED HUMPS SHALL REQUIRED REMOVAL AND TREATMENT AS PER THE SITE CONDITIONS FOR ACCOMMODATING FULL PAVEMENT THICKNESSES AS DIRECTED BY THE ENGINEER.
25. LOCATION OF UNDER GROUND CABLES/UTILITIES SHOWN ON PLANS ARE APPROXIMATE. EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR AT NO EXTRA COST.
26. SUBGRADE IN CUT:
 - i) IN CUT AREAS (COMMON SOILS) SUBGRADE SOILS (TOP 300mm) MUST BE EXCAVATED, RELAID AND COMPACTED IN LAYERS (EACH 150mm THICK) TO THE SPECIFIED DENSITY AND MUST MEET THE MATERIAL REQUIREMENT FOR CLASSIFICATION, PLASTICITY INDEX (PI) AND SOAKED CBR 25%. THE UNSUITABLE SOILS IF OBTAINED FROM EXCAVATION SHALL BE DISPOSED OFF AND REPLACED WITH SUITABLE SOILS MEETING THE REQUIREMENT OF SUB GRADE/COMPACTED FILL MATERIAL CBR \geq 25%.
 - ii) IN ROCK CUT THE EXCAVATION LIMIT LINE SHALL BE AT THE BOTTOM LEVEL OF SUBBASE COURSE.
 - iii) IN ROCK CUT AREAS (UNSUITABLE MATERIALS LIKE SHALE) THE EXCAVATION LIMIT LINE SHALL BE 300mm BELOW THE BOTTOM LEVEL OF SUBBASE COURSE. THIS DEPTH OF 300mm SHALL BE REPLACED WITH SUITABLE SOILS MEETING THE REQUIREMENT OF SUB GRADE/COMPACTED FILL MATERIAL CBR \geq 25%.
27. PRECAST CONCRETE/METAL GUARD RAIL IS TO BE PROVIDED WHERE FILL HEIGHT EXCEED 3.00M OR AS DIRECTED BY THE ENGINEER.

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CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- TITLE:- GENERAL NOTES	ED.NO.	DATE	DESCRIPTION	DRAWN: N. SAQIB SIDDIQUI	DRAWING NO. GEN-03
							DESIGNED: HINA ZEESHAN	
EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Scale:- N.T.S.
							DATE: JUNE, 2023	Edition. 0

SYMBOLS

EXISTING ROAD	
TRACK / PATH	
PROPOSD ROAD	
PROPOSD ALIGNMENT	
PROPOSD CULVERTS	
RIGHT OF WAY	
HIGH TENSION LINE	
LOW TENSION LINE	
ELECTRIC POLE, ELECTRIC WIRE	
TELEPHONE POLE, TELEPHONE WIRE	
FIBRE OPTIC CABLE	
PIPE LINE	
WATER COURSE	
BUILDING AND OTHER STRUCTURES	
MASJID	
HAND PUMP / TUBE WELL	
GPS CONTROL POINTS	
BENCH MARK	
LIGHT POLE-LP	

SYMBOLS

EXISTING BUND	
CANAL / WAH	
TREES	
GRAVE YARD	
POND	
RAILWAY LINE	
P.I. STATION	

ABBREVIATIONS

GENERAL

B.O.P.	BEGENING OF PROJECT
BM	BENCH MARK
CL	CENTRE LINE
CM	CUBIC METER
Cm	CENTIMETER
D.S.T.	DOUBLE SURFACE TREATMENT
DRG.	DRAWING
D/S	DOWN STREAM
E	EAST, EASTING, EXTERNAL DISTANCE
E.O.P.	END OF PROJECT
F.R.L.	FINISHED ROAD LEVEL
H.F.L.	HIGH FLOOD LEVEL
KM	KILOMETRE
LT.	LEFT
RT.	RIGHT
I.L	INVERT LEVEL

ABBREVIATIONS

GENERAL

M	METRE
MH	MAN HOLE
mm	MILLIMETRE
N	NORTH, NORTHING
N.G.L.	NATURAL GROUND LEVEL / EXISTING LEVEL
N.T.S.	NOT TO SCALE
RD.	REDUCED DISTANCE
RH.	RIGHT HAND CURVE
R.O.W.	RIGHT OF WAY
STA.	STATION
TR	TRAVERSE STATION
U/S	UP SREAM
WC	WATER COURSE

HORIZONTAL CURVE

P.I.#.	POINT OF INTERSECTION NUMBER
I	DEFLECTION ANGLE
R	RADIUS
T	TANGENT LENGTH
E	EXTERNAL ORIDINATE
L	LENGTH OF CURVE / ARC LENGTH
C	CHORD LENGTH
M	MIDDLE ORIDINATE
PC	POINT OF CURVATURE
PT	POINT OF TANGECY





VERTICAL CURVE

STA.	RD. AT VERTICAL POINT OF INTERSECTION
VPC.	VERTICAL POINT OF CURVATURE
VPT.	VERTICAL POINT OF TANGENCY
EL	ELEVATION AT VERTICAL POINT OF INTERSECTION
CURVE LEN	LENGTH OF VERTICAL CURVE
E	EXTERNAL DISTANCE
K	RATE OF VERTICAL CURVATURE / K FACTOR
F.R.L.	FINISHED ROAD LEVEL AT PROFILE GRADE
RD.	REDUCED DISTANCE

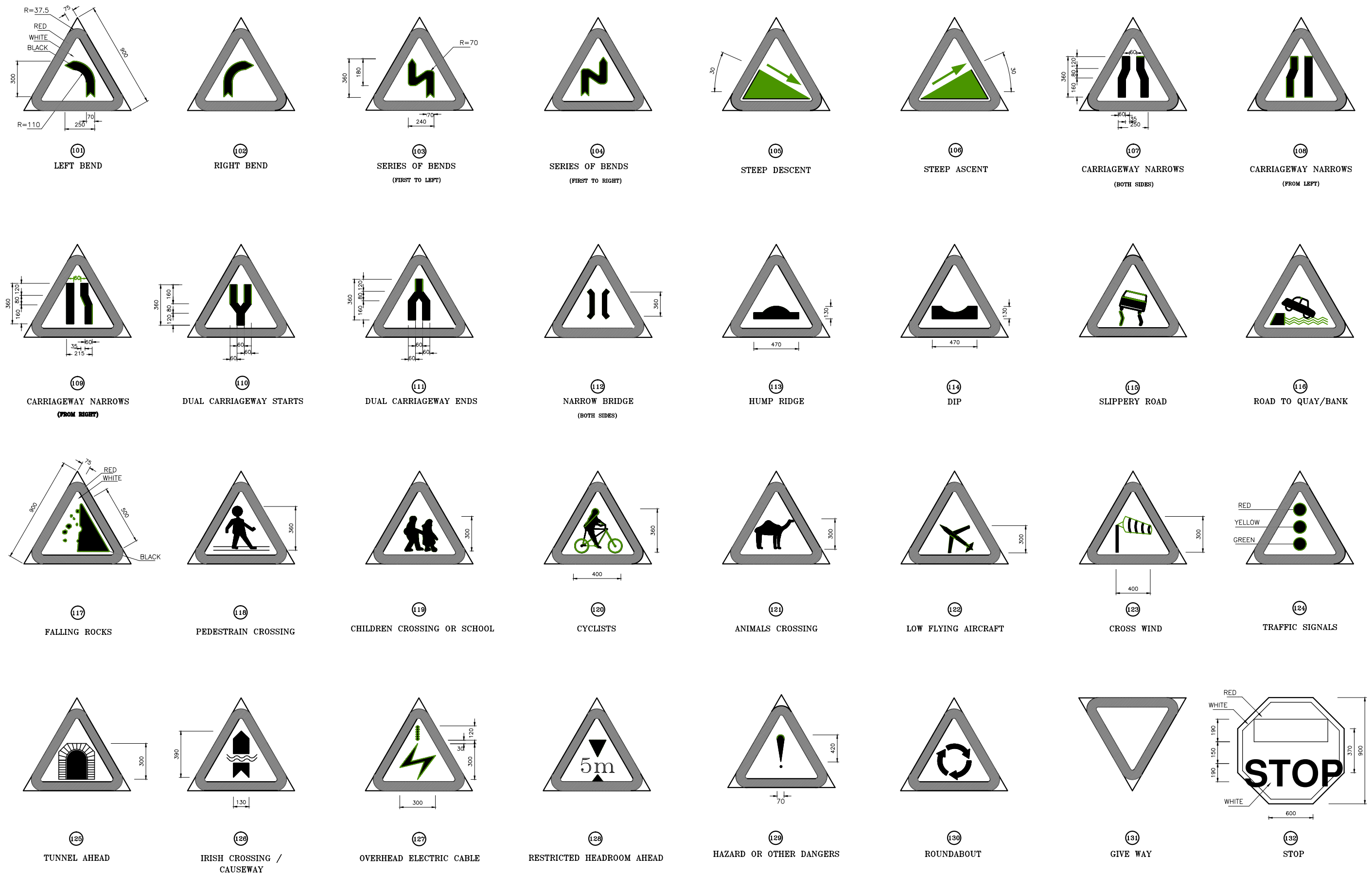
SUPERELEVATION





SUPERELEVATION.	%
SR	SUPERELEVATION RUN OFF LENGTH
TR	TANGENT RUNOUT LENGTH
TRAN.	TRANSITION
STRAIGHT.	NORMAL CROSS SLOPE

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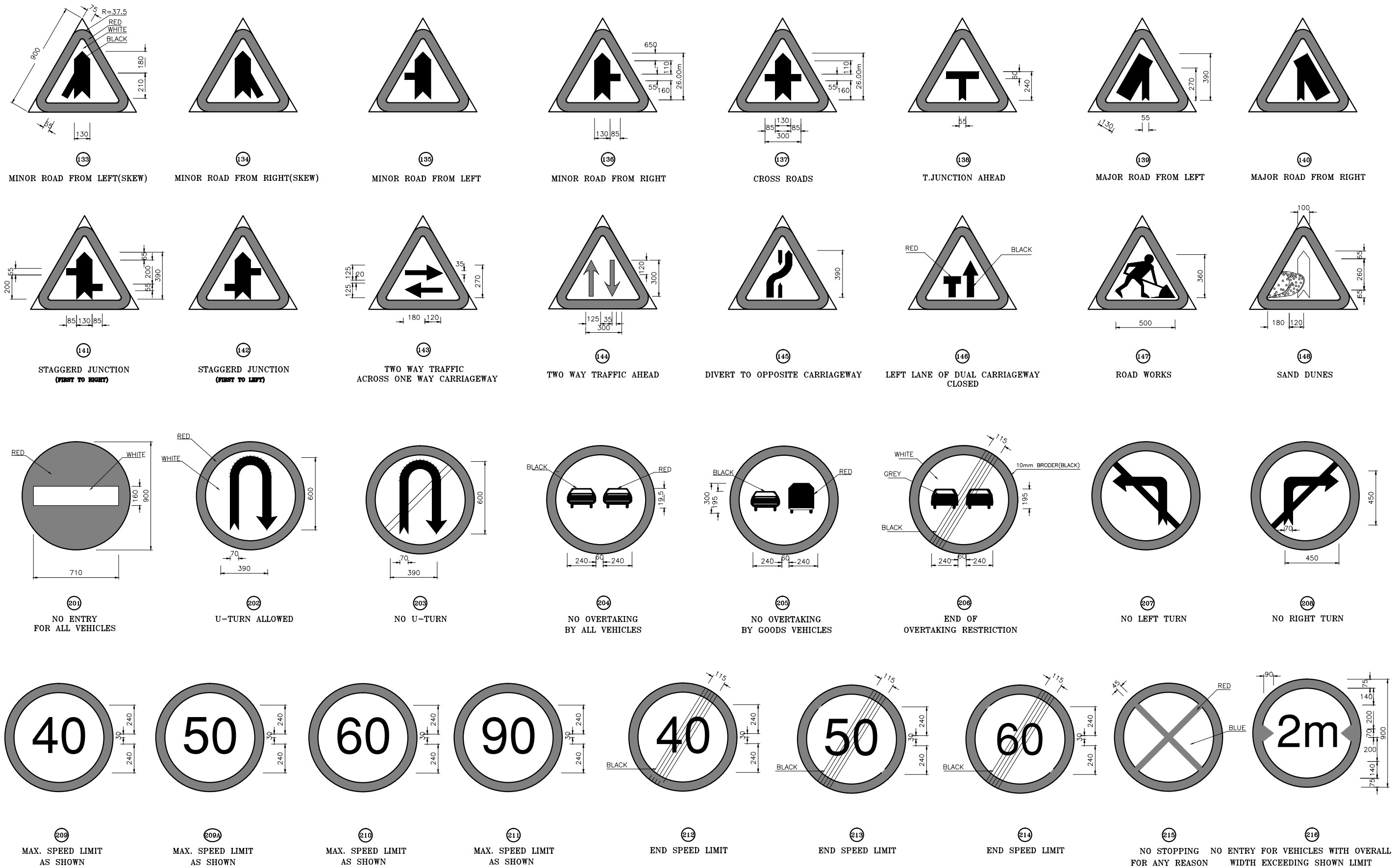
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EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH			TITLE:- SYMBOLS AND ABBREVIATIONS				DESIGNED: HINA ZEESHAN	Scale:- N.T.S.
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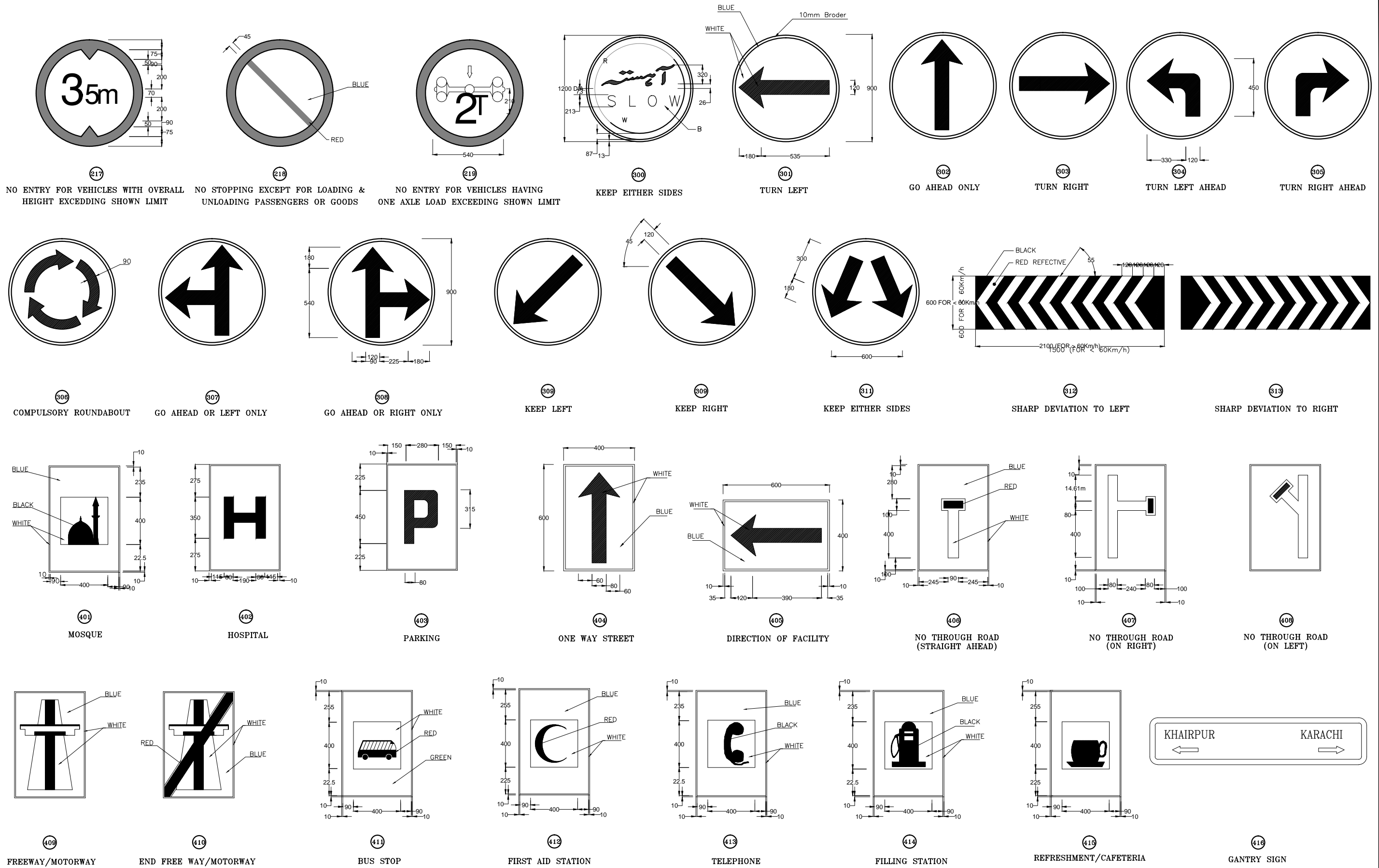
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EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH			TITLE:- TYPICAL ROAD SIGNS (SHEET 1 OF 3)				CHECKED: NAVEED HASSAN	Scale:- N.T.S.
							DATE: JUNE, 2023	Edition. 0





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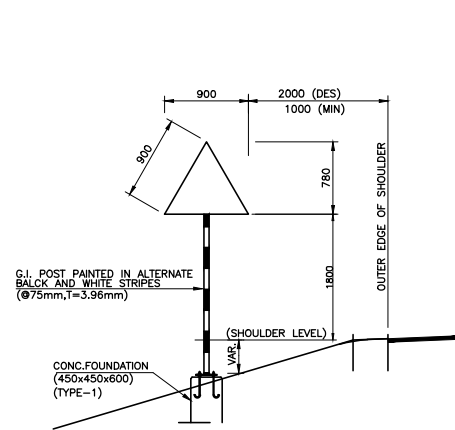
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							CHECKED: NAVEED HASSAN	
							DATE: JUNE, 2023	

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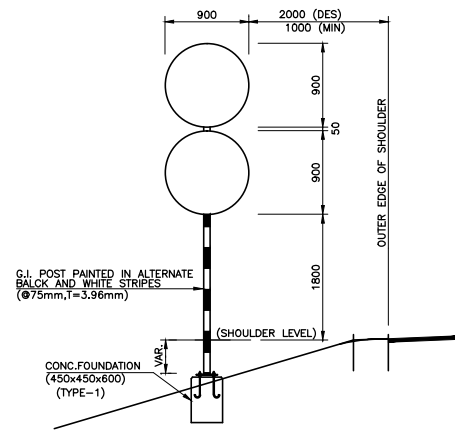


CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- TITLE:- TYPICAL ROAD SIGNS (SHEET 3 OF 3)	ED.NO.	DATE	DESCRIPTION	DRAWN: N. SAQIB SIDDIQUI	DRAWING NO. GEN-05B Scale:- N.T.S. Edition. 0
							DESIGNED: HINA ZEESHAN	
							CHECKED: NAVEED HASSAN	
							DATE: JUNE, 2023	

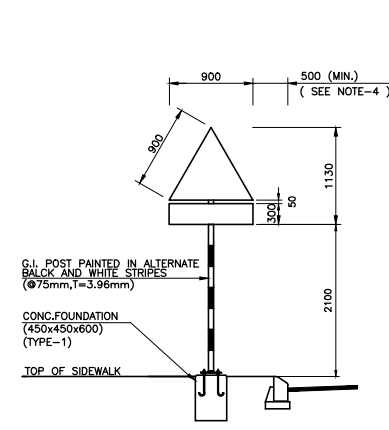
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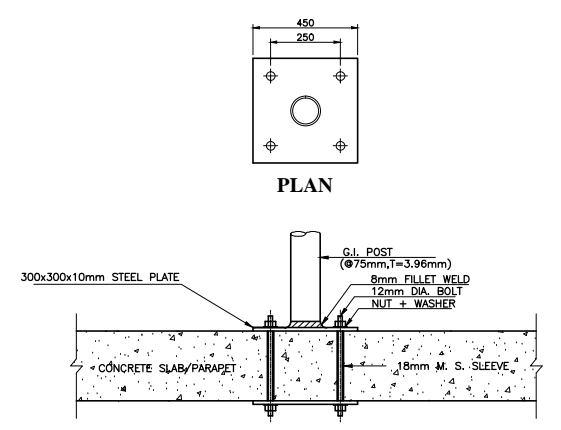
MOUNTED ALONG FILL SLOPE



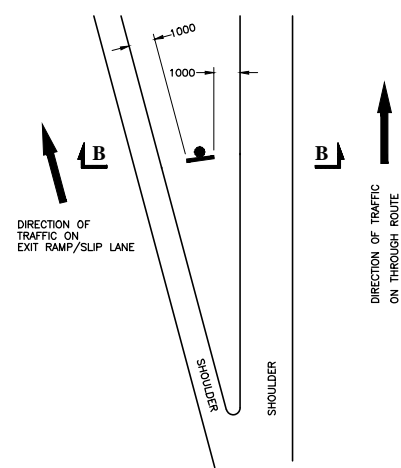
MOUNTED ALONG SIDEWALK OR ISLAND
TYPICAL PLACING DETAILS OF ROAD SIGNS



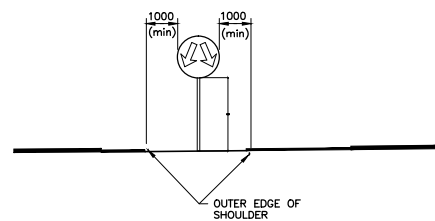
MOUNTED ON STRUCTURE



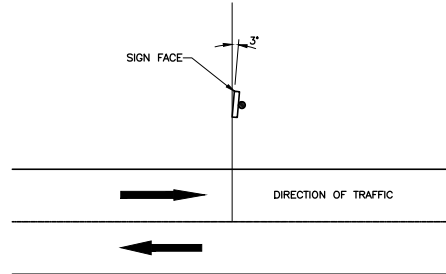
DETAIL 'A'



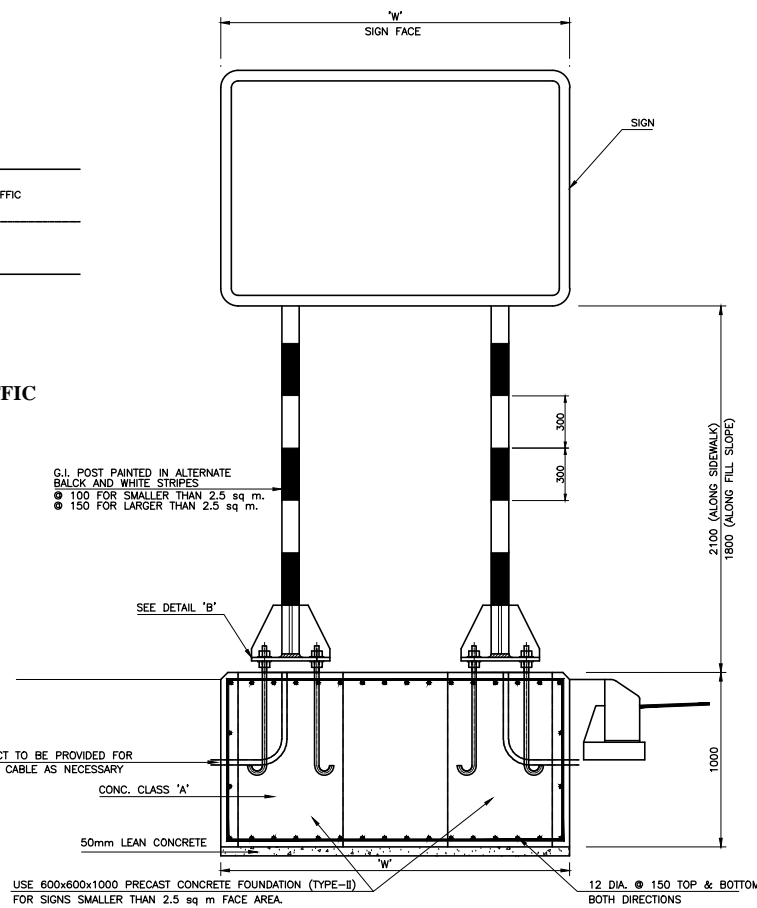
PLACING OF SIGN AT NOSE



SECTION B-B

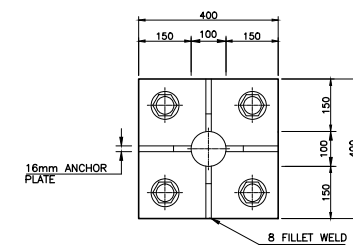


ORIENTATION OF SIGN IN PLAN
RELATED TO DIRECTION OF TRAFFIC

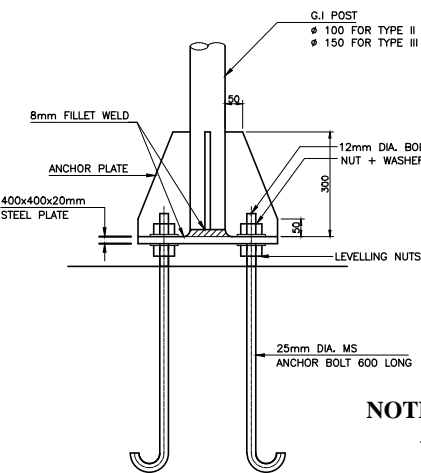


POST FOR LARGE SIGNS (> 1.5 Sq m FACE AREA)
(TYPE-II & III)

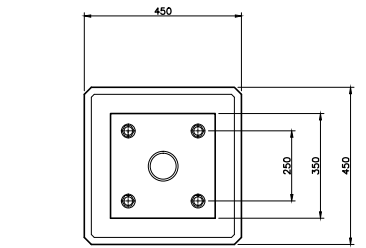
(SEE NOTE-2)



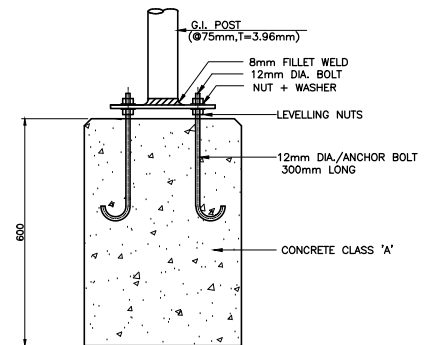
PLAN



DETAIL 'B'
(TYPE-II & III)







PLAN



PRECAST FOUNDATION DETAIL
(TYPE-I)

NOTES :-

- 1-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- 2-USE DIA. 75mm G. I. POST WITH 450x450x600 FOUNDATION (TYPE-I) FOR PROHIBITIVE, MANDATORY, WARNING AND SMALL INFORMATORY SIGNS. FOR LARGE SIGNS, USE 100mm DIA. POST WITH 600x600x1000mm CONCRETE POST FOUNDATION (TYPE-II) FOR SIGNS WITH FACE AREA LARGER THAN 2.5 Sq.M. USE 150mm DIA. POST WITH INSITU REINFORCED CONCRETE FOUNDATION (TYPE-III)
- 3-TWO SIGN PLATES MAX. JUL BE PLACED ON ONE POST ASSEMBLY.
- 4-A SIGN POST SHALL NOT BE MOUNTED IN THE MIDDLE OF SIDEWALK.
- 5-WIDTH OF CAST IN SITU CONCRETE FOUNDATION FOR LARGE SIGNS (TYPE-III) SHALL BE SAME AS THAT OF SIGN FACE, WHERE AS ITS BREADTH AND DEPTH SHALL BE 1.00m.
- 6-THE CONTRACTOR SHALL SUBMIT THE MOUNTING AND FASTENING DETAILS FOR THE ENGINEER'S APPROVAL.

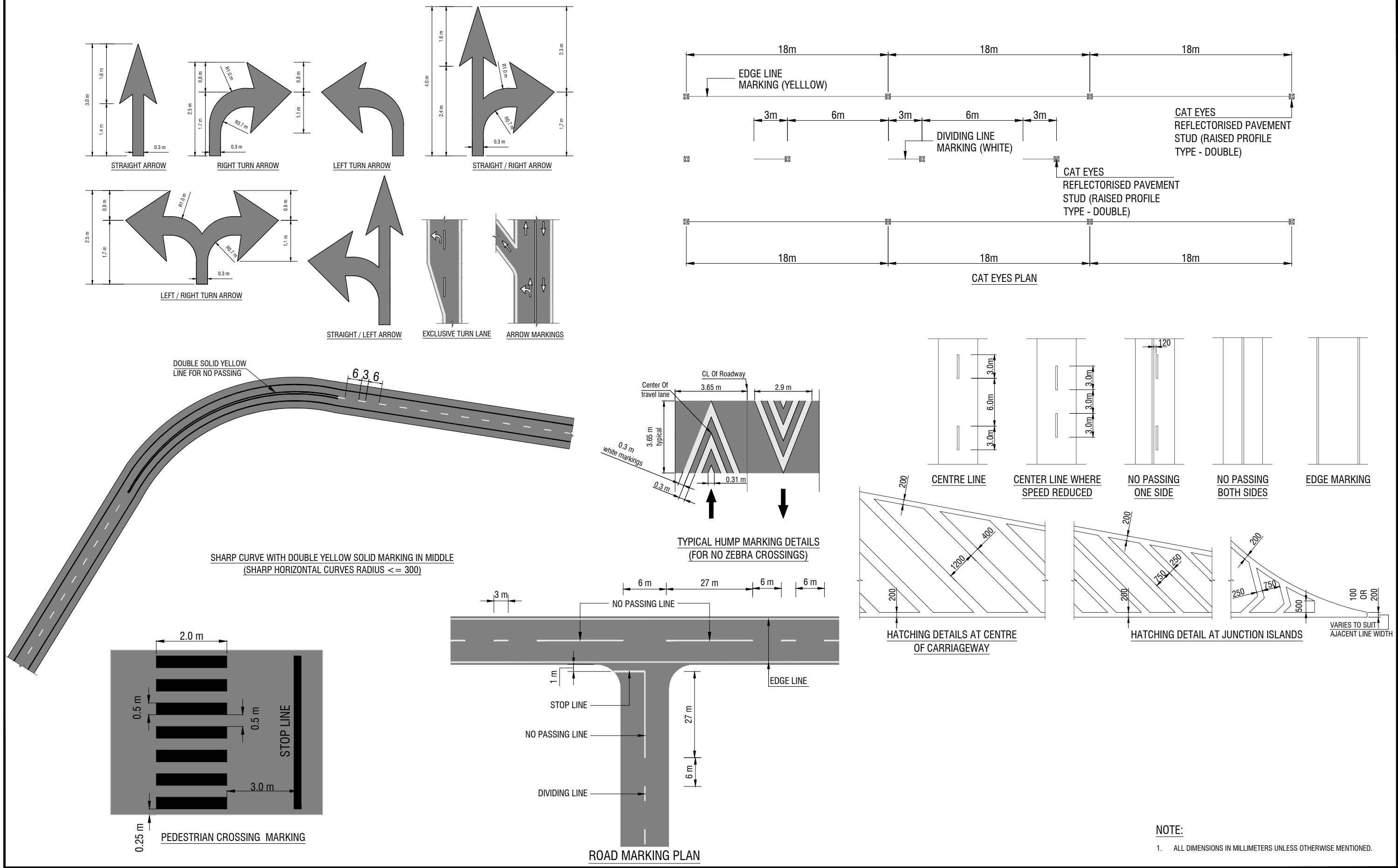
CLIENT:- 	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:-	ED.NO.	DATE	DESCRIPTION	DRAWN: N. SAQIB SIDDIQUI	DRAWING NO. GEN-06
EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH			TITLE:- TYPICAL SIGN PLACING & FOUNDATION DETAILS				DESIGNED: HINA ZEESHAN	Scale:- N.T.S.
							CHECKED: NAVEED HASSAN	Edition.
							DATE: JUNE, 2023	0





The diagram illustrates a three-lane highway cross-section. It consists of a central three-lane section flanked by shoulders on both sides. The central section has a total width of 10.5L, divided into three lanes of width L and two gaps of width 3L. The shoulders on either side have a width of L4. The diagram is labeled with 'SHOULDER' at the top and bottom, and 'LANE' in the middle. The lane width is labeled 'L' and the gap width is labeled '3L'. The shoulder width is labeled '(L4)'. The central section is labeled '(L1)'.

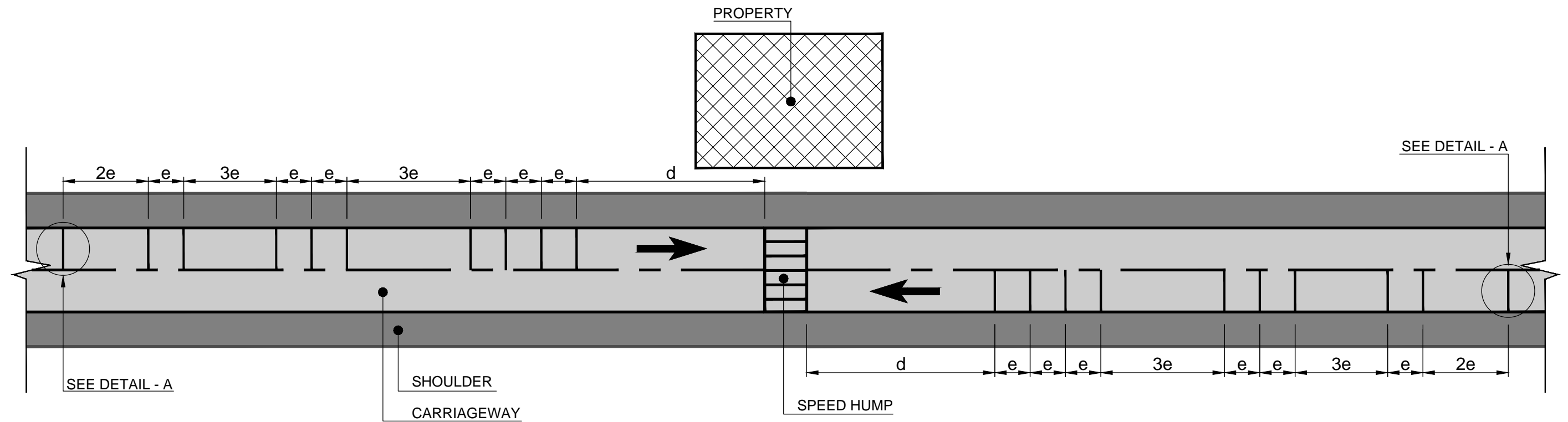
A diagram showing a cross-section of a road. The road consists of three main layers: a top layer labeled (L4), a middle layer labeled (L3), and a bottom layer labeled (L4). The top and bottom layers are shaded light blue, while the middle layer is unshaded. The road is flanked by shoulders on both sides, labeled "SHOULDER". The road surface is labeled "PAVEMENT".

The diagram illustrates a cross-section of a two-lane highway with a central barrier. The road is symmetrical about the centerline. The outermost sections on both sides are labeled 'SHOULDER'. Moving inward from the shoulders, the first section is labeled 'PAVEMENT'. The road consists of two travel lanes, each labeled '(L3)', separated by a central 'BARRIER'. On the outer edge of each travel lane, there is a narrow section labeled '(L4)'. The diagram uses various line styles (solid, dashed, and double lines) to delineate the different road components and their boundaries.

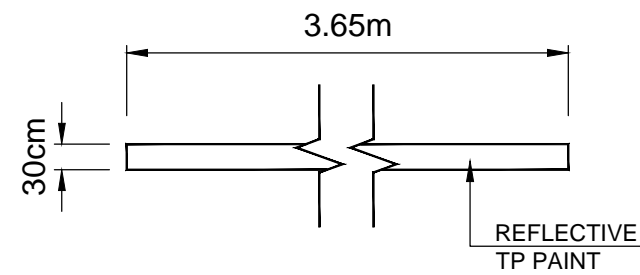
1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. AT HORIZONTAL CURVES CENTER LINE OR LANE SEPARATION LINE (L1) BECOMES (L3) FROM START TO END OF CURVE.



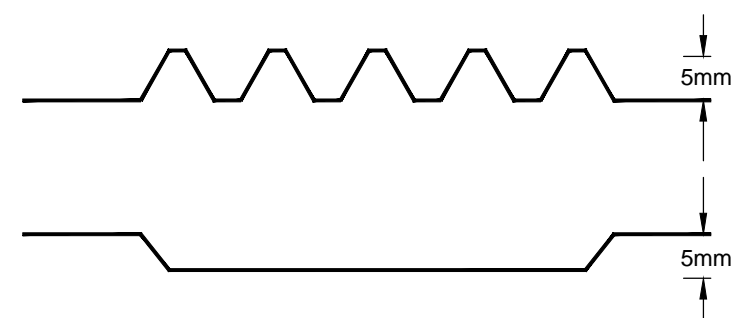
CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:-	ED.NO.	DATE	DESCRIPTION	DRAWN: N. SAQIB SIDDIQUI	DRAWING NO. GEN-07A
							DESIGNED: HINA ZEESHAN	
EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH			TITLE:- PAVEMENT MARKING AND CAT EYES DETAILS				CHECKED: NAVEED HASSAN	Scale:- N.T.S.
							DATE: JUNE, 2023	Edition. 0



PLAN OF TRANSVERSE RUMBLE STRIPS







PLAN OF RUMBLE STRIP



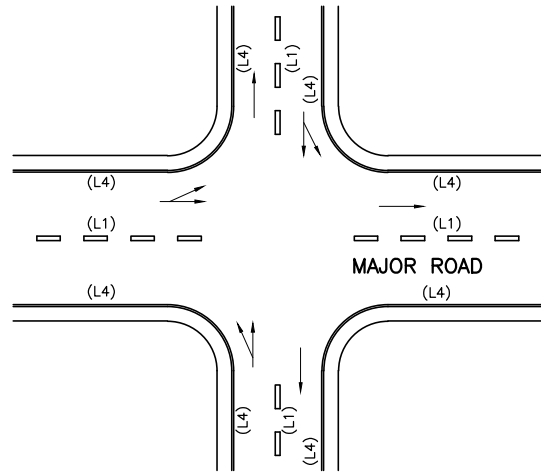
**RUMBLE STRIP CROSS SECTION
DETAIL - A**

NOTES:-

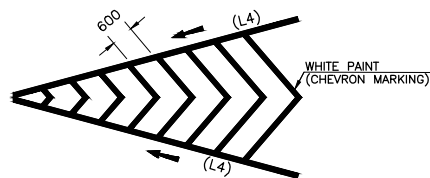
- 1 - ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT OTHERWISE MENTIONED.
- 2 - SPEED HUMPS/RUMBLE STRIPS WILL BE PROVIDED NEAR AMENITIES SUCH AS MOSQUES, PLAYGROUNDS, SCHOOLS, HOSPITALS, ETC, FOR TRAFFIC CALMING AS PER DECISION OF THE ENGINEER.

CLIENT:- <div>Asian Development Bank</div>		PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:-	ED.NO.	DATE	DESCRIPTION	DRAWN: N. SAQIB SIDDIQUI	DRAWING NO. GEN-07B
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>	TITLE:- RUMBLE STRIP DETAILS						DESIGNED: HINA ZEESHAN	Scale:- N.T.S.	
							CHECKED: NAVEED HASSAN	Edition. 0	
							DATE: JUNE, 2023		

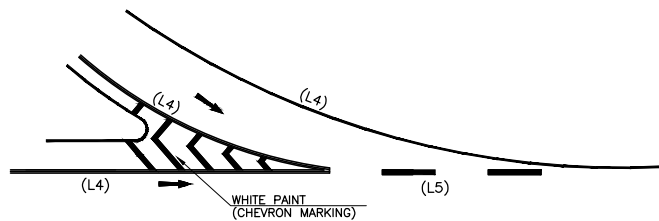
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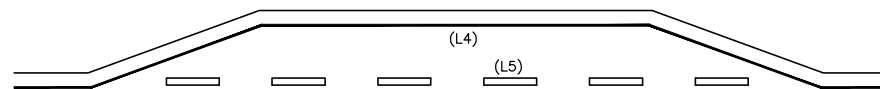
TYPICAL LANE MARKING FOR INTERSECTION



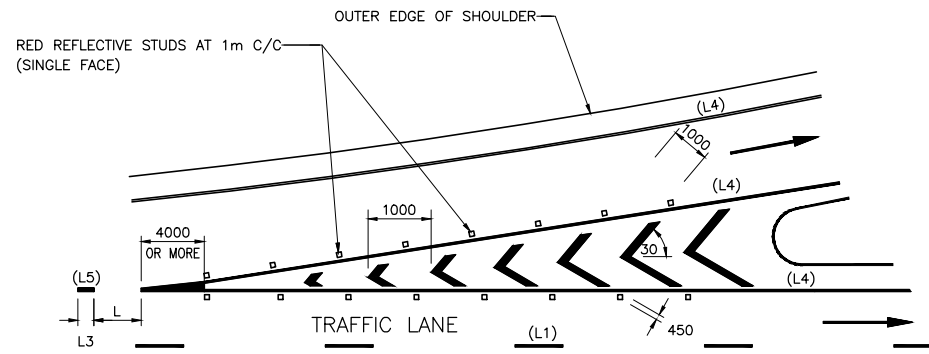
TYPICAL ISLAND APPROACH/EXIT DETAILS



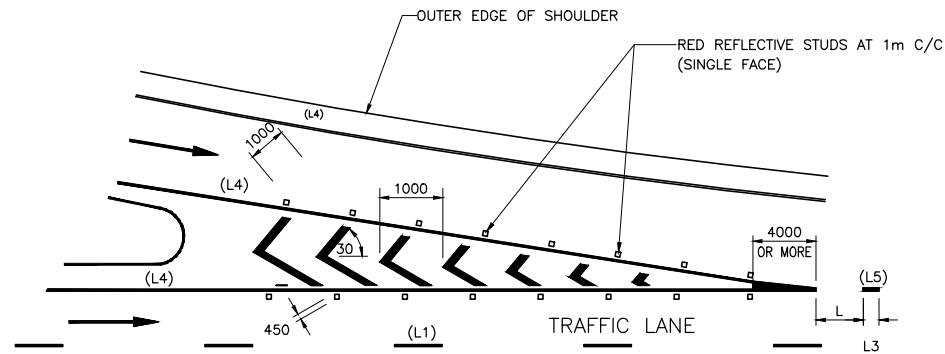
EXCLUSIVE TURN LANE



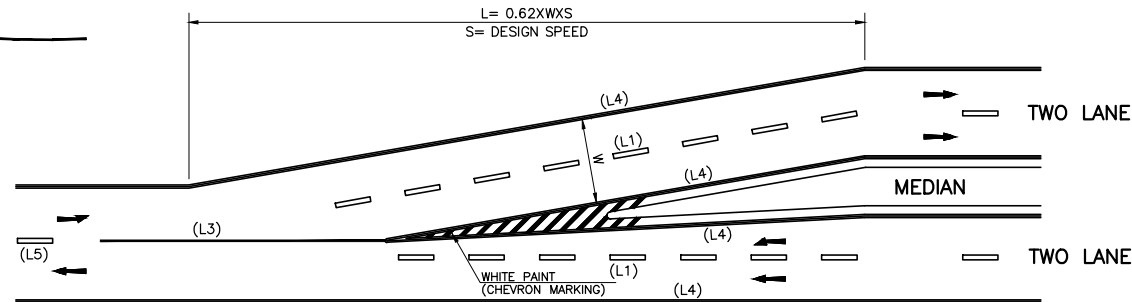
BUS - LANE



EXIT NOSE DETAIL

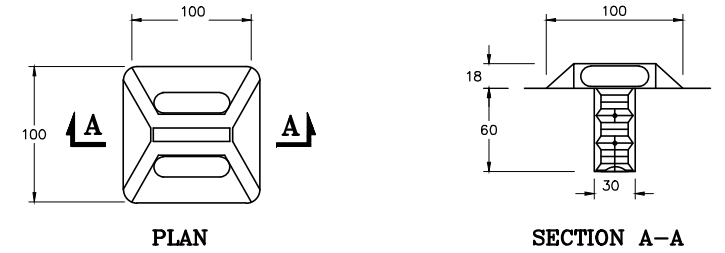


ENTRANCE NOSE DETAIL



REFER PAGE 3-134 OF AASHTO 2011

PAVEMENT REDUCTION MARKING







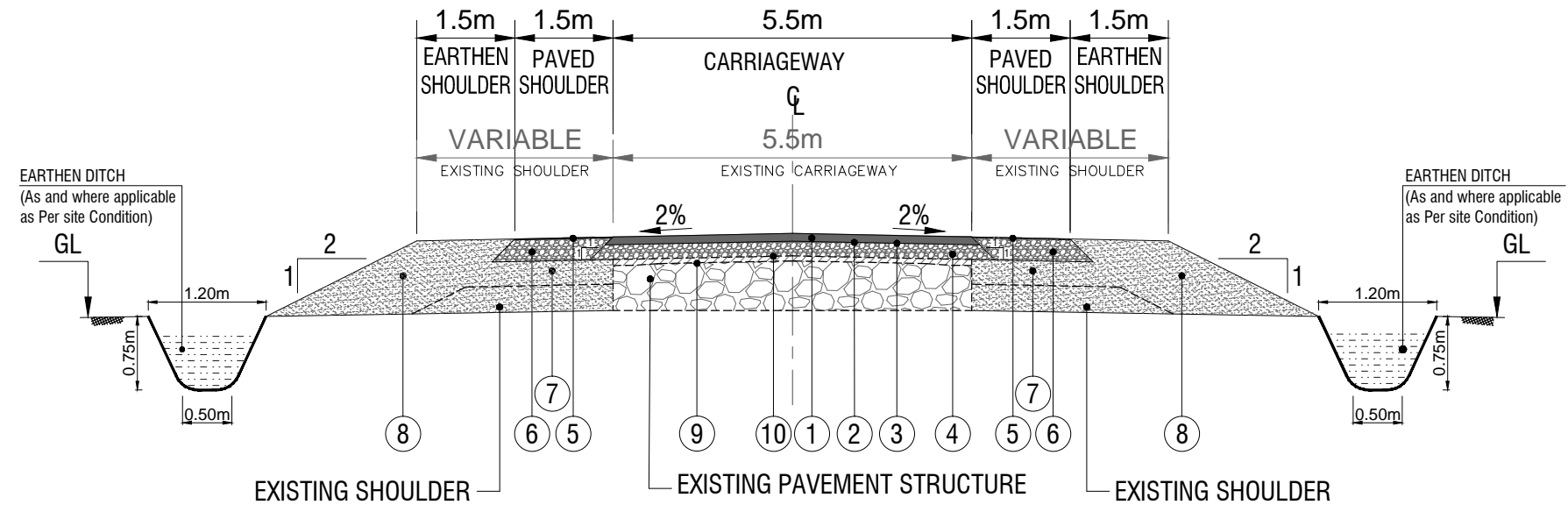
REFLECTORISED PAVEMENT STUD
(RAISED PROFILE TYPE)

SCALE NTS

NOTES:

- 1) THE MATERIAL TO BE USED FOR CARRIAGEWAY MARKINGS SHALL BE OF APPROVED TYPE AND QUALITY.
- 2) PROPER VISIBILITY OF ALL SIGNS & MARKINGS AT ALL TIMES DURING THE DAY AND NIGHT SHALL BE ENSURED.
- 3) ROAD STUDS SHALL ALSO BE PROVIDED AT INTERSECTIONS AS SHOWN ON PLANS AND AS DIRECTED BY THE ENGINEER.

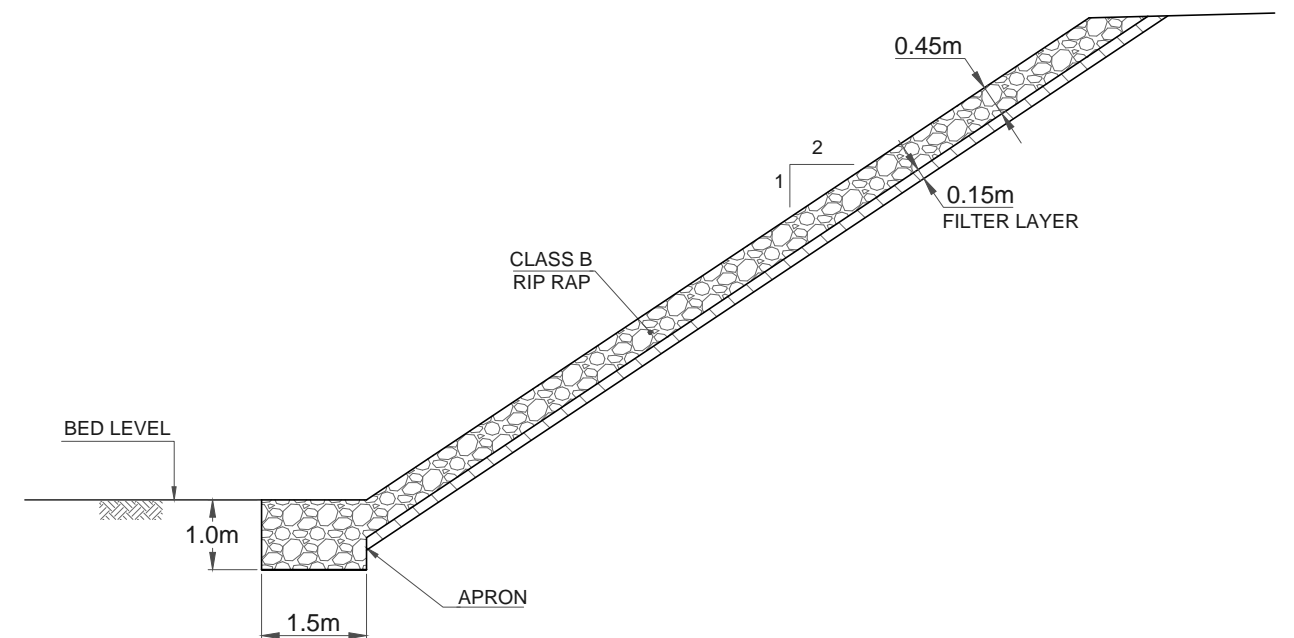
CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- TITLE:- DETAILS OF MERGING/DIVERGING	ED.NO.	DATE	DESCRIPTION	DRAWN: N. SAQIB SIDDIQUI	DRAWING NO. GEN-08
							DESIGNED: HINA ZEESHAN	
EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Scale:- N.T.S.
							DATE: JUNE, 2023	Edition. 0







NOTES :-

1. ASPHALT CONCRETE WEARING COURSE (CLASS A) 5cm
2. TACK COAT.
3. SINGLE SURFACE TREATMENT.
4. WATER BOUND MACADAM 25cm
5. TRIPLE SURFACE TREATMENT.
6. WATER BOUND MACADAM 15cm.
7. BORROW SOIL HAVING SOAKED CBR 8% & PI NOT GREATER THAN 6% 30cm
8. EARTHEN SHOULDER.
9. EXISTING ROAD BITUMINOUS SURFACING IS TO BE SCARIFIED AND REMOVED THE EXPOSED SURFACE AFTER SCARIFICATION SHALL BE COMPACTED TO SPECIFIED DENSITY.
10. IN STRETCHES / SEGMENTS WHERE THERE IS NO EXISTING BITUMINOUS SURFACING AS THE SAME HAS BEEN WORN OUT,SKIN PATCHES OF TRANSPORTED CONTAMINATED SOIL IS TO REMOVED FROM SURFACE AND COMPACTED TO SPECIFIED DENSITY.
11. ALL DIMENSIONS ARE IN METER EXCEPT OTHER WISE MENTIONED.

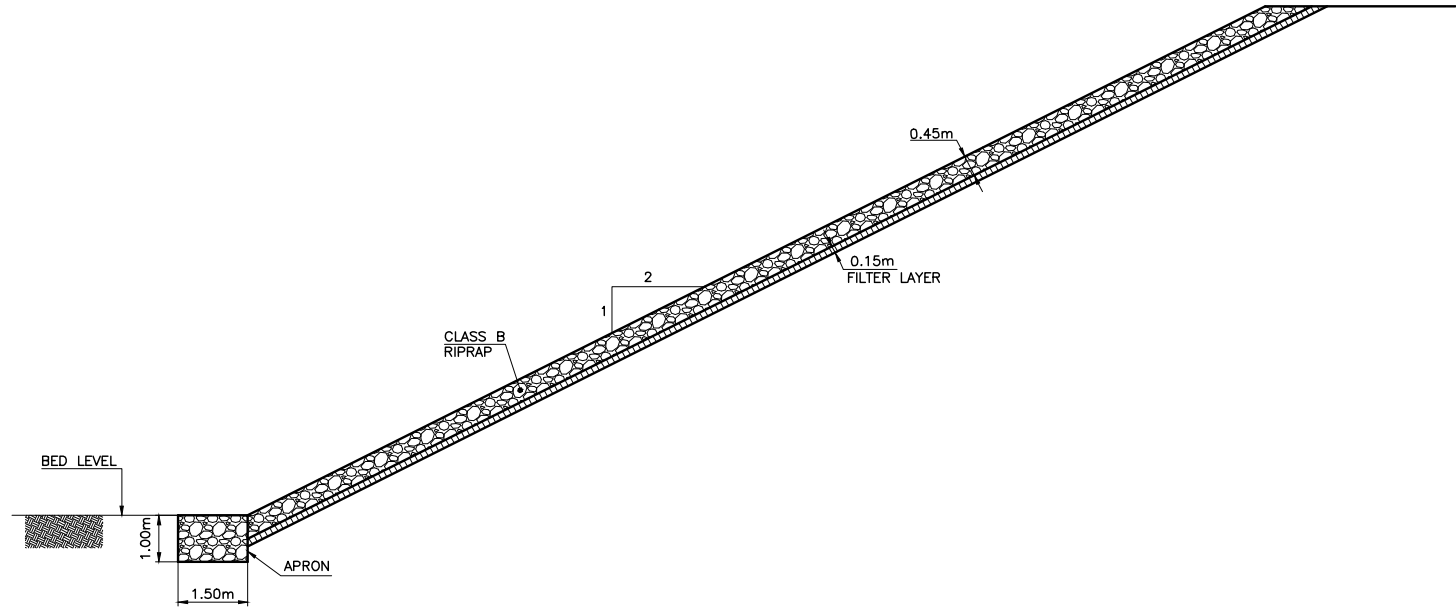
* REMOVAL OF BRICK EDGING SHALL BE CARRIED OUT AND PAID IN SHOULDER EXCAVATION



TYPICAL SECTION OF PROTECTION WORKS

<div>CLIENT:-</div> <div>Asian Development Bank</div>	<div>PROJECT:-</div> <div>LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)</div>	<div>DESIGN CONSULTANT</div> <div> In association with </div>	<div>PROJECT ROAD:-</div> <div>SB - 2</div> <div>Improvement / Rehabilitation of road from 60th mile to connect 3 Chak via 68th mile and Chaudhary Nazeer road</div>	<div>ED.NO.</div>	<div>DATE</div>	<div>DESCRIPTION</div>	<div>DRAWN:</div> <div>M. NOMAN SIDDIQUI</div>	<div>DRAWING NO.</div> <div>SB-2</div>
<div>EXECUTING AGENCY:-</div> <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>			<div>TITLE:-</div> <div>TYPICAL CROSS SECTION 0+000 TO END REHABILITATION (5.5m)</div>				<div>DESIGNED:</div> <div>ANDLEEB</div>	<div>Scale:-</div> <div>N.T.S.</div>
							<div>CHECKED:</div> <div>BUX ALI ABRO</div>	<div>Edition.</div> <div>0</div>
							<div>DATE:</div> <div>JULY, 2023</div>	

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NOTES :-

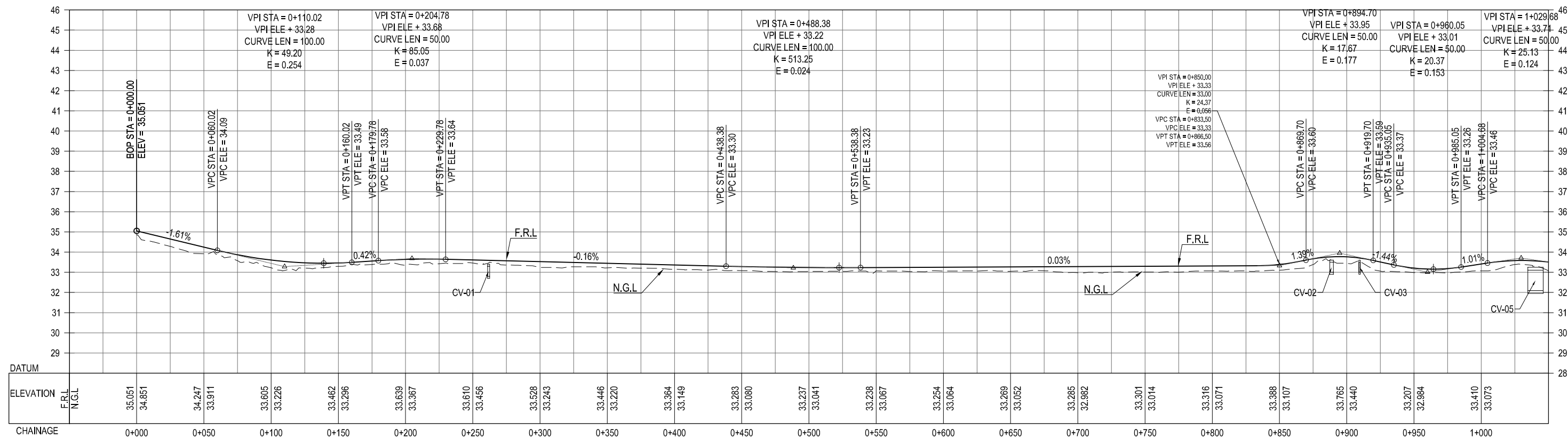
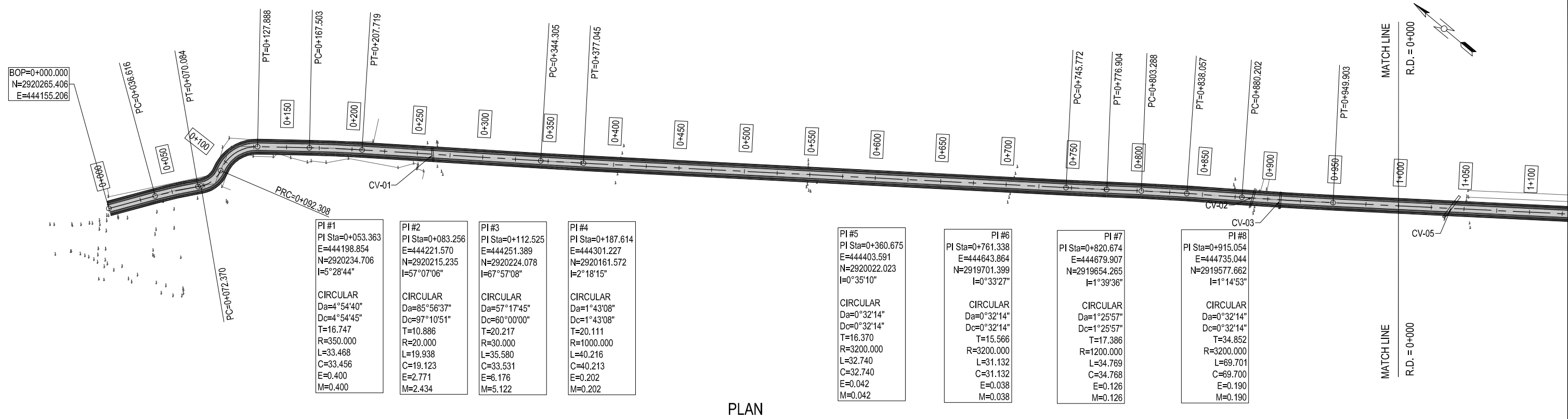
- 1. PROTECTION WORK SHALL BE APPLICABLE ON REACHES WHICH WILL BE IDENTIFIED IN THE HYDROLOGY REPORT AND AROUND ENTRY AND EXIT OF CULVERT/BRIDGES.
- 2. ALL DIMENSIONS ARE IN METERS EXCEPT OTHERWISE MENTIONED.





TENTATIVE SCHEDULE			
FROM	TO	SIDE	REMARKS
-	-	-	-

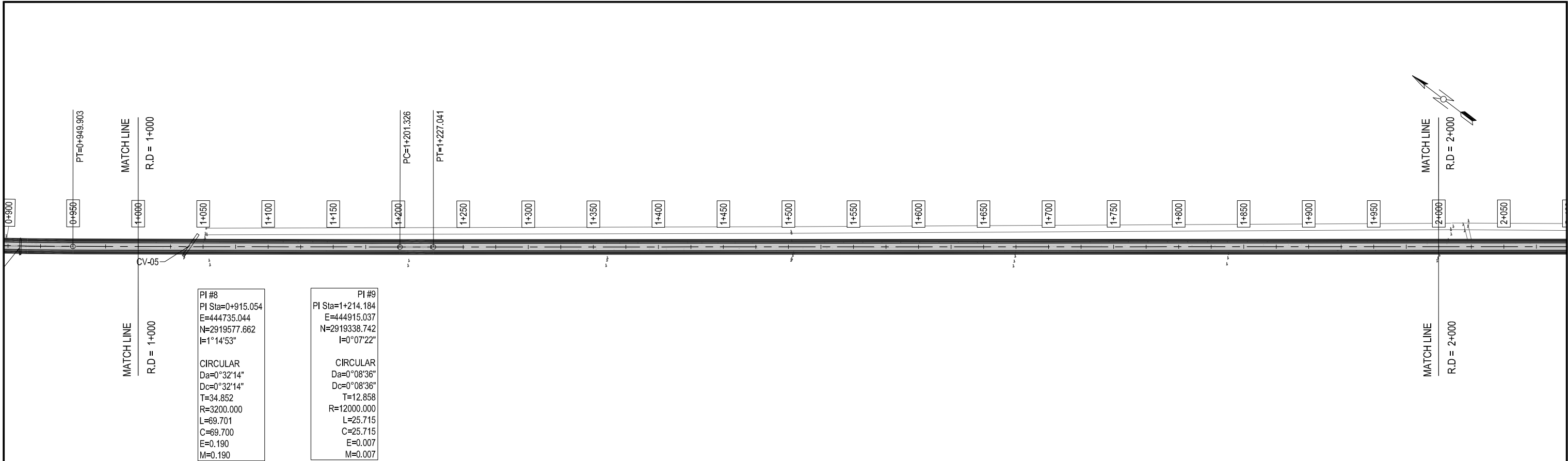
CLIENT:- <div>Asian Development Bank</div>	PROJECT:- LOAN NO. 4279 (COL): EMERGENCY FLOOD ASSISTANT PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- SB - 2 Improvement / Rehabilitation of road from 60th Mile to connect 3 Chak via 68th Mile and Chaudhary Nazeer road	ED. NO.	DATE:-	DESCRIPTION	DRAWN:- N.SAQIB SIDDIQUI	DRAWING NO. PW-SB-2
							DESIGN:- HINA ZEESHAN	Scale:- N.T.S.
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>			TITLE:- PROTECTION WORK SCHEDULE				CHECKED:- NAVEED HASSAN	Edition:-
							DATE:- JUNE, 2023	0

PLAN & PROFILE DRAWINGS

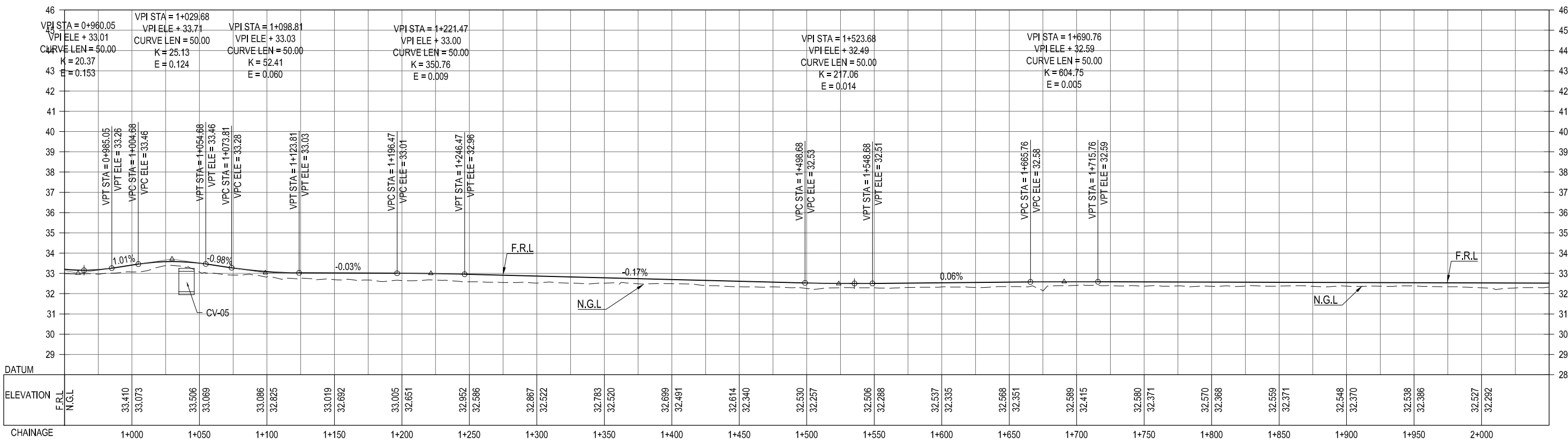
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CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 0+000 TO 1+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-01
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EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Scale:- H=1:2000 V=1:20
							DATE: JULY, 2023	Edition.



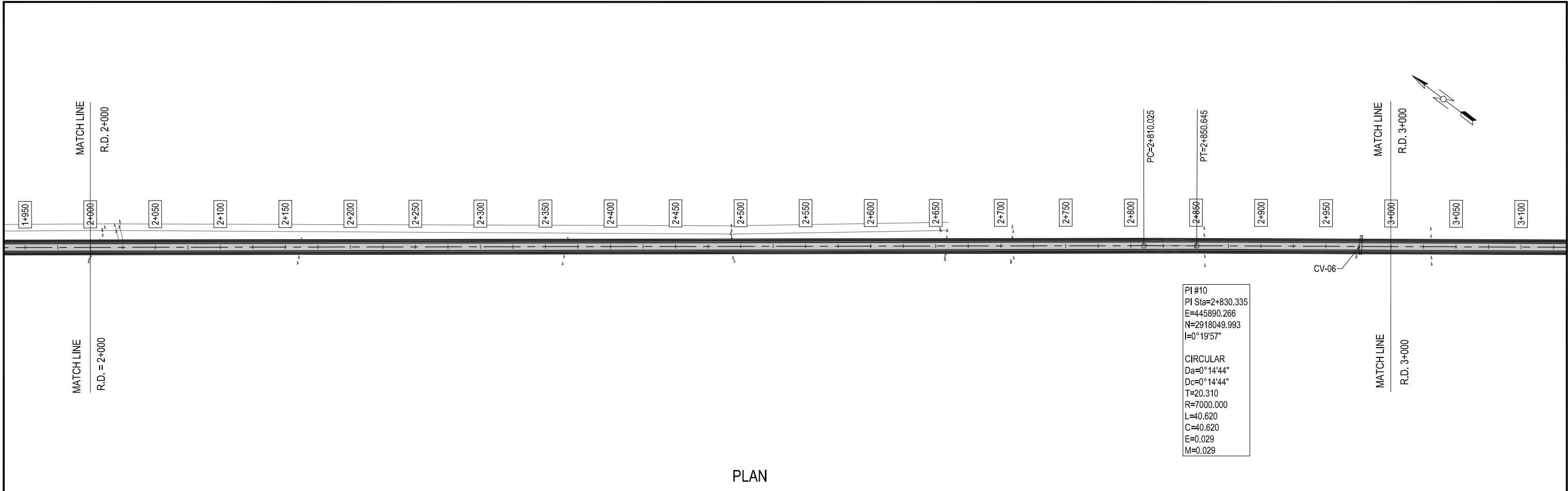
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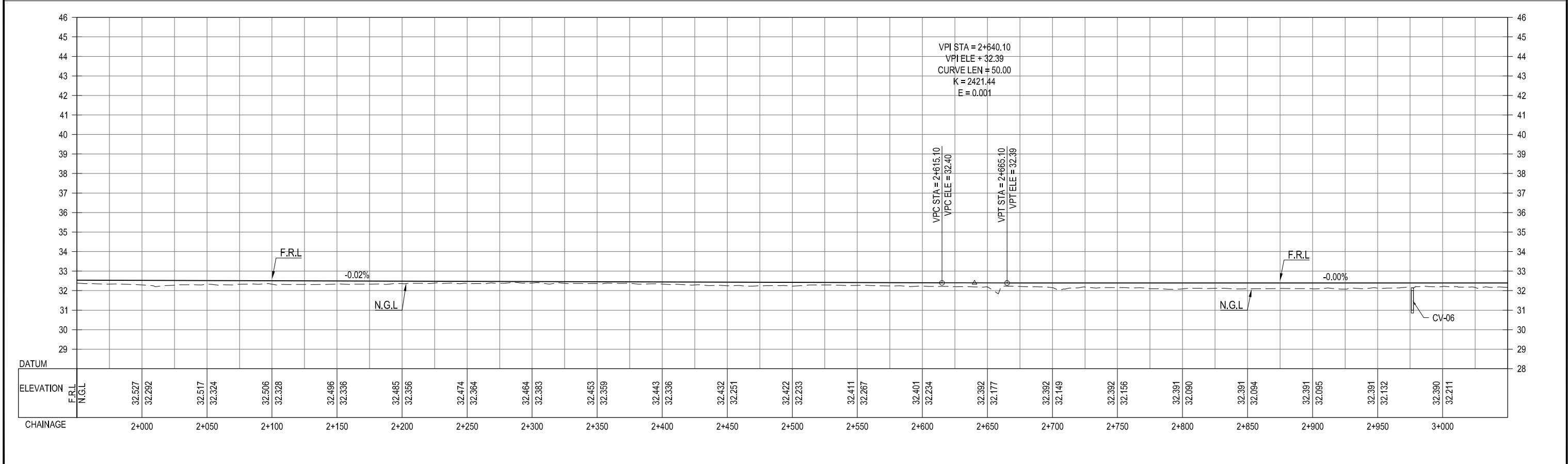
PROFILE

CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 1+000 TO 2+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-02
							DESIGNED: HINA ZEESHAN	Scale:- H=1:2000 V=1:20
EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Edition.
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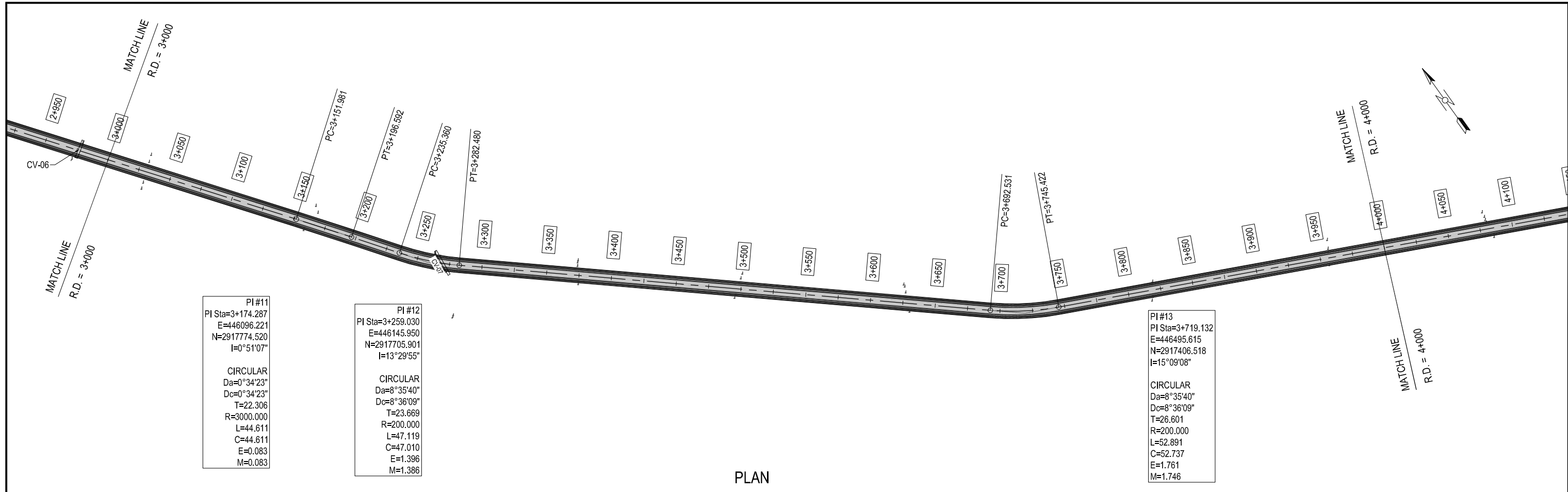
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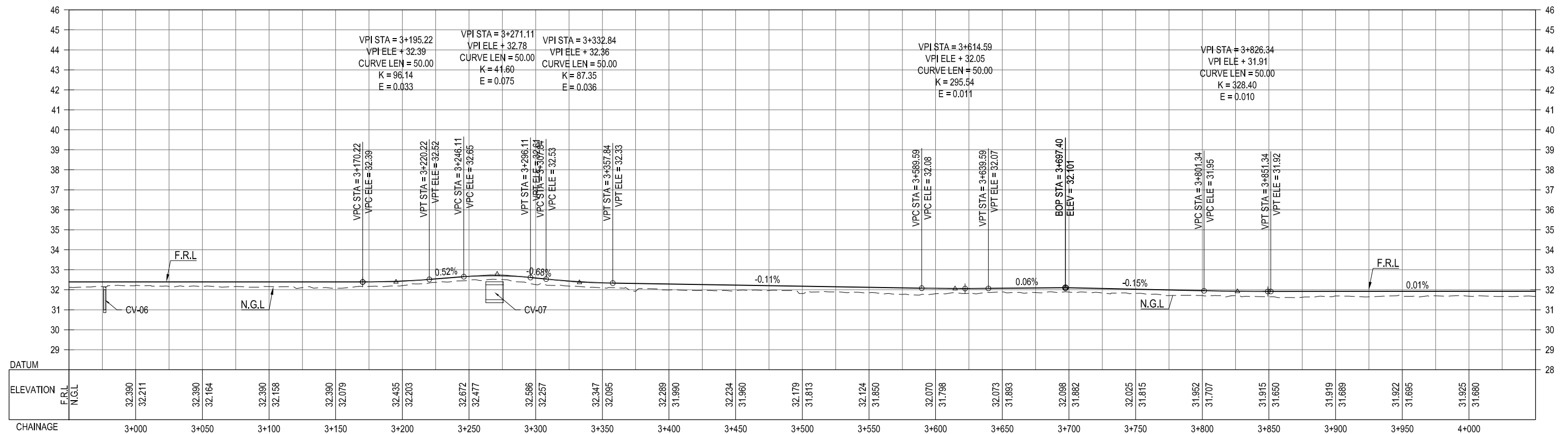
PROFILE

CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 2+000 TO 3+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-03
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EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Edition. 0
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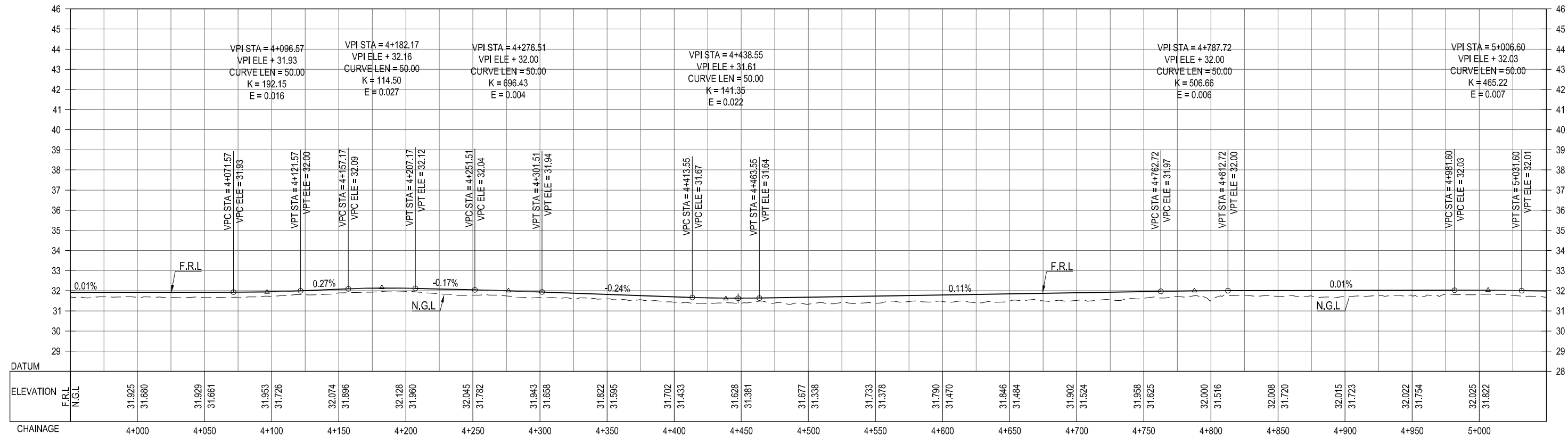
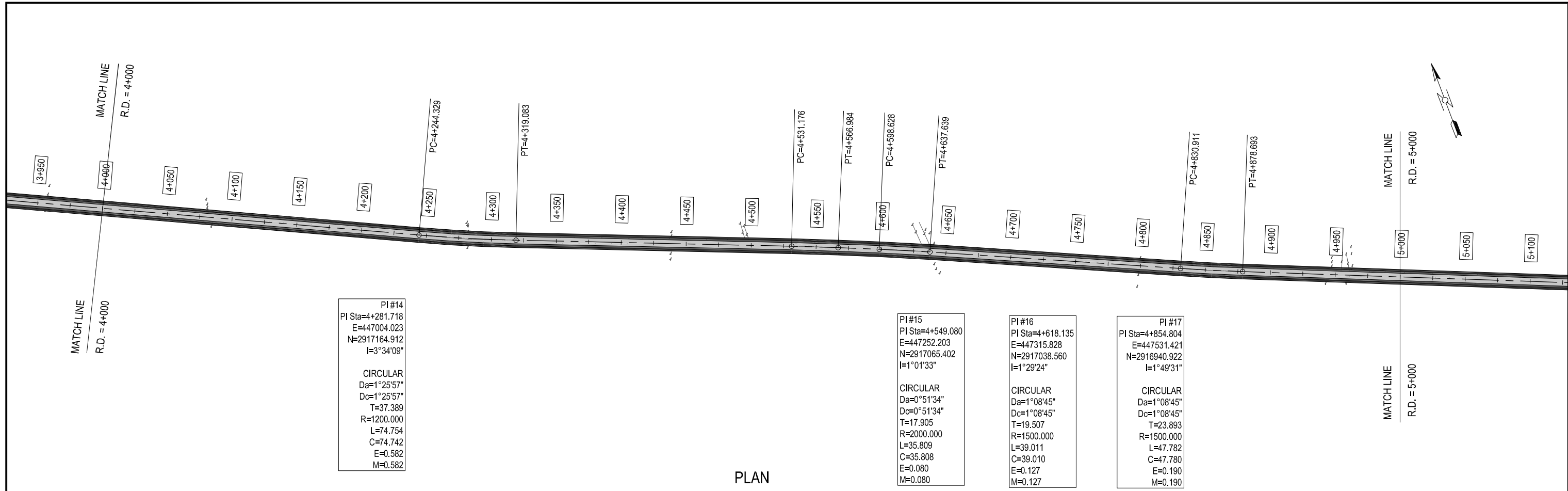
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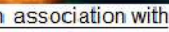



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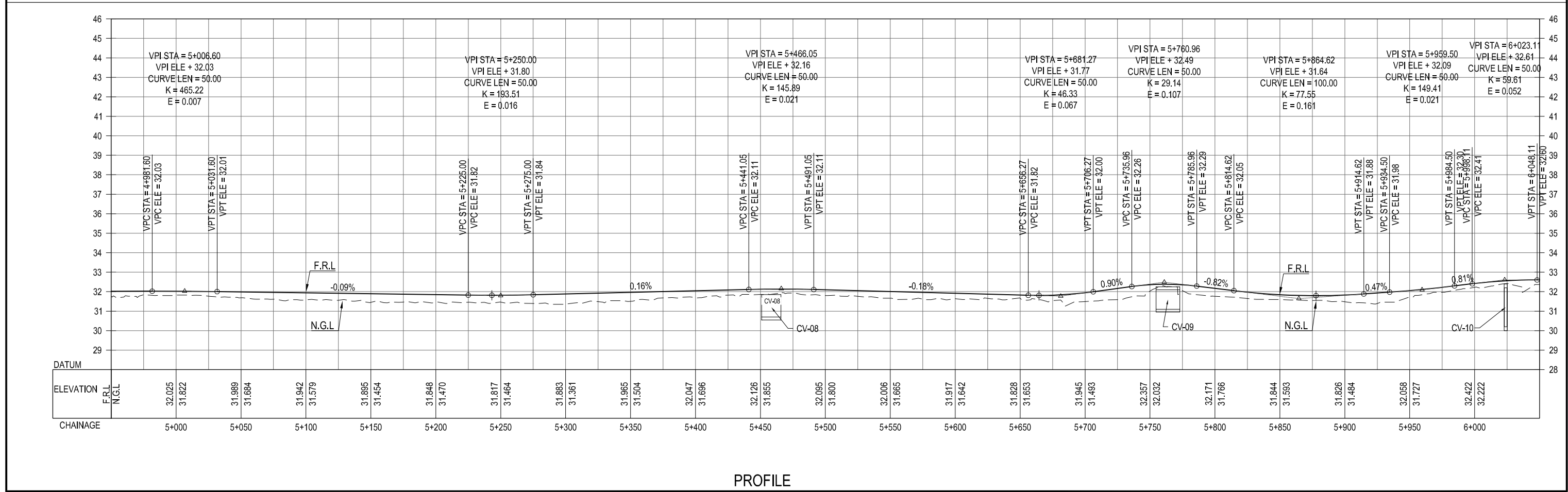
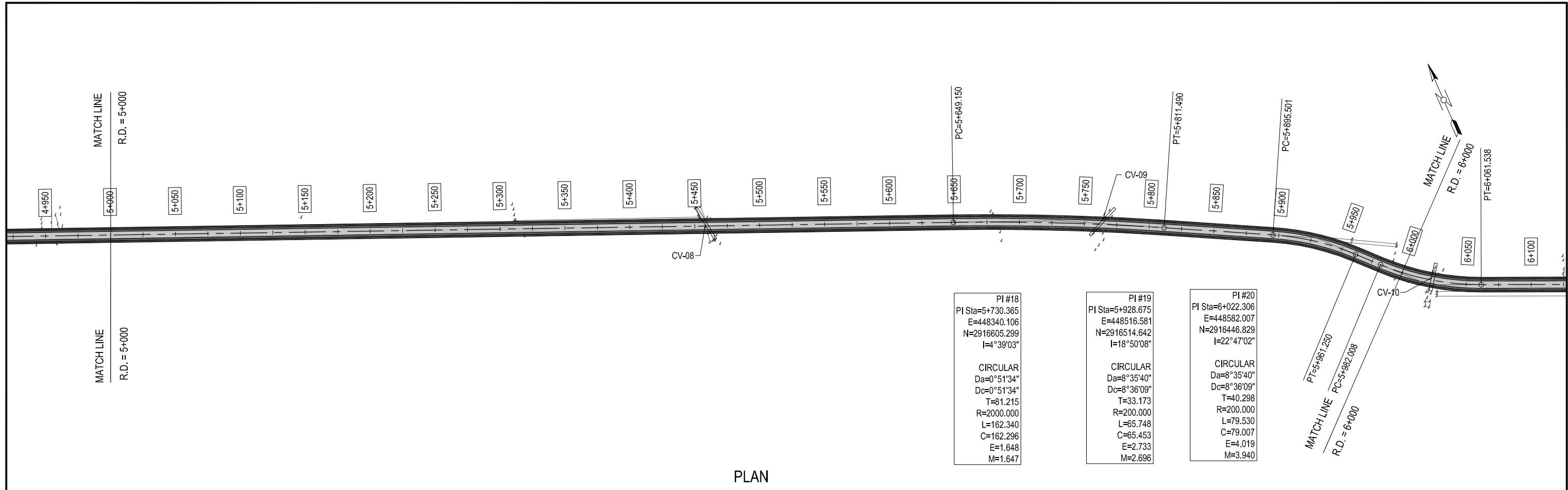
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EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Scale:- H=1:2000 V=1:20 Edition. 0
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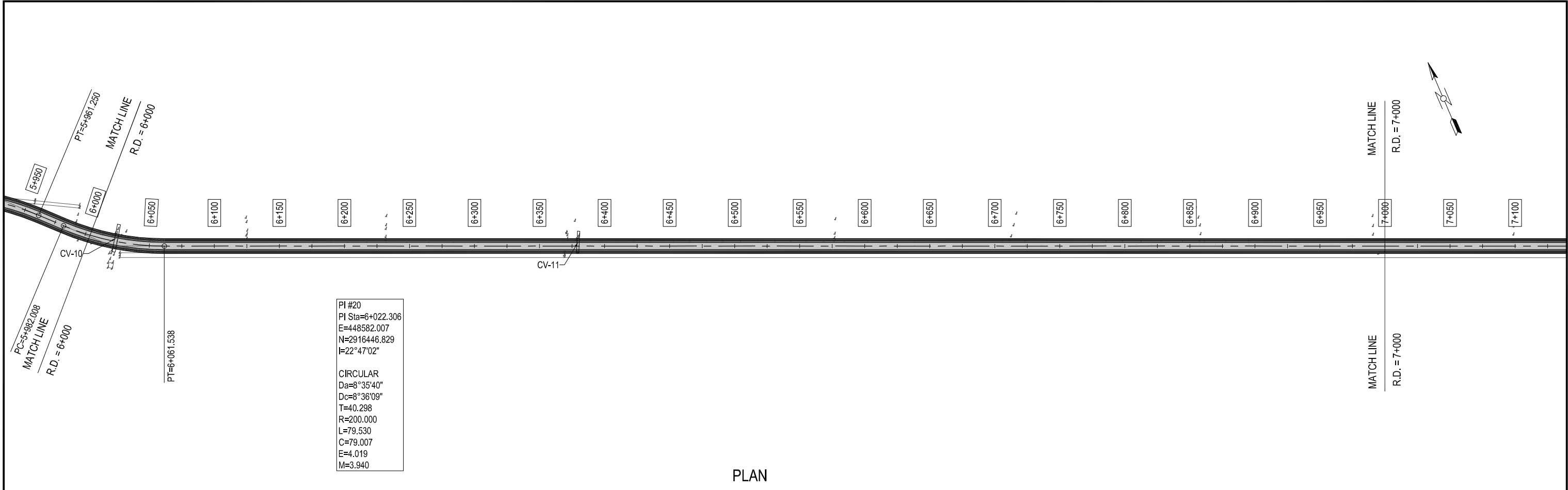


CLIENT:- <div>Asian Development Bank</div>	PROJECT:- <div>LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)</div>	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- <div>SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD</div>	ED.NO.	DATE	DESCRIPTION	DRAWN: <div>JUNAID</div>	DRAWING NO. <div>HWY-SB02-PP-05</div>
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>			TITLE:- <div>PLAN & PROFILE OF SB-02 CH: 4+000 TO 5+000</div>				DESIGNED: <div>HINA ZEESHAN</div>	Scale:- <div>H=1:2000 V=1:20</div>
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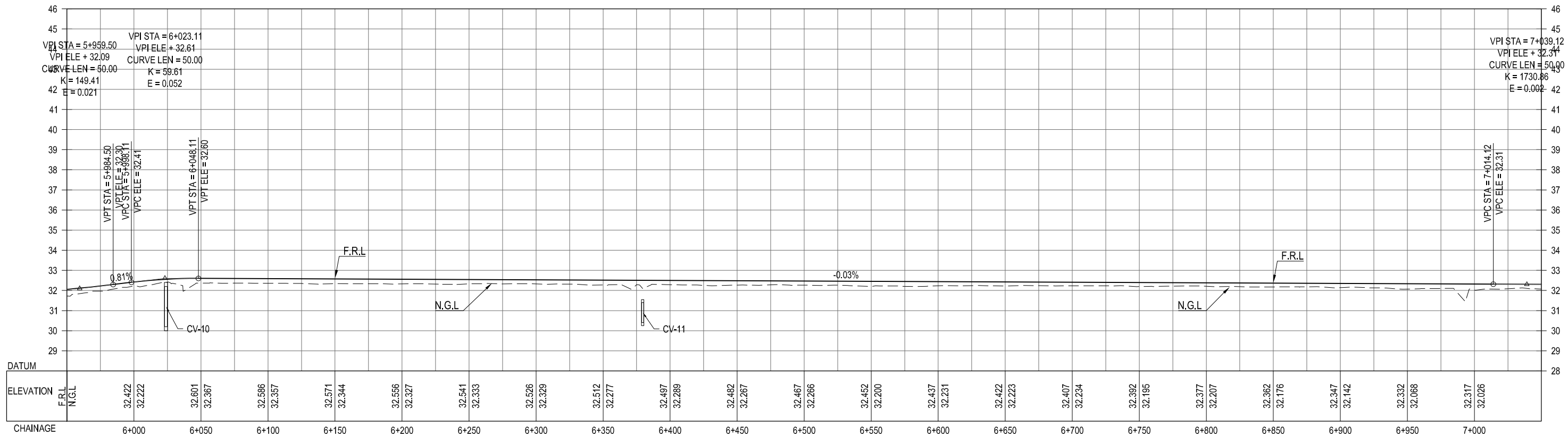
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
CLIENT:- <div>ADB Asian Development Bank</div>	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> <u>In association with</u> </div>	PROJECT ROAD:- <div>SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD</div>	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-06
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EXECUTING AGENCY:- <div> WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>			TITLE:- <div>PLAN & PROFILE OF SB-02 CH: 5+000 TO 6+000</div>				CHECKED: NAVEED HASSAN	Edition. 0
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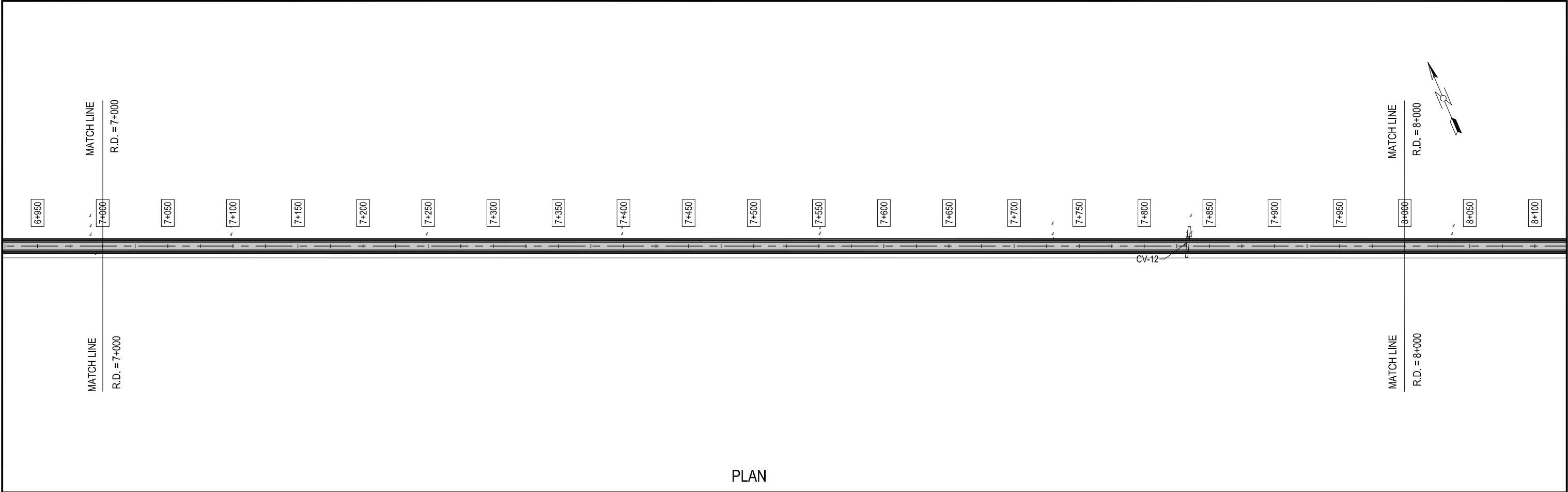
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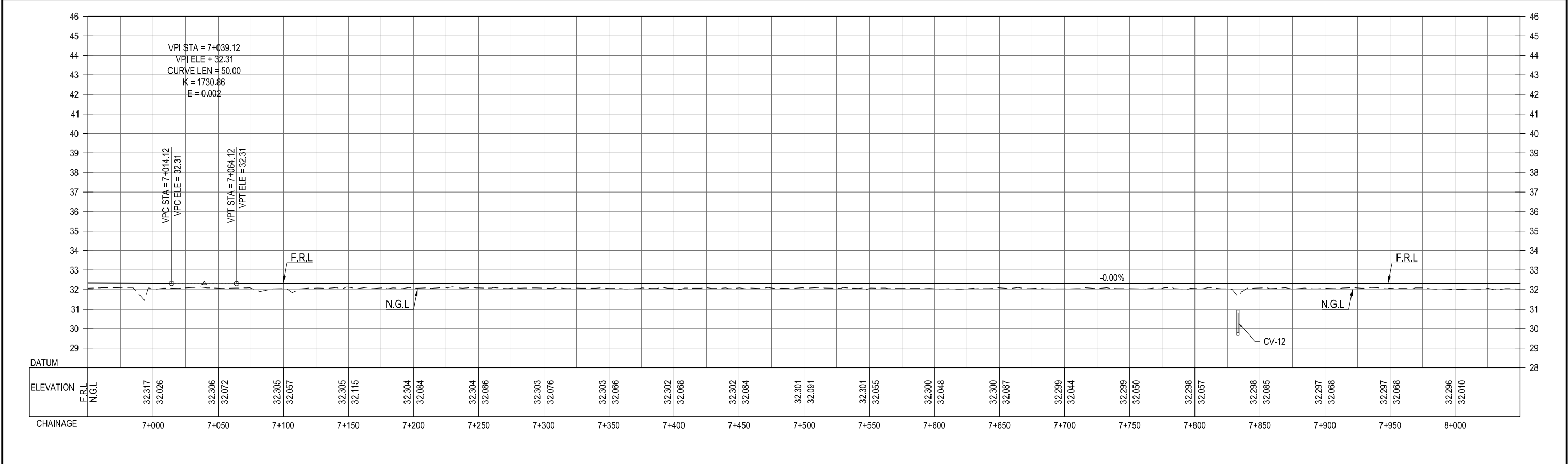
PROFILE

CLIENT:- <div>Asian Development Bank</div>	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-07
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>			TITLE:- PLAN & PROFILE OF SB-02 CH: 6+000 TO 7+000				DESIGNED: HINA ZEESHAN	Scale:- H=1:2000 V=1:20
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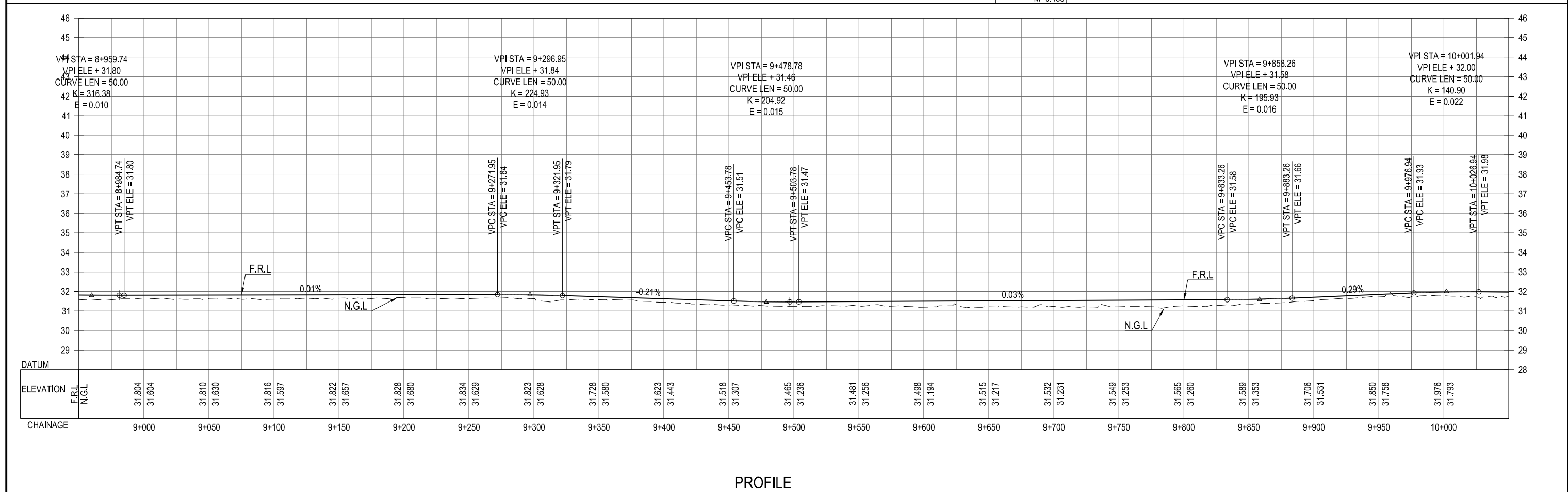
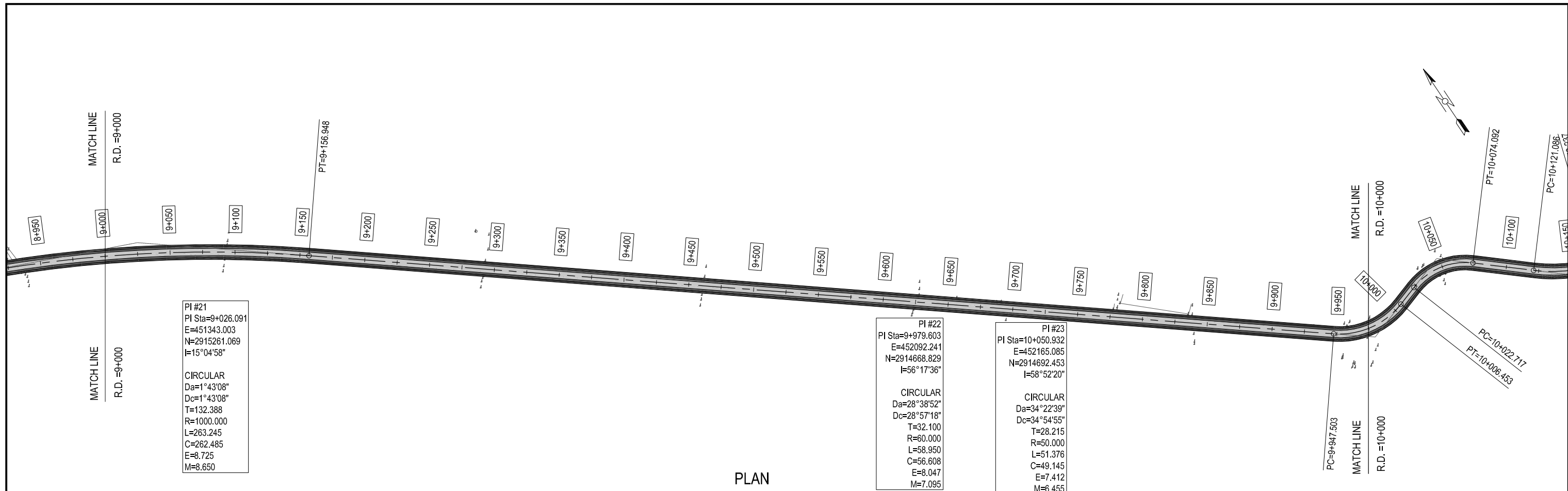






PLAN



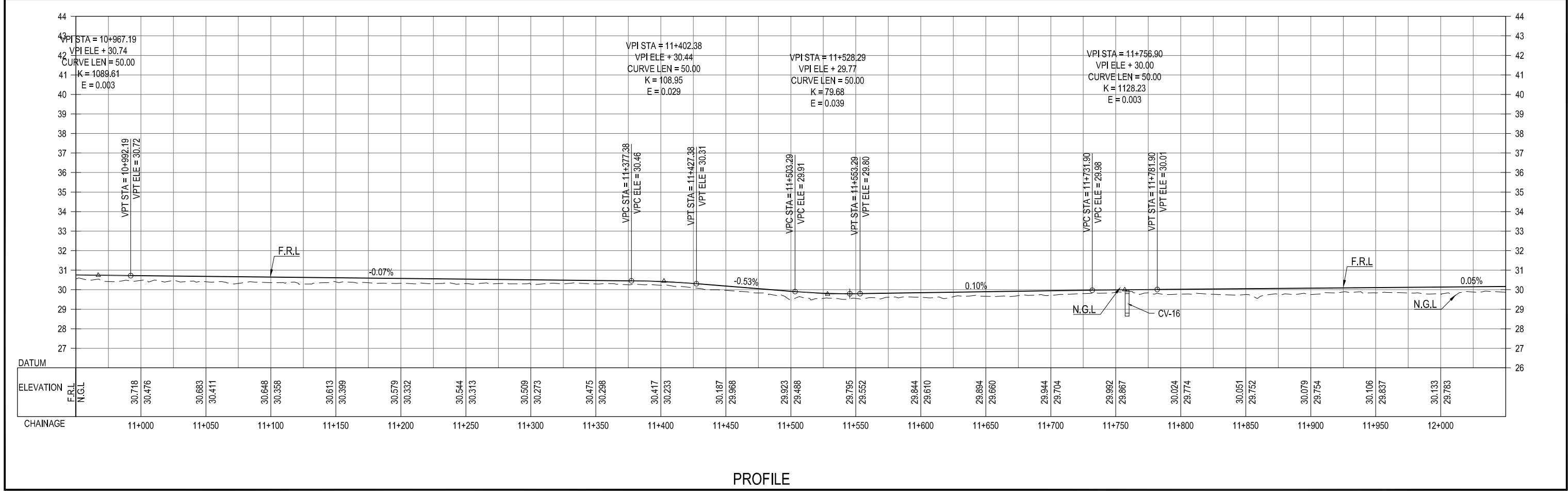
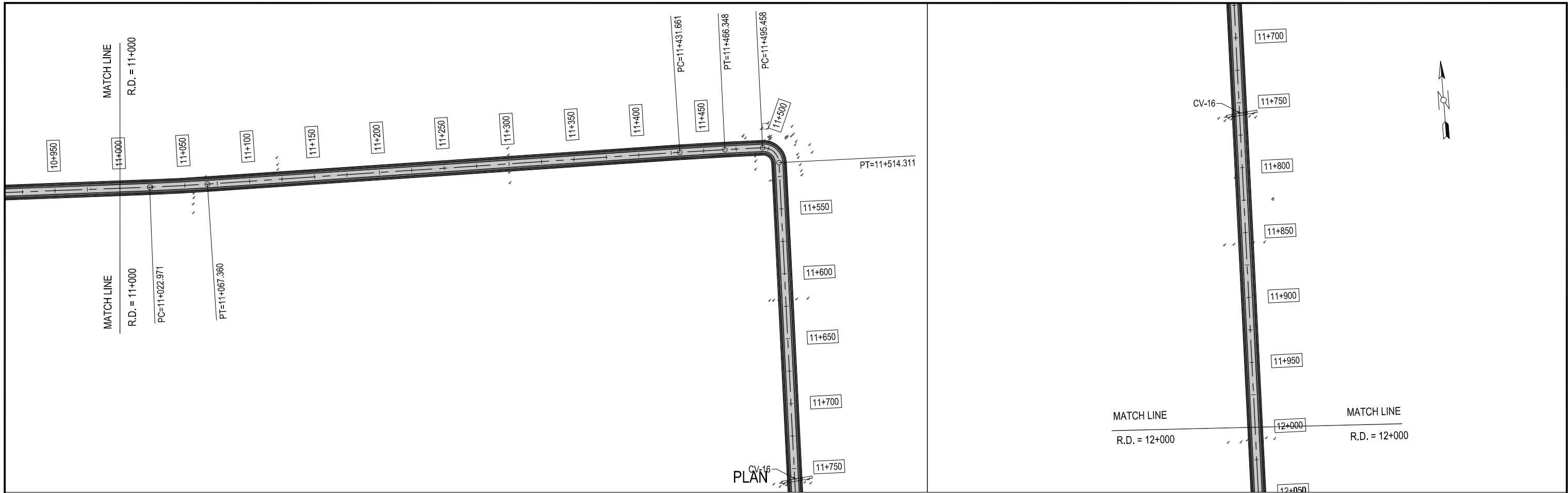
PROFILE





CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 7+000 TO 8+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-08
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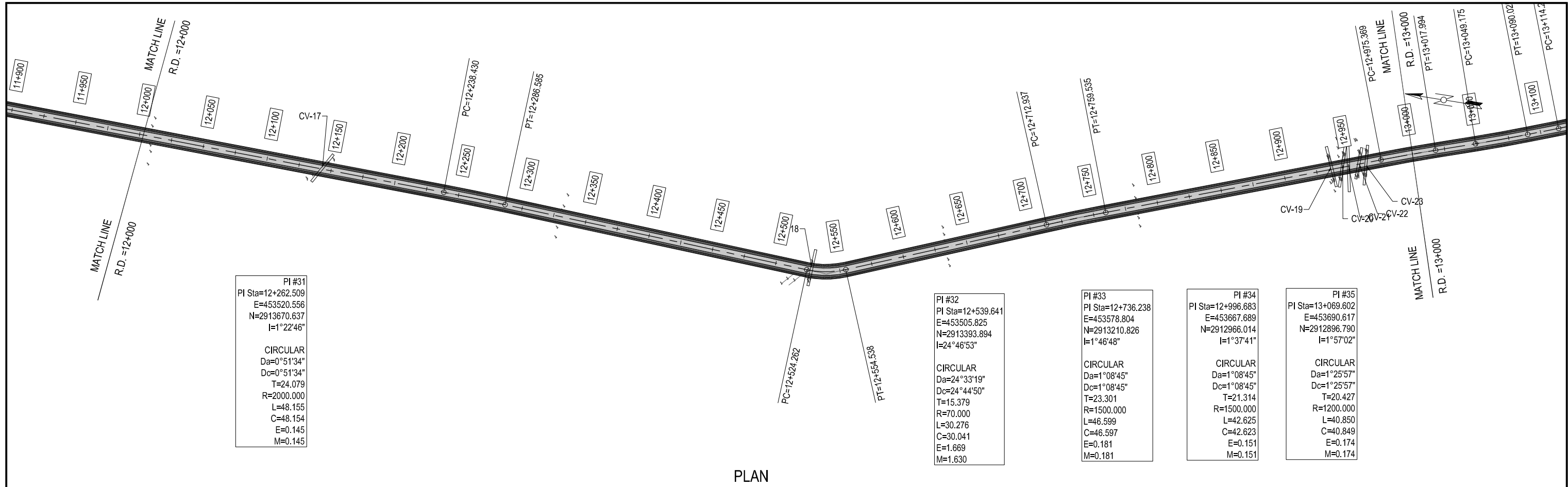
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			TITLE:- PLAN & PROFILE OF SB-02 CH: 9+000 TO 10+000						DESIGNED: HINA ZEESHAN	Scale:- H=1:2000 V=1:20
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>								CHECKED: NAVEED HASSAN	Edition. 0	
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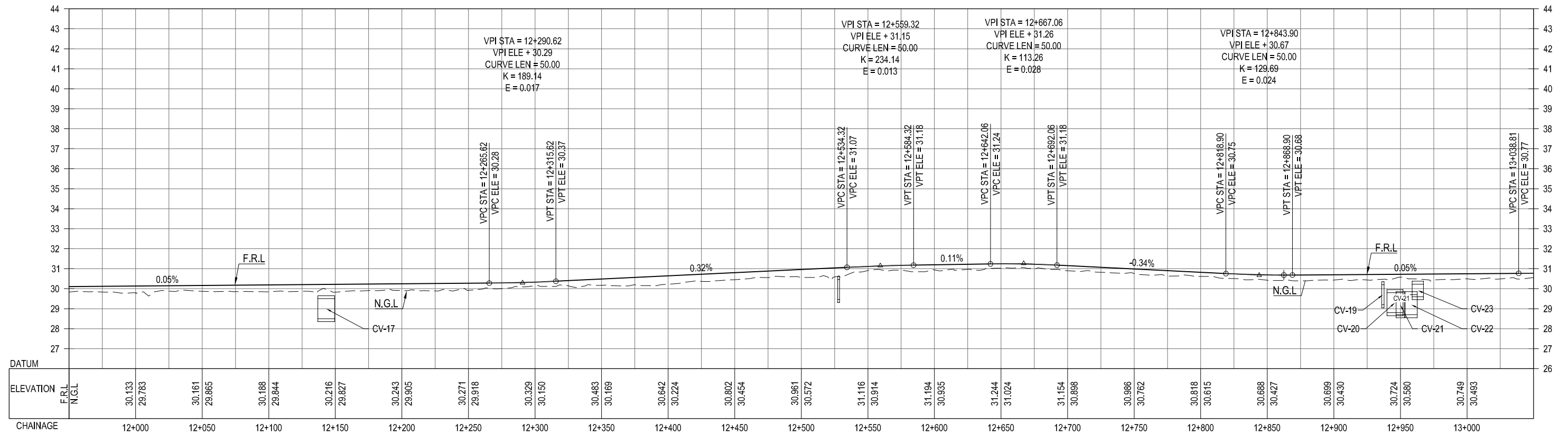


CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 11+000 TO 12+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-12
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EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Edition. 0
							DATE: JULY, 2023	





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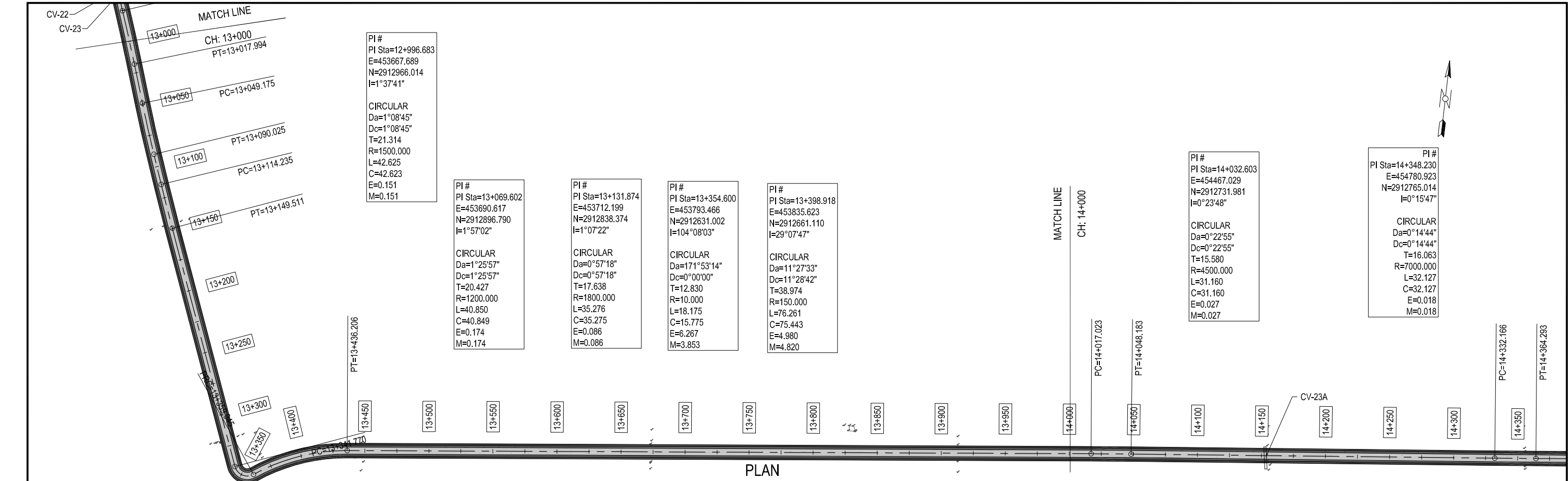


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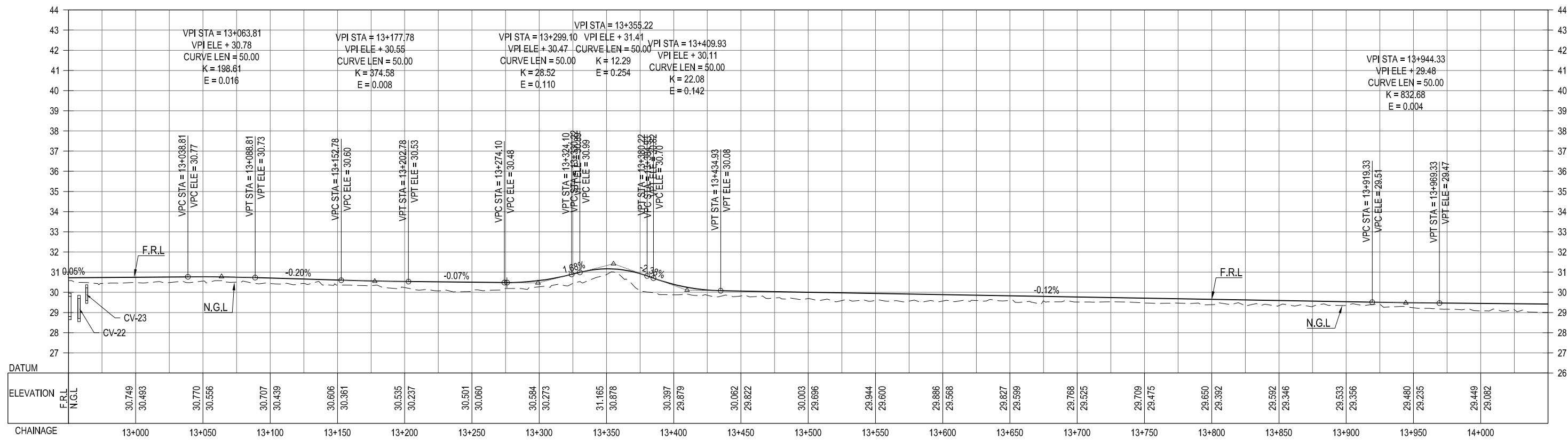


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CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 12+000 TO 13+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-13
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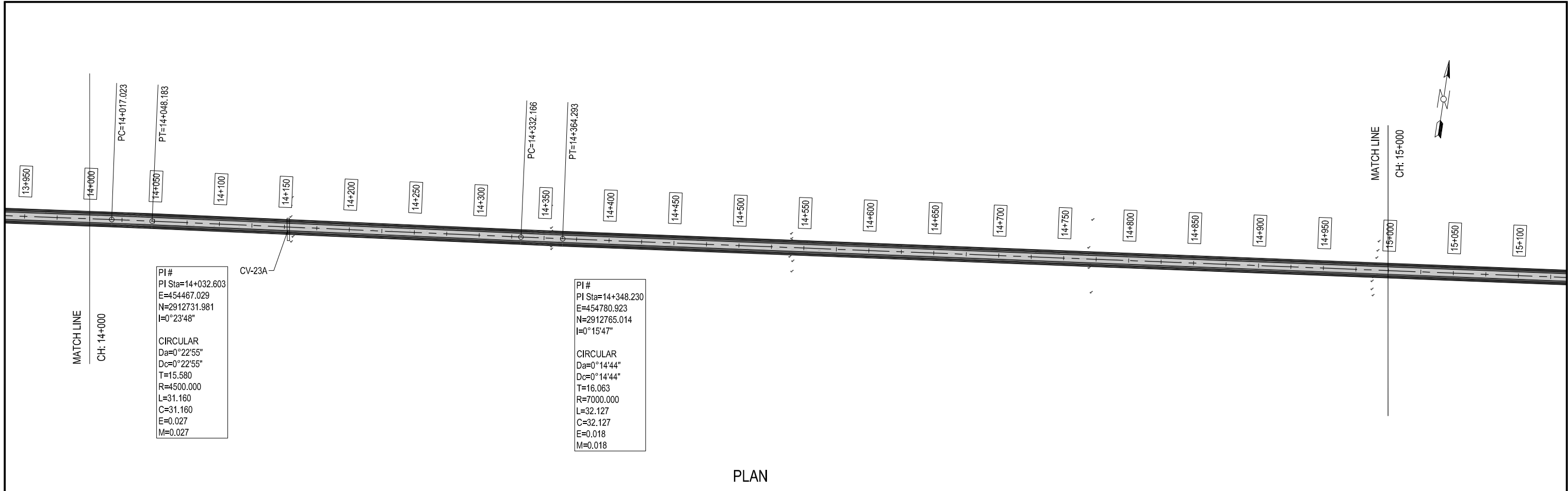


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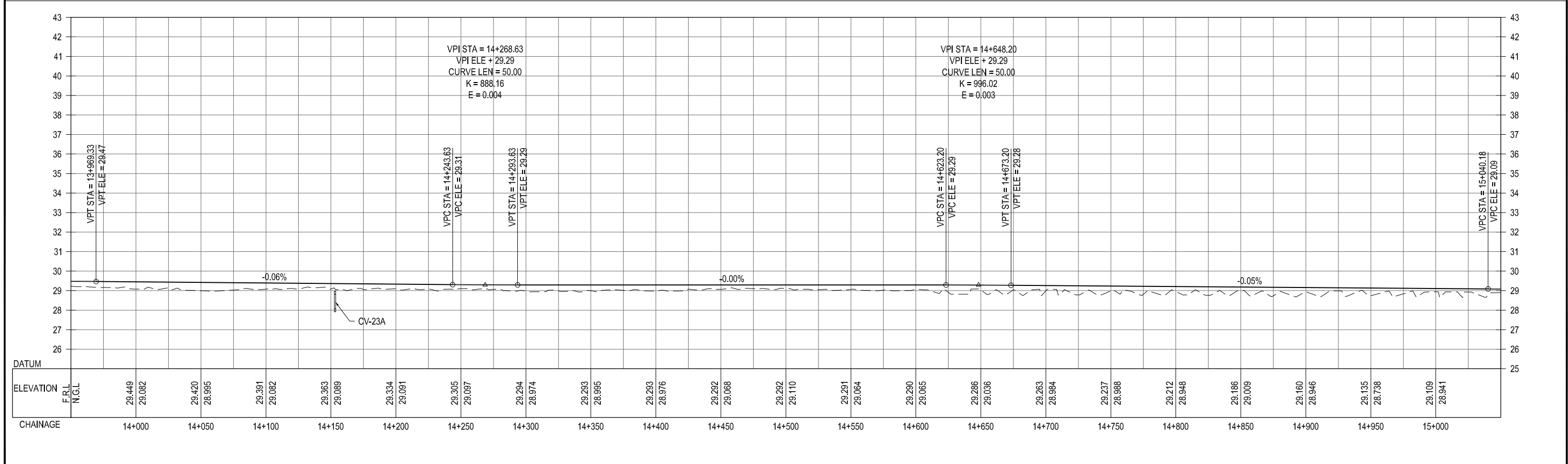
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CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 13+000 TO 14+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-14
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EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Scale:- H=1:2000 V=1:20
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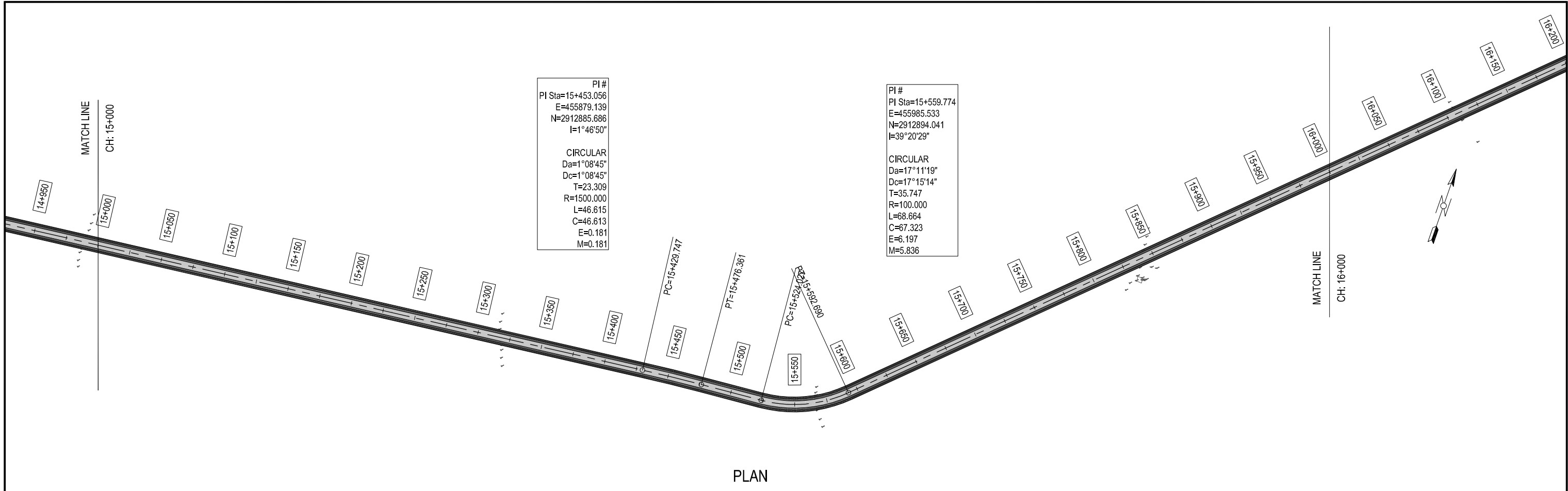
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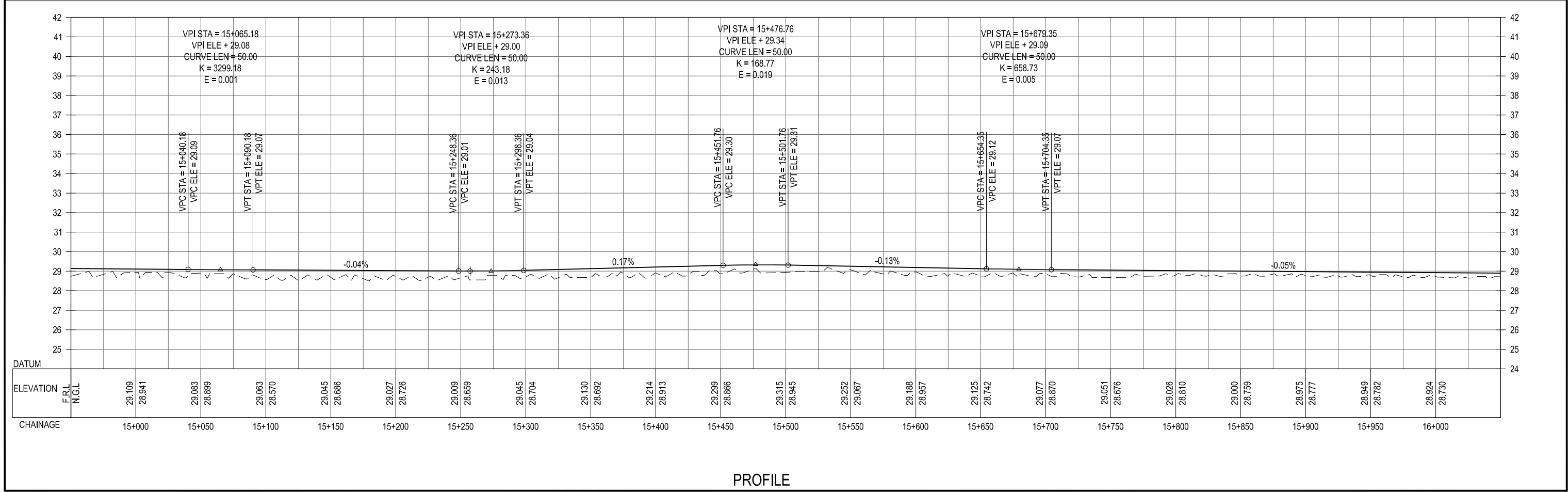
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CLIENT:-  Asian Development Bank		PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)		DESIGN CONSULTANT  In association with 		PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD		ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID		DRAWING NO. HWY-SB02-PP-15	
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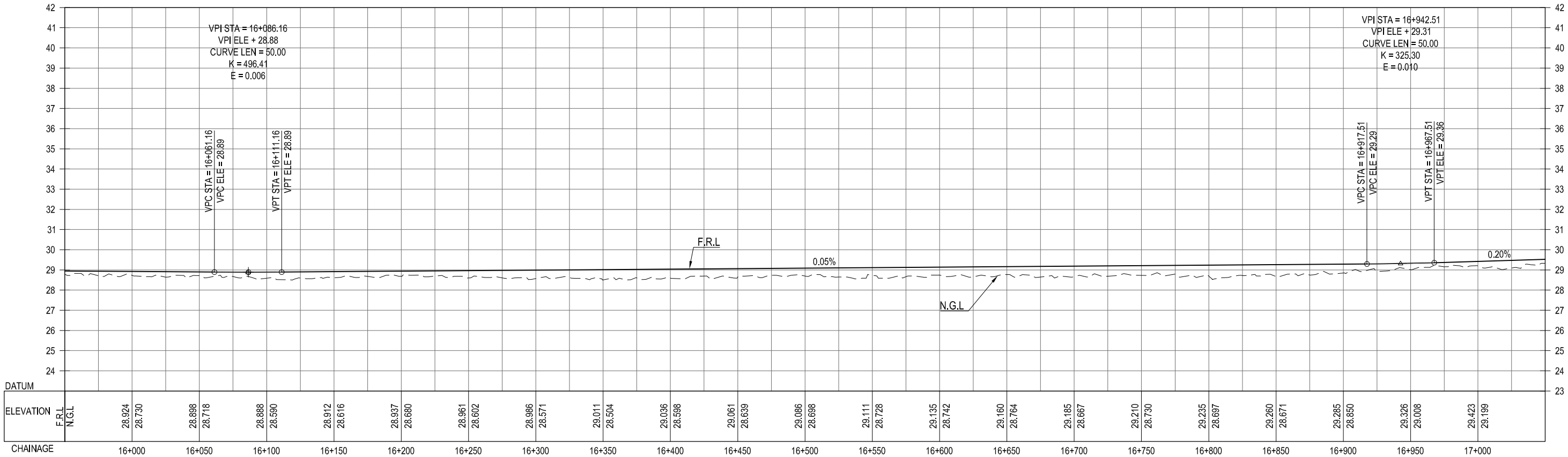
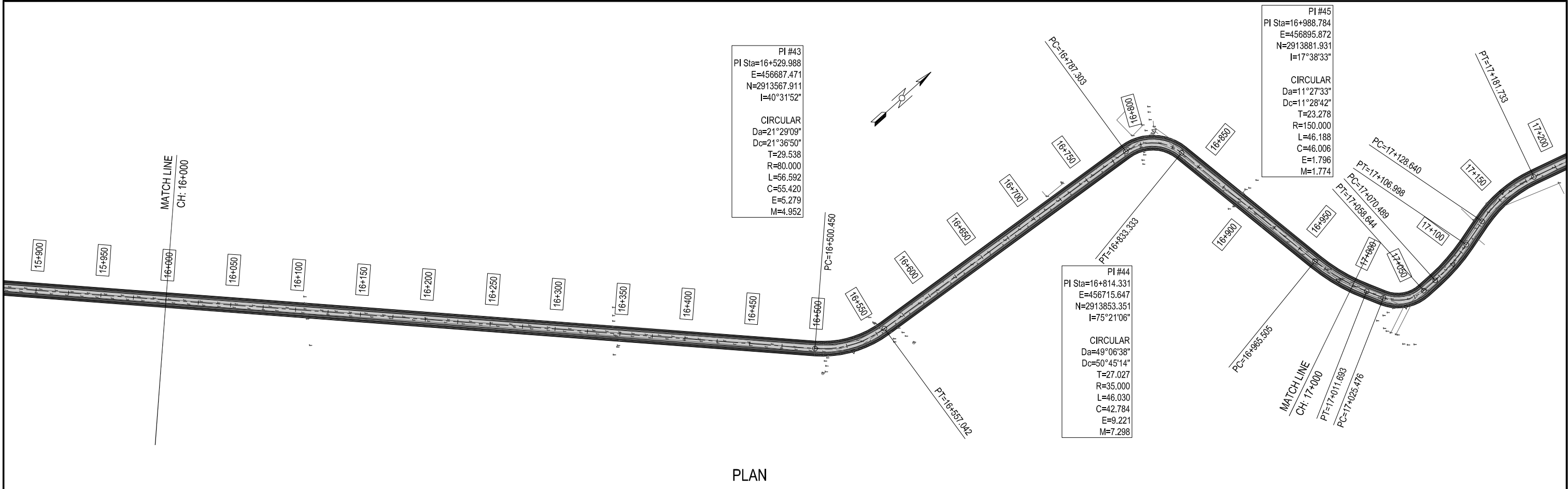





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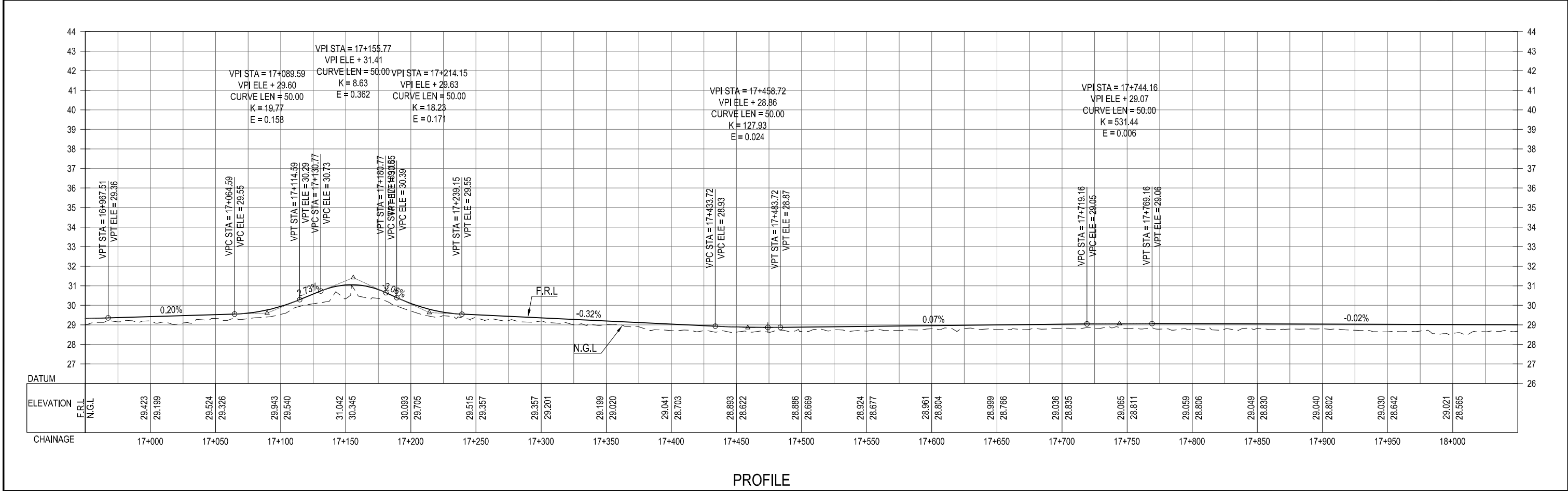
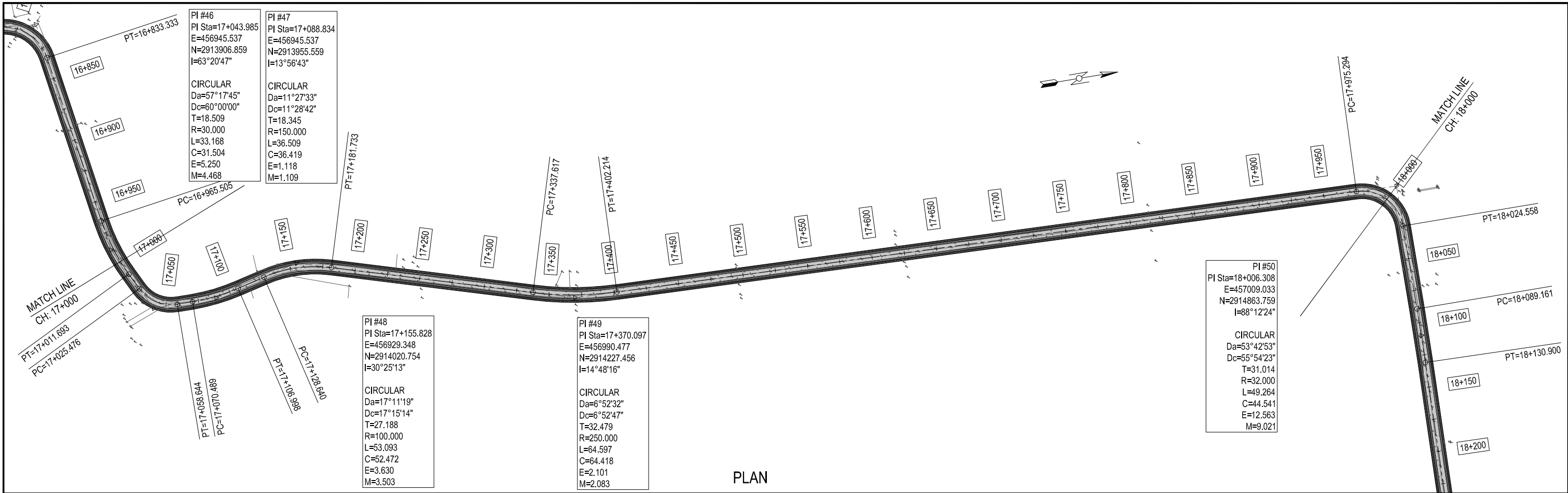
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CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL); EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 15+000 TO 16+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-16
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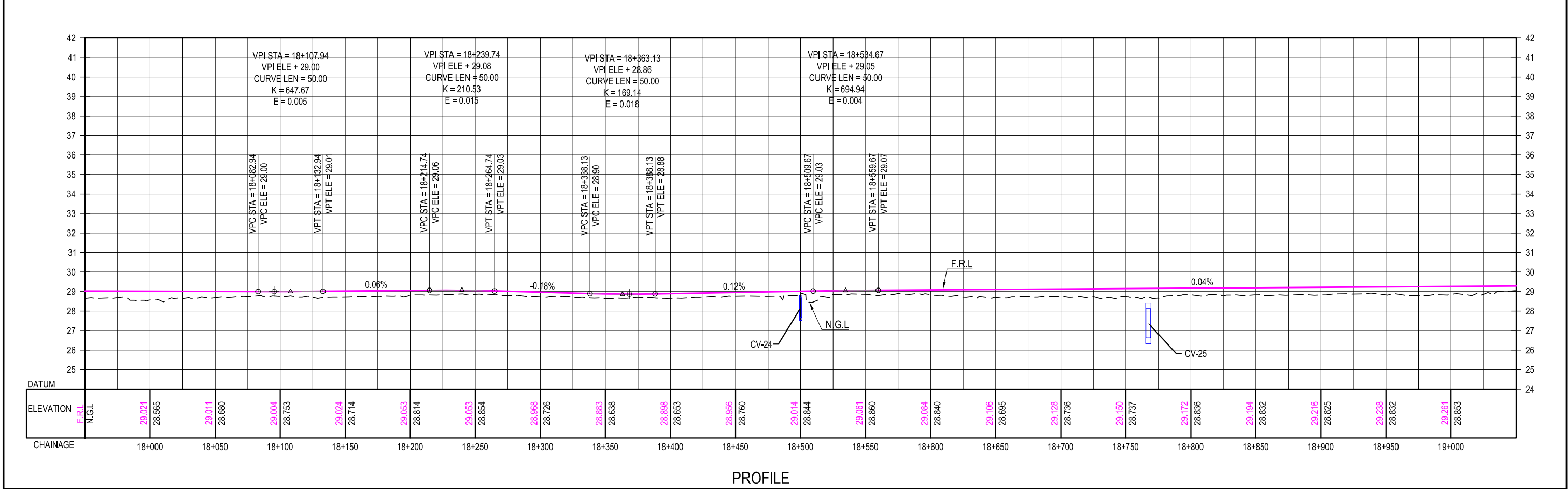
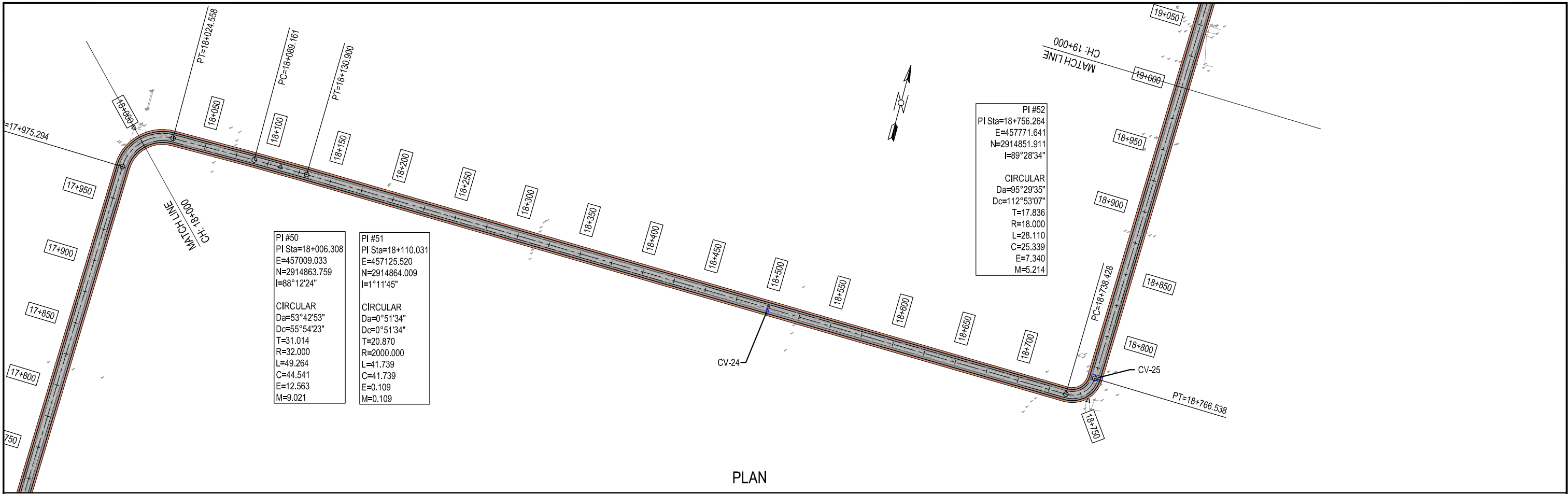
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Sun, 23 Jul 2023 - 4:47pm
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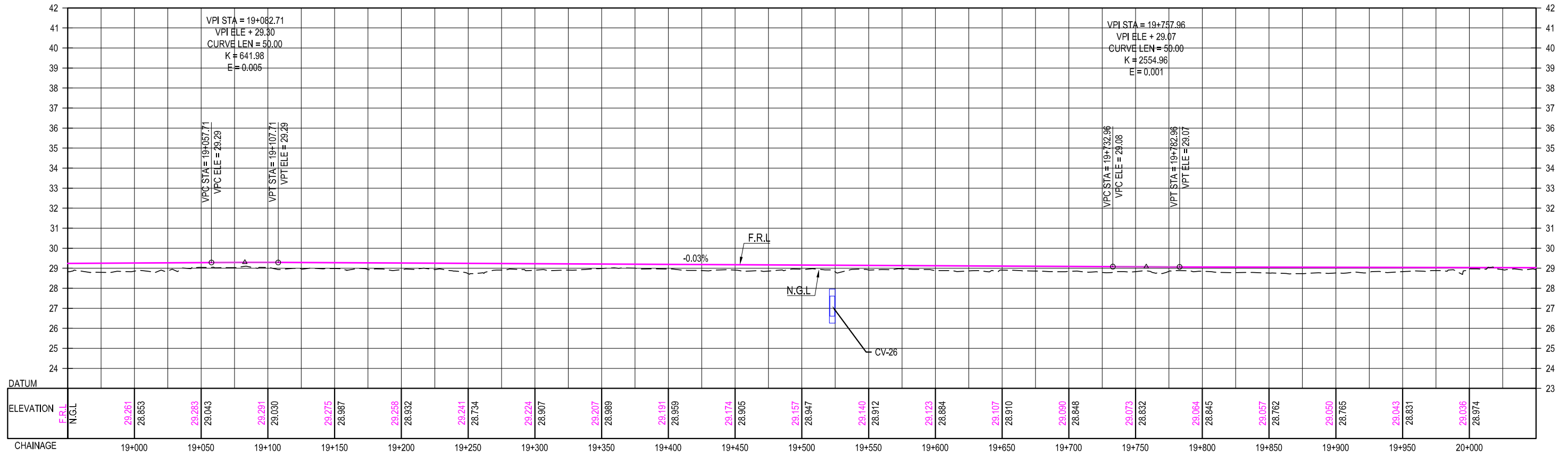
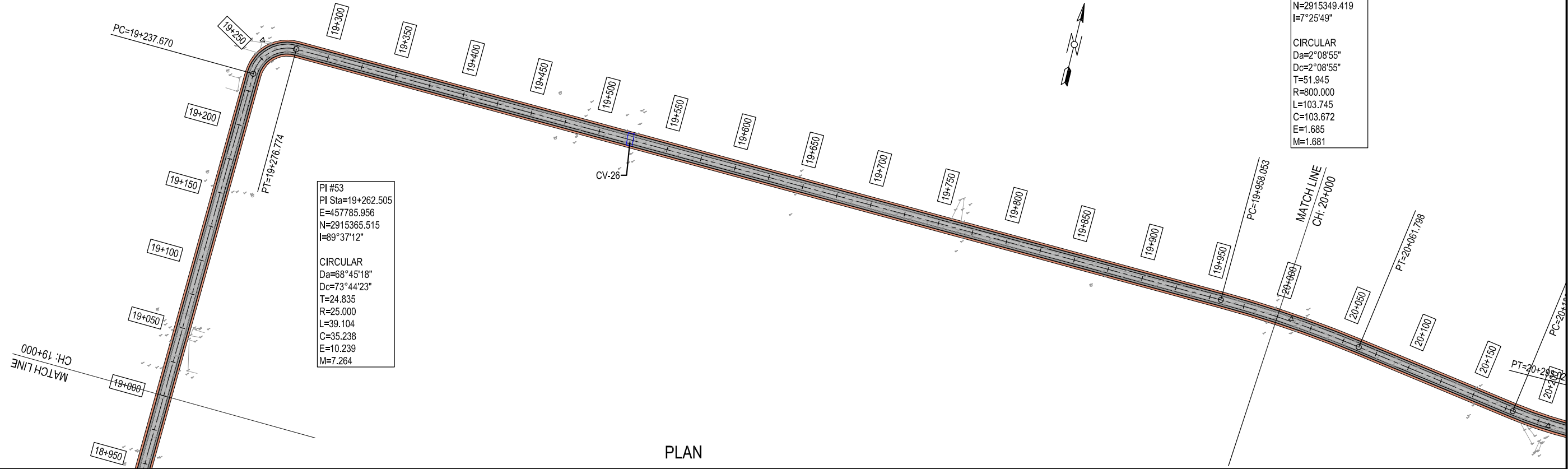
CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 17+000 TO 18+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-18
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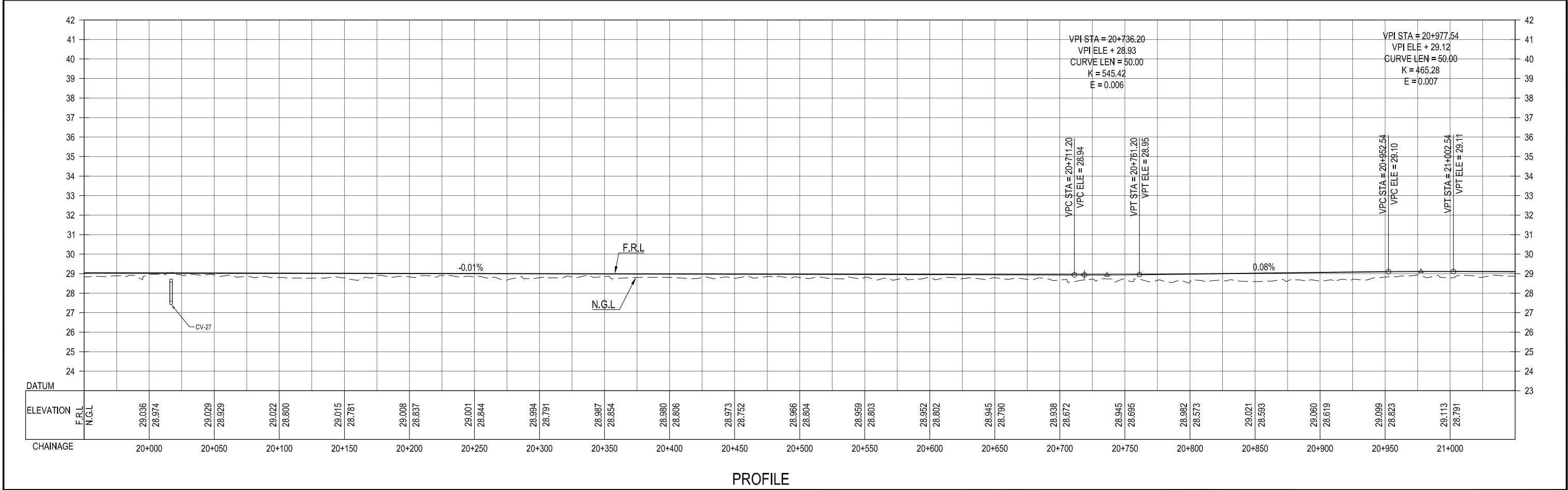
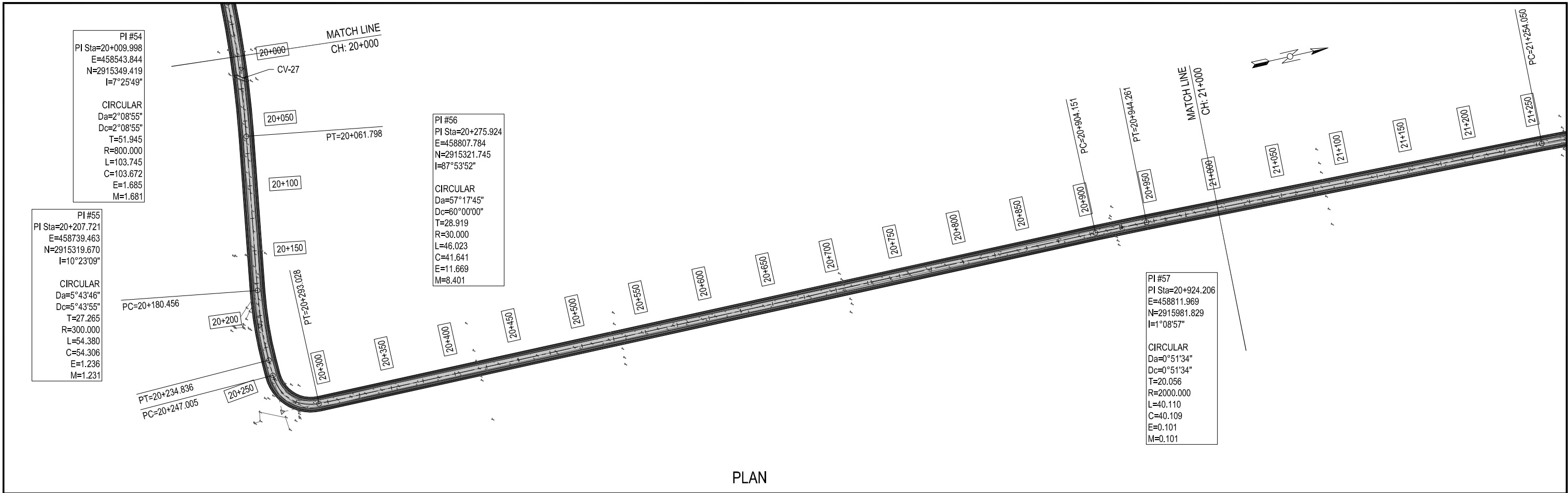






CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 18+000 TO 19+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-19
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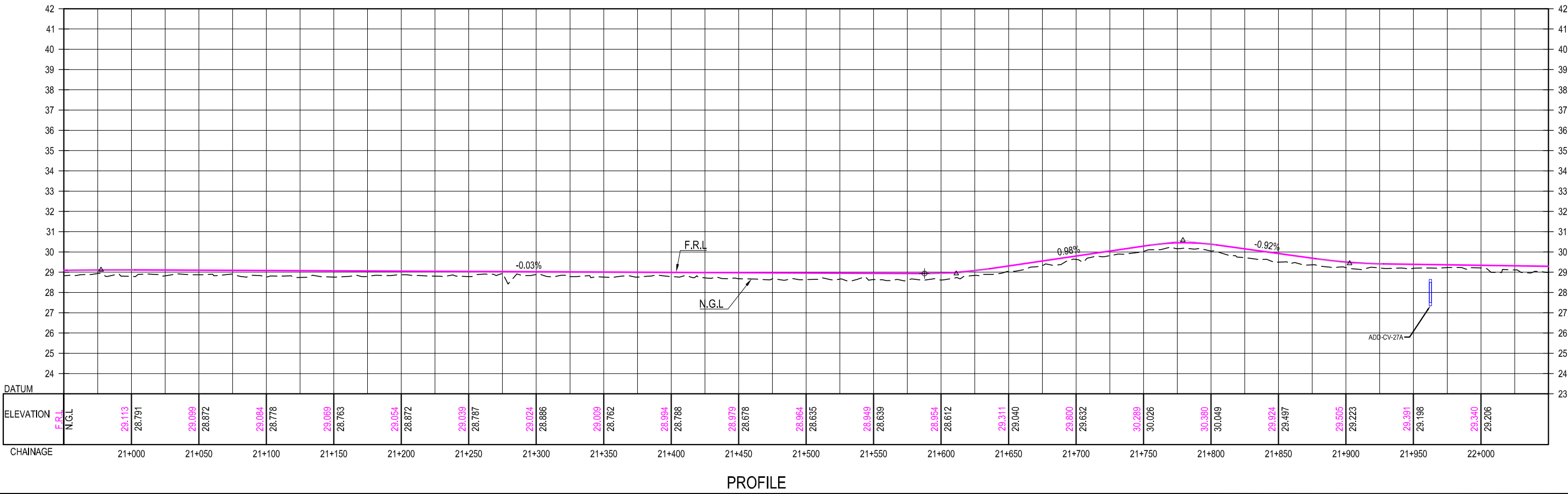
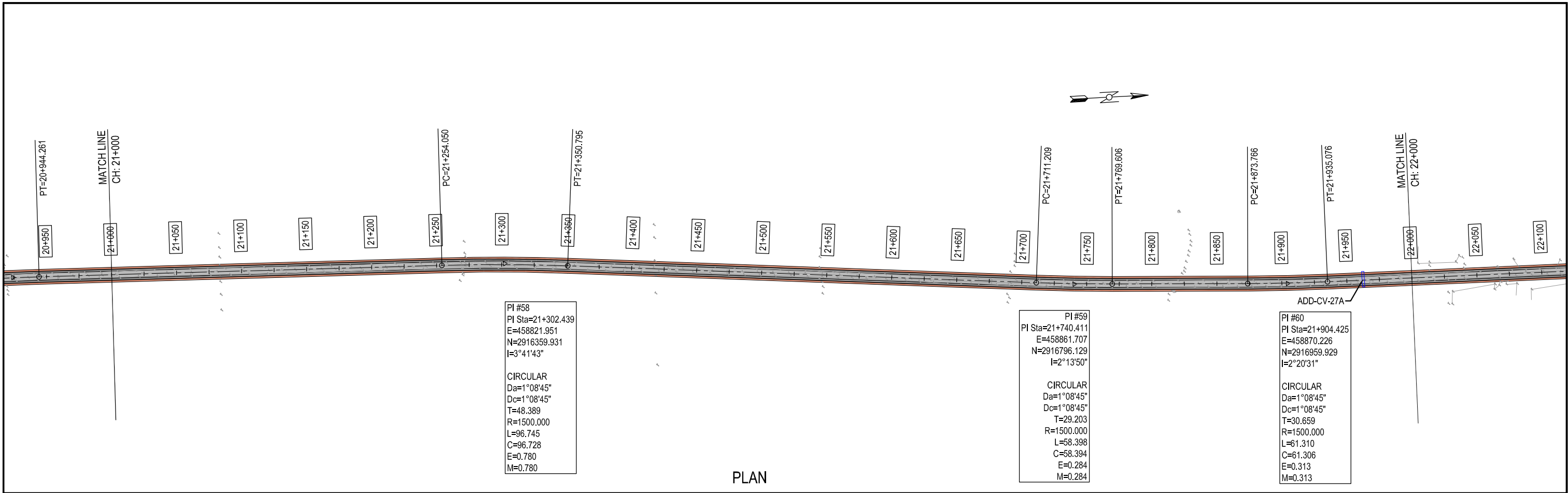






CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 19+000 TO 20+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-20 Scale:- H=1:3000 V=1:200 Edition. 0
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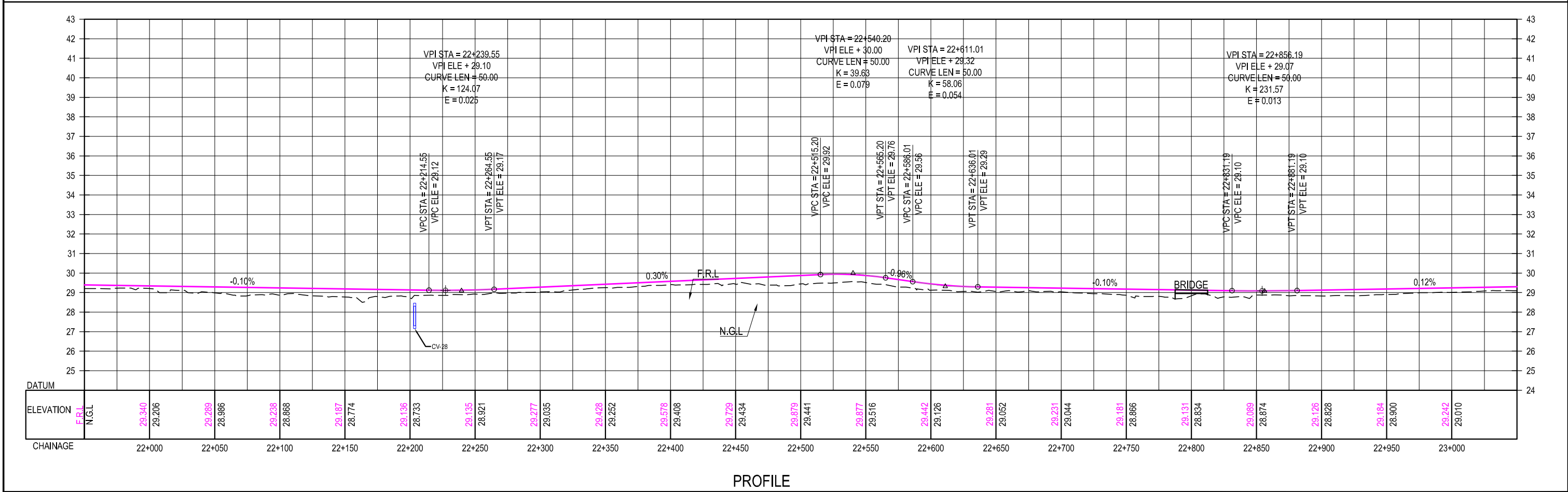
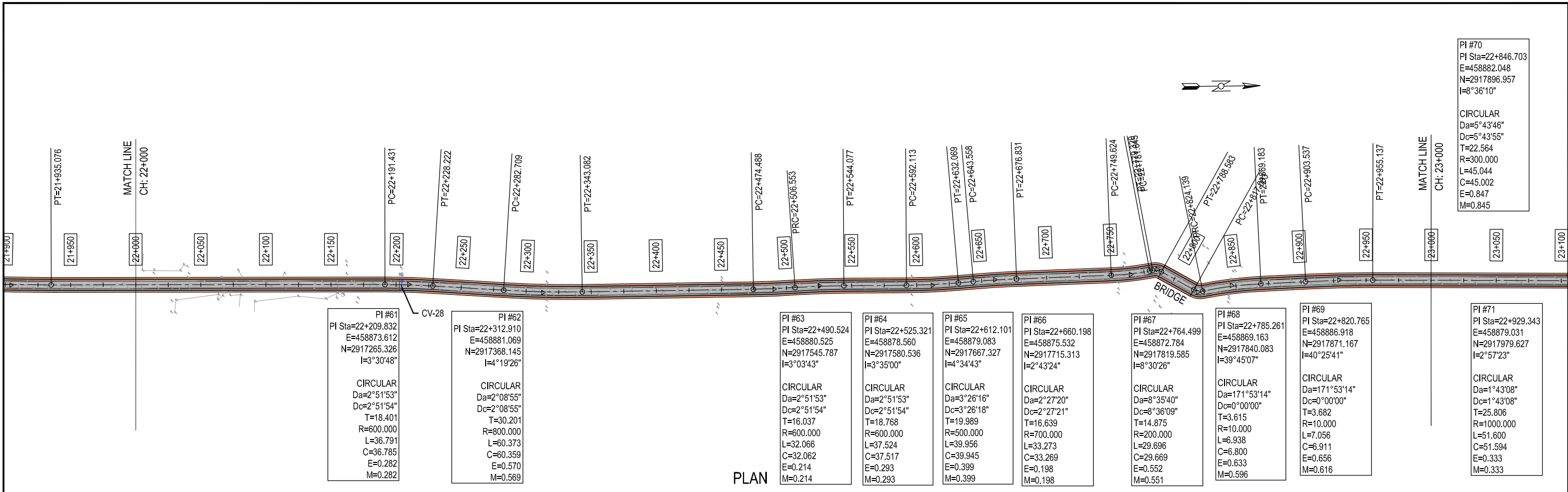






CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 20+000 TO 21+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-21
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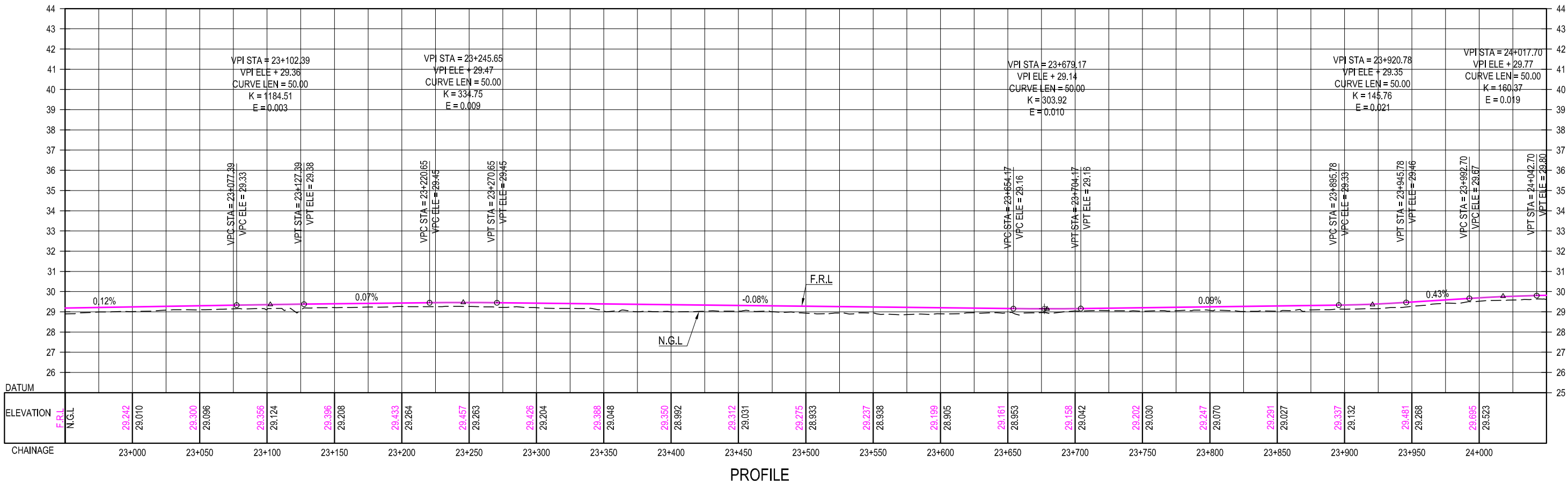
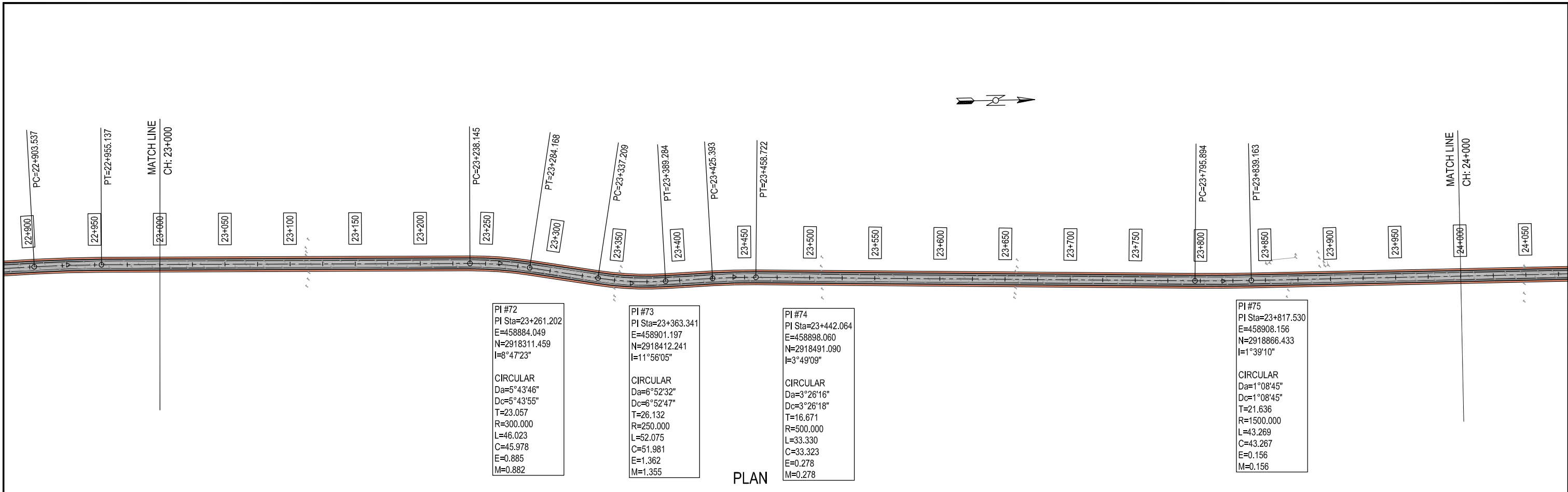






CLIENT:- <div>Asian Development Bank</div>	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-22
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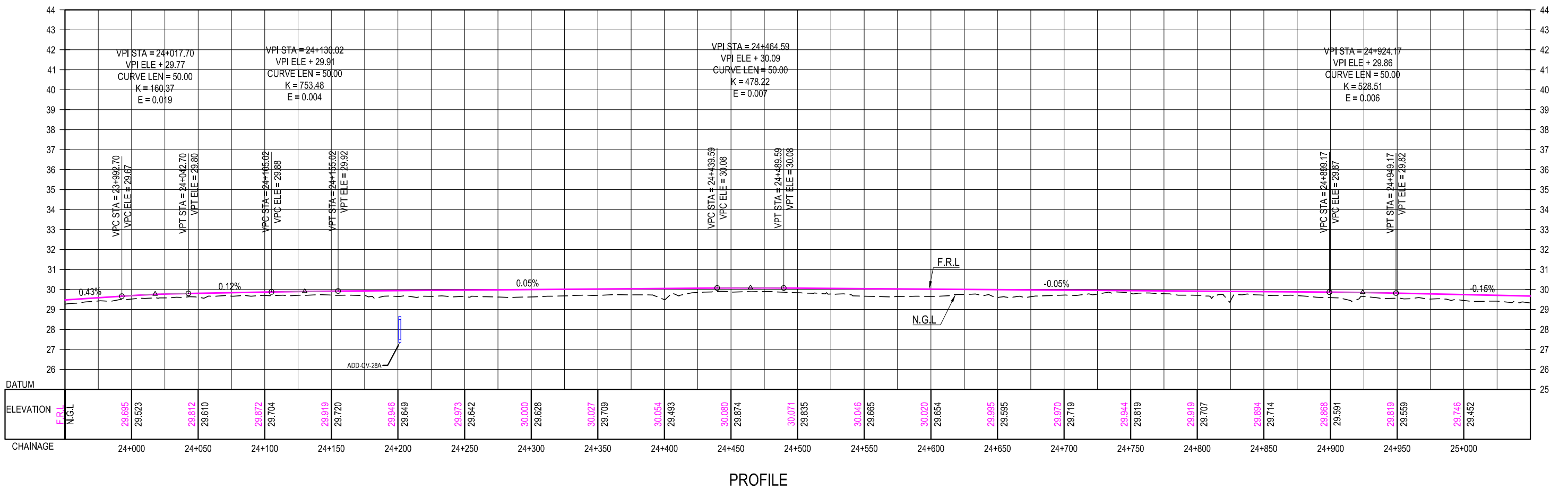
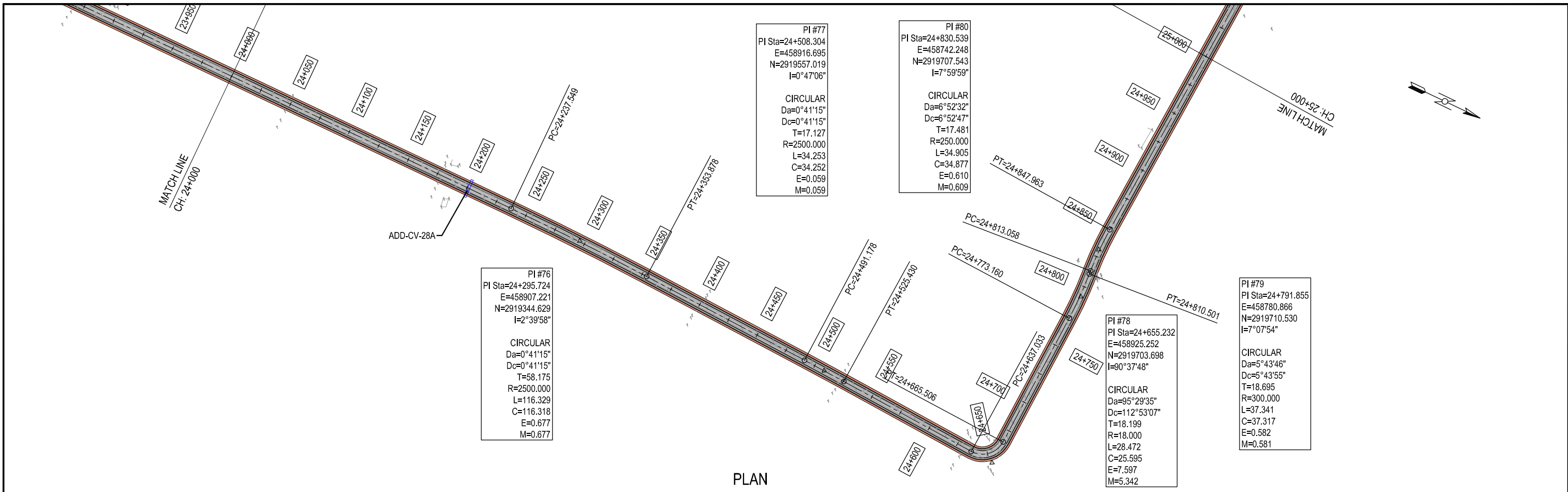






CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD		ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-23
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EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH								CHECKED: NAVEED HASSAN	Scale:- H=1:3000 V=1:200
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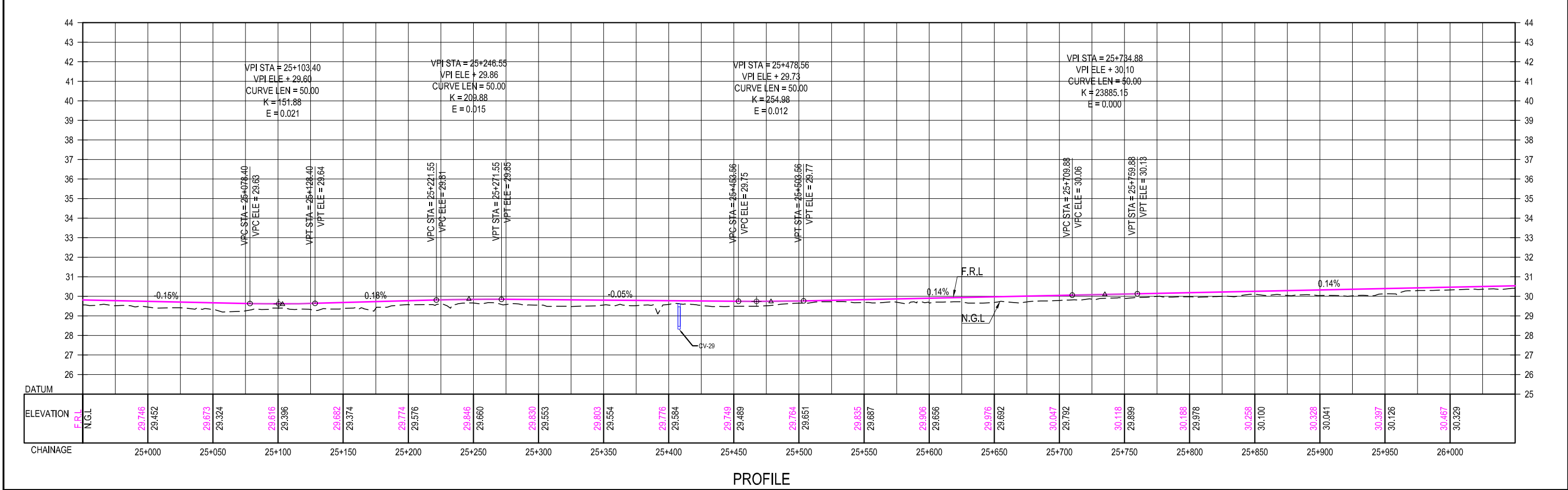
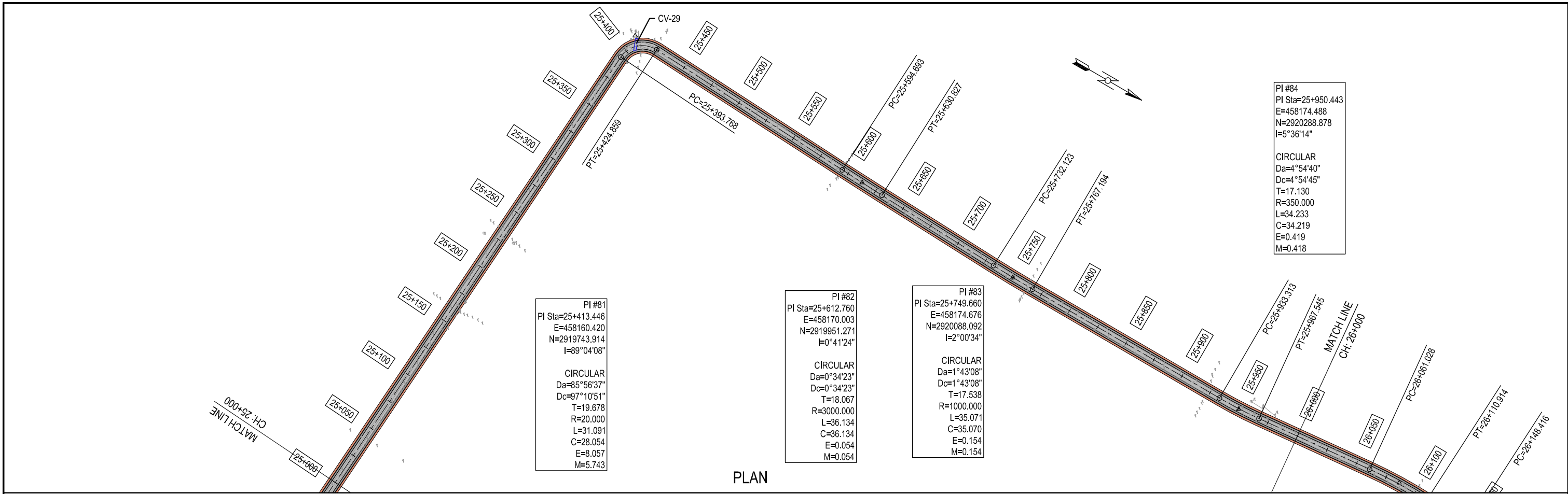
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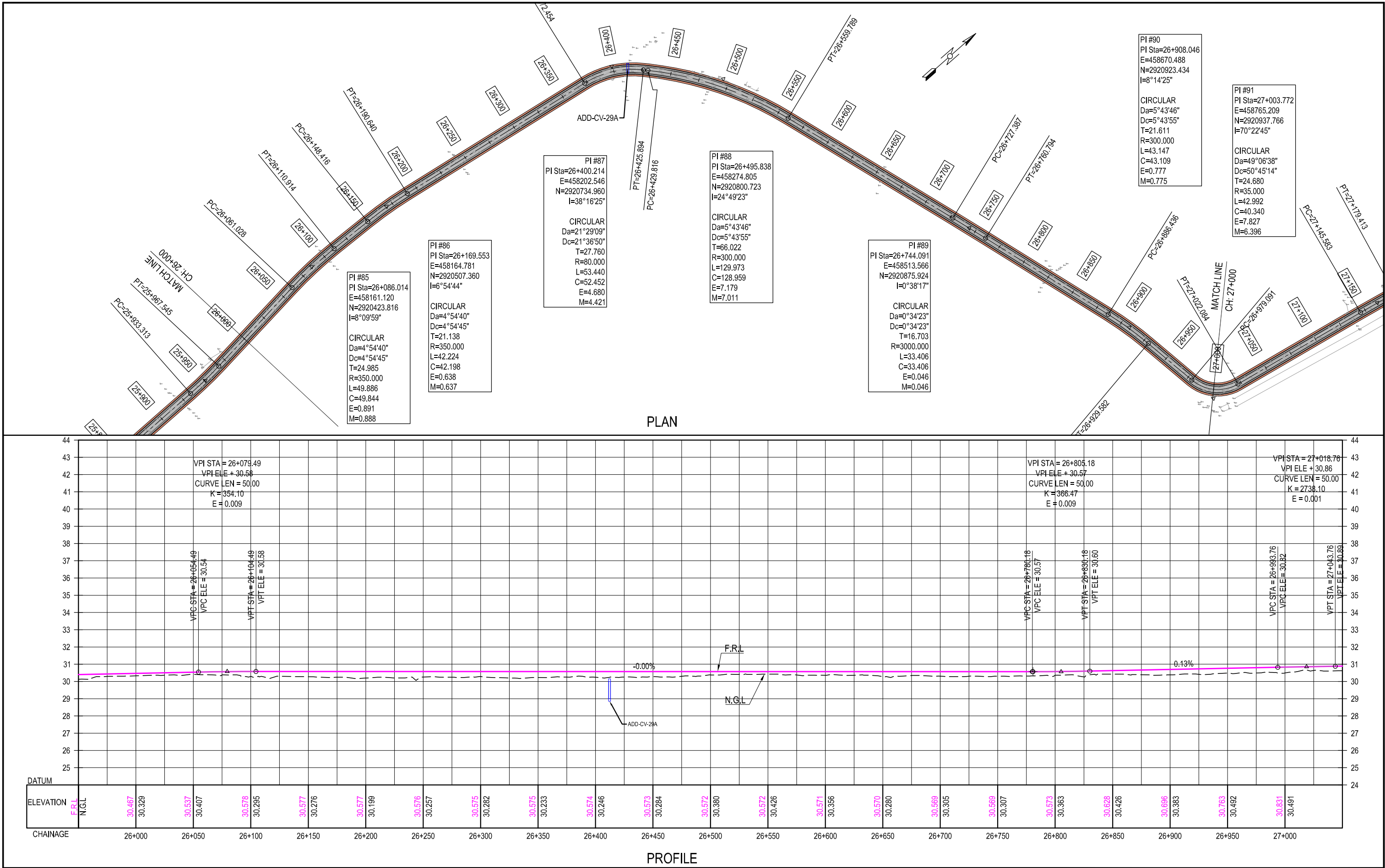
CLIENT:- <div>Asian Development Bank</div>	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-24	
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
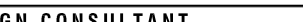




<div>CLIENT:-</div> <div>Asian Development Bank</div>	<div>PROJECT:-</div> <div>LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)</div>	<div>DESIGN CONSULTANT</div> <div> In association with </div>	PROJECT ROAD:-	ED.NO.	DATE	DESCRIPTION	DRAWN:	DRAWING NO.
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							HINA ZEESHAN	
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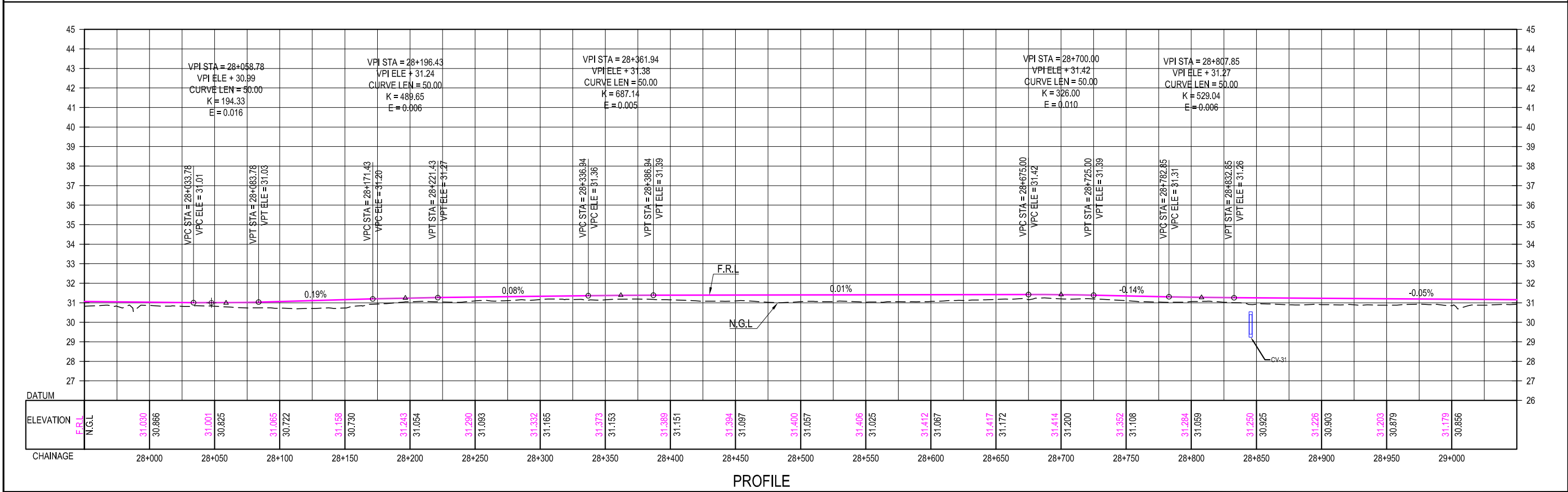
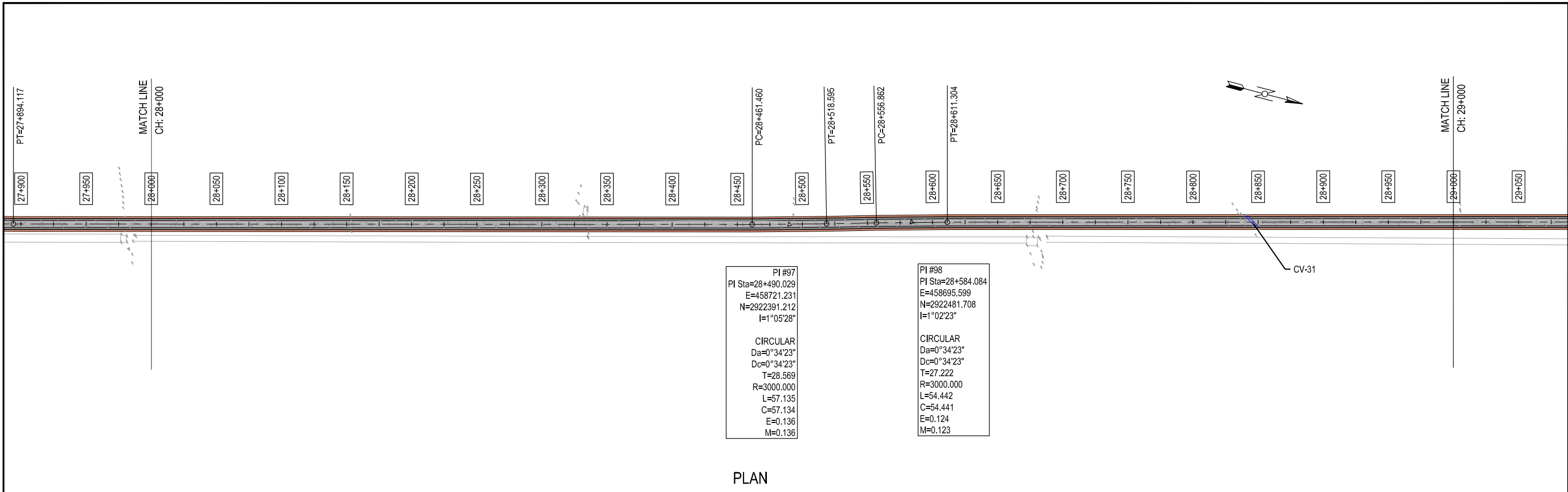






CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 25+000 TO 26+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-26
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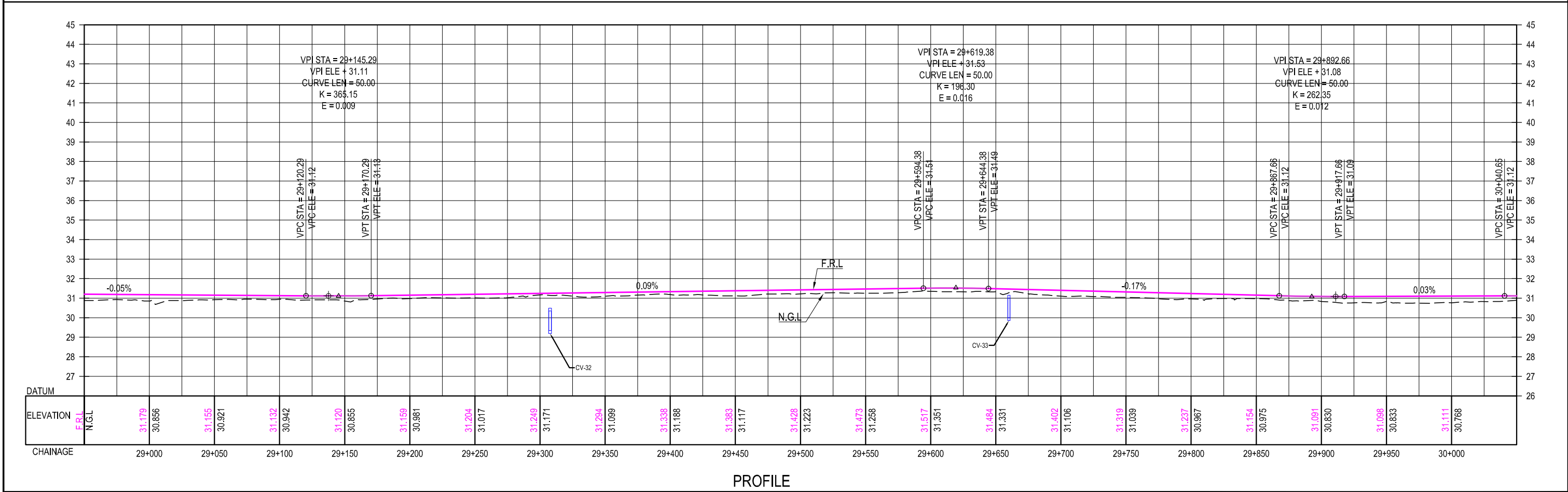
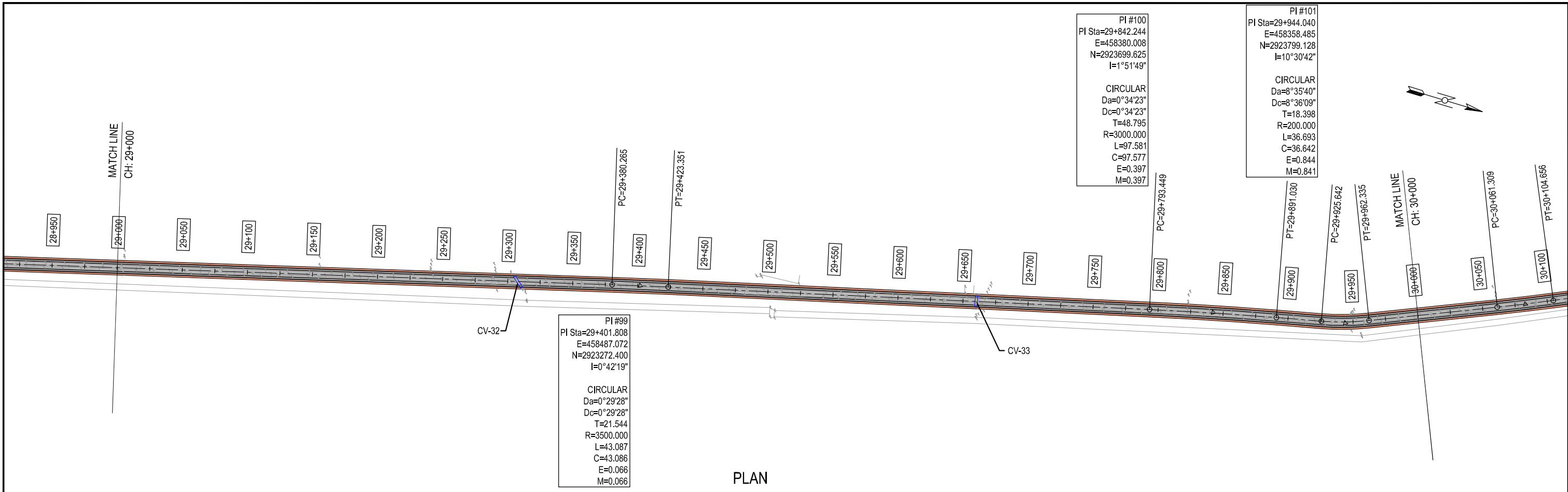






CLIENT:- <div>Asian Development Bank</div>		PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD		ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-27				
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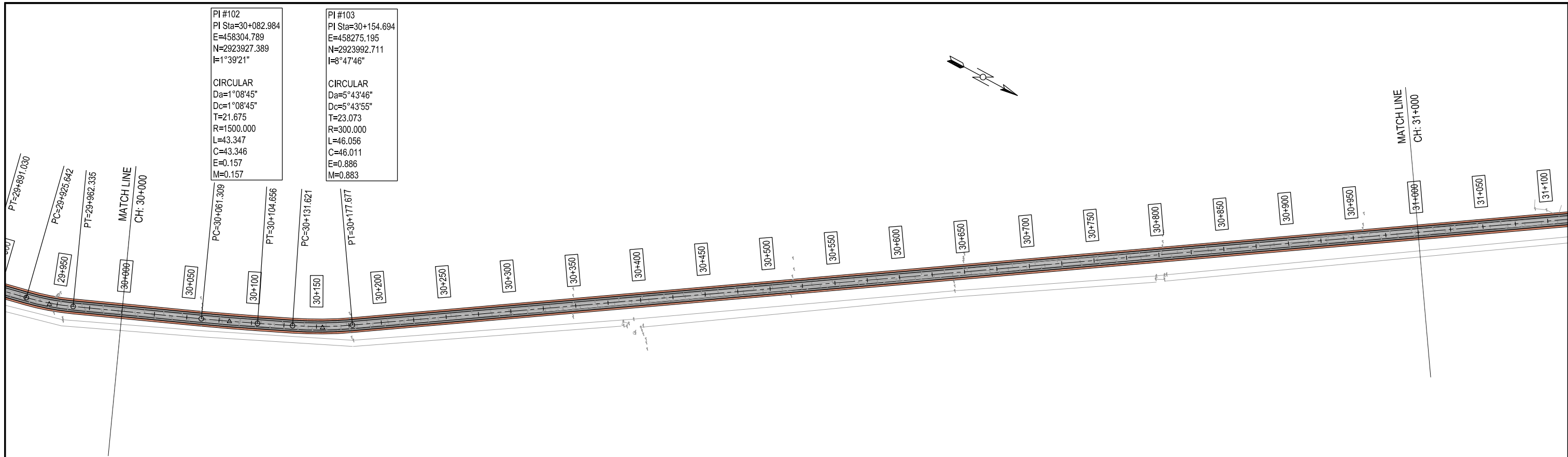


CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 28+000 TO 29+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-29
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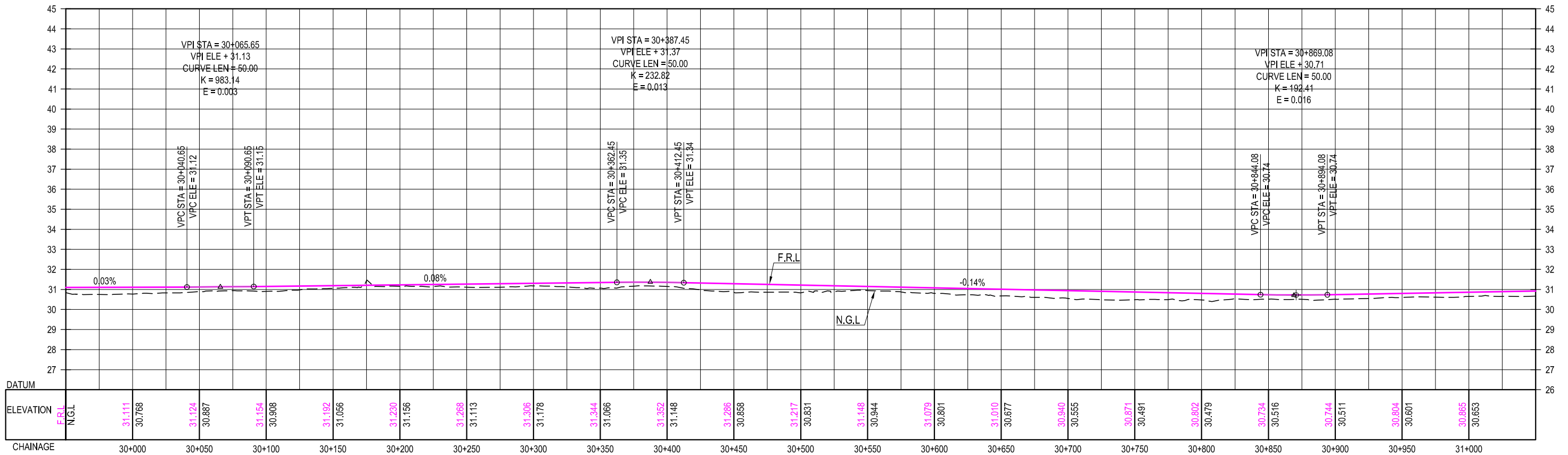


CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 29+000 TO 30+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-30
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							CHECKED: NAVEED HASSAN	Scale:- H=1:3000 V=1:200
							DATE: JULY, 2023	Edition, 0
				0	JULY, 2023	ISSUED FOR APPROVAL		





Sun, 23 Jul 2023 - 5:48pm
nsaqib D:\S SINDH ROAD\SB-2\ 31-SB-2-PP-31.dwg

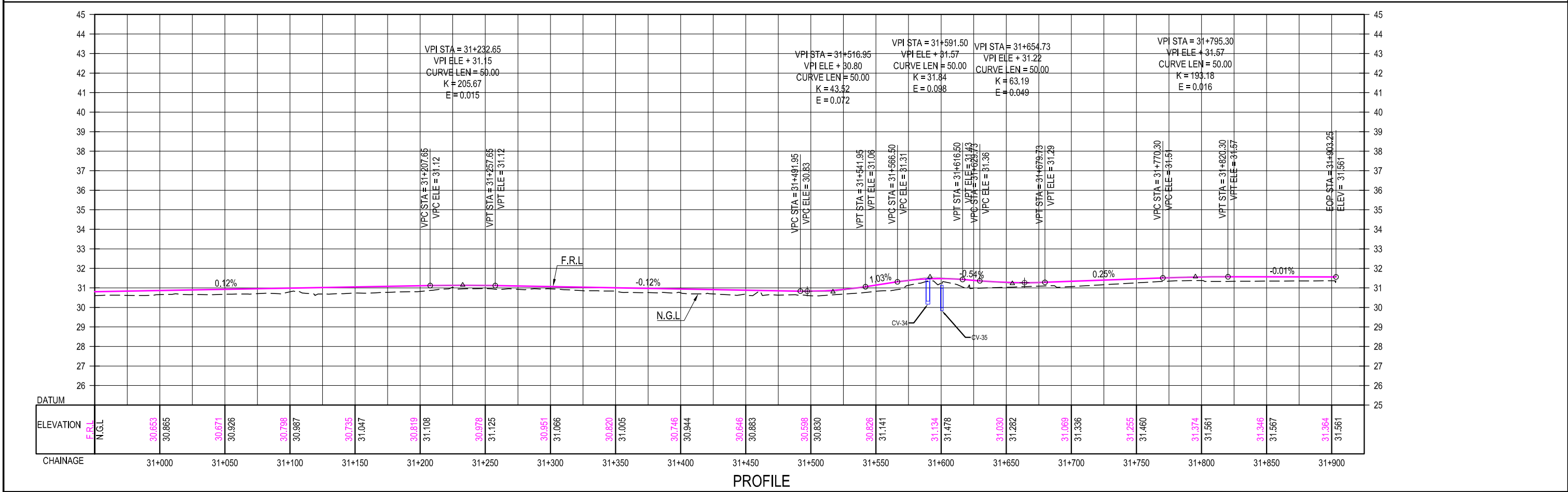
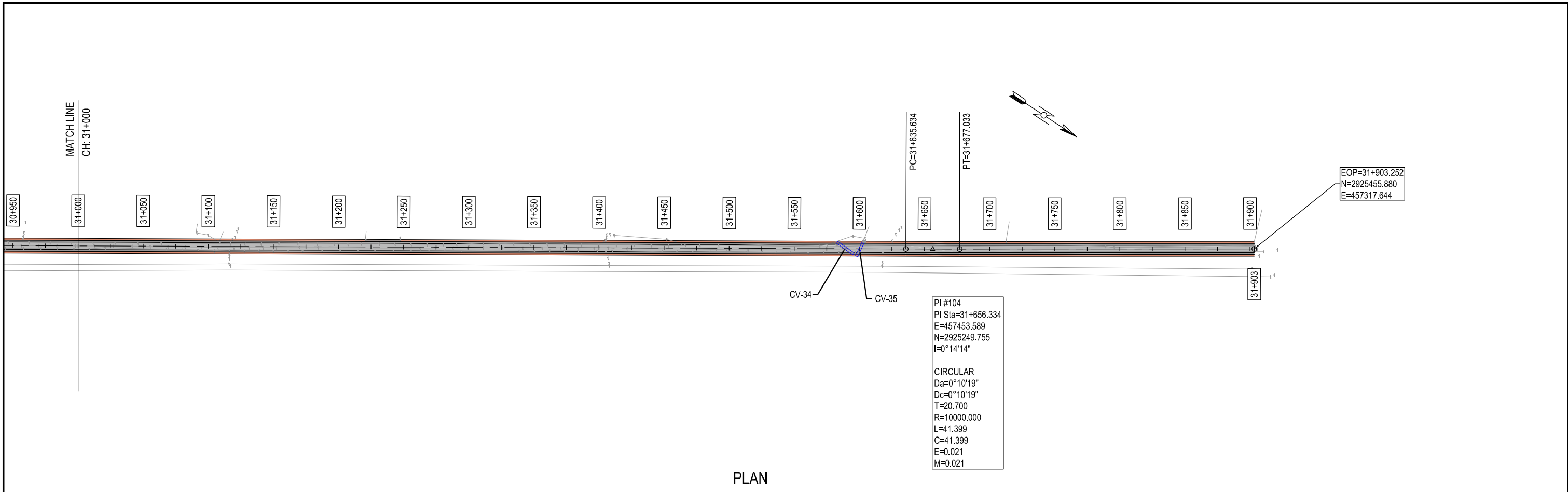






PLAN



PROFILE




CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 30+000 TO 31+000	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-31
							DESIGNED: HINA ZEESHAN	
							CHECKED: NAVEED HASSAN	
				0	JULY, 2023	ISSUED FOR APPROVAL	DATE: JULY, 2023	Scale:- H=1:3000 V=1:200 Edition. 0



CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60th MILE TO CONNECT 3 CHAK via 68th MILE AND CHAUDHARY NAZEER ROAD TITLE:- PLAN & PROFILE OF SB-02 CH: 31+000 TO 31+903.252	ED.NO.	DATE	DESCRIPTION	DRAWN: JUNAID	DRAWING NO. HWY-SB02-PP-32
							DESIGNED: HINA ZEESHAN	
EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH							CHECKED: NAVEED HASSAN	Scale:- H=1:3000 V=1:200
				0	JULY, 2023	ISSUED FOR APPROVAL	DATE: JULY, 2023	Edition. 0

LIST OF DRAWINGS

S. NO.	DESCRIPTION	DRAWING NO.
1	LIST OF DRAWING	2053-STR-SB02-LD-01
2	GENERAL NOTES	2053-STR-SB02-GN-01
BRIDGE		
1	SCHEDULE OF BRIDGE	2053-STR-SB02-SCH-01
PROPOSED NEW BRIDGE		
1	BRIDGE NO. B1 - GENERAL ARRANGEMENT	2053-STR-SB02-B1-101
2	BRIDGE NO. B1 - ABUTMENT	2053-STR-SB02-B1-102
3	BRIDGE NO. B1 - P.C. GIRDER	2053-STR-SB02-B1-103
4	BRIDGE NO. B1 - DECK SLAB AND DIAPHRAGMS	2053-STR-SB02-B1-104
5	BRIDGE NO. B1 - ABUTMENT	2053-STR-SB02-B1-201
6	BRIDGE NO. B1 - P.C. GIRDER	2053-STR-SB02-B1-202
7	BRIDGE NO. B1 - DECK SLAB	2053-STR-SB02-B1-203
8	BRIDGE NO. B1 - DIAPHRAGMS	2053-STR-SB02-B1-204
CULVERTS		
1	SCHEDULE OF CULVERTS	2053-STR-SB02-CU-SCH-01
	BOX CULVERTS	
1	RCC BOX CULVERT - GENERAL ARRANGEMENT	2053-STR-SB02-BC-01
2	RCC BOX CULVERT - DETAILS OF APRON SLAB & WING WALLS	2053-STR-SB02-BC-02
3	RCC BOX CULVERT - REINFORCEMENT DETAILS OF BOX CULVERT	2053-STR-SB02-BC-03
4	RCC BOX CULVERT - REINFORCEMENT DETAILS OF APRON SLAB & WING WALLS (FOR CULVERT HEIGHT ≤ 2m)	2053-STR-SB02-BC-04
5	REINFORCEMENT DETAILS OF APRON SLAB & WING WALLS FOR CULVERT HEIGHT > 2M	2053-STR-SB02-BC-05
	PIPE CULVERTS	
1	PIPE CULVERT - GENERAL ARRANGEMENT	2053-STR-SB02-PC-01
2	PIPE CULVERT - TYPICAL DETAILS WING WALL & APRON SLAB	2053-STR-SB02-PC-02
3	PIPE CULVERT - REINFORCEMENT DETAILS	2053-STR-SB02-PC-03

CLIENT:- <div>ADBAsian Development Bank</div> EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- DISTRICT : BENAZIRABAD - SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD TITLE:- LIST OF DRAWINGS	ED.NO.	DATE	DESCRIPTION	DRAWN: F.A.S	DRAWING NO. 2053-STR-SB02-LD-01
							DESIGNED : R.I / M.A	Scale:- 1:1
							CHECKED : S.A	Edition.
							DATE: JUNE 2023	

GENERAL NOTES

1.

THE STRUCTURES ARE DESIGNED FOR CLASS AA AND CLASS A LOADING SPECIFIED IN GOVERNMENT OF WEST PAKISTAN, HIGHWAY DEPARTMENT CODE OF PRACTICE FOR HIGHWAY BRIDGES, 1967.
2.

CONCRETE IN ALL ELEMENTS OF SUBSTRUCTURE BELOW GROUND LINE TO BE MADE FROM ORDINARY PORTLAND CEMENT. IF SUBSOIL INVESTIGATIONS INDICATE THE PRESENCE OF SULPHATES IN BEARING SOIL, THEN SULPHATE RESISTING CEMENT INSTEAD OF ORDINARY PORTLAND CEMENT SHALL BE USED.
3.

ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO GENERAL SPECIFICATIONS (1998) AS GIVEN IN CONTRACT DOCUMENTS AND RELEVANT AASHTO STANDARDS UNLESS OTHERWISE STIPULATED. WHEREVER ASTM SPECIFICATIONS ARE REFERRED TO, THEY SHALL BE FOLLOWED. A COPY OF THE STANDARDS SHALL BE SUPPLIED BY THE CONTRACTOR TO THE ENGINEER.
4.

DIMENSION ON THE DRAWINGS ARE IN MILLIMETER EXCEPT OTHERWISE NOTED.
5.

THE LOAD FACTORS AND LOAD COMBINATIONS ARE BASED ON THE STIPULATION GIVEN IN AASHTO LRFD BRIDGES DESIGN SPECIFICATIONS.
6.

ALL BLINDING CONCRETE SHALL BE LEAN CONCRETE.
7.

ALL STRUCTURAL CONCRETE SHALL CONFORM TO AASHTO T–22, AASHTO T–23 AND AASHTO T–24 AS SPECIFIED. MINIMUM COMPRESSIVE STRENGTHS AS MEASURED ON CYLINDERS AT 28 DAYS SHALL BE AS FOLLOWS.

– CLASS A1 (210 kg./sq. cm.) FOR BARRIER, APPROACH SLAB AND ALL OTHER REINFORCED CONCRETE MEMBERS EXCEPT NOTED BELOW.

– CLASS A3 (280 kg./sq. cm.) FOR TRANSOMS, PILECAPS, ABUTMENTS & RETAINING WALLS, PILES, PIER SHAFTS, DECK SLAB, DIAPHRAGMS & CULVERTS

– CLASS D2 (425 kg./sq. cm.) FOR PRECAST PRESTRESSED CONCRETE GIRDERS.

8.

REINFORCING STEEL INDICATED ON DRAWINGS AS Ø SHALL BE AS PER AASHTO M31 GRADE 60

9.

ALL BAR DIAMETERS ARE IN MILLIMETERS. BARS ARE DESIGNATED BY A CODE CONSISTING OF THREE NUMBERS SEPARATED BY TWO HYPHENS, THE FIRST NUMBER IS THE BAR IDENTIFICATION MARK, THE MIDDLE NUMBER IS ITS DIAMETER IN MILLIMETERS AND THIRD NUMBER IS THE NUMBER OF BARS REQUIRED, FOR EXAMPLE

126

16

24

BAR MARKS

DIAMETER IN MILLIMETER

NUMBERS REQUIRED

10.

THE CONTRACTOR SHALL PREPARE ALL BAR BENDING SCHEDULES ETC. AND SUBMIT THEM FOR APPROVAL OF THE ENGINEER PRIOR TO CUTTING, BENDING AND PLACEMENT.

11.

ALL REINFORCING STEEL SHALL BE ACCURATELY LOCATED IN THE FORMWORK AND HELD FIRMLY IN PLACE, BEFORE PLACING OF CONCRETE BY MEANS OF 16 GUAGE BLACK ANNEALED WIRE AND ADEQUATELY DESIGNED SPACERS.

12.

UNLESS OTHERWISE SHOWN ON THE DRAWING LAPS IN REINFORCING STEEL BARS SHALL BE STAGGERED. MINIMUM LENGTH OF LAP SHALL BE AS PER AASHTO REQUIREMENTS.

13.

THE GIRDERS SHALL BE PLACED IN SPANS BY APPROVED MEANS TO ENSURE THEIR PLACEMENT WITHOUT DAMAGE AND ACCIDENT, GIRDERS SHALL BE PLACED AT CORRECT POSITION AS SHOWN ON THE DRAWINGS AND TEMPORARILY BRACED LATERALLY UNTIL DIAPHRAGMS/TRANSOMS AND DECK SLABS ARE CAST. THE ERECTION PROCESS SHALL NOT HINDER NORMAL MOVEMENT OF TRAFFIC.

14.

MULTISTRAND PRESTRESSING SYSTEM HAS BEEN USED IN THE DESIGN. FIXTURES AND DETAILS SHALL CONFORM TO ONE OF THE FOLLOWING SYSTEMS:–

– OVM

– FREYSSINET

– VSL

– STRONGHOLD

15.

PRESTRESSING STEEL SHALL CONFORM TO ASTM–416 (GRADE–270) WITH MINIMUM ULTIMATE STRENGTH OF 1860 N/sq.mm.

16.

ALL TENDONS SHALL BE STRESSED FROM ONE END ALTERNATELY UNLESS OTHERWISE SHOWN ON DRAWINGS AND SUBSTITUTION OF LIVE ANCHORAGE WITH BLIND ANCHORAGE FOR ONE – END STRESSING IS PERMITTED.

17.

IF ANCHORAGE PULL–IN OF STRANDS EXCEEDS 6 mm, THE TENDON SHALL BE DESTRESSED BY APPROVED MEANS AND SHALL BE RESTRESSED USING NEW SET OF GRIPS.

18.

TENDONS SHALL BE STESSED AFTER THE CONCRETE HAS ATTAINED A CRUSHING STRENGTH OF 425 Kg/sq.cm. THE EXTENSIONS SHOWN IN DRAWINGS ARE THE TOTAL EXTENSION TO BE ACHIEVED BEFORE LOCKING AND ARE CALCULATED ON THE BASIS OF 200000 N/sq.mm AS MODULUS OF ELASTICITY OF STEEL: FOR OTHER VALUES OF MODULUS OF ELASATICITY, EXTENSIONS SHOULD BE CALCULATED ON PRO–RTA BASIS. TENDONS SHOULD NOT BE LOCKED IF THE ACTUAL EXTENSIONS VARY MORE THAN 10% FROM THE VALUES SHOWN OR CALCULATED AS THE CASE MAY BE AND THE MATTER REPORTED TO ENGINEER WHO SHALL GIVE FURTHER INSTRUCTION.

19.

PRESTRESSING TENDONS COMPRISE 0.5 INCHES DIAMETER 7 WIRES STRANDS IN NUMBERS STATED IN THE RESPECTIVE DRAWINGS.

20.

THE ORDER OF STRESSING SHALL BE AS STATED IN THE DRAWINGS.

21.

ANCHORAGE POCKET SHALL BE FILLED WITH CLASS A1 CONCRETE USING 12 mm DOWN AGGREGATES, AFTER GROUTING AND TRIMMING TENDONS.

22.

INTERMEDIATE GROUT VENTS SHALL BE PROVIDED AT ABOUT MID LENGTH OF THE TENDONS WHEN TENDON LENGTH IS MORE THAN 12 METERS.

23.

ALL EXPOSED CORNERS OF CONCRETE TO BE CHAMFERED 25 mm x 25 mm EXCEPT OTHER WISE SHOWN.

24.

ALL REINFORCED CONCRETE AND PRESTRESSED SHALL BE FAIR–FACED TO BE CAST IN STEEL FORMWORK AND PLATES OF NOT LESS THAN 3 mm THICKNESS. TIMBER AND STEEL–CLAD TIMBER FORMWORK SHALL NOT BE ALLOWED.

25.

THE DESIGN AND THE ENGINEERING OF THE FORMWORK AND FALSEWORK AS WELL AS ITS CONSTRUCTION SHALL BE RESPONSIBILITY OF THE CONTRACTOR, DESIGN OF FORMWORK AND FALSEWORK SHALL COMPLY WITH THE SPECIFICATIONS AND IN GENERAL CONFORM TO ACI 318–95 AND ACI SP–4.

26.

CONCRETE IN DECK SLAB SHALL BE PLACED IN FULL WIDTH. NO CONSTRUCTION JOINT SHALL BE PERMITTED EXCEPT AS MENTIONED IN THE DRAWING OF CONSTRUCTION SEQUENCE OF DECK SLAB.

27.

ELASTOMERIC BEARING PADS SHALL CONFORM TO SECTION 25, DIVISION 2 OF AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 1992 AS AMENDED IN 1994, FULLY ENCLOSED IN RUBBER

28.

BRIDGE BEARINGS SHALL BE PLACED IN HORIZONTAL POSITIONS. INCLINED OR TAPERED BEARINGS SHALL NOT BE ALLOWED.

29.

BEFORE COMMENCEMENT OF CONSTRUCTION OF PERMANENT PILES, TEST PILES SHALL BE CONSTRUCTED, TESTED AND THE LOAD TEST RESULT SHALL BE SUBMITTED TO THE ENGINEER, WHO SHALL APPROVE OR AMMEND THE PILE TIP LEVEL.

30.

THE PILES SHALL BE BORED–CAST–IN–PLACE. THE WORKING LOAD AND DIAMETER OF THE PILE ARE STATED ON THE GENERAL ARRANGEMENT DRAWING.

31.

THE PILING WORK SHALL BE EXECUTED USING APPROPRIATE PILING EQUIPMENT AND METHODOLOGY TO BE APPROVED IN WRITING BY THE ENGINEER.

32.

THE PILE TIP LEVELS ARE TENTATIVE AND TO BE CONFIRMED BY THE ENGINEER UPON COMPLETION OF SUBSOIL INVESTIGATION AND REPORT BY THE GEOTECHNICAL ENGINEER OF THE CONTRACTOR.

33.

CLEAR COVER TO REINFORCEMENT TO BE:

(a) 25 mm IN DECK SLAB & APPROACH SLAB (BOTTOM REINF.)

40 mm IN DECK SLAB & APPROACH SLAB (TOP REINF.)

(b) 25 mm IN BARRIER.

(c) 40 mm IN GIRDERS, TRANSOMS, DIAPHRAGMS (TOP & BOTTOM REINF.).

(d) 40 mm IN WALLS.

(e) 50 mm IN PILECAP

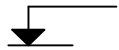



(f) 75 mm IN PILES & PIER SHAFTS




UNLESS OTHERWISE SPECIFIED.

34.

FOR CORRECT FIXATION OF FINISHED DECK LEVELS OF BRIDGES LOCATED ON CURVES WITH SUPER ELEVATION, REFER TO PLAN AND PROFILE DRAWINGS PRIOR TO CASTING OF DECK SLAB.

LEGEND AND SYMBOLS

	(IN ELEVATION OR SECTION) FINISHED SURFACE ELEVATION
	REINFORCEMENT
E.F.	EACH FACE
EA	EACH
R	RADIUS
DWG.	DRAWING
N.T.S.	NOT TO SCALE
CRS	(ON) CENTRES
I.F	INNER FACES
O.F	OUTER FACES
B.F.	BOTH FACES
EL.	ELEVATION
N/mm. ²	NEWTON PER SQUARE MILLIMETER.
T	TOP
℄	CENTRELINE
B	BOTTOM
ALT	ALTERNATELY
E.J.	EXPANSION JOINT
C.J.	CONSTRUCTION JOINT
N.S.I.E	NOT SHOWN IN ELEVATION
N.S.I.P	NOT SHOWN IN PLAN
	GANTRY
	SYMMETRICAL

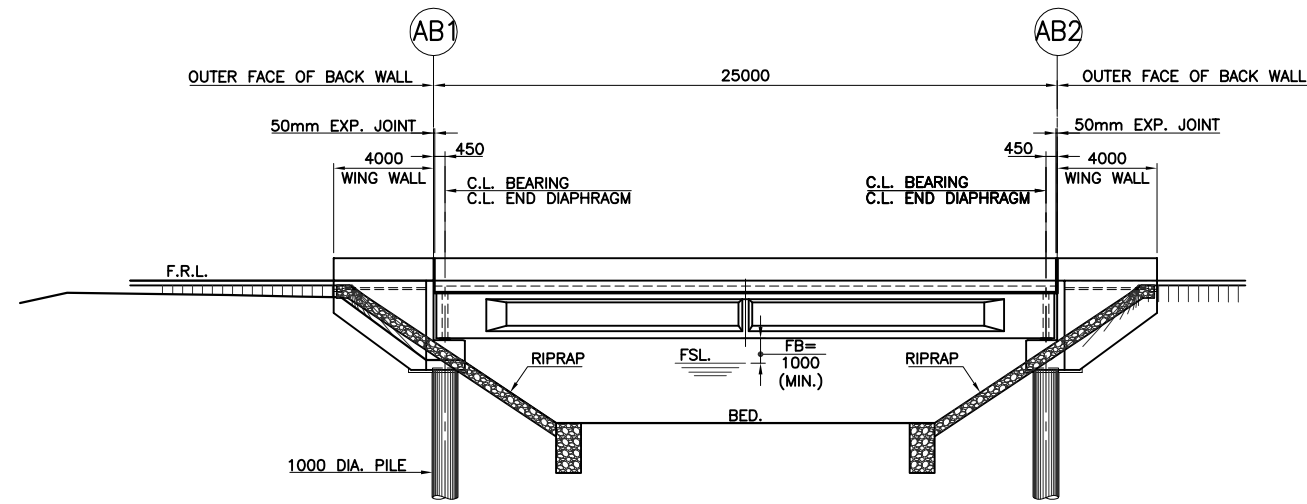
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			TITLE:- <div>GENERAL NOTES</div>				DESIGNED : <div>R.I / M.A</div>	Scale:- <div>1:1</div>
							CHECKED : <div>S.A</div>	Edition.
							DATE: <div>JUNE 2023</div>	

BRIDGE

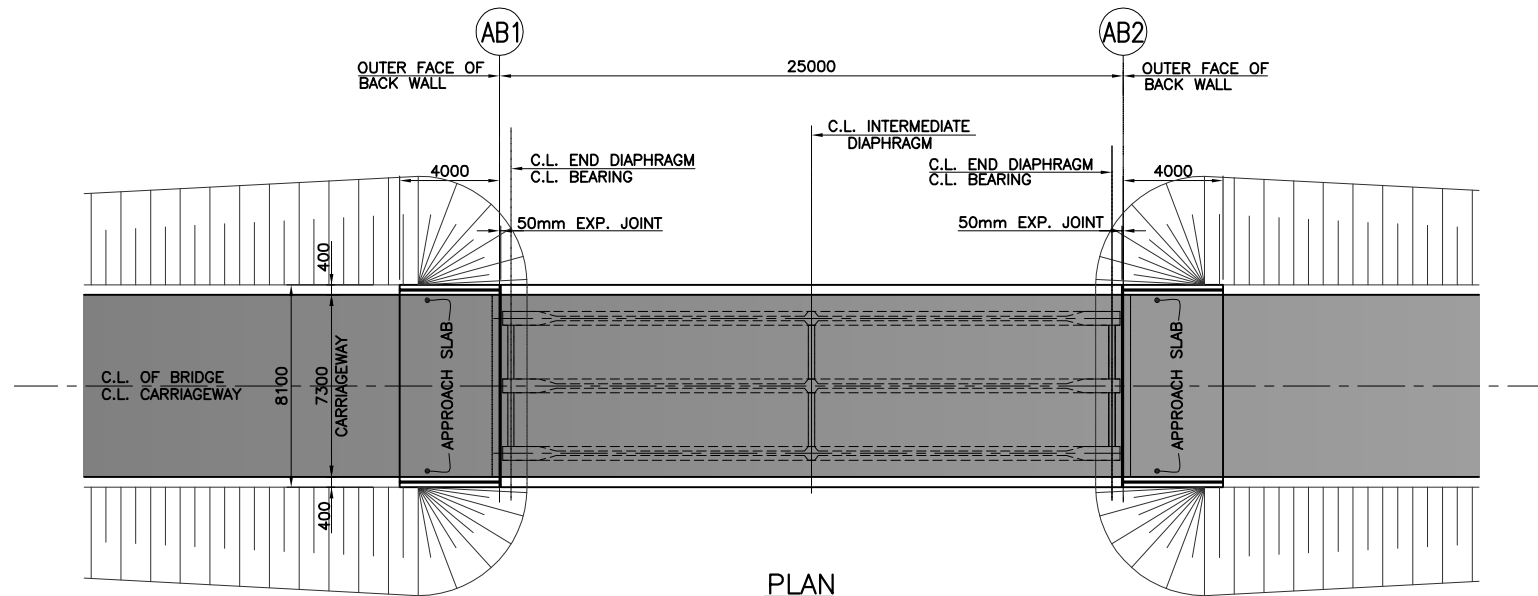
SCHEDULE OF BRIDGES

BRIDGE NO.	LATITUDE	LONGITUDE	EXISTING/ PROPOSED	EXISTING BRIDGE			DESIGN STRATEGY	PROPOSED DESIGN			
				NO. OF SPANS	SPAN	TOTAL LENGTH		NO. OF SPANS	SPAN	TOTAL LENGTH	SKEW
B1	26.37998	68.58780	PROPOSED	2	2.5	7.5	NEW	1	25	25	0

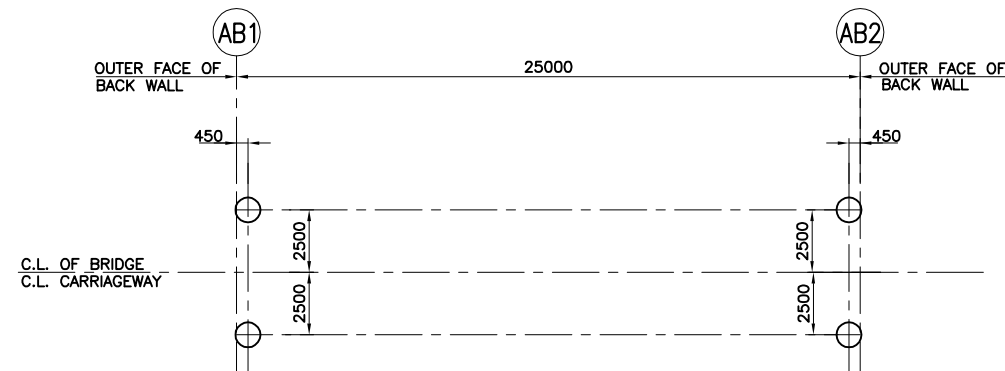
PROPOSED NEW BRIDGE



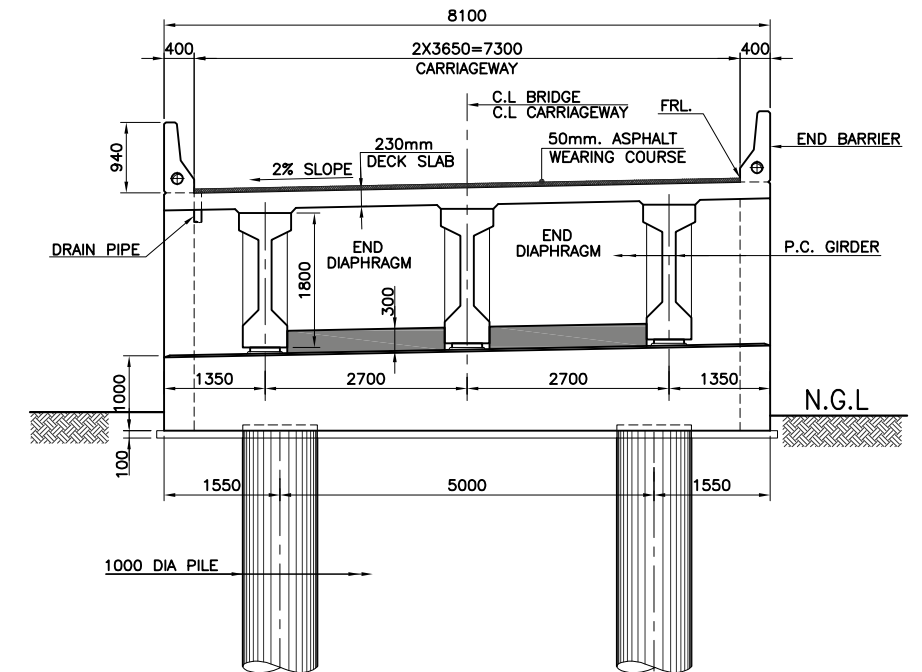
ELEVATION



PLAN
(SHOWING SUPER STRUCTURE)

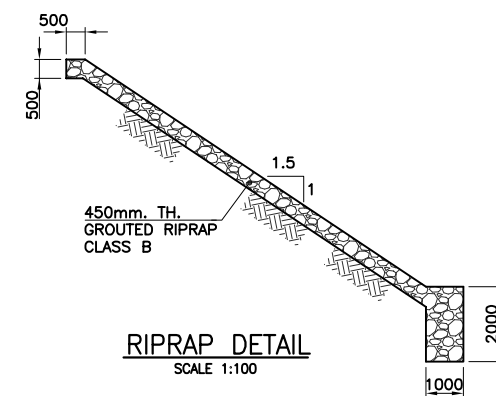


PLAN
(SHOWING SUB STRUCTURE)



TYPICAL CROSS SECTION
SCALE: 1:50





FOUNDATIONS DESIGN IS TENTATIVE SUBJECT TO REVIEW PER RESULTS OF PRECONSTRUCTION GEOTECHNICAL INVESTIGATIONS AT LOCATION OF EACH FOUNDATION

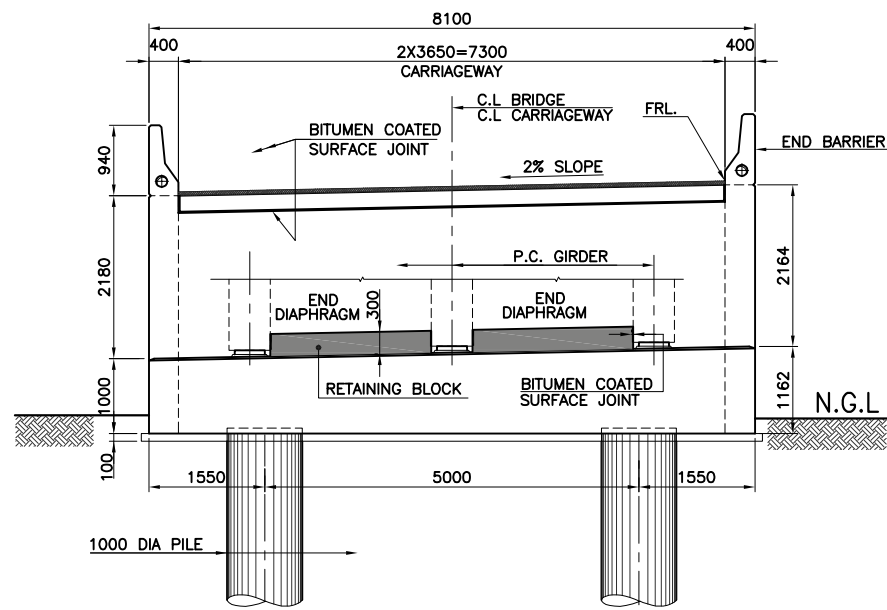


RIPRAP DETAIL
SCALE 1:100

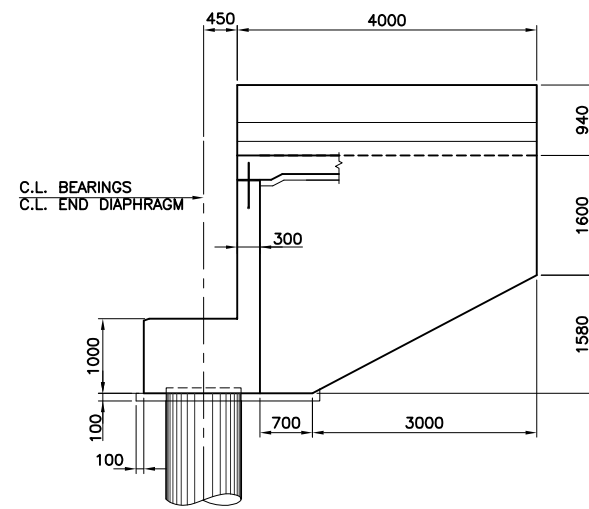
NOTES:

- 1 - THIS DRAWING MUST BE READ IN CONJUNCTION WITH RELEVANT HIGHWAYS DWGS.
- 2 - FOR GENERAL NOTES REFER DWG. NO. 2053-STR-SB02-GN-01.
- 3 - ALL LEVELS SHALL BE VERIFIED AT SITE BEFORE CONSTRUCTION ANY DISCREPANCY FOUND, SHOULD BE IMMEDIATELY REPORTED TO ENGINEER.

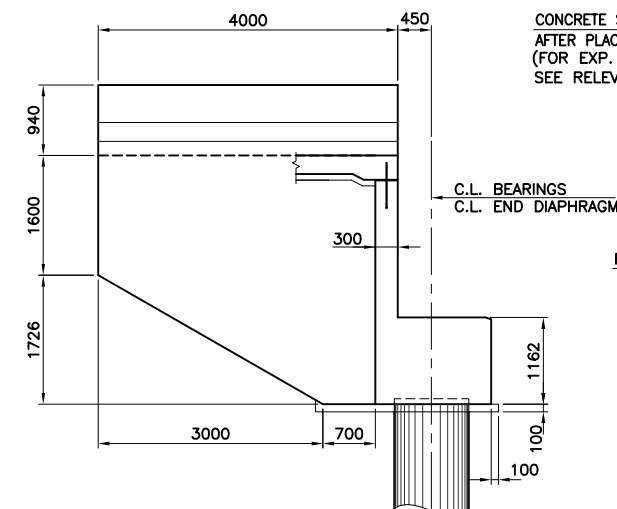
CLIENT:- <div>Asian Development Bank</div>		PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- DISTRICT : BENAZIRABAD - SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD	ED.NO.	DATE	DESCRIPTION	DRAWN: F.A.S	DRAWING NO. 2053-STR-SB02-B1-101
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>				TITLE:- BRIDGE NO. B1 GENERAL ARRANGEMENT				DESIGNED : R.I / M.A	Scale:- 1:150
							CHECKED : S.A	Edition.	
							DATE: JUNE 2023		



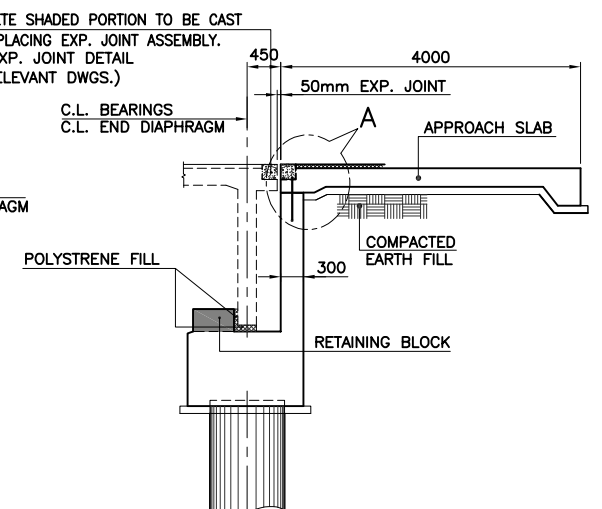
1 - 1
(BACK WALL)



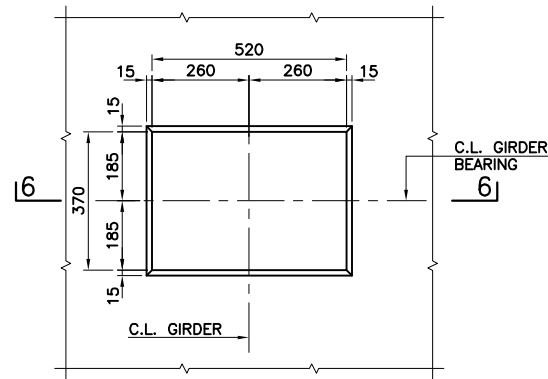
2 - 2
(WING WALL W1)
(2 NOS.)



3 - 3
(WING WALL W2)
(2 NOS.)

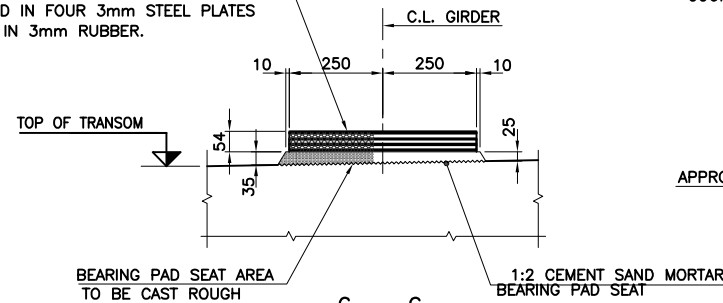


4 - 4

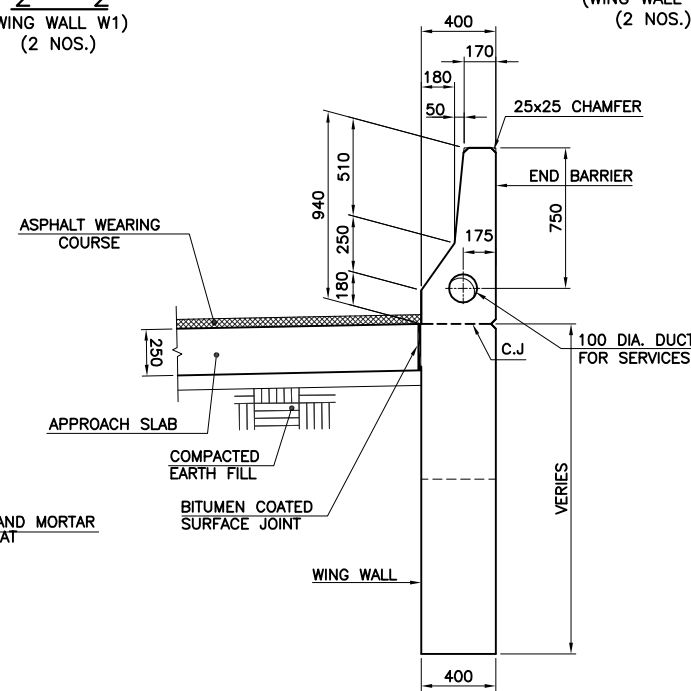


BEARING PAD SEAT
SCALE 1:10

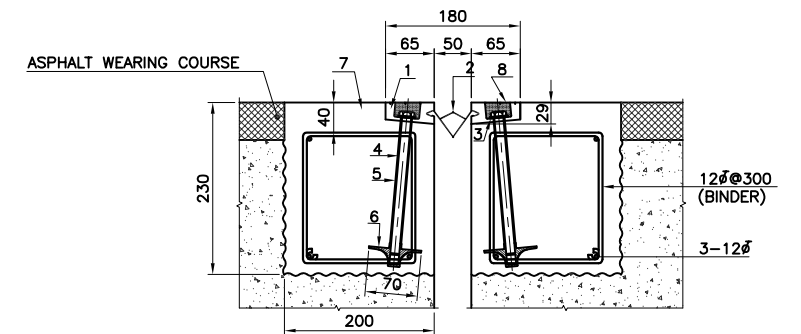
500x350x54 ELASTOMERIC BEARING PAD
COMPRISING OF THREE 12mm RUBBER PLATES
SANDWICHED IN FOUR 3mm STEEL PLATES
ENCLOSED IN 3mm RUBBER.



6 - 6
SCALE 1:10

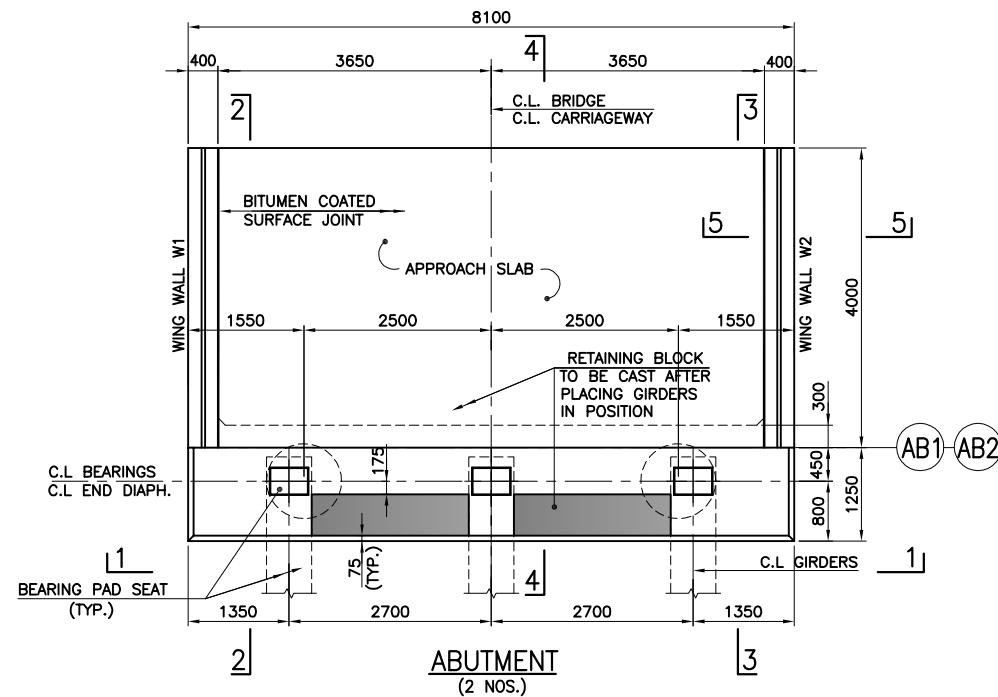


5 - 5
SCALE 1:20

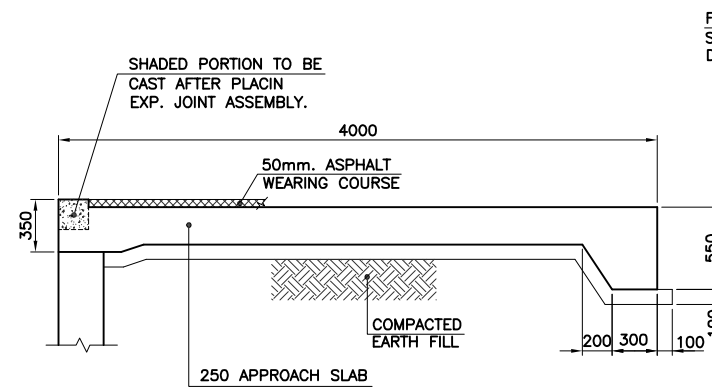


EXPANSION JOINT DETAIL
FREYSSINET CIPEC (WOSd 50) OR APPROVED EQUIVALENT WITH TENSION BOLTS.
SCALE 1:5

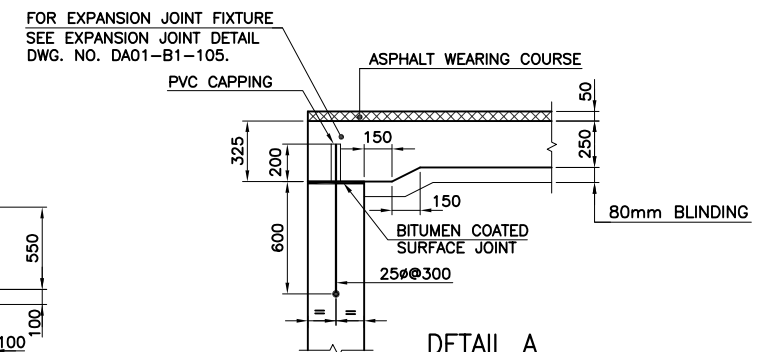
- 1- EXTRUDED ALUMINIUM ALLOY SECTION.
- 2- NEOPRENE GLAND (ELASTOMERIC PROFILE)
- 3- WASHER.
- 4- STRUCTURAL ANCHOR BOLT M12x200mm HSS GALVANIZED BOLT.
- 5- PVC PROTECTION SHEATH.
- 6- ANCHORING PIECE.
- 7- CONCRETE CAST AFTER SETTING IN PLACE THE JOINT.
- 8- EPOXY FILL-FOSROC NITOSEAL 290 OR APPROVED EQUIVALENT.



ABUTMENT
(2 NOS.)







APPROACH SLAB
SCALE: 1:25

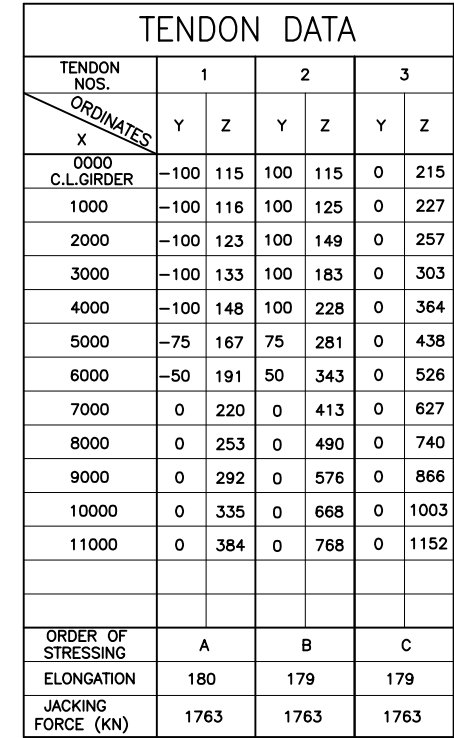


DETAIL A
SCALE 1:20

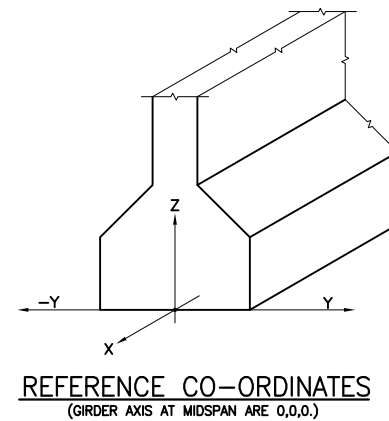
NOTES

- 1- THIS DRAWING MUST BE READ IN CONJUNCTION WITH DWG. NO. 2053-STR-SB02-B1-101.
- 2- FOR GENERAL NOTES REFER DWG. NO. 2053-STR-SB02-GN-01.

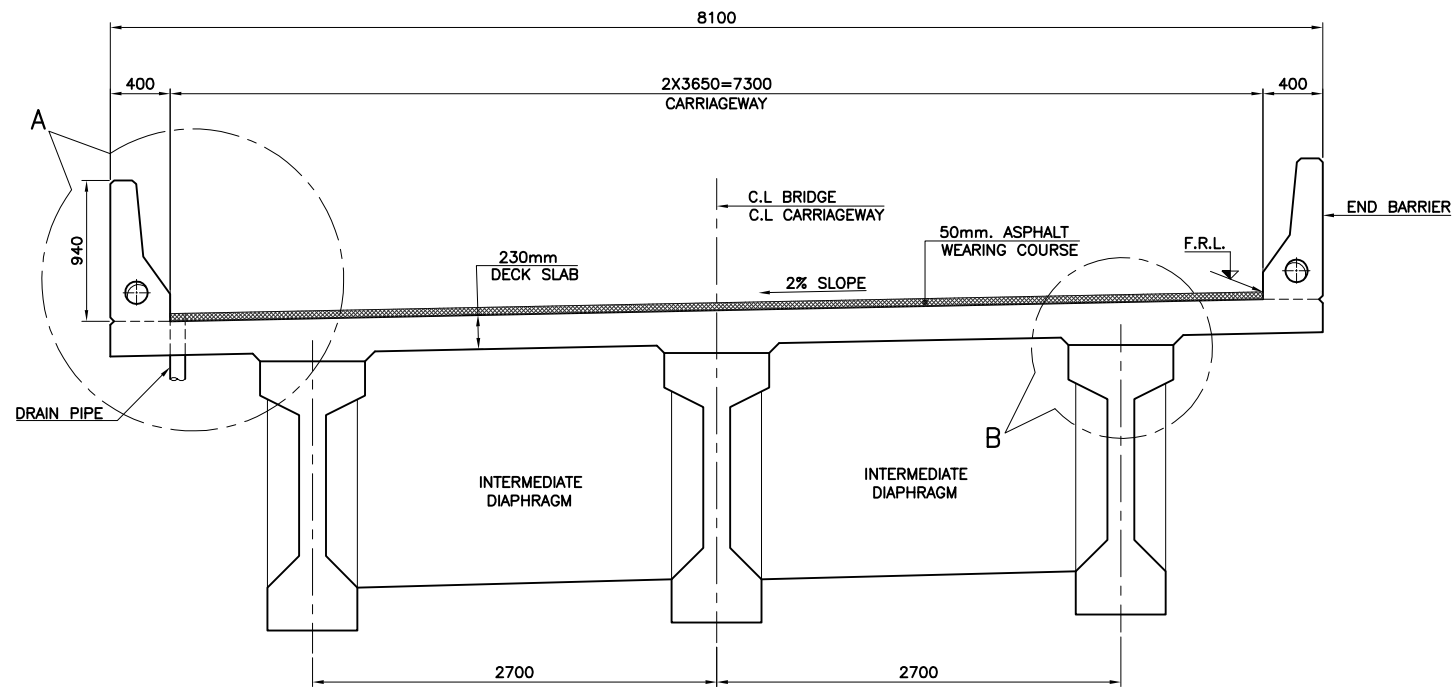
CLIENT:- <div>Asian Development Bank</div>	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- DISTRICT : BENAZIRABAD - SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD	ED.NO.	DATE	DESCRIPTION	DRAWN: F.A.S	DRAWING NO. 2053-STR-SB02-B1-102
			TITLE:- BRIDGE NO. B1 ABUTMENT				DESIGNED : R.I / M.A	
							CHECKED : S.A	Edition,
							DATE: JUNE 2023	
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>								



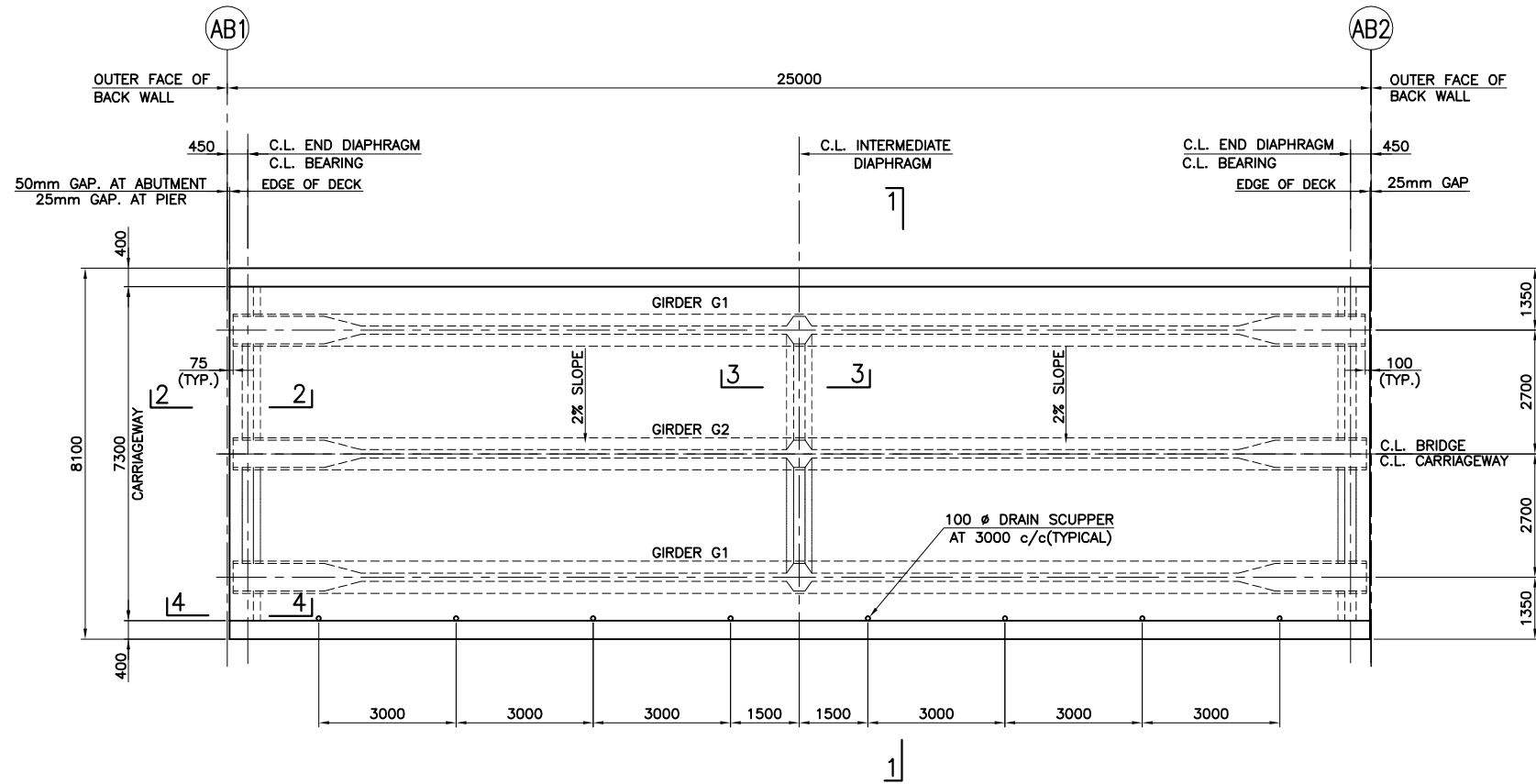
TENDON NOS.	X	Z
1	11288	399
2	11284	798
3	11283	1197



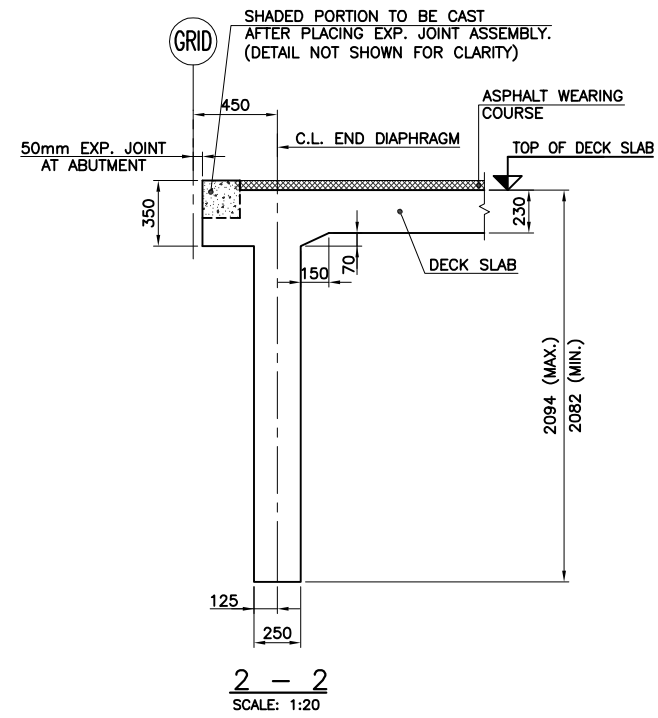
- ### NOTES:
- 1 - ALL STRANDS IN TENDON Nos. 1, 2 & 3 SHALL BE STRESSED FROM ONE END ONLY.
 - 2 - ALL STRANDS IN TENDONS SHALL BE STRESSED TO A MAX. LOAD OF 147 KN EACH AND LOCKED .
 - 3 - THE ANCHORAGE POCKET DETAILS SHOULD BE CHECKED BY THE CONTRACTOR FOR COMPATIBILITY WITH JACK PROPOSED TO BE USED BY HIM.
 - 4 - THE TOTAL EXTENSION GIVEN IN THE TABLE ARE CALCULATED ON THE FOLLOWING BASIS.
 'E, MODULUS OF ELASTICITY OF STEEL = 2.0E5 N/sq.mm
 JACK OVER LENGTH BEYOND FACE OF ANCHORAGE = 300 mm
 - 5 - THE PRECAST GIRDERS SHALL BE PLACED IN SPANS BY APPROVED MEANS TO ENSURE THEIR PLACEMENT WITHOUT DAMAGE AND ACCIDENT. GIRDER SHALL BE PLACED AT CORRECT POSITIONS AS SHOWN ON THE DRAWINGS AND TEMPORARILY BRACED Laterally UNTIL DIAPHRAGMS AND DECK SLABS ARE CAST.
 - 6 - THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS OF:
 (a) FORMWORK, (b) STEEL TUBES, & (c) ANCHOR POCKET DETAILS.
 - 7 - CONTRACTOR SHALL PROPOSE LIFTING ARRANGEMENT OF THE GIRDER FOR APPROVAL BY THE ENGINEER.
 - 8 - FOR GENERAL NOTES REFER DRG. NO. 2053-STR-SB02-GN-01.



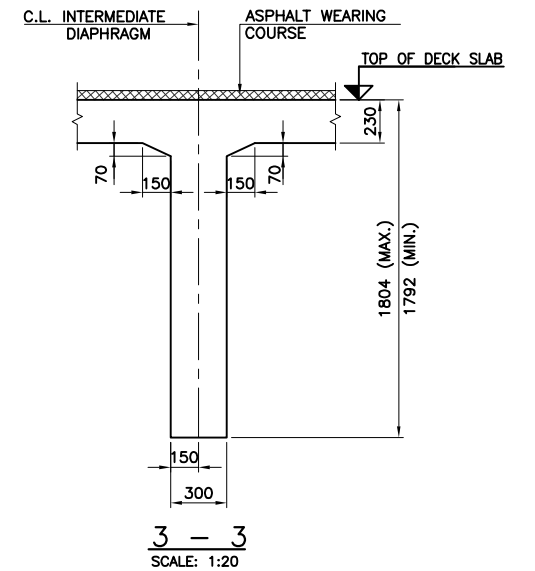
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SCALE: 1:25



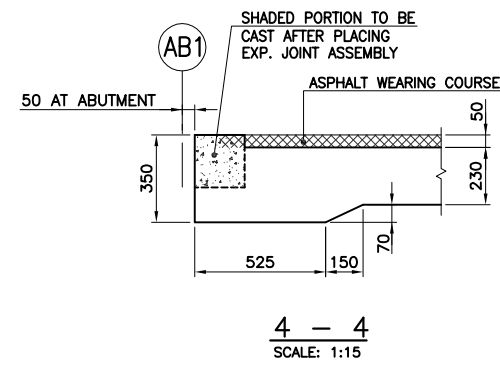
DECK SLAB



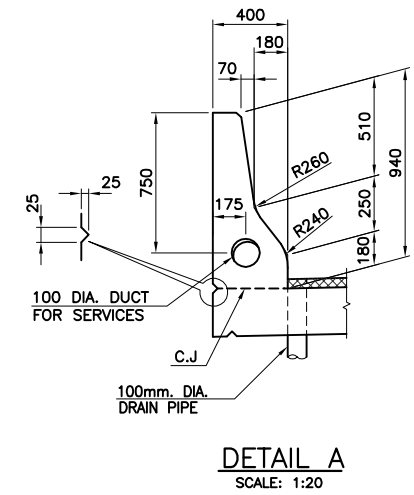
2 - 2
SCALE: 1:20



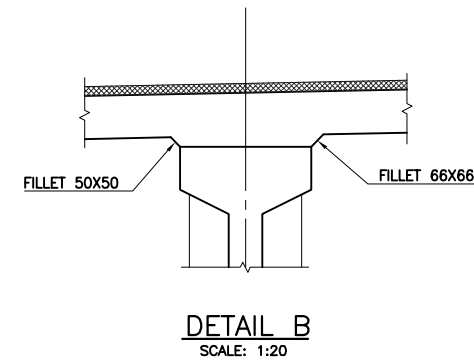
3 - 3
SCALE: 1:20



4 - 4
SCALE: 1:15






DETAIL A
SCALE: 1:20




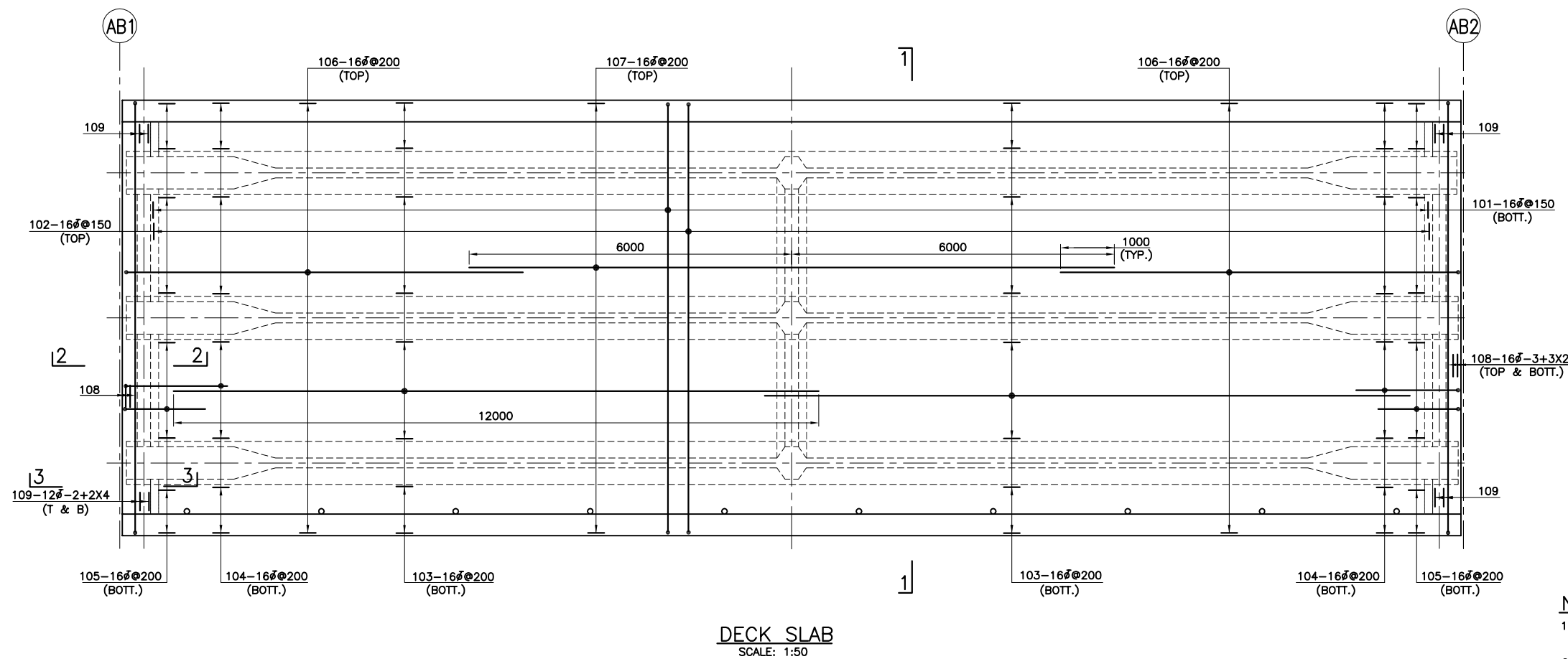
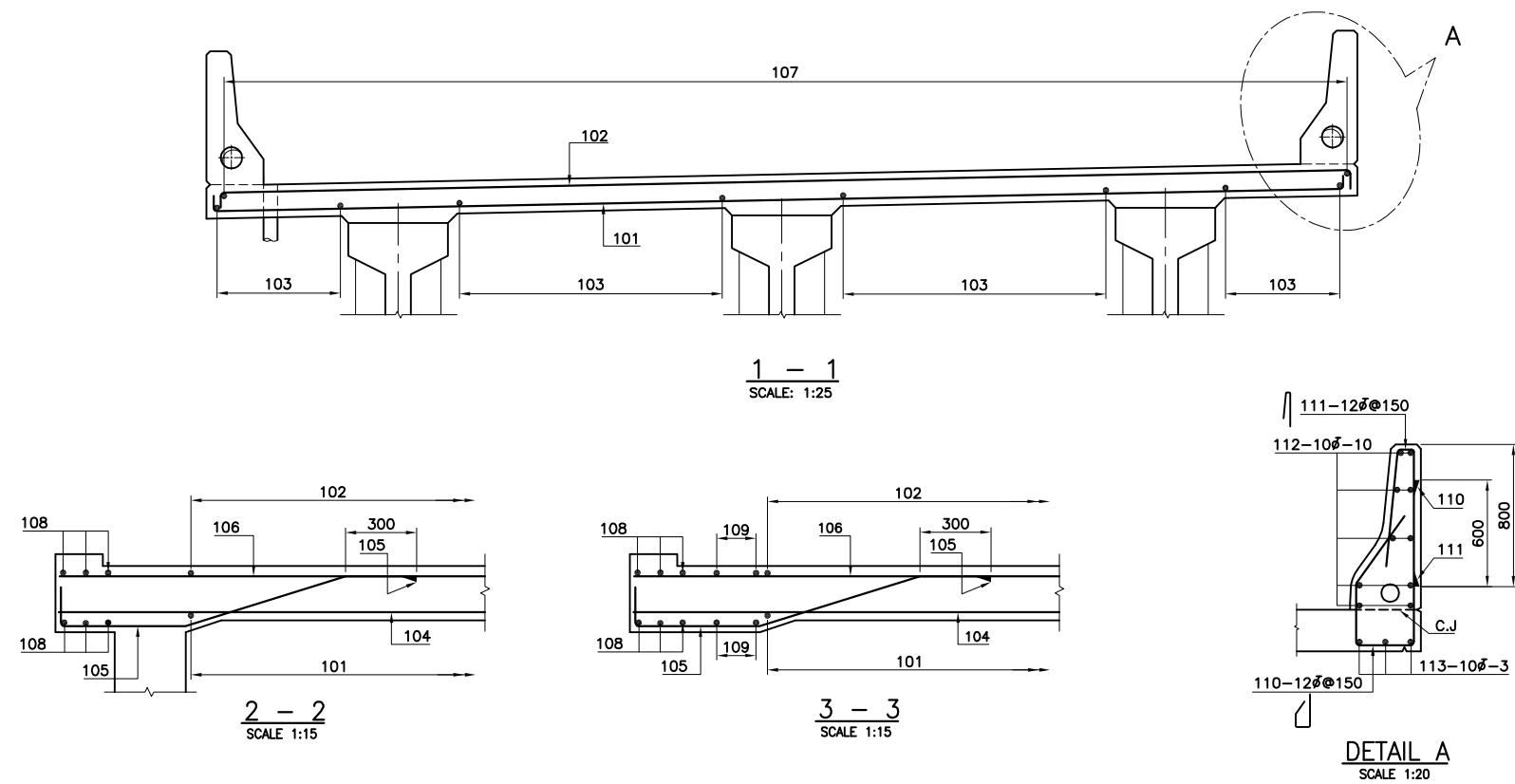
DETAIL B
SCALE: 1:20

NOTES:





- 1- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO. 2053-STR-SB02-B1-101.
- 2- FOR EXPANSION JOINT & BEARING PAD DETAILS REFER DWG. NO. 2053-STR-SB02-B1-102.
- 3- FOR GENERAL NOTES REFER DWG. NO. 2053-STR-SB02-GN-01.

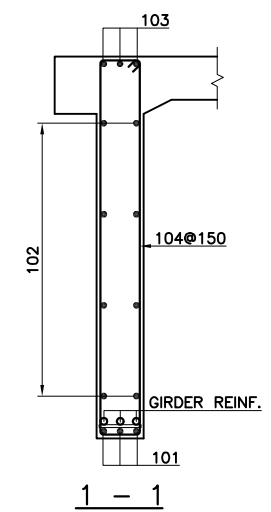
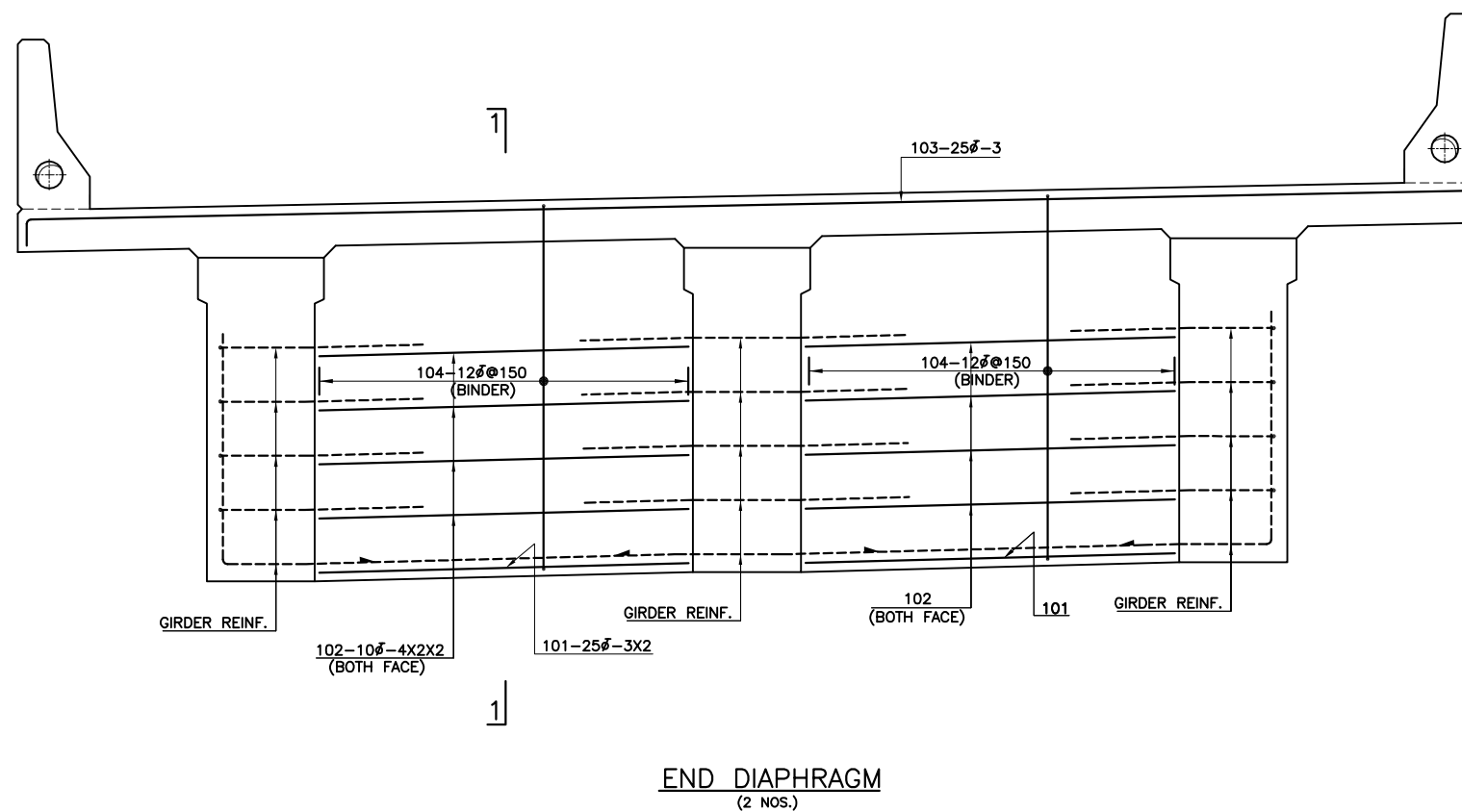
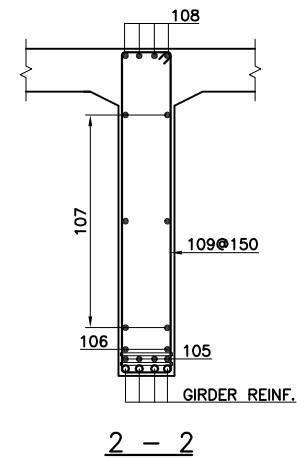
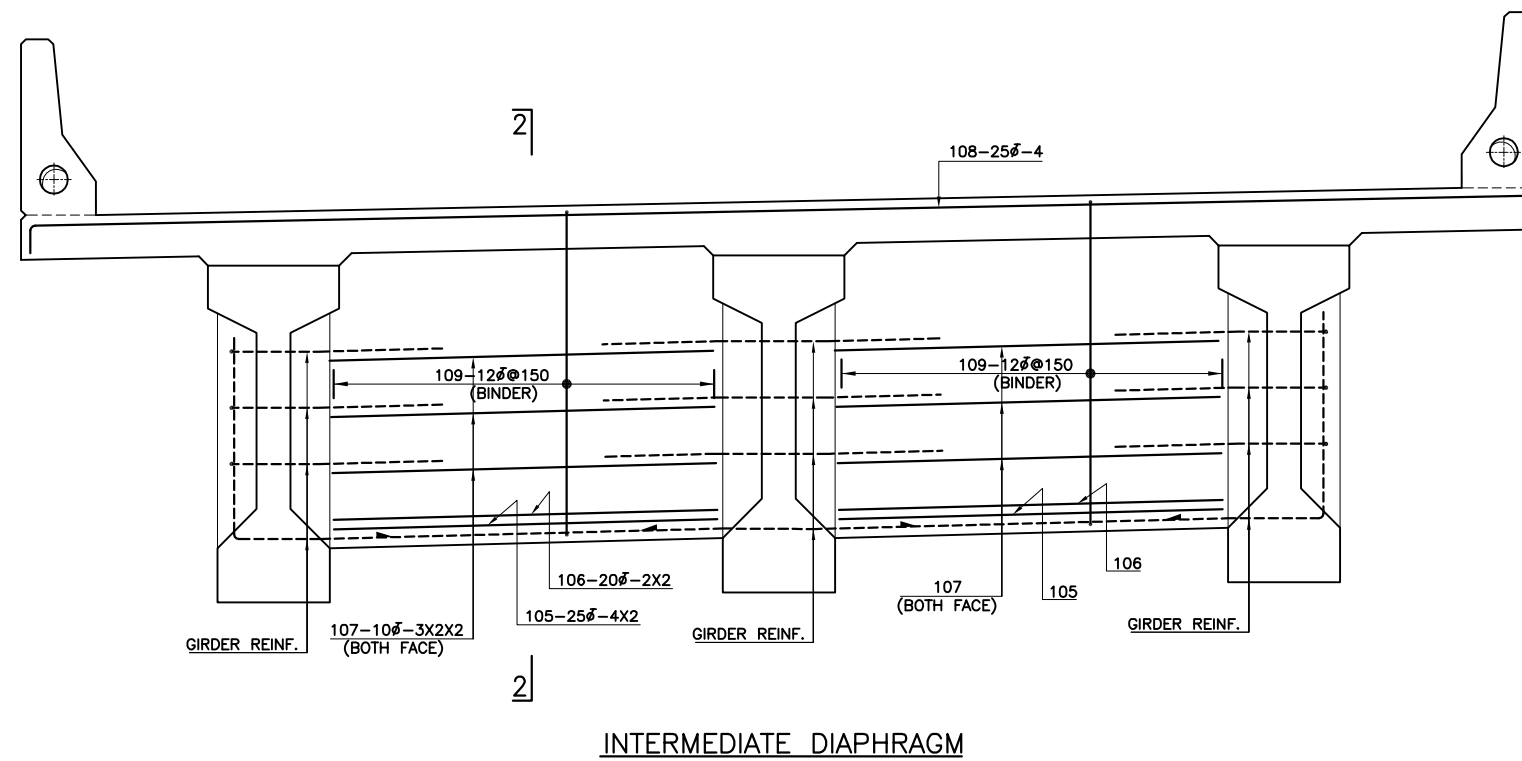
CLIENT:- <div>Asian Development Bank</div>	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- DISTRICT : BENAZIRABAD - SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD	ED.NO.	DATE	DESCRIPTION	DRAWN: F.A.S	DRAWING NO. 2053-STR-SB02-B1-104
			TITLE:- BRIDGE NO. B1 DECK SLAB & DIAPHRAGMS				DESIGNED : R.I / M.A	
							CHECKED : S.A	Edition.
							DATE: JUNE 2023	

EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>
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- NOTES:-**
- 1- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DWG. NO. 2053-STR-SB02-B1-104.
 - 2- FOR GENERAL NOTES REFER DWG. NO. 2053-STR-SB02-GN-01.

CLIENT:-  Asian Development Bank	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- DISTRICT : BENAZIRABAD - SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD	ED.NO. DATE	DESCRIPTION	DRAWN: M.A	DRAWING NO. 2053-STR-SB02-B1-203
						DESIGNED: R.I / M.A	Scale:- 1:100
EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH			TITLE:- BRIDGE NO. B1 DECK SLAB			CHECKED: S.A	Edition.
						DATE: JUNE 2023	



NOTES:-

- 1- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DWG. NO. 2053-STR-SB02-B1-104.
- 2- FOR GENERAL NOTES REFER DWG. NO. 2053-STR-SB02-GN-01.

CLIENT:-  Asian Development Bank EXECUTING AGENCY:-  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	PROJECT:- LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)	DESIGN CONSULTANT  In association with 	PROJECT ROAD:- DISTRICT : BENAZIRABAD - SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD TITLE:- BRIDGE NO. B1 DIAPHRAGMS	ED.NO. DATE	DESCRIPTION	DRAWN: M.A DESIGNED: R.I / M.A CHECKED: S.A DATE: JUNE 2023	DRAWING NO. 2053-STR-SB02-B1-204 Scale:- 1:20 Edition.
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CULVERTS

SCHEDULE OF CULVERTS

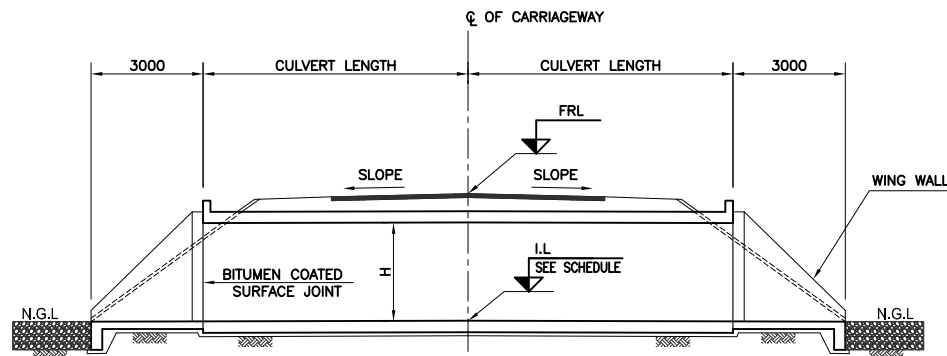
CULVERT NO.	LATITUDE	LONGITUDE	EXISTING/ PROPOSED	EXISTING CULVERT			DESIGN STRATEGY	PROPOSED DESIGN			
				NO. OF CELLS	WIDTH/ DIA	HEIGHT		TYPE	NO. OF CELLS	WIDTH/ DIA	HEIGHT
C1	26.44649	68.57254	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C2	26.44630	68.57358	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C3	26.43647	68.58077	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C4	26.43137	68.58311	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C5	26.42839	68.58399	EXISTING	1	1	1.5	REPLACE WITH NEW	BOX	1	1.5	1.5
C6	26.42433	68.58515	EXISTING	1	1.5	1.5	REPLACE WITH NEW	BOX	1	1.5	1.5
C7	26.41169	68.58723	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C8	26.40630	68.58096	PROPOSED	-	-	-	NEW	BOX	1	1.5	1.5
C9	26.40220	68.58052	EXISTING	1	0.3	0.3	REPLACE WITH NEW	PIPE	1	1	-
C10	26.39725	68.58063	EXISTING	1	1	1.5	REPLACE WITH NEW	BOX	1	1.5	1.5
C11	26.39682	68.58654	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C12	26.39280	68.58809	PROPOSED	-	-	-	NEW	BOX	1	1.5	1.5
C13	26.37476	68.58780	EXISTING	1	1	1	RETAINED/ REPAIR	-	-	-	-
C14	26.37264	68.58768	PROPOSED	-	-	-	NEW	PIPE	1	1	-
C15	26.35781	68.58460	EXISTING	1	1	1.5	REPLACE WITH NEW	BOX	1	1.5	1.5
C16	26.35780	68.57959	EXISTING	1	1	1	REPLACE WITH NEW	PIPE	2	1	-
C17	26.35420	68.57691	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1	1
C18	26.35324	68.57688	EXISTING	1	1	1	REPLACE WITH NEW	PIPE	3	1	-
C19	26.35300	68.57421	EXISTING	1	0.3	0.3	REPLACE WITH NEW	BOX	1	1.5	1
C20	26.35319	68.57103	EXISTING	1	1	1.5	REPLACE WITH NEW	BOX	1	1.5	1.5
C21	26.34335	68.56624	EXISTING	1	0.3	0.3	REPLACE WITH NEW	PIPE	1	1	-
C22	26.33397	68.54493	EXISTING	1	1	1	RETAINED/ REPAIR	-	-	-	-
C23	26.33636	68.53565	EXISTING	1	2	2	RETAINED/ REPAIR	-	-	-	-
C24	26.33985	68.53404	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C25	26.33986	68.53417	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	2	1
C26	26.34327	68.53433	EXISTING	1	1.5	1	RETAINED/ REPAIR	-	-	-	-
C27	26.34445	68.53434	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C28	26.34677	68.53423	EXISTING	1	1	1	RETAINED/ REPAIR	-	-	-	-
C29	26.34877	68.53443	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C30	26.34906	68.53433	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	2	1
C31	26.34939	68.52535	EXISTING	1	0.3	0.3	REPLACE WITH NEW	BOX	1	1	1
C32	26.35127	68.51790	EXISTING	1	1.5	1.5	REPLACE WITH NEW	BOX	1	2	1.5
C33	26.35132	68.51968	EXISTING	1	1.5	1.5	REPLACE WITH NEW	BOX	1	1.5	1.5
C34	26.35819	68.50774	EXISTING	1	1	1	RETAINED/ REPAIR	-	-	-	-
C35	26.35841	68.50714	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C36	26.36085	68.50136	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C37	26.36585	68.48792	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C38	26.36706	68.48461	EXISTING	1	4	1.5	RETAINED/ REPAIR	-	-	-	-
C39	26.36845	68.48253	EXISTING	1	1	1	RETAINED/ REPAIR	-	-	-	-
C40	26.36981	68.47964	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C41	26.37384	68.46798	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C42	26.37847	68.46023	EXISTING	1	1	1	RETAINED/ REPAIR	-	-	-	-
C43	26.38053	68.45842	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C44	26.39212	68.44868	EXISTING	1	1	1	REPLACE WITH NEW	BOX	1	1.5	1
C45	26.39437	68.44656	EXISTING	1	1	1	RETAINED/ REPAIR	-	-	-	-
C46	26.39527	68.44580	EXISTING	1	1	1.2	RETAINED/ REPAIR	-	-	-	-
C47	26.39544	68.44562	EXISTING	1	1	1.2	RETAINED/ REPAIR	-	-	-	-
C48	26.39553	68.44560	EXISTING	1	1	1.2	REPLACE WITH NEW	BOX	1	1.5	1
C49	26.40008	68.44205	EXISTING	1	0.8	0.8	REPLACE WITH NEW	BOX	1	1.5	1

NOTES:–

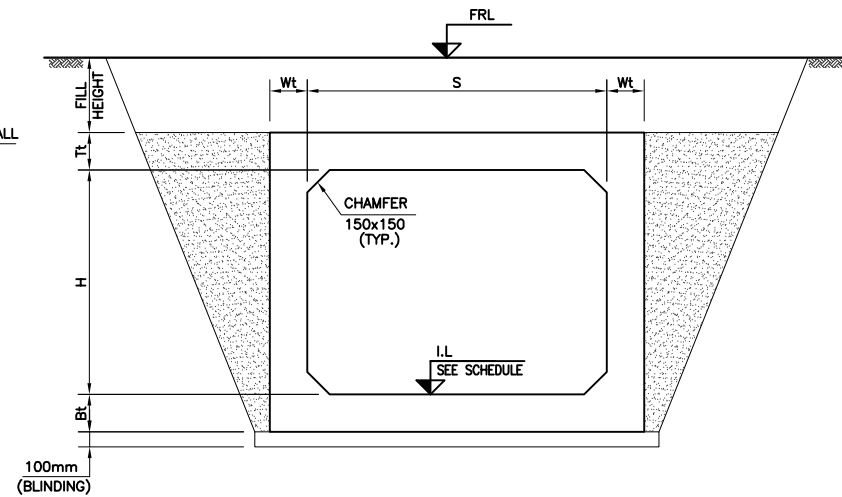
- 1– THIS DRAWING MUST BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS.
- 2– ALL LEVELS SHALL BE VERIFIED AT SITE BEFORE EXECUTION.
- 3– LEVELS, LENGTHS & SKEWS MAY BE ADJUSTED AS PER SITE CONDITIONS DURING LEVELS ADJUSTMENTS, IF FILL HEIGHT VARIES SIGNIFICANTLY FOR WHICH THE STRUCTURE IS DESIGNED, NOTIFY ENGINEER.

CLIENT:- <div>Asian Development Bank</div>	PROJECT:- <div>LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)</div>	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:-	DISTRICT : BENAZIRABAD - SB-02	ED.NO.	DATE	DESCRIPTION	DRAWN:	F.A.S	DRAWING NO.	2053-STR-SB02-CU-SCH-01				
			IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD							DESIGNED :	R.I / M.A	Scale:-	1:100		
				TITLE:-							CHECKED :	S.A	Edition.		
					SCHEDULE OF CULVERTS							DATE:	JUNE 2023		

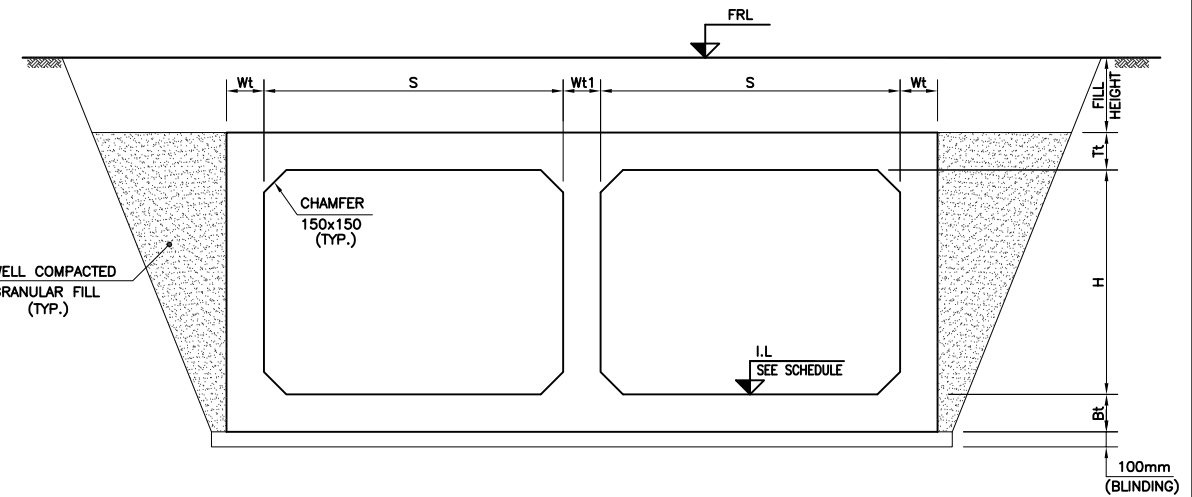
BOX CULVERTS



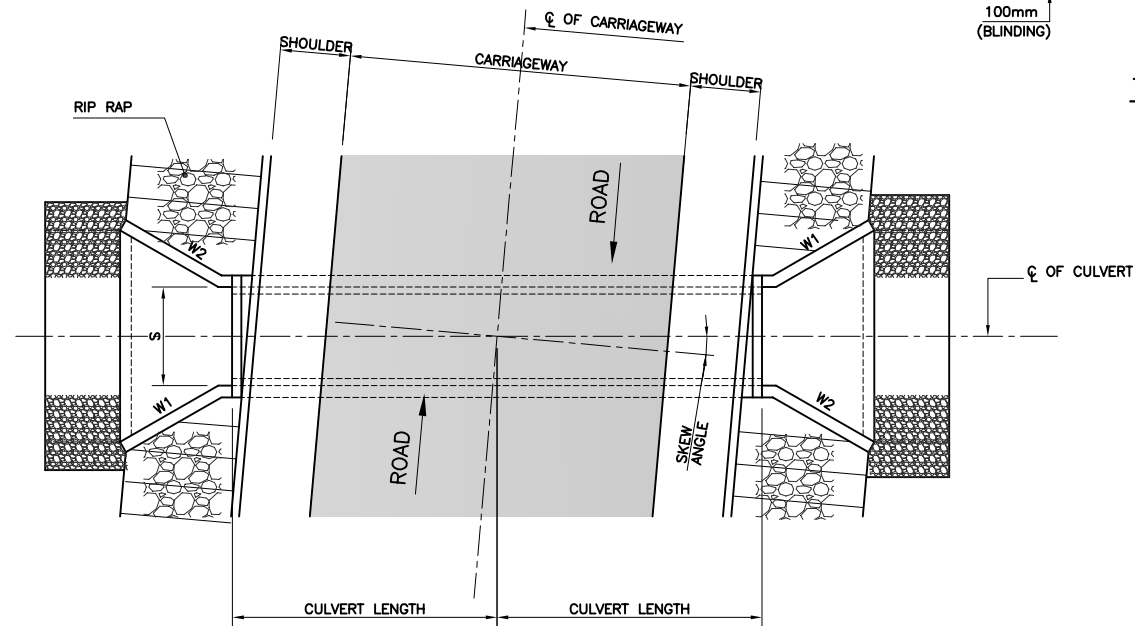
LONGITUDINAL SECTION AT C.L. OF CULVERT
(FOR ROAD X-SECTION REFER RELEVANT ROADWAY DRAWINGS)



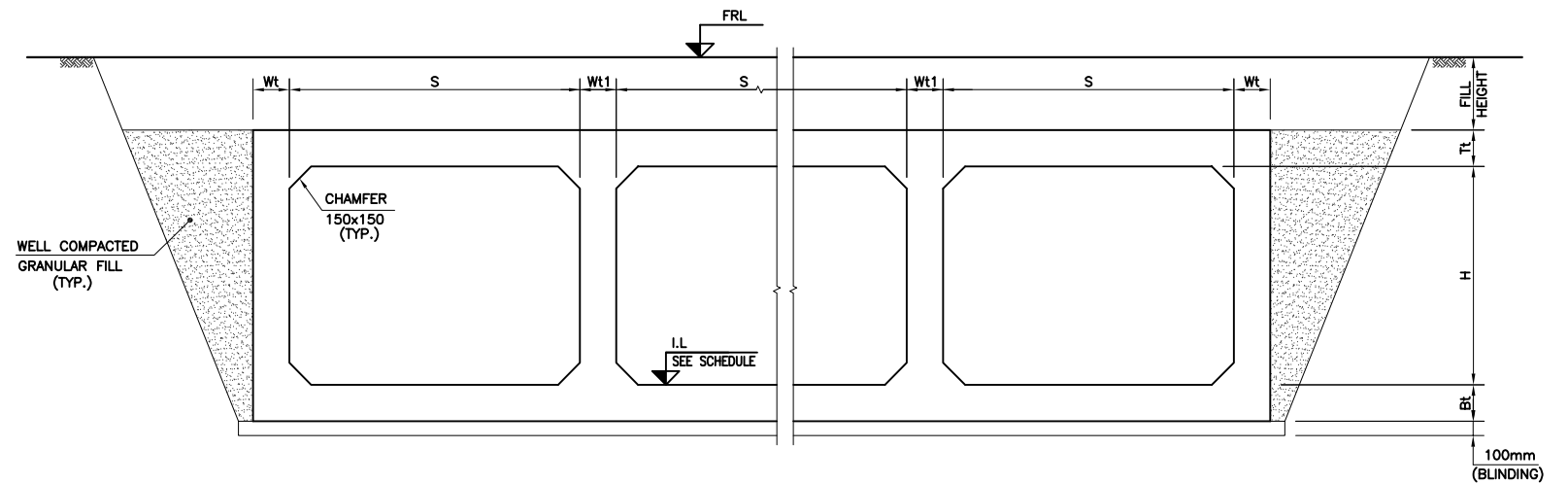
TYP. CROSS SECTION (SINGLE CELL)
SCALE 1:25



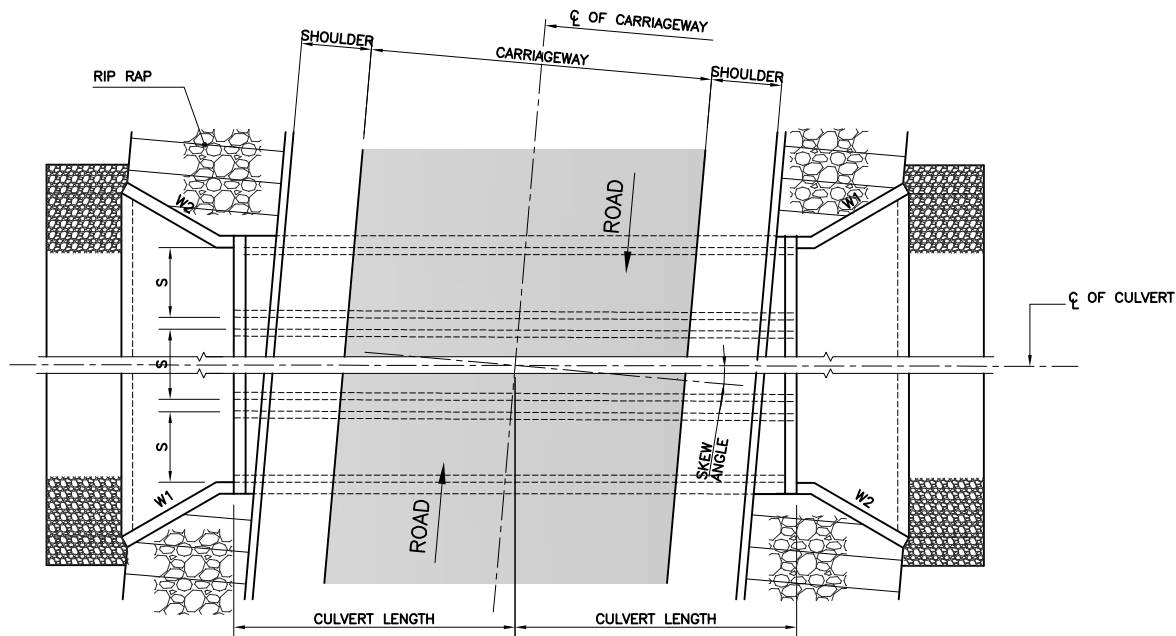
TYP. CROSS SECTION (DOUBLE CELL)
SCALE 1:25



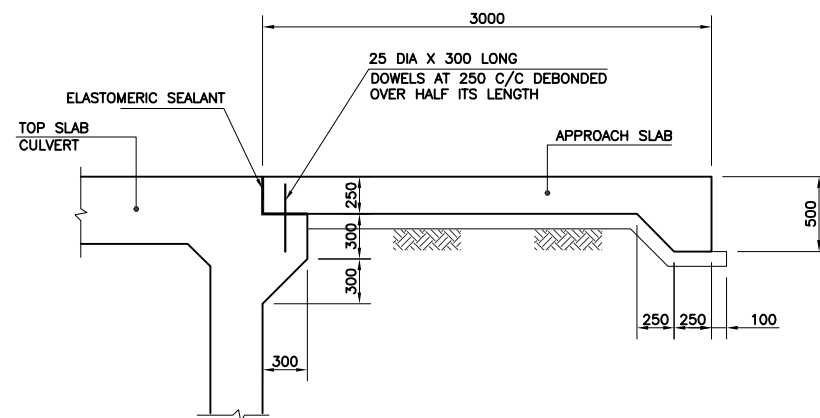
PLAN (SINGLE CELL)



TYP. CROSS SECTION (MULTI CELL)
SCALE 1:25







PLAN (MULTI CELL)

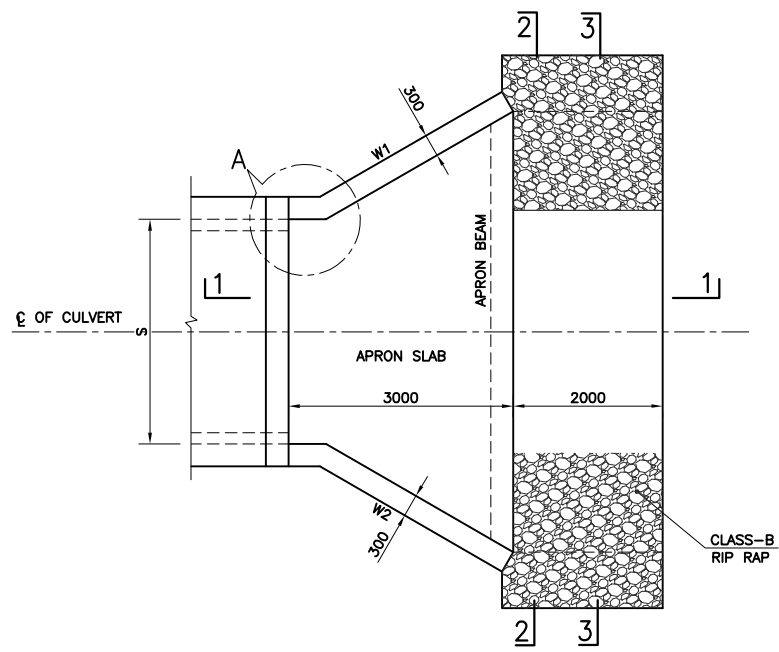


TYP. DETAIL OF APPROACH SLAB
FOR FILL HEIGHT \leq 1000mm
SCALE 1:25

NOTES:-

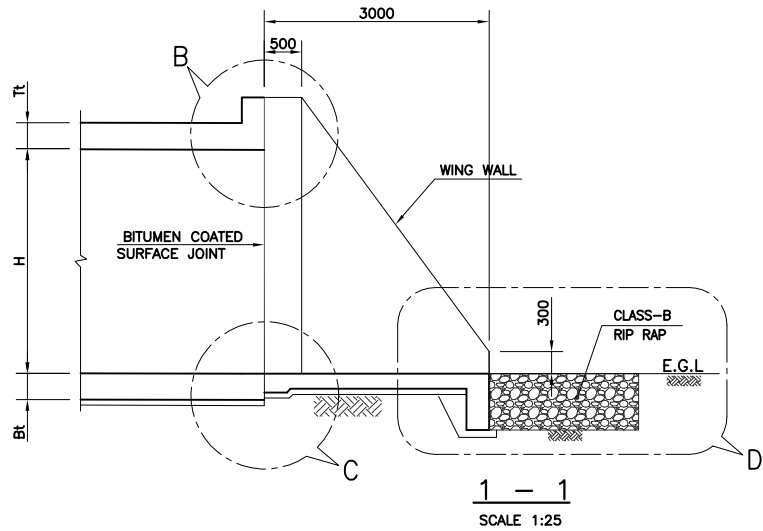
- 1 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWING.
- 2 - FOR ROAD X-SECTION AND LOCATION REFER RELEVANT ROADWAY PLAN AND PROFILE DRAWINGS.
- 3 - LEVELS MAY BE ADJUSTED AS PER SITE CONDITIONS. DURING LEVEL ADJUSTMENTS, IF FILL HEIGHT VARIES SIGNIFICANTLY FOR WHICH THE STRUCTURE IS DESIGNED, NOTIFY ENGINEER.
- 4 - LENGTH OF CULVERT, WINGWALL AND WINGWALL INCLINATION SHALL BE ADJUSTED AS PER SITE REQUIREMENTS.

CLIENT:- <div>Asian Development Bank</div>		PROJECT:- <div>LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)</div>	DESIGN CONSULTANT <div> In association with </div>	PROJECT ROAD:- <div>DISTRICT : BENAZIRABAD - SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD</div>	ED.NO.	DATE	DESCRIPTION	DRAWN: <div>F.A.S</div>	DRAWING NO. <div>2053-STR-SB02-BC-01</div>
EXECUTING AGENCY:- <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>							DESIGNED: <div>R.I / M.A</div>	Scale:- <div>1:100</div>	
							CHECKED: <div>S.A</div>	Edition.	
							DATE: <div>JUNE 2023</div>		

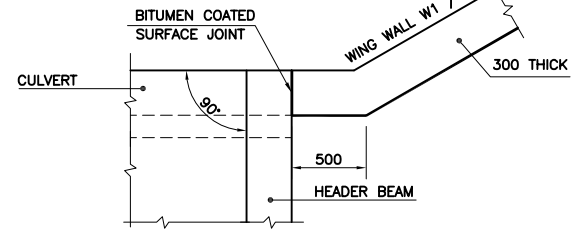


PLAN OF APRON SLAB (SINGLE CELL)

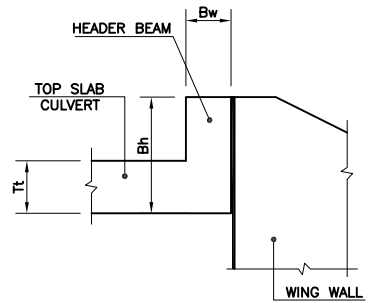
SCALE 1:50



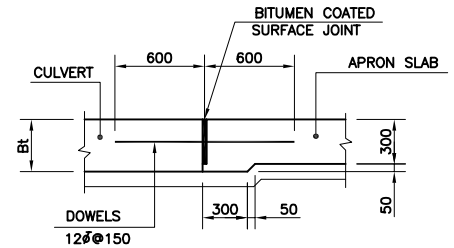
1 - 1
SCALE 1:25



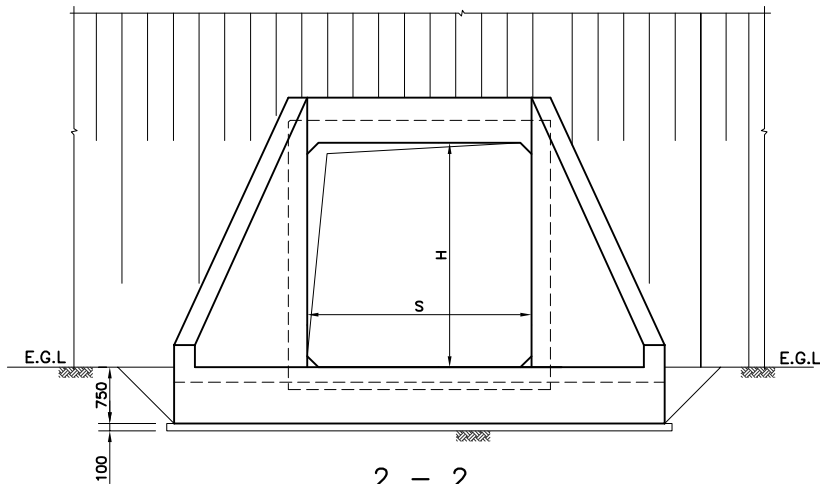
DETAIL A
SCALE 1:25



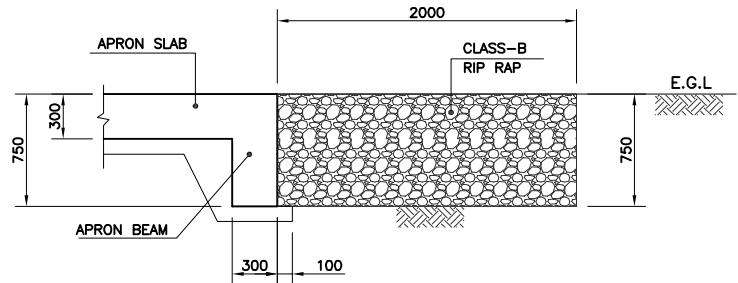
DETAIL B
SCALE 1:25



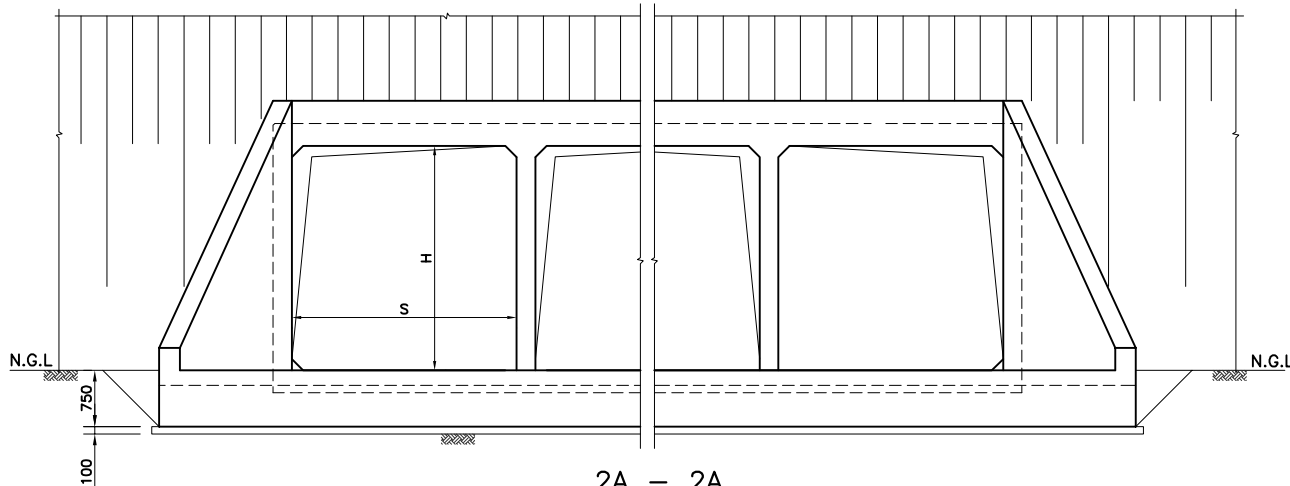
DETAIL C
SCALE 1:25



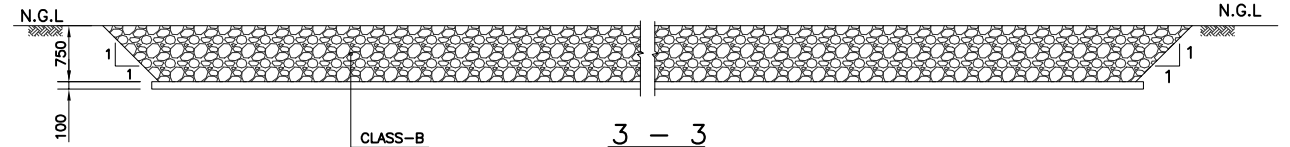
2 - 2
SCALE 1:50



DETAIL D
SCALE 1:25



2A - 2A
SCALE 1:50



3 - 3
SCALE 1:50

NOTES:-

- 1- THIS DRAWING MUST BE READ IN CONJUNCTION WITH
DWG. NO. 2053-STR-SB02-01-BC-01.

CLIENT:-
ADB Asian Development Bank

EXECUTING AGENCY:-
WORKS AND SERVICES DEPARTMENT
GOVERNMENT OF SINDH

PROJECT:-
LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD
ASSISTANCE PROJECT (EFAP)

DESIGN CONSULTANT
ECIL
In association with
AA


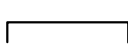
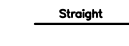
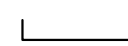
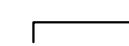
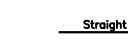
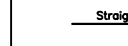
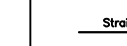

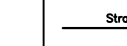
PROJECT ROAD:-
DISTRICT : BENAZIRABAD - SB-02
IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO
CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD

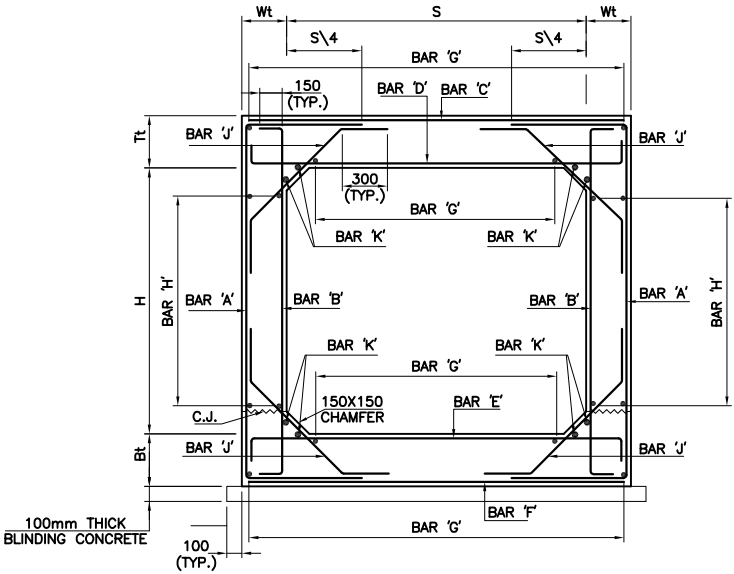
TITLE:-
RCC BOX CULVERT
DETAILS OF APRON SLAB & WING WALLS

ED.NO.	DATE	DESCRIPTION

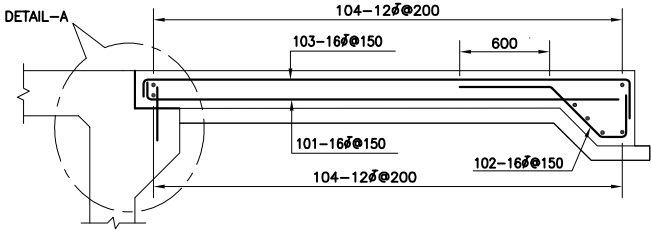
DRAWN:	F.A.S	DRAWING NO.	2053-STR-SB02-BC-02
DESIGNED:	R.I / M.A	Scale:-	1:100
CHECKED:	S.A	Edition.	
DATE:	JUNE 2023		

SINGLE CELL CULVERTS

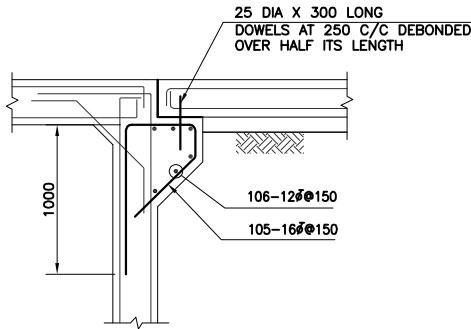
DIMENSIONS																										
							BAR A		BAR B		BAR C		BAR D		BAR E		BAR F		BAR G		BAR H		BAR J		BAR K	
NO. OF CELLS	S mm	H mm	FILL mm	Wt mm	Bt mm	Tt mm	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	NO.OF BAR
1	1000	1000	300-1000	250	250	250	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	150	10ϕ	125	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	1000	1500	300-1000	250	250	250	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	125	10ϕ	125	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	1500	1000	300-1000	250	250	250	10ϕ	100	10ϕ	200	10ϕ	150	12ϕ	125	12ϕ	125	10ϕ	150	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	1500	1500	300-1000	250	250	250	10ϕ	100	10ϕ	200	10ϕ	150	12ϕ	125	12ϕ	125	10ϕ	150	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	1500	2000	300-1000	250	250	250	10ϕ	100	10ϕ	200	10ϕ	150	12ϕ	125	12ϕ	125	10ϕ	150	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	2000	1000	300-1000	300	300	300	12ϕ	125	10ϕ	150	12ϕ	150	12ϕ	100	12ϕ	100	12ϕ	150	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	2000	2500	300-1000	300	300	300	12ϕ	125	10ϕ	150	12ϕ	150	16ϕ	150	16ϕ	125	12ϕ	150	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	2000	1500	300-1000	300	300	300	12ϕ	125	10ϕ	150	12ϕ	150	12ϕ	100	12ϕ	100	12ϕ	150	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	2000	2000	300-1000	300	300	300	12ϕ	125	10ϕ	150	12ϕ	150	12ϕ	100	12ϕ	100	12ϕ	150	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	2500	1000	300-1000	300	325	325	12ϕ	100	12ϕ	200	12ϕ	100	16ϕ	125	16ϕ	125	12ϕ	100	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	2500	1500	300-1000	300	325	325	12ϕ	100	12ϕ	200	12ϕ	100	16ϕ	125	16ϕ	125	12ϕ	100	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8
1	2500	2000	300-1000	300	325	325	12ϕ	100	12ϕ	200	12ϕ	100	16ϕ	100	16ϕ	100	12ϕ	100	10ϕ	200	10ϕ	200	10ϕ	200	10ϕ	8



TYPICAL SECTION OF SINGLE CELL
SCALE 1:25



TYP. REINFORCEMENT DETAIL OF
APPROACH SLAB



DETAIL-A
SCALE 1:25

NOTES:-

- 1- BAR CUT LENGTH SHALL BE IN ACCORDANCE WITH LENGTH OF CULVERT.
- 2- ALL STURCTURAL CONCRETE SHALL BE CLASS 'A3' CONCRETE.
- 3- ALL STURCTURAL REINFORCEMENT SHALL BE GRADE 60 STEEL.
- 4- MINIMUM COVER TO THE REINFORCEMENT SHALL BE 50mm.
- 5- OVERLAP LENGTH OF REBAR SHALL BE 48 x DIA OF BARS.
- 6- FOR CULVERTS WITH SPAN LESS THAN ANY OF THOSE SHOWN IN TABLE, USE REINFORCEMENT AND SPACING FOR NEXT GREATER SIZE SPAN.MARK NECESSARY CHANGES IN BAR LENGTH AND QUANTITIES.
- 7- EXPANSION JOINTS SHALL BE PROVIDED AT MAX.15m LENGTH IF NECESSARY.
- 8- ELASTIC ASPHALT BOARD WITH 10mm. THICKNESS AT THE JOINT OF CONCRETE SHALL BE PROVIDED.
- 9- DO NOT LAP BAR C & F AT SUPPORT OR WALLS &
DO NOT LAP BAR D & E AT MID SPAN
- 10- C.J MEANS CONSTRUCTION JOINT
- 11- MAXIMUM DESIGN BEARING PRESSURE IS 200 Kpa. WHICH SHELL BE VARIFIED AT SITE BEFORE EXECUTION.

CLIENT:-



EXECUTING AGENCY:-



WORKS AND SERVICES DEPARTMENT
GOVERNMENT OF SINDH

PROJECT:-

LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD
ASSISTANCE PROJECT (EFAP)

DESIGN CONSULTANT



PROJECT ROAD:-

DISTRICT : BENAZIRABAD - SB-02
IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO
CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD

TITLE:-

RCC BOX CULVERT
REINFORCEMENT DETAILS OF BOX CULVERT

ED.NO.

DATE

DESCRIPTION

DRAWN:

F.A.S

DESIGNED :

R.I / M.A

CHECKED :

S.A

DATE:

JUNE 2023

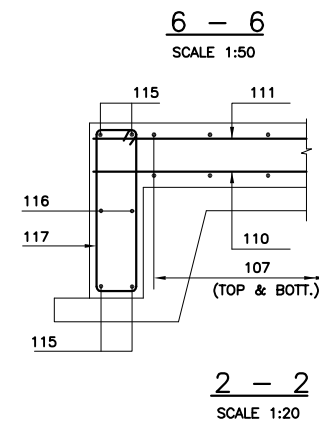
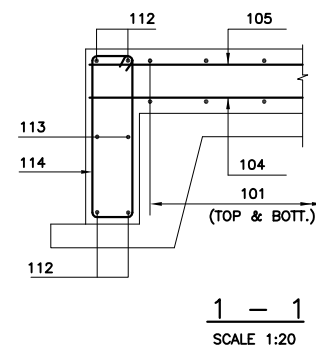
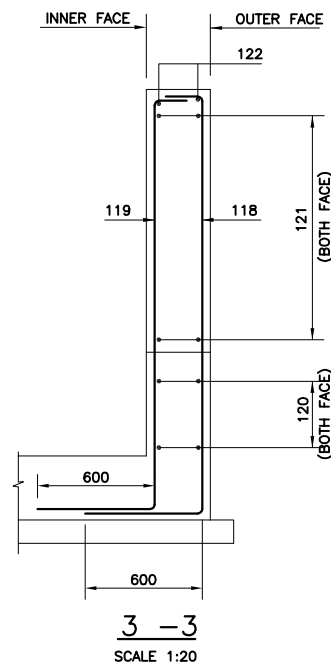
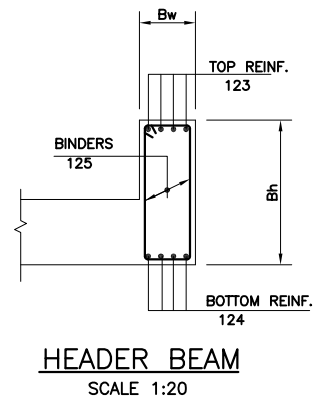
DRAWING NO.

2053-STR-SB02-BC-03

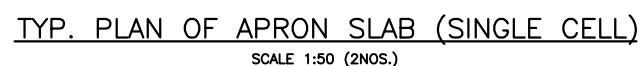
Scale:-

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Edition,

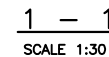
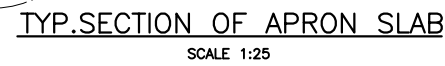


Technical drawing of a 4-4 scale, showing a cross-section of a channel. The drawing is labeled "OUTER FACE" and "INNER FACE". Dimensions are given as 118, 119, 121, and 121a. The scale is indicated as "4 - 4" and "SCALE 1:20".

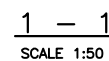
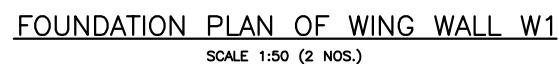
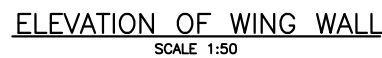






1- THIS DRAWING MUST BE READ IN CONJUNCTION WITH
DWG. NO. 2053-STR-SB02-BC-01, 02 & 03.

S.NO.	H	F1	F2	F3	Wt1	Ft1	BAR 'A'	BAR 'B'	BAR 'C'	BAR 'D'
1	1500	1200	200	750	250	250	12 ϕ 200	12 ϕ 200	12 ϕ 200	12 ϕ 200
2	2500	1800	300	1250	250	250	16 ϕ 200	12 ϕ 200	12 ϕ 200	16 ϕ 200
3	3000	2000	300	1400	300	300	16 ϕ 200	12 ϕ 200	12 ϕ 200	16 ϕ 200
4	4000	3000	700	1950	350	350	16 ϕ 125	12 ϕ 200	16 ϕ 200	16 ϕ 125
5	4500	3200	850	2000	350	350	16 ϕ 100	12 ϕ 200	16 ϕ 200	16 ϕ 100

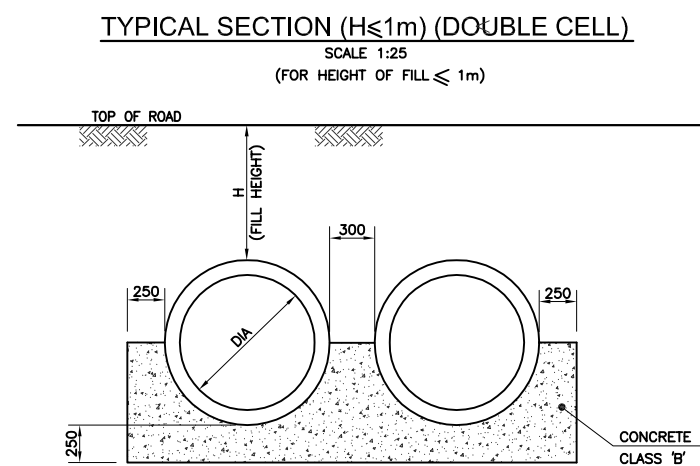
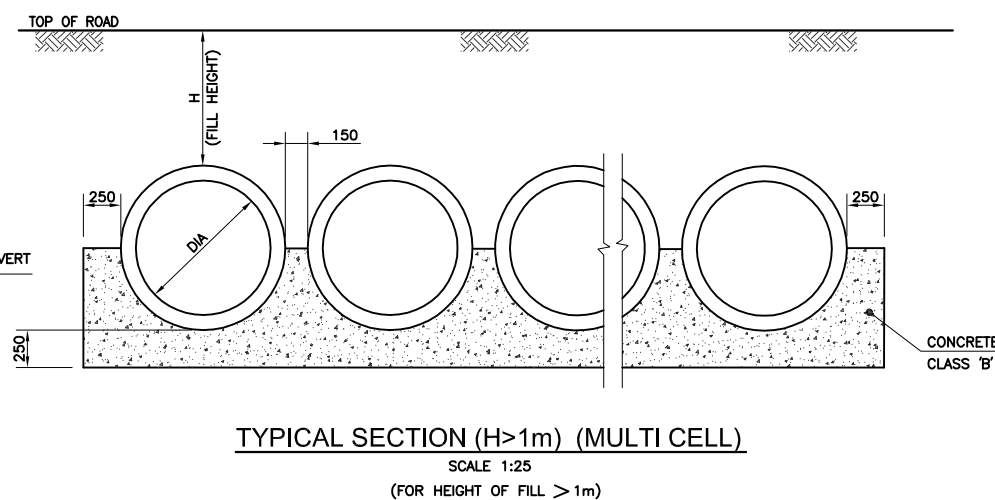
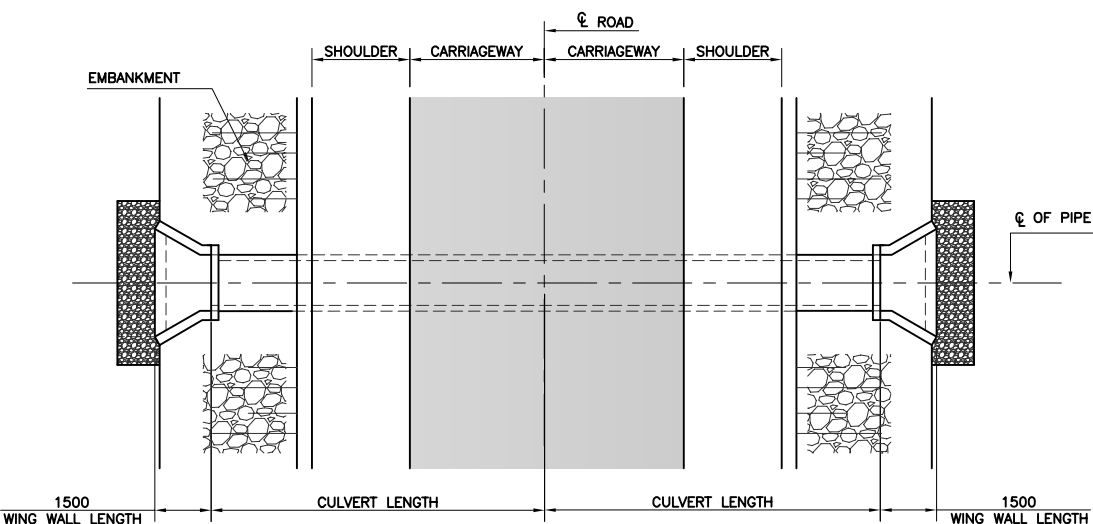
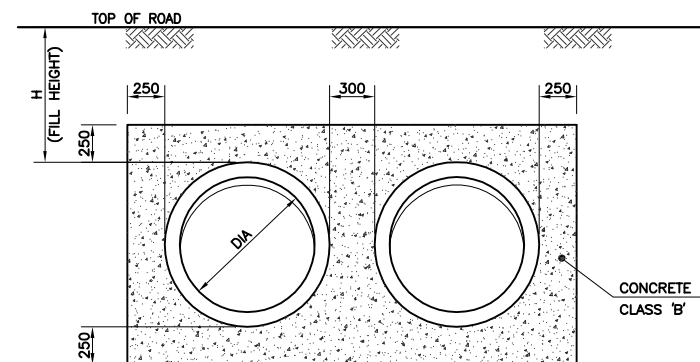
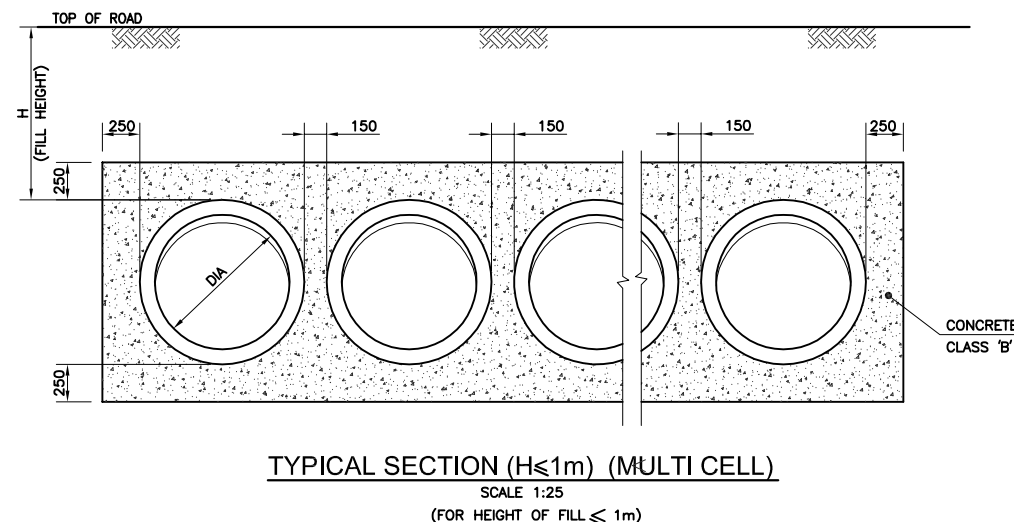
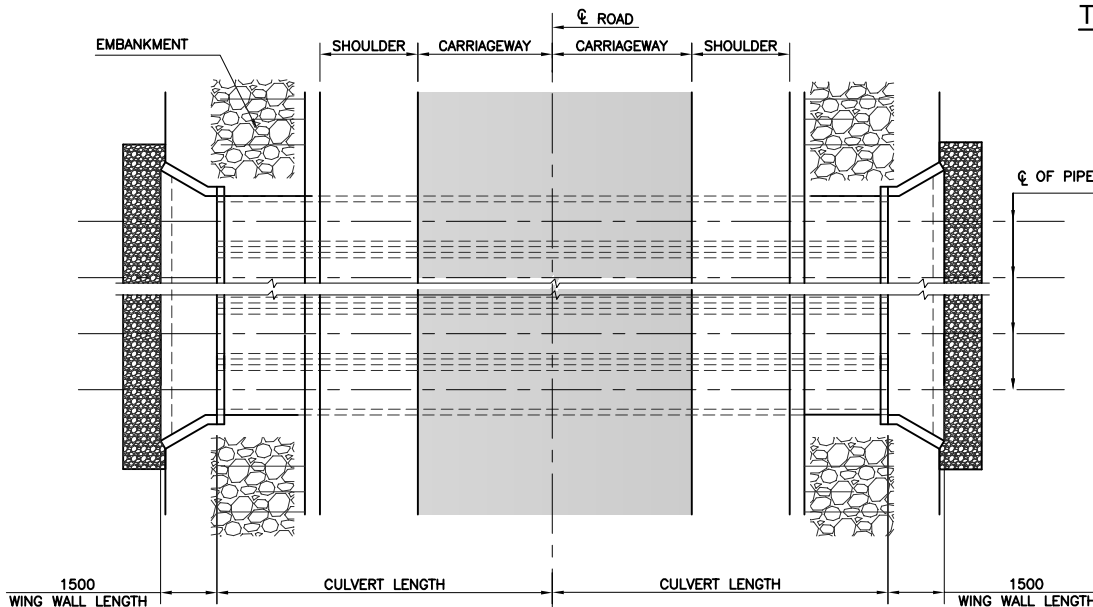
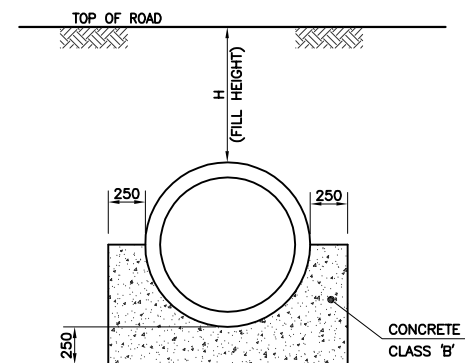
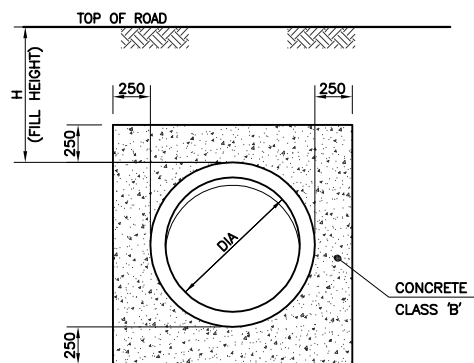
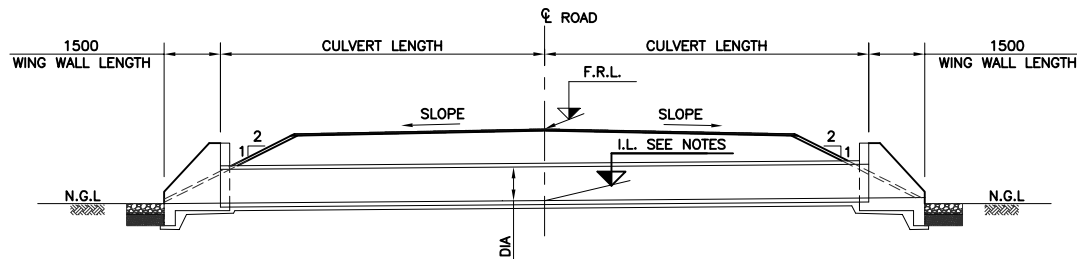


1- THIS DRAWING MUST BE READ IN CONJUNCTION WITH
DWG. NO. 2053-STR-SB02-BC-01.



<div>CLIENT:-</div> <div>Asian Development Bank</div>	<div>PROJECT:-</div> <div>LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)</div>	<div>DESIGN CONSULTANT</div> <div></div> <div>In association with</div> <div></div>	PROJECT ROAD:- DISTRICT : BENAZIRABAD - SB-02	ED.NO.	DATE	DESCRIPTION	DRAWN: F.A.S	DRAWING NO. 2053-STR-SB02-BC-05
			IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD				DESIGNED : R.I / M.A	
			TITLE:- REINFORCEMENT DETAILS OF APRON SLAB & WING WALLS FOR CULVERT HEIGHT > 2m				CHECKED : S.A	Edition.
							DATE: JUNE 2023	
<div>EXECUTING AGENCY:-</div> <div>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</div>								

PIPE CULVERTS



GENERAL NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS STATED OTHERWISE.
- ALL DRAWINGS TO BE READ IN CONJUNCTION WITH RELEVANT HIGHWAY DRAWINGS.
- CULVERT LOCATION, LENGTH, F.R.L. & INVERT LEVEL SHALL BE AS PER ROAD/HYDRAULIC REQUIREMENTS.
- ALL LEVELS SHALL BE VERIFIED AT SITE BEFORE EXECUTION.
- LEVELS, LENGTHS & SKEWS MAY BE ADJUSTED AS PER SITE CONDITIONS DURING LEVELS ADJUSTMENTS, IF FILL HEIGHT VARIES SIGNIFICANTLY FOR WHICH THE STRUCTURE IS DESIGNED, NOTIFY ENGINEER.
- ALL SOIL AT FOUNDATION LEVEL SHALL BE COMPACTED TO 95% OF MOD. PROCTOR BEFORE PLACEMENT OF FOUNDATION.
- GROUND/SUBGRADE IMPROVEMENTS AND BACK FILLING SHALL BE IN ACCORDANCE WITH SPECIFICATION.
- COMPACTION AROUND CULVERT SHALL BE ACHIEVED BY APPLYING COMPACTOR/ROLLER PASSES ALONG THE LENGTH OF THE CULVERT IN LAYERS (i.e. MAX 150MM THICK.)
- PROPER CHANNELISATION OF THE DRAINAGE SHOULD BE ENSURED AT BOTH INLET AND OUTLET OF THE CULVERT OR AS DIRECTED BY THE ENGINEER.
- AS A GENERAL PRINCIPLE, FOR NEW ROAD CONSTRUCTION, EMBANKMENT FILL SHOULD NOT BE LESS THAN 600mm. REDUCTION IN MINIMUM FILL SHOULD BE REVIEWED AS PER SITE CONDITIONS OR AS DIRECTED BY THE ENGINEER.
- CLEAR COVER TO REINFORCEMENT SHALL NOT BE LESS THEN THE FOLLOWING:
BURIED FACES IN CONTACT WITH SOIL = 75mm
INTERNAL FACES = 50mm
- ALL STURCTURAL CONCRETE SHALL BE CLASS 'A3' CONCRETE.
- ALL STURCTURAL REINFORCEMENT SHALL BE GRADE 60 STEEL.
- REINFOECED CONCRETE PIPE CULVERTS SHALL CONFORM TO THE REQUIREMENTS OF ASHTO M-170.CLASS IV.
- BEDDING OR ENCASEMENT OF CONCRETE PIPE CULVERTS SHALL CONFORM TO THE REQUIREMENTS OF GENERAL SPECIFICATIONS.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO. 2053-STR-SB02-PC-02
- FOR EMBANKMENT DETAILS, REFER HIGHWAY DWGS.
- DIAMETER & NO. OF PIPES SHALL BE CONFIRMED FROM HYDROLOGY REPORT BEFORE EXECUTIONS.

CLIENT:-



EXECUTING AGENCY:-



WORKS AND SERVICES DEPARTMENT
GOVERNMENT OF SINDH

PROJECT:-

LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD
ASSISTANCE PROJECT (EFAP)

DESIGN CONSULTANT



PROJECT ROAD:-

DISTRICT : BENAZIRABAD - SB-02
IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO
CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD

TITLE:-

PIPE CULVERTS
GENERAL ARRANGEMENT

ED.NO.

DATE

DESCRIPTION

DRAWN:

F.A.S

DESIGNED:

R.I / M.A

CHECKED:

S.A

DATE:

JUNE 2023

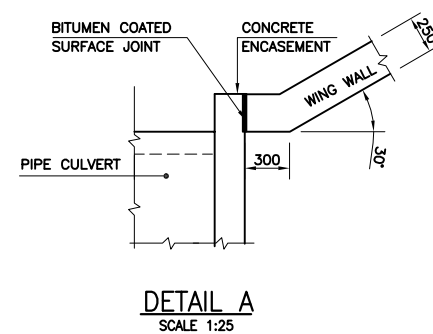
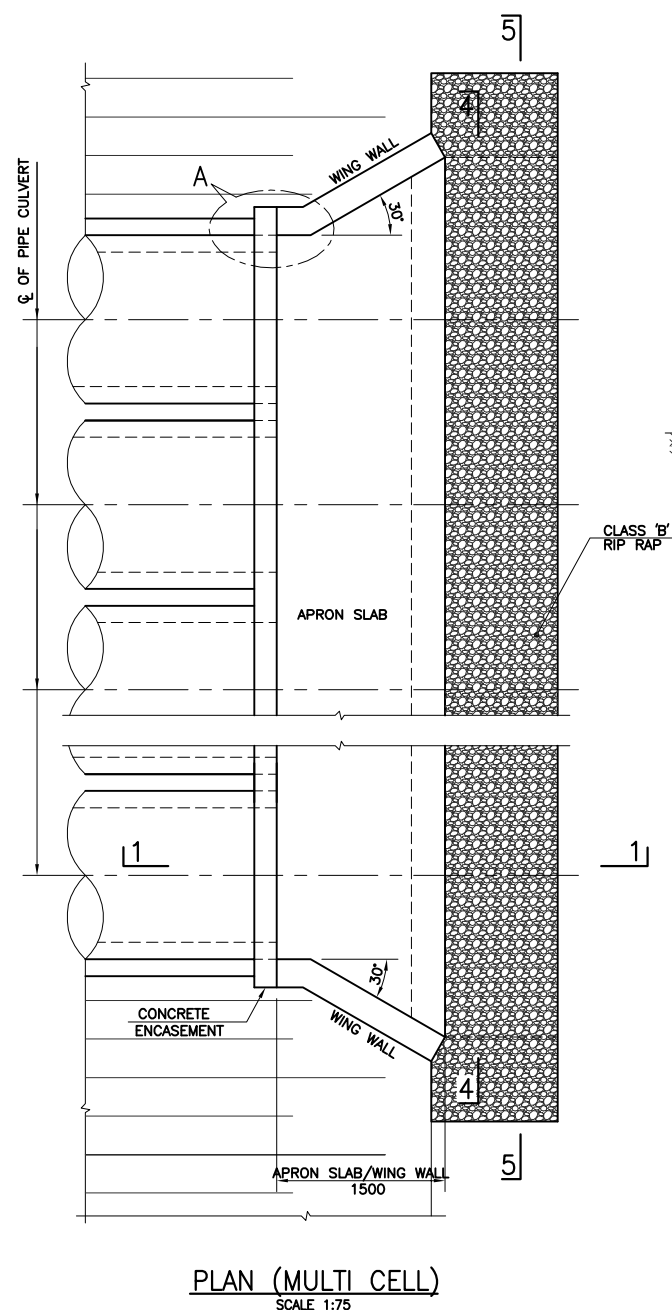
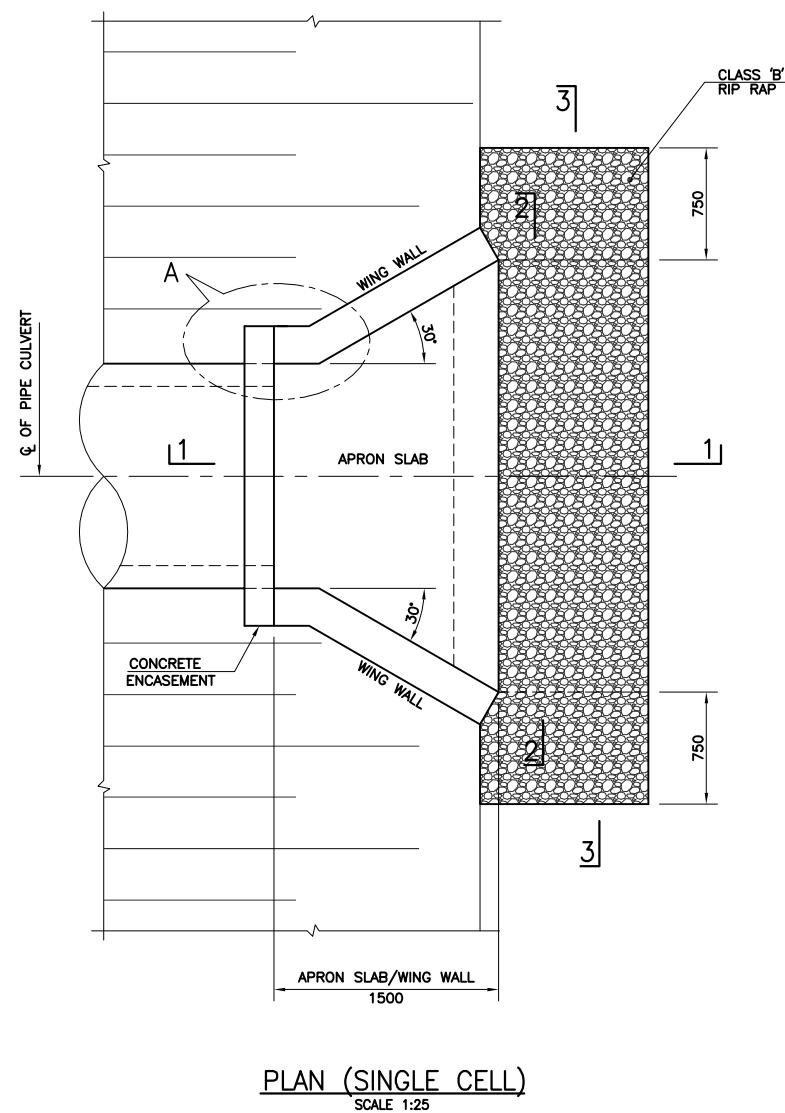
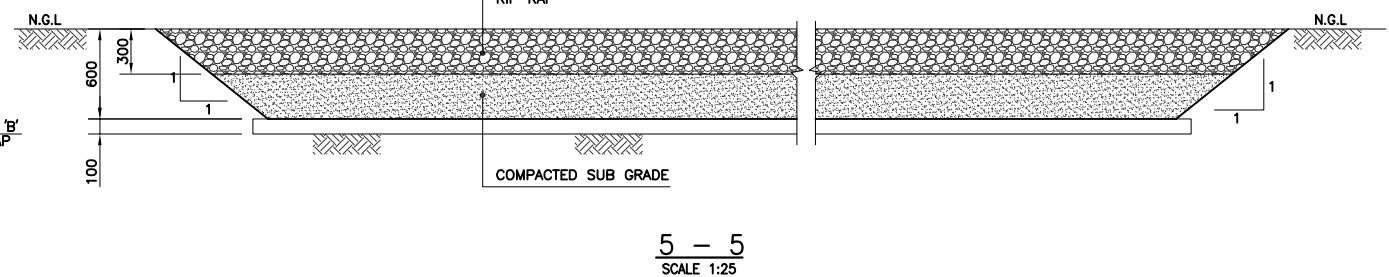
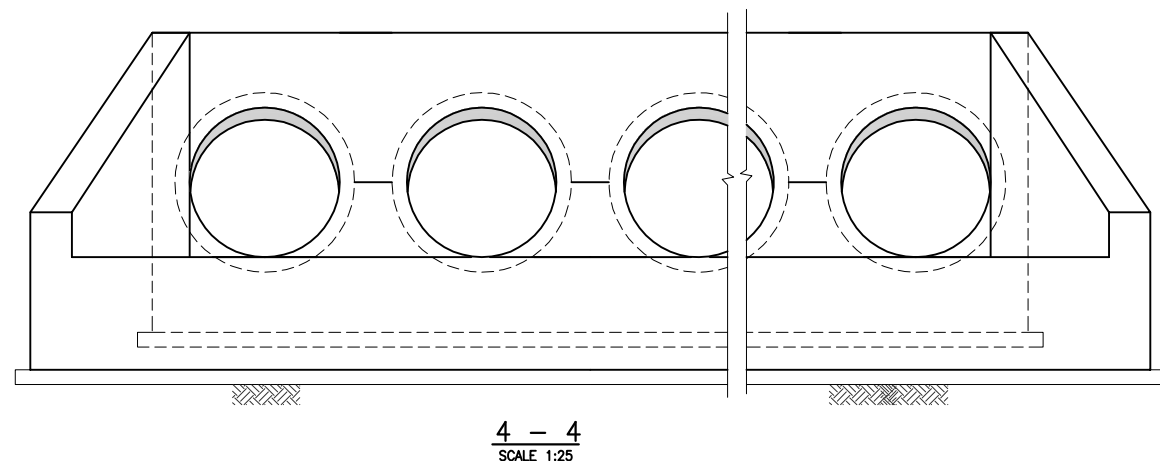
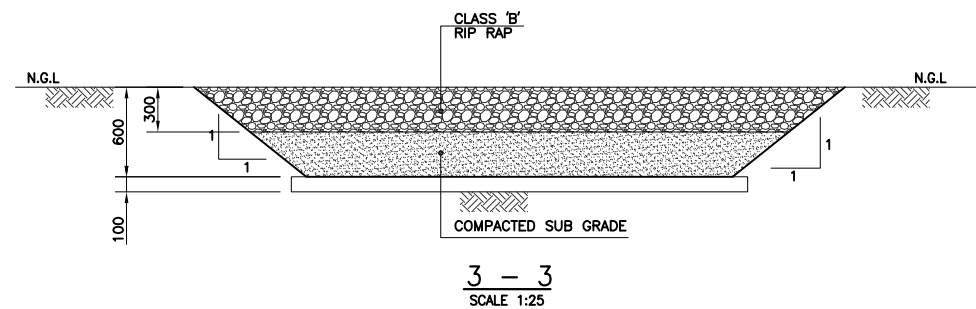
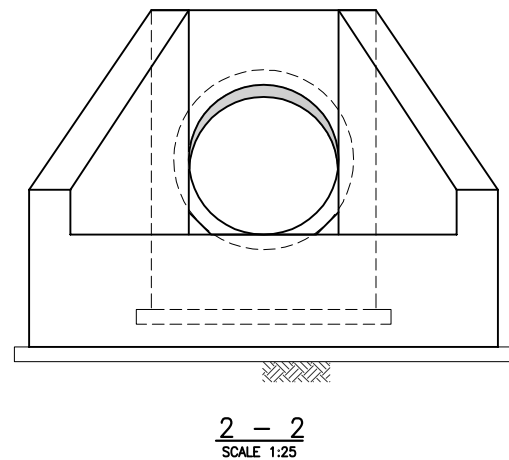
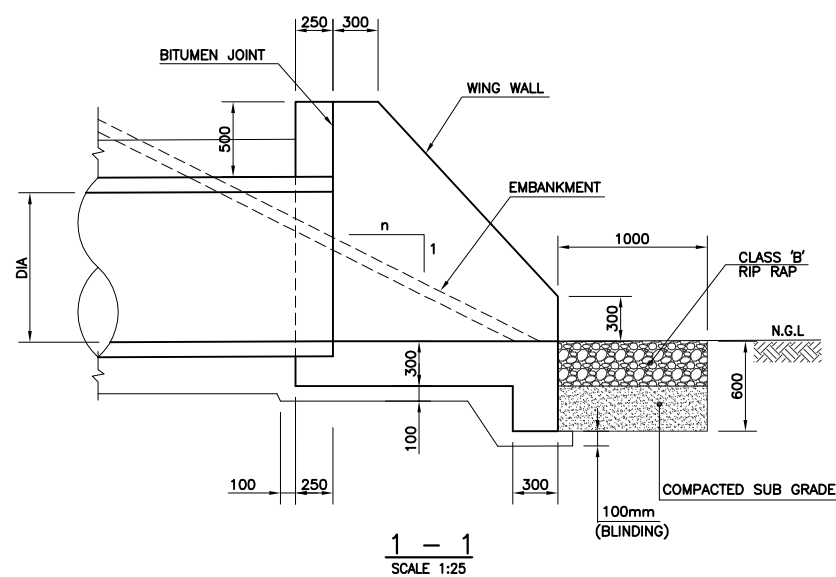
DRAWING NO.

2053-STR-SB02-PC-01

Scale:-

1:100

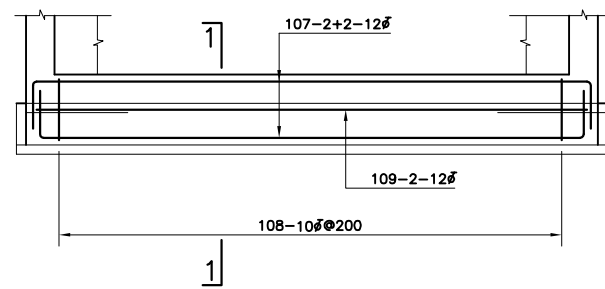
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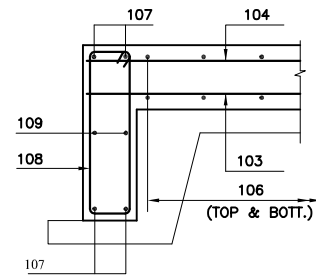
NOTES:-

- FOR GENERAL NOTES REFER DWG. NO. 2053-STR-SB02-PC-01.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO. 2053-STR-SB02-PC-01.

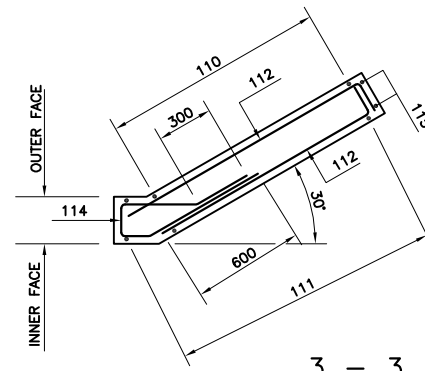
<p>CLIENT:-</p> <p>ADB Asian Development Bank</p> <p>EXECUTING AGENCY:-</p> <p>WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH</p>	<p>PROJECT:-</p> <p>LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)</p>	<p>DESIGN CONSULTANT</p> <p>ECIL</p> <p>In association with</p> <p>AA</p>	<p>PROJECT ROAD:-</p> <p>DISTRICT : BENAZIRABAD - SB-02</p> <p>IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD</p> <p>TITLE:-</p> <p>PIPE CULVERTS</p> <p>TYPICAL DETAILS WING WALL & APRON SLAB</p>	<p>ED.NO.</p> <p>DATE</p>	<p>DESCRIPTION</p>	<p>DRAWN:</p> <p>F.A.S</p> <p>DESIGNED:</p> <p>R.I / M.A</p> <p>CHECKED:</p> <p>S.A</p> <p>DATE:</p> <p>JUNE 2023</p>	<p>DRAWING NO.</p> <p>2053-STR-SB02-PC-02</p> <p>Scale:-</p> <p>1:100</p> <p>Edition.</p>
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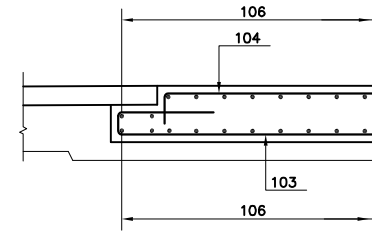
ELEV. OF APRON BEAM
SCALE 1:50



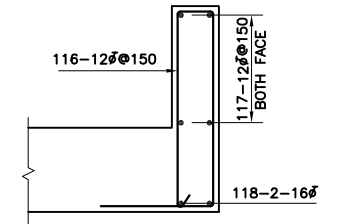
1 - 1
SCALE 1:20



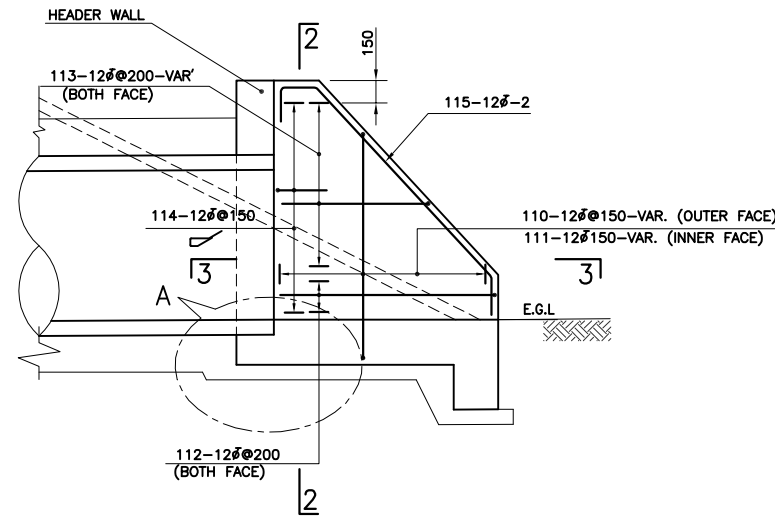
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SCALE 1:20



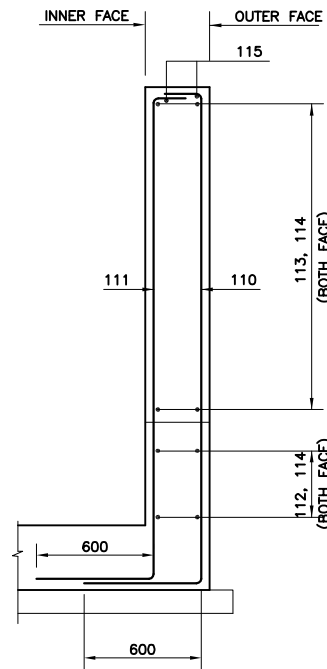
DETAIL A
SCALE 1:20



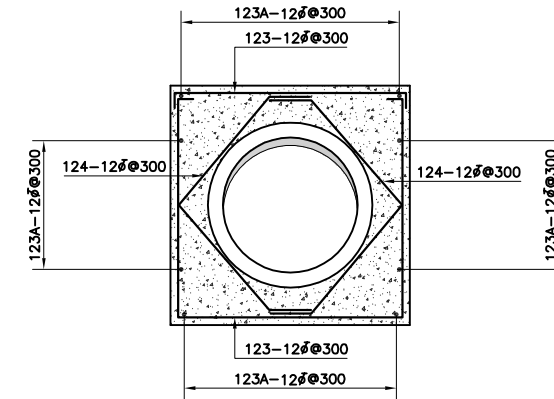
TYP. SEC. OF HEADER WALL
SCALE 1:20



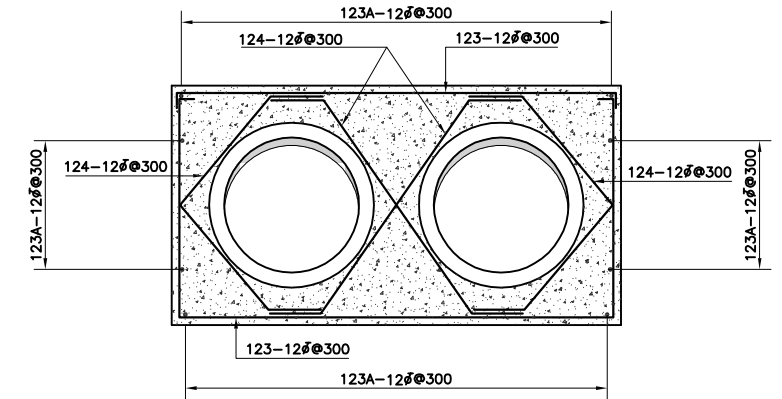
ELEVATION OF WING WALL
SCALE 1:25 (4NOS.)



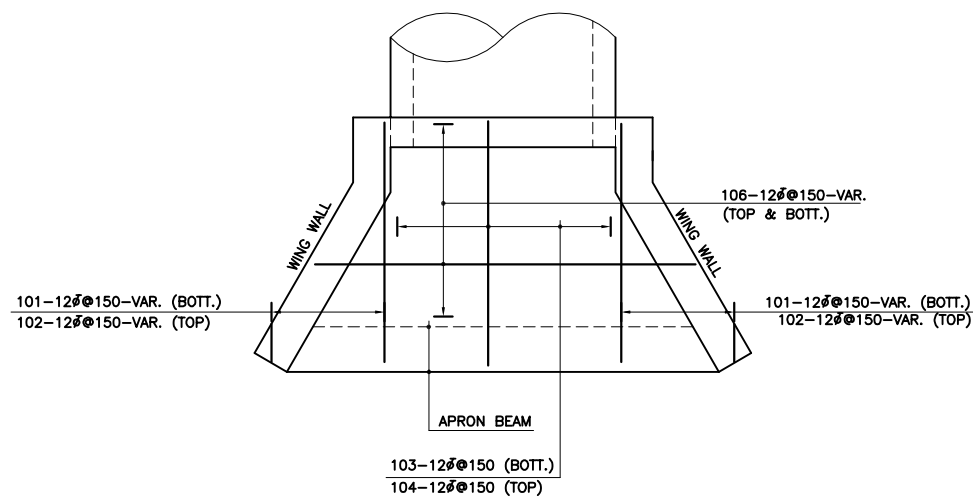
2 - 2
SCALE 1:20



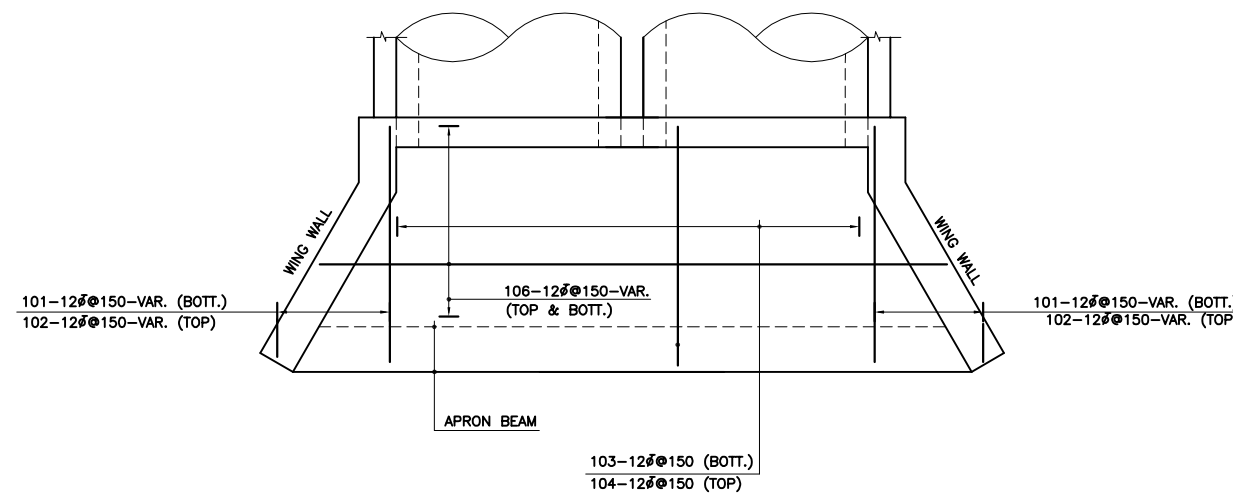
TYPICAL SECTION (H<=1M) (SINGLE CELL)
SCALE 1:25
(FOR HEIGHT OF FILL ≤ 1m)



TYPICAL SECTION (H<=1M) (DOUBLE CELL)
SCALE 1:25
(FOR HEIGHT OF FILL ≤ 1m)







TYP. PLAN OF APRON SLAB (SINGLE CELL)
SCALE 1:25 (2NOS.)



TYP. PLAN OF APRON SLAB (DOUBLE CELL)
SCALE 1:25 (2NOS.)

NOTES:-

- 1- FOR GENERAL NOTES REFER DWG. NO. 2053-STR-SB02-PC-01.
- 2- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO. 2053-STR-SB02-PC-01 & 02.

<p>CLIENT:-</p>  Asian Development Bank <p>EXECUTING AGENCY:-</p>  WORKS AND SERVICES DEPARTMENT GOVERNMENT OF SINDH	<p>PROJECT:-</p> <p>LOAN NO. 4279-PAK (COL): EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)</p>	<p>DESIGN CONSULTANT</p>  In association with 	<p>PROJECT ROAD:-</p> <p>DISTRICT : BENAZIRABAD - SB-02 IMPROVEMENT / REHABILITATION OF ROAD FROM 60TH MILE TO CONNECT 3 CHAK VIA 68TH MILE AND CHAUDHARY NAZEER ROAD</p> <p>TITLE:-</p> <p>PIPE CULVERTS REINFORCEMENT DETAILS</p>	<p>ED.NO.</p> <p>DATE</p>	<p>DESCRIPTION</p>	<p>DRAWN:</p> <p>F.A.S</p> <p>DESIGNED:</p> <p>R.I / M.A</p> <p>CHECKED:</p> <p>S.A</p> <p>DATE:</p> <p>JUNE 2023</p>	<p>DRAWING NO.</p> <p>2053-STR-SB02-PC-03</p> <p>Scale:-</p> <p>1:100</p> <p>Edition.</p>
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