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16/7/2020  
4035/103/JOH/2012255  
16/07/2020

**GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY**



**RATODERO ~ RAJANPUR ROAD  
PACKAGE - I  
(SHIKARPUR TO KANDH KOT)**

**TENDER DRAWINGS**

**JUNE, 2018**



**NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LIMITED.  
NESPAK HOUSE  
NESPAK HOUSE 2nd Floor Attaturk Avenue, Sector G-5/2 Islamabad- Pakistan.**

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RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	SHEET INDEX	SCALE
DATE MARCH 2018	DRAWING NO. 3905/102/TD/	REV. SL-01

## SYMBOLS

	EXISTING ROAD
	EARTHEN TRACK
	PROPOSED ROAD
	GRAVES / GRAVE YARD
	RAILWAY TRACK
	EXISTING STRUCTURE
	EXISTING PIPE CULVERT
	PROPOSED STRUCTURE
	TELEPHONE POLE
	R.O.W
	LIGHT POLE
	HAND PUMP
	ELECTRIC WATER PUMP
	FILLING POINT (PETROL PUMP)
	OPTICAL FIBER CABLE
	ELECTRIC POLE
	ELECTRIC LINE
	KILOMETER POST

## SYMBOLS

	TUBE WELL/WELL
	POND / FISH FARM
	MOBILE TOWER
	TREES
	GARDEN/ ORCHARD
	CULTIVATED LAND
	TRAVERSE POINT
	NULLAH EDGE
	GRID LINE AND COORDINATES
	EXISTING DRAIN
	PYLON
	ELECTRIC WIRE
	BOUNDARY WALL

## SYMBOLS

	GAS LINE
	NORTH ARROW
	MOSQUE
	BUILT UP AREA
	LINED WATER COURSE

## ABBREVIATIONS.

DWG/DRG	DRAWING
N	NORTHING
E	EASTING
EL	ELEVATION
N.S.L	NATURAL SURFACE LEVEL
E.R.L	EXISTING ROAD LEVEL
VER.	VERTICAL
HOR	HORIZONTAL
I.L	INVERT LEVEL
M	METER
NO	NUMBER
F.G.L	FINISH GRADE LEVEL
N.T.S	NOT TO SCALE
PI	POINT OF INTERSECTION
T	TANGENT
R	RADIUS
C	CHORD LENGTH
L	CURVE LENGTH
E	APEX
M	MIDDLE ORDINATE
VPC	VERTICAL POINT OF CURVE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENT
STR	STRUCTURE
BP	BEGINNING OF PROJECT
EP	END OF PROJECT
LONG	LONGITUDINAL
MAX	MAXIMUM
MM	MILLIMETER
R.O.W	RIGHT OF WAY
STA.	STATION
TYP.	TYPICAL
VAR.	VARIES
CL	CENTER LINE
S.B.C	EXISTING SOUTH BOUND CARRIAGEWAY
N.B.C	EXISTING NORTH BOUND CARRIAGEWAY

TENDER DRAWINGS

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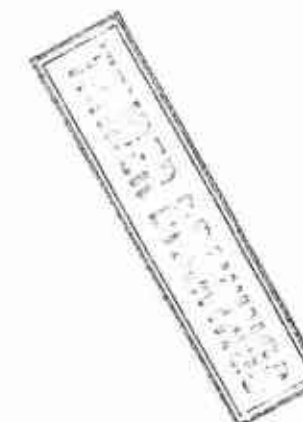
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02	M/S NESPAK	RECOMMENDED BY	
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RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	SYMBOLS & ABBREVIATIONS	SCALE
DATE	DRAWING NO.	REV.
November, 2017	3905/102/TD/ SA-01	

# LEGEND

NATIONAL CAPITAL	*
PROVINCIAL CAPITAL	*
IMPORTANT CITY	*
INTERNATIONAL BOUNDARY	---
PROVINCIAL BOUNDARY	- - -
ROADS	—
PROJECT AREA	///



PROJECT AREA

(SHIKARPUR TO KANDH KOT)

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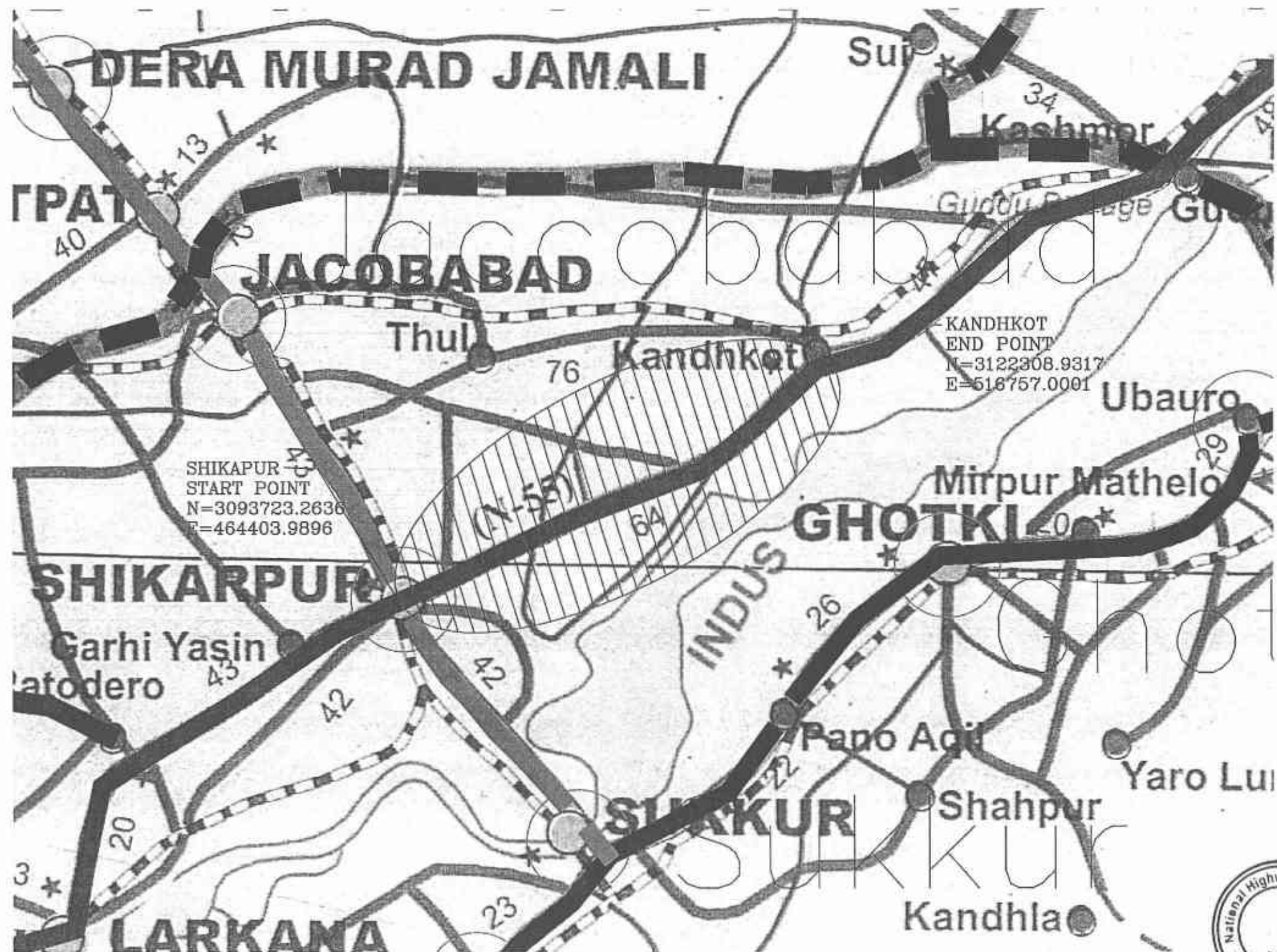
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PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	KEY MAP	SCALE
DATE	DRAWING NO.	REV.
MARCH 2018	3905/102/TD/ KM-01	



## LEGEND

NATIONAL CAPITAL  
PROVINCIAL CAPITAL  
IMPORTANT CITY  
INTERNATIONAL BOUNDARY  
PROVINCIAL BOUNDARY  
ROADS  
PROJECT AREA



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PACKAGE-I  
(SHIKARPUR TO KANDHKOT)

TITLE  
KEY MAP

DATE  
MARCH 2018

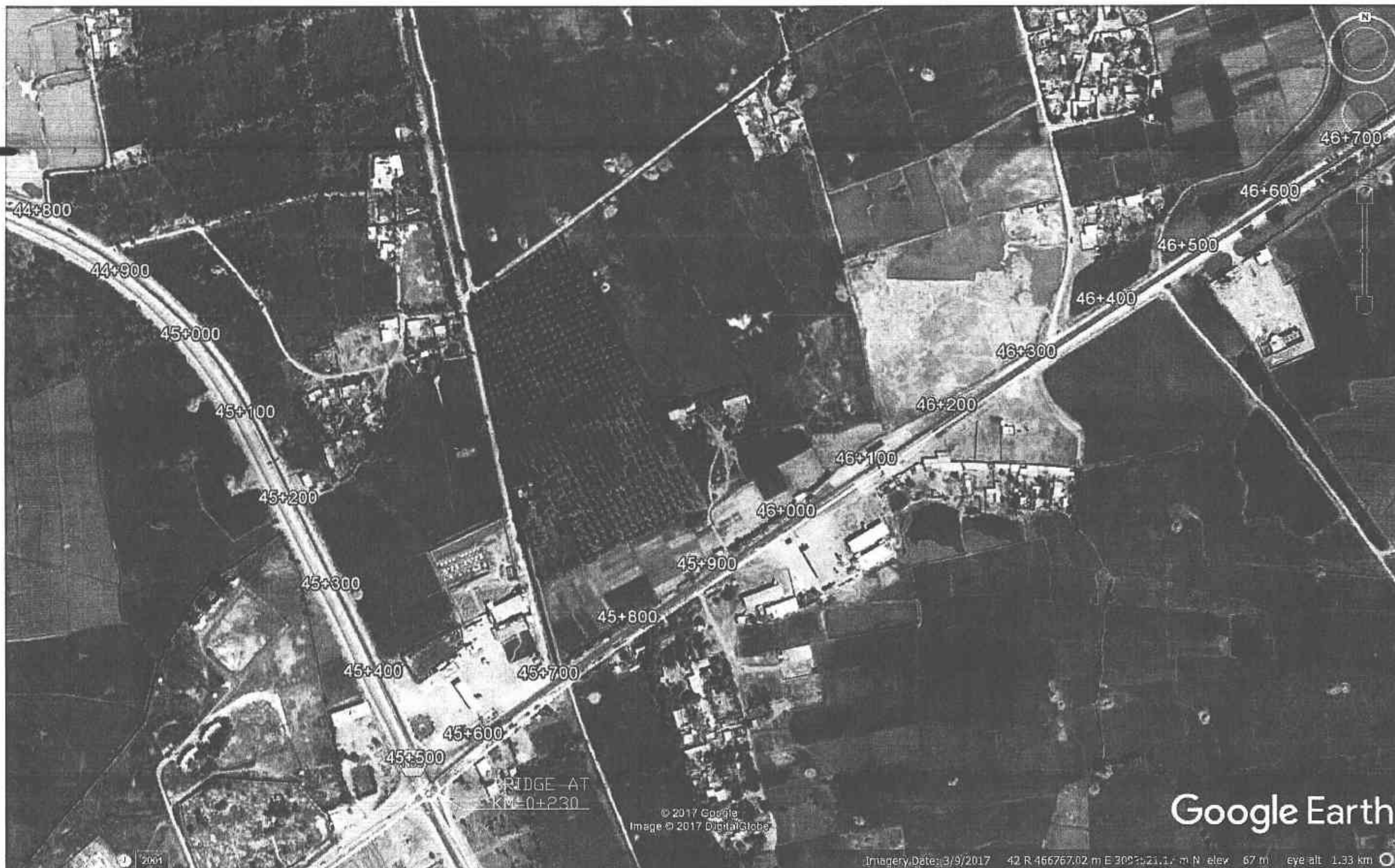
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		03			SUBMITTED BY				
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 PACKAGE-I  
 (SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN

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PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN

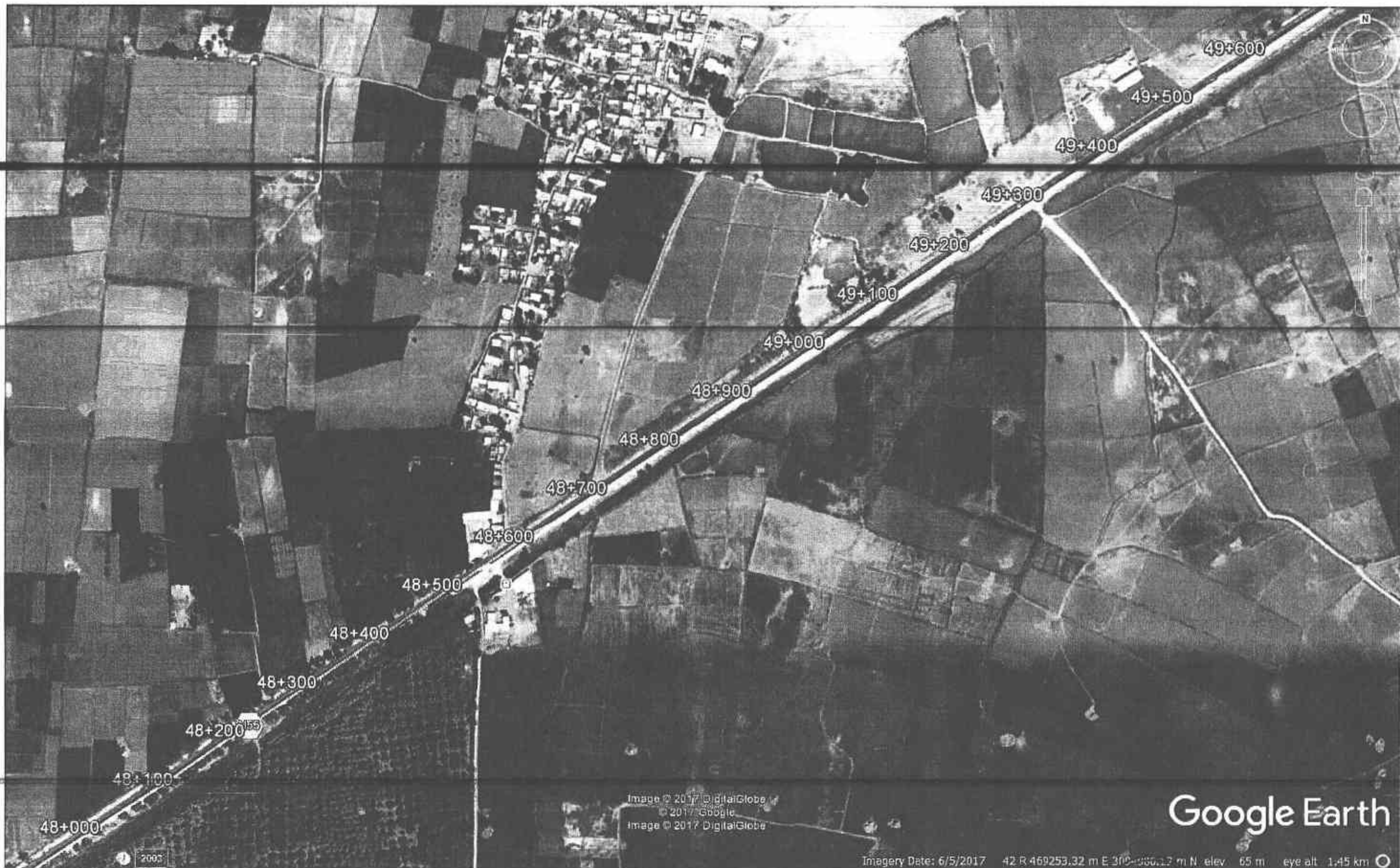
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 (SHIKARPUR TO KANDH KOT)



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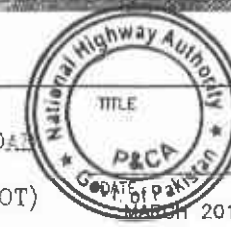
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PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



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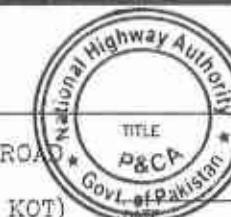



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**PACKAGE-I**  
**(SHIKARPUR TO KANDH KOT)**



**ROUTE LOCATION PLAN**

SCALE

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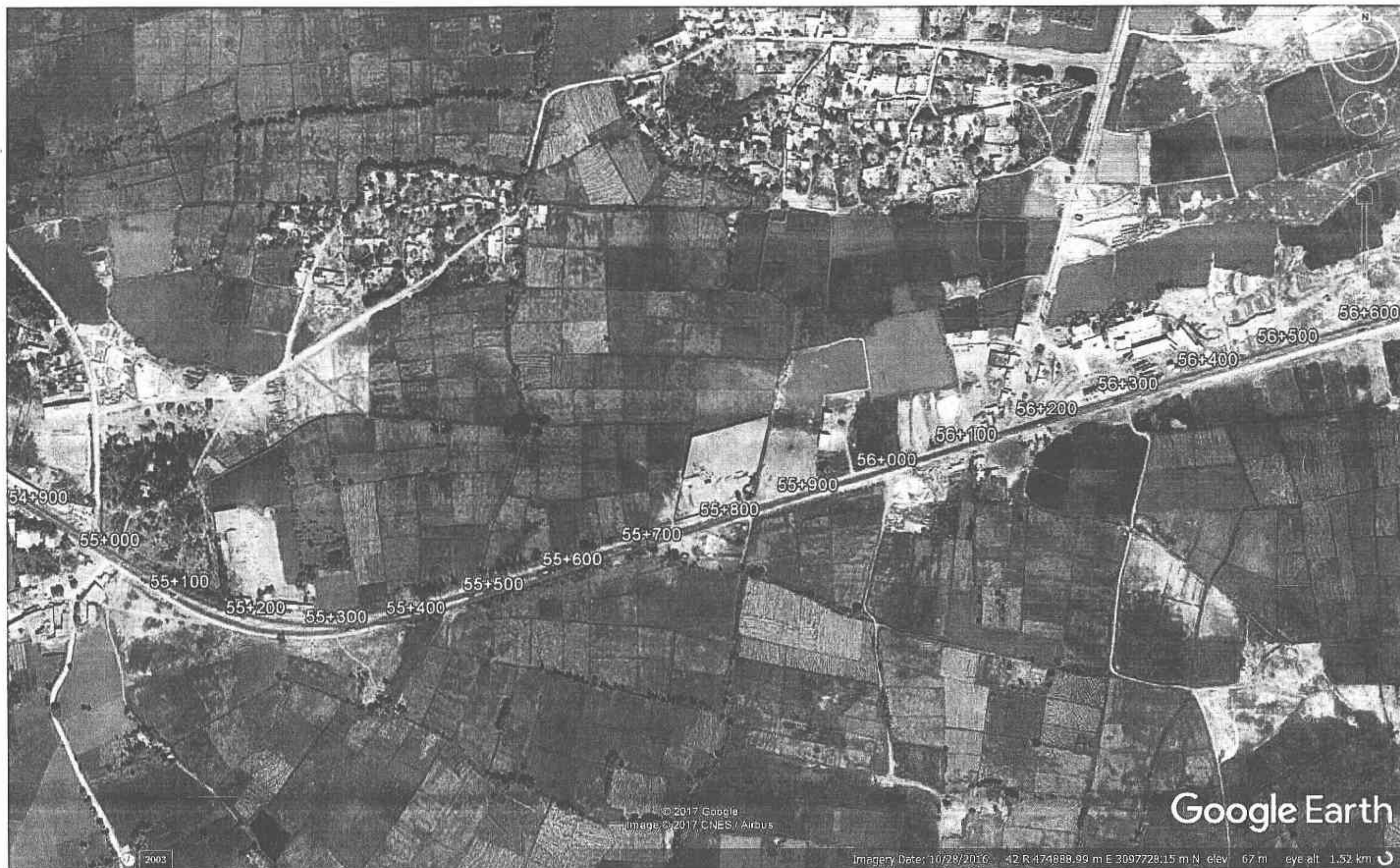
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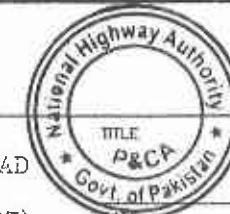


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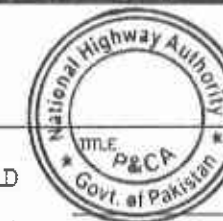
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**PACKAGE-I**  
**(SHIKARPUR TO KANDH KOT)**



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(SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN

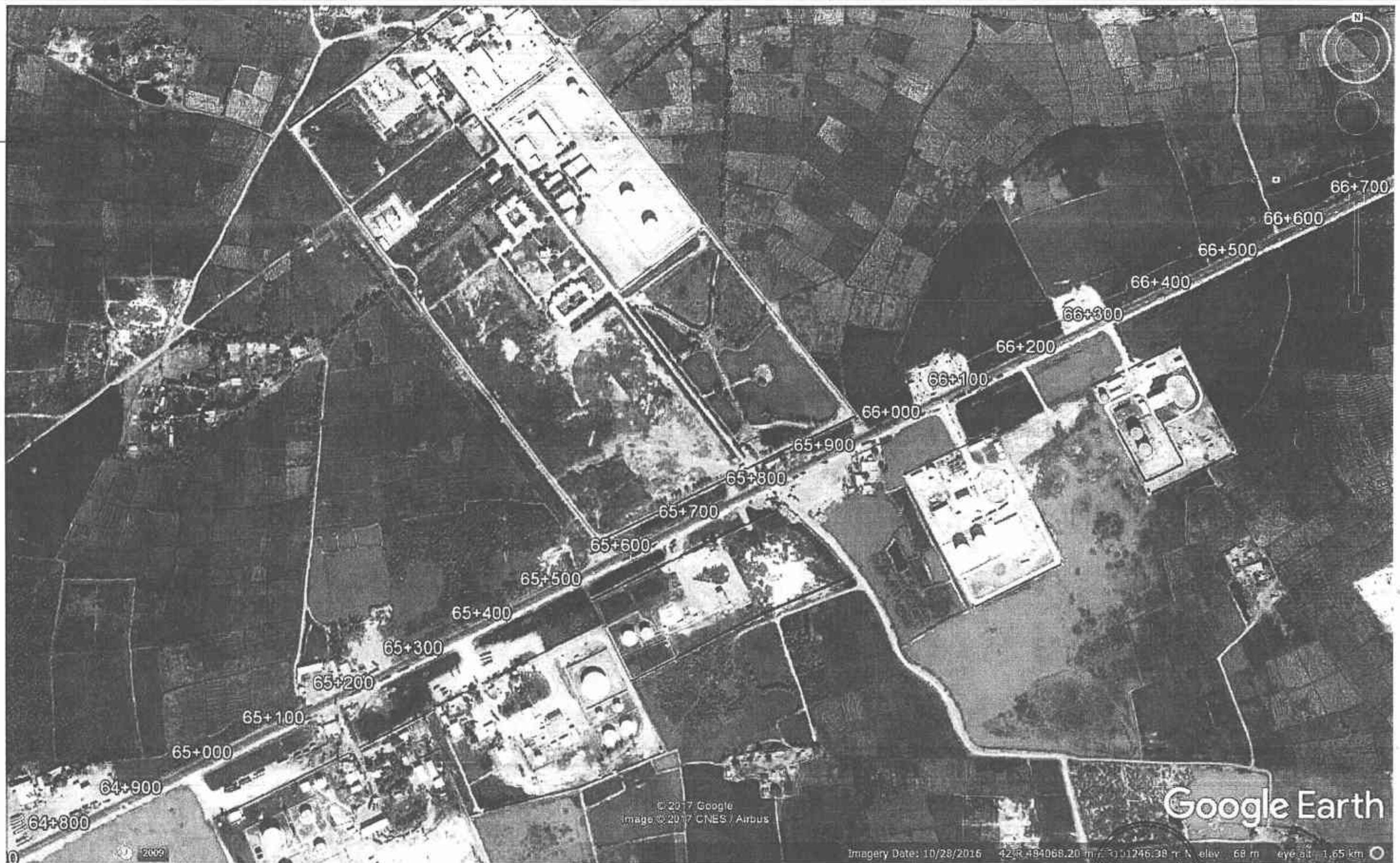
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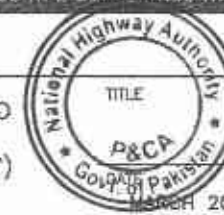


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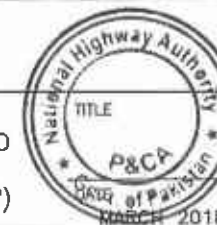
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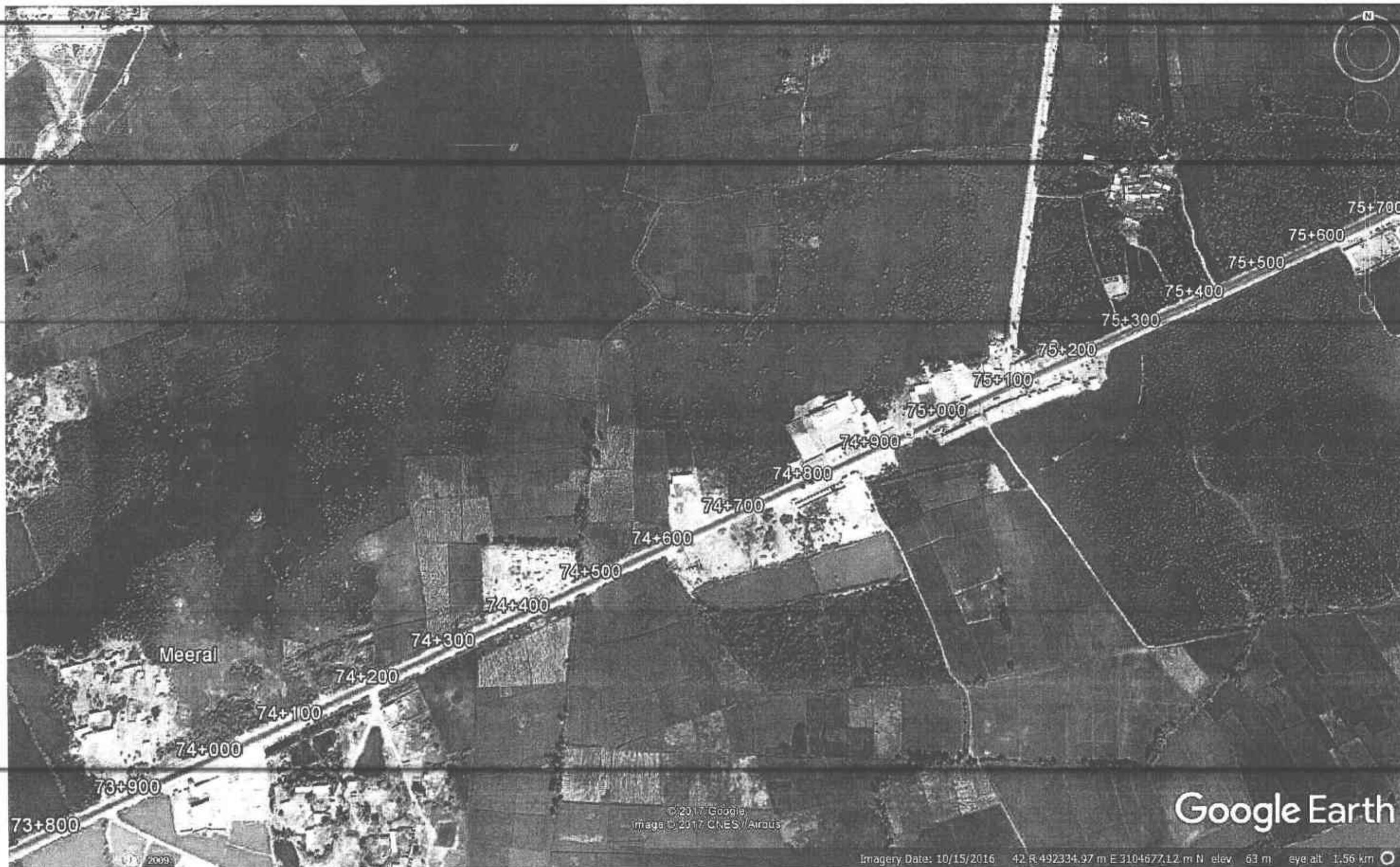
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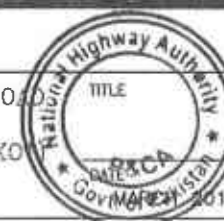


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ROUTE LOCATION PLAN

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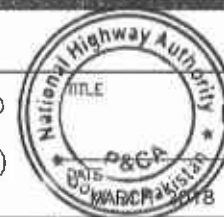
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PACKAGE-1  
(SHIKARPUR TO KANDH KOT)



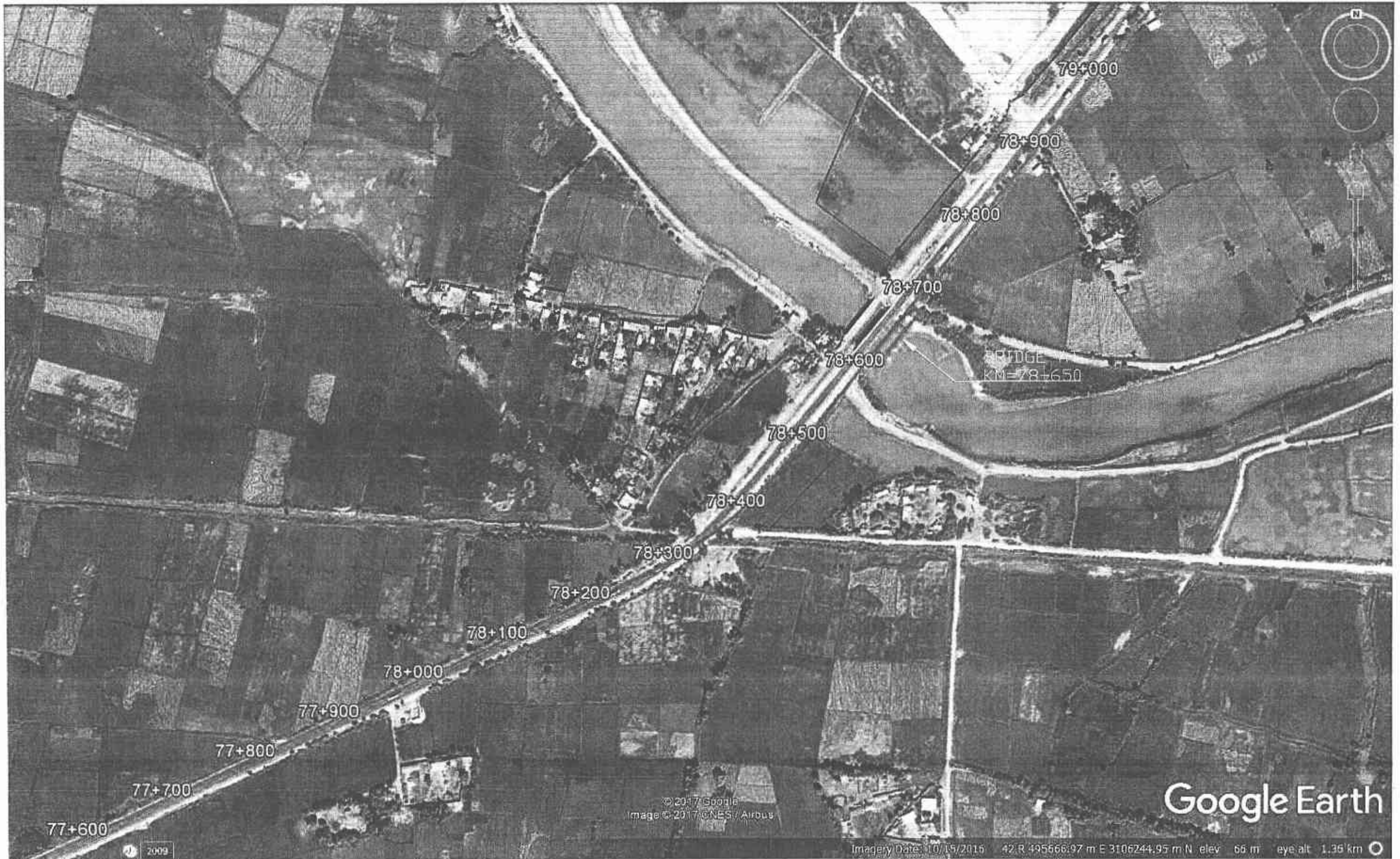
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PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



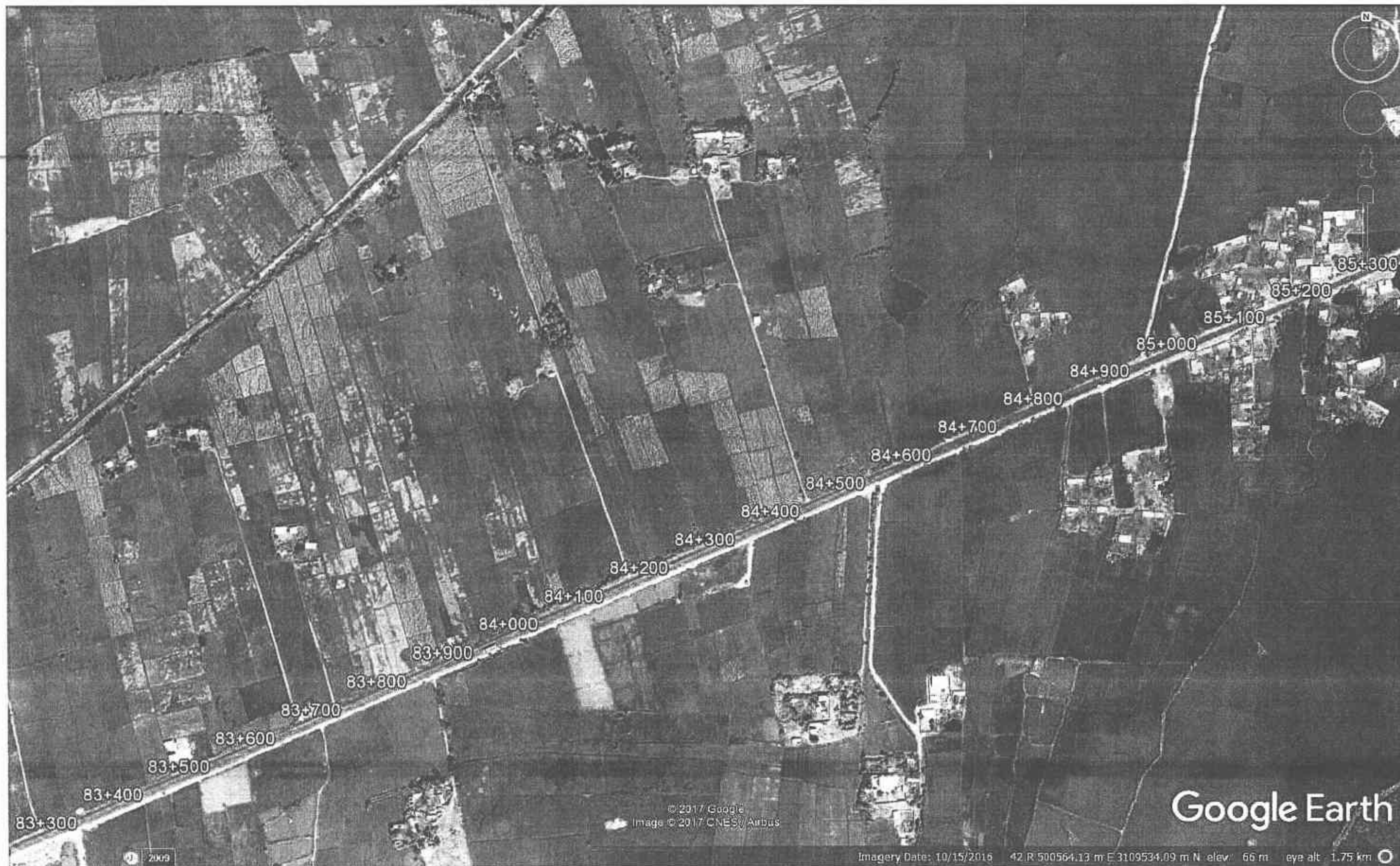
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PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



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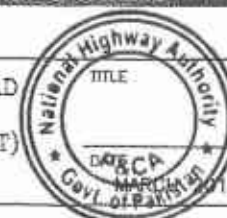


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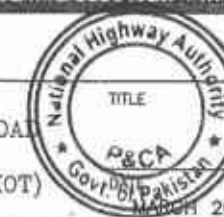


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02			RECOMMENDED BY	
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN

DRAWING NO.  
3905/102/TD/ RLP-24

SCALE

REV.



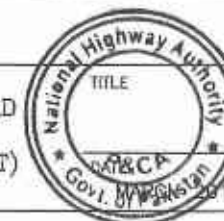


GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04			DRAWN BY	RAJA SHAFIQ
03			SUBMITTED BY	
02			RECOMMENDED BY	
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
PACKAGE-1  
(SHIKARPUR TO KANDH KOT)



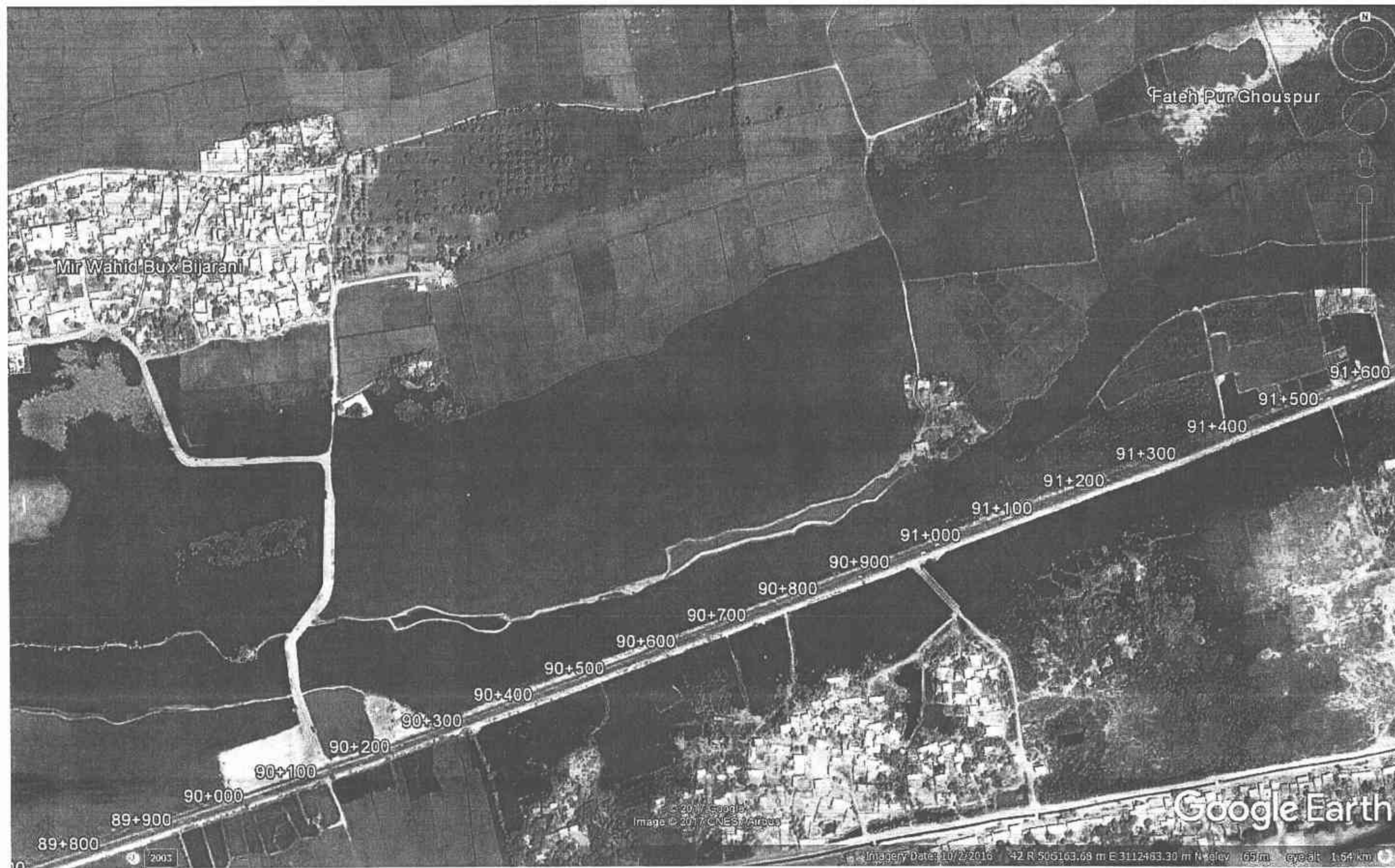
ROUTE LOCATION PLAN

DRAWING NO.  
3905/102/TD/ RLP-25

SCALE

REV.





GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
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PAKISTAN (PVT.) LTD.

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02			RECOMMENDED BY	
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REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



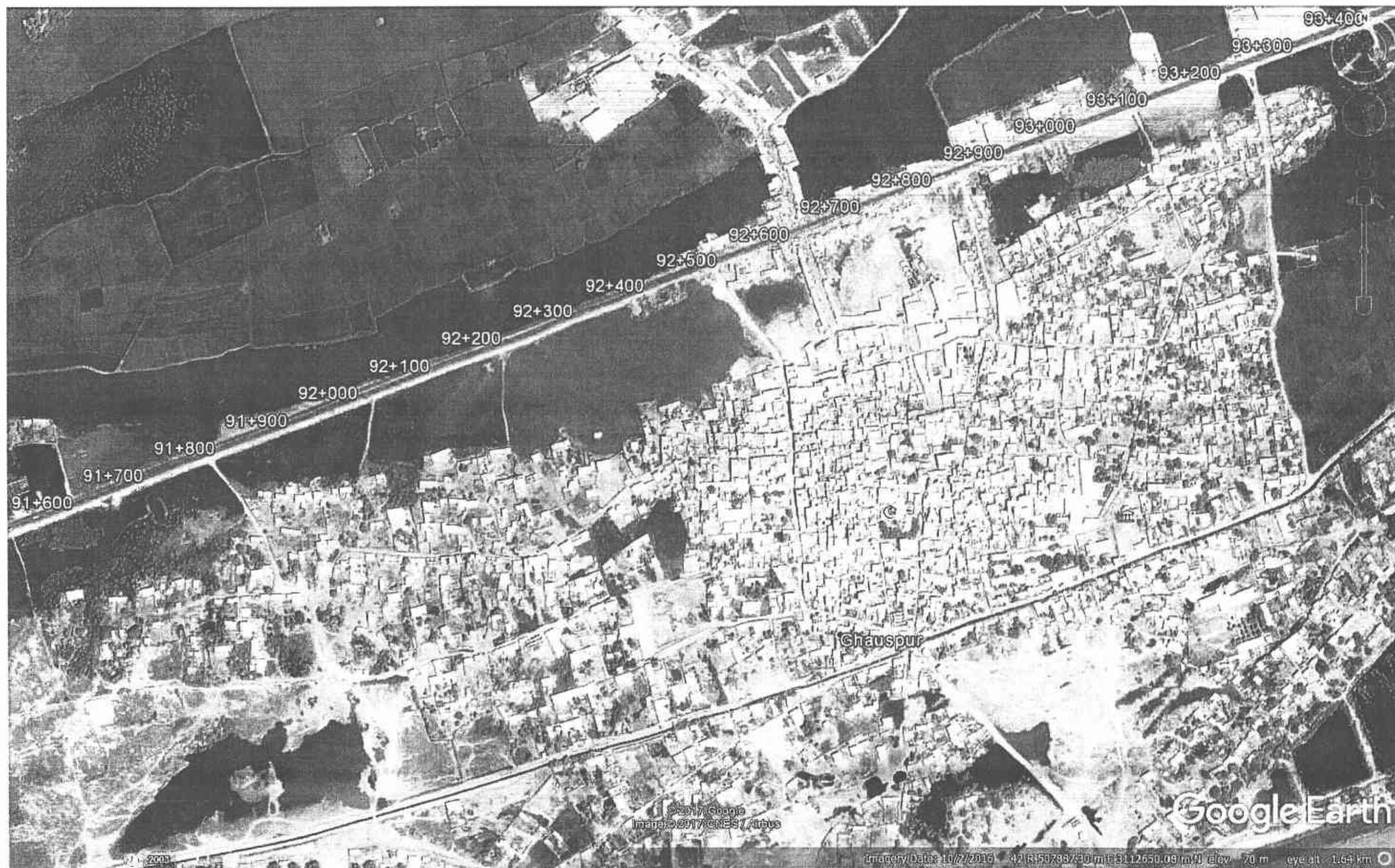
ROUTE LOCATION PLAN

DRAWING NO.  
3905/102/TD/ RLP-26

SCALE

REV.





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PAKISTAN (PVT.) LTD.

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01				CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



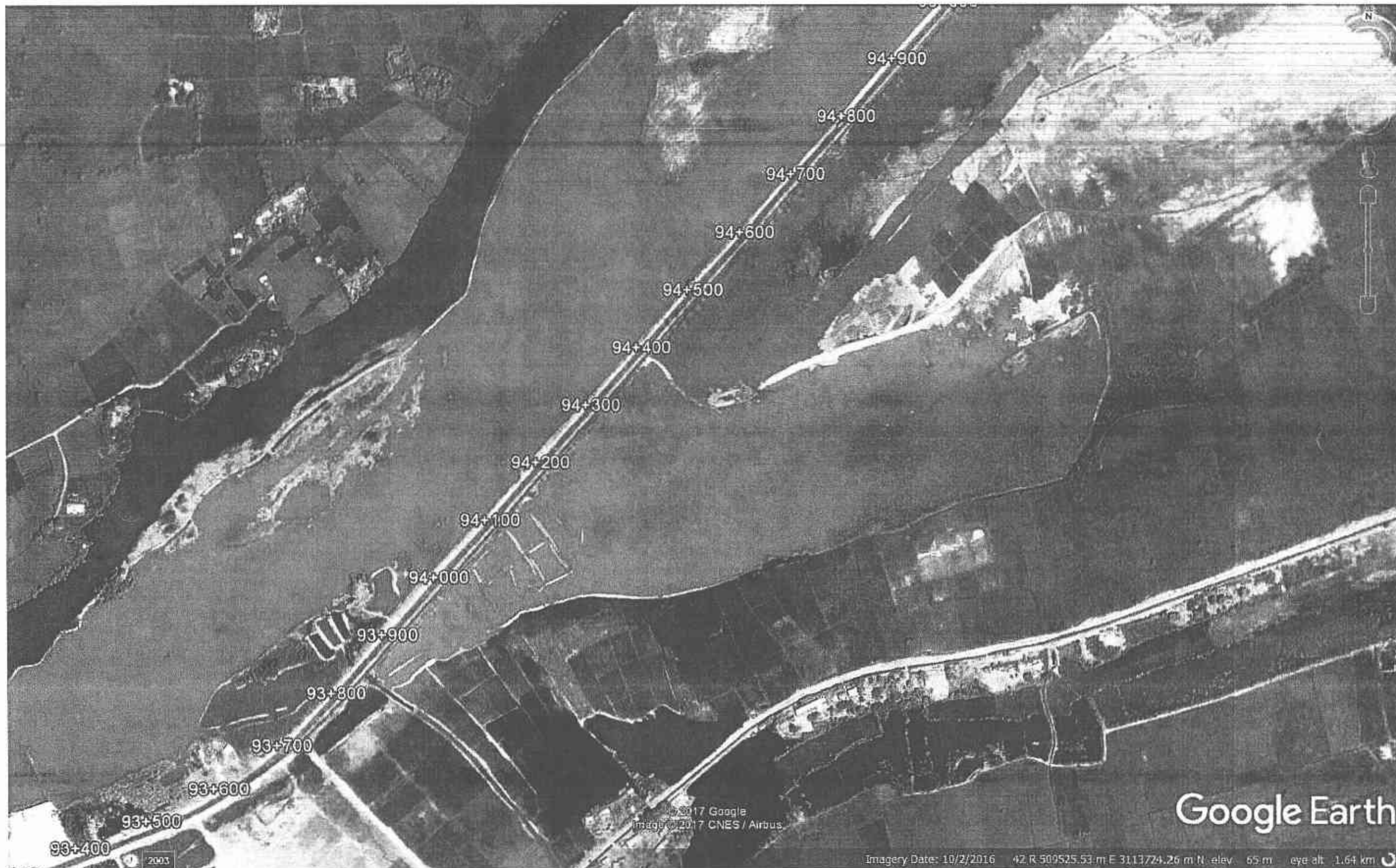
ROUTE LOCATION PLAN

DRAWING NO.  
3905/102/TD/ RLP-27

SCALE

REV.





GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

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02			RECOMMENDED BY	
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN

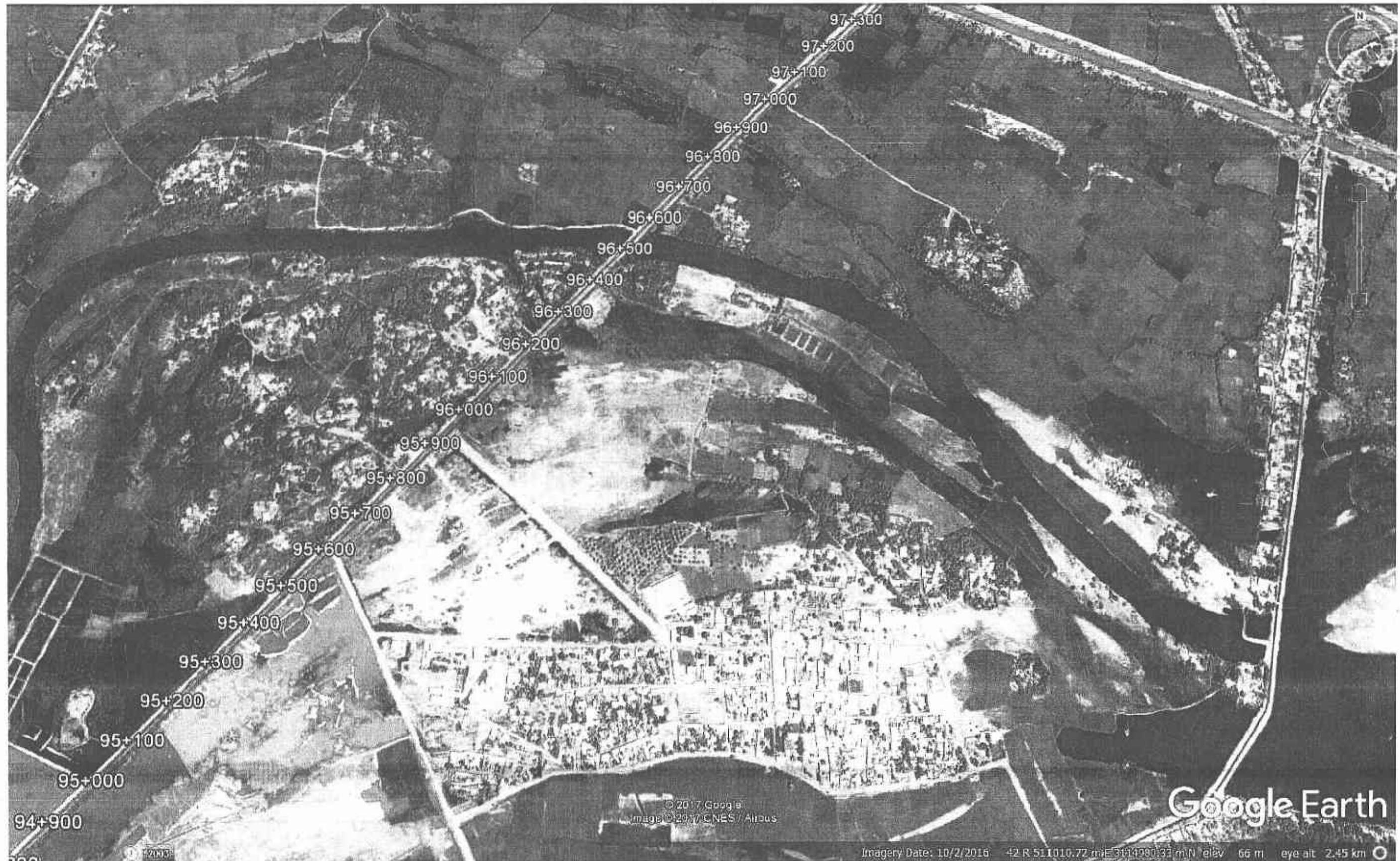
SCALE

DRAWING NO.  
3905/102/TD/ RLP-28

REV.



Ghanspur



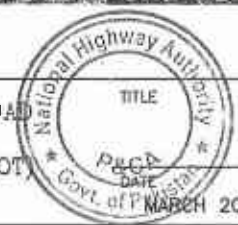
Imagery Date: 10/2/2016 42 R 511010.72 m E 3614930.37 m N elev 66 m eye alt 2.45 km

GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

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02			RECOMMENDED BY	
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)




ROUTE LOCATION PLAN


DRAWING NO. 3905/102/TD/ RLP-29  
REV.

SCALE






**GOVERNMENT OF PAKISTAN**  
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**NATIONAL ENGINEERING SERVICES**  
**PAKISTAN (PVT.) LTD.**

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02			RECOMMENDED BY	
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
 PACKAGE-I  
 (SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN


DRAWING NO.  
 3905/102/TD/ RLP-30


SCALE

REV.






**GOVERNMENT OF PAKISTAN**  
**MINISTRY OF COMMUNICATIONS**  
**NATIONAL HIGHWAY AUTHORITY**


**NATIONAL ENGINEERING SERVICES**  
**PAKISTAN (PVT.) LTD.**

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02			RECOMMENDED BY	
01			CHG./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

**RATODERO ~ RAJANPUR ROAD**  
**PACKAGE-I**  
**(SHIKARPUR TO KANDH KOT)**



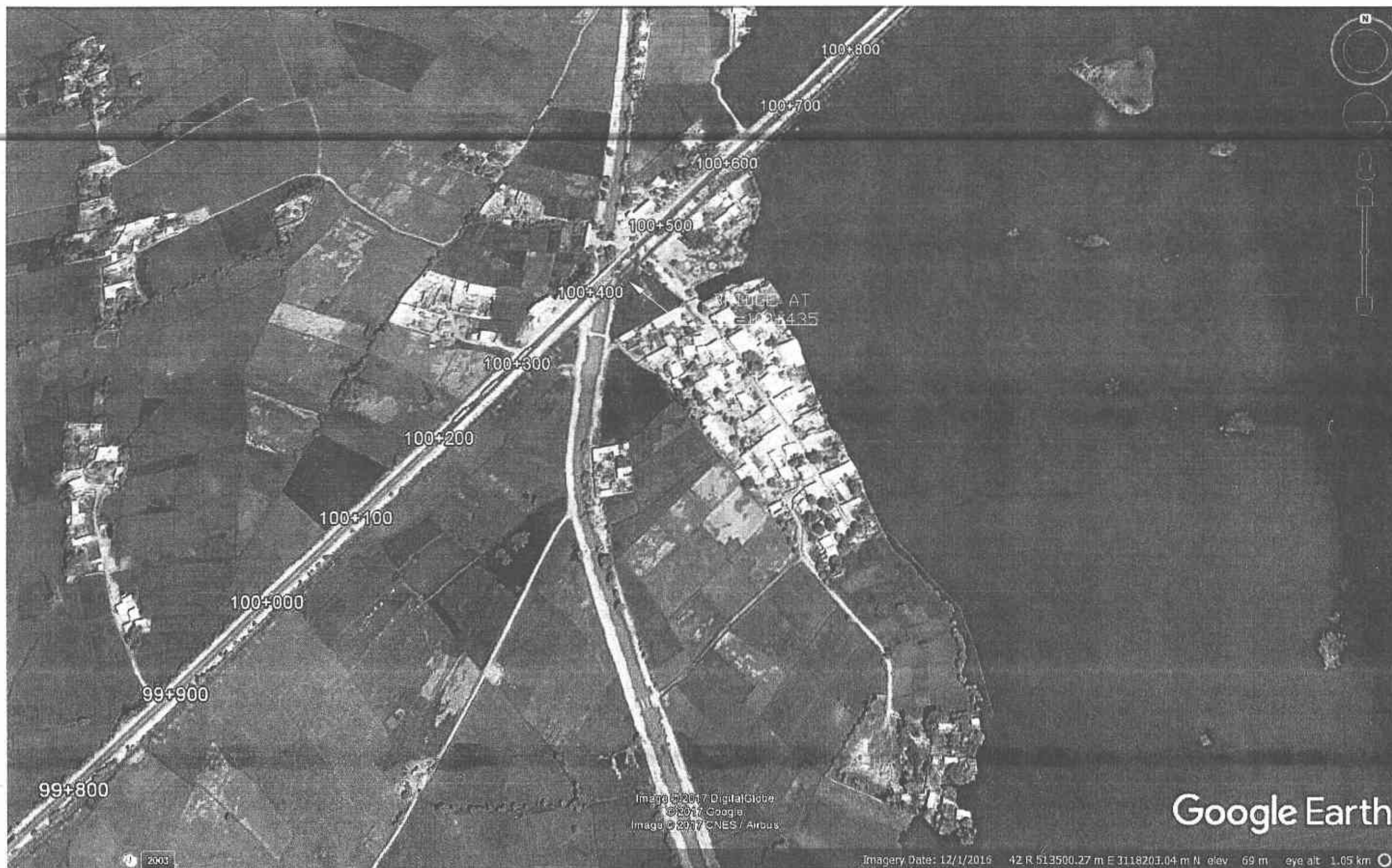
**ROUTE LOCATION PLAN**

DRAWING NO.  
 3905/102/TD/ RLP-31

SCALE

REV.





GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

**NES** NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

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02				RECOMMENDED BY	
01				CHD./VEL. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN	SCALE
DRAWING NO. 3905/102/TD/ RLP-32	REV.





GOVERNMENT OF PAKISTAN  
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 PAKISTAN (PVT.) LTD.

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02			RECOMMENDED BY	
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
 PACKAGE-I  
 (SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN


DRAWING NO.  
 3905/102/TD/ RLP-33


SCALE

REV.






**GOVERNMENT OF PAKISTAN**  
**MINISTRY OF COMMUNICATIONS**  
**NATIONAL HIGHWAY AUTHORITY**


**NATIONAL ENGINEERING SERVICES**  
**PAKISTAN (PVT.) LTD.**

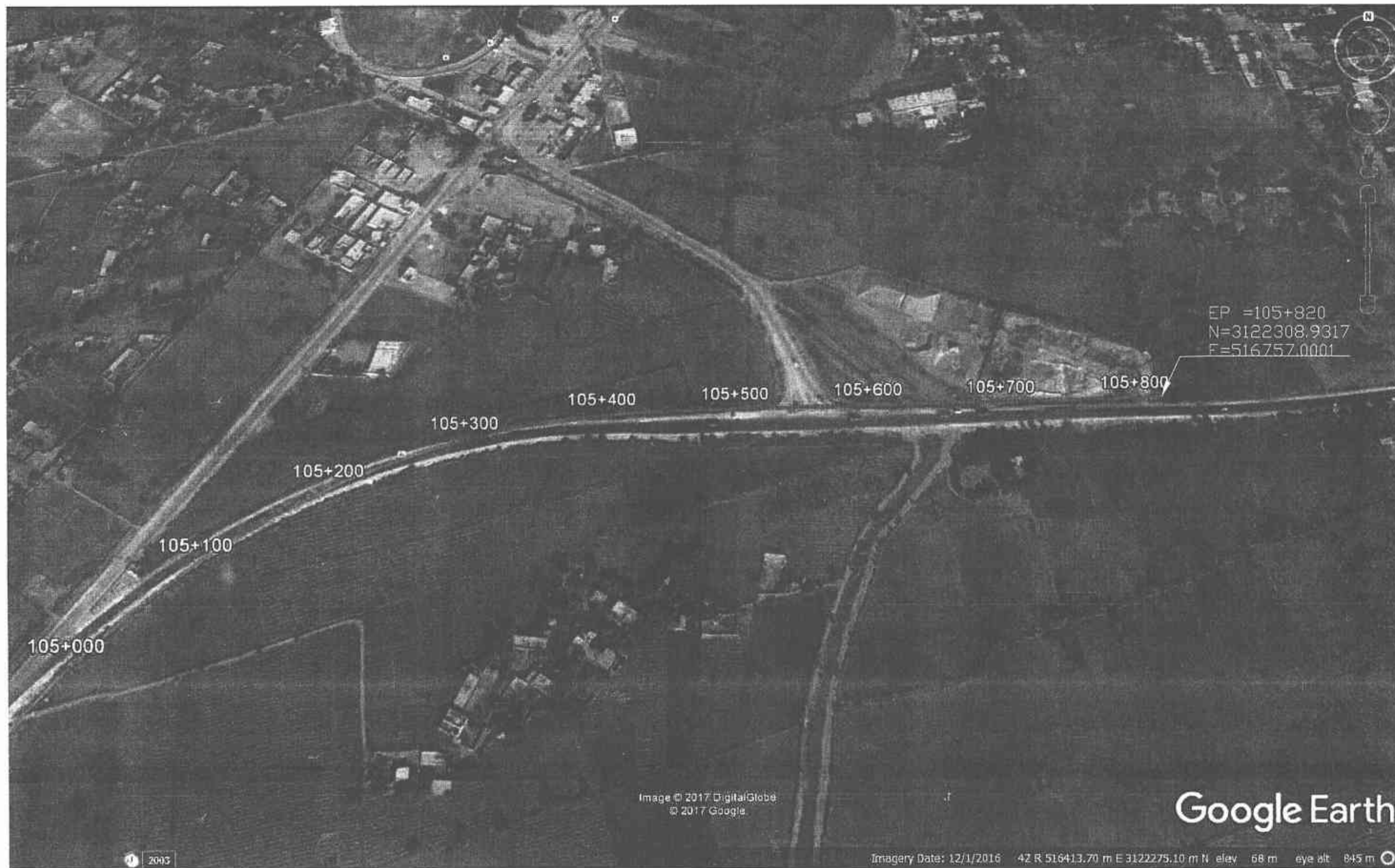
04			DRAWN BY	RAJA SHAFIQ
03			SUBMITTED BY	
02			RECOMMENDED BY	
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
 PACKAGE-I  
 (SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN		SCALE
DATE 2018	DRAWING NO. 3905/102/TD/ RLP-34	REV.





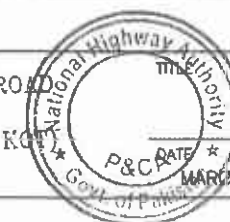
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

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03				SUBMITTED BY	
02				RECOMMENDED BY	
01				CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



ROUTE LOCATION PLAN

SCALE

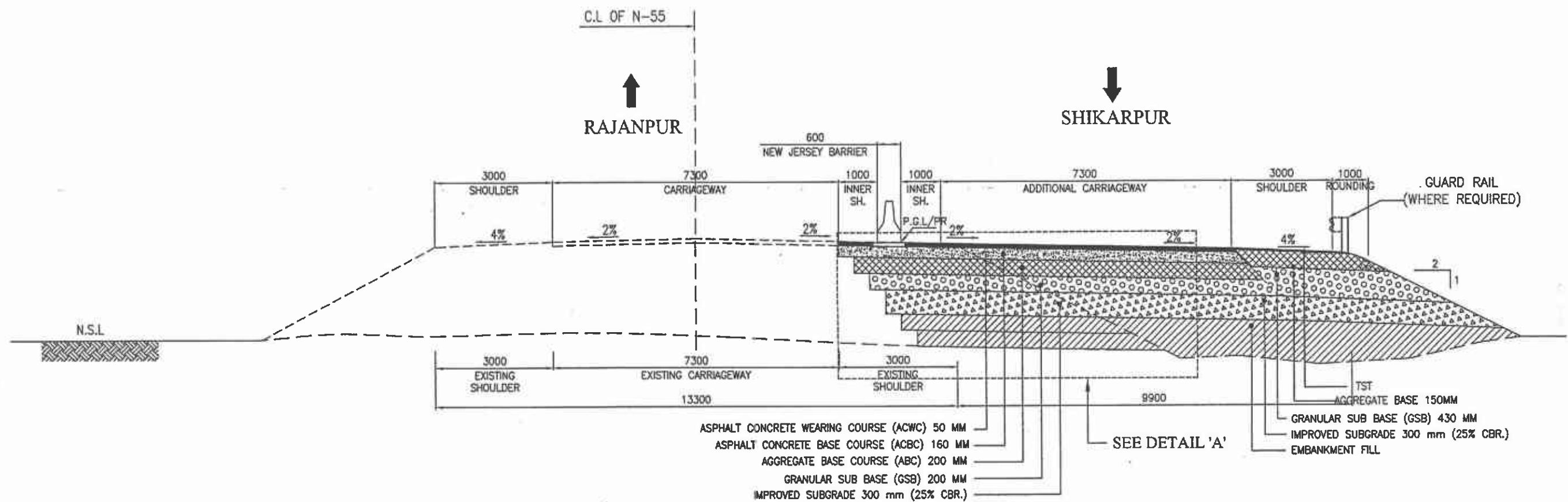
DRAWING NO.  
3905/102/TD/ RLP-35

REV.









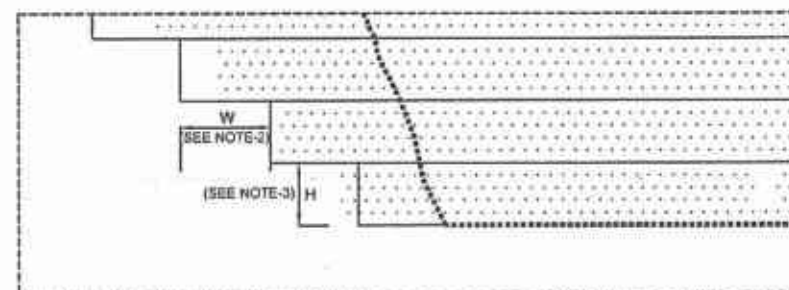
#### ADDITIONAL CARRIAGEWAY (RIGHT SIDE)

APPLICABLE REACHES	
FROM (KM)	TO (KM)
68+000	73+460
78+460	79+160
81+000	81+800
85+430	87+660
96+400	103+660

5.24  
0.7  
0.6  
2.23  
7.23  
16.45

#### TYPICAL X-SECTION FOR ADDITIONAL CARRIAGEWAY ON RIGHT SIDE

#### BENCHING DETAIL:-



DETAIL "A"

#### BENCHING METHODOLOGY:-

- 1- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- 2- MINIMUM DIMENSION "W" SHALL BE 300
- 3- "H" SHALL BE LIMITED TO A MINIMUM OF 150.
- 4- BENCHES TO BE EXCAVATED ONE LEVEL AT A TIME AND THE COMPACTED FILL BROUGHT UP BEFORE THE NEXT LEVEL OF ENCHING IS EXCAVATED.
- 5- PROPER CONFINEMENT WITH A -4 MATERIAL SHALL BE CARRIED OUT IN CASE A-3 (SAND) OR NON- COHESIVE MATERIAL IS USED IN WIDENING PORTION.
- 6- NO SEPARATE PAYMENT SHALL BE MADE FOR CUTTING/BENCHING INTO EXISTING GROUND /SLOPE.
- 7- FOR OTHER NOTES REFER DRAWING # CS-04.



**TENDER DRAWINGS**

GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

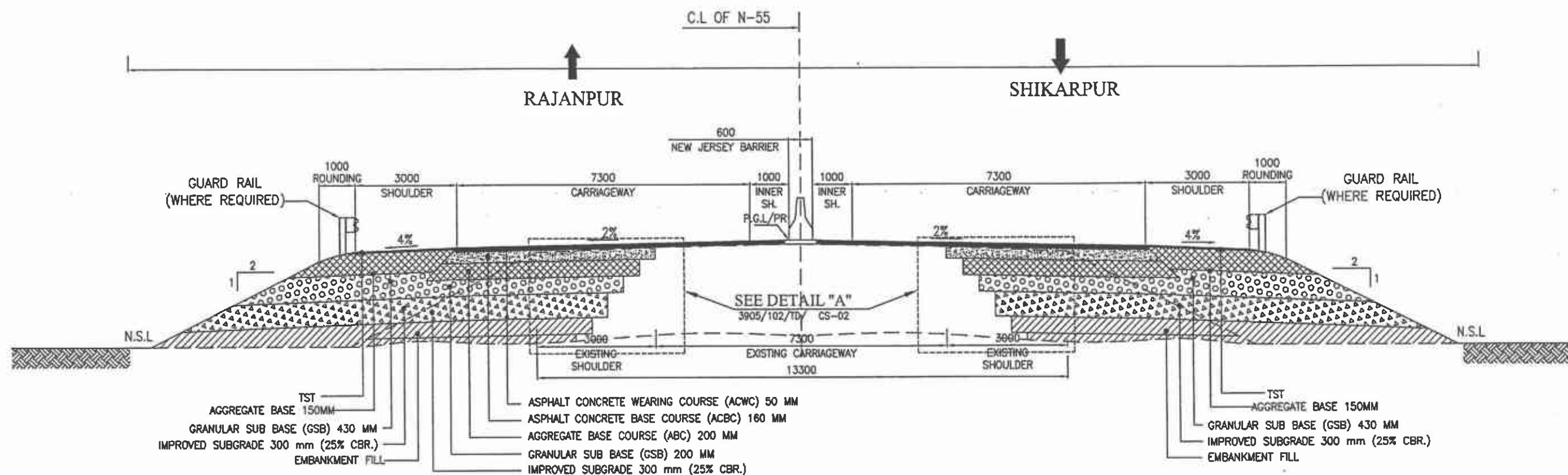
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04		Project Manager		DRAWN BY	RAJA SHAFIQ
03		M/S NESPAK		SUBMITTED BY	
02				RECOMMENDED BY	
01				CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	TYPICAL CROSS SECTION ADDITIONAL CARRIAGEWAY	SCALE
DATE	MARCH 2018	REV.
DRAWING NO.	3905/102/TD/	CS-02





TYPICAL X-SECTION WITH BOTH SIDE WIDENING

BOTH SIDE WIDENING



APPLICABLE REACHES	
FROM (KM)	TO (KM)
52+600	56+400
62+400	63+500
67+700	68+000
73+460	75+380
78+200	78+460
79+160	81+000
81+800	82+180
84+800	85+430
87+660	88+100
92+370	96+400
103+660	105+400

NOTE.

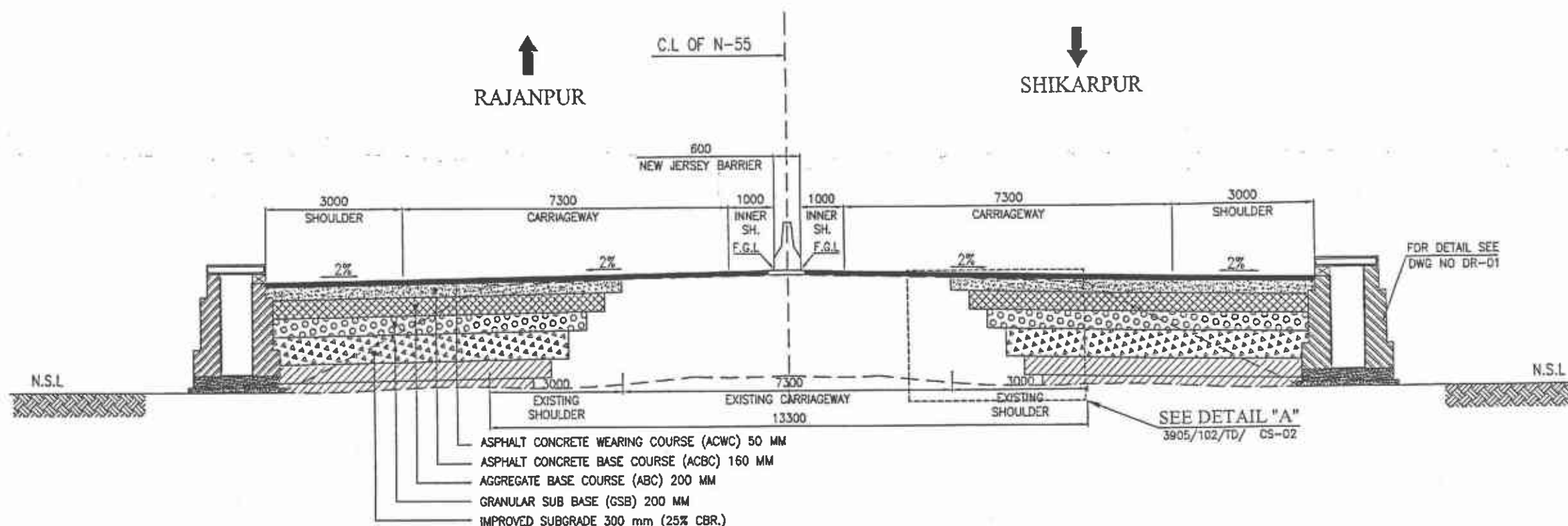
- 1-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- 2-FOR NOTES REFER DRAWING NO. CS-04.

TENDER DRAWINGS



	GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY		NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	04	JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	TITLE		SCALE
				03	Project Manager	SUBMITTED BY			TYPICAL CROSS SECTION		
				02	M/S NESPAK	RECOMMENDED BY					
				01		CHD./VER. BY					
				REV.	DATE	DESCRIPTION	APPROVED		APPROVED BY		
									DATE	DRAWING NO.	REV.
									MARCH 2018	3905/102/TD/	CS-03





TYPICAL X-SECTION WITH BOTH SIDE WIDENING IN URBAN AREA

STEPS FOR EXISTING ROAD REHABILITATION:

1. REMOVE ASPHALTIC WEARING COURSE AND INSPECT THE UNDERLYING ASPHALTIC BASE COURSE AS PER SPECIFICATIONS. IF FOUND SUITABLE, LAY 80MM ASPHALTIC BASE COURSE AND THEN LAY 50MM ASPHALTIC WEARING COURSE.
2. IF AFTER REMOVING ASPHALTIC WEARING COURSE, UNDERLYING ASPHALTIC BASE COURSE DO NOT QUALIFY THE SPECIFICATIONS, REMOVE ASPHALTIC BASE COURSE COMPLETELY AND INSPECT UNDERLYING AGGREGATE BASE COURSE AND CHECK SUITABILITY AS PER SPECIFICATIONS. IF UNDERLYING AGGREGATE BASE COURSE MATERIAL QUALIFIES THE SPECIFICATIONS, THEN RE-COMPACT AT 100% MDD AND LAY SUBSEQUENT ASPHALTIC LAYERS.
3. IF UNDERLYING AGGREGATE BASE COURSE IS NOT QUALIFYING THE SPECIFICATIONS, THEN ADD GOOD QUALITY BASE MATERIAL (15cm) FOR QUALIFICATION AND RE-COMPACT AT 100% MDD AND LAY SUBSEQUENT ASPHALTIC LAYERS.

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. IMPROVED SUBGRADE SHALL HAVE MINIMUM CBR OF 25%. IF A BARROW MATERIAL OF 25% CBR IS NOT AVAILABLE IN THE PROJECT AREA THE APPROVED MATERIAL SHALL BE BLENDED MECHANICALLY IN A PROPER PROPORTION WITH PRIOR APPROVAL OF THE ENGINEER.
3. EMBANKMENT FILL SHALL BE MEASURED AND PAID AS PER 2H:1V SLOPE, HOWEVER PAVEMENT STRUCTURE SHALL BE MEASURED AND PAID AS PER 1H:1V SLOPE ON OUTER SIDE AND SHALL BE MEASURED AND PAID VERTICAL ON INNER SIDE (TOWARDS EXISTING CARRIAGEWAY).
4. ASPHALTIC LAYERS SHALL BE PAID VERTICAL.
5. EMBANKMENT FILL SHALL BE COMPACTED ACCORDING TO THE COMPACTION ZONE.
6. THE LOCATION OF WATER PONDING/WATER LOGGED AREAS SHALL BE IDENTIFIED PRIOR TO THE CONSTRUCTION WITH APPROVAL OF THE ENGINEER.
7. IN CASE OF WATER LOGGED AREA, GRANULAR PLATFORM SHALL BE PROVIDED UPTO THE DEPTH OF 450MM (MAX) OR AS DIRECTED BY THE ENGINEER. HOWEVER WATER IN PONDING AREAS, ROCK FILL MATERIAL SHALL BE PROVIDED UPTO THE HEIGHT OF WATER LEVEL + 600MM.
8. DRAIN SHALL BE PROVIDED IN URBAN PORTION, AND TYPE OF DRAIN SHALL BE DECIDED BY ENGINEER REPRESENTATIVE KEEPING IN VIEW SITE CONDITIONS.
9. FOR BENCHING DETAIL, REFER TO DRW 3905/102/TDCS002.



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04	JAWAD UL HAQ	DRAWN BY	RAJA SHAHID
03	Project Manager	SUBMITTED BY	
02	M/S NESPAK	RECOMMENDED BY	
01		CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-II  
(KANDH KOT TO KASHMORE)

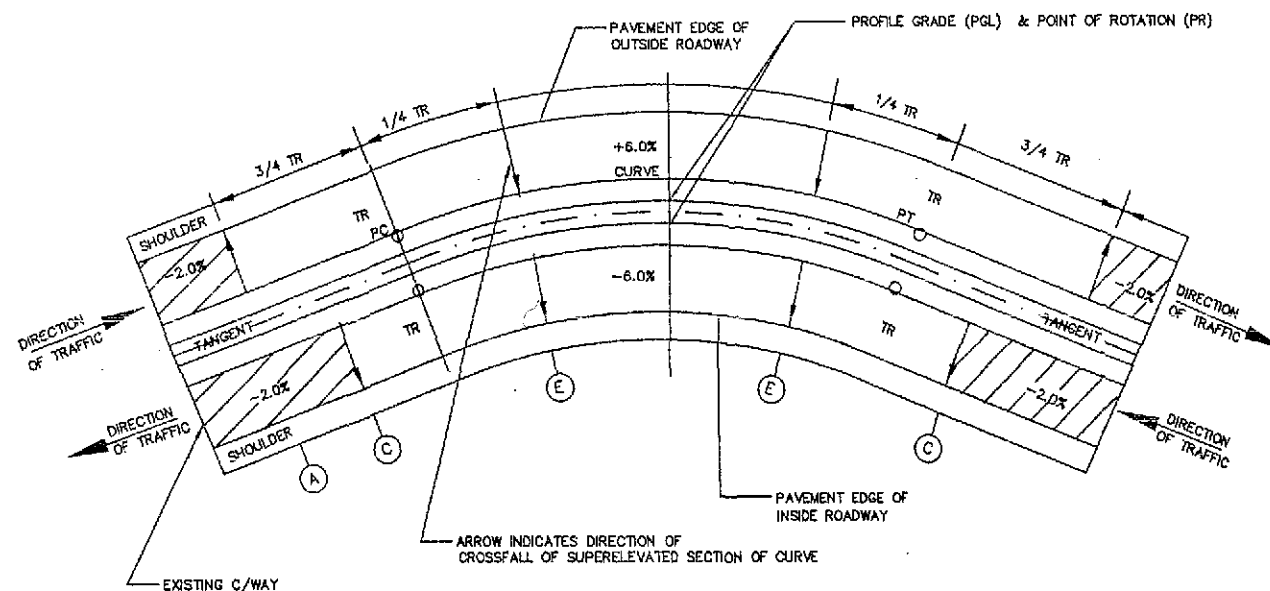
TITLE	TYPICAL CROSS SECTION	SCALE
DATE	MARCH 2018	REV.
DRAWING NO.	3905/102/TD/	CS-04



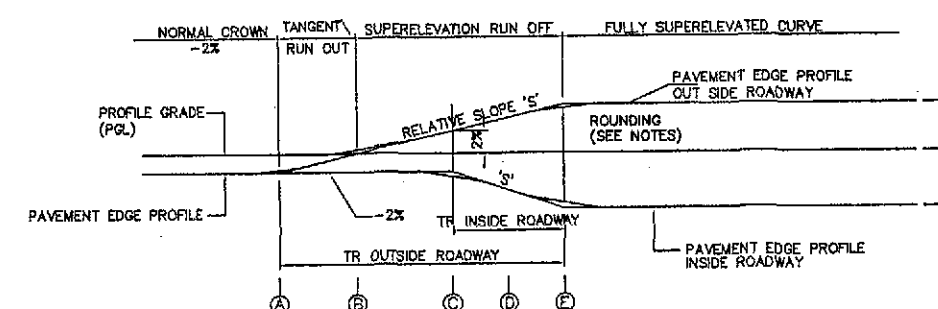
TABLE-I  
RELATIVE SLOPE FOR SUPERELEVATED EDGE (S%)

DESIGN SPEED Km / Hr	2 LANE ROAD	1 LANE RAMP	2 LANE RAMP
50	0.67	0.80	1.00
80	0.50		
100*	0.45		
120	0.40		

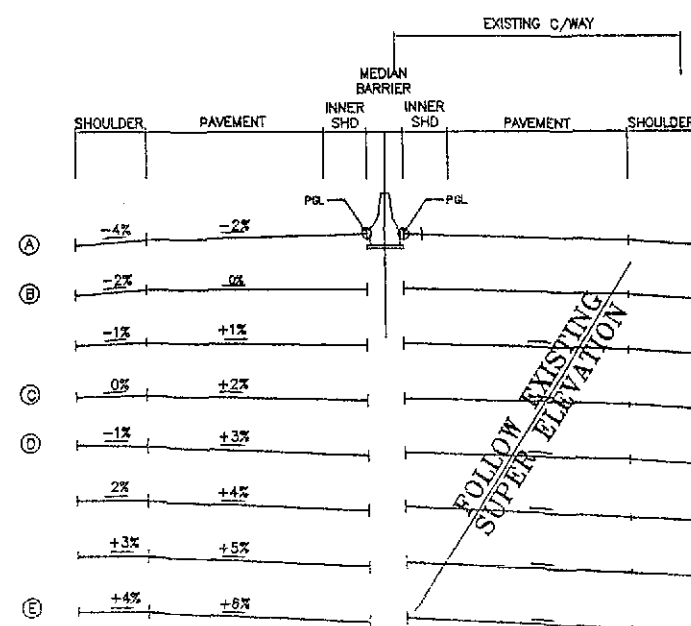
\* VALUE TO BE ADOPTED FOR THIS PROJECT.



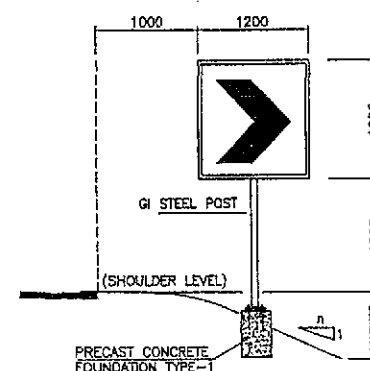
PLAN OF TYPICAL  
SUPERELEVATION TRANSITION



PROFILE OF TYPICAL EDGE  
SUPERELEVATION TRANSITIONS



SECTIONS OF TYPICAL  
DISTRIBUTION OF SUPERELEVATION



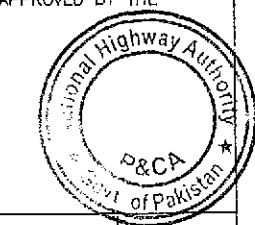
SHARP DEVIATION SIGN  
(ON SHARP CURVES)



NOTES :-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
- ALL SUPERELEVATION RATES ARE EXPRESSED IN UNITS PER HUNDRED (%).
- PROFILE GRADE LINE (PGL) AND POINT OF ROTATION (PR) SHALL BE AS SHOWN IN THE TYPICAL CROSS SECTION.
- FOLLOWING SIGN CONVENTION FOR SUPERELEVATION RATE ARE APPLICABLE  
(-) WHEN LEFT EDGE OF PAVEMENT OR SHOULDER, IN DIRECTION OF TRAFFIC IS LOWER THAN RIGHT EDGE.  
(+) WHEN LEFT EDGE OF PAVEMENT OR SHOULDER, IN DIRECTION OF TRAFFIC, IS HIGHER THAN RIGHT EDGE.
- EDGE PROFILES OF SUPERELEVATED PAVEMENT AND SHOULDERS SHALL BE FREE FROM IRREGULARITIES, ROUNDING AT POINTS A, C & E SHALL BE ACHIEVED USING A 20 METER MINIMUM VERTICAL CURVE.
- THE FORMULAE USED FOR CALCULATION OF INNER & OUTER TRs ARE AS UNDER:-  
(i). LENGTH OF TR =  $\frac{\text{REQUIRED S.E.} \times \text{CROSS SLOPE}}{\text{S FACTOR}} \times \text{PAVEMENT WIDTH TO BE ROTATED}$   
(ii). 'S' FACTOR IS TAKEN FROM TABLE-I. THE LENGTH OF TRs ARE INDICATED ON PLAN & PROFILE SHEETS, WHICH MAY BE ADJUSTED AS PER SITE CONDITIONS AND/OR AS APPROVED BY THE ENGINEER'S REPRESENTATIVE.
- THE RATE OF SUPERELEVATION (S.E) IS RESTRICTED TO A MAXIMUM OF 6%.

TENDER DRAWINGS

TENDER DRAWINGS

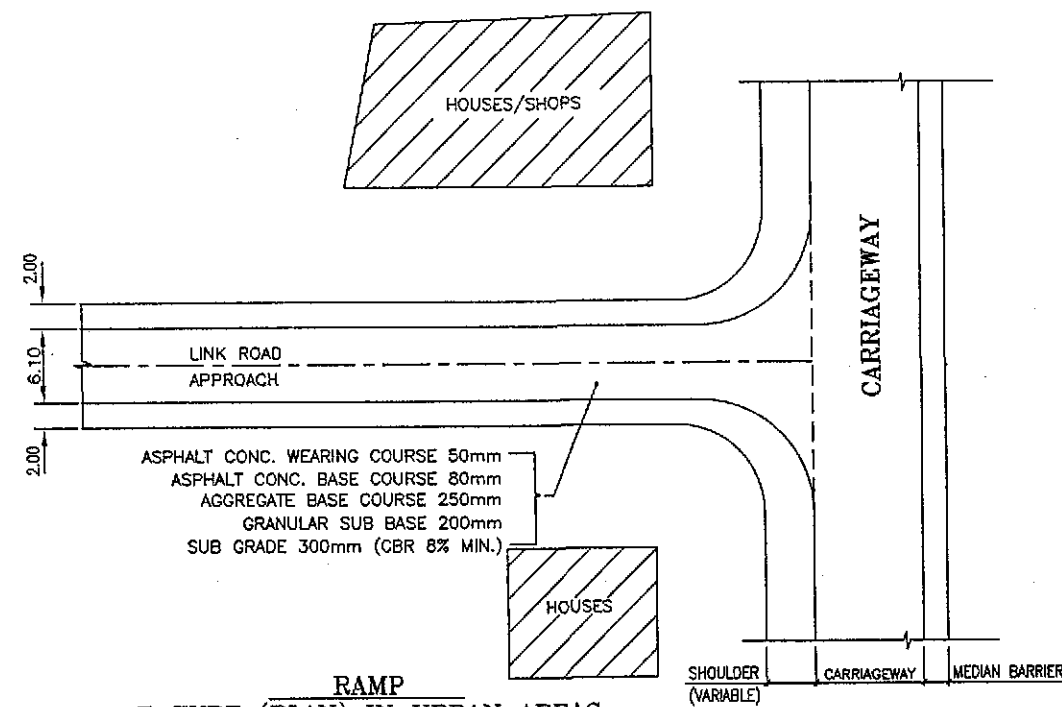


	GOVERNMENT OF PAKISTAN			NATIONAL ENGINEERING SERVICES		DRAWN BY RAJA SHAFIQ	TITLE RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)		DATE November 2017		DRAWING NO. 3905/102/TD/ TS-01	REV.
	MINISTRY OF COMMUNICATIONS			PAKISTAN (PVT.) LTD.			SUBMITTED BY [Signature]		TYPICAL SUPERELEVATION DETAILS			
	NATIONAL HIGHWAY AUTHORITY						RECOMMENDED BY [Signature]					
							CHD./VER. BY [Signature]					
							APPROVED BY [Signature]					
REV.		DATE		DESCRIPTION		APPROVED						
		04		JAWAD UL HAQ								
		03		Project Manager								
		02		M/S NESPAK								
		01										

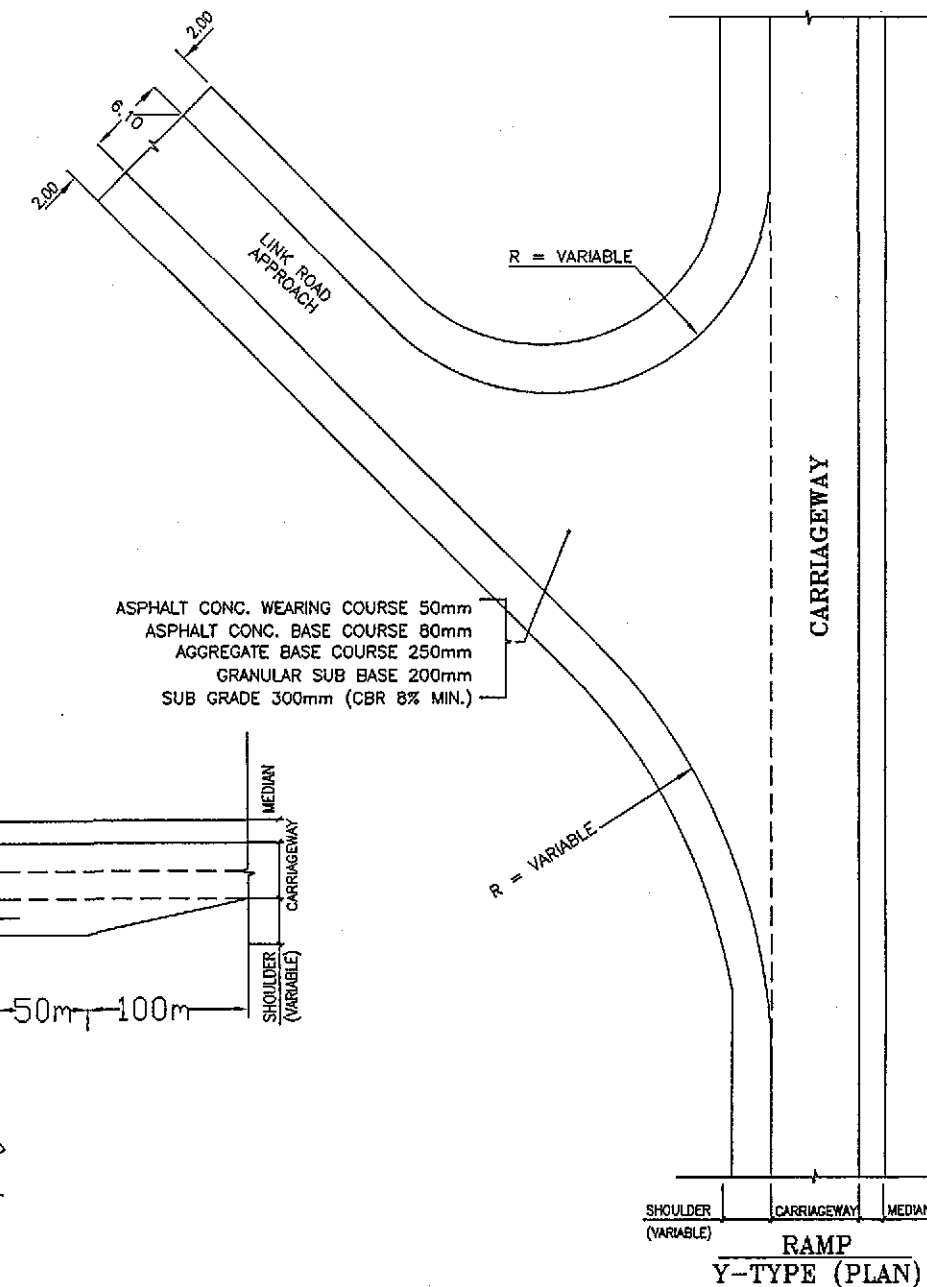


RECOMMENDED CURVE RADII FOR DIFFERENT  
ANGLES OF TURN

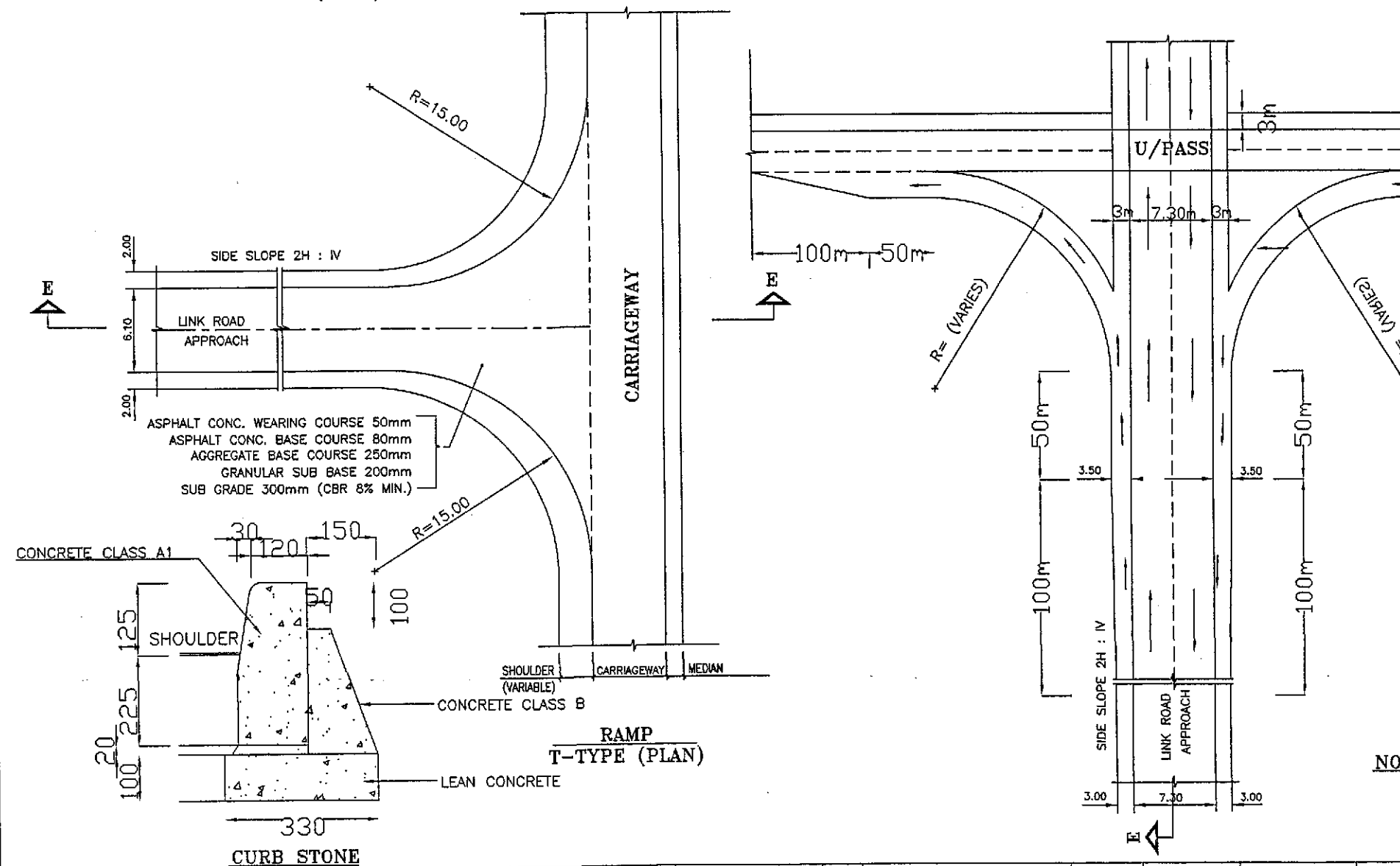
ANGLE OF TURN (DEGREES)	CURVE RADIUS (R) (METRES)
30	30
45	23
60	18
75	16
90	12 TO 15
>90	VARIABLE



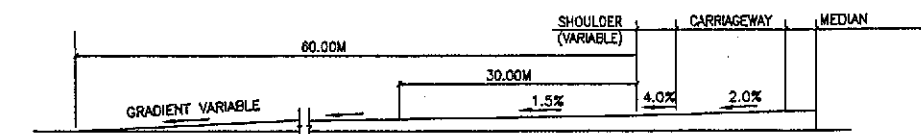
RAMP  
T-TYPE (PLAN) IN URBAN AREAS



RAMP  
Y-TYPE (PLAN)



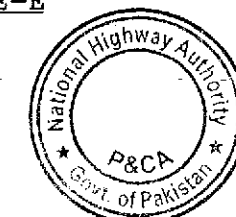
RAMP  
T-TYPE (PLAN)



SECTION AT E-E

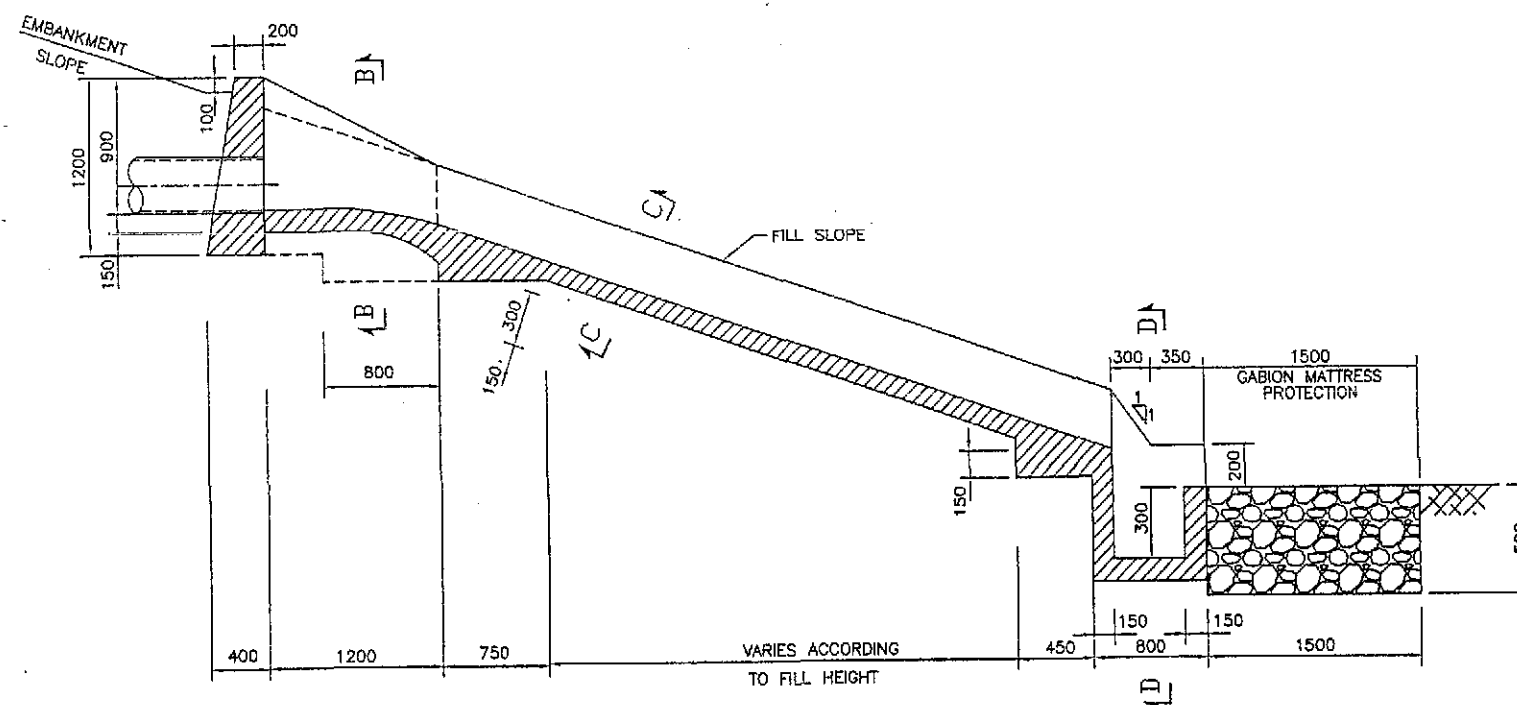
NOTES:

- 1- ALL DIMENSIONS ARE IN MILLIMETERS OTHERWISE MENTIONED.
- 2- RAMPS ARE TO BE MATCHED WITH DESIGN FINISHED ROAD LEVEL OF PROJECT ROAD.

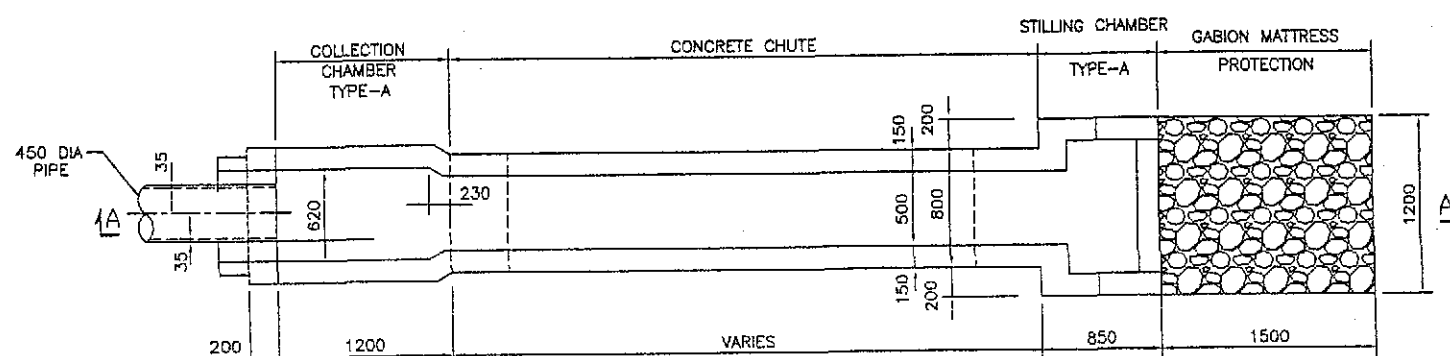




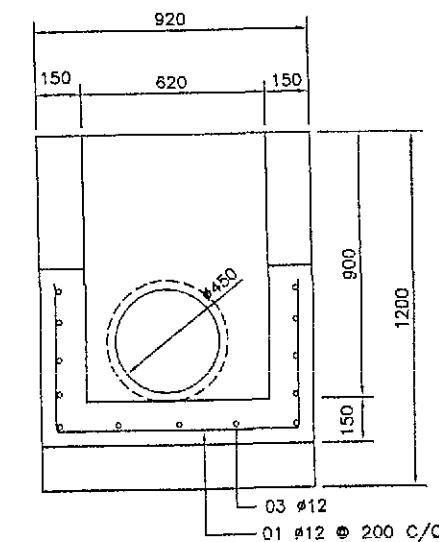




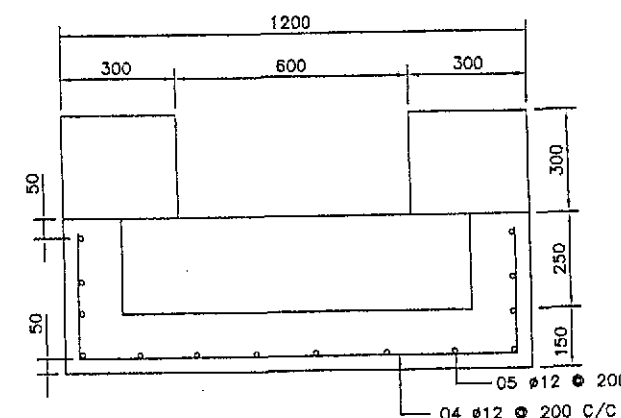
SECTION A-A



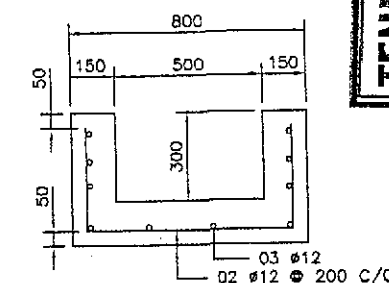
PLAN  
CHUTE TYPE (A)



SECTION B-B



SECTION D-D



SECTION C-C

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. CONCRETE CHUTES SHALL BE PROVIDED AT AN INTERVAL OF 50M WHERE FILL HEIGHT IS MORE THAN 3M OR AS DIRECTED BY THE ENGINEER'S REPRESENTATIVE.
3. CONCRETE FOR CHUTES COLLECTION & STILLING CHAMBERS SHALL BE CLASS "A1".
4. RE-BAR SHALL BE GRADE 60 REINFORCEMENT STEEL.
5. CONCRETE CHUTE TYPE (A) SHALL BE USED AT OUTLETS OF MEDIAN OPENING AND AT OTHER LOCATIONS OR AS DIRECTED BY THE ENGINEER'S REPRESENTATIVE.
6. COLLECTION CHAMBER TYPE-C SHALL BE USED IN LIEU OF TYPE-B, WHEREVER LONGITUDINAL SLOPE OF ROAD EXCEEDS 1.0% AND/OR AT OTHER LOCATIONS APPROVED BY THE ENGINEER'S REPRESENTATIVE.

TENDER DRAWINGS



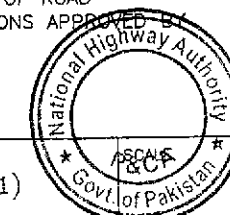
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

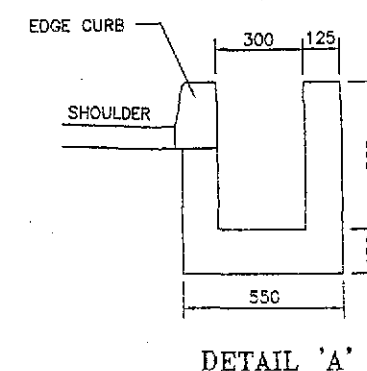
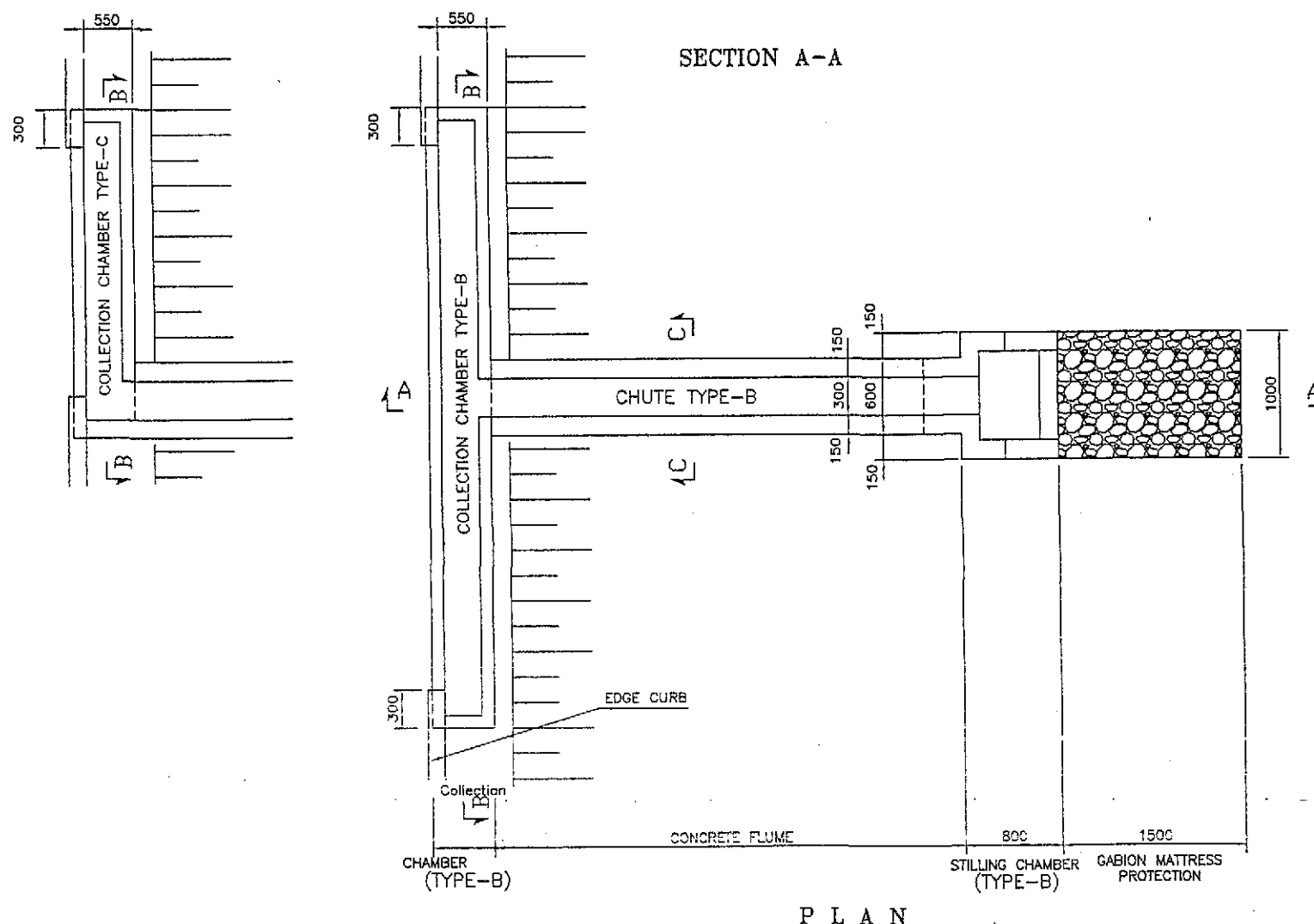
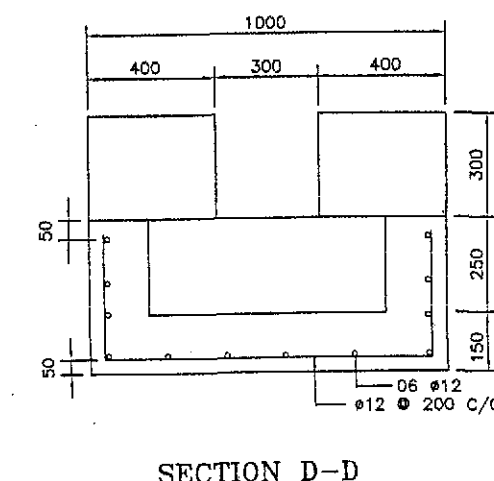
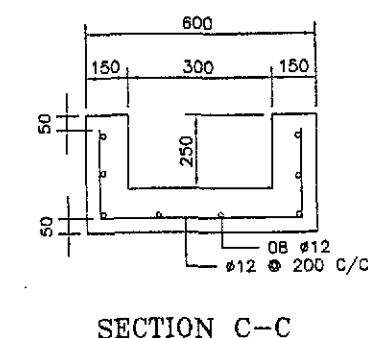
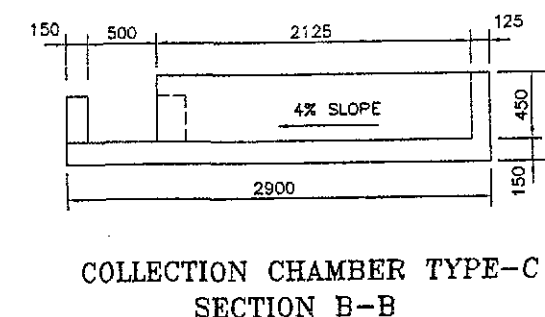
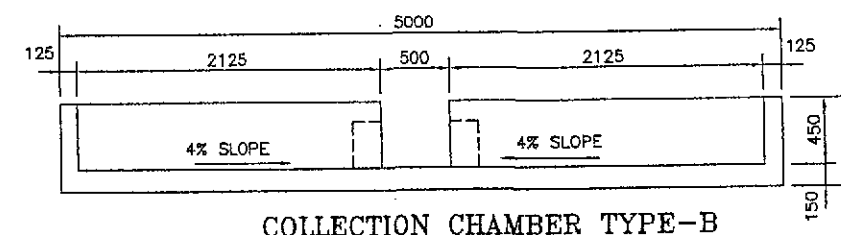
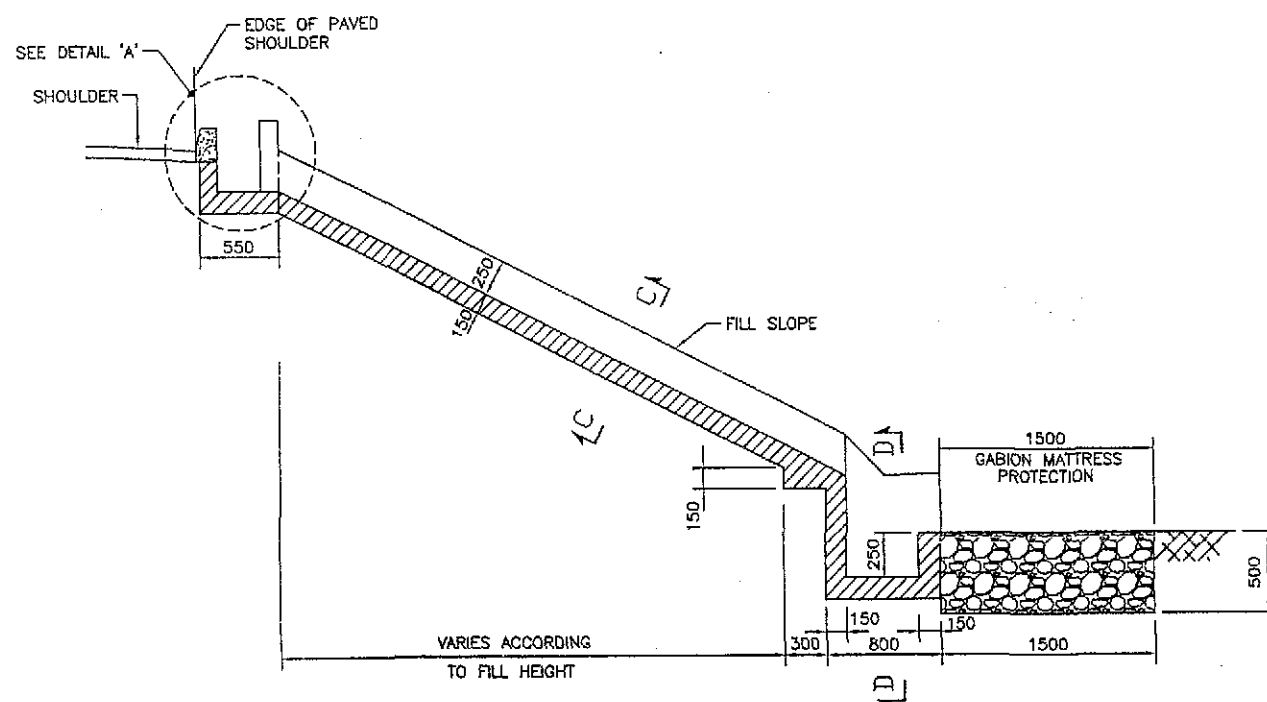
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04		JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ
03		Project Manager	SUBMITTED BY	fur
02		M/S NESPAK	RECOMMENDED BY	Q
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	CONCRETE CHUTE (1)		
DATE	November 2017	DRAWING NO.	3905/102/TD/ D-02
REV.			

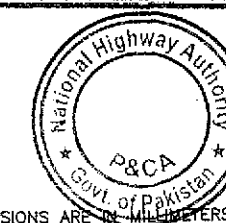




TENDER DRAWINGS

NOTES

1 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

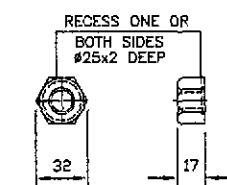
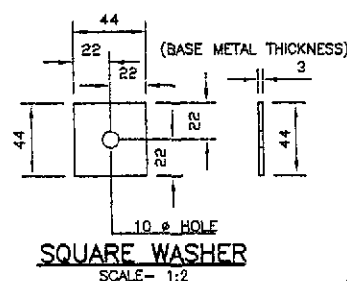
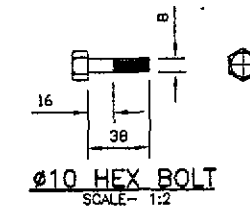
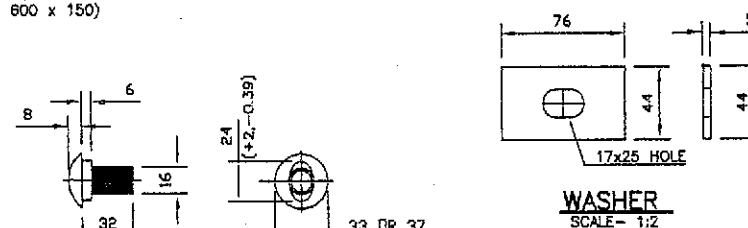
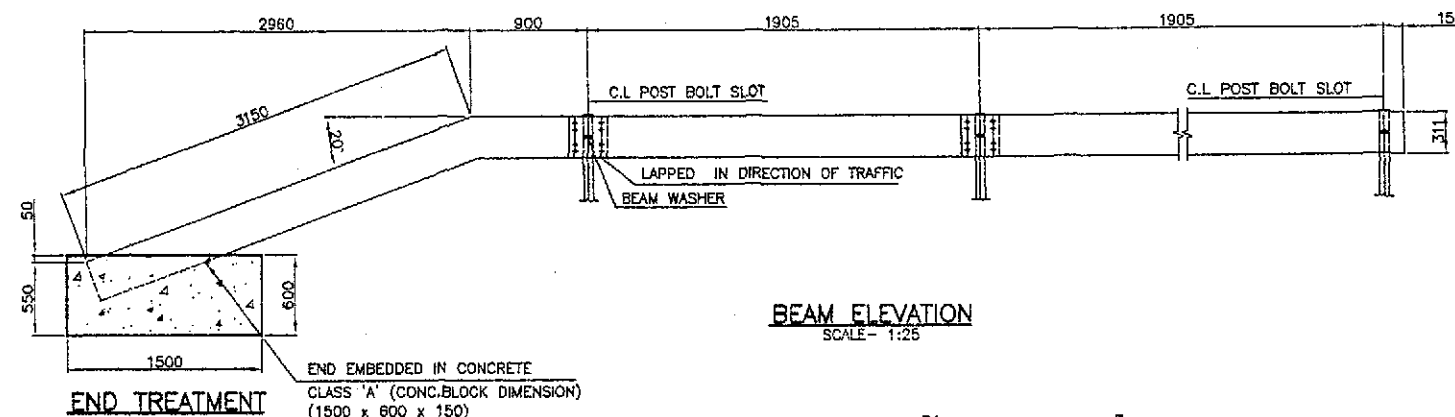
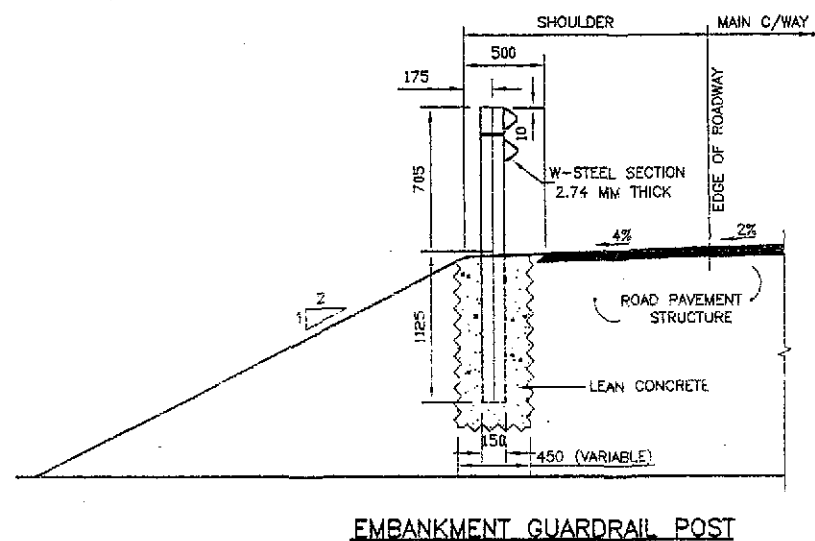
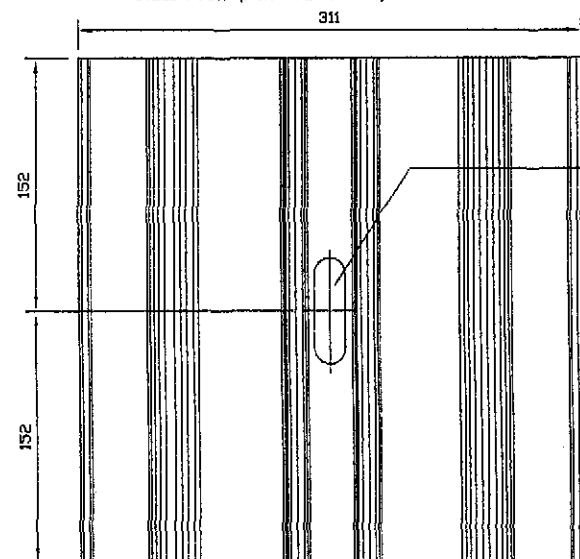
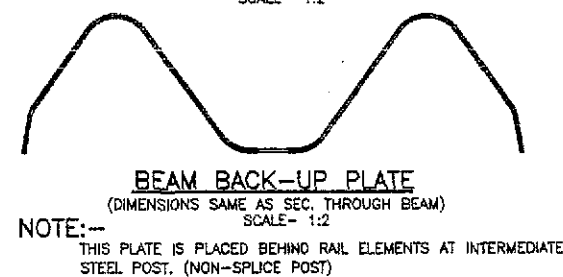
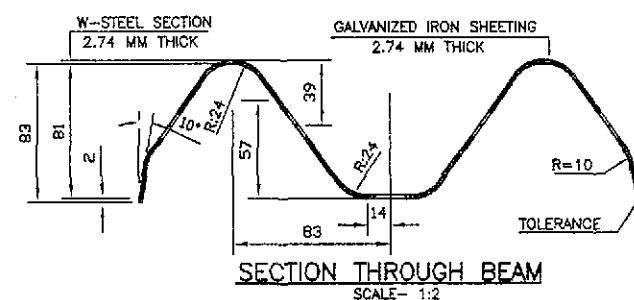
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04		JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ
03		Project Manager	SUBMITTED BY	
02		M/S NESPAK	RECOMMENDED BY	
01			CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY

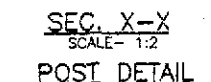
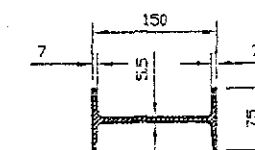
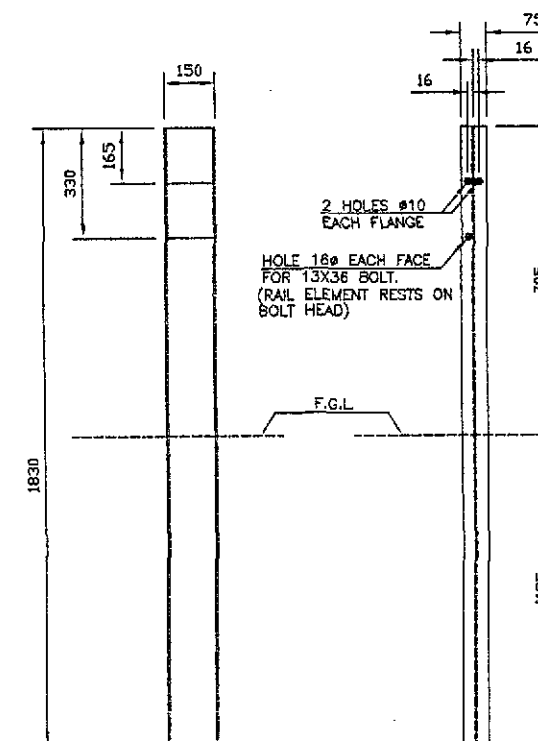
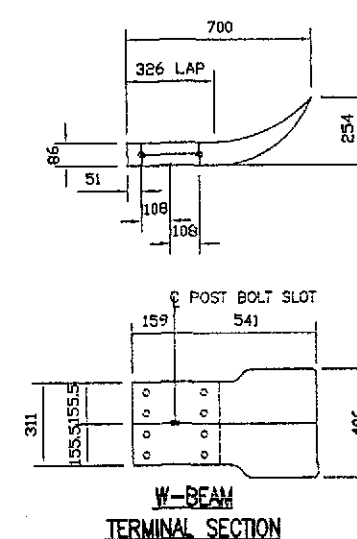
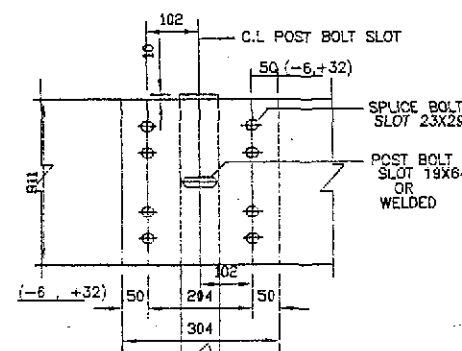
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	CONCRETE CHUTE (2)	SCALE
DATE	November 2017	REV.
DRAWING NO.	3905/102/TO/ D-03	





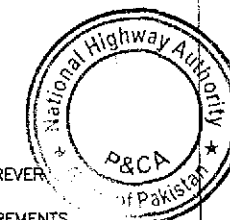
LOCATIONS OF GUARD RAIL				
SR.	CHAINAGE (KM)		LENGTH	REMARKS
NO.	FROM	TO	(M)	
1	43+760	44+060	300	L.H.S
2	44+740	45+130	390	L.H.S
3	52+800	53+040	240	R.H.S
4	53+640	54+210	570	L.H.S
5	55+050	55+440	390	R.H.S
6	62+740	63+000	260	R.H.S
7	63+170	63+480	310	L.H.S
8	78+280	78+480	220	R.H.S
9	93+480	93+810	330	R.H.S

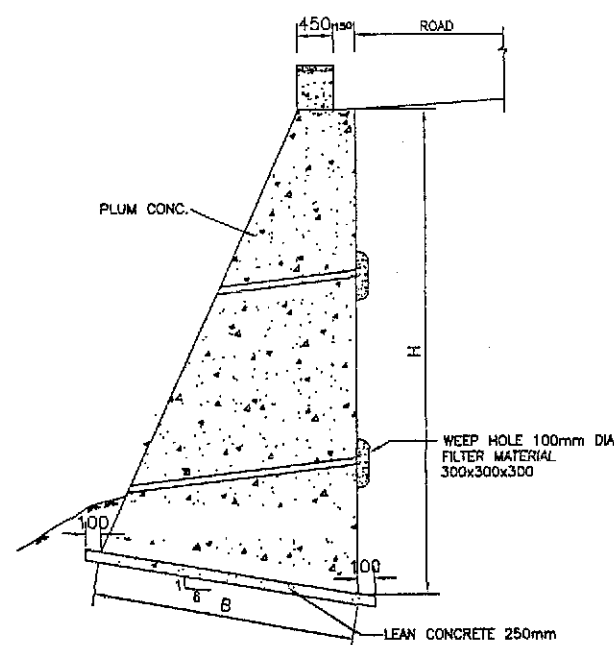
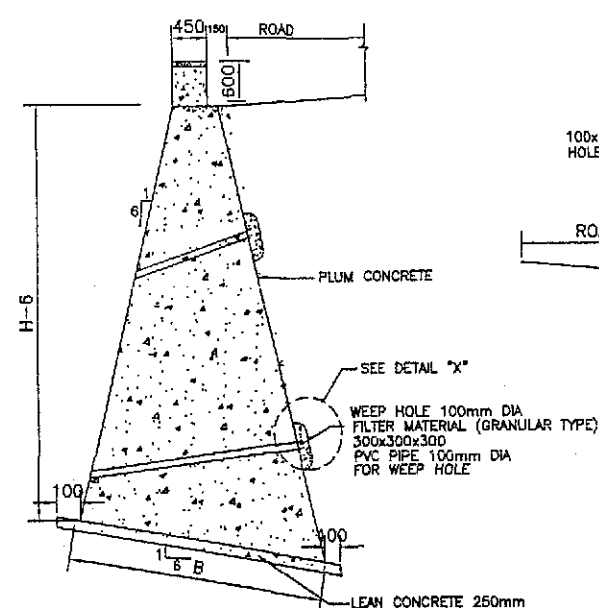
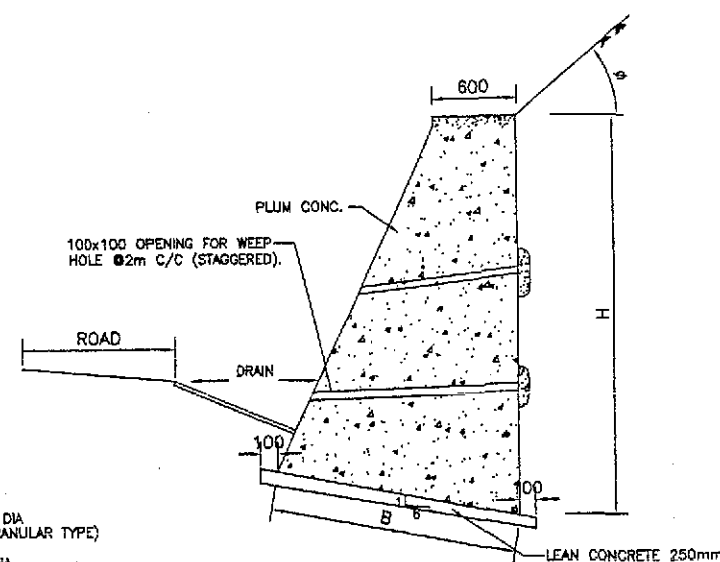
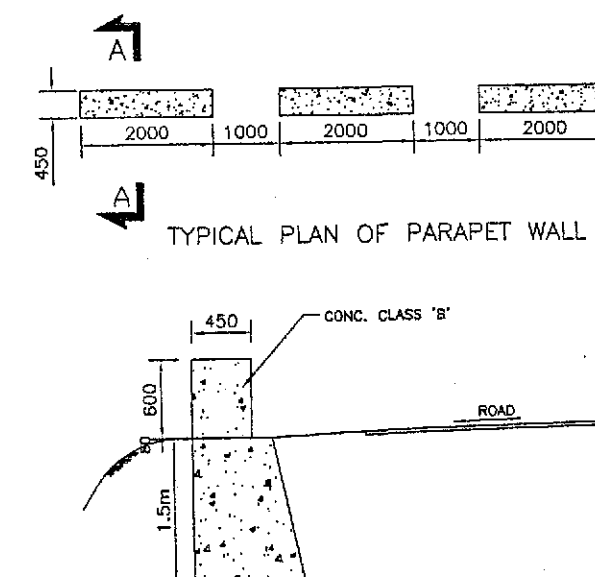
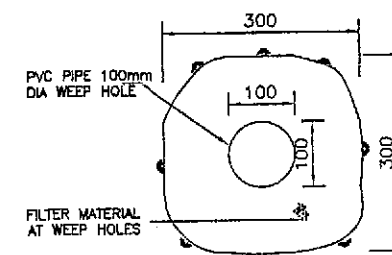


**TENDER DRAWINGS**

NOTES:—

- \* -PROVIDE CONC. CLASS "A" AROUND POSTS WHEREVER DRIVING IS NOT POSSIBLE.
- \* -HEIGHT OF POST MAY VARY AS PER SITE REQUIREMENTS.
- \* -16 Ø BOLT NOT REQUIRED IF BACKUP PLATE IS USED.
- \* ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.



TYPICAL SECTION OF PLUM CONCRETE  
RETAINING WALL TYPE 1TYPICAL SECTION OF PLUM CONCRETE  
RETAINING WALL TYPE 2TYPICAL SECTION OF PLUM CONCRETE  
RETAINING/BREAST WALL TYPE 3APPLICABLE WHERE NO RETAINING WALL EXISTS  
SECTION A-A

DETAIL "X"

TABLE:-

TYPE-1

H (m)	B (m)
1.50	0.60
2.00	0.80
2.50	1.00
3.00	1.20
3.50	1.50
4.00	1.80
4.50	2.00
5.00	2.30
5.50	2.60
6.00	2.90
7.00	3.40
8.00	3.90

TYPE-2

H (m)	B (m)
1.50	0.80
2.00	1.05
2.50	1.40
3.00	1.70
3.50	2.10
4.00	2.40
4.50	2.70
5.00	3.00
5.50	3.30
6.00	4.00
7.00	4.70
8.00	5.50
9.00	6.00
10.00	6.60
11.00	7.20
12.00	7.80

TYPE-3  
 $\phi < 40'$ 

H (m)	B (m)
1.50	0.80
2.00	1.00
2.50	1.40
3.00	1.70
3.50	2.00
4.00	2.40
4.50	2.70
5.00	3.00
5.50	3.30
6.00	3.70
6.50	4.00
7.00	4.40
7.50	4.70
8.00	5.00

TYPE-3  
 $\phi > 40'$ 

H (m)	B (m)
1.50	1.10
2.00	1.40
2.50	1.70
3.00	2.00
3.50	2.30
4.00	2.70
4.50	3.00
5.00	3.60
5.50	3.90
6.00	4.30
6.50	4.70
7.00	5.00

## NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
- WEEP HOLES PVC PIPE 100mm DIA SHALL BE STAGGERED AT AN INTERVAL OF 2m VERTICAL AND HORIZONTAL AND AS ADDITIONALLY DIRECTED BY THE ENGINEER.
- THE SLOPE OF WEEP HOLE SHALL BE 1 IN 8 FROM BACK OF THE WALL TO THE OUTER FACE OR AS DIRECTED BY THE ENGINEER.
- TYPE OF RETAINING WALL SHALL BE DECIDED BY THE ENGINEER AS PER SITE CONDITIONS KEEPING FOLLOWING IN VIEW:
  - TYPE 1 RETAINING WALL SHALL BE PROVIDED WHERE THE ROAD IS WELL AWAY FROM THE NALLAH, RIVER/RIVINE.
  - TYPE 2 RETAINING WALL SHALL BE PROVIDED WHERE THE ROAD IS IN CLOSE VICINITY OF THE RIVER/RIVINE OR CLIFF FACE.
  - TYPE 3 RETAINING WALL SHALL BE PROVIDED TO RETAIN THE SCREED MATERIAL (BREAST WALL).
- PLUM CONCRETE (70% CONCRETE CLASS 'B' & 30% ROCK FILL MATERIAL HAVING STONE SIZE RANGING BETWEEN 200-300) BE UTILIZED.
- PCC PARAPET SHALL BE PROVIDED AT TOP OF RETAINING WALL AND AT OTHER HAZARDOUS LOCATIONS. GUARD RAIL SHALL BE PROVIDED OVER 4m HIGH FILL OR AS DIRECTED BY THE ENGINEER.
- VERTICAL SLOPE TO THE OUTER FACE OF THE RETAINING WALL TYPE 2 CAN BE CHANGED UP TO 1 IN 10.
- PAYMENT FOR WEEP HOLES AND FILTER MATERIAL IS INCLUDED IN THE COST OF OTHER ITEMS AND SHALL NOT BE PAID SEPARATELY.

TENDER DRAWINGS

GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITYNATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04	JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ
03	Project Manager	SUBMITTED BY	dh
02	M/S NESPAK	RECOMMENDED BY	cal
01		CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED

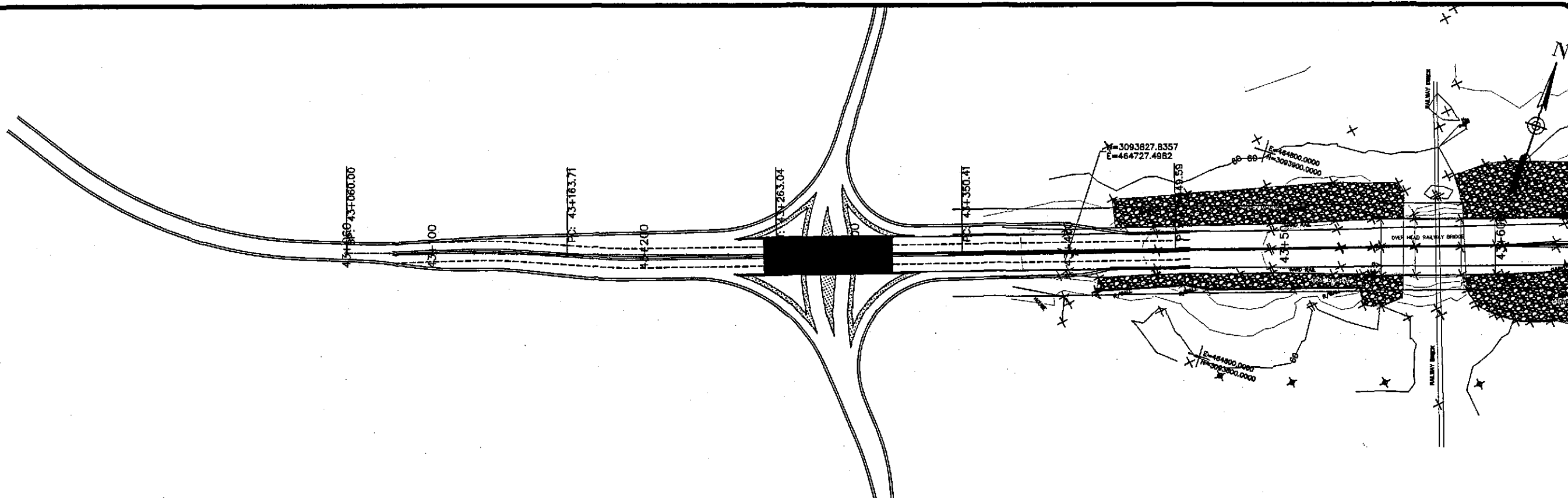
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	TYPICAL PLUM CONC. RETAINING WALL DETAILS	SCALE
DATE	November 2017	REV.
DRAWING NO.	3905/102/TD/ RW-01	

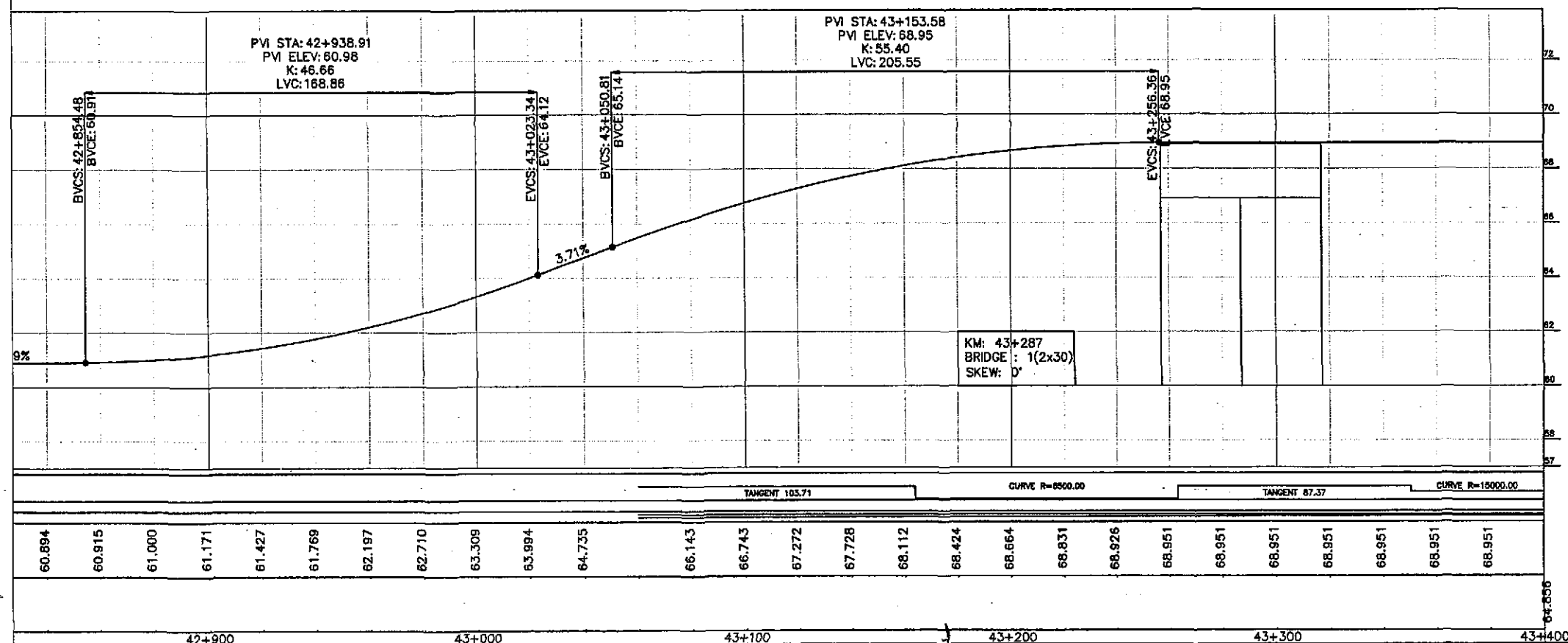


# PLANS & PROFILES

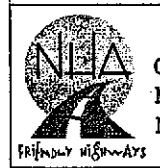




Sarwarkot ~ Kandhkot Section II Profile



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

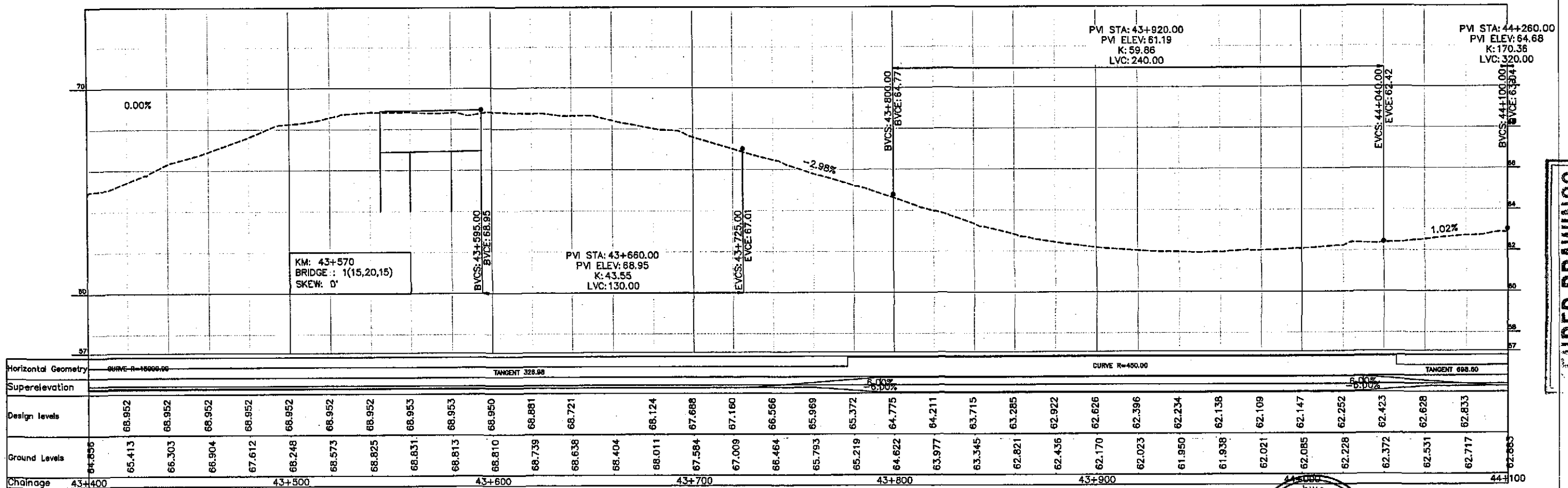
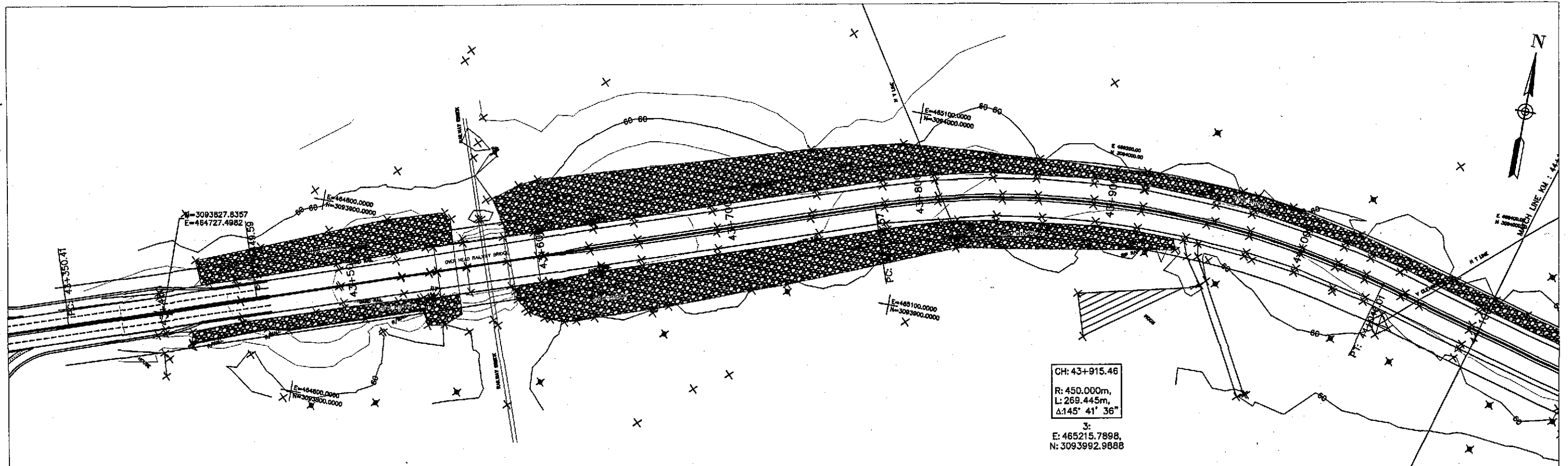
**NESPAK**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ Project Manager M/S NESPAK		DRAWN M A NADEEM AWAN	
REV.		SUBMITTED	
DATE		RECOMMENDED	
DESCRIPTION		CHD./VER.	
APPROVED		APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

PLAN & PROFILE		SCALE
KM: 43+060 ~ KM: 43+400		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P 62	





ENDER DRAWINGS



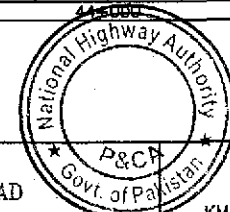
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



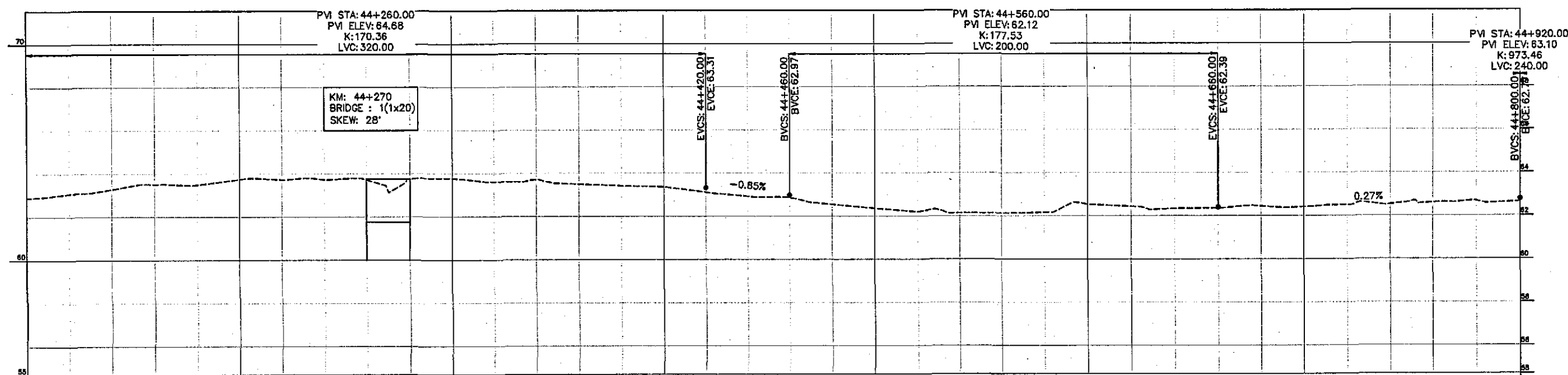
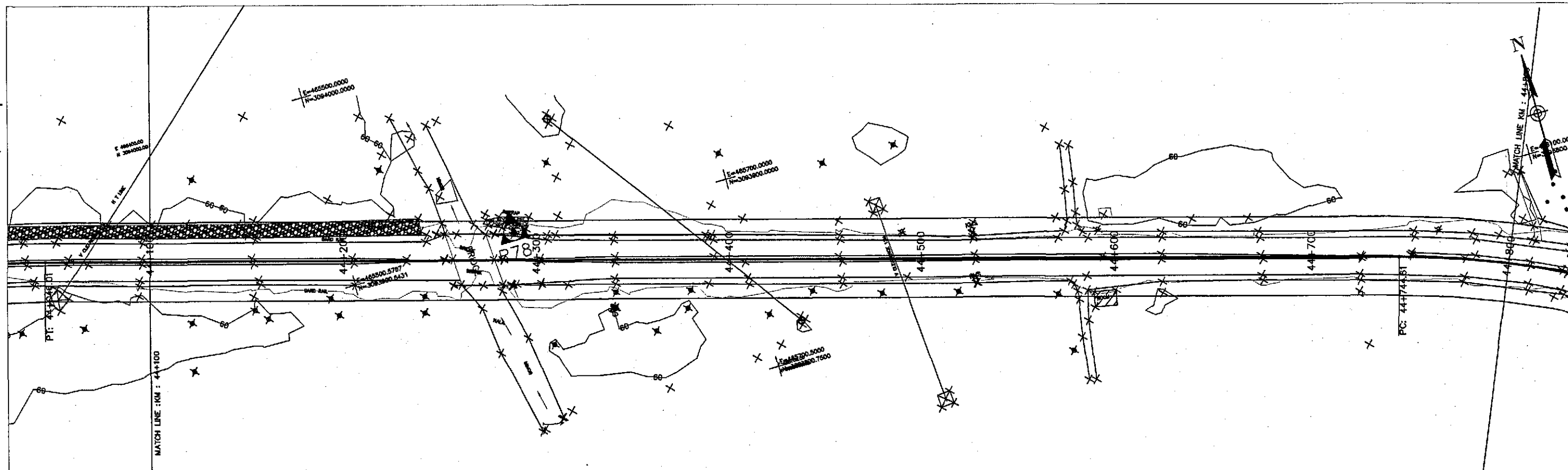
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ Project Manager M/S NESPAK		DRAWN	M A NADEEM AWAN
		SUBMITTED	
		RECOMMENDED	
		CHD./VER.	
REV.	DATE	DESCRIPTION	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-1  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE KM: 43+400 ~ KM: 44+100		SCALE 1:2000
DATE JUNE, 2018	DWG NO. 3905/102/TD/P&P63	



Horizontal Geometry	TANGENT 886.60																												CURVE R=450.00						
Superelevation	-0.00%																												-0.00%						
Design Levels	63.231	63.401	63.547	63.670	63.769	63.845	63.897	63.926	63.932	63.914	63.872	63.807	63.718	63.606	63.471	63.312	63.141	62.971	62.811	62.674	62.560	62.468	62.399	62.352	62.328	62.326	62.347	62.390	62.445	62.499	62.554	62.609	62.663	62.718	
Ground Levels	62.883	63.072	63.273	63.498	63.485	63.731	63.713	63.727	63.703	63.741	63.755	63.610	63.698	63.489	63.408	63.356	63.106	62.918	62.855	62.544	62.360	62.201	62.137	62.136	62.159	62.530	62.429	62.336	62.348	62.441	62.406	62.498	62.520	62.597	62.678
Chainage	44+100				44+200					44+300				44+400					44+500					44+600				44+700					44+800		



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MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



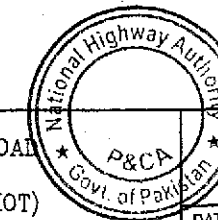
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAC

REV.	DATE	DESCRIPTION	APPROVED	APPROVED
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DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 44+100 ~ KM: 44+800

SCALE

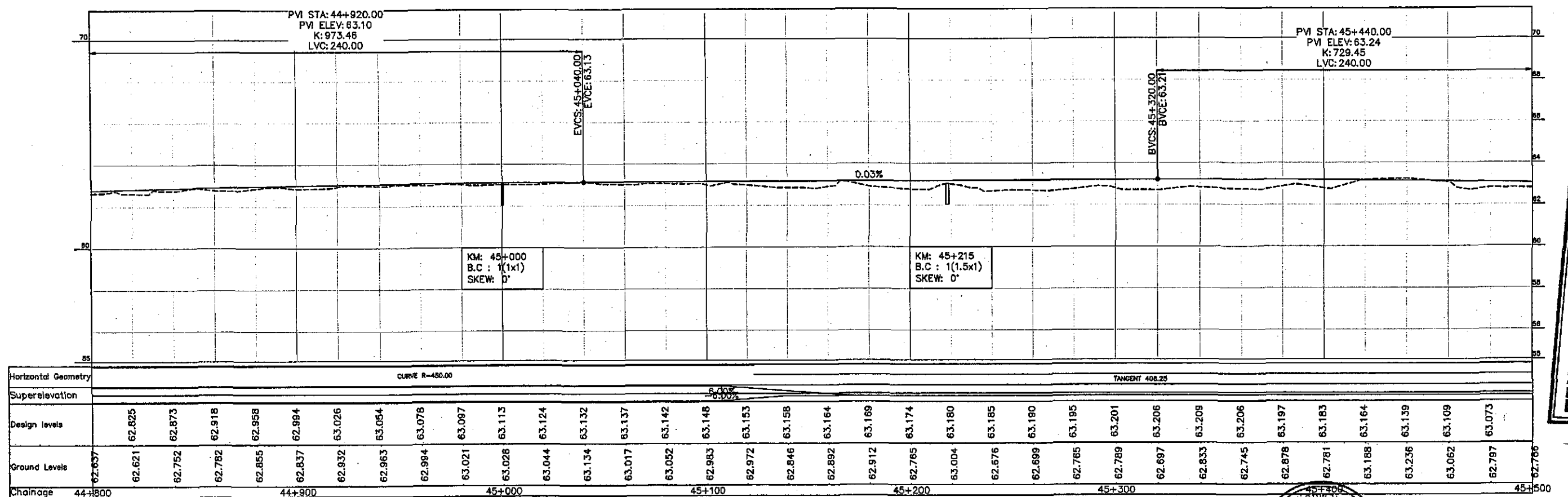
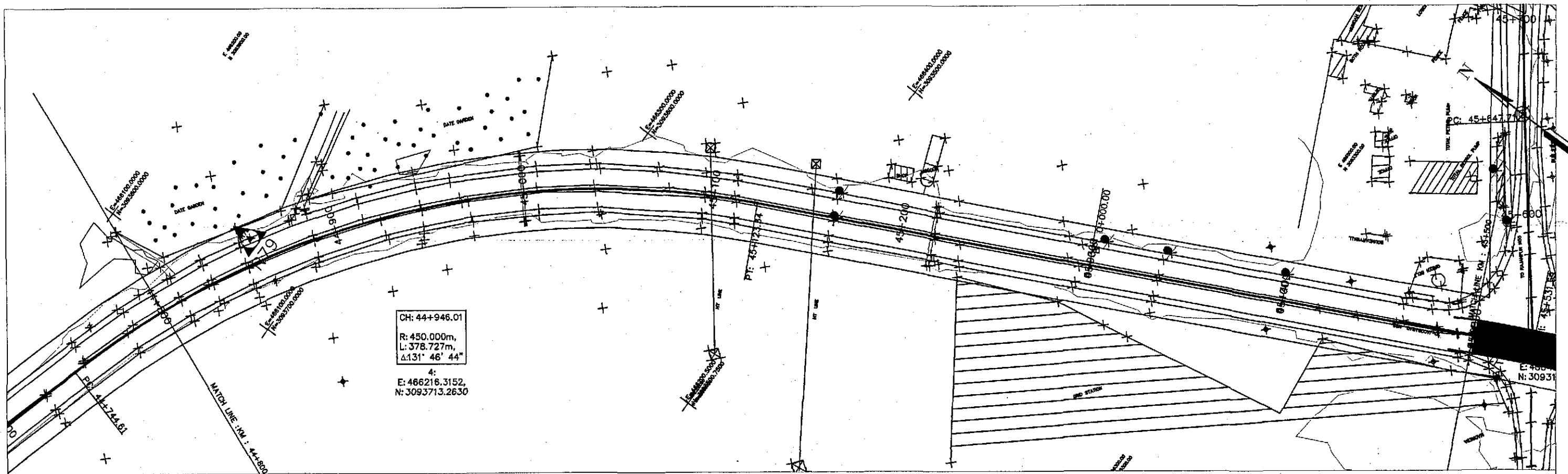
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DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P84

UNDER DRAWINGS





TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



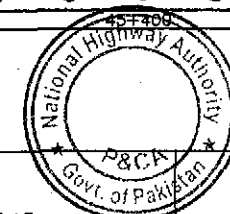
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

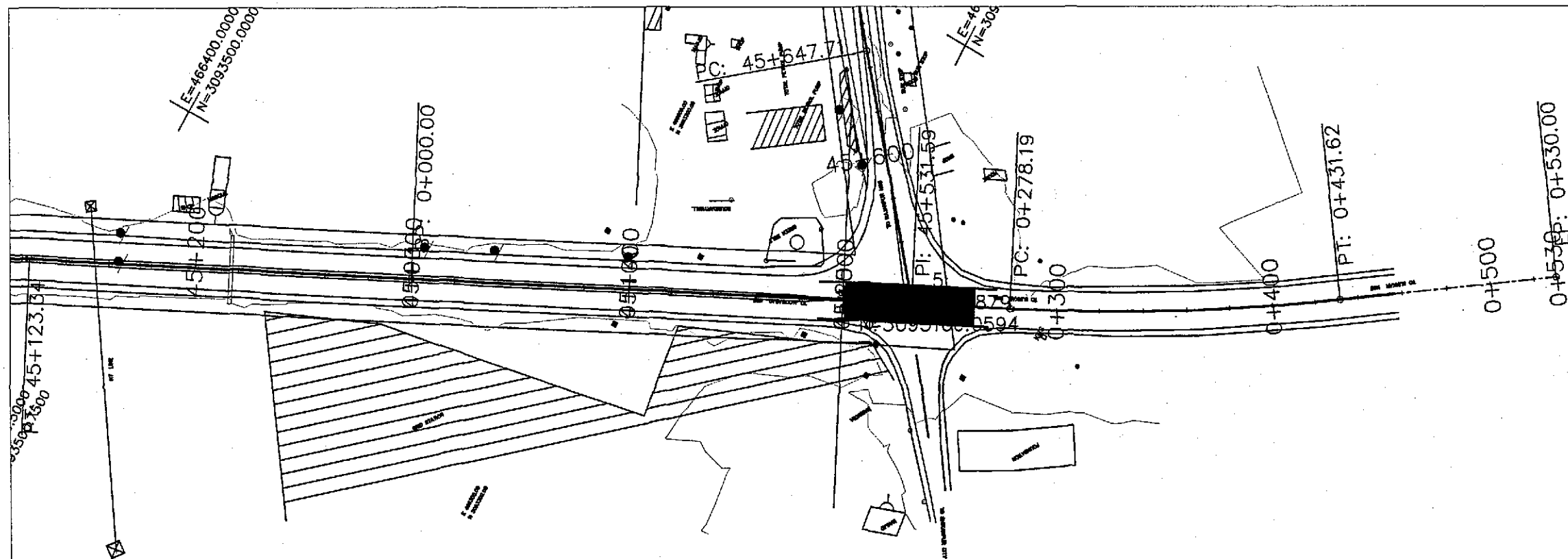
REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

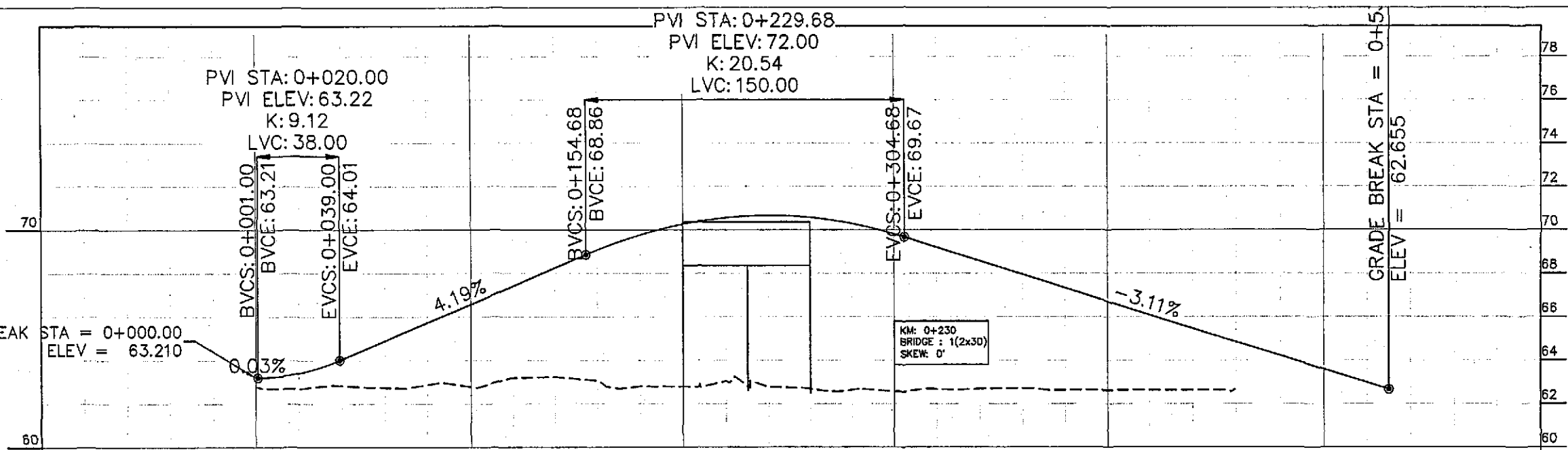
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 44+800 ~ km: 45+500		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P65	



**TENDER DRAWINGS**



Horizontal Geometry	TANGENT 278.19										CURVE R=1000.00										TANGENT 98.38															
Superelevation																																				
Design Levels				62.697	62.833	62.745	62.878	62.781	63.188	63.236	63.062	62.797	62.786	63.037	62.778	62.682	62.637	62.573	62.669	62.694	62.703	62.634	62.629	62.629	62.627											
Ground Levels				62.789	62.697	62.833	62.745	62.878	62.781	63.188	63.236	63.062	62.797	62.786	63.037	62.778	62.682	62.637	62.573	62.669	62.694	62.703	62.634	62.629	62.629	62.627										
Chainage	-0+100			0+000				0+100					0+200				0+300				0+400				0+500									0+600		

**GOVERNMENT OF PAKISTAN**  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

**NATIONAL ENGINEERING SERVICES**  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

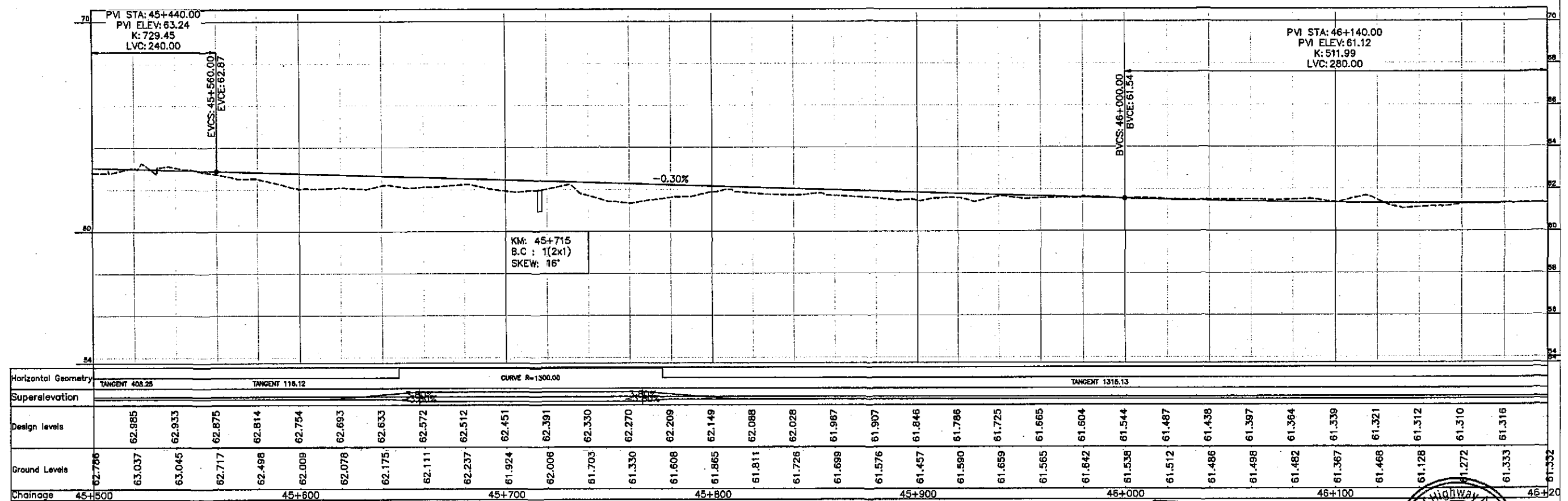
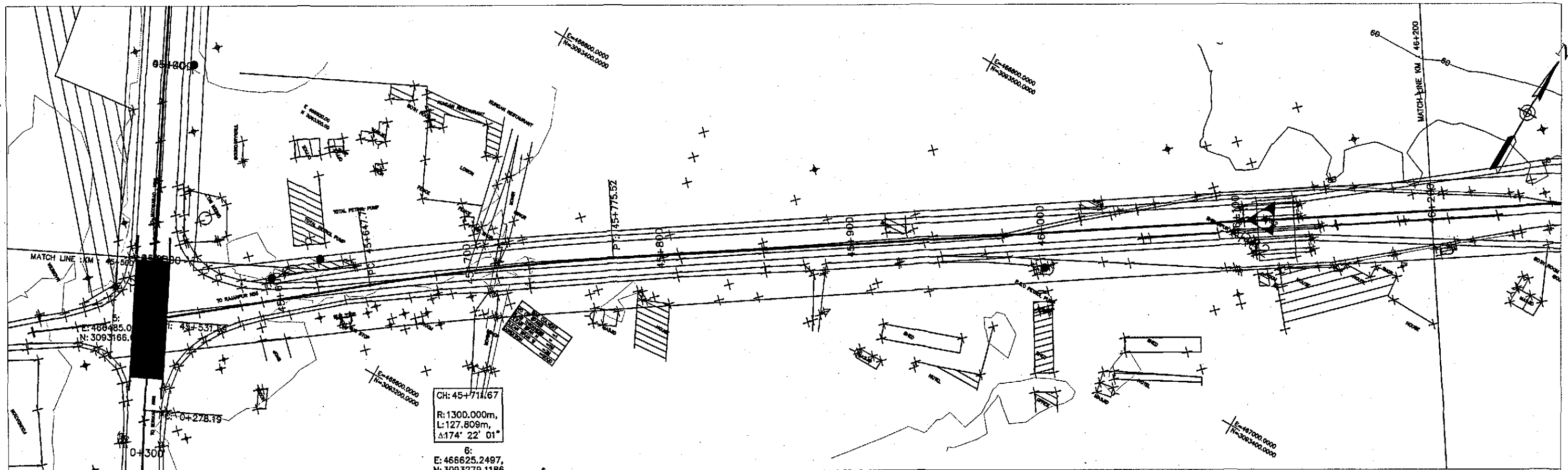
DRAWN	
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

N-55 TO N-65 FLYOVER PLAN & PROFILE KM: 0+000 ~ KM: 0+530		SCALE 1:2000
DATE JUNE, 2018	DWG NO. 3905/102/TD/P&P 65 A	







**TENDER DRAWINGS**



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

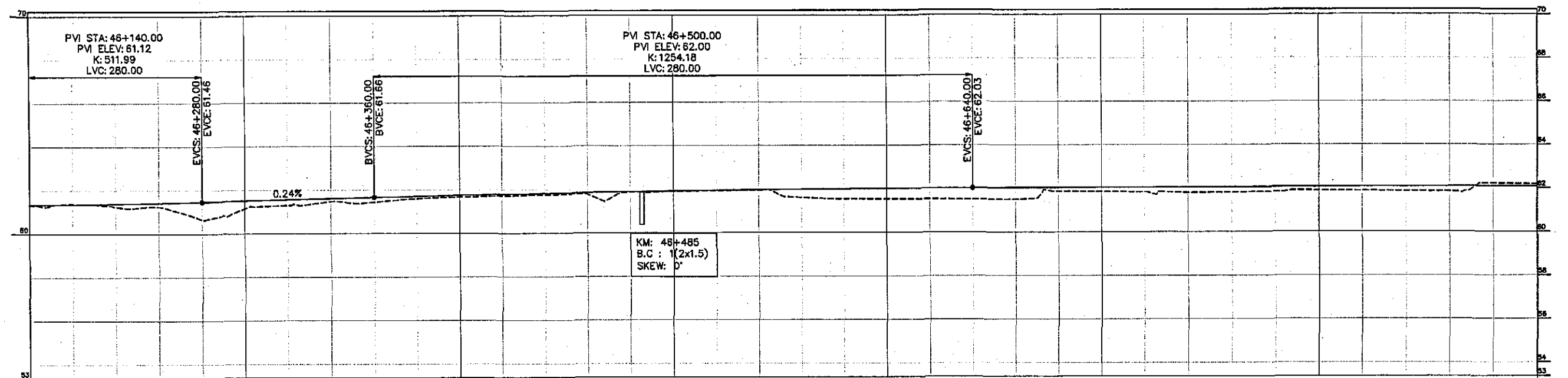
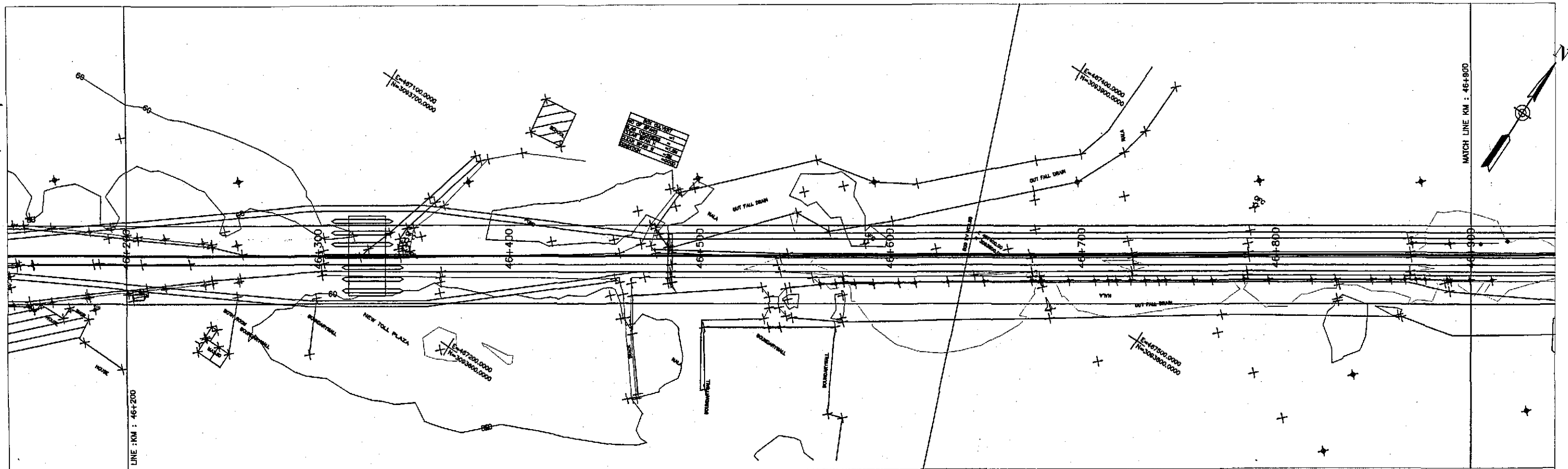
**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

PLAN & PROFILE	SCALE
KM: 45+500 ~ KM: 46+200	1:2000
DATE JUNE, 2018	DWG NO. 3905/102/TD/P&P66



Horizontal Geometry	TANGENT 1315.13																																																																				
Superelevation																																																																					
Design Levels		61.351		61.380		61.417		61.462		61.511		61.560		61.609		61.658		61.705		61.749		61.790		61.828		61.862		61.894		61.922		61.947		61.969		61.987		62.003		62.015		62.024		62.030		62.034		62.038		62.042		62.046		62.051		62.055		62.059		62.063		62.068		62.072		62.076		62.080	
Ground Levels	61.332	61.376	61.242	61.242	60.641	61.144	61.295	61.471	61.436	61.594	61.664	61.710	61.757	61.777	61.881	61.890	61.950	61.809	61.547	61.536	61.525	61.514	61.488	61.869	61.854	61.839	61.806	61.818	61.838	61.892	61.877	61.861	61.845	62.211	62.189																																		
Chainage	46+200				46+300					46+400					46+500					46+600					46+700					46+800				46+900	46+900																																		



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

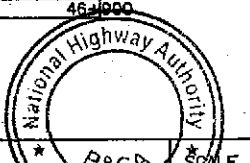
**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

**TENDER DRAWINGS**

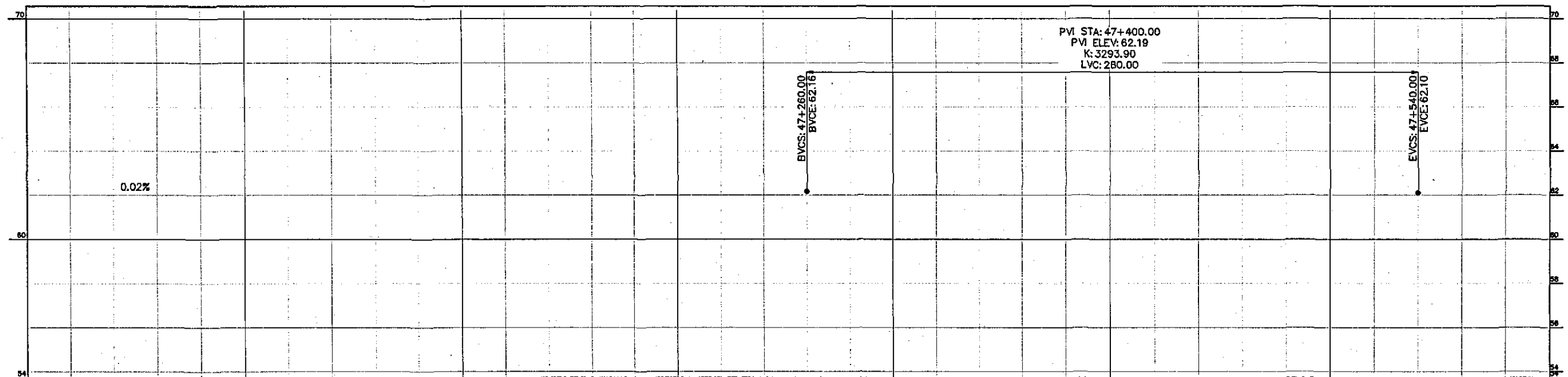
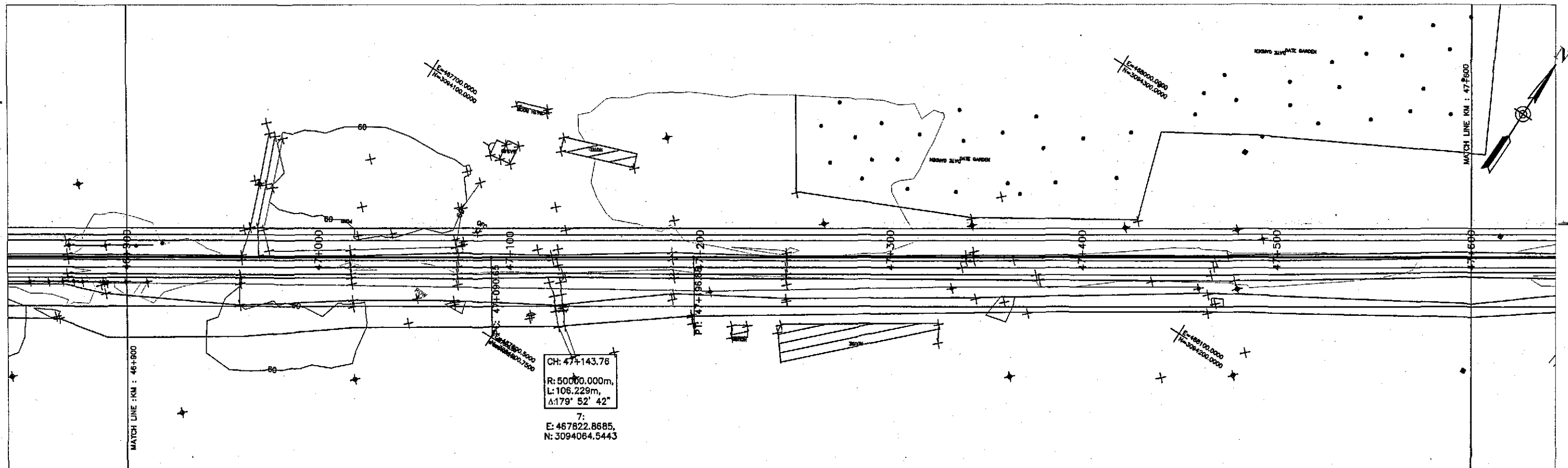
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 46+200 ~ KM: 46+800  
SCALE: 1:2000

DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P67





Horizontal Geometry	TANGENT 1315.13										CURVE R=30000.00										TANGENT 1387.05														
Superelevation																																			
Design Levels	62.089	62.093	62.097	62.101	62.106	62.110	62.114	62.118	62.123	62.127	62.131	62.135	62.139	62.144	62.148	62.152	62.156	62.161	62.164	62.167	62.168	62.168	62.166	62.164	62.160	62.155	62.149	62.142	62.134	62.124	62.113	62.101	62.088	62.075	
Ground Levels	62.189	62.103	62.052	61.843	61.837	61.814	61.919	61.923	61.916	61.923	61.934	61.989	62.001	62.017	62.018	62.026	62.037	62.050	62.046	62.029	62.006	61.984	61.966	62.168	62.029	62.070	62.119	62.167	62.215	62.216	62.168	62.119	62.063	62.009	61.966
Chainage	46+900					47+000					47+100				47+200						47+300					47+400				47+500			47+600		



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

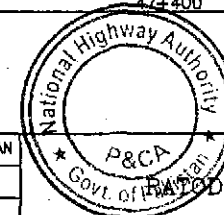


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	APPROVED
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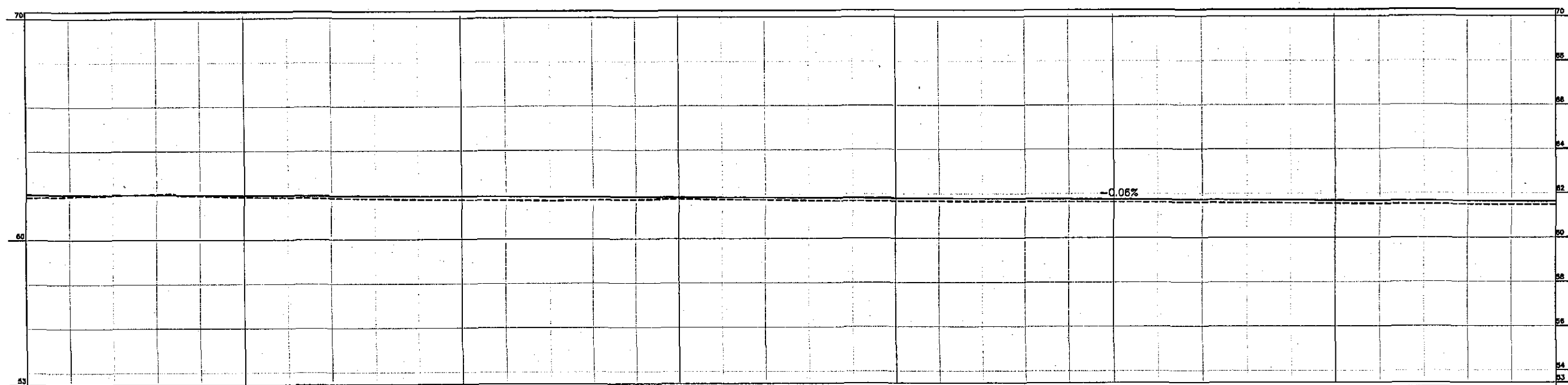
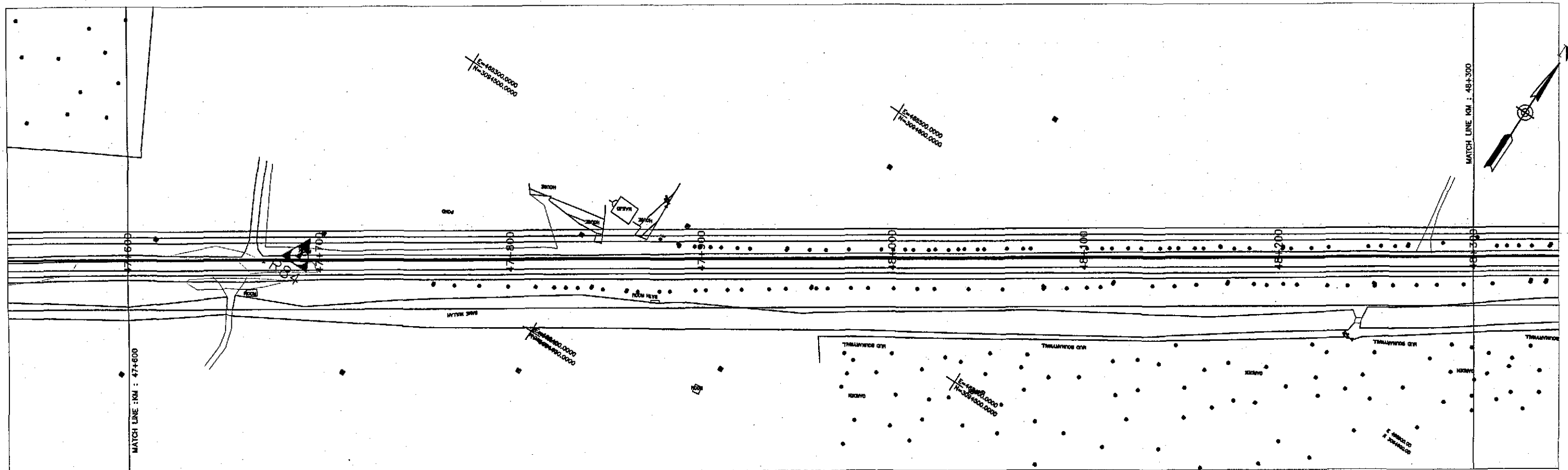
DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	



**TENDER DRAWINGS**

RAJANPUR ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

PLAN & PROFILE		SCALE
KM: 46+900 ~ KM: 47+600		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P68	



Horizontal Geometry	TANGENT 1387.05																							
Superelevation																								
Design levels		62.050	62.037	62.024	62.011	61.998	61.986	61.973	61.960	61.947	61.935	61.922	61.909	61.896	61.883	61.871	61.858	61.845	61.832	61.820	61.807	61.794	61.781	61.768
Ground Levels	61.923	61.965	62.012	62.066	61.966	61.922	61.892	61.861	61.827	61.800	61.776	61.752	61.727	61.755	61.766	61.788	61.763	61.740	61.710	61.681	61.672	61.663	61.654	61.643
Chainage	47+600				47+700					47+800				47+900					48+000				48+100	
																							48+200	48+300

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



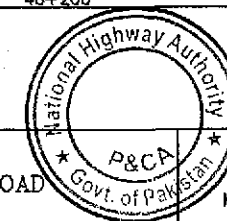
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

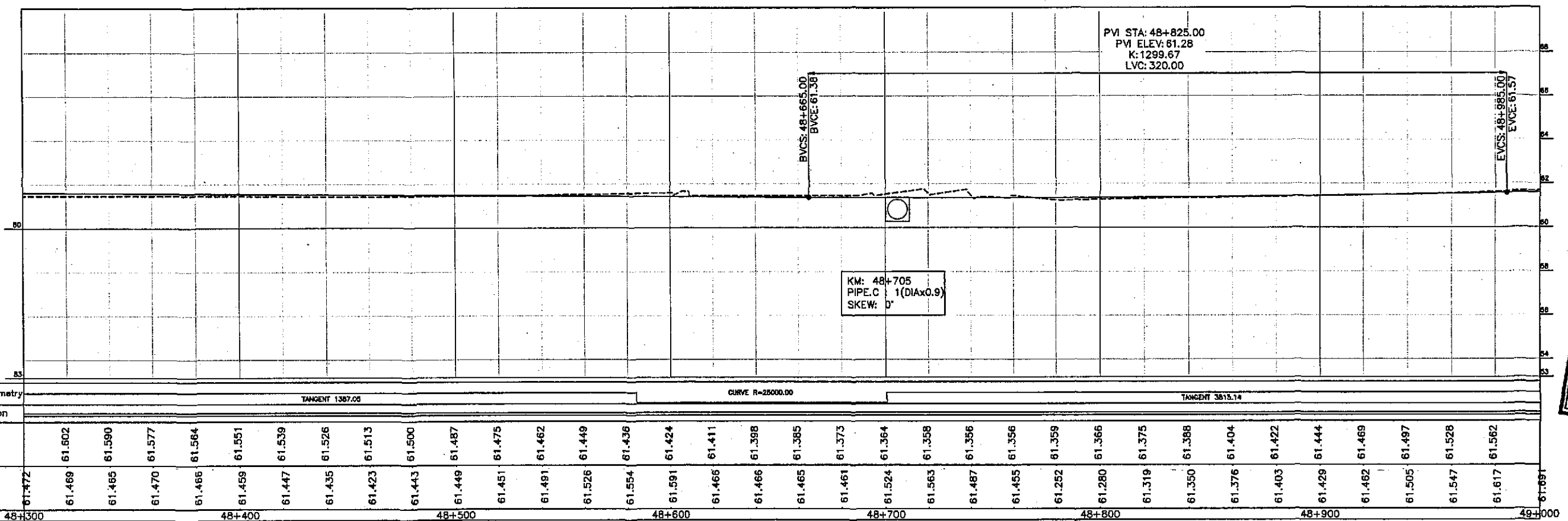
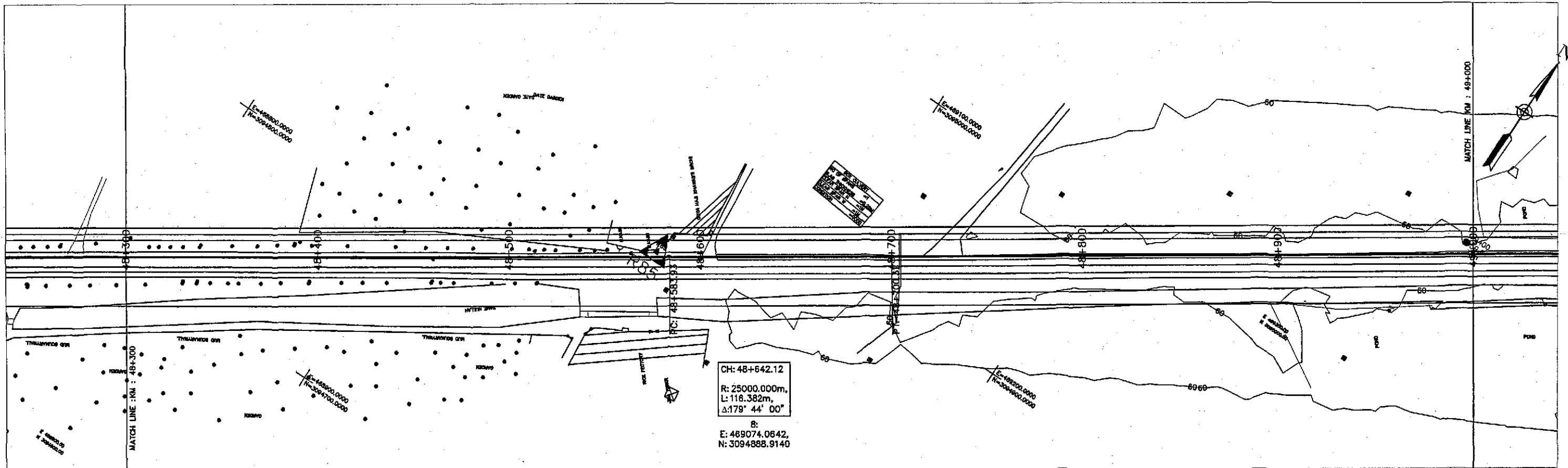
DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-1  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 47+600 ~ KM: 48+300		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P69	





TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



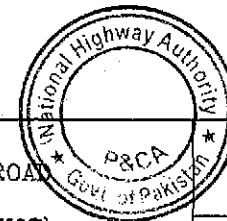
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

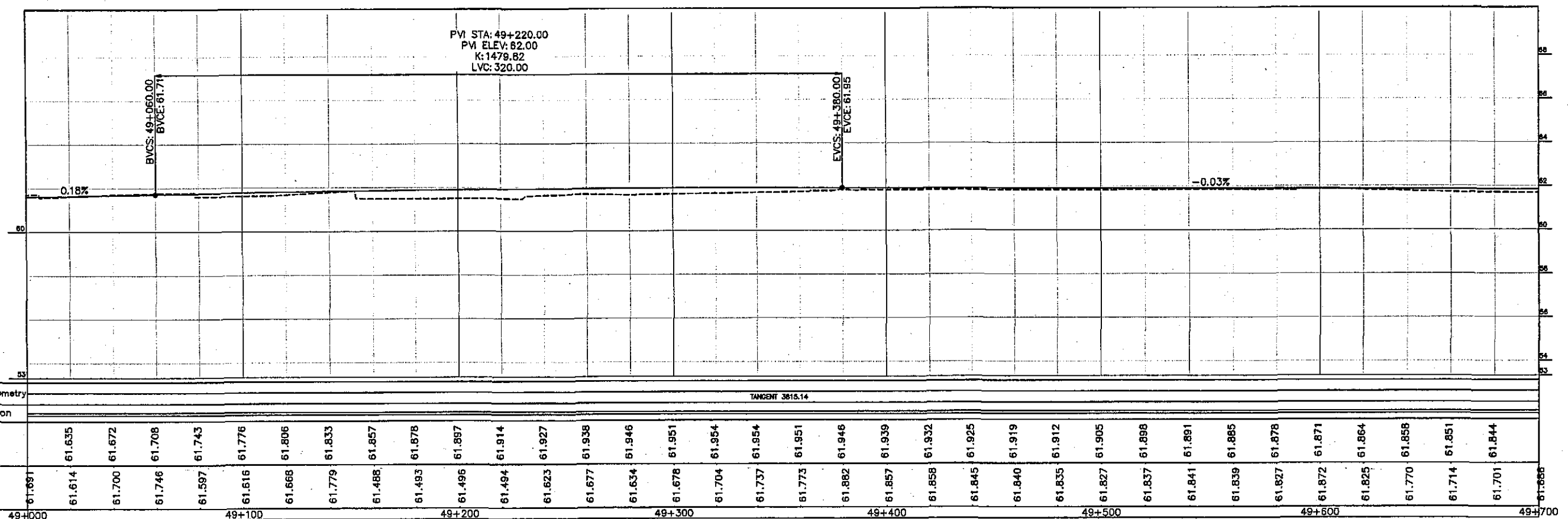
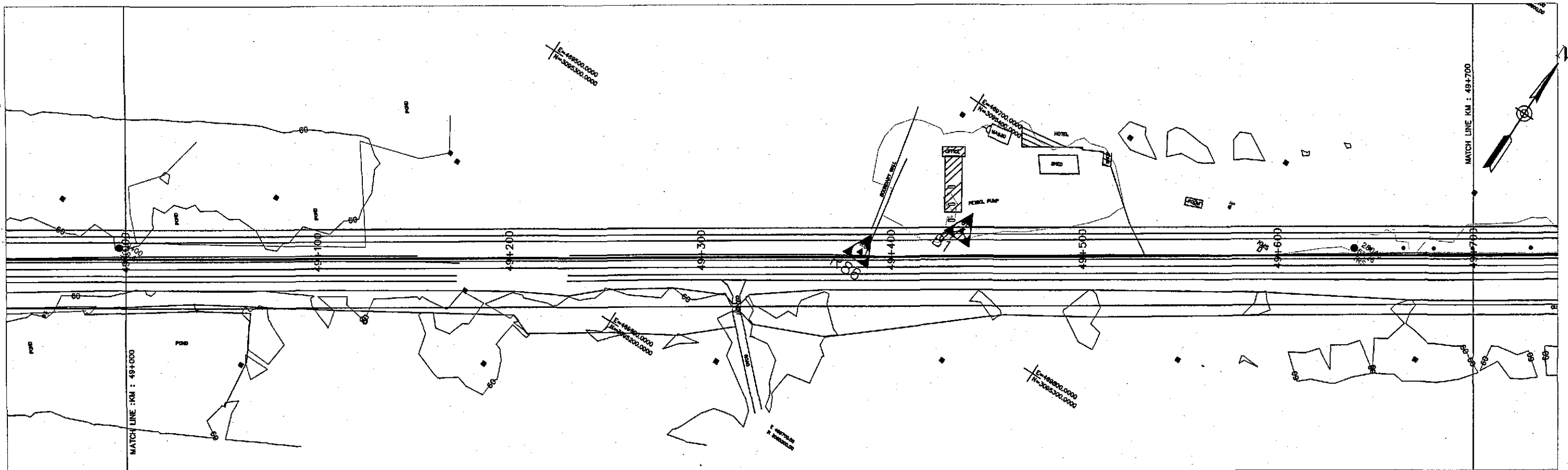


PLAN & PROFILE  
KM: 48+300 ~ KM: 49+000

DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P70

SCALE

1:2000



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



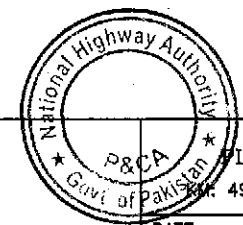
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

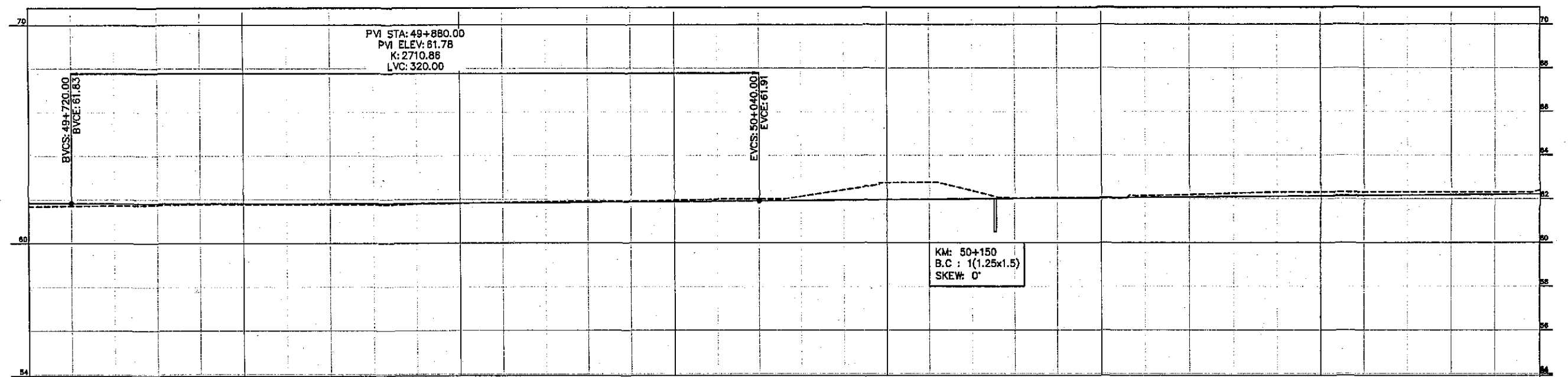
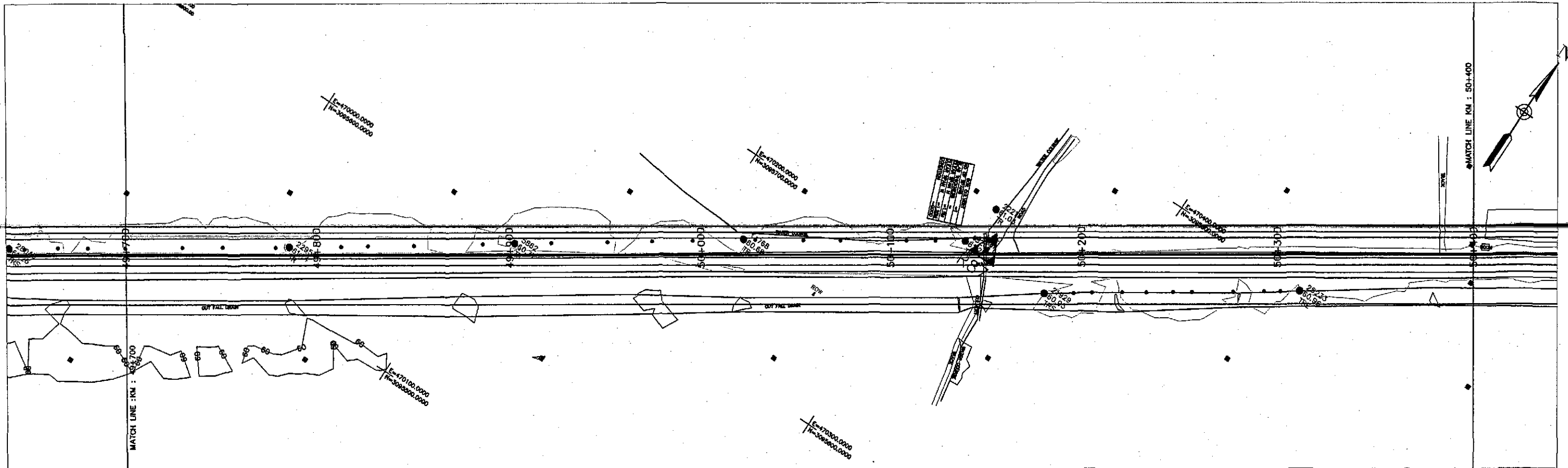
DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



DATE	DWG NO.	SCALE
JUNE, 2018	3905/102/TD/P&P71	1:2000





Horizontal Geometry		TANGENT 3015.14																			
Superelevation																					
Design Levels		61.830	61.824	61.820	61.817	61.815	61.815	61.816	61.819	61.823	61.829	61.836	61.845	61.855	61.867	61.880	61.895	61.911	61.928	61.944	61.961
Ground Levels		61.686	61.703	61.726	61.748	61.771	61.778	61.770	61.768	61.766	61.788	61.823	61.858	61.894	61.906	61.918	61.943	61.988	62.003	62.121	62.420
Chainage		49+700				49+800				49+900				50+000				50+100		50+200	
																				50+300	50+400

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

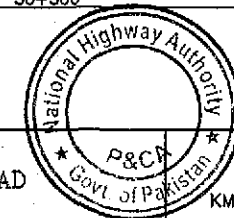


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

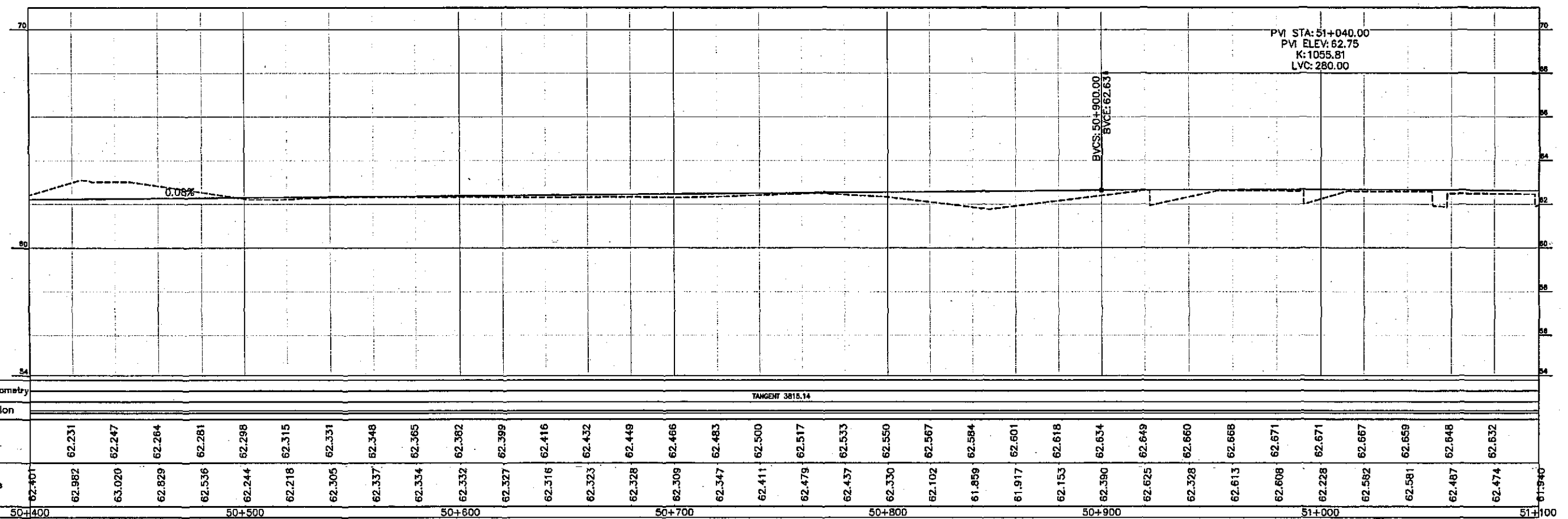
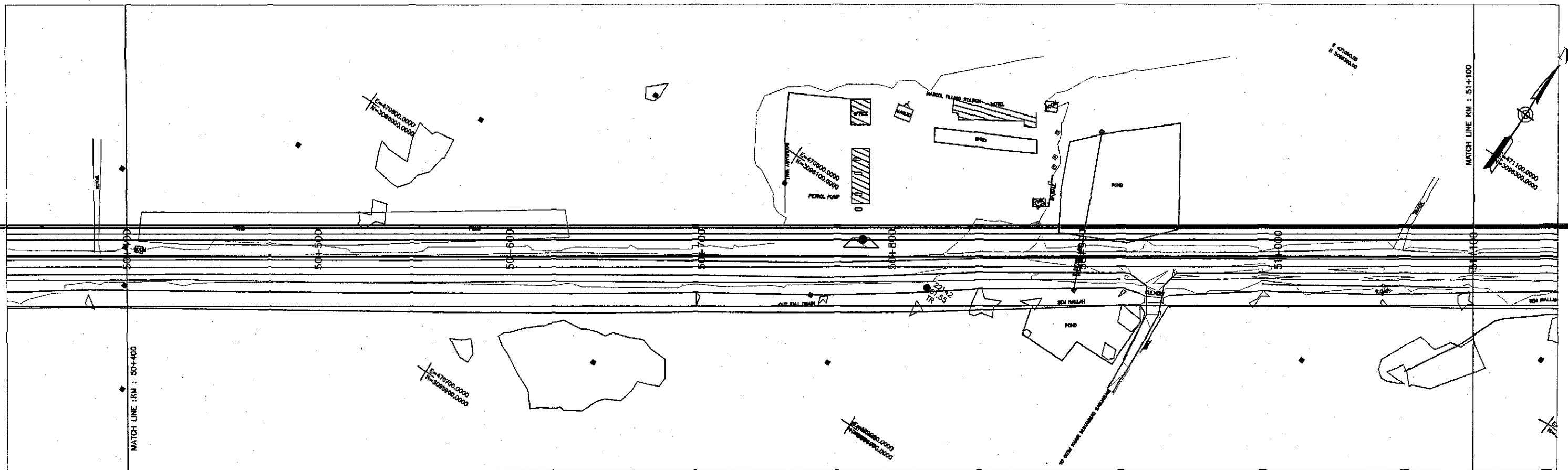


PLAN & PROFILE  
KM: 49+700 ~ KM: 50+400

SCALE  
1:2000

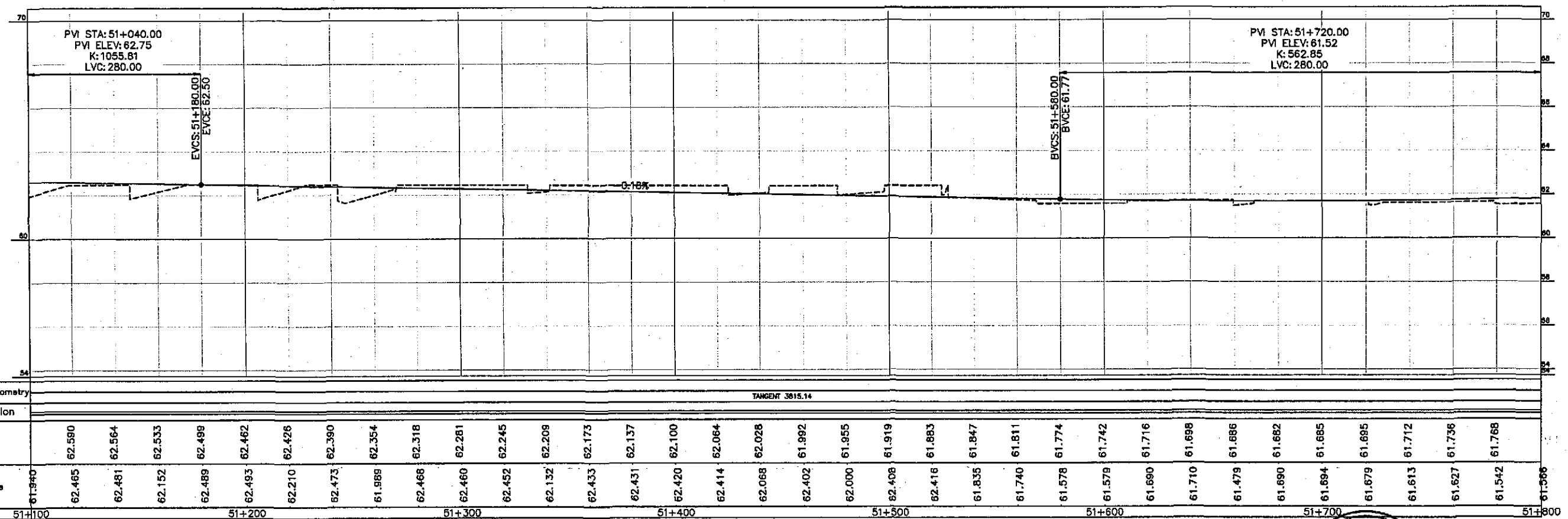
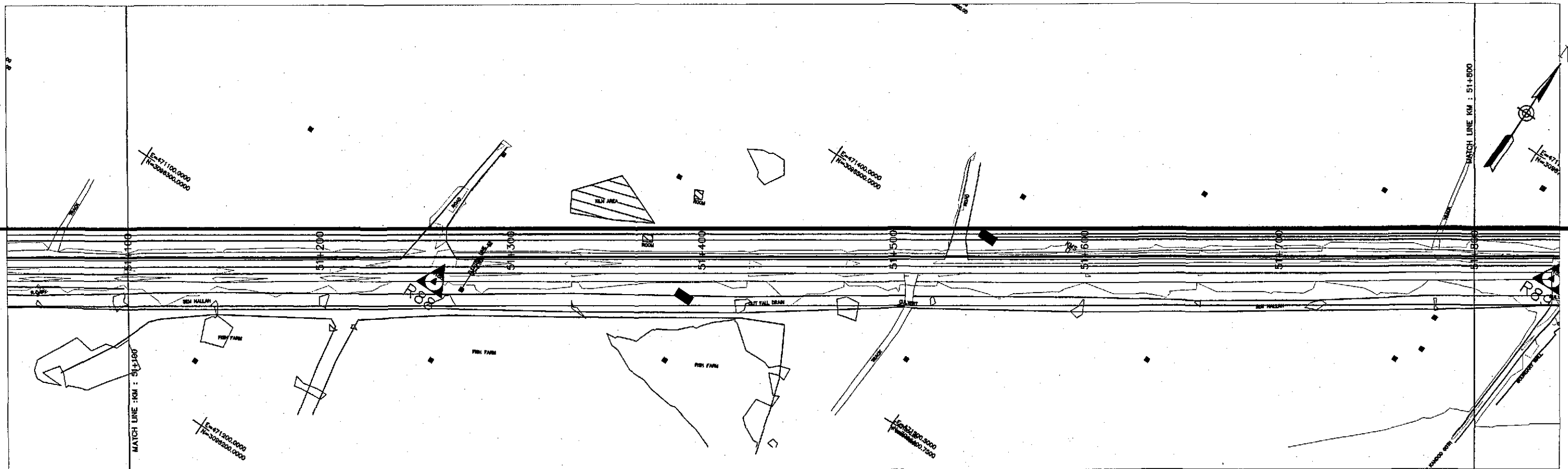
DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P72



TENDER DRAWING





TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



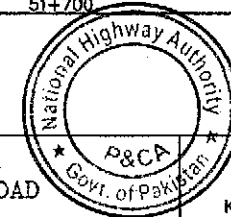
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

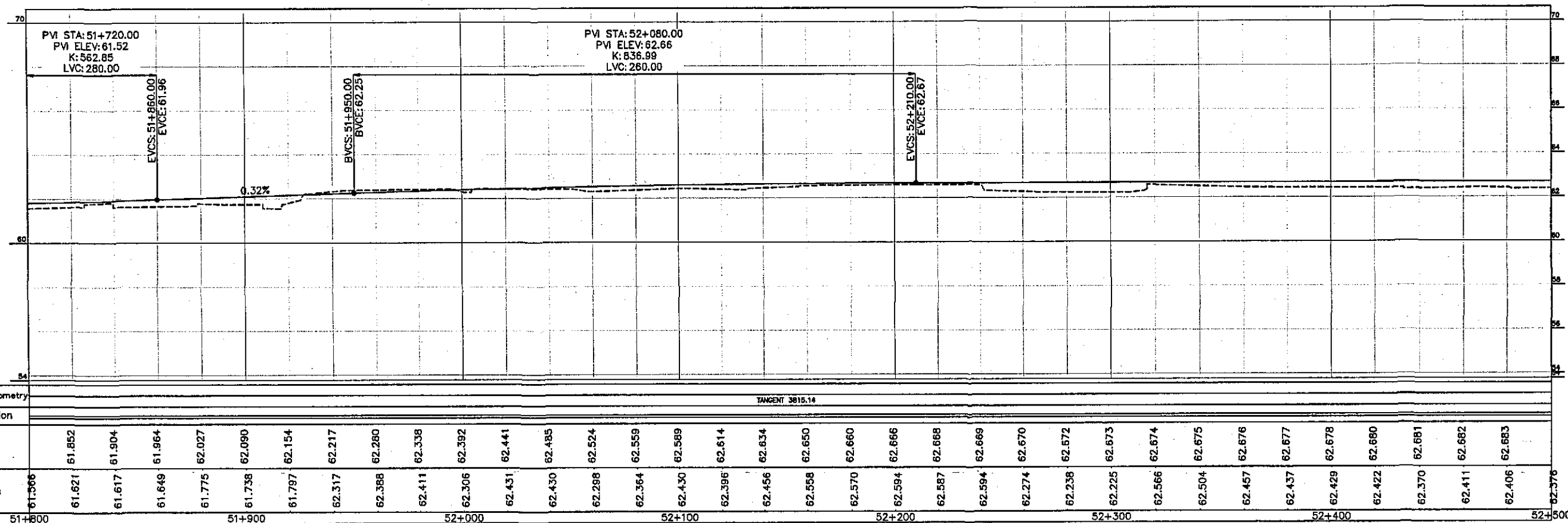
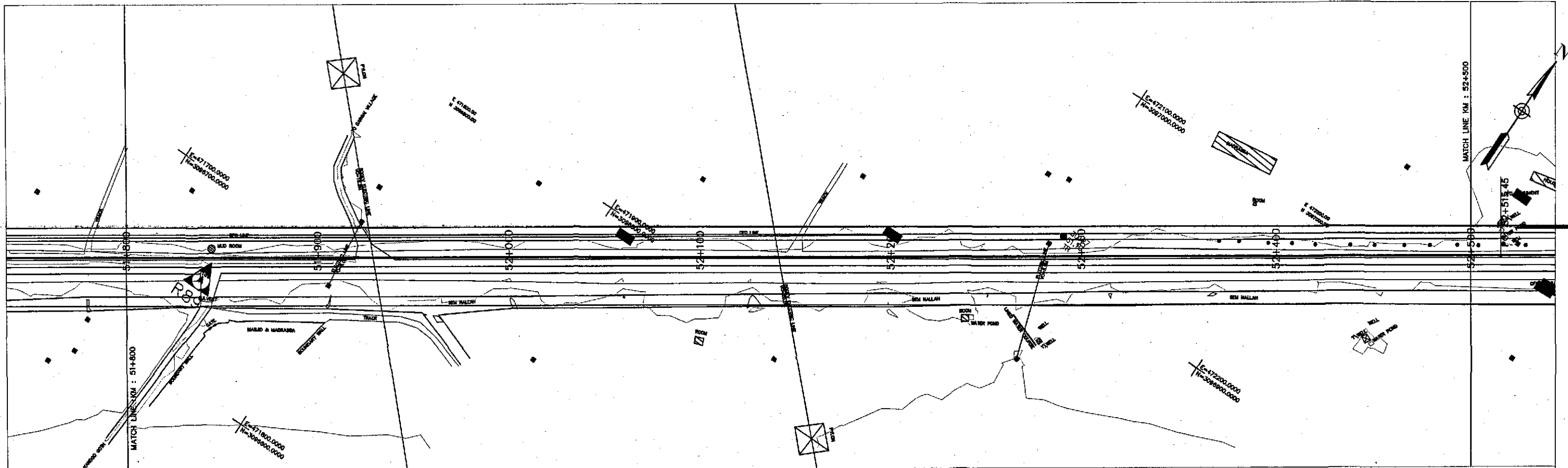


PLAN & PROFILE  
KM: 51+100 ~ km: 51+800

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P74



Horizontal Geometry	TANGENT 3815.14																																		
Superelevation																																			
Design Levels		61.852	61.904	61.964	62.027	62.090	62.154	62.217	62.280	62.338	62.392	62.441	62.485	62.524	62.559	62.589	62.614	62.634	62.650	62.660	62.666	62.668	62.669	62.670	62.672	62.673	62.674	62.675	62.676	62.677	62.678	62.680	62.681	62.682	62.683
Ground Levels	61.366	61.621	61.617	61.649	61.775	61.738	61.797	62.317	62.388	62.411	62.306	62.431	62.430	62.298	62.364	62.430	62.396	62.456	62.558	62.570	62.594	62.587	62.594	62.274	62.238	62.225	62.566	62.504	62.457	62.437	62.429	62.422	62.370	62.411	62.406
Chainage	51+800				51+900					52+000				52+100					52+200					52+300				52+400					52+500		

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



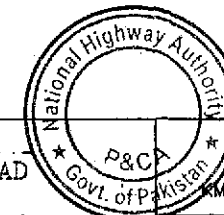
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

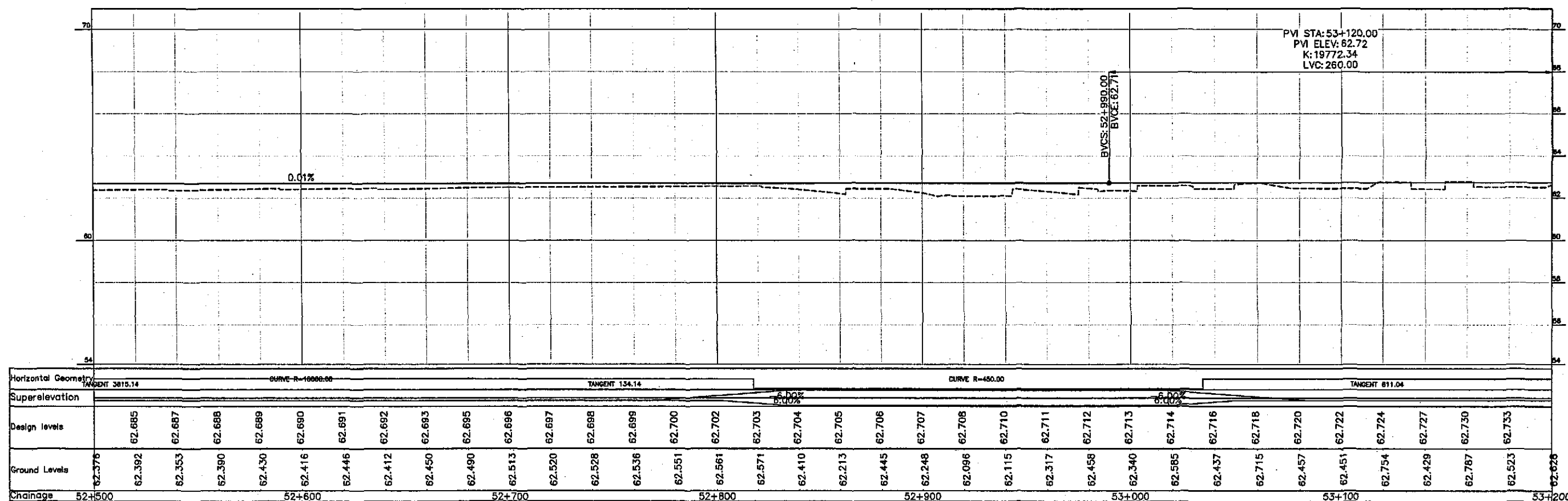
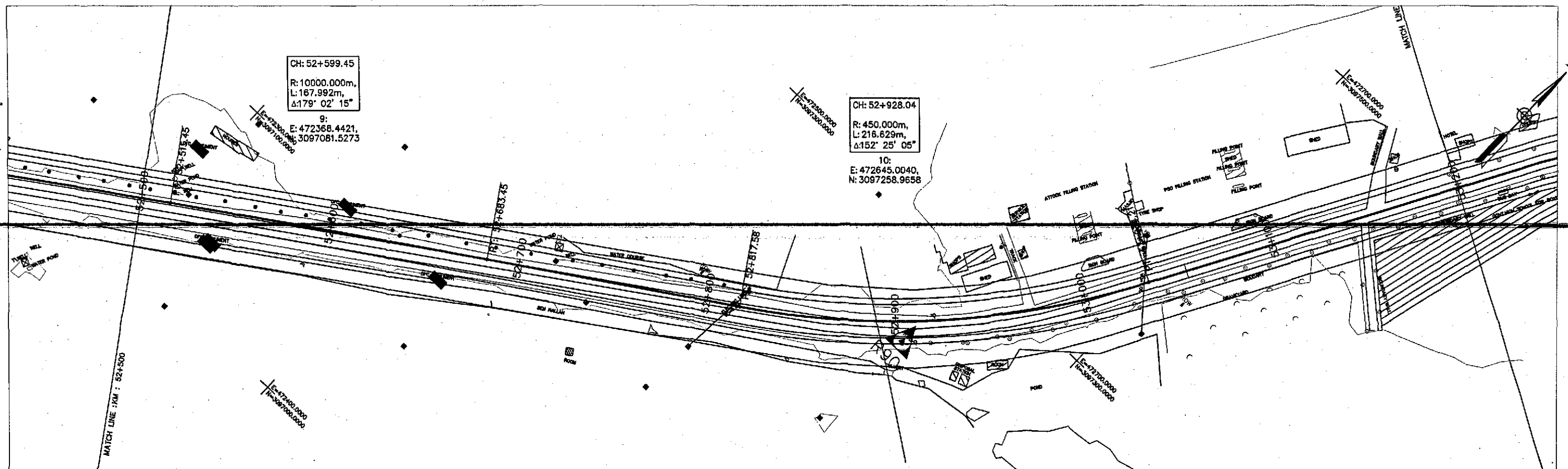


PLAN & PROFILE  
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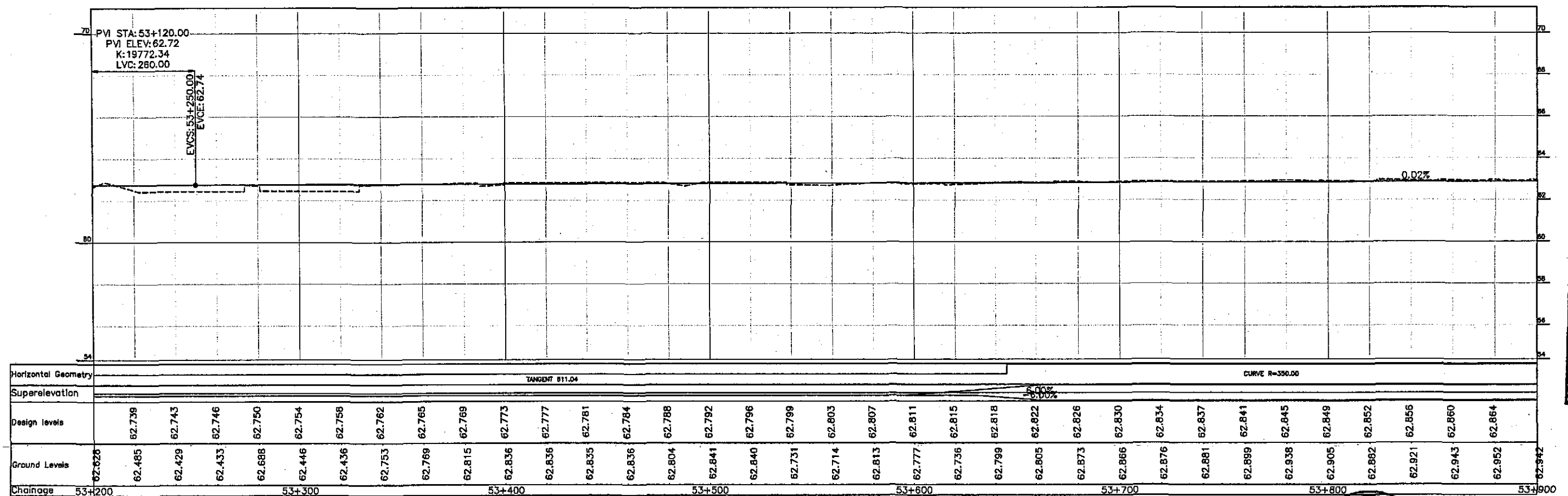
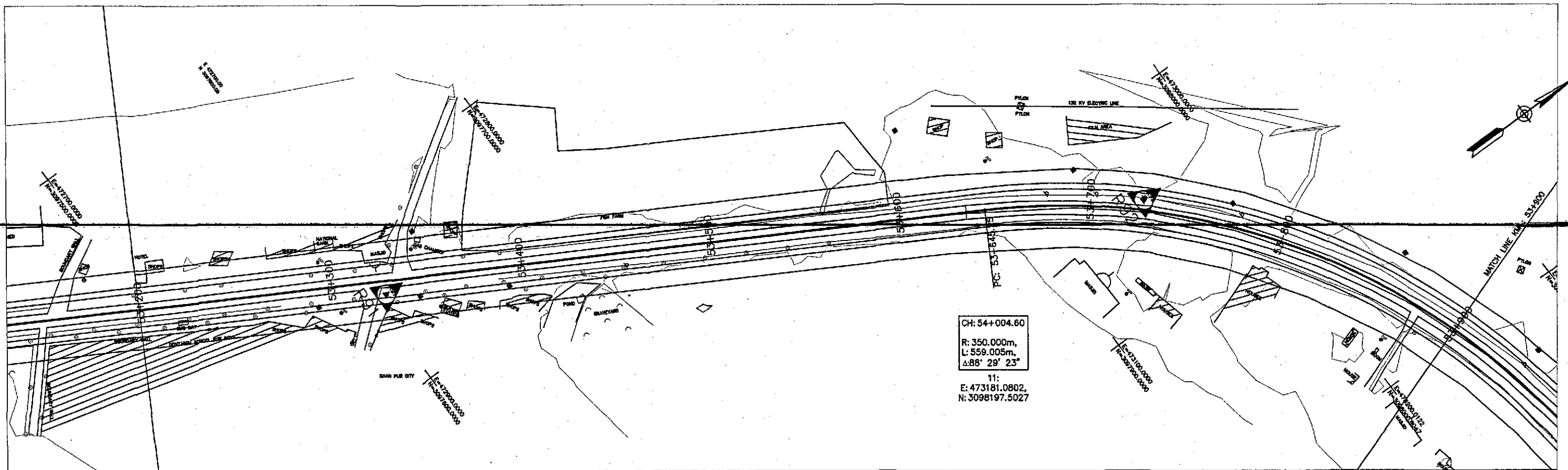
SCALE  
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DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P75





TENDER DRAWINGS



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



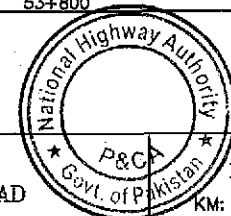
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAB UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED
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DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



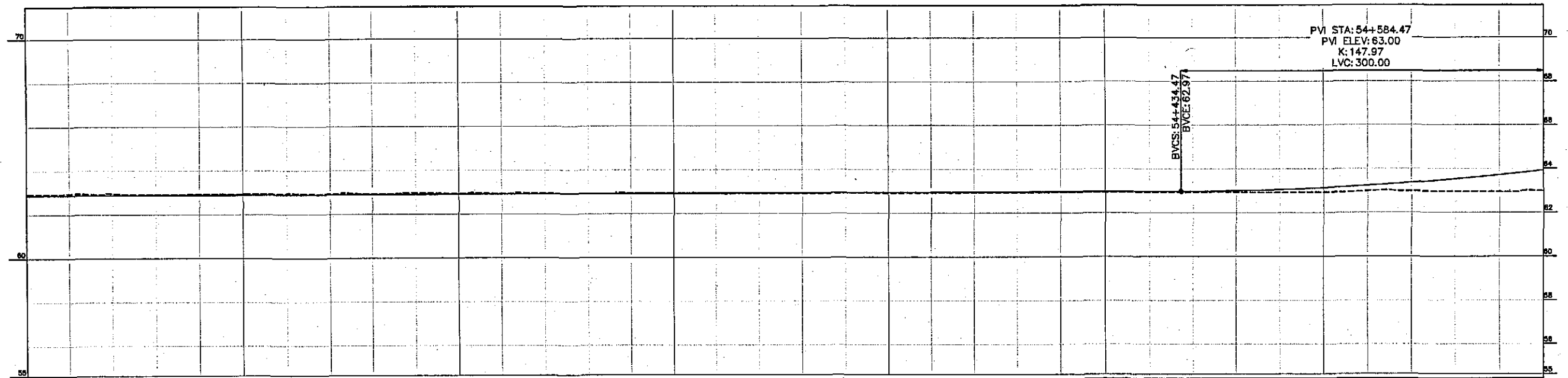
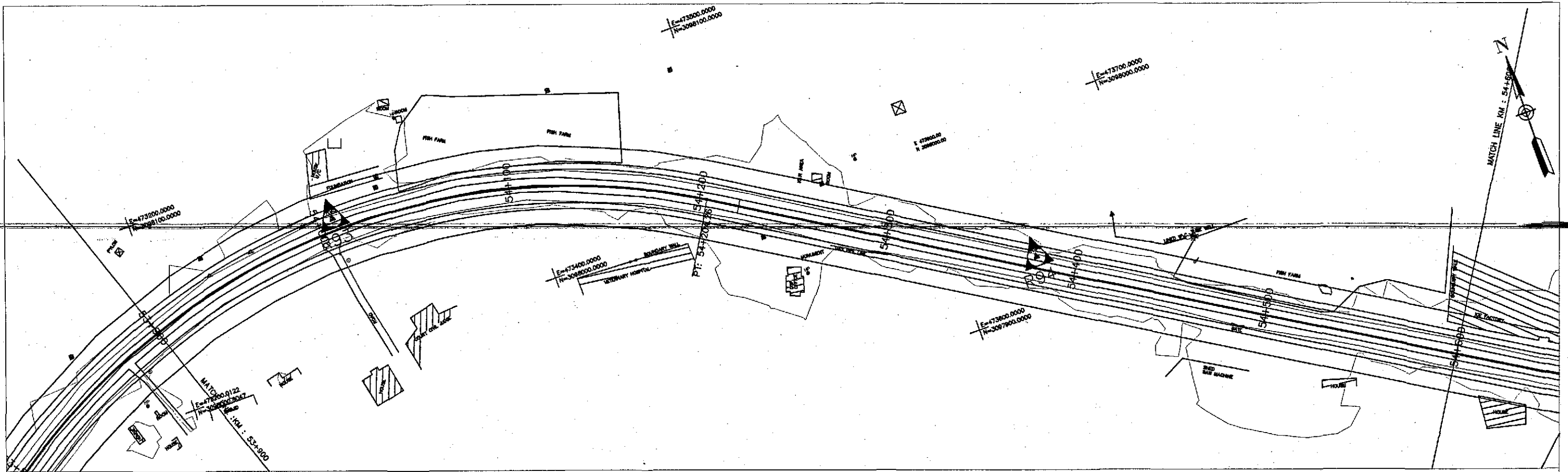
PLAN & PROFILE  
KM: 53+200 ~ KM: 53+900

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P77





Horizontal Geometry	CURVE R=350.00																												TANGENT 850.79					
Superelevation	5.00% 5.00%																																	
Design levels	62.871	62.875	62.879	62.883	62.886	62.890	62.894	62.898	62.902	62.905	62.909	62.913	62.917	62.921	62.924	62.928	62.932	62.936	62.939	62.943	62.947	62.951	62.955	62.958	62.962	62.966	62.971	62.986	63.047	63.126	63.232	63.365	63.525	63.712
Ground Levels	62.942	62.952	62.954	62.914	62.935	62.933	62.950	62.926	62.934	62.976	62.946	62.940	62.945	62.924	62.952	62.921	62.929	62.921	62.922	62.938	62.923	62.922	62.928	62.925	62.926	62.924	62.922	62.929	62.924	62.926	62.984	62.982	62.959	62.953
Chainage	53+900				54+000					54+100				54+200					54+300					54+400				54+500					54+600	



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



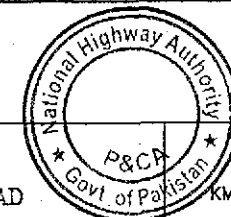
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 53+900 ~ km: 54+600

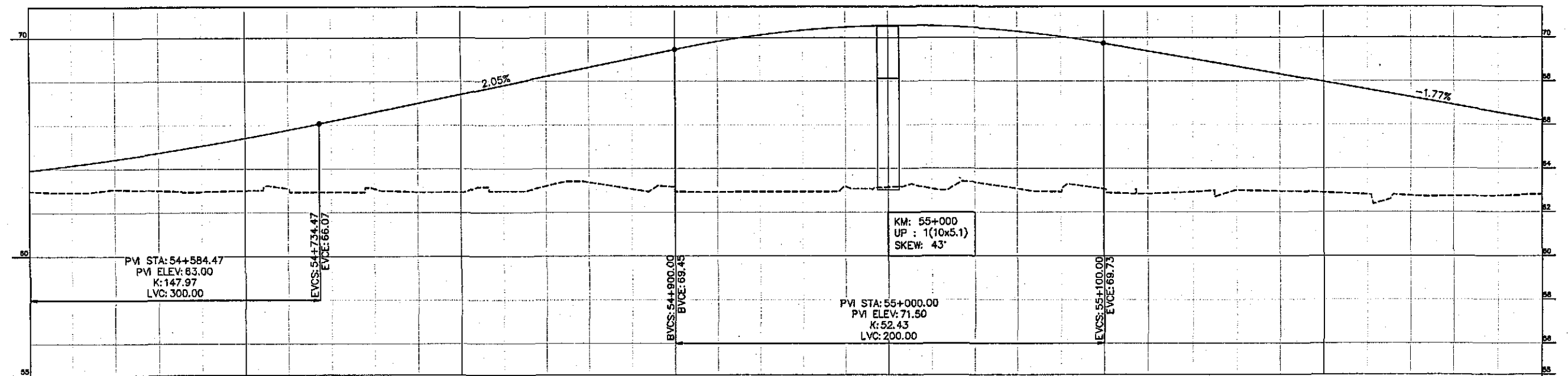
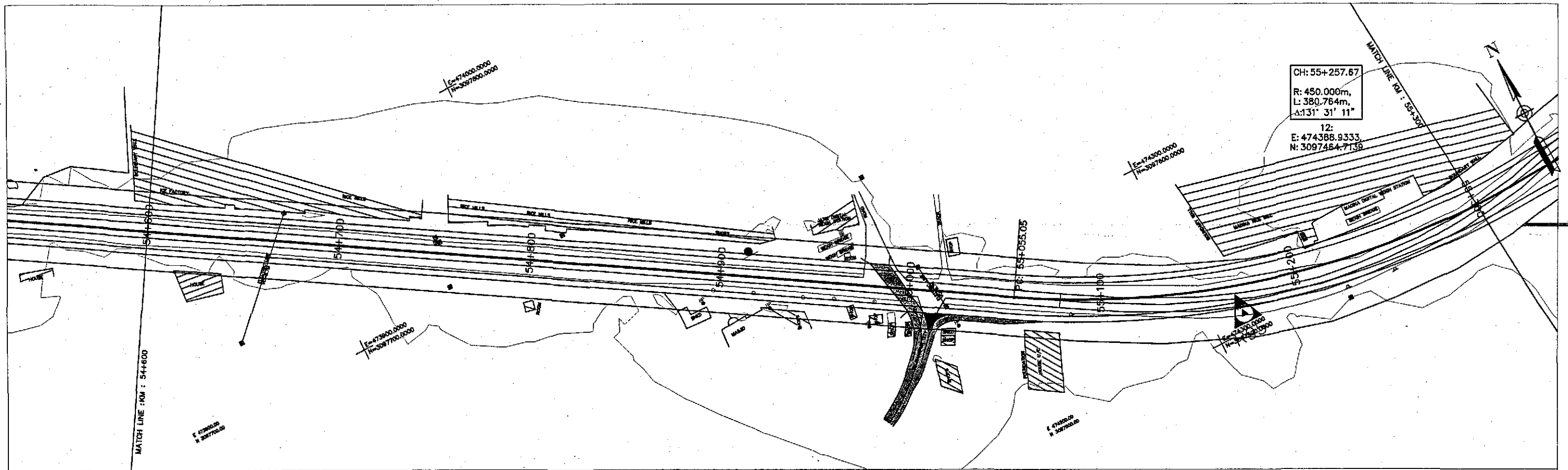
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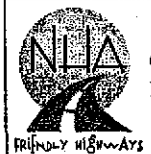
DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P78

TENDER DRAWINGS



Horizontal Geometry	TANGENT 850.79																				CURVE R=450.00
Superelevation																					
Design levels	64.167	64.435	64.730	65.052	65.401	65.777	66.180	66.589	66.998	67.407	67.817	68.226	68.635	69.044	69.454	69.825	70.120	70.338	70.480	70.546	70.536
Ground Levels	62.980	62.935	63.062	63.001	62.945	63.001	63.093	62.929	63.081	62.934	62.936	62.973	63.204	63.368	63.059	62.941	62.931	62.939	62.942	63.178	63.143
Chainage	54+600					54+700						54+800				54+900				55+000	



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



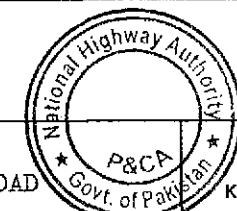
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	APPROVED
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DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

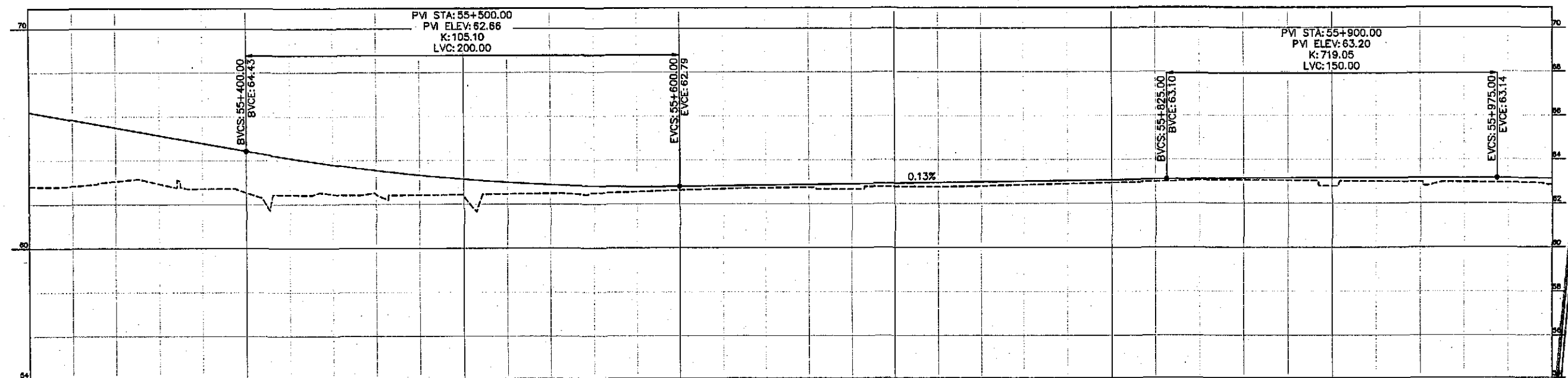
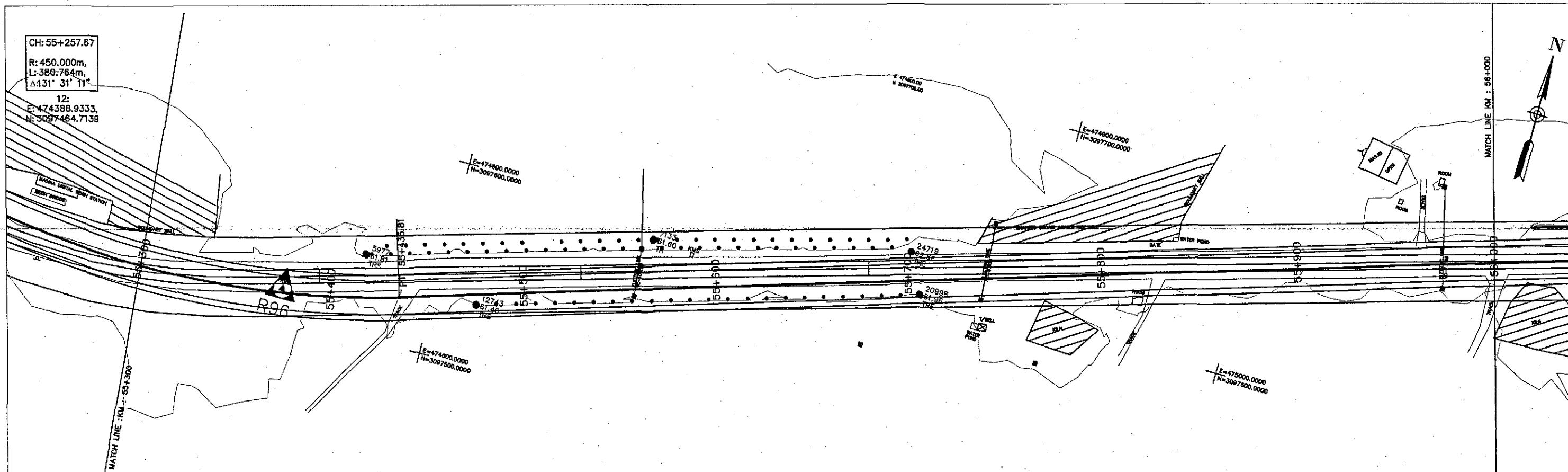
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 54+600 ~ KM: 55+300		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P79	

TENDER DRAWINGS





Horizontal Geometry	CURVE R=450.00																TANGENT 825.03																	
Superelevation	6.00%																																	
Design Levels	65.842	65.489	65.135	64.782	64.428	64.083	63.797	63.538	63.318	63.136	62.991	62.885	62.817	62.787	62.795	62.822	62.849	62.876	62.903	62.930	62.957	62.984	63.011	63.038	63.065	63.092	63.117	63.137	63.152	63.161	63.164	63.162	63.154	63.141
Ground Levels	62.806	62.833	63.042	62.927	62.707	62.426	62.458	62.448	62.419	62.371	62.464	62.486	62.508	62.557	62.626	62.683	62.721	62.741	62.872	62.774	62.765	62.791	62.847	62.895	62.938	62.985	63.041	63.061	63.040	62.786	62.998	62.979	62.958	62.838
Chainage	55+300				55+400					55+500					55+600					55+700					55+800			55+900					56+000	

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



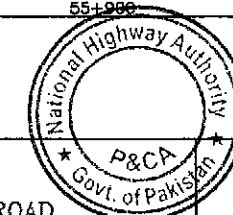
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

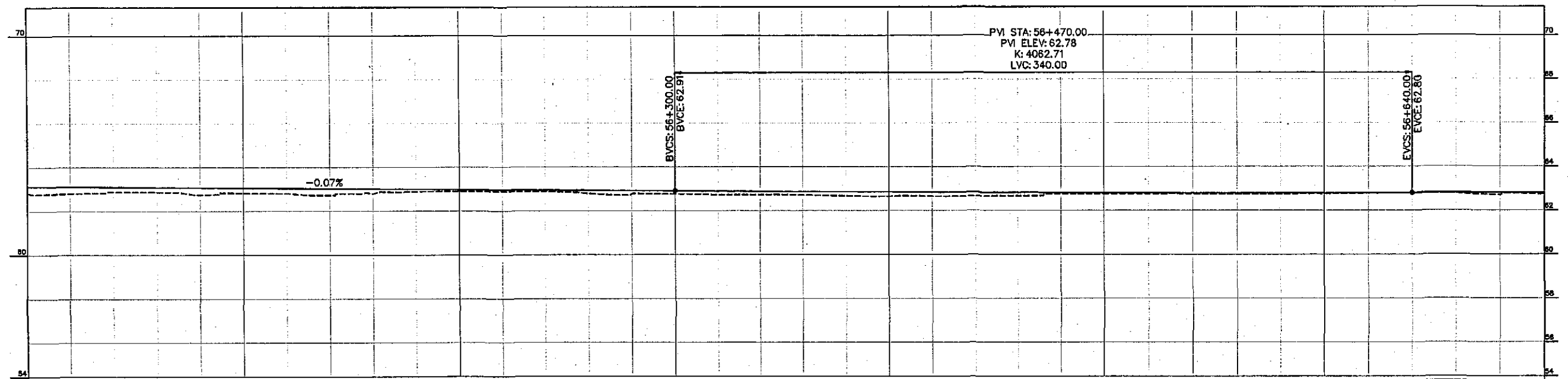
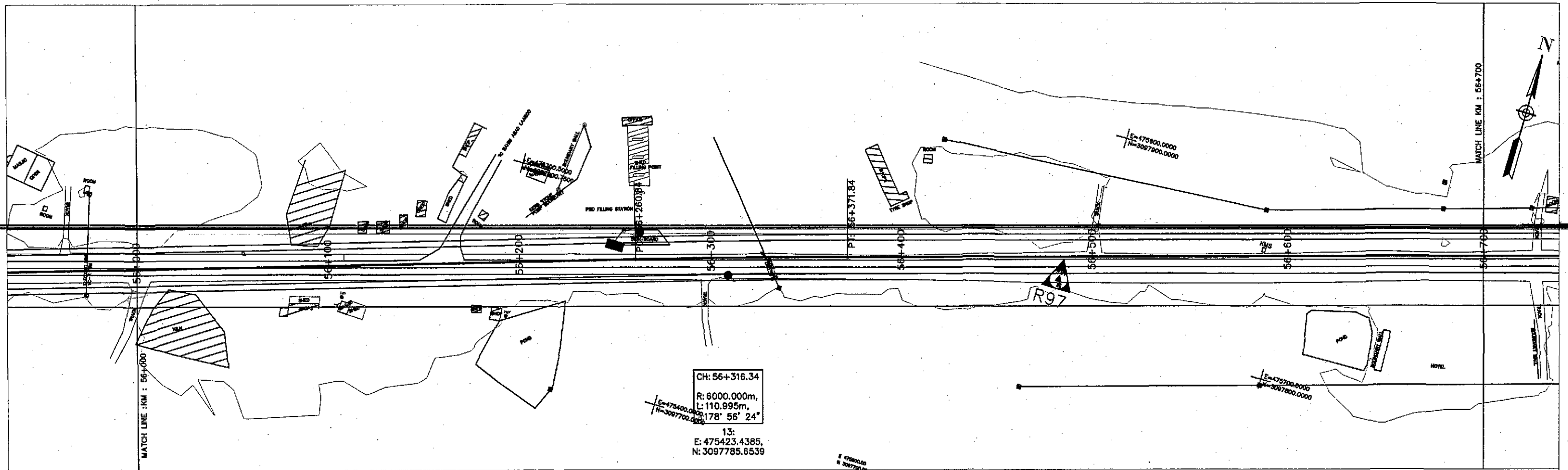
REV.	DATE	DESCRIPTION	APPROVED	APPROVED
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DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 55+300 ~ KM: 56+000		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P80	



Horizontal Geometry	TANGENT 825.03										CURVE R=5000.00										TANGENT 1648.82															
Superelevation																																				
Design Levels	63.112	63.097	63.082	63.068	63.053	63.038	63.023	63.009	62.994	62.979	62.964	62.950	62.935	62.920	62.906	62.891	62.878	62.866	62.855	62.844	62.835	62.827	62.819	62.813	62.808	62.803	62.800	62.797	62.796	62.796	62.796	62.798	62.800	62.802		
Ground Levels	62.835	62.800	62.882	62.865	62.744	62.816	62.799	62.722	62.788	62.877	62.800	62.888	62.877	62.790	62.766	62.763	62.726	62.725	62.707	62.670	62.648	62.653	62.655	62.664	62.757	62.757	62.754	62.750	62.731	62.732	62.762	62.774	62.768	62.768	62.701	62.730
Chainage	56+000	56+100					56+200					56+300					56+400					56+500					56+600					56+700				

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

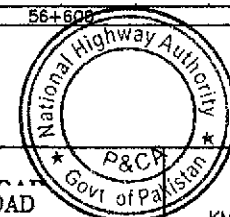


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

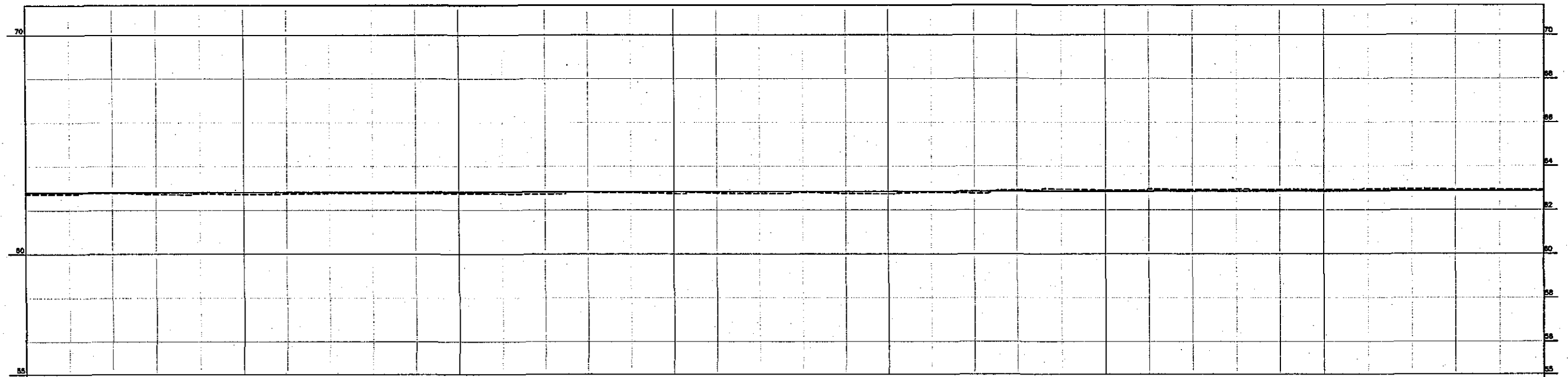
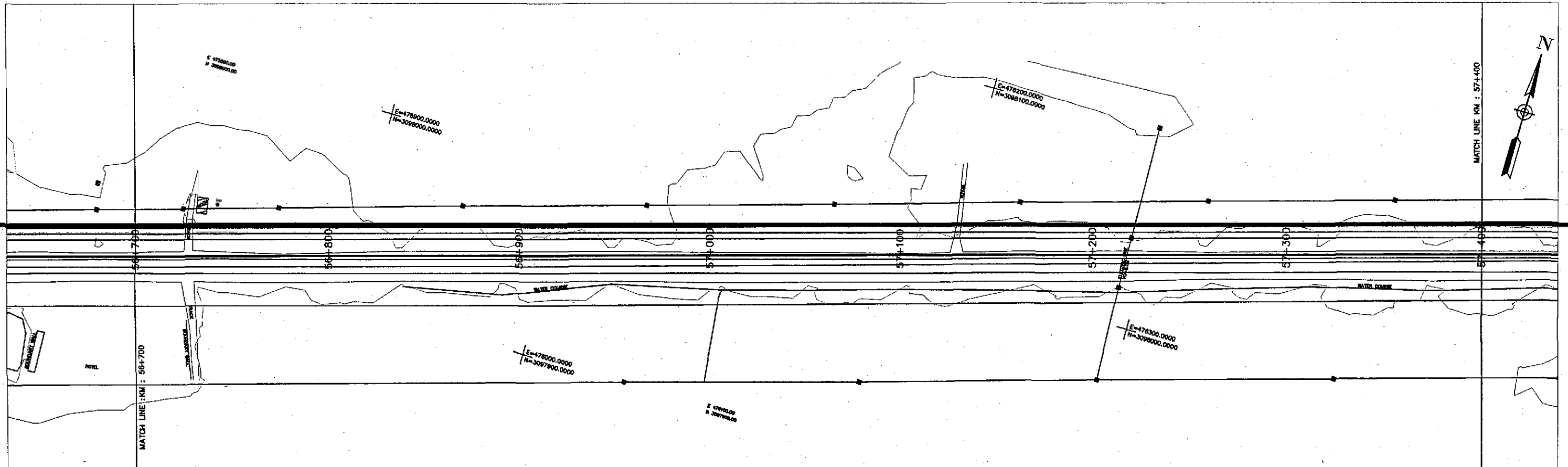
REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 56+000 ~ km: 56+700		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P81	





Horizontal Geometry	TANGENT 1849.82																								
Superelevation																									
Design Levels	62.806	62.808	62.810	62.812	62.814	62.816	62.818	62.820	62.822	62.824	62.826	62.828	62.830	62.832	62.834	62.836	62.838	62.840	62.842	62.844	62.846	62.848	62.850	62.852	62.854
Ground Levels	62.735	62.736	62.787	62.730	62.746	62.723	62.736	62.781	62.772	62.763	62.765	62.736	62.732	62.817	62.783	62.747	62.766	62.749	62.792	62.757	62.735	62.791	62.766	62.903	62.845
Chainage	56+700			56+800						56+900				57+000					57+100					57+200	
																									57+300
																									57+400

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

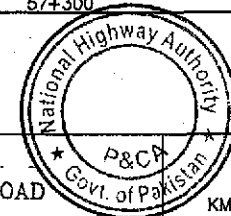


NATIONAL ENGINEERING SERVICES  
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**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

1 RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

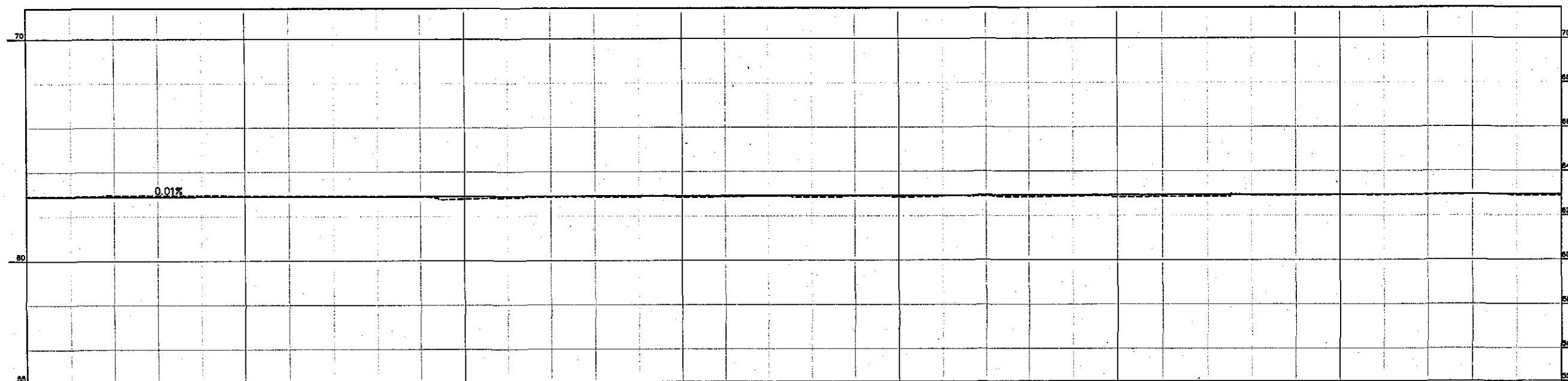
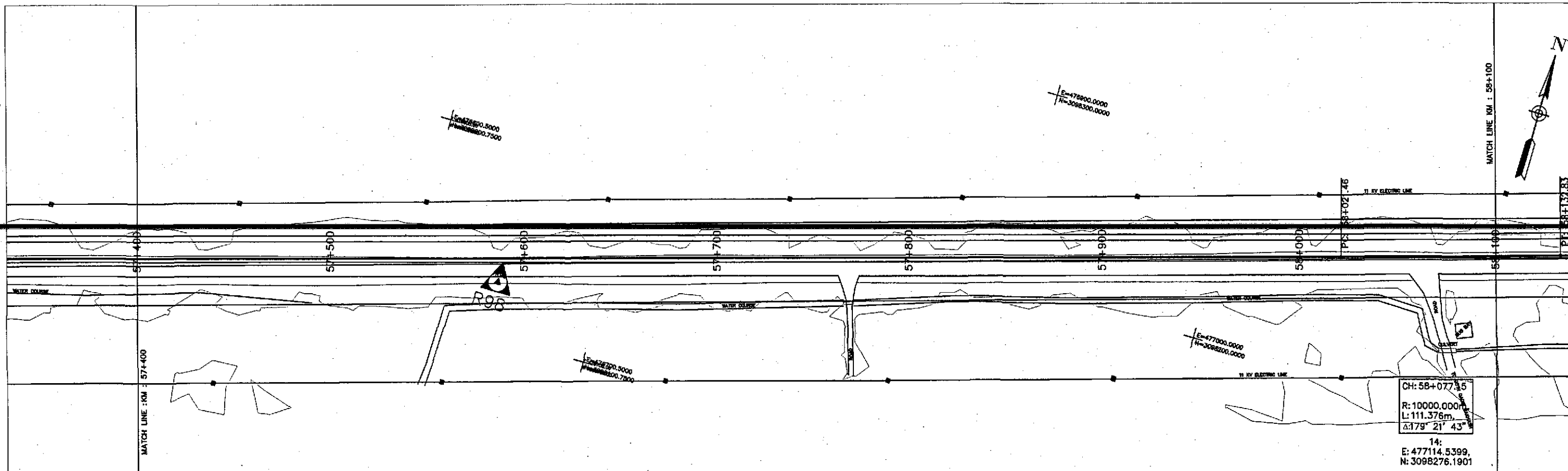


PLAN & PROFILE  
KM: 56+700 ~ KM: 57+400

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P82



Horizontal Geometry	TANGENT 1549.62																												CURVE R=10000.00							
Superelevation																																				
Design Levels		62.876	62.878	62.880	62.882	62.884	62.886	62.888	62.890	62.892	62.894	62.896	62.898	62.900	62.902	62.904	62.906	62.908	62.910	62.912	62.914	62.917	62.919	62.921	62.923	62.925	62.927	62.929	62.931	62.933	62.935	62.937	62.939	62.941	62.943	
Ground Levels	62.919	62.919	62.956	62.955	62.955	62.917	62.911	62.907	62.903	62.887	62.781	62.825	62.866	62.867	62.850	62.846	62.870	62.884	62.838	62.894	62.849	62.897	62.868	62.837	62.880	62.828	62.842	62.855	62.916	62.892	62.924	62.916	62.919	62.933	62.891	62.883
Challage	57+400	57+500				57+600				57+700				57+800				57+900				58+000				58+100										



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



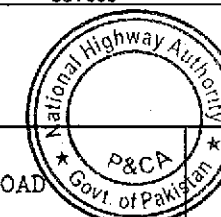
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE

KM: 57+400 ~ KM: 58+100

SCALE

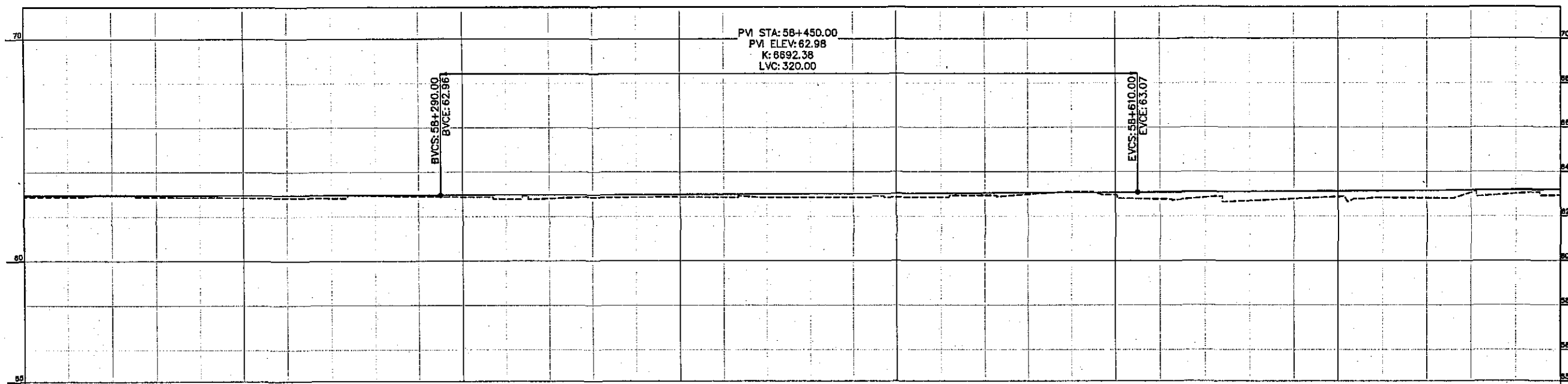
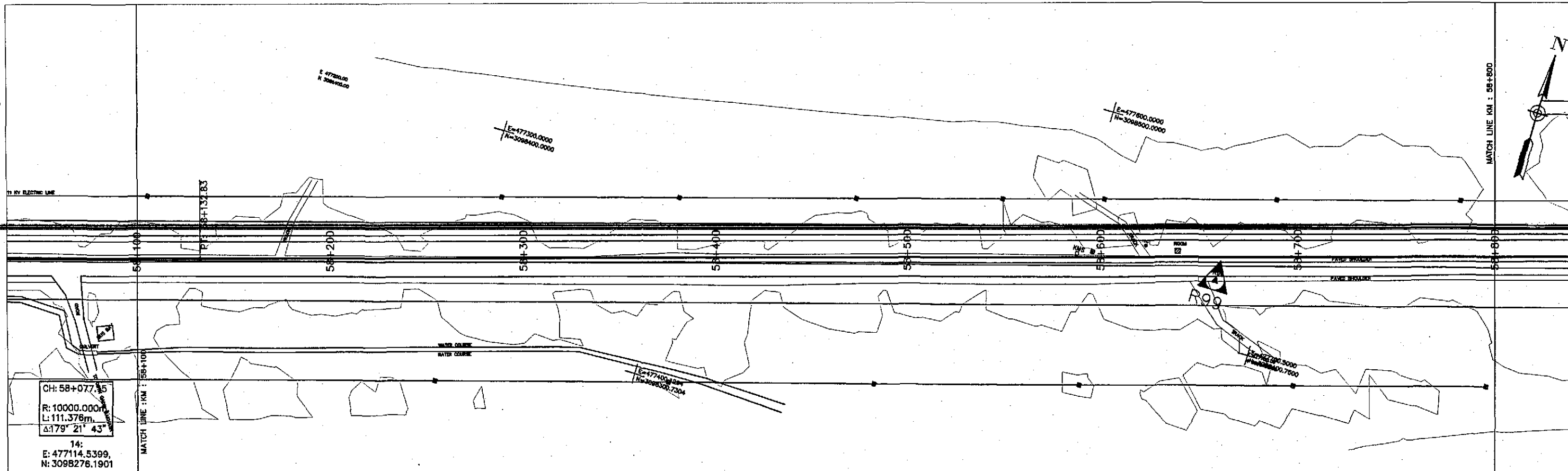
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DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P83

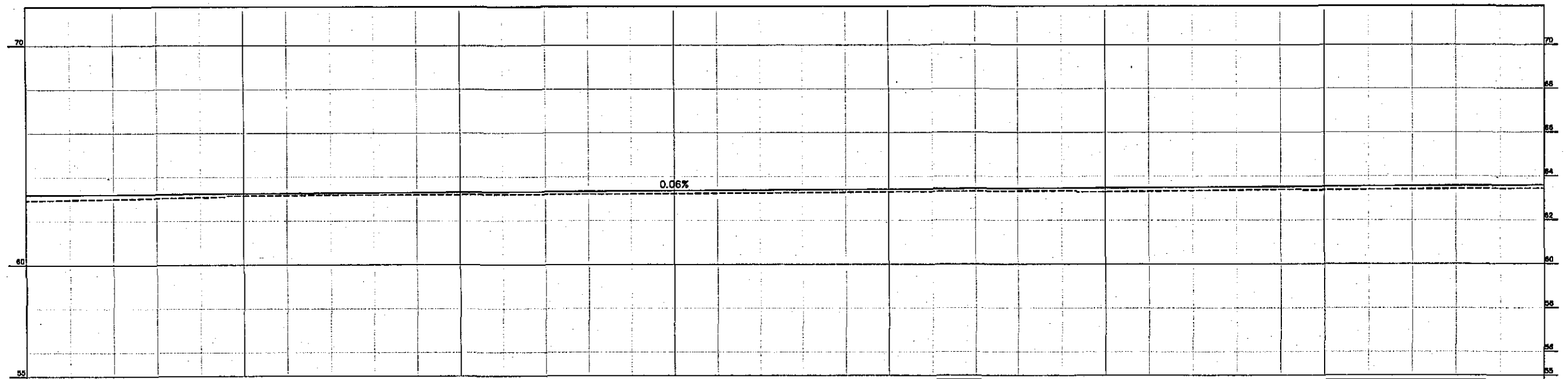
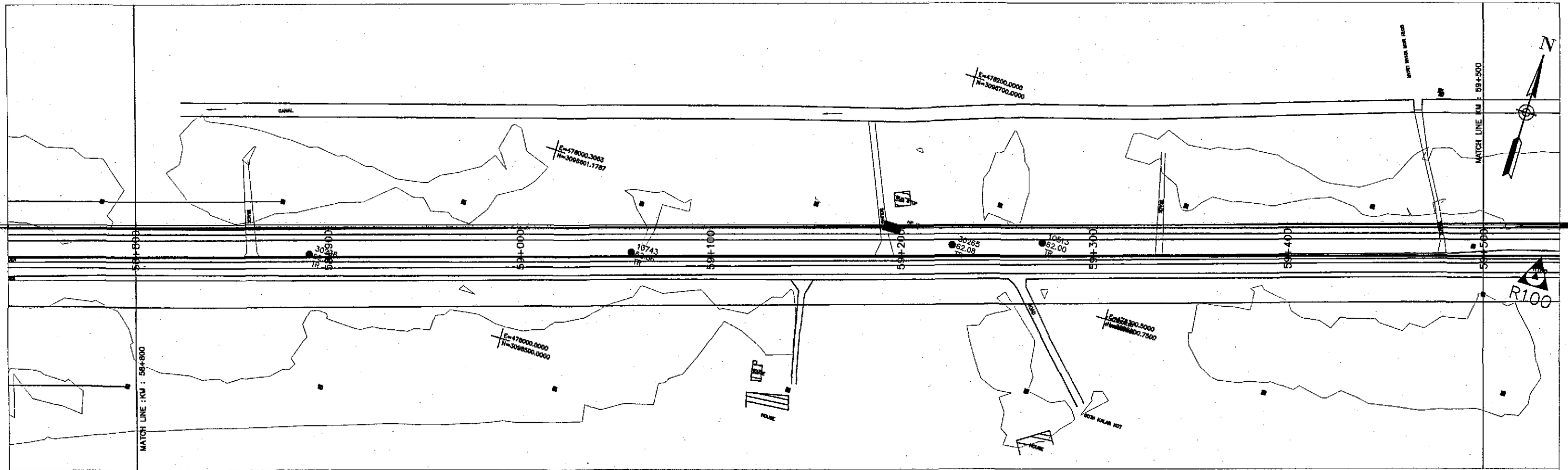
PLAN & PROFILE





Horizontal Geometry CURVE R=10000.00		TANGENT 1805.37	
Superelevation			
Design Levels	62.947	62.949	62.951
Ground Levels	62.893	62.892	62.878
Chainage	58+100	58+200	58+300

TENDER DRAWINGS



Horizontal Geometry	TANGENT 1803.27																			
Superelevation																				
Design Levels	63.194	63.206	63.217	63.229	63.241	63.252	63.264	63.275	63.287	63.298	63.310	63.322	63.333	63.345	63.356	63.368	63.379	63.391	63.403	63.414
Ground Levels	62.926	62.963	63.001	63.043	63.085	63.151	63.162	63.173	63.184	63.190	63.194	63.198	63.202	63.208	63.211	63.223	63.235	63.248	63.261	63.278
Chainage	58+800			58+900					59+000				59+100					59+200		59+300
																				59+400
																				59+500

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

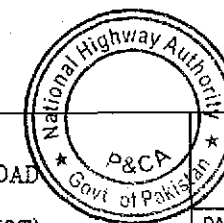


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



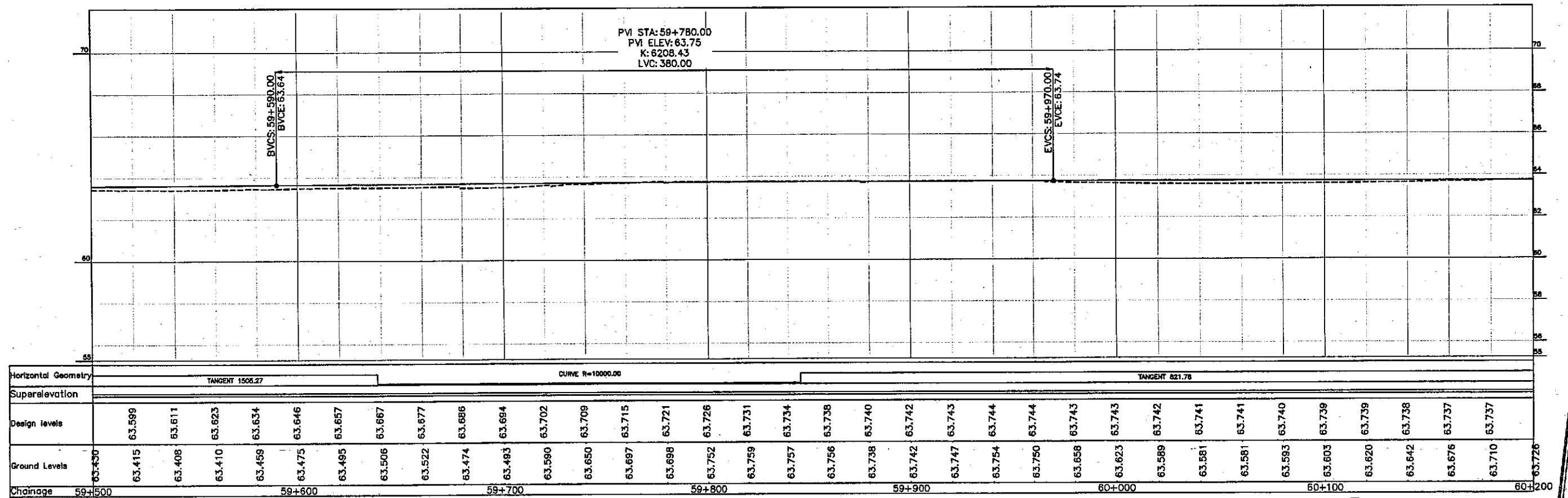
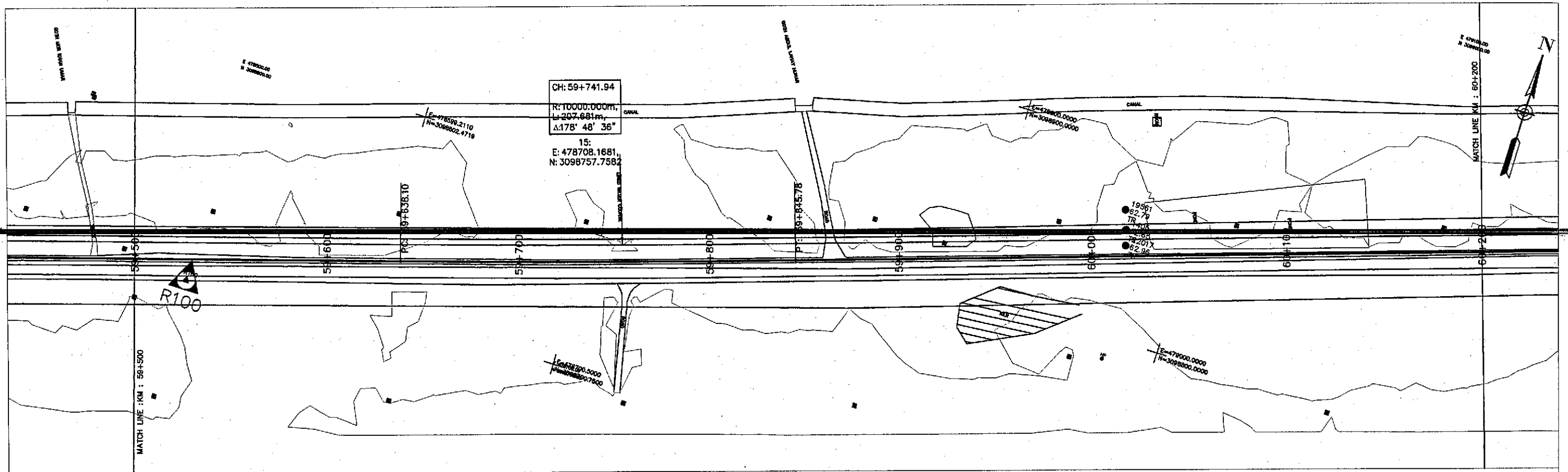
PLAN & PROFILE  
KM: 58+800 ~ km: 59+500

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P85

SCALE  
1:2000





GOVERNMENT OF PAKISTAN  
 MINISTRY OF COMMUNICATIONS  
 NATIONAL HIGHWAY AUTHORITY



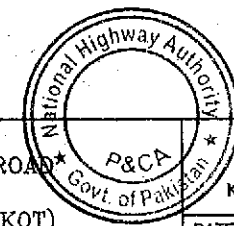
NATIONAL ENGINEERING SERVICES  
 PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
 Project Manager  
 M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

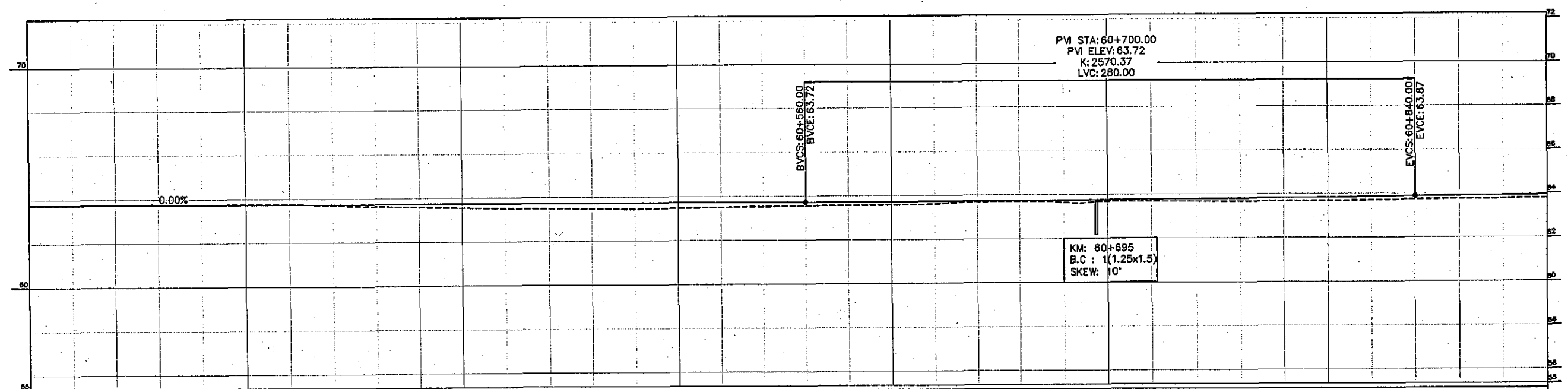
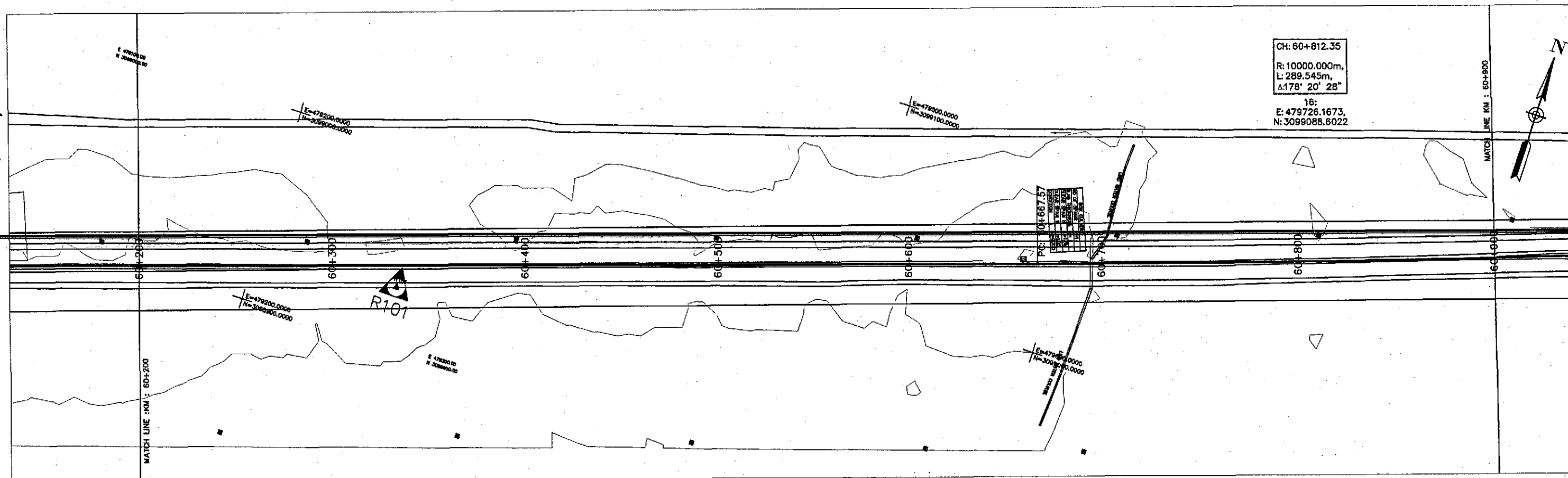
RATODERO ~ RAJANPUR ROAD  
 PACKAGE-I  
 (SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
 KM: 59+500 ~ KM: 60+200

DATE	DWG NO.	SCALE
JUNE, 2018	3905/102/TD/P&PB6	1:2000

TENDER DRAWINGS



Horizontal Geometry TANGENT 821.78 CURVE R=10000.00

Superelevation

Design levels		63.735	63.735	63.734	63.733		63.733	63.732	63.731	63.731	63.730	63.729	63.729	63.728	63.727	63.727	63.726	63.725	63.725	63.724	63.724	63.726	63.729	63.734	63.740	63.748	63.758	63.769	63.781	63.811	63.828	63.847	63.867	63.889	63.910
Ground Levels	63.726	63.733	63.741	63.748	63.747	63.747	63.746	63.688	63.634	63.592	63.550	63.509	63.482	63.464	63.456	63.475	63.507	63.534	63.555	63.567	63.582	63.616	63.687	63.700	63.653	63.680	63.687	63.672	63.661	63.671	63.676	63.696	63.723	63.748	63.759
Chainage	60+200					60+300					60+400					60+500					60+600					60+700				60+800			60+900		

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
 MINISTRY OF COMMUNICATIONS  
 NATIONAL HIGHWAY AUTHORITY

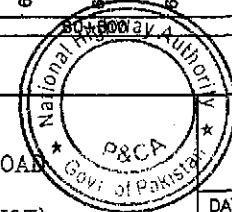


NATIONAL ENGINEERING SERVICES  
 PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
 Project Manager  
 M/S NESPAK

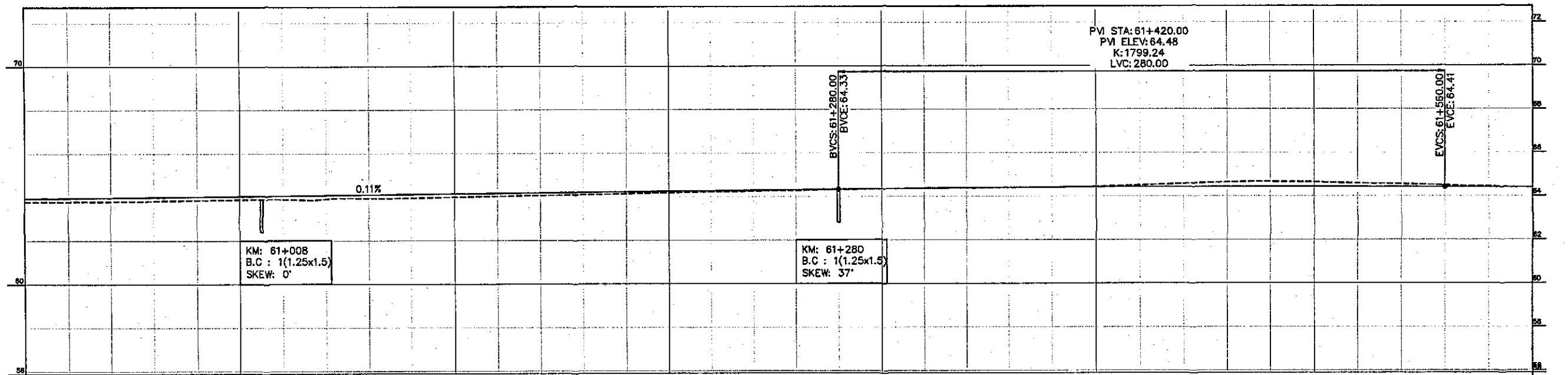
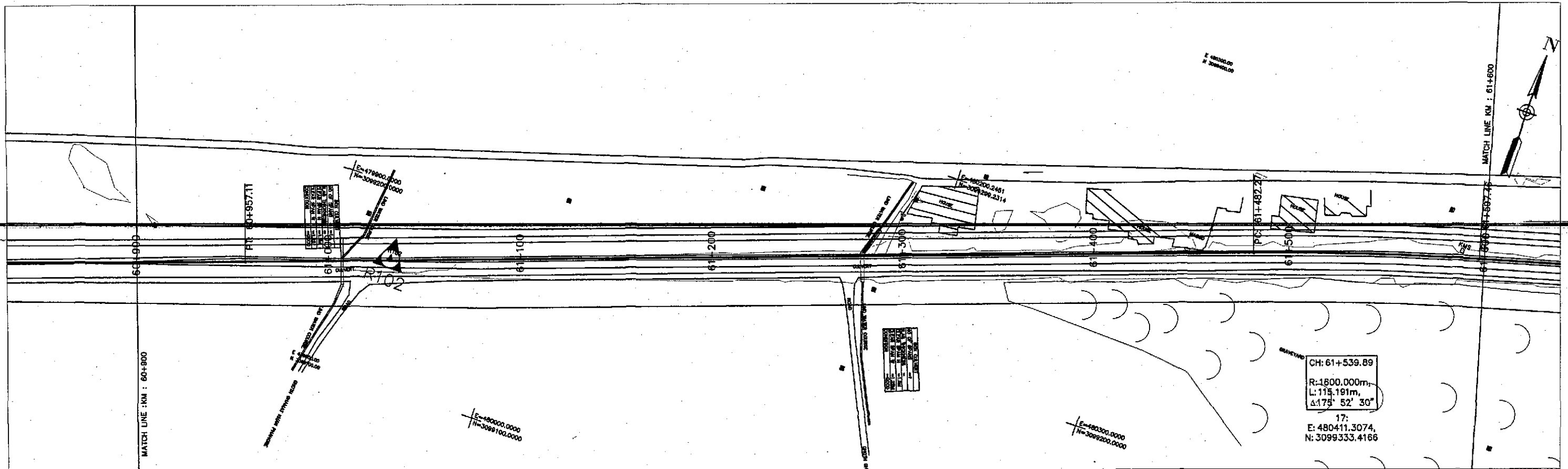
REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
 PACKAGE-I  
 (SHIKARPUR TO KANDH KOT)



PLAN & PROFILE KM: 60+200 ~ KM: 60+900	SCALE 1:2000
DATE JUNE, 2018	DWG NO. 3905/102/TD/P&P87





Horizontal Geometry	CURVE R=10000.00										TANGENT 525.18										CURVE R=1600.00										TANGENT 738.47																																																	
Superelevation																																																																																
Design Levels	63.952	63.973	63.994	64.015	64.036	64.058	64.079	64.100	64.121	64.142	64.163	64.184	64.205	64.227	64.248	64.269	64.290	64.311	64.332	64.352	64.370	64.386	64.399	64.410	64.419	64.426	64.430	64.432	64.430	64.426	64.419	64.410	64.400	64.388																																														
Ground Levels	63.785	63.794	63.803	63.817	63.856	63.882	63.893	63.908	63.935	63.954	63.988	64.030	64.062	64.100	64.137	64.176	64.211	64.240	64.273	64.313	64.348	64.366	64.381	64.391	64.401	64.442	64.502	64.572	64.632	64.654	64.632	64.579	64.543	64.487	64.433	64.385																																												
Chainage	60+900										61+000										61+100										61+200										61+300										61+400										61+500										61+600									



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



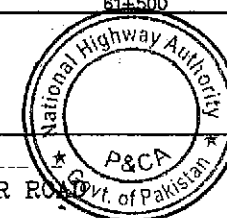
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

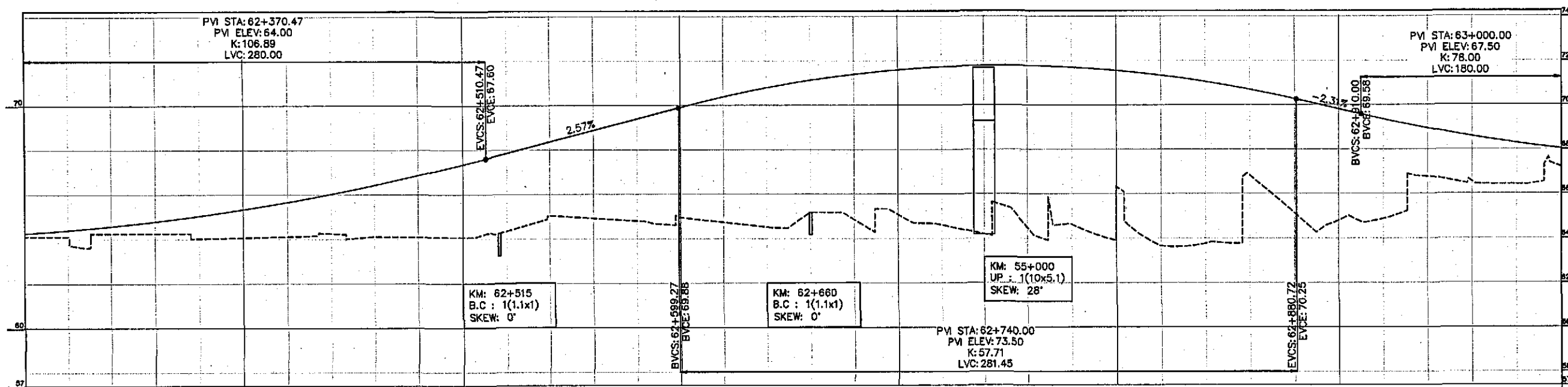
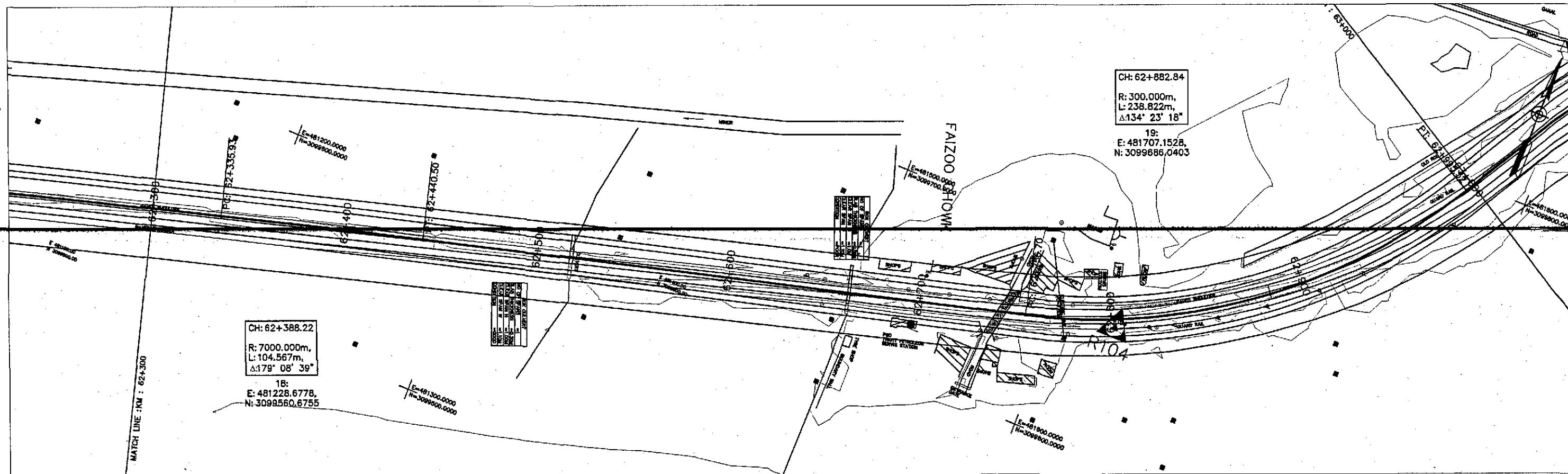
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 60+900 ~ km: 61+600		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P88	

TENDER DRAWINGS





Horizontal Geometry	TANGENT 738.47																														CURVE R=7000.00																														TANGENT 318.20																														CURVE R=300.00																														TANGENT 178.13																													
Superelevation																																																																																																																																																						
Design Levels	64.405 64.581 64.795 65.046 65.334 65.560 66.024 66.424 66.863 67.338 67.847 68.381 68.875 69.389 69.903 70.379 70.787 71.125 71.394 71.698 71.998 72.284 72.551 72.794 73.019 73.224 73.409 73.574 73.719 73.844 73.949																																																																																																																																																					
Ground Levels	64.117 64.115 64.257 64.259 64.031 64.065 64.113 64.248 64.108 64.091 64.075 64.351 65.042 64.921 64.800 64.945 64.732 64.518 65.175 64.848 64.603 64.188 64.467 64.622 66.304 63.656 63.762 66.819 65.121 64.798 64.869 66.769 66.543 66.419 67.198																																																																																																																																																					
Chainage	62+300 62+400 62+500 62+600 62+700 62+800 62+900 63+000																																																																																																																																																					



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

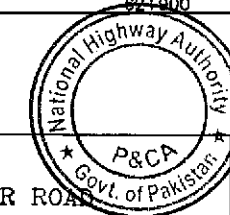


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

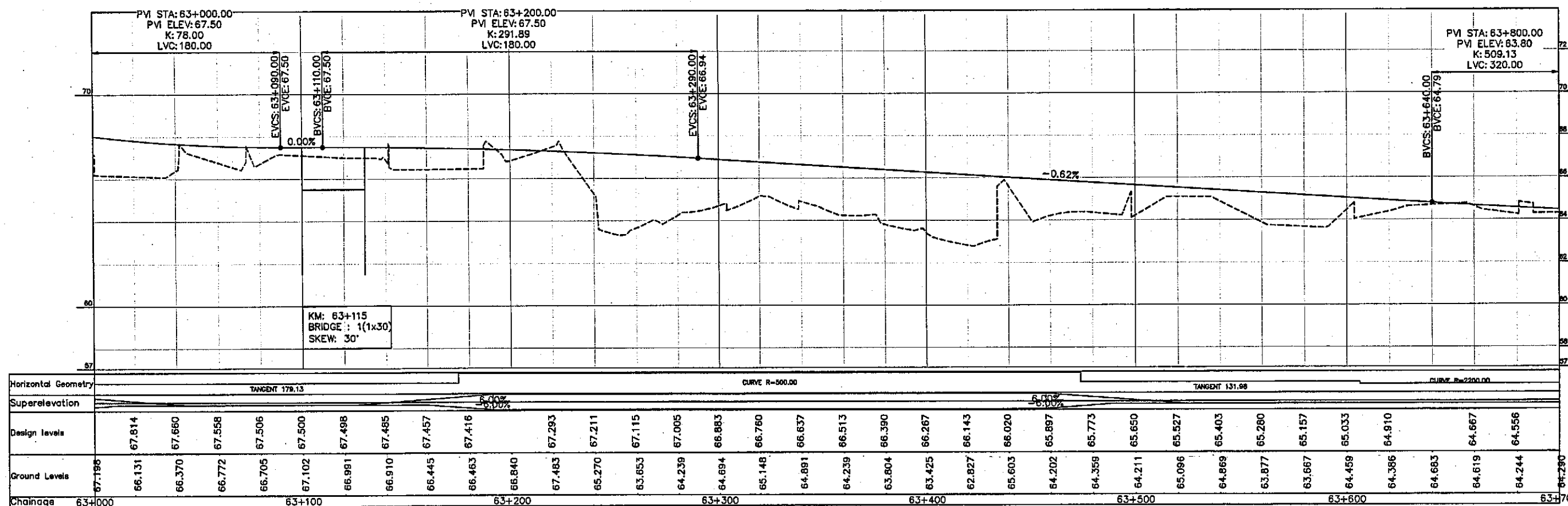
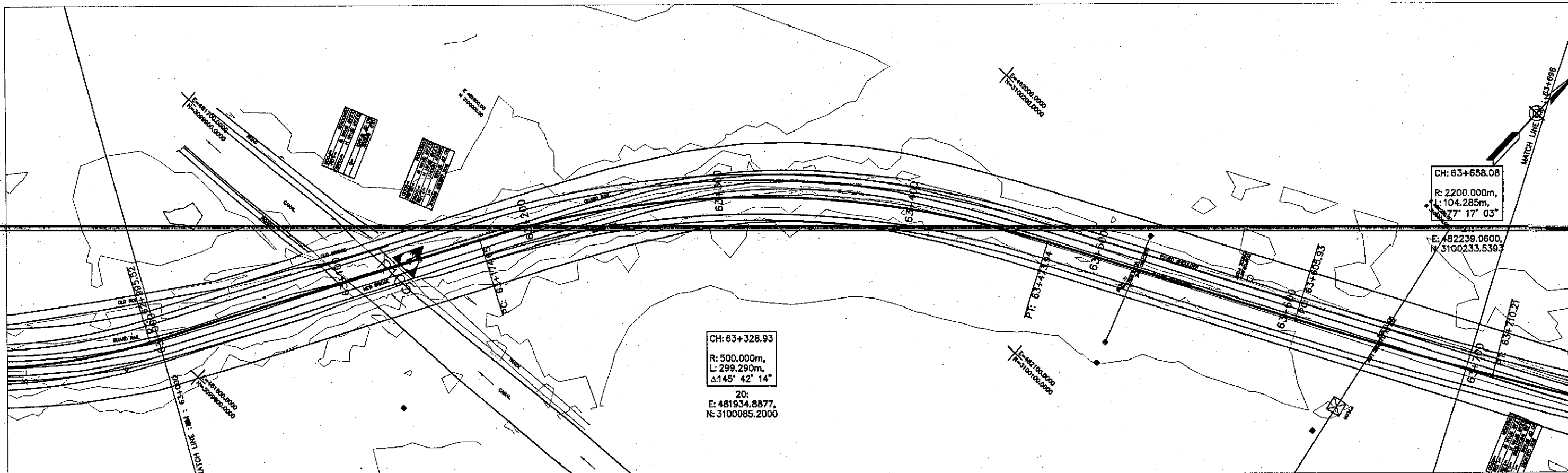
RATODERO ~ RAJANPUR ROAD  
PACKAGE-1  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 62+300 ~ km: 63+000		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P90	

TENDER DRAWINGS





GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



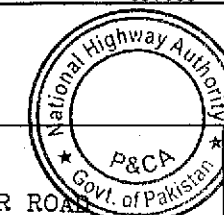
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAC

REV.	DATE	DESCRIPTION	APPROVED

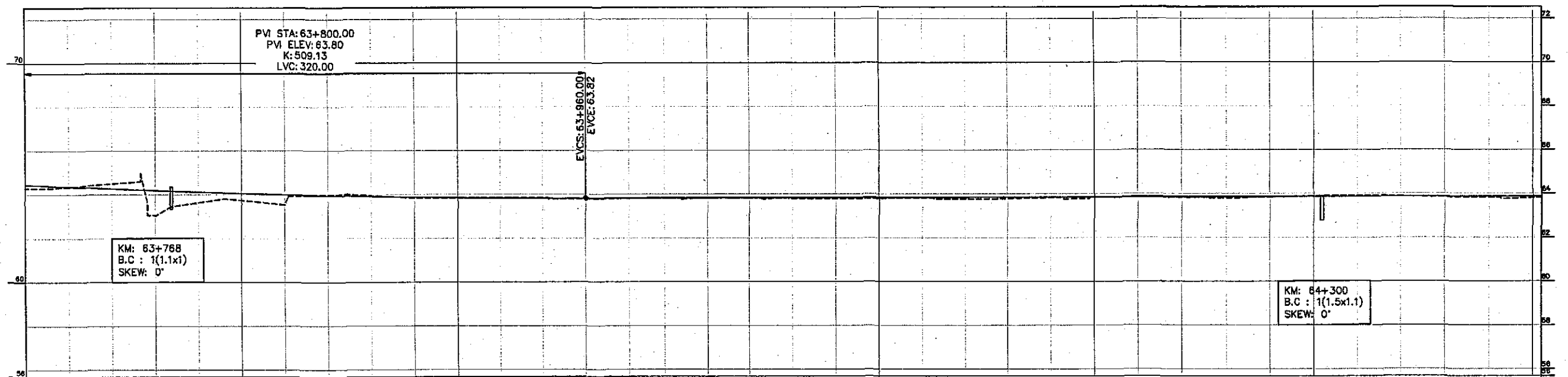
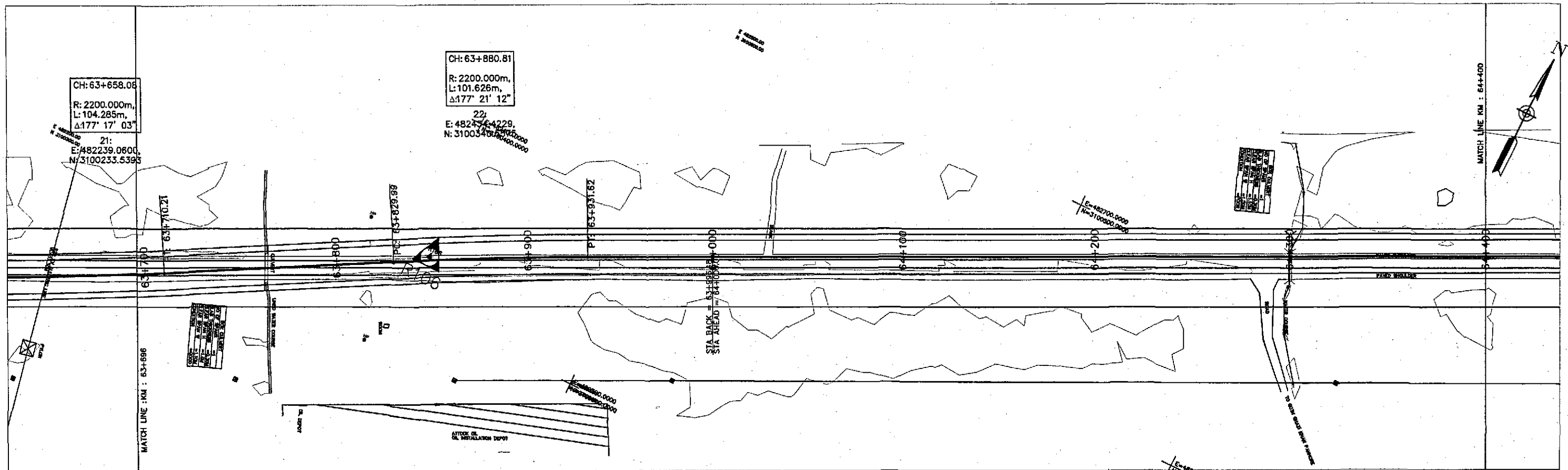
DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE KM: 63+000 ~ km: 63+700		SCALE 1:2000
DATE JUNE, 2018	DWG NO. 3905/102/TD/P&P91	

TENDER DRAWINGS



Horizontal Geometry	R=2200.00																TANGENT 119.78																CURVE R=2200.00																TANGENT 781.31																																																																
Superelevation																																																																																																																	
Design Levels	64.356	64.268	64.188	64.116	63.995	63.946	63.905	63.872	63.847	63.830	63.821	63.821	63.826	63.828	63.830	63.833	63.835	63.838	63.840	63.842	63.845	63.847	63.849	63.852	63.854	63.856	63.859	63.861	63.864	63.866	63.868	63.871																																																																																	
Ground Levels	64.290	64.350	64.496	63.033	63.629	63.733	63.539	63.980	63.945	63.833	63.832	63.836	63.841	63.789	63.806	63.828	63.834	63.832	63.774	63.775	63.790	63.817	63.761	63.774	63.820	63.831	63.827	63.824	63.796	63.844	63.885	63.907	63.871	63.840	63.818	63.793																																																																													
Chainage	63+700	63+800																63+900																64+000																64+100																64+200																64+300																64+400.82															



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



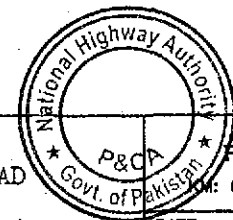
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

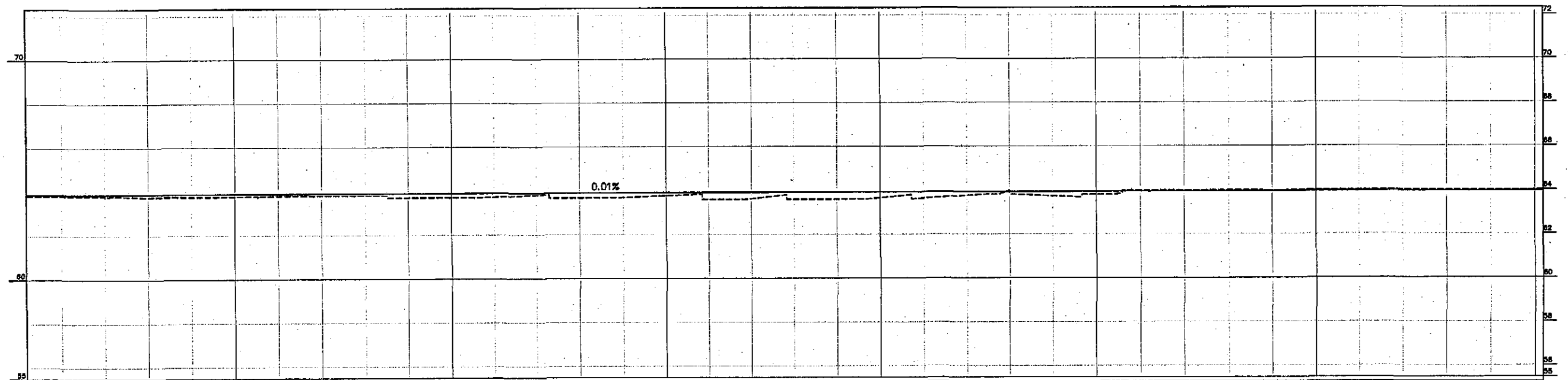
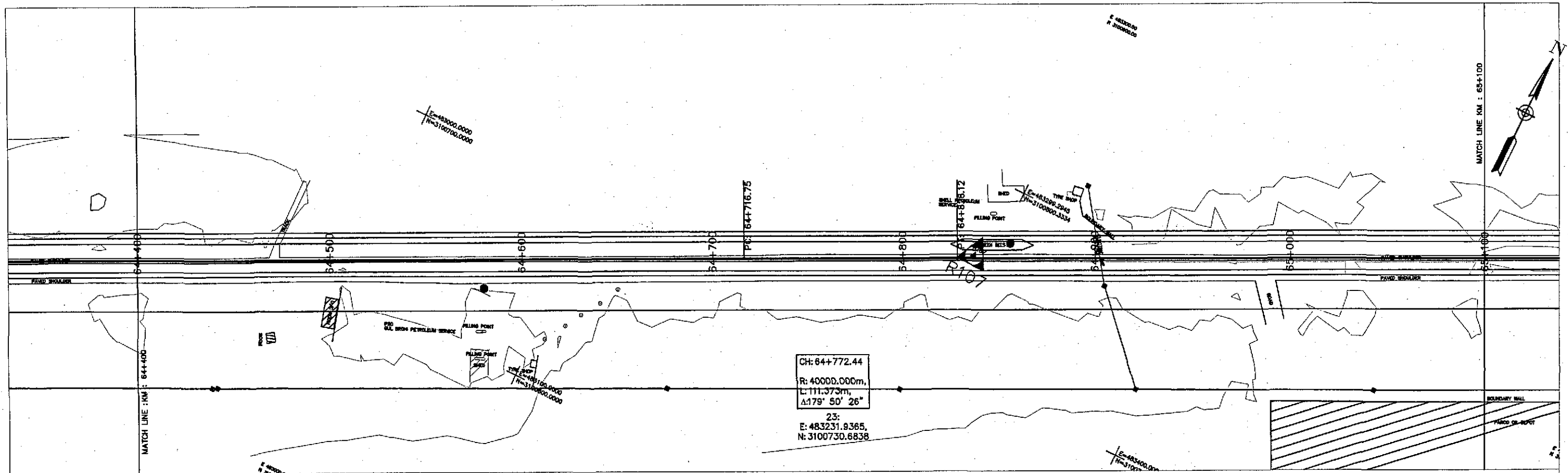
DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
DATE	DWG NO.	1:2000
JUNE, 2018	3905/102/TD/P&P92	

TENDER DRAWINGS



Horizontal Geometry	TANGENT 781.31															CURVE R=40000.00										TANGENT 1172.57										
Superelevation																																				
Design Levels		63.873	63.875	63.878	63.880	63.883	63.885	63.887	63.890	63.892	63.894	63.897	63.899	63.902	63.904	63.906	63.909	63.911	63.913	63.916	63.918	63.921	63.923	63.925	63.928	63.930	63.932	63.935	63.937	63.940	63.942	63.944	63.947	63.949	63.951	63.954
Ground Levels	63.803	63.811	63.766	63.750	63.757	63.764	63.787	63.793	63.797	63.702	63.702	63.727	63.800	63.679	63.690	63.763	63.586	63.616	63.590	63.593	63.655	63.631	63.753	63.811	63.729	63.797	63.992	63.992	63.989	63.948	63.988	63.988	64.014	63.993	63.986	63.996
Chainage	64+403.82	64+500				64+600				64+700				64+800				64+900				65+000				65+100.82										

TENDER DRAWINGS

GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

**NESPAC**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAC

REV.	DATE	DESCRIPTION	APPROVED

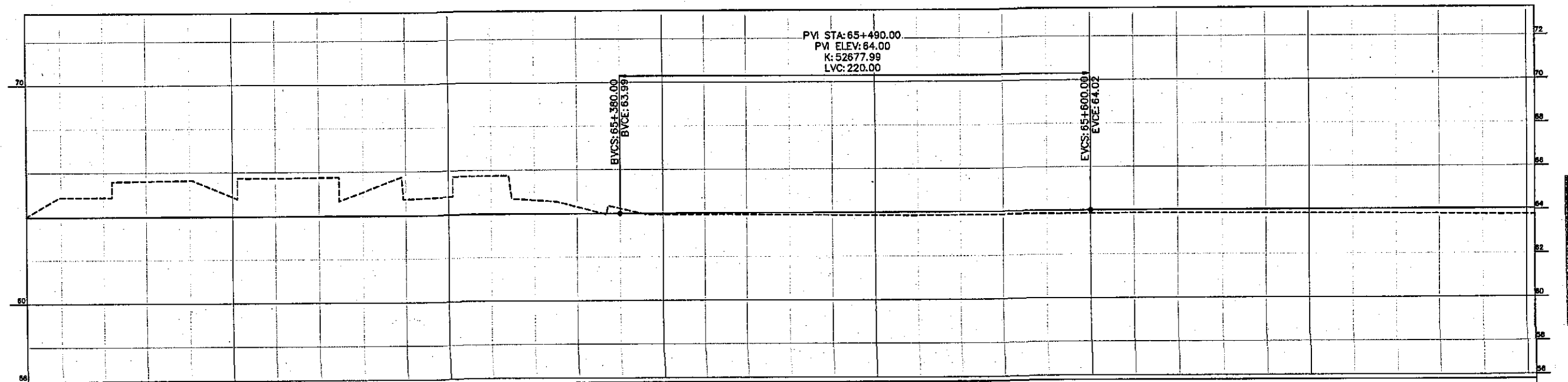
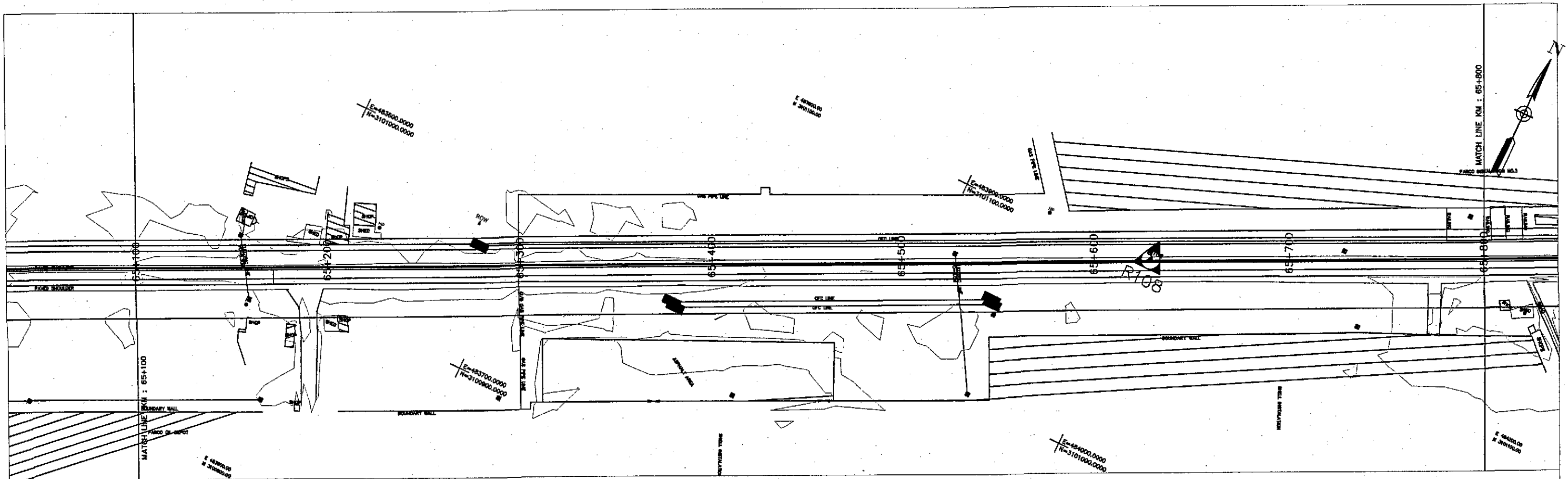
DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

**RATODERO ~ RAJANPUR ROAD**  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

PLAN & PROFILE  
KM: 64+400 ~ KM: 65+100  
DATE: JUNE, 2018  
DWG NO.: 3905/102/TD/P&P93

SCALE: 1:2000





Horizontal Geometry		TANGENT 1172.57																																			
Superelevation																																					
Design Levels		63.956	63.958	63.961	63.963	63.966	63.968	63.970	63.973	63.975	63.977	63.980	63.982	63.985	63.987	63.989	63.992	63.994	63.997	64.000	64.003	64.005	64.008	64.011	64.014	64.018	64.021	64.024	64.027	64.030	64.034	64.037	64.040	64.043	64.047	64.050	
Ground Levels		63.991	64.866	64.860	65.606	65.633	64.870	65.722	65.743	65.063	64.722	64.811	65.735	64.614	64.295	64.214	63.940	63.936	63.923	63.908	63.884	63.869	63.858	63.870	63.876	63.871	63.872	63.881	63.877	63.869	63.858	63.848	63.837	63.826	63.806	63.786	63.774
Chainage		65+103.82					65+200					65+300					65+400						65+500													65+800.82	

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

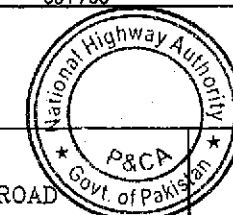


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWADUL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

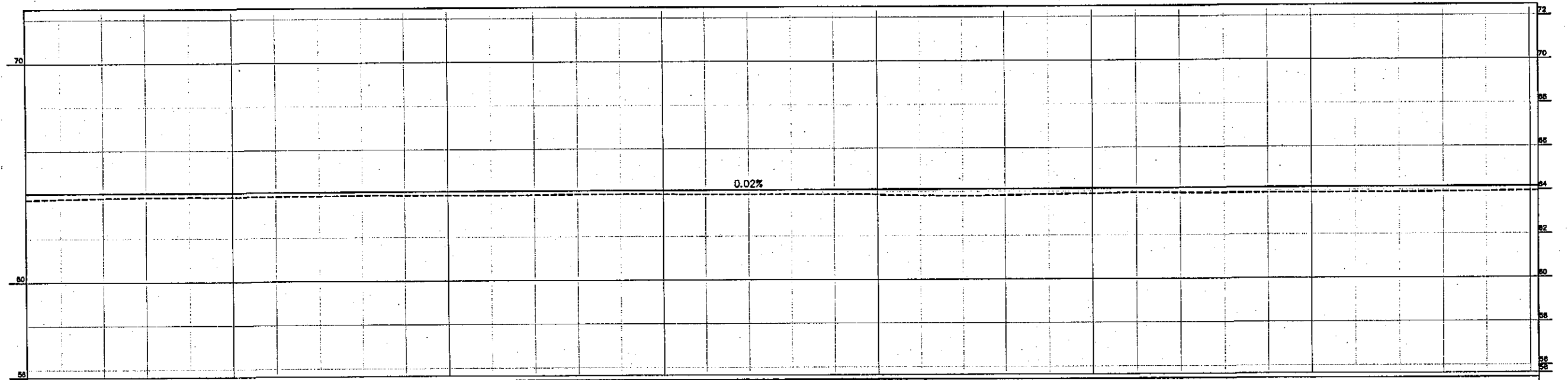
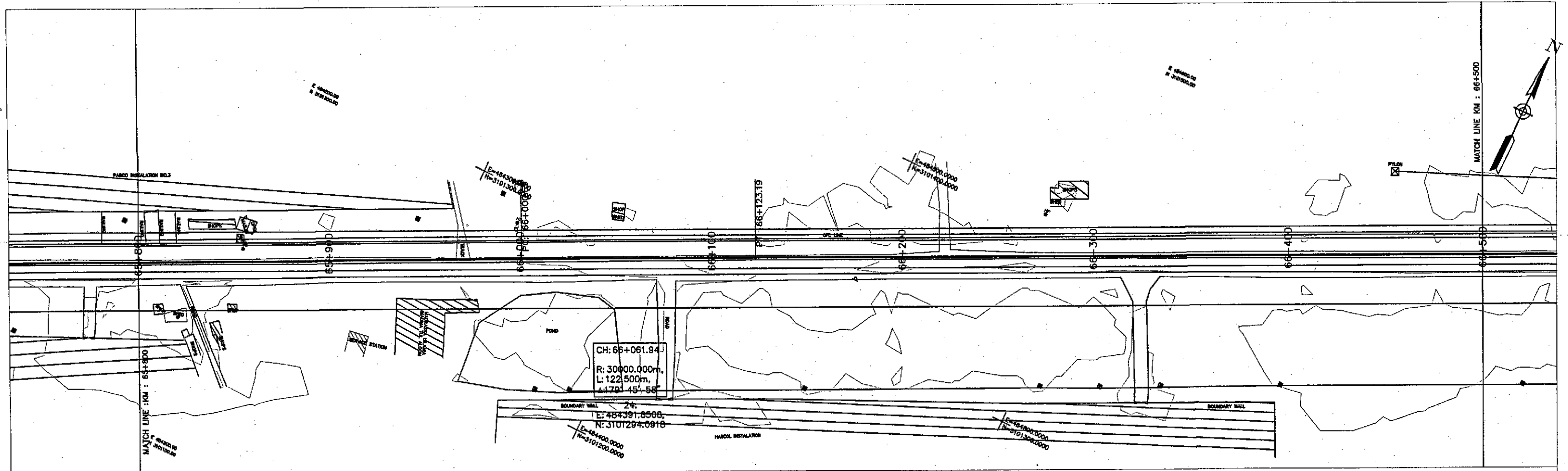


PLAN & PROFILE  
KM: 65+100 ~ KM: 65+800

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P94



Horizontal Geometry	TANGENT 1172.57										CURVE R=30000.00										TANGENT 1807.17															
Superelevation																																				
Design Levels		64.053	64.056	64.059	64.063	64.066	64.069	64.072	64.075	64.079	64.082	64.085	64.088	64.091	64.095	64.098	64.101	64.104	64.107	64.111	64.114	64.117	64.120	64.123	64.127	64.130	64.133	64.136	64.140	64.143	64.146	64.149	64.152	64.156	64.159	64.162
Ground Levels	63.771	63.799	63.838	63.873	63.879	63.878	63.885	63.894	63.915	63.909	63.906	63.900	63.905	63.923	63.937	63.925	63.915	63.911	63.908	63.899	63.876	63.833	63.812	63.831	63.874	63.885	63.928	63.909	63.897	63.898	63.900	63.902	63.905	63.914	63.929	63.951
Chainage	65+803.82	65+900				66+000				66+100				66+200				66+300				66+400				66+500.82										

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

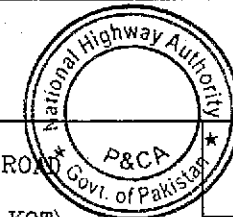


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

KATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

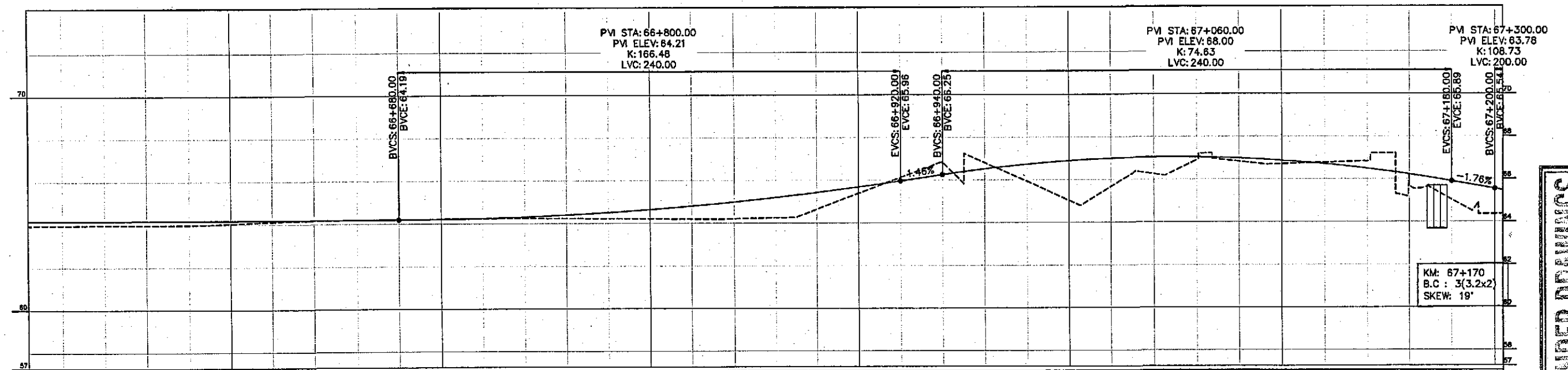
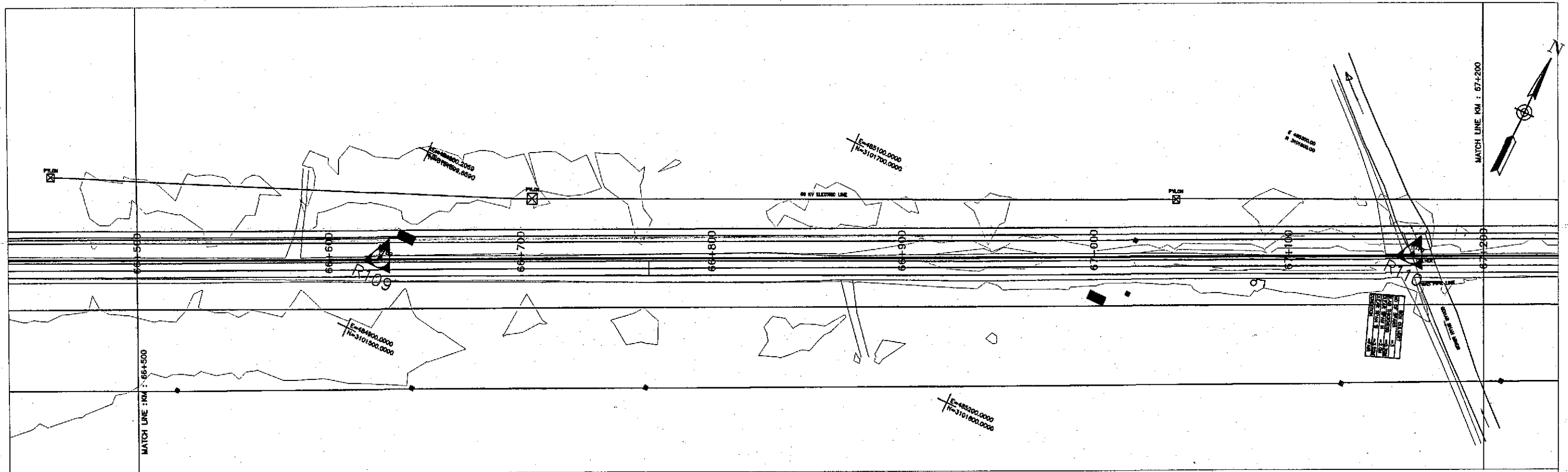


PLAN & PROFILE  
KM: 65+800 ~ KM: 66+500

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P95



Horizontal Geometry		TANGENT 1807.17	
Superelevation			
Design levels			
63.953	64.165	64.168	64.172
63.961	64.168	64.172	64.175
63.979	64.168	64.172	64.178
63.968	64.172	64.175	64.181
63.975	64.175	64.178	64.184
64.037	64.178	64.181	64.188
64.116	64.181	64.184	64.188
64.165	64.184	64.188	64.191
64.187	64.188	64.191	64.206
64.200	64.191	64.206	64.245
64.218	64.206	64.245	64.309
64.237	64.245	64.309	64.396
64.245	64.309	64.396	64.507
64.236	64.396	64.507	64.643
64.226	64.507	64.643	64.802
64.213	64.643	64.802	64.985
64.197	64.802	64.985	65.193
64.205	64.985	65.193	65.424
64.248	65.193	65.424	65.680
64.638	65.424	65.680	65.959
65.379	65.680	65.959	66.251
66.120	65.959	66.251	66.516
66.634	66.251	66.516	66.727
66.804	66.516	66.727	66.884
65.930	66.727	66.884	66.988
65.025	66.884	66.988	67.038
65.860	66.988	67.038	67.035
66.251	67.038	67.035	66.978
66.896	67.035	66.978	66.868
66.827	66.978	66.868	66.704
66.707	66.868	66.704	66.486
66.770	66.704	66.486	66.215
66.632	66.486	66.215	65.890
65.657	66.215	65.890	65.538
65.025	65.890	65.538	64.353
64.353	65.538	64.353	64.353
Chainage	66+503.82	66+600	66+700
	66+800	66+900	67+000
	67+100	67+200	67+203.82

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



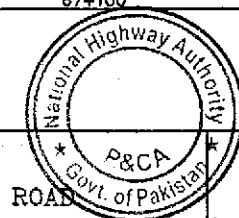
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

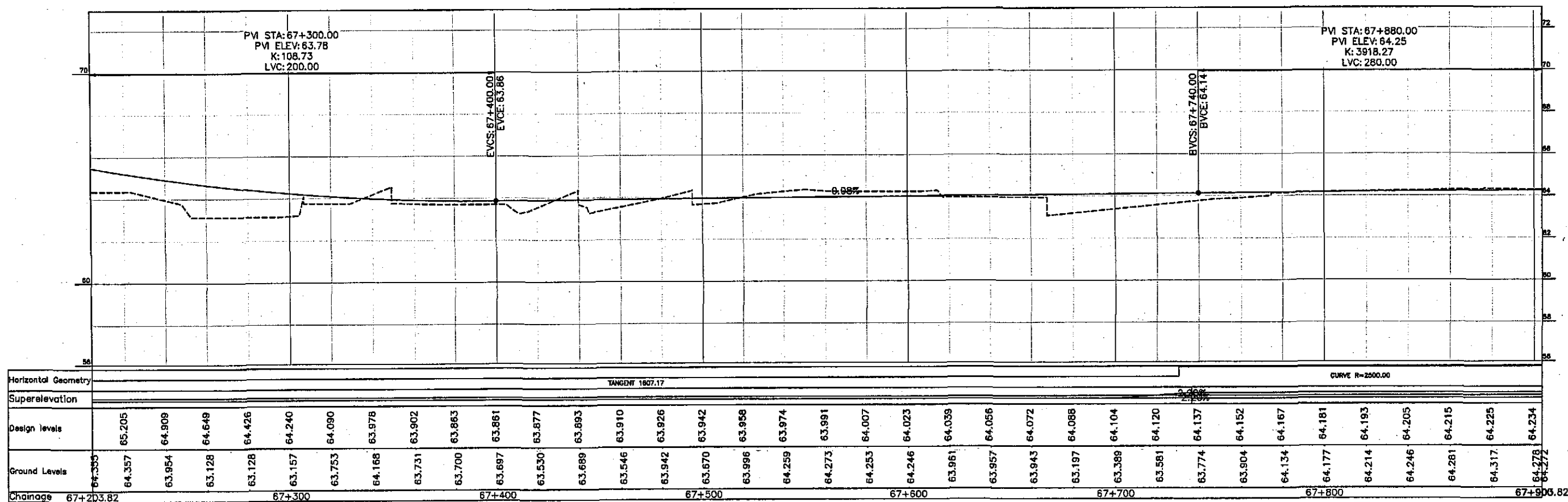
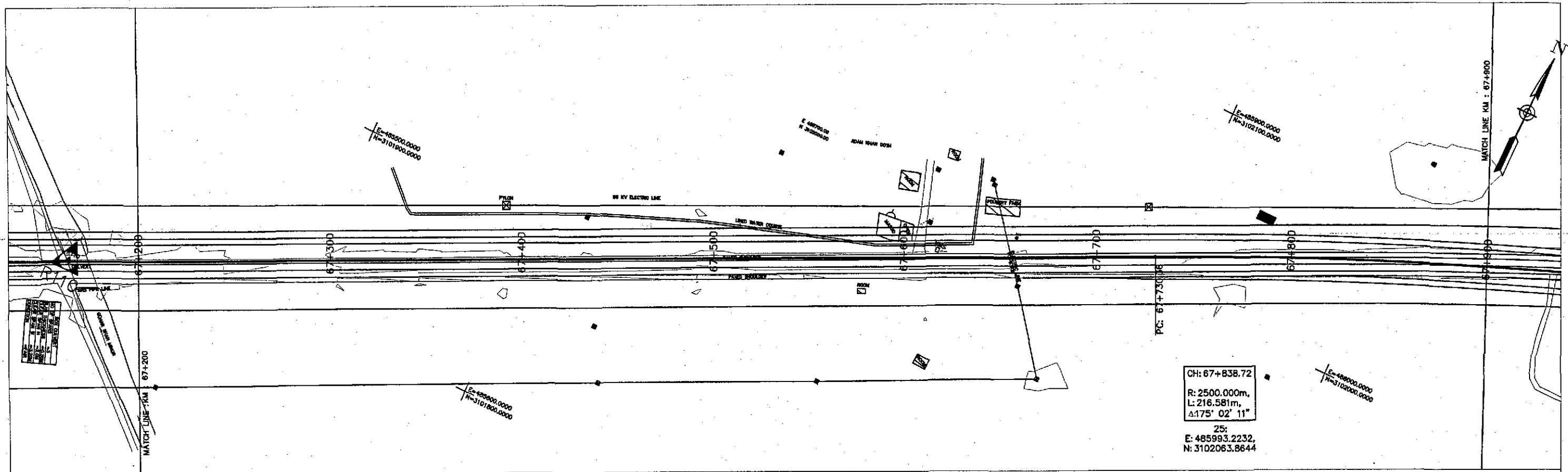
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 66+500 ~ KM: 67+200

DATE	DWG NO.	SCALE
JUNE, 2018	3905/102/TD/P&P96	1:2000





TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

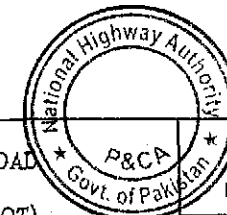


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

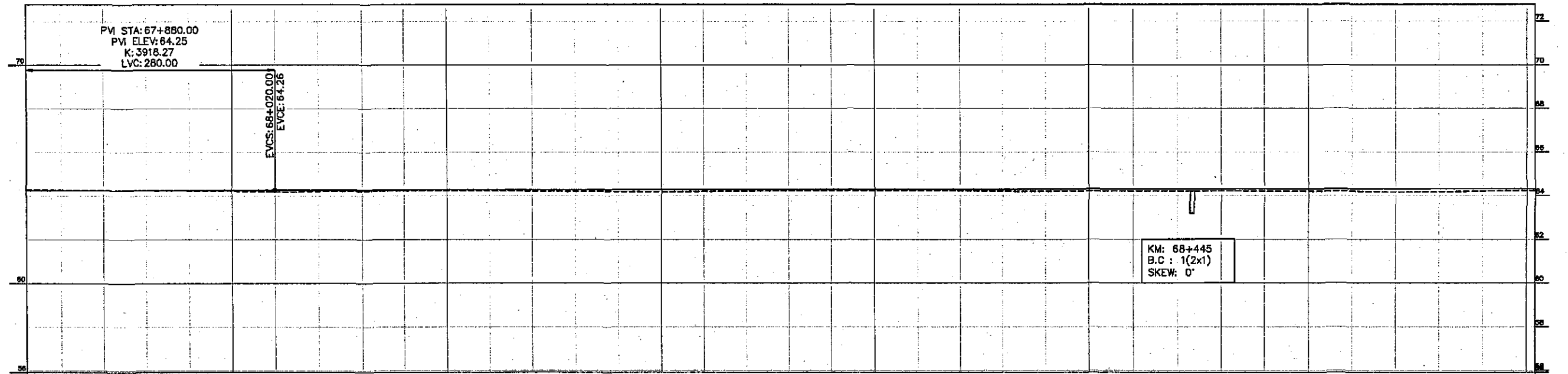
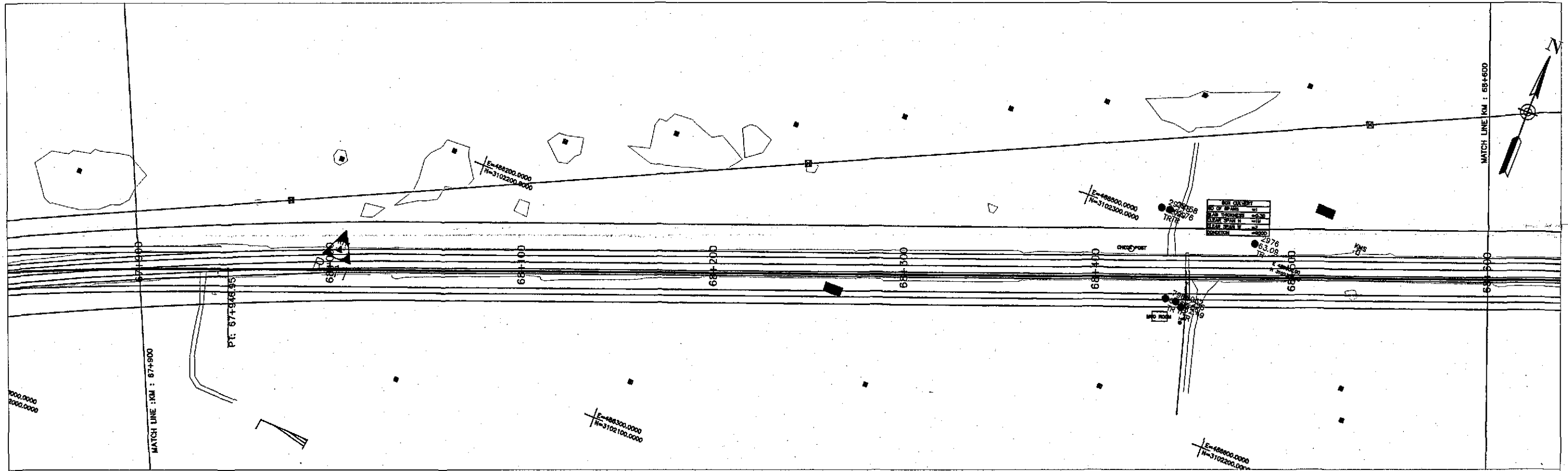
**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

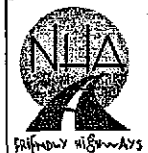


PLAN & PROFILE	SCALE
KM: 67+200 ~ KM: 67+900	1:2000
DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P97



KM: 68+445  
B.C : 1(2x1)  
SKEW: 0°

Horizontal Geometry	CURVE R=2500.00																																			
Superelevation	TANGENT 1813.79																																			
Design Levels	64.241	64.248	64.253	64.258	64.261	64.263	64.265	64.267	64.269	64.271	64.273	64.275	64.277	64.279	64.281	64.283	64.284	64.286	64.288	64.290	64.292	64.294	64.296	64.298	64.300	64.302	64.304	64.306	64.307	64.309	64.311	64.313	64.315	64.317	64.319	
Ground Levels	64.272	64.264	64.256	64.247	64.234	64.230	64.184	64.211	64.219	64.226	64.233	64.226	64.209	64.200	64.192	64.183	64.195	64.208	64.221	64.234	64.232	64.231	64.219	64.205	64.201	64.206	64.206	64.206	64.218	64.196	64.199	64.196	64.167	64.174	64.207	64.232
Chainage	67+903.82	68+000				68+100				68+200				68+300				68+400				68+500				68+600.82										



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



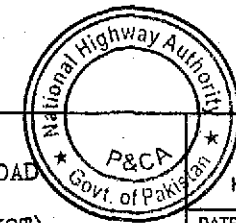
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ  
Project Manager  
M/S NESPAC

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

REV.	DATE	DESCRIPTION	APPROVED
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RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



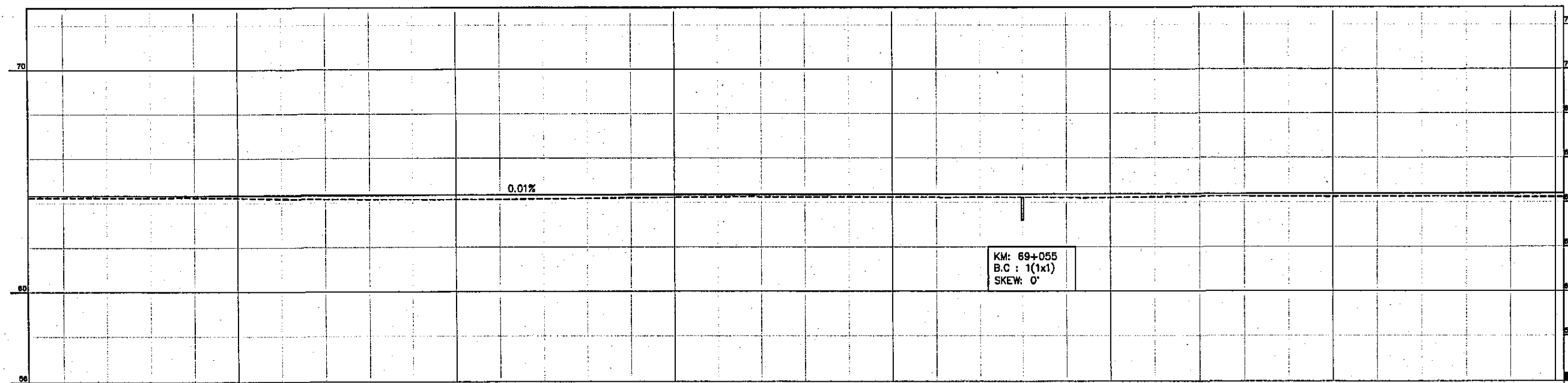
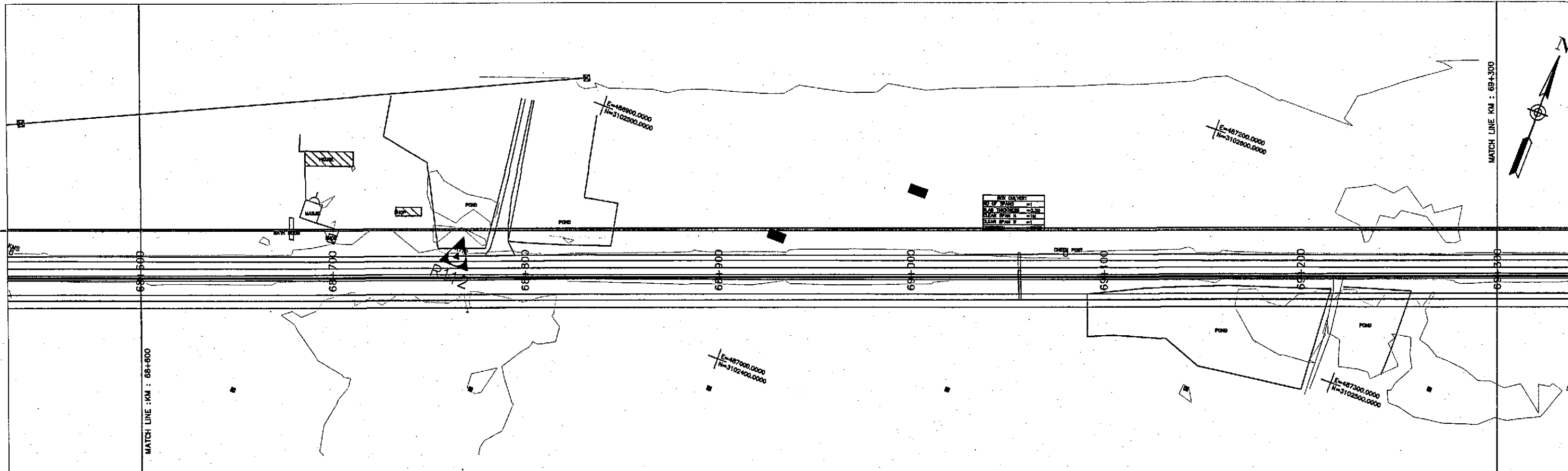
PLAN & PROFILE  
KM: 67+900 ~ KM: 68+600

DATE	JUNE, 2018	DWG NO.	3905/102/TD/P&P98
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TENDER DRAWINGS

SCALE

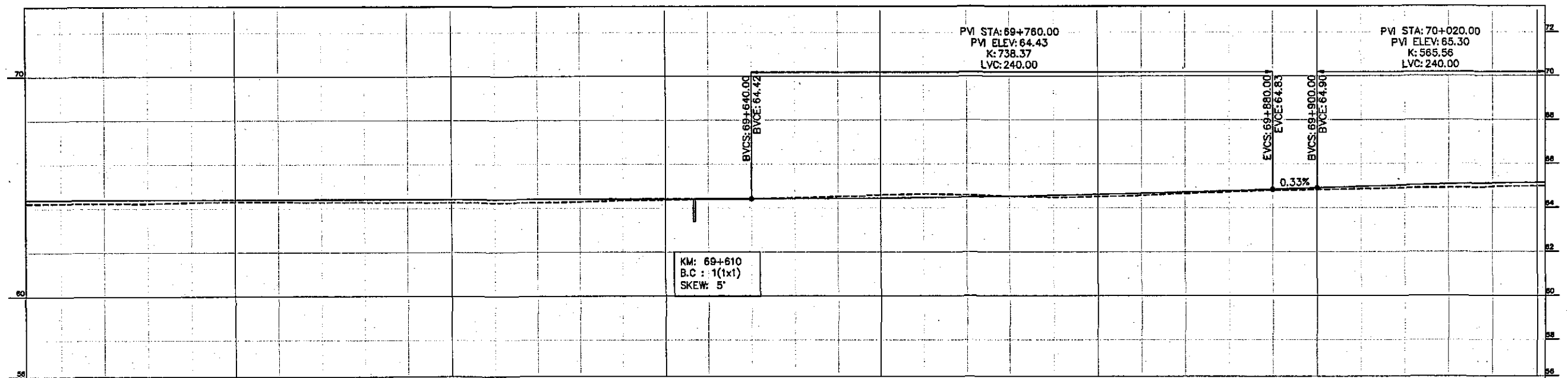
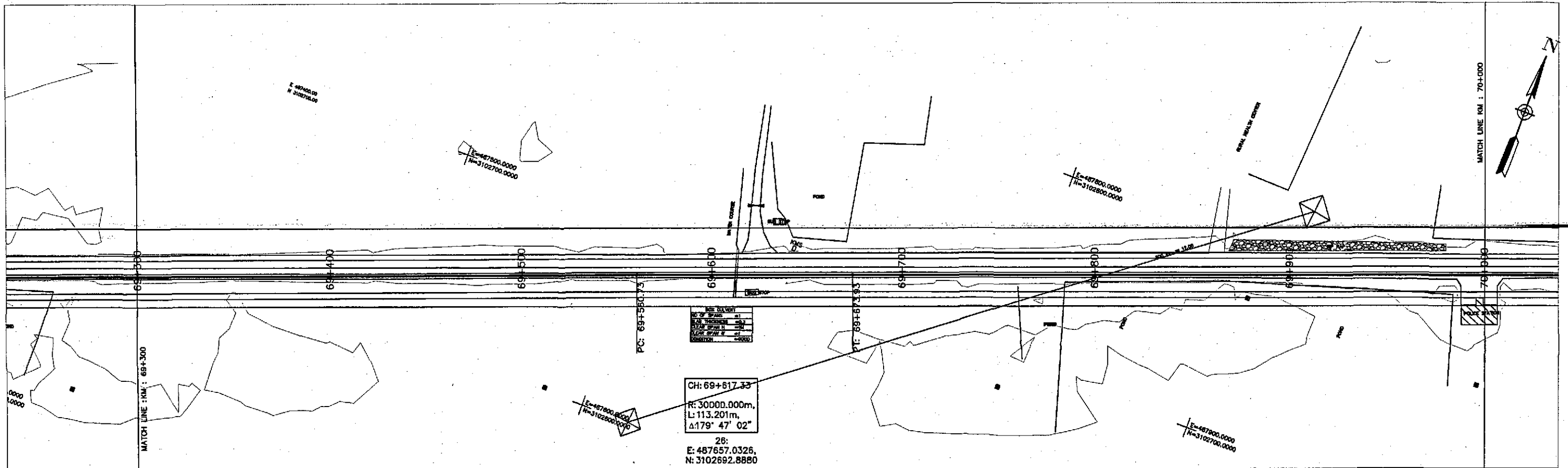
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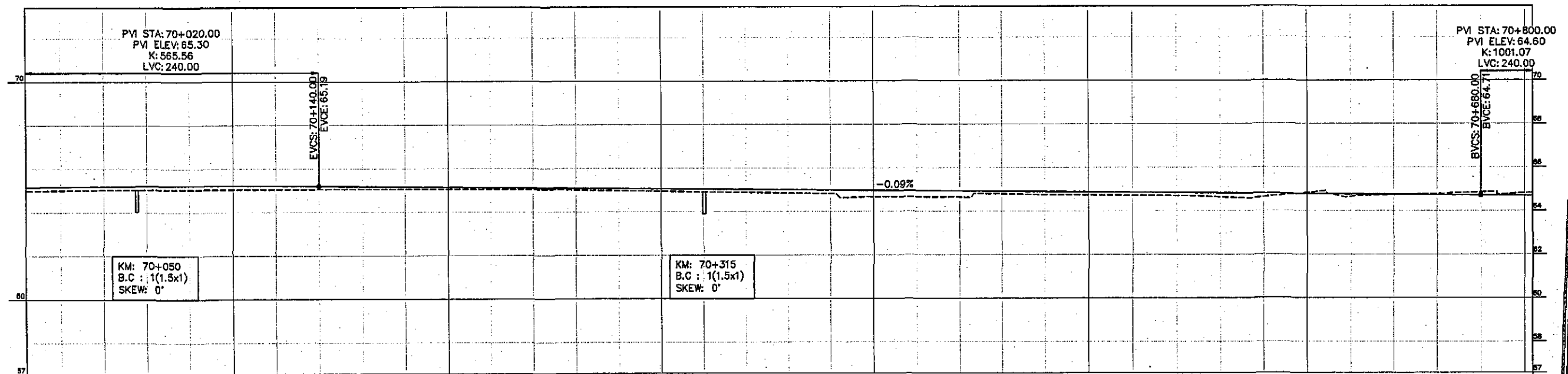
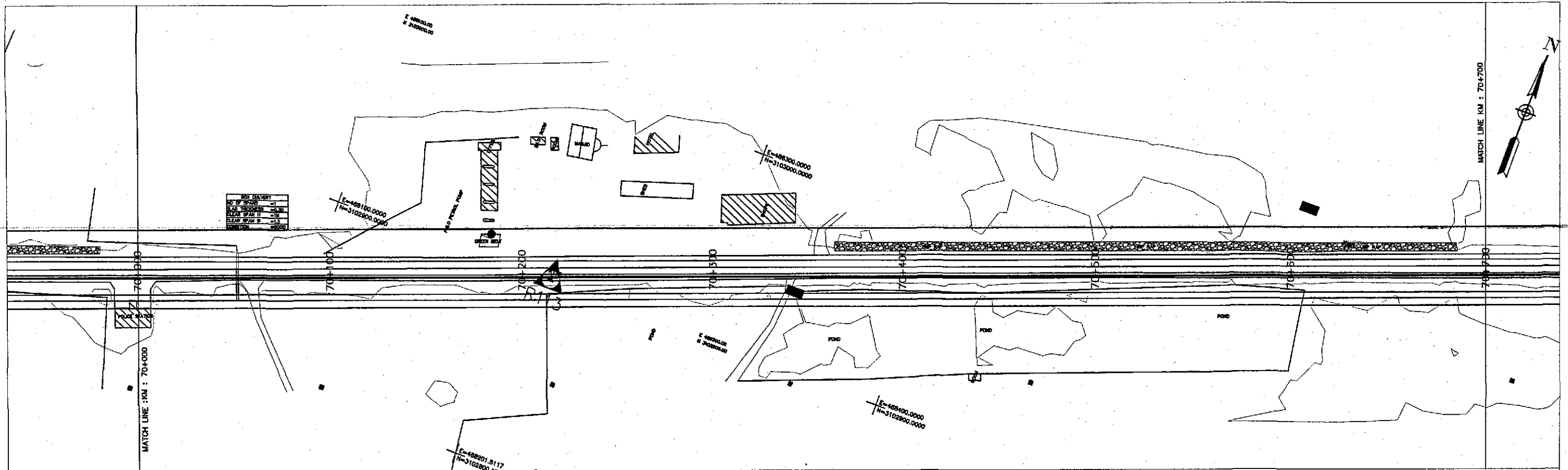
Horizontal Geometry	TANGENT 1613.78																							
Superelevation																								
Design Levels	64.321	64.323	64.325	64.327	64.328	64.330	64.332	64.334	64.336	64.338	64.340	64.342	64.344	64.346	64.348	64.350	64.351	64.353	64.355	64.357	64.359	64.361	64.363	64.365
Ground Levels	64.233	64.242	64.235	64.238	64.243	64.219	64.178	64.157	64.148	64.142	64.136	64.143	64.162	64.185	64.205	64.226	64.246	64.245	64.238	64.245	64.240	64.235	64.228	64.223
Chainage	68+603.82					68+700						68+800				68+900				69+000			69+100	
																							69+200	
																								69+300.82

TENDER DRAWINGS





Horizontal Geometry	TANGENT 1613.78										CURVE R=30000.00										TANGENT 1620.71															
Superelevation																																				
Design Levels		64.388	64.390	64.392	64.394	64.396	64.397	64.399	64.401	64.403	64.405	64.407	64.409	64.411	64.413	64.415	64.417	64.418	64.423	64.433	64.449	64.470	64.496	64.528	64.565	64.607	64.655	64.709	64.767	64.832	64.898	64.962	65.018	65.067	65.110	65.145
Ground Levels	64.226	64.232	64.236	64.239	64.274	64.295	64.294	64.274	64.271	64.265	64.258	64.251	64.258	64.265	64.336	64.369	64.400	64.430	64.465	64.522	64.593	64.634	64.588	64.529	64.471	64.507	64.565	64.641	64.717	64.778	64.815	64.852	64.888	64.907	64.946	64.982
Chainage	69+303.82	69+400				69+500				69+600				69+700				69+800				69+900				70+000.8										



Horizontal Geometry		TANGENT 1820.71																			
Superelevation																					
Design Levels		65.173	65.194	65.208	65.214	65.214	65.207	65.192	65.174	65.156	65.138	65.121	65.103	65.085	65.067	65.049	65.031	65.013	64.995	64.977	64.959
Ground Levels		65.007	65.028	65.041	65.040	65.041	65.043	65.045	65.047	65.047	65.042	65.032	65.000	64.967	64.934	64.902	64.872	64.841	64.810	64.867	64.856
Chainage		70+003.82	70+100	70+200	70+300	70+400	70+500	70+600	70+700.82												

TENDER DRAWINGS



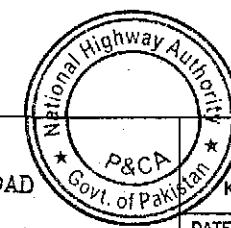
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ Project Manager M/S NESPAK		DRAWN M A NADEEM AWAN	
REV.	DATE	DESCRIPTION	APPROVED

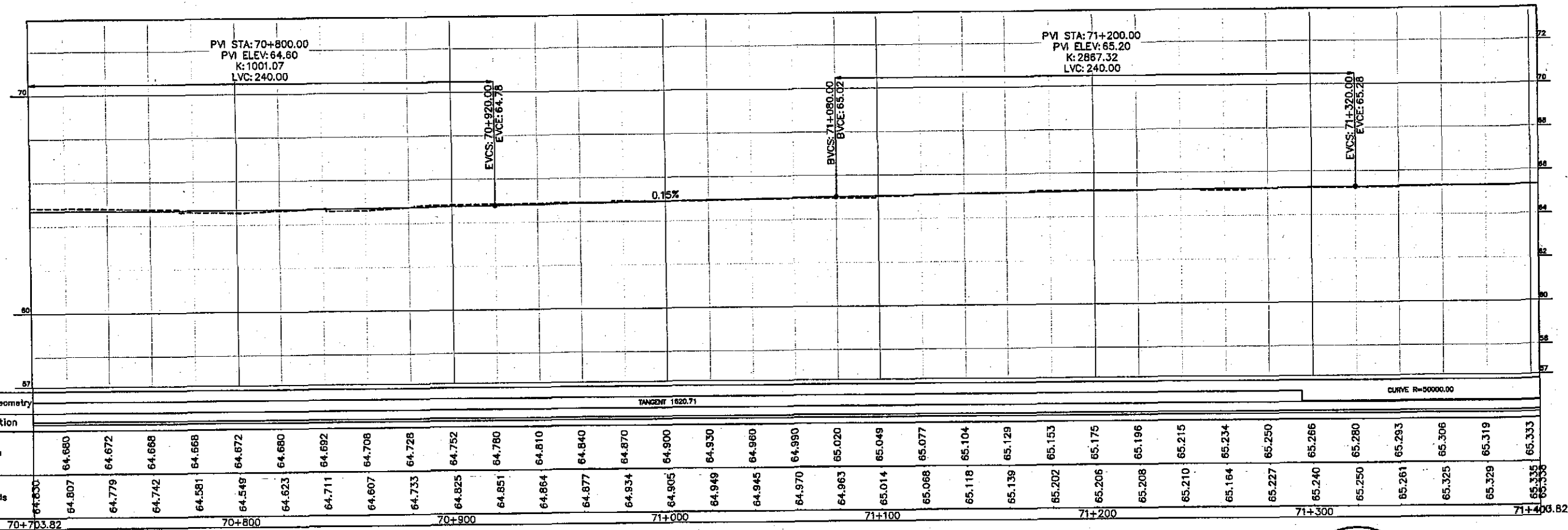
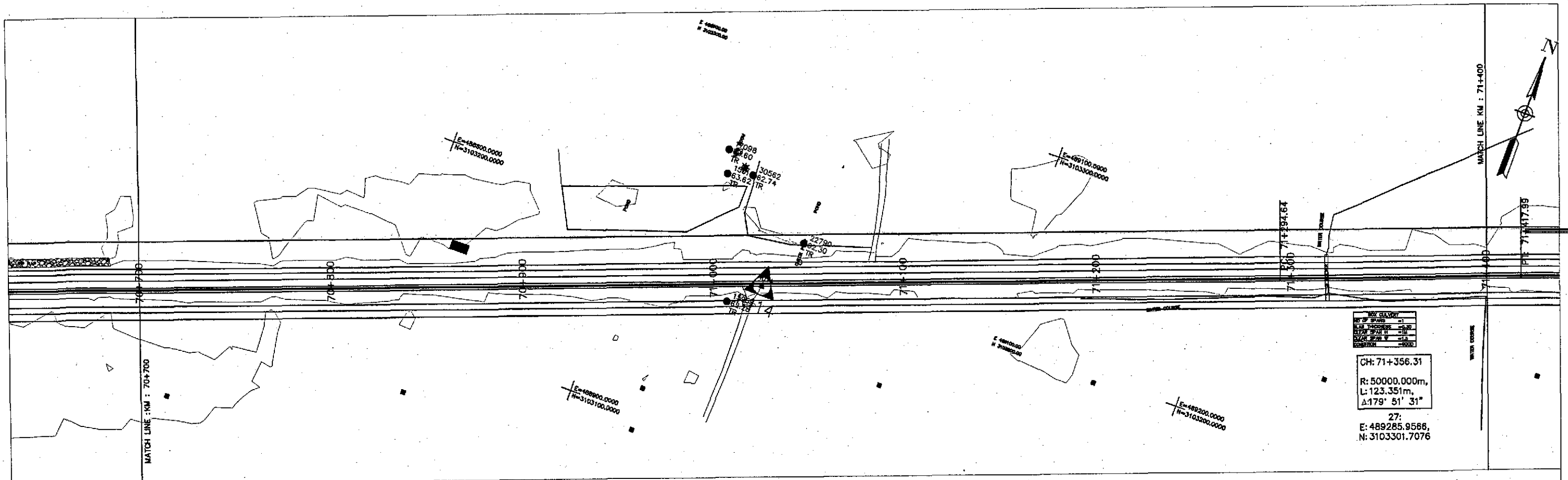
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 70+000 ~ KM: 70+700

DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P101

SCALE  
1:2000



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

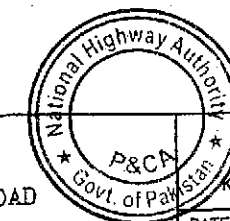


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE

KM: 70+700 ~ KM: 71+400

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P102

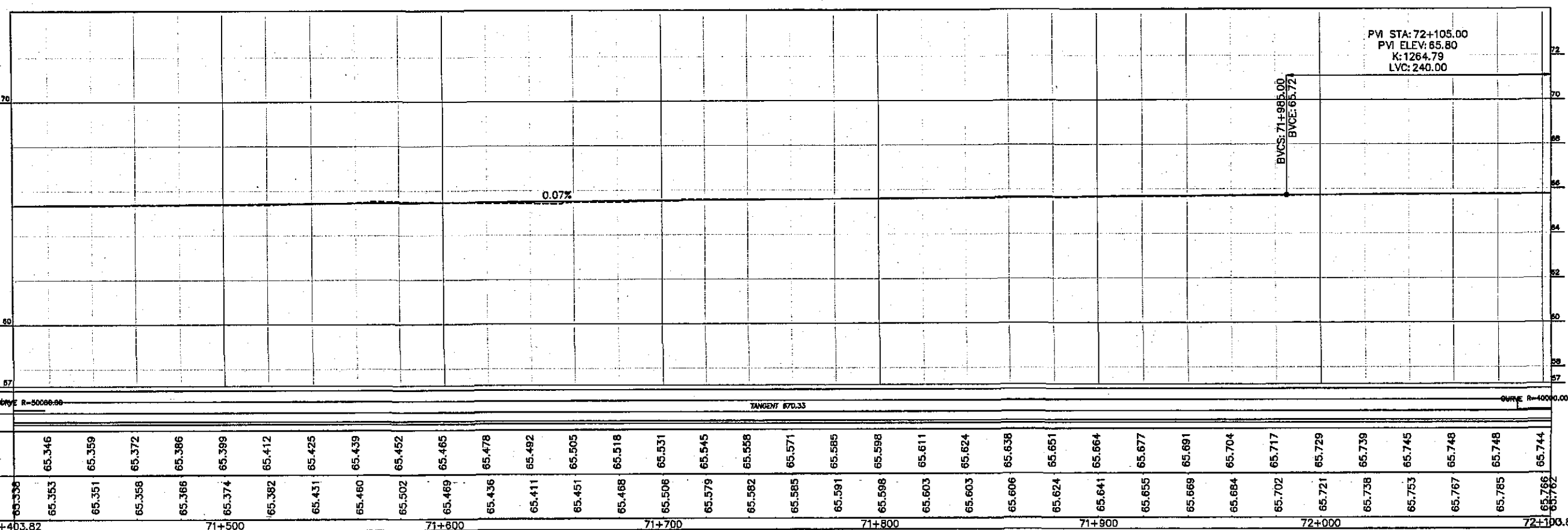


NO. OF STAKES	11
PLAN PROPORTION	1:500
PLAN SCALE	1:500
PLAN DATE	2018
PLAN NO.	103

CH: 71+356.31  
R: 50000.000m,  
L: 123.351m,  
Δ: 179° 51' 31"

27:  
E: 489285.9566,  
N: 3103301.7076

MATCH LINE : KM : 71+400



Horizontal Geometry	R=50000.00																				TANGENT 870.33		CURVE R=10000.00													
Superelevation																																				
Design Levels	65.346	65.359	65.372	65.386	65.399	65.412	65.425	65.439	65.452	65.465	65.478	65.492	65.505	65.518	65.531	65.545	65.558	65.571	65.585	65.598	65.611	65.624	65.638	65.651	65.664	65.677	65.691	65.704	65.717	65.729	65.739	65.745	65.748	65.748	65.744	
Ground Levels	65.338	65.353	65.351	65.358	65.366	65.374	65.382	65.431	65.460	65.502	65.469	65.436	65.411	65.451	65.488	65.506	65.579	65.582	65.585	65.591	65.598	65.603	65.603	65.606	65.624	65.641	65.655	65.669	65.684	65.702	65.721	65.738	65.753	65.767	65.785	65.786
Chainage	71+403.82	71+500				71+600				71+700				71+800				71+900				72+000				72+100.82										



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

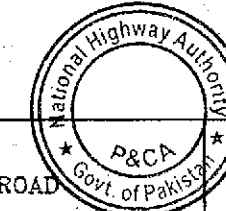


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



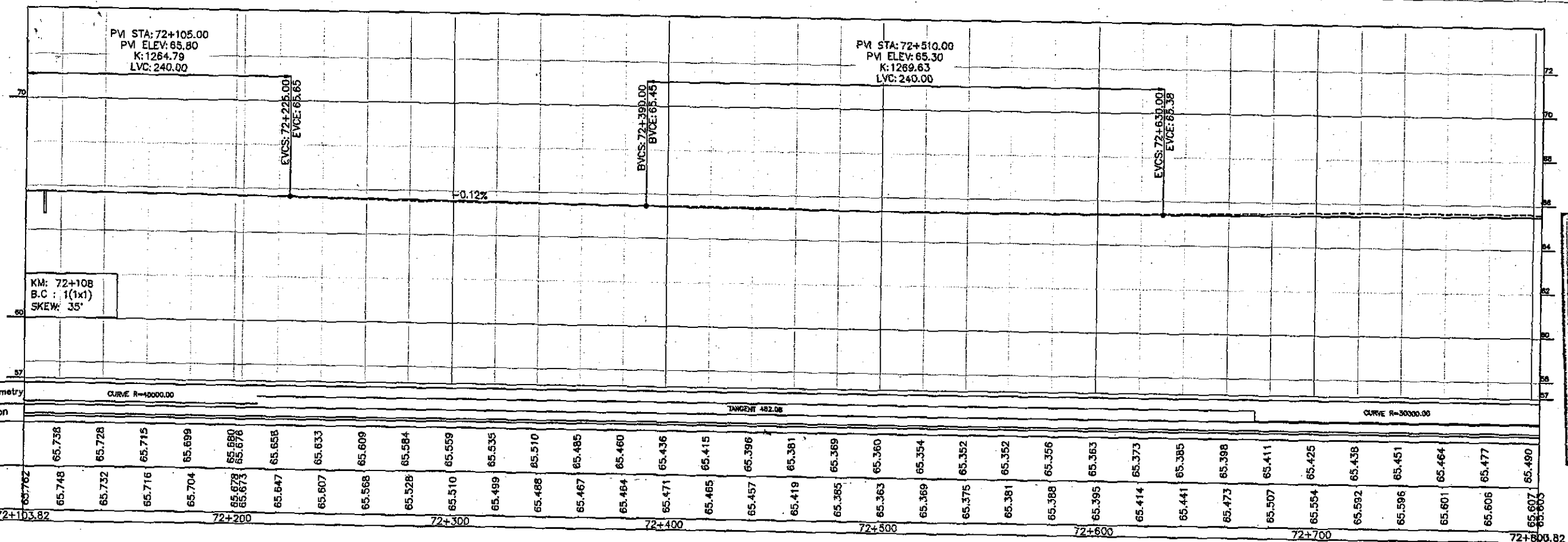
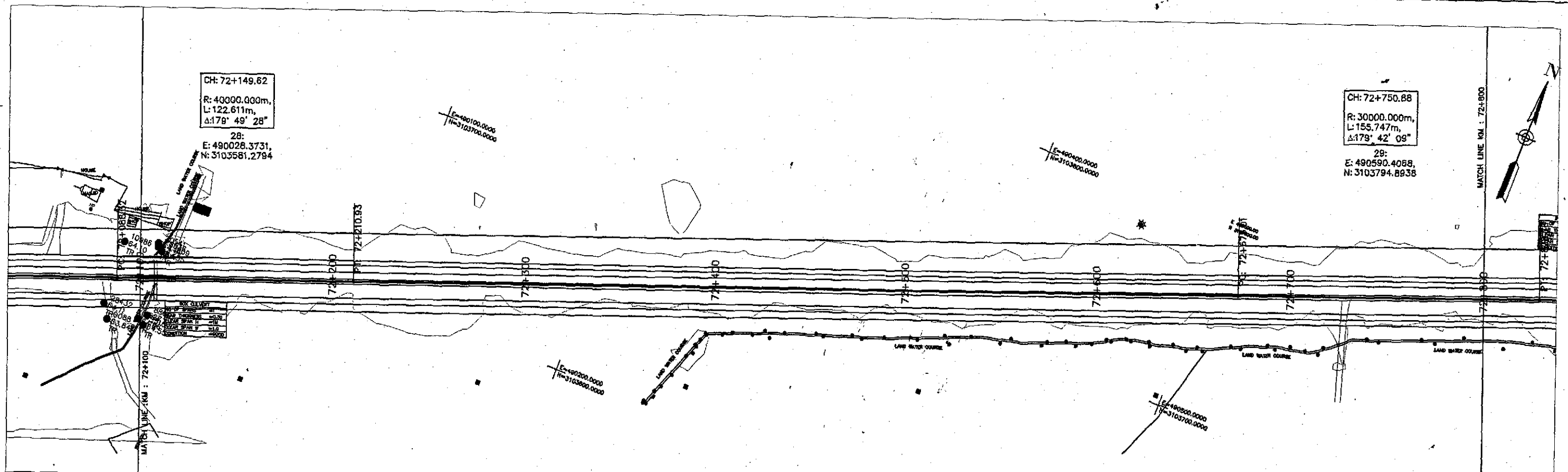
PLAN & PROFILE  
KM: 71+400 ~ KM: 72+100

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P103

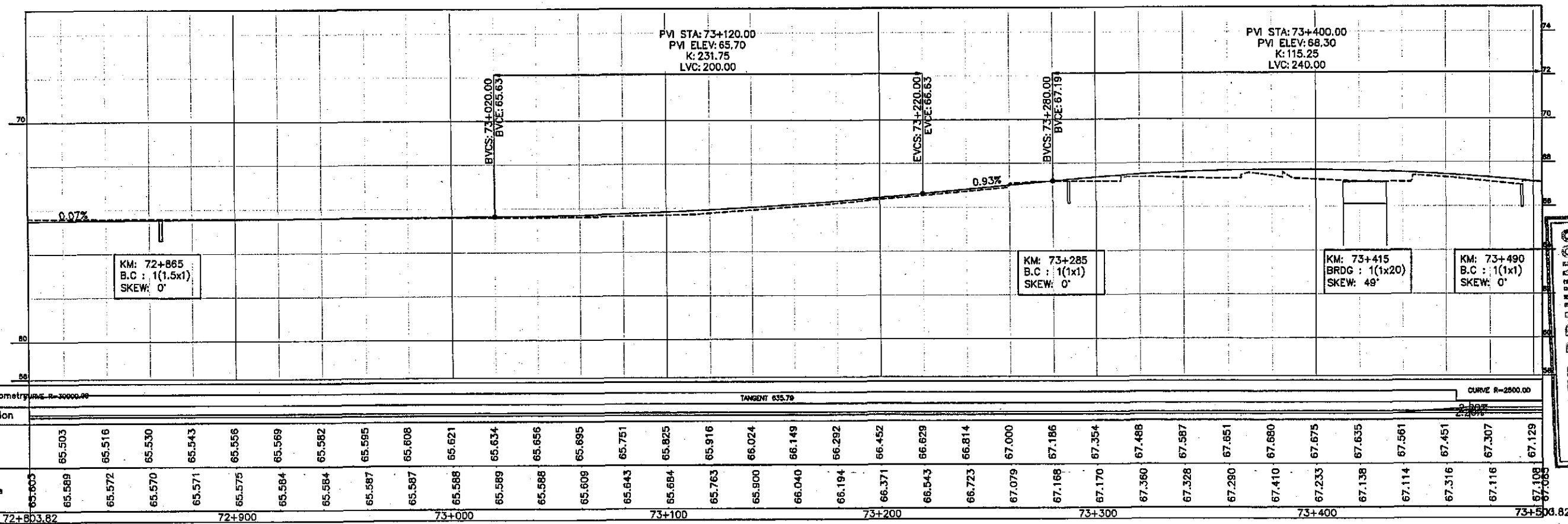
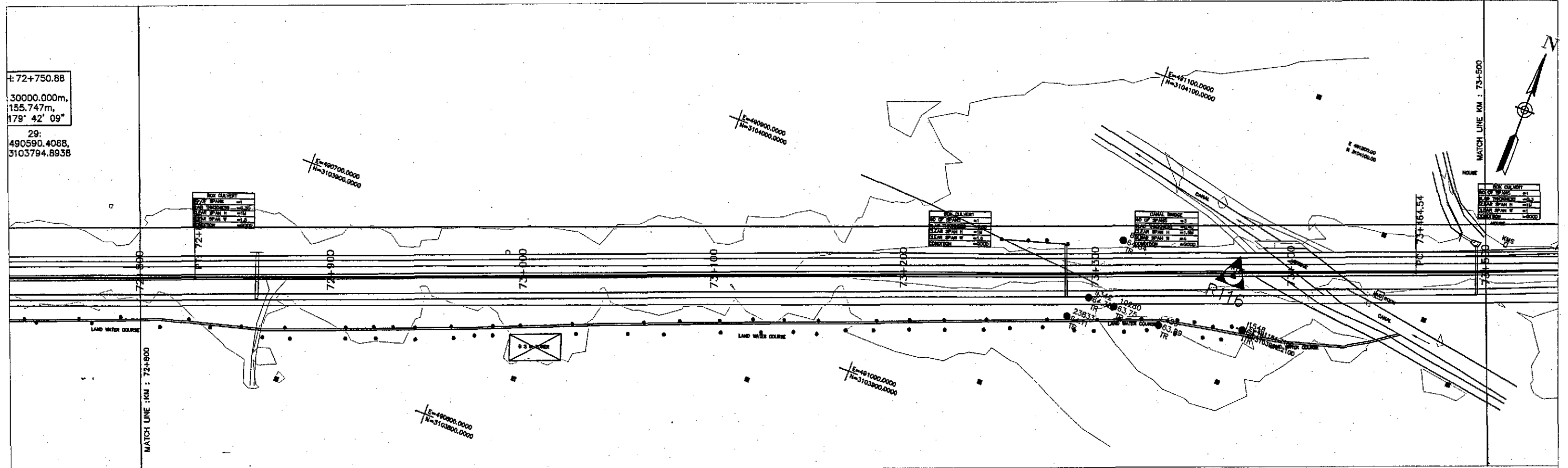
TENDER DRAWINGS

SCALE  
1:2000



Horizontal Geometry	CURVE R=40000.00																			
Superelevation	TANGENT 482.08																			
Design Levels	65.738	65.728	65.715	65.699	65.680	65.658	65.633	65.609	65.584	65.559	65.535	65.510	65.485	65.460	65.436	65.415	65.396	65.381	65.369	65.360
Ground Levels	65.762	65.748	65.732	65.716	65.704	65.678	65.673	65.647	65.607	65.568	65.528	65.510	65.499	65.488	65.467	65.464	65.471	65.465	65.457	65.419
Chainage	72+103.82	72+200	72+300	72+400	72+500	72+600	72+700	72+800.82												

TENDER DRAWINGS



Horizontal Geometry: R=2000.00		TANGENT 635.79																				CURVE R=2500.00														
Superelevation																																				
Design Levels	85.503	85.516	85.530	85.543	85.556	85.569	85.582	85.595	85.608	85.621	85.634	85.656	85.695	85.751	85.825	85.916	86.024	86.149	86.292	86.452	86.629	86.814	87.000	87.186	87.354	87.488	87.587	87.651	87.680	87.675	87.635	87.561	87.451	87.307	87.129	
Ground Levels	65.605	65.589	65.572	65.570	65.571	65.575	65.584	65.584	65.587	65.588	65.589	65.588	65.608	65.643	65.684	65.763	65.900	66.040	66.194	66.371	66.543	66.723	67.079	67.168	67.170	67.360	67.328	67.280	67.410	67.233	67.138	67.114	67.316	67.116	67.108	67.085
Chainage	72+803.82			72+900						73+000				73+100						73+200						73+300						73+400				73+503.82

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

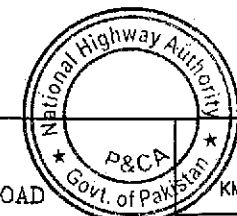


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

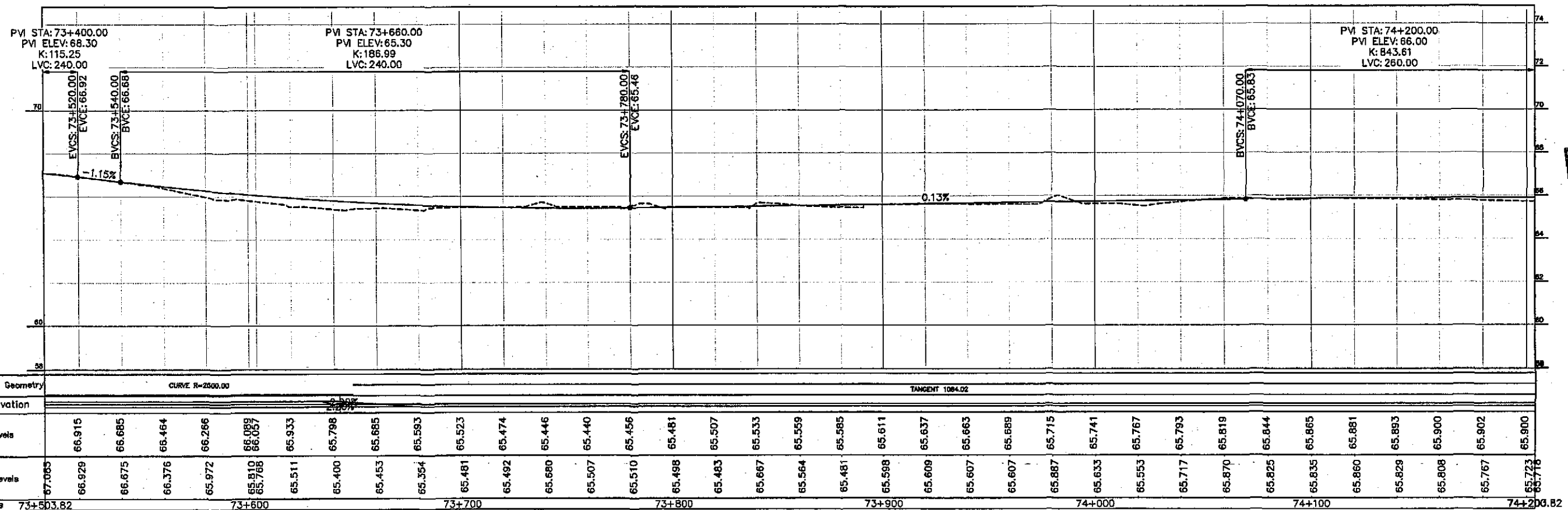
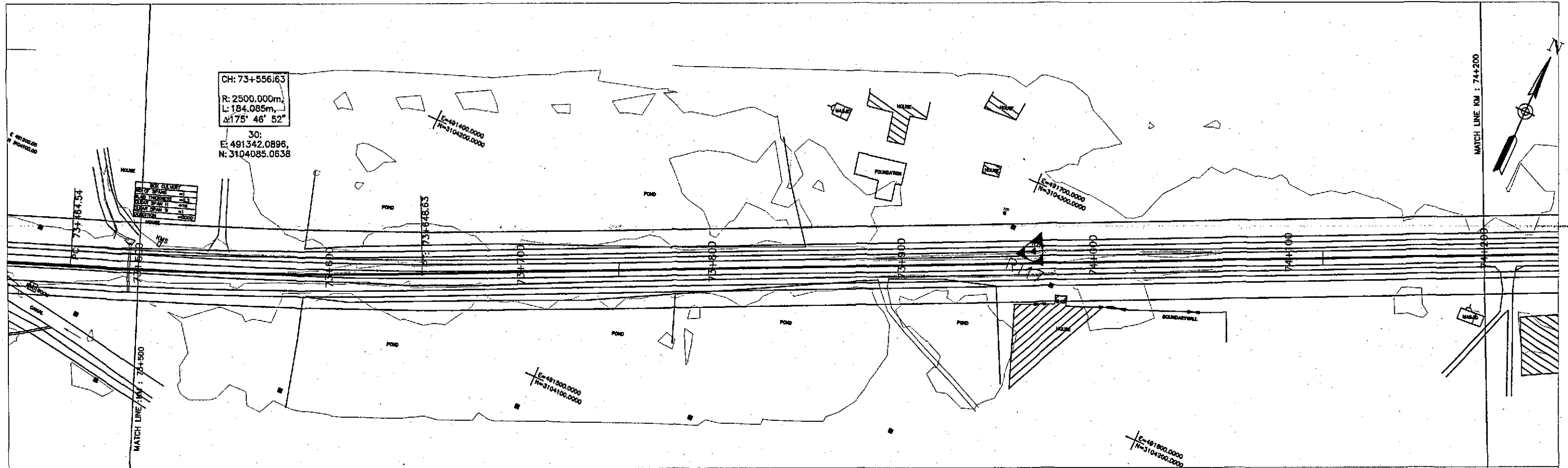
REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE	SCALE
KM: 72+800 ~ KM: 73+500	1:2000
DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P105





Horizontal Geometry	CURVE R=2500.00																TANGENT 1084.02																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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Design Levels		66.915		66.685		66.464		66.266		66.089		65.933		65.798		65.685		65.593		65.523		65.474		65.446		65.440		65.456		65.481		65.507		65.533		65.559		65.585		65.611		65.637		65.663		65.689		65.715		65.741		65.767		65.793		65.819		65.844		65.865		65.881		65.893		65.900		65.902		65.900																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Ground Levels	67.083	66.929		66.675		66.376		65.972		65.810	65.768	65.511		65.400		65.453		65.394		65.481		65.492		65.680		65.507		65.510		65.498		65.483		65.667		65.564		65.481		65.598		65.609		65.607		65.607		65.887		65.633		65.553		65.717		65.870		65.825		65.835		65.860		65.829		65.808		65.767		65.723	65.718																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Chainage	73+503.82					73+600								73+700														73+800																																										73+900																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				</

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

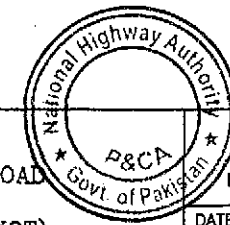


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

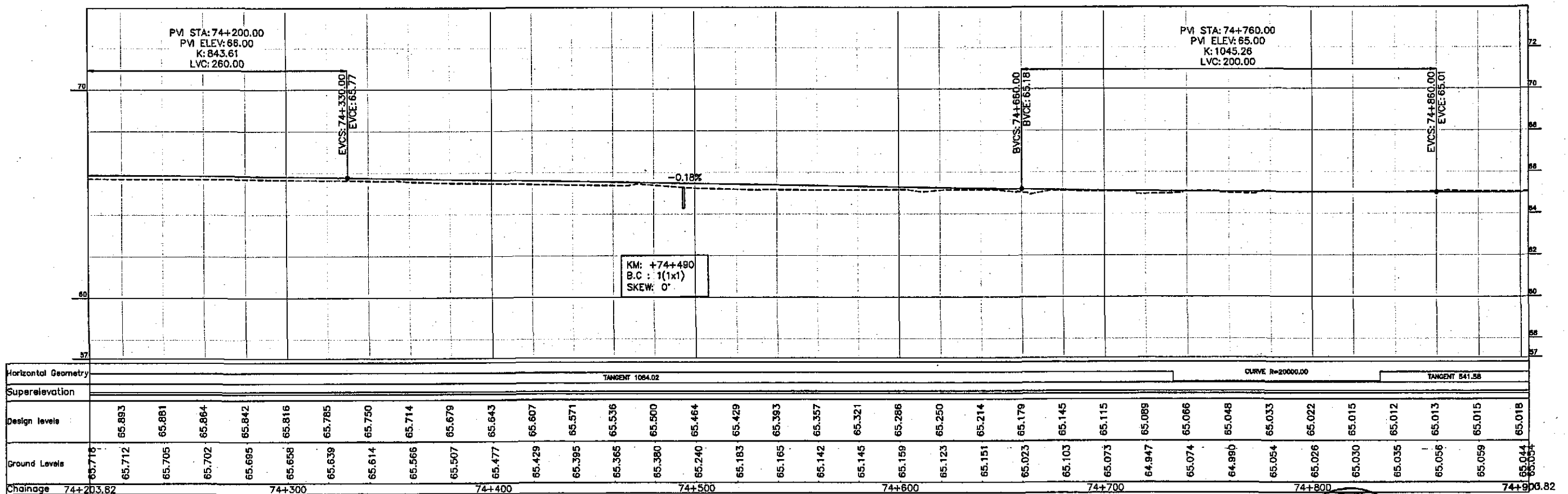
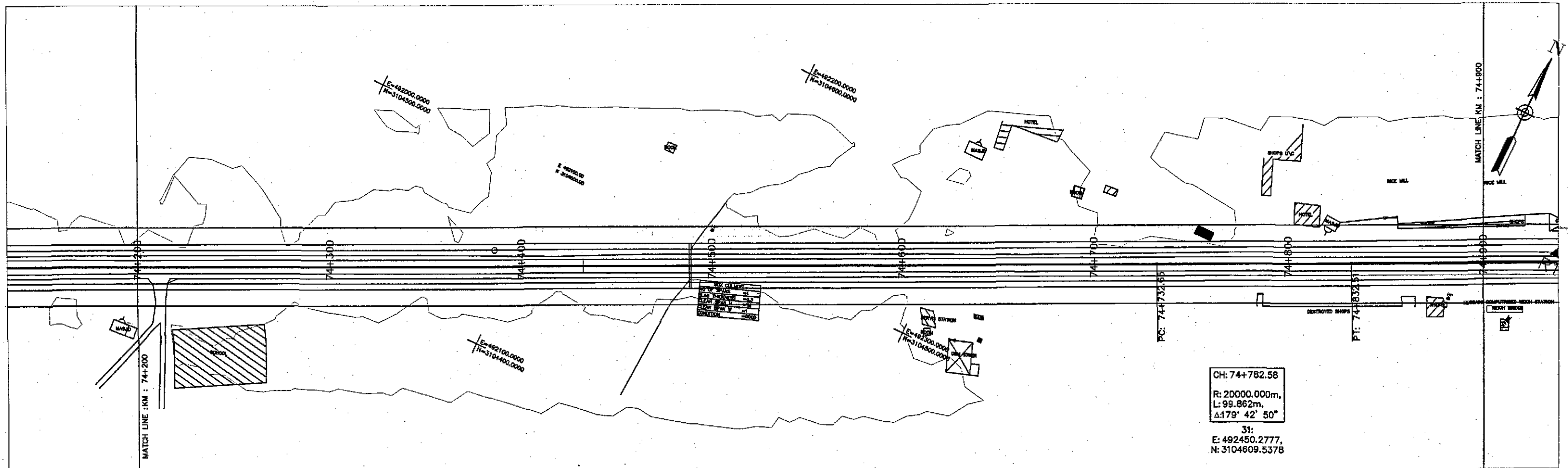
REV.	DATE	DESCRIPTION	APPROVED	APPROVED	DRAWN	M A NADEEM AWAN
					SUBMITTED	
					RECOMMENDED	
					CHD./VER.	

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAC

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE	SCALE
KM: 73+500 ~ KM: 74+200	1:2000
DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P106



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



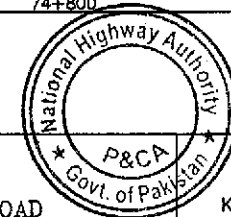
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

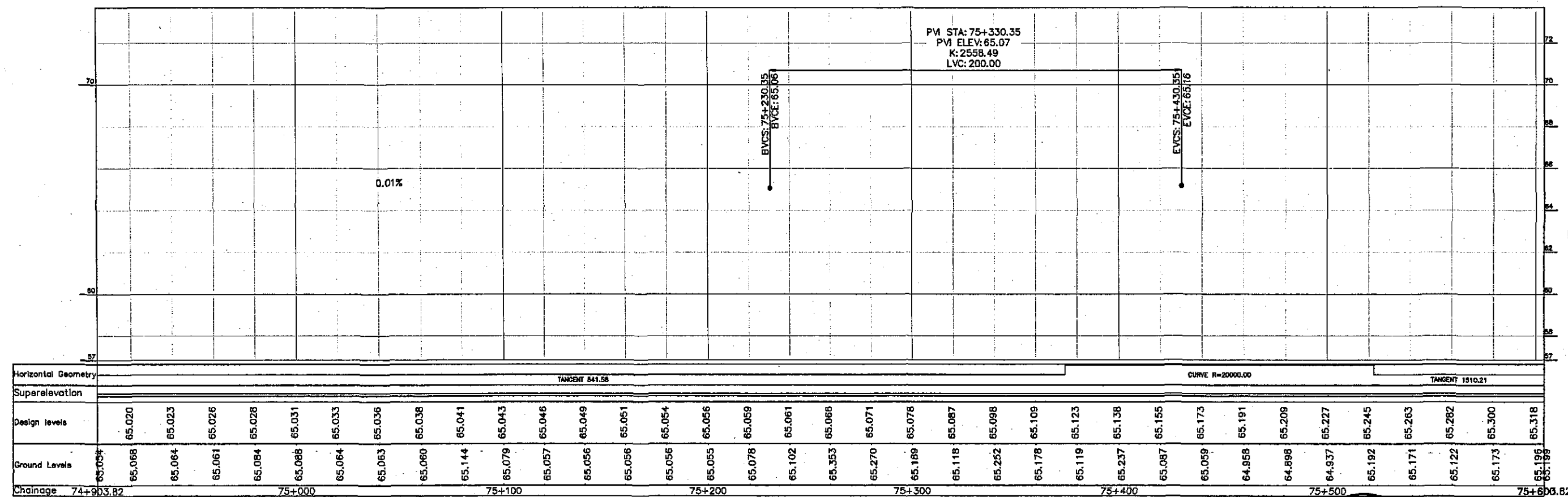
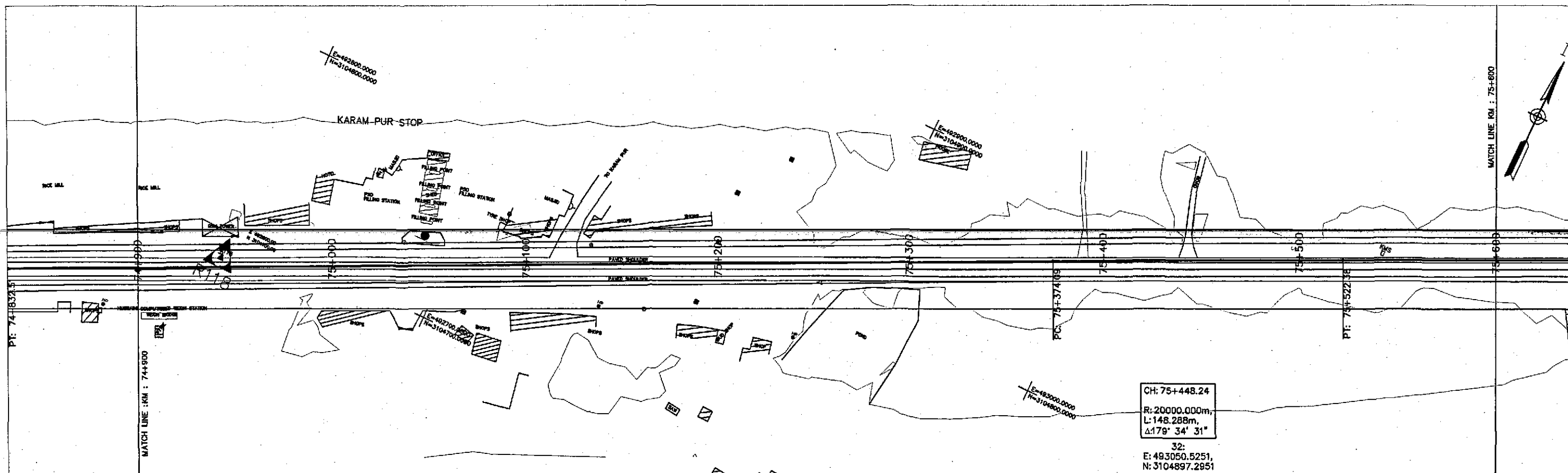
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 74+200 ~ KM: 74+900

DATE: JUNE, 2018  
DWG NO.: 3905/102/TD/P&P107

SCALE  
1:2000



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



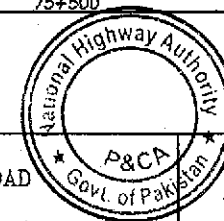
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

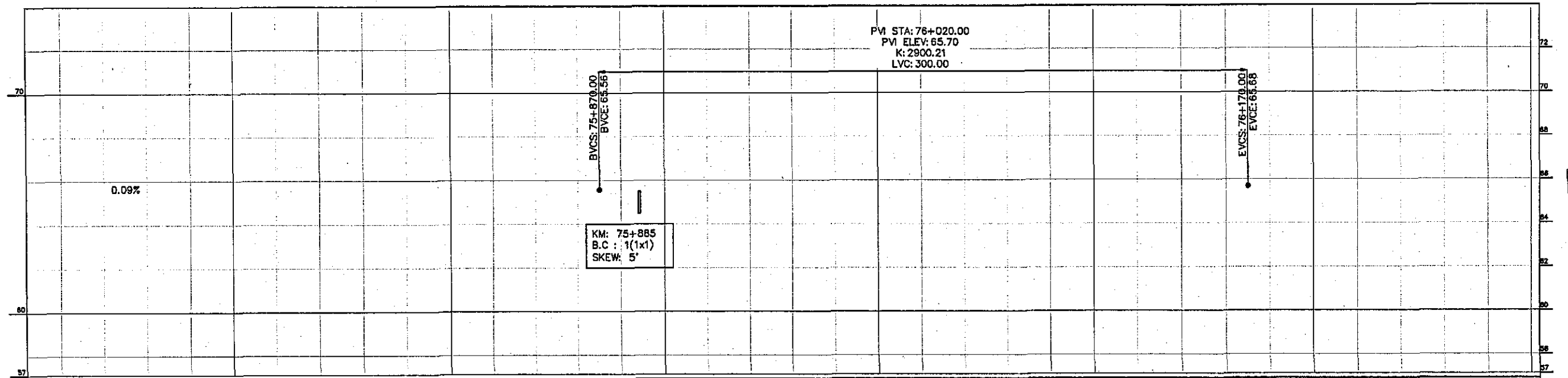
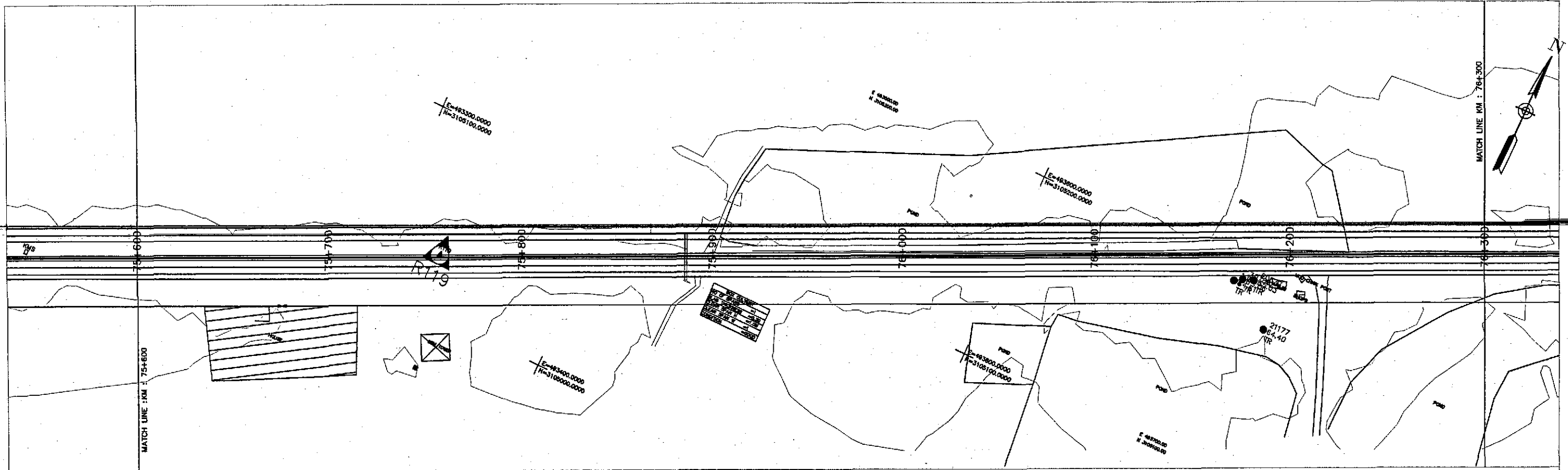


PLAN & PROFILE  
KM: 74+800 ~ KM: 75+600

SCALE  
1:2000

DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P108





Horizontal Geometry	TANGENT 1510.21																			
Superelevation																				
Design Levels	65.336	65.354	65.373	65.391	65.409	65.427	65.445	65.464	65.482	65.500	65.518	65.536	65.554	65.573	65.589	65.605	65.619	65.631	65.643	65.653
Ground Levels	65.199	65.213	65.133	65.239	65.166	65.130	65.128	65.240	65.253	65.219	65.201	65.336	65.403	65.362	65.499	65.556	65.547	65.577	65.699	65.715
Chainage	75+603.82					75+700					75+800				75+900				76+000	
																				76+100
																				76+200
																				76+300
																				76+303.82

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

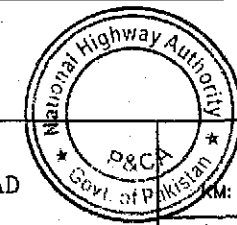


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

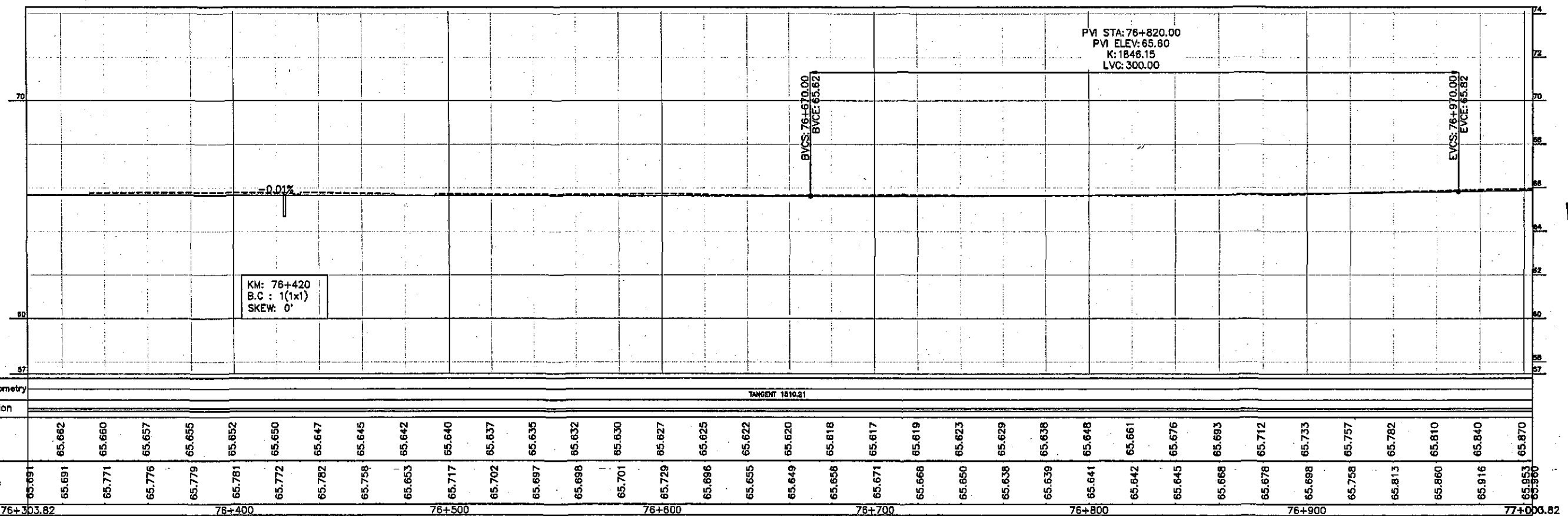
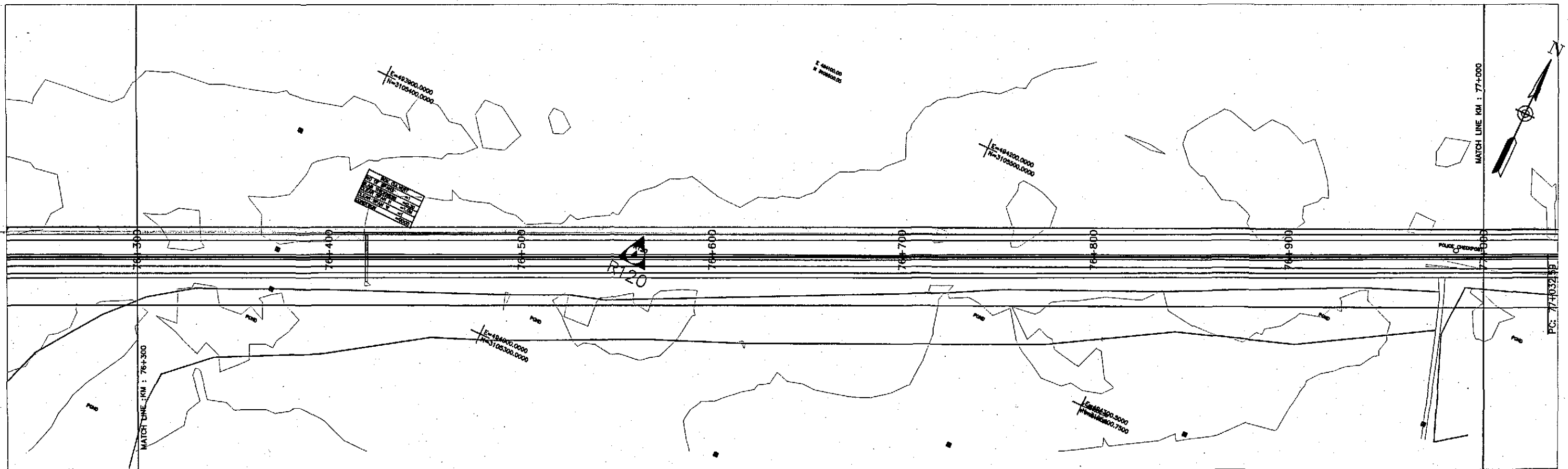


PLAN & PROFILE  
KM: 75+600 ~ KM: 76+300

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P109



Horizontal Geometry	TANGENT 1210.21																																			
Superelevation																																				
Design levels	65.662	65.660	65.657	65.655	65.652	65.650	65.647	65.645	65.642	65.640	65.637	65.635	65.632	65.630	65.627	65.625	65.622	65.620	65.618	65.617	65.619	65.623	65.629	65.638	65.648	65.661	65.676	65.693	65.712	65.733	65.757	65.782	65.810	65.840	65.870	
Ground Levels	65.691	65.691	65.771	65.776	65.779	65.781	65.772	65.782	65.758	65.653	65.717	65.702	65.697	65.698	65.701	65.729	65.696	65.655	65.649	65.658	65.671	65.668	65.650	65.638	65.639	65.641	65.642	65.645	65.668	65.678	65.698	65.758	65.813	65.860	65.916	65.953
Chainage	76+303.82		76+400				76+500				76+600				76+700				76+800				76+900				77+000.82									

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

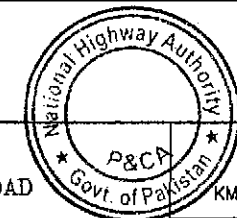


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAC

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE

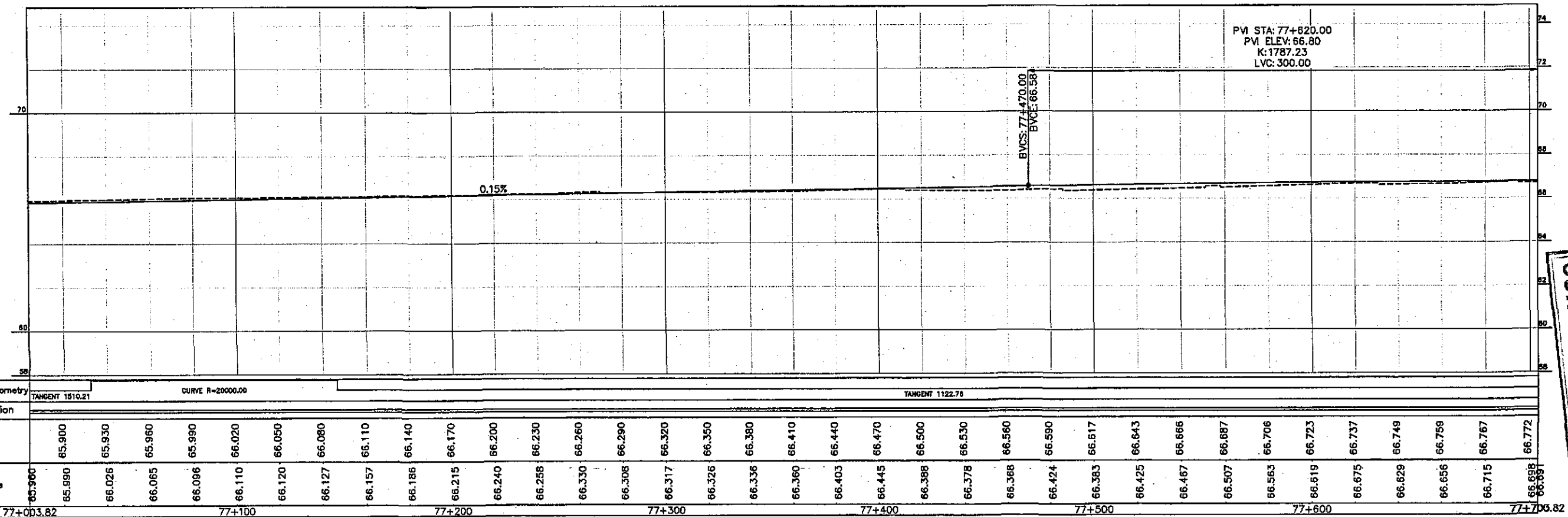
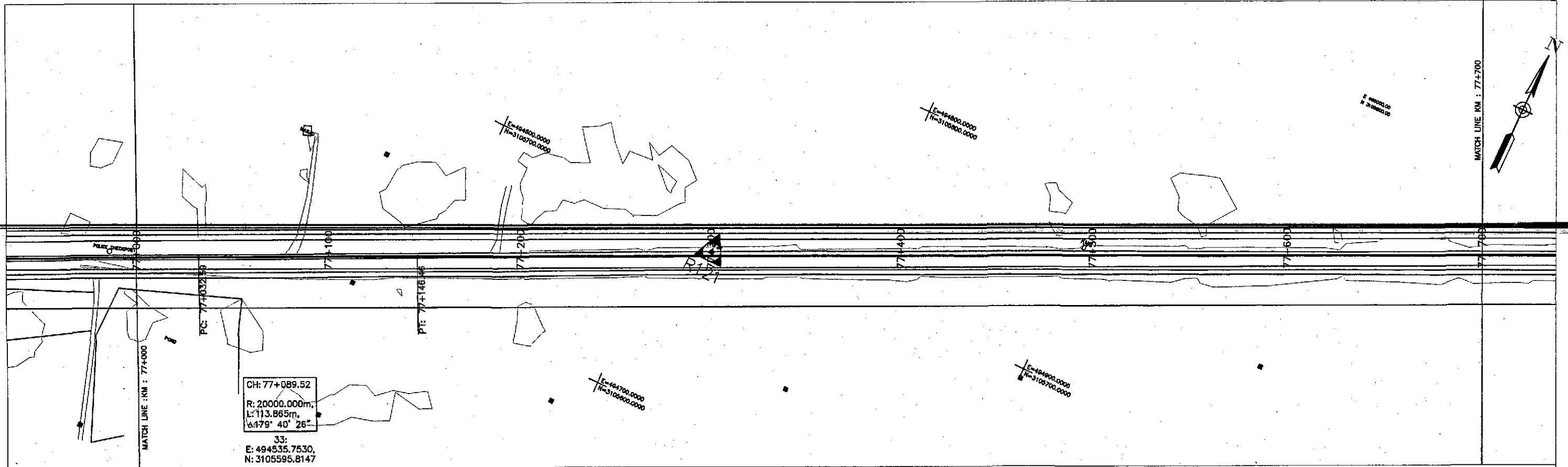
KM: 76+300 ~ KM: 77+000

SCALE

1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P110



Horizontal Geometry	TANGENT 1510.21		CURVE R=20000.00										TANGENT 1122.76																								
Superelevation																																					
Design Levels	65.900	65.900	65.930	65.960	65.990	66.020	66.050	66.080	66.110	66.140	66.170	66.200	66.230	66.260	66.290	66.320	66.350	66.380	66.410	66.440	66.470	66.500	66.530	66.560	66.590	66.617	66.643	66.666	66.687	66.706	66.723	66.737	66.749	66.759	66.767	66.772	
Ground Levels	65.900	65.990	66.026	66.065	66.096	66.110	66.120	66.127	66.157	66.186	66.215	66.240	66.258	66.330	66.308	66.317	66.326	66.336	66.360	66.403	66.445	66.398	66.378	66.368	66.424	66.383	66.425	66.467	66.507	66.563	66.619	66.675	66.629	66.656	66.715	66.698	66.691
Chainage	77+003.82	77+100				77+200				77+300				77+400				77+500				77+600				77+700.82											

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

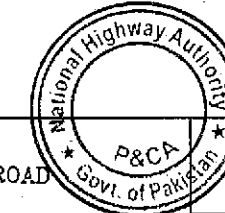


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAC

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



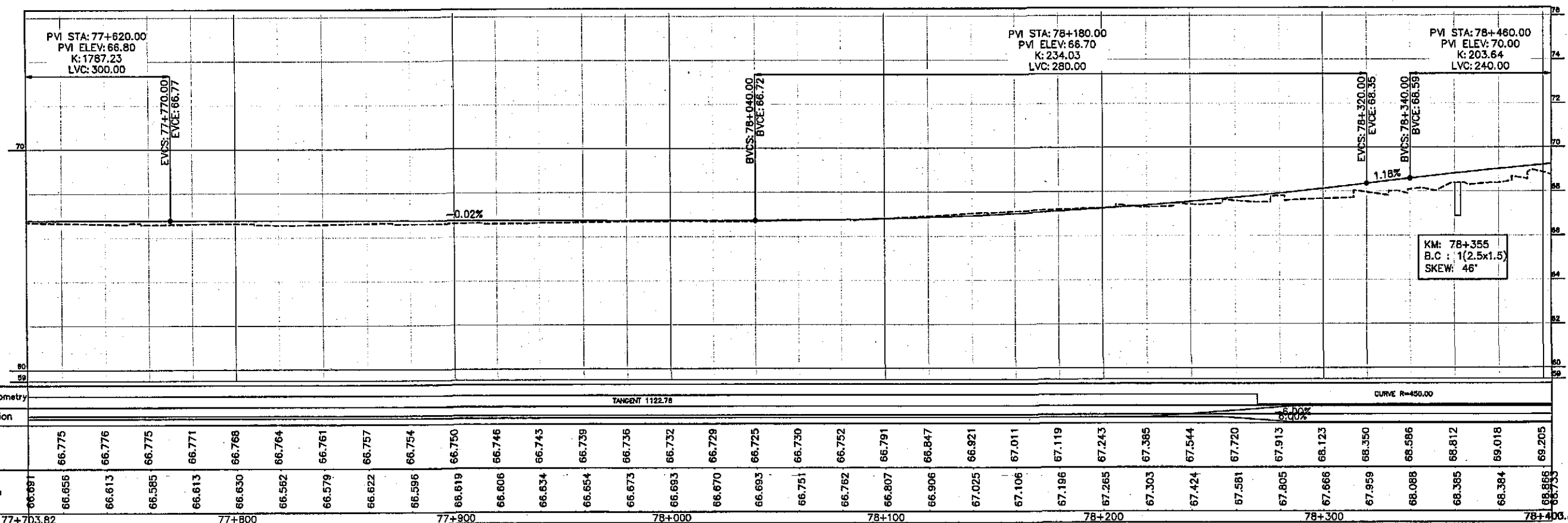
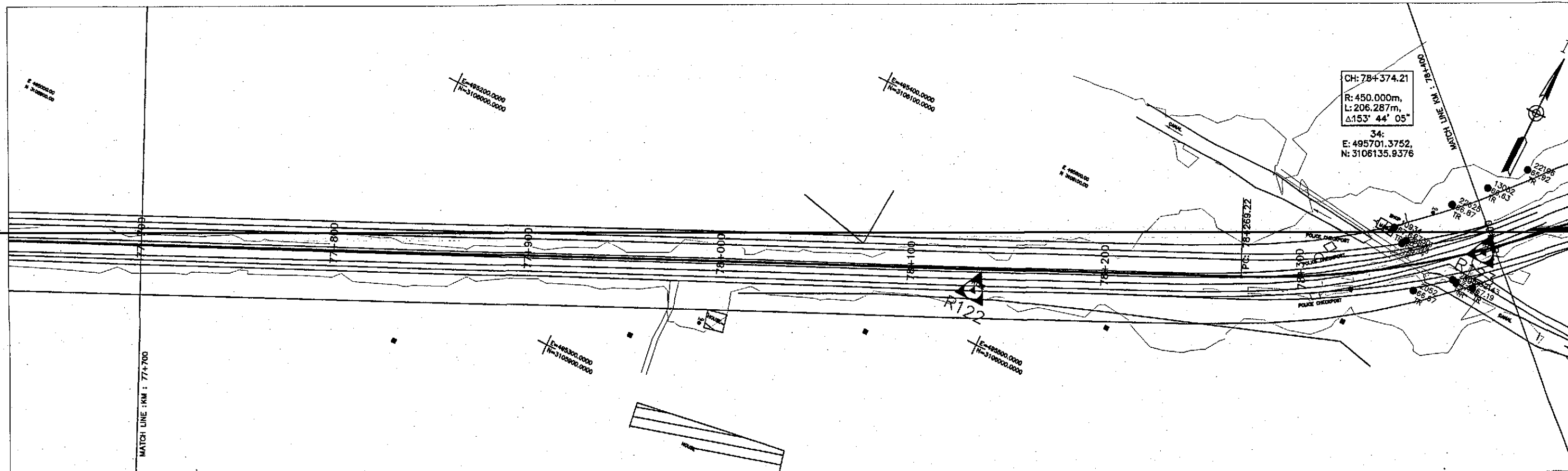
PLAN & PROFILE  
KM: 77+000 ~ km: 77+700

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P111





TENDER DRAWINGS



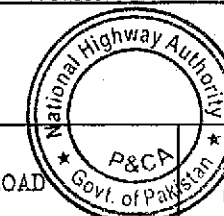
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ Project Manager M/S NESPAK		DRAWN M A NADEEM AWAN	
REV.	DATE	DESCRIPTION	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

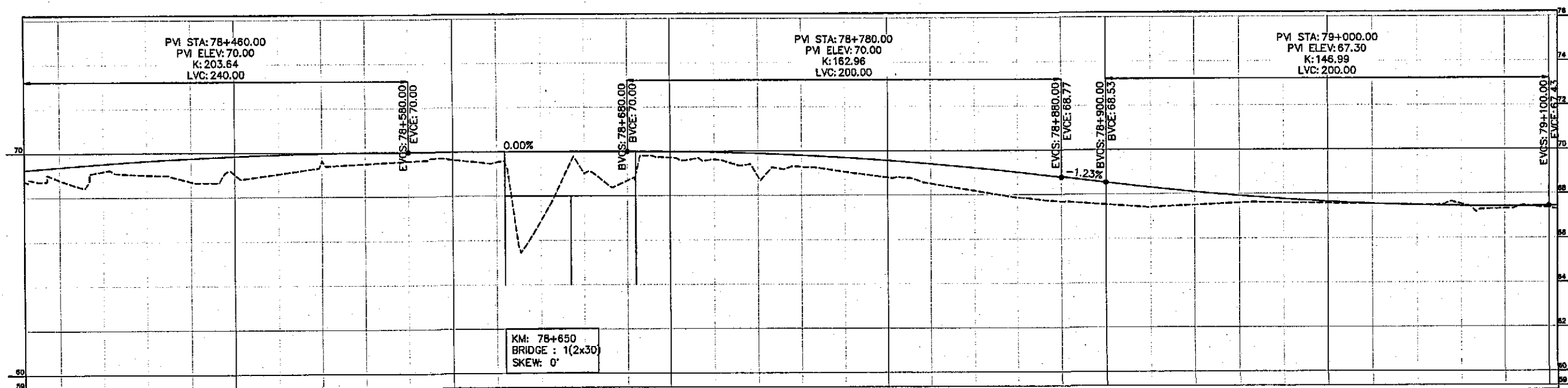
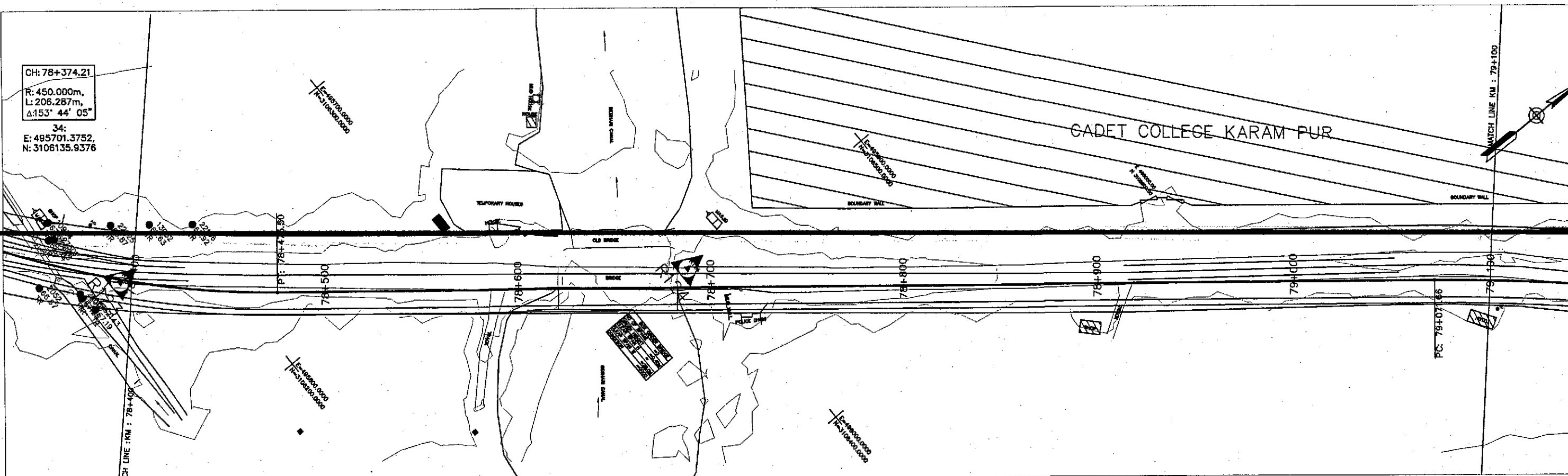


PLAN & PROFILE  
KM: 77+700 ~ KM: 78+400

SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P112



Horizontal Geometry	CURVE R=450.00																				TANGENT 598.15										CURVE R=1000.00									
Superelevation	<del>6.00%</del> 5.00%																																							
Design Levels	69.371	69.519	69.646	69.754	69.843	69.912	69.961	69.990	70.000	70.000	70.000	70.000	70.000	70.000	69.988	69.951	69.890	69.804	69.693	69.558	69.399	69.215	69.006	68.773	68.527	68.295	68.091	67.913	67.763	67.640	67.544	67.476	67.434	67.420	67.433					
Ground Levels	68.733	68.785	69.176	69.008	68.703	69.028	69.041	69.628	69.479	69.595	69.642	69.527	69.674	69.003	68.677	69.714	69.623	68.835	69.280	69.051	68.791	68.506	68.179	67.857	67.678	67.536	67.394	67.500	67.594	67.596	67.565	67.534	67.484	67.519	67.309	67.341				
Chainage	78+403.82				78+500					78+600				78+700					78+800					78+900				79+000						79+100						

TENDER DRAWINGS



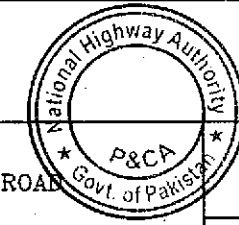
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

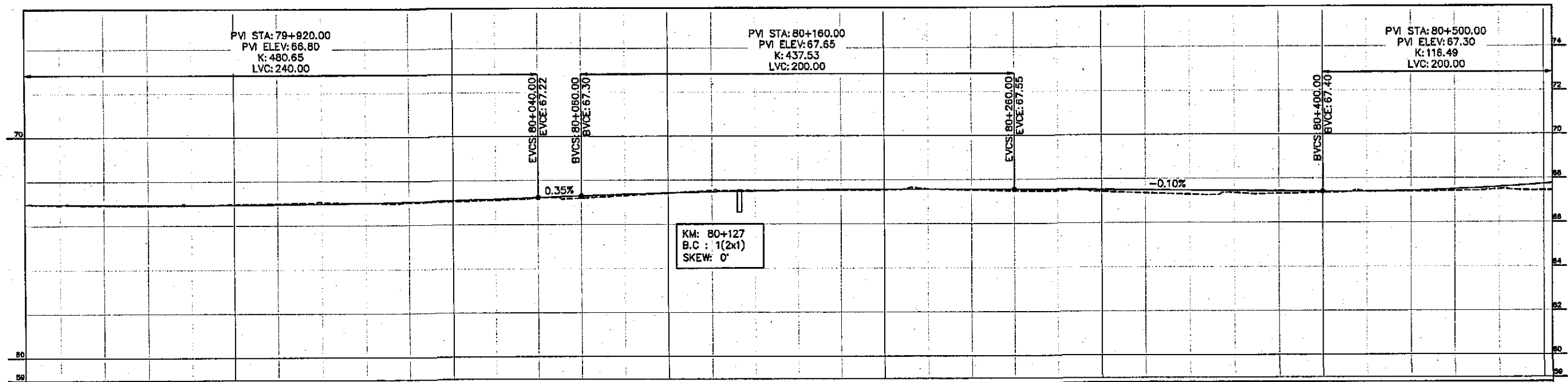
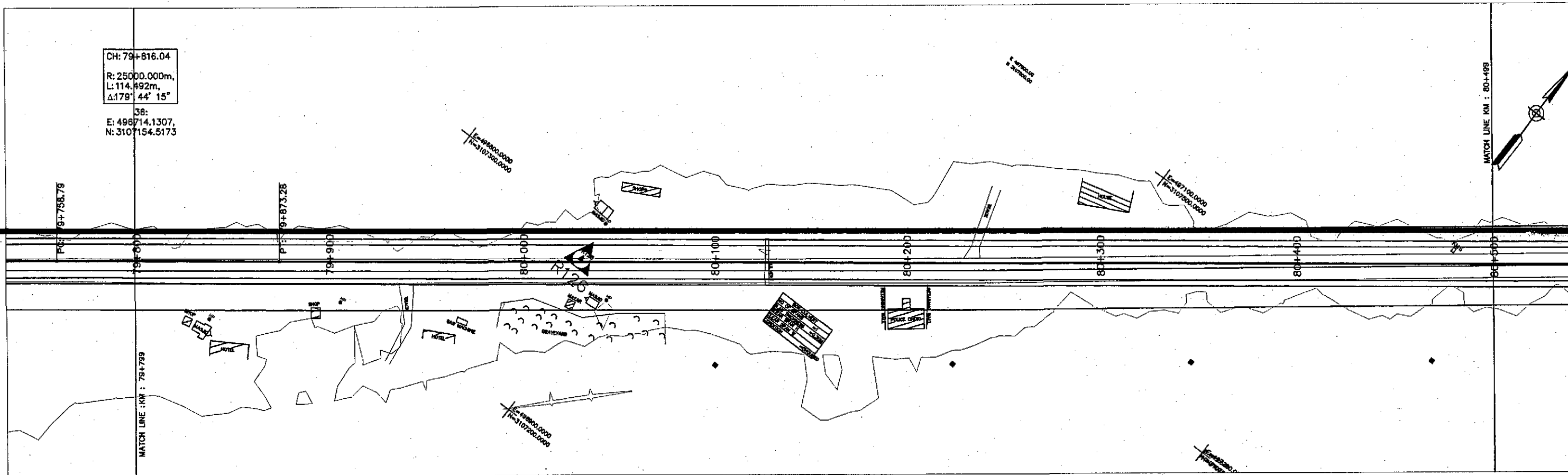
JAWAD UL HAQ		DRAWN		M A NADEEM AWAN	
Project Manager		SUBMITTED			
M/S NESPAK		RECOMMENDED			
REV.	DATE	DESCRIPTION	APPROVED	CHD./VER.	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



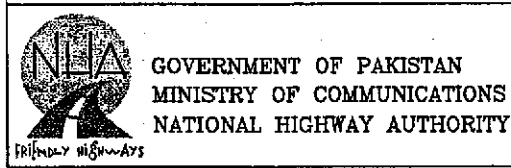
PLAN & PROFILE		SCALE
KM: 78+400 ~ KM: 79+100		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P113	

CH: 79+816.04  
R: 25000.000m,  
L: 114.492m,  
Δ: 179° 44' 15"  
36:  
E: 498714.1307,  
N: 3107154.5173



Horizontal Geometry	CURVE R=25000.00																			TANGENT 989.18																
Superelevation																																				
Design Levels	66.949	66.933	66.925	66.925	66.933	66.950	66.975	67.008	67.050	67.100	67.158	67.225	67.296	67.362	67.419	67.467	67.506	67.536	67.556	67.568	67.570	67.563	67.547	67.526	67.506	67.485	67.465	67.444	67.424	67.403	67.400	67.430	67.496	67.595	67.729	
Ground Levels	66.971	66.931	66.935	66.924	66.933	66.959	66.994	67.051	67.005	67.021	67.052	67.112	67.205	67.196	67.301	67.408	67.539	67.531	67.536	67.543	67.549	67.571	67.523	67.476	67.451	67.417	67.350	67.283	67.346	67.313	67.347	67.387	67.399	67.416	67.500	67.443
Chainage	79+803.82				79+900					80+000					80+100					80+200					80+300					80+400					80+503.82	

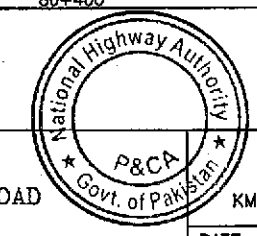
TENDER DRAWINGS



**NESPAC**  
**NATIONAL ENGINEERING SERVICES**  
**PAKISTAN (PVT.) LTD.**

<b>JAWAD UL HAQ</b>		DRAWN		M A NADEEM AWAN	
Project Manager		SUBMITTED			
M/S NESPAC		RECOMMENDED			
REV.		DATE		CHD./VER.	
		DESCRIPTION		APPROVED	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

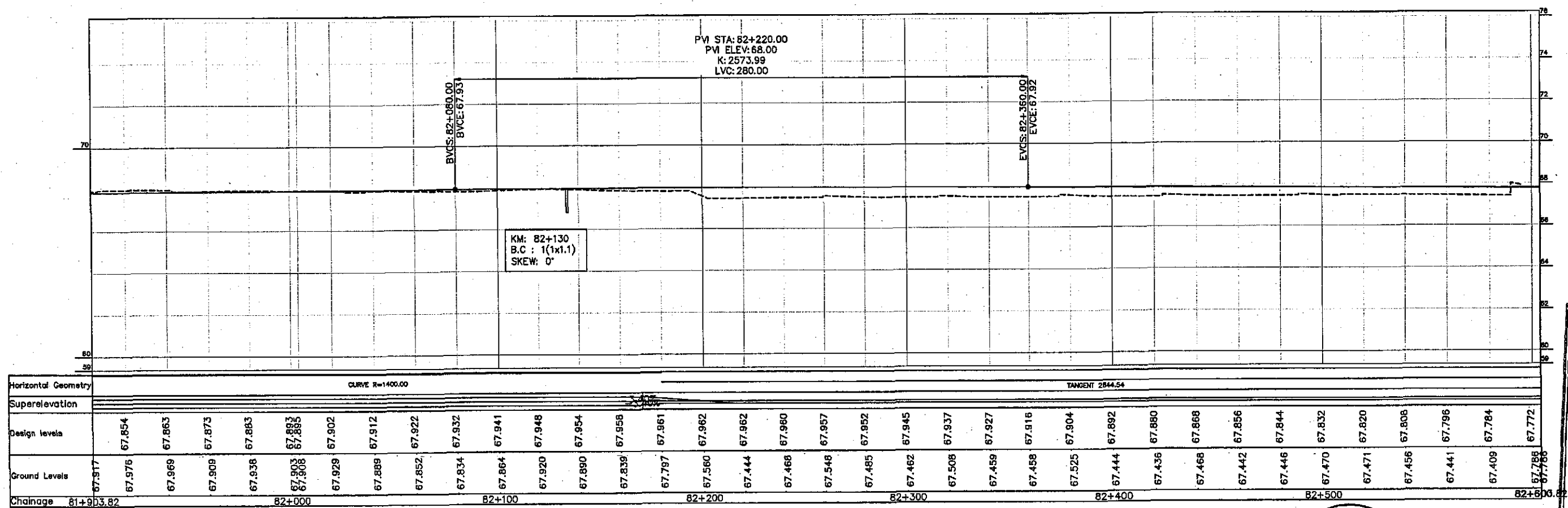
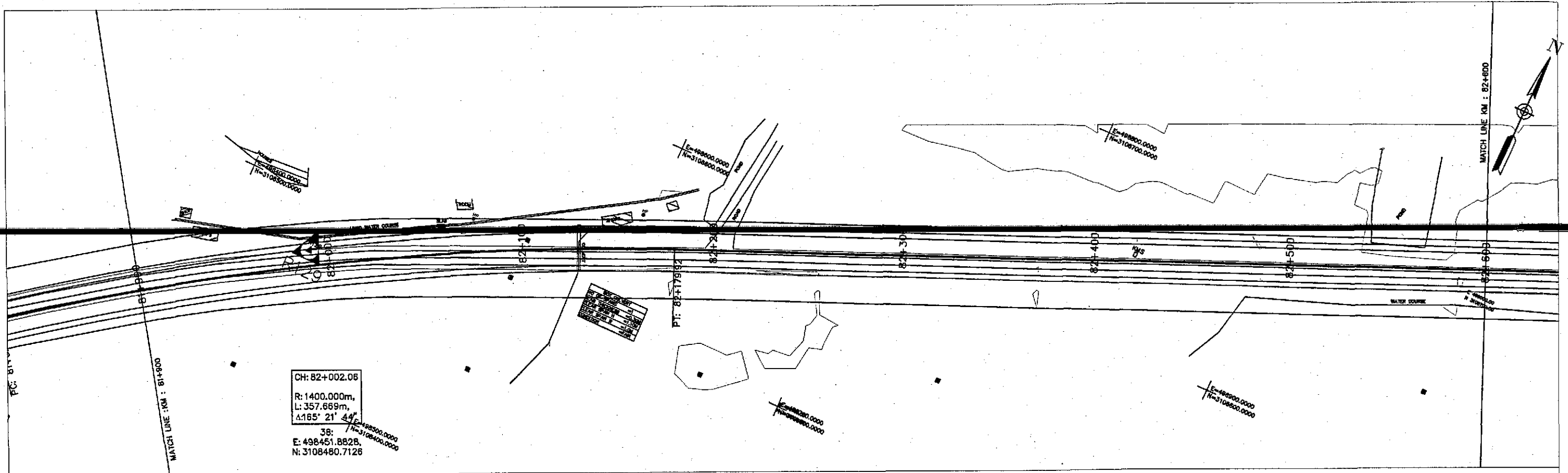


<b>PLAN &amp; PROFILE</b>		SCALE	
KM: 79+800 ~ KM: 80+500		1:2000	
DATE	DWG NO.		
JUNE, 2018	3905/102/TD/P&P115		









TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
 MINISTRY OF COMMUNICATIONS  
 NATIONAL HIGHWAY AUTHORITY

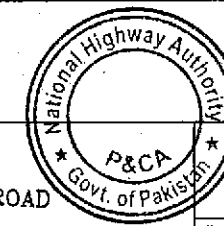


NATIONAL ENGINEERING SERVICES  
 PAKISTAN (PVT.) LTD.

**JAWADUL HAQ**  
 Project Manager  
 M/S NESPAK

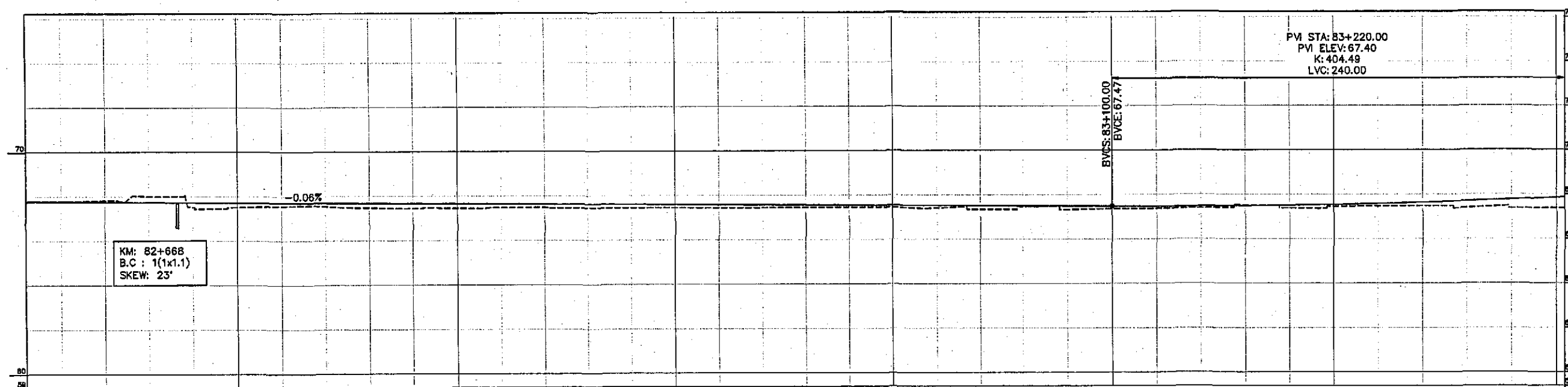
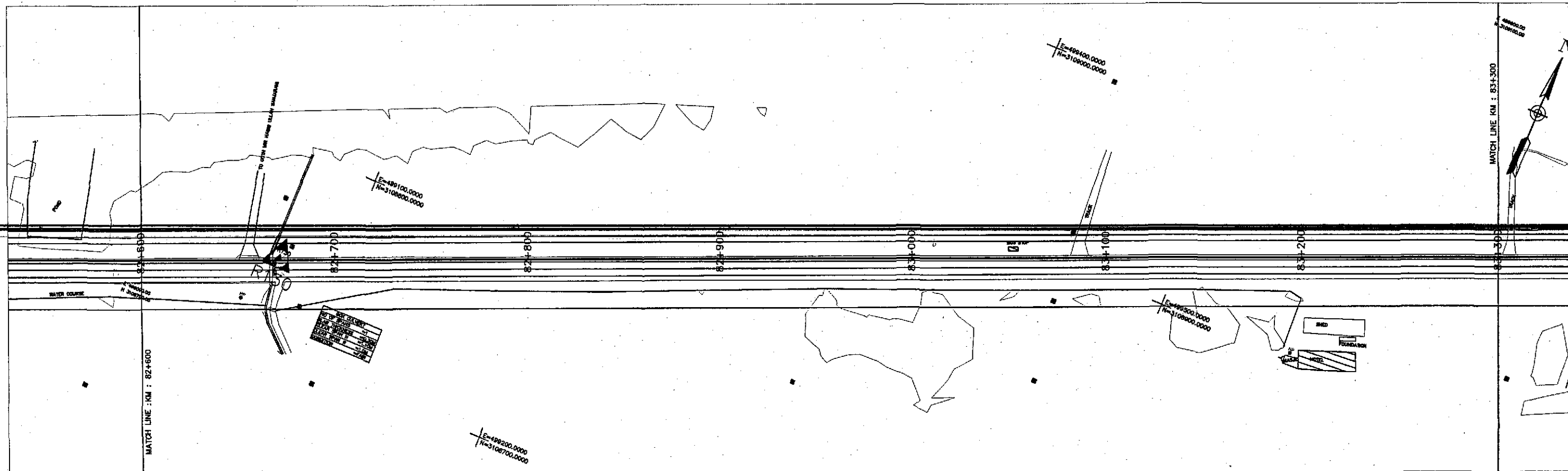
REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
 PACKAGE-I  
 (SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 81+900 ~ km: 82+600		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P118	





Horizontal Geometry		TANGENT 2844.54	
Superelevation			
Design Levels	67.760 67.748 67.736 67.724 67.712 67.700 67.688 67.676 67.664 67.652 67.640 67.628 67.616 67.604 67.592 67.580 67.568 67.556 67.544 67.532 67.520 67.508 67.496 67.484 67.472 67.465 67.468 67.481 67.503 67.536 67.578 67.630 67.692 67.765 67.846		
Ground Levels	67.786 67.788 67.814 68.001 67.520 67.510 67.552 67.535 67.469 67.445 67.446 67.474 67.482 67.446 67.444 67.451 67.434 67.437 67.443 67.450 67.447 67.405 67.339 67.455 67.320 67.353 67.367 67.390 67.510 67.377 67.459 67.466 67.473 67.390 67.375 67.377		
Chainage	82+603.82 82+700 82+800 82+900 83+000 83+100 83+200 83+300.82		



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



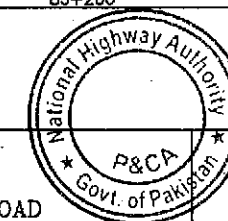
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

REV.	DATE	DESCRIPTION	APPROVED
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RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



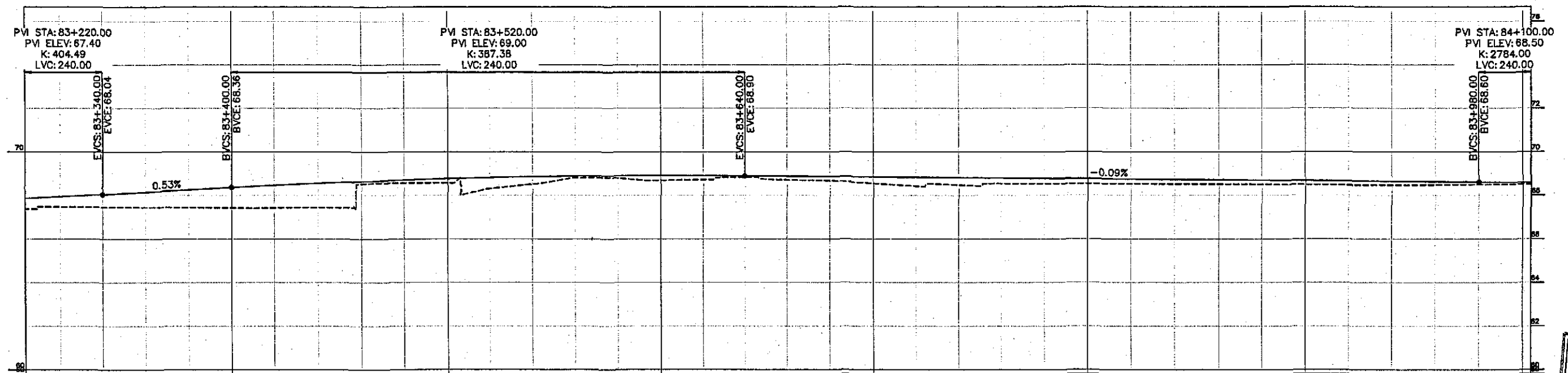
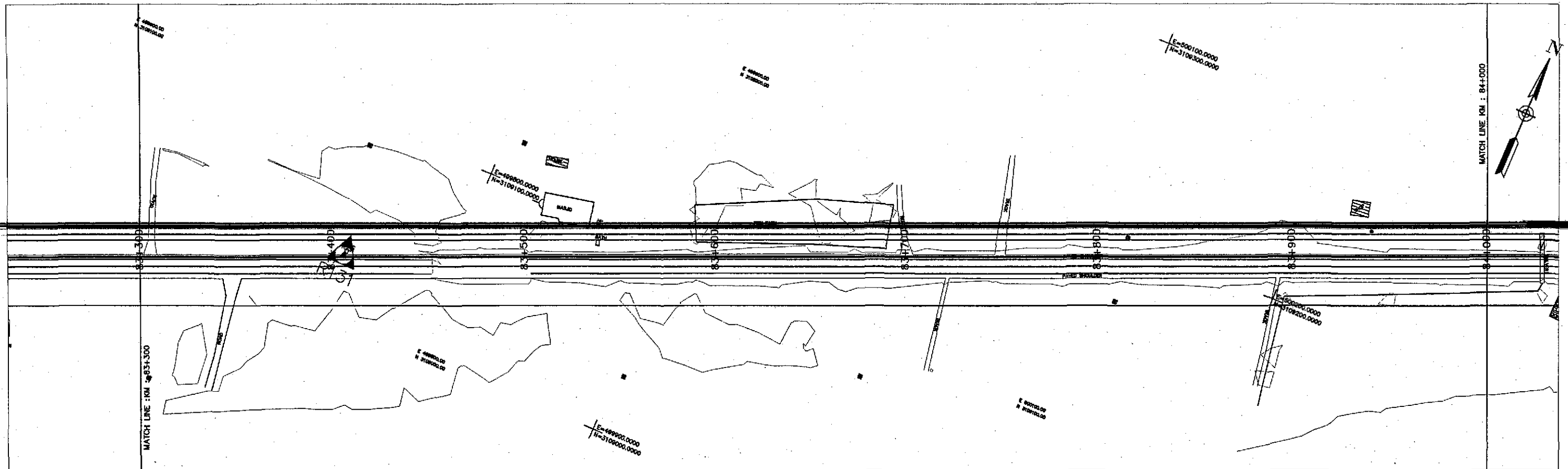
PLAN & PROFILE  
KM: 82+600 ~ KM: 83+300

DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P119

TENDER DRAWINGS

SCALE

1:2000



Horizontal Geometry	TANGENT 2844.54																			
Superelevation																				
Design Levels	67.938	68.040	68.147	68.253	68.360	68.462	68.553	68.634	68.704	68.764	68.814	68.854	68.883	68.902	68.910	68.909	68.897	68.879	68.862	68.845
Ground Levels	67.377	67.474	67.465	67.455	67.440	67.425	67.425	67.441	68.516	68.564	68.564	68.311	68.510	68.805	68.789	68.684	68.715	68.828	68.707	68.673
Chainage	83+303.82			83+400					83+500					83+600				83+700		



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



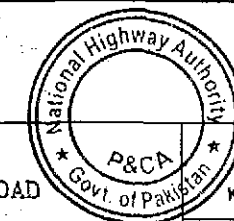
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

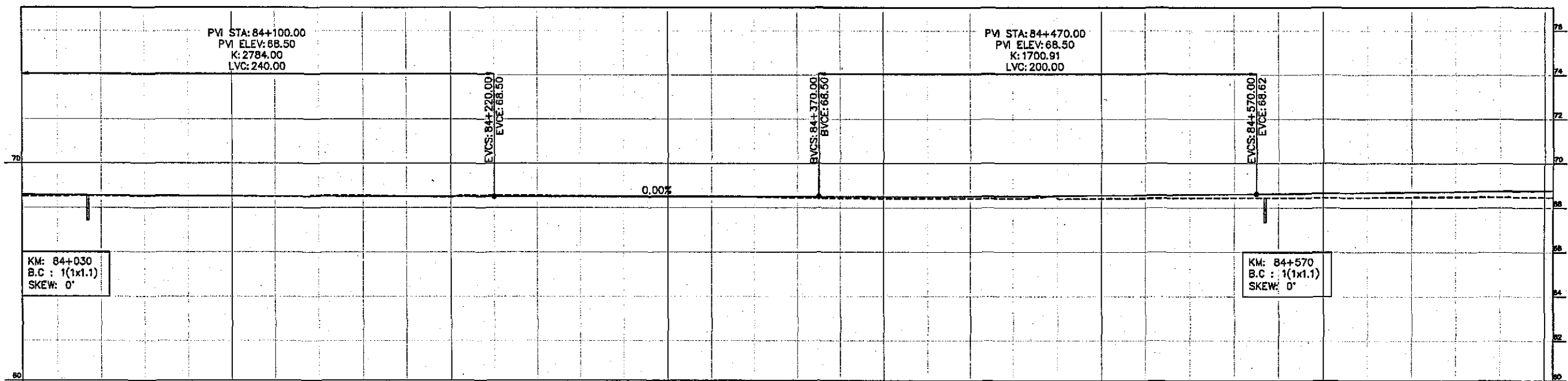
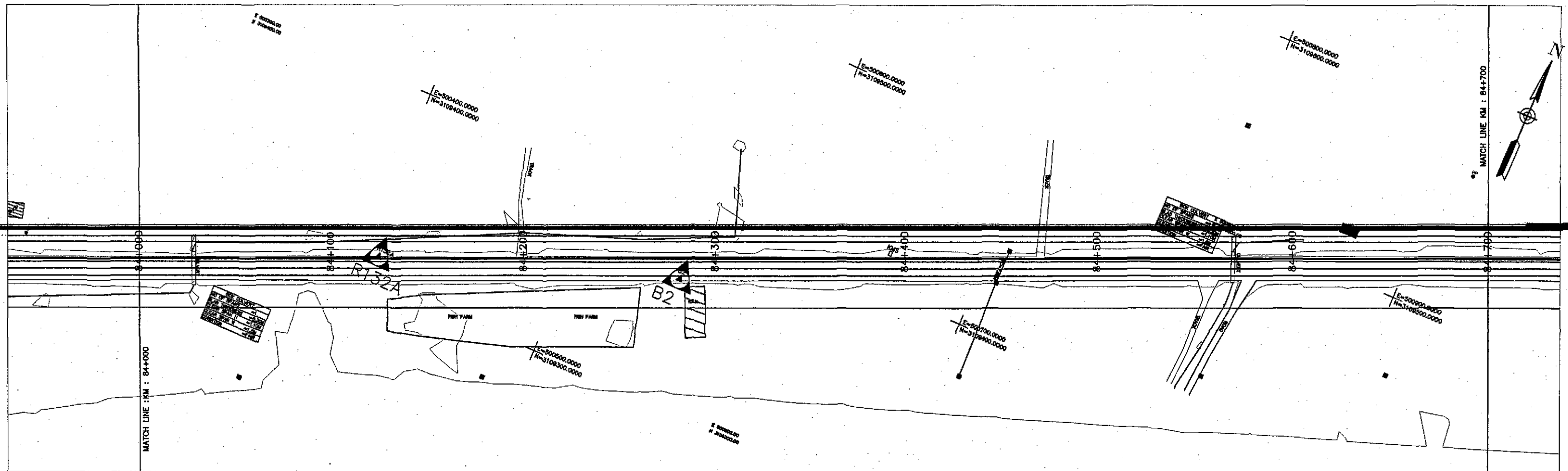
DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 83+300 ~ KM: 84+000		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P120	

TENDER DRAWINGS



Horizontal Geometry	TANGENT 2844.54																																			
Superelevation																																				
Design Levels	68.572	68.558	68.546	68.535	68.526	68.518	68.511	68.506	68.503	68.501	68.500	68.500	68.500	68.500	68.500	68.500	68.503	68.507	68.514	68.524	68.536	68.550	68.566	68.585	68.606	68.629	68.653	68.676	68.700	68.723	68.747	68.770				
Ground Levels	68.514	68.529	68.536	68.529	68.521	68.521	68.501	68.560	68.546	68.514	68.484	68.561	68.549	68.532	68.522	68.516	68.506	68.479	68.452	68.424	68.425	68.426	68.427	68.416	68.430	68.413	68.425	68.437	68.449	68.450	68.453	68.463	68.481	68.494	68.485	68.473
Chainage	84+003.82				84+100			84+200				84+300				84+400				84+500				84+600				84+700.82								



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

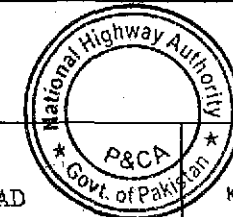


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

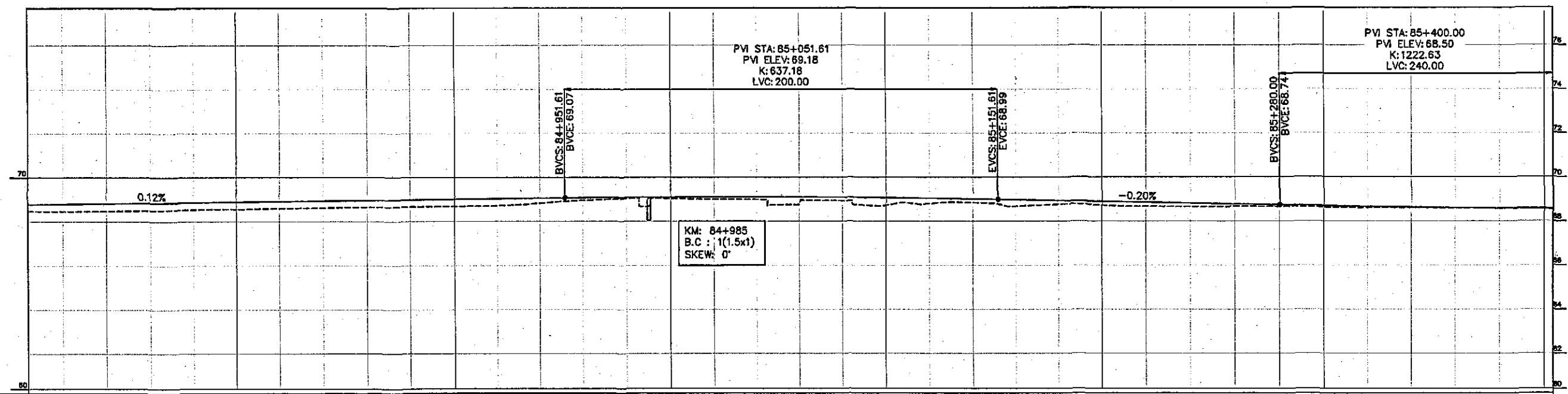
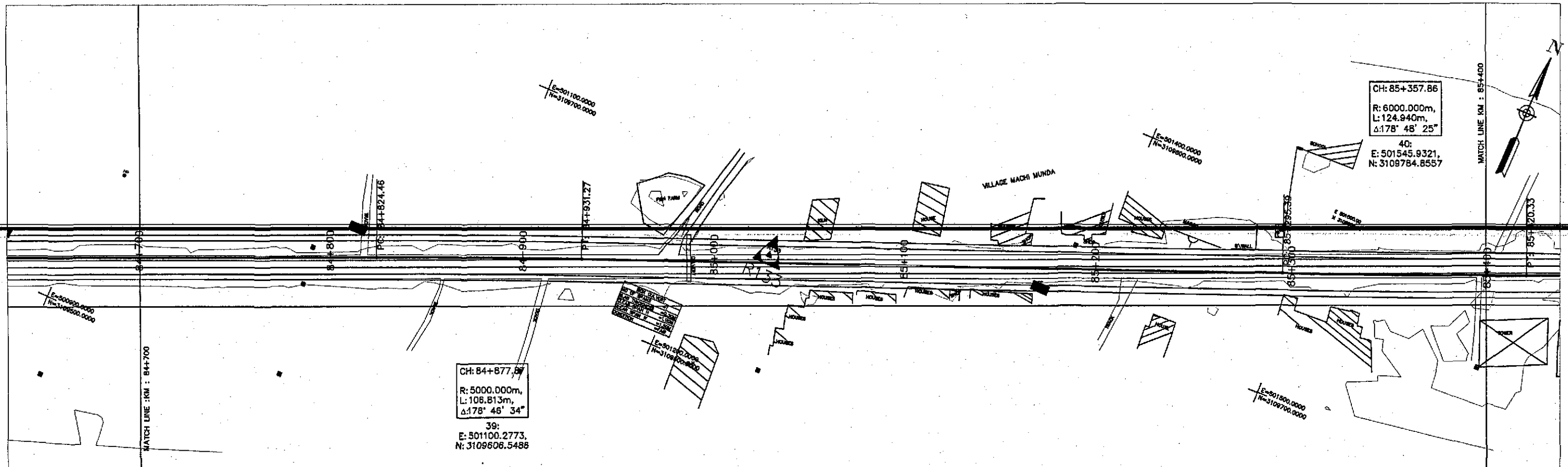
ATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 84+000 ~ KM: 84+700  
SCALE 1:2000  
DATE JUNE, 2018  
DWG NO. 3905/102/TD/P&P121

TENDER DRAWINGS





Horizontal Geometry	TANGENT 2844.54										CURVE R=5000.00										TANGENT 384.12										CURVE R=5000.00									
Superelevation																																								
Design Levels	68.794	68.817	68.841	68.865	68.888	68.912	68.935	68.959	68.982	69.006	69.029	69.053	69.076	69.093	69.105	69.110	69.109	69.102	69.088	69.068	69.042	69.009	68.971	68.932	68.893	68.853	68.814	68.775	68.736	68.698	68.664	68.632	68.605	68.580	68.559					
Ground Levels	68.470	68.459	68.473	68.500	68.536	68.562	68.593	68.622	68.648	68.667	68.689	68.712	68.823	68.949	69.040	69.036	68.988	68.751	68.930	68.717	68.794	68.836	68.674	68.762	68.716	68.670	68.658	68.680	68.657	68.637	68.606	68.603	68.594	68.592	68.592					
Chainage	84+703.82				84+800				84+900				85+000				85+100				85+200				85+300				85+400.82											



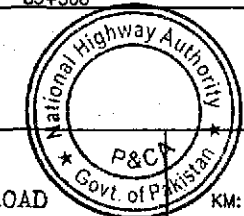
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

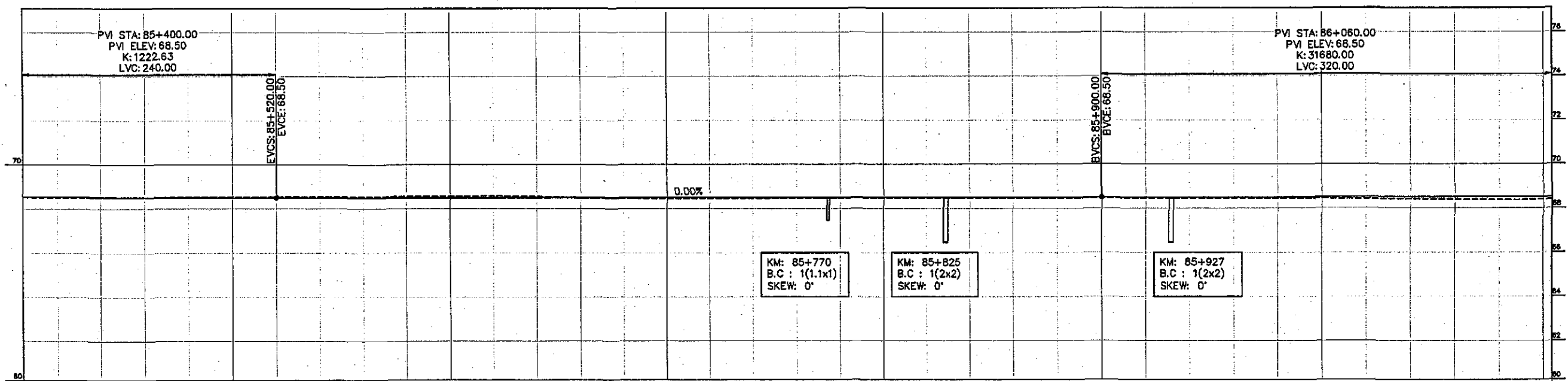
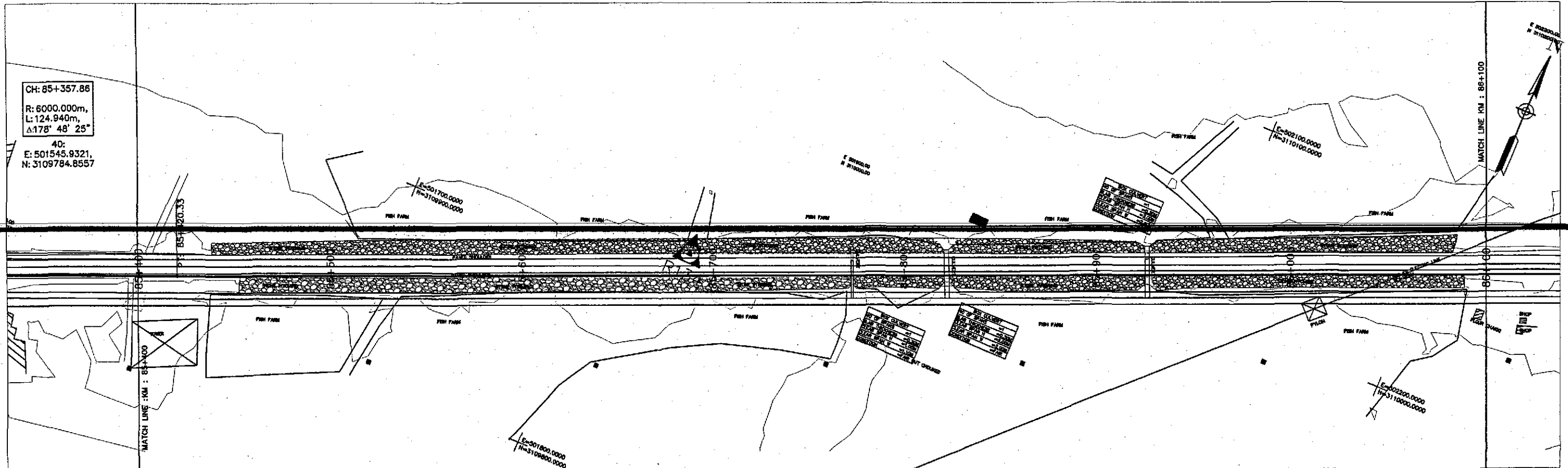
JAWADUL HAQ Project Manager M/S NESPAK				DRAWN M A NADEEM AWAN	
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

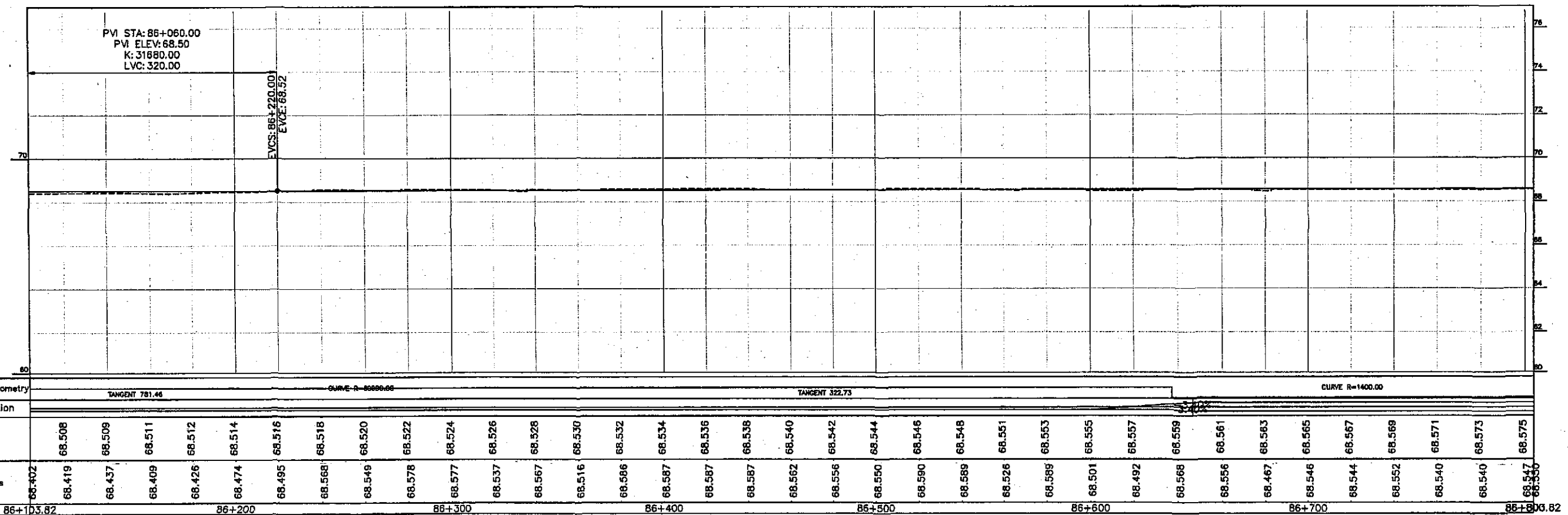
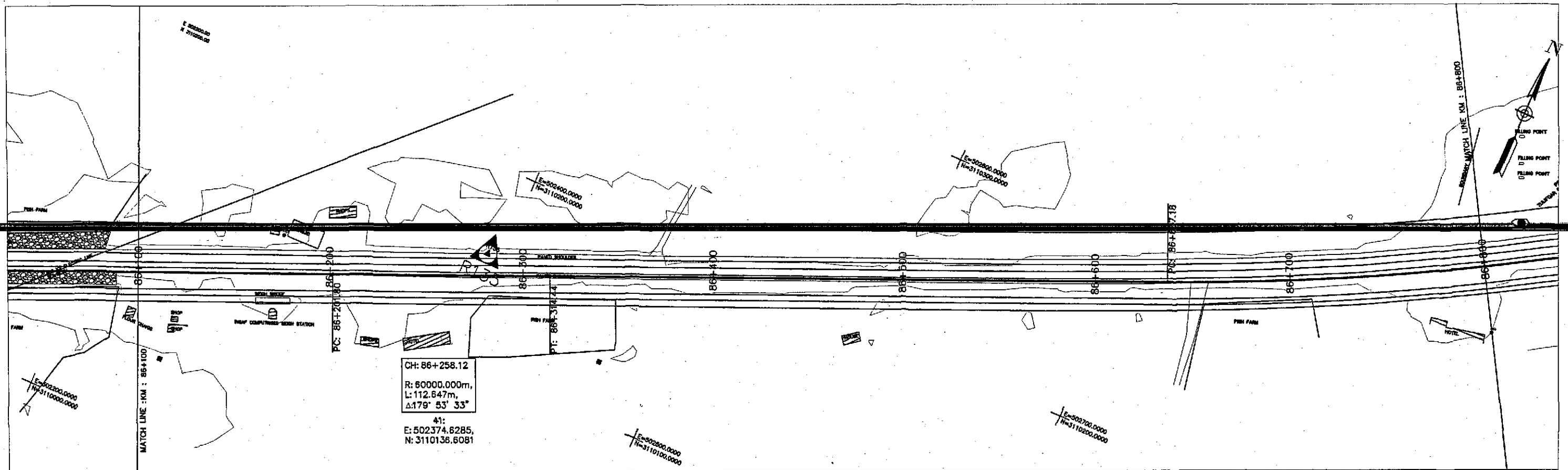


PLAN & PROFILE		SCALE	
KM: 84+700 ~ KM: 85+400		1:2000	
DATE	JUNE, 2018	DWG NO.	3905/102/TD/P&P122

TENDER DRAWINGS



Horizontal Geometry	R=6000.00																																			
Superelevation	TANGENT 781.48																																			
Design Levels	68.541	68.526	68.515	68.507	68.502	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.500	68.501	68.501	68.502	68.502	68.503	68.504	68.505	68.506						
Ground Levels	68.529	68.521	68.514	68.508	68.527	68.542	68.546	68.553	68.549	68.559	68.570	68.582	68.548	68.511	68.473	68.445	68.450	68.455	68.463	68.471	68.477	68.470	68.465	68.460	68.459	68.459	68.459	68.458	68.445	68.433	68.420	68.408	68.395	68.383	68.368	68.358
Chainage	85+403.82				85+500					85+600					85+700					85+800					85+900			86+000				86+100.82				



TENDER DRAWINGS



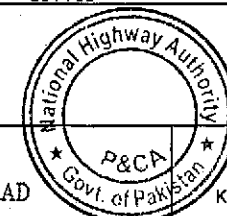
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ Project Manager M/S NESPAK		DRAWN	M A NADEEM AWAN
		SUBMITTED	
REV.	DATE	DESCRIPTION	RECOMMENDED
			CHD./VER.
		APPROVED	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



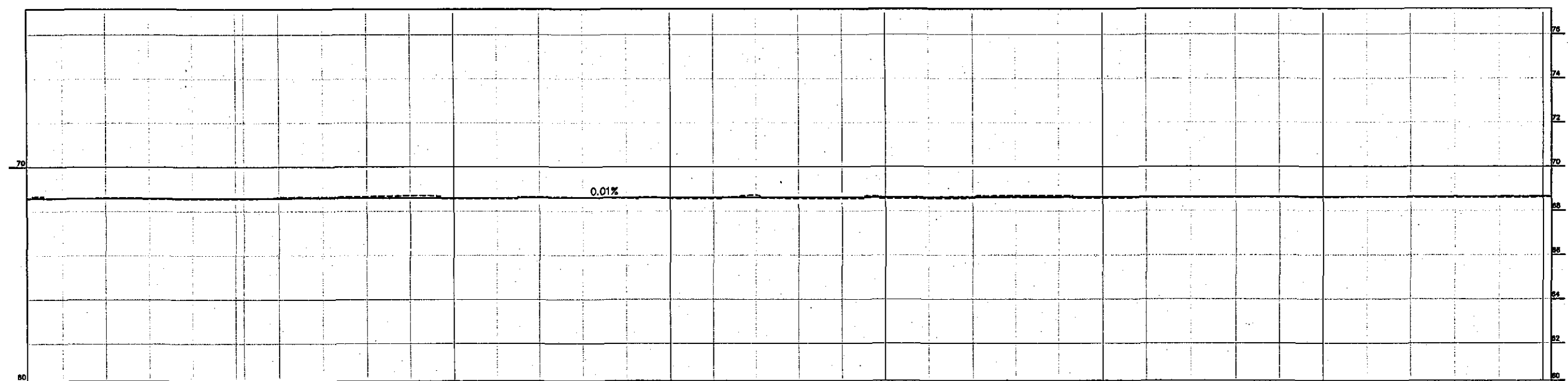
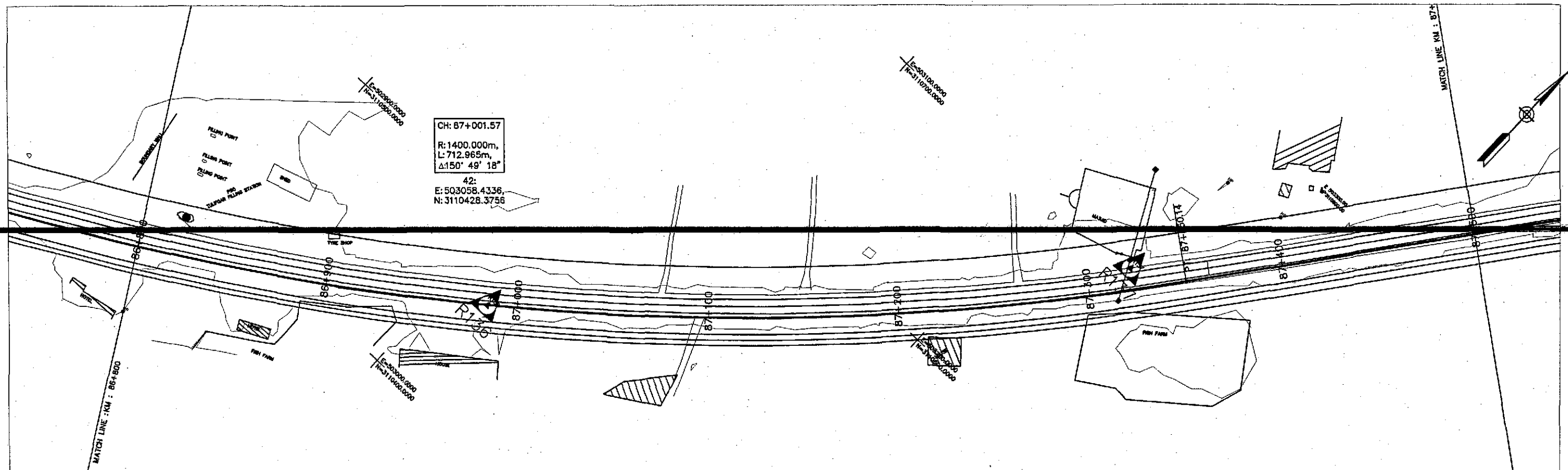
PLAN & PROFILE  
KM: 86+100 ~ KM: 86+800

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P124

SCALE  
1:2000





Horizontal Geometry	CURVE R=1400.00																																TANGENT 384.08			
Superelevation																																				
Design Levels	68.577	68.579	68.581	68.583	68.585	68.587	68.589	68.591	68.593	68.595	68.597	68.599	68.601	68.603	68.605	68.607	68.609	68.611	68.613	68.615	68.617	68.619	68.621	68.623	68.625	68.627	68.629	68.631	68.633	68.635	68.637	68.639	68.641	68.643	68.645	
Ground Levels	68.550	68.566	68.600	68.593	68.548	68.555 68.558 68.558	68.641	68.641	68.664	68.702	68.570	68.568	68.635	68.606	68.578	68.573	68.572	68.721	68.570	68.569	68.570	68.566	68.574	68.681	68.694	68.578	68.586	68.590	68.596	68.621	68.608	68.623	68.612	68.611	68.610	68.617 68.617
Chainage	86+803.82				86+900					87+000				87+100			87+200					87+300					87+400							87+500.82		

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



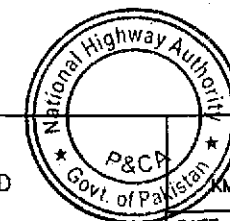
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

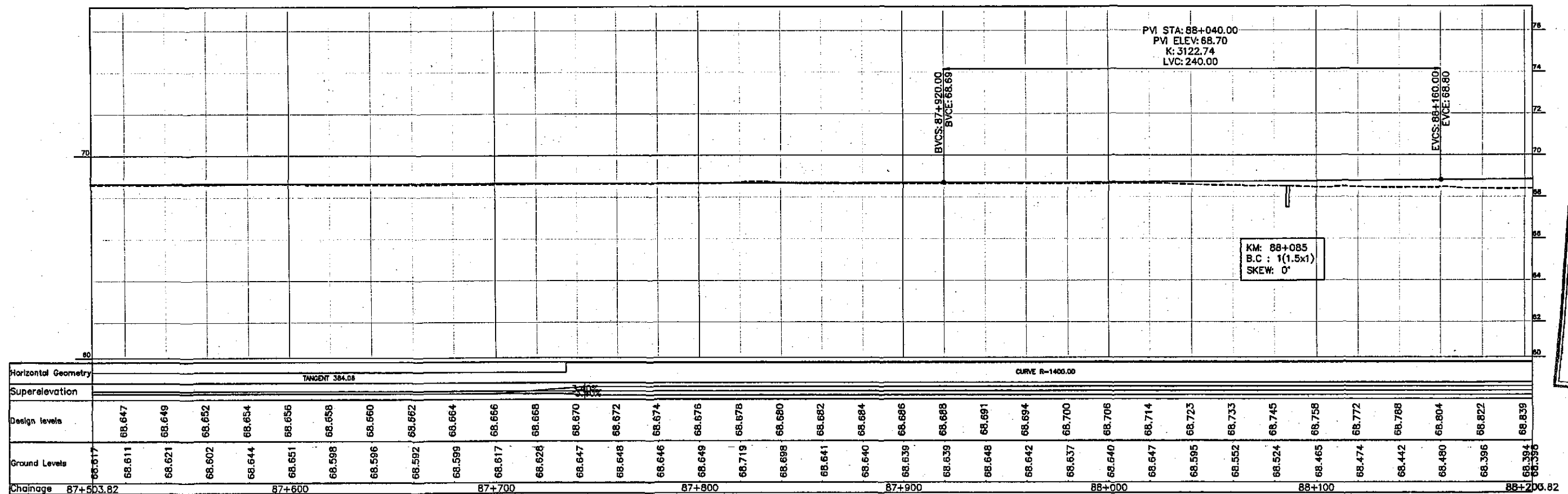
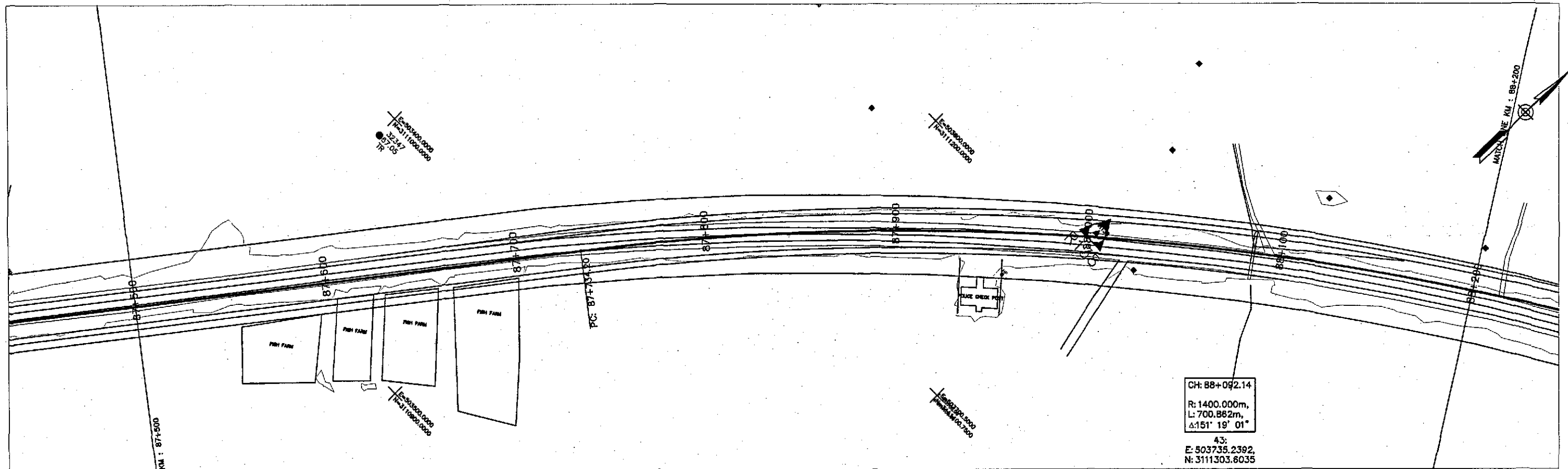
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 86+800 ~ KM: 87+500

DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P125

SCALE  
1:2000



TENDER DRAWINGS



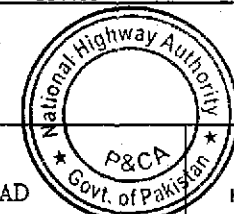
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ Project Manager M/S NESPAK		DRAWN	M A NADEEM AWAN
		SUBMITTED	
		RECOMMENDED	
		CHD./VER.	
REV.	DATE	DESCRIPTION	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



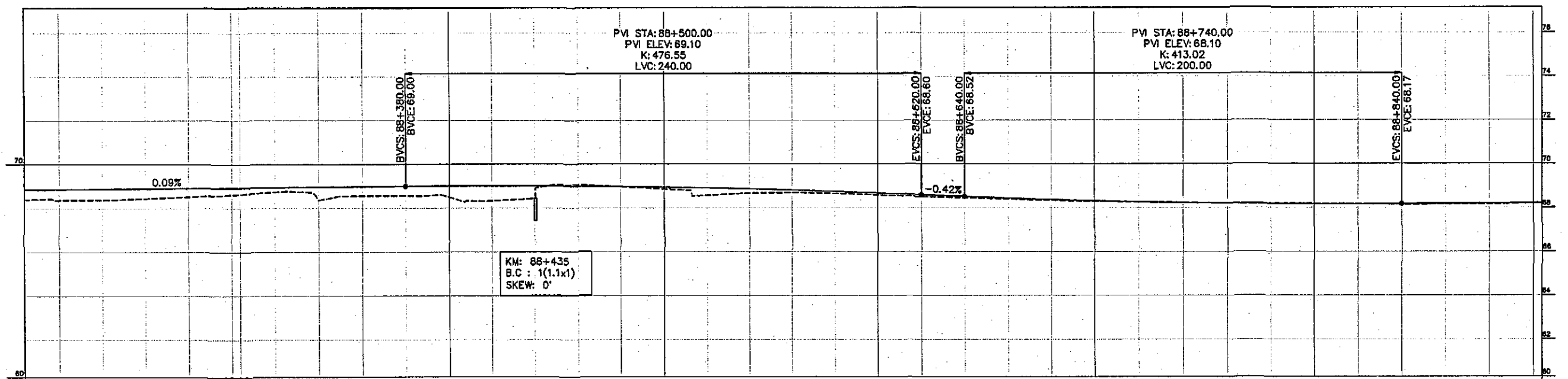
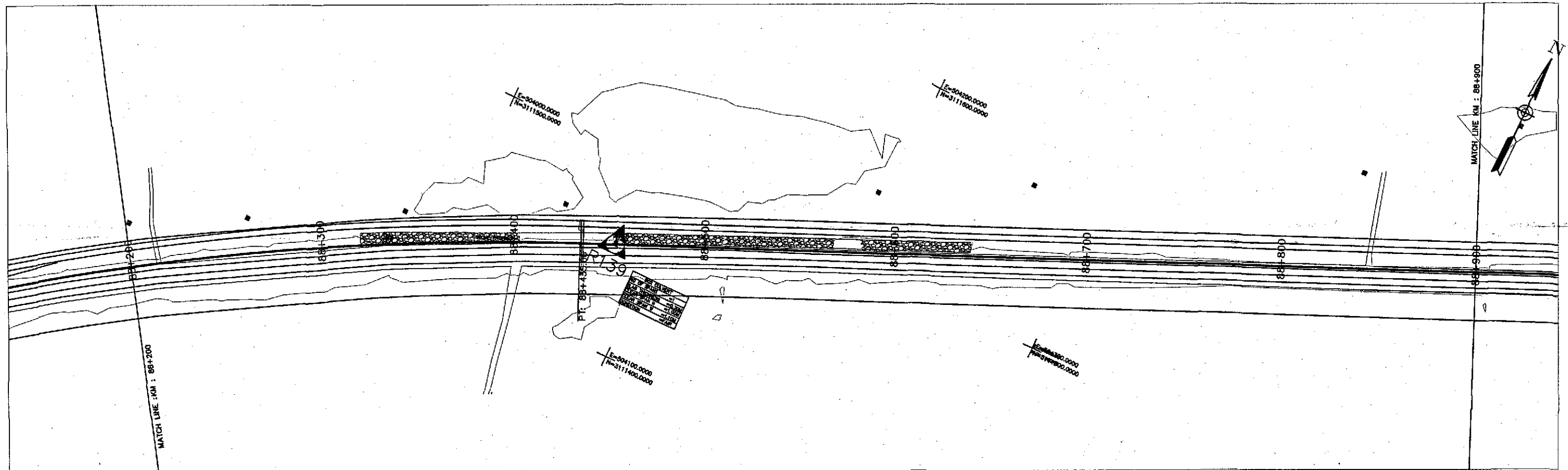
PLAN & PROFILE  
KM: 87+500 ~ KM: 88+200

SCALE

1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P126



Horizontal Geometry	CURVE R=1400.00																				TANGENT 708.53
Superelevation																					
Design Levels	68.857	68.874	68.891	68.909	68.926	68.943	68.961	68.978	68.996	69.009	69.014	69.010	68.998	68.978	68.949	68.912	68.866	68.812	68.750	68.679	68.600
Ground Levels	68.386	68.353	68.379	68.439	68.517	68.616	68.637	68.734	68.859	68.955	68.996	68.996	68.996	68.996	68.996	68.996	68.996	68.996	68.996	68.996	68.996
Chainage	88+203.82				88+300					88+400				88+500					88+600		
																					88+700
																					88+800
																					88+900.82

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



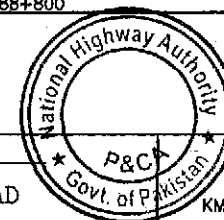
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT),



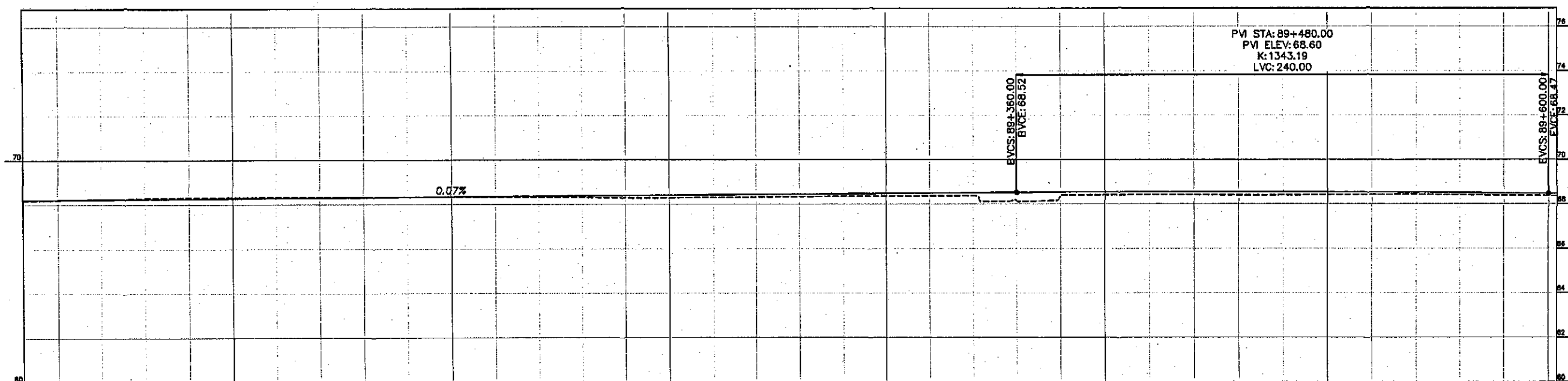
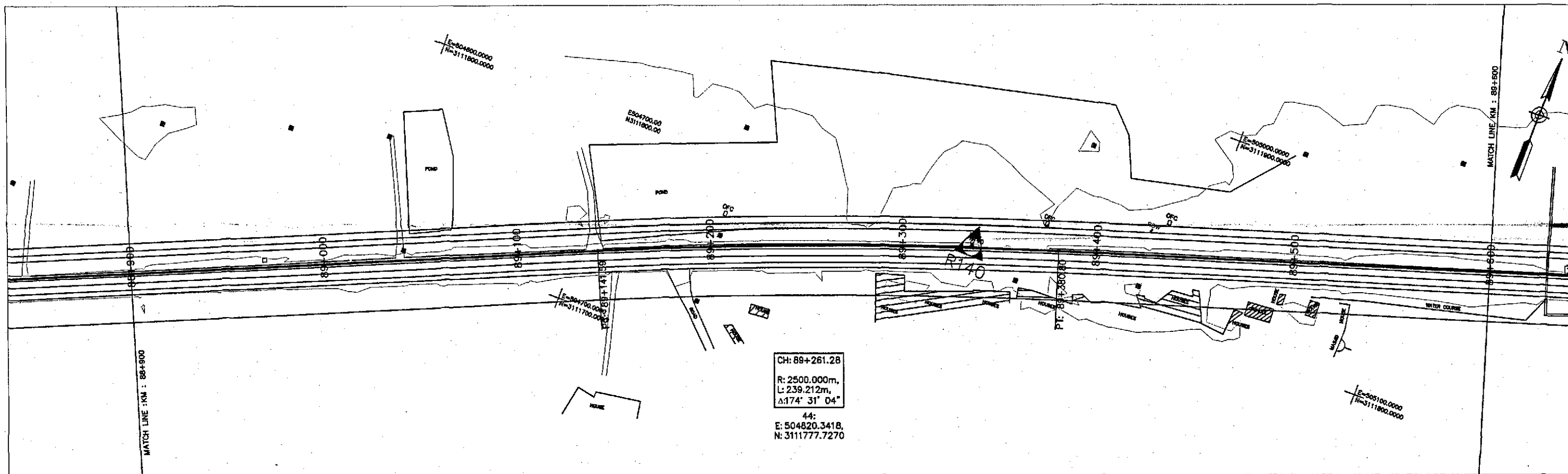
PLAN & PROFILE  
KM: 88+200 ~ KM: 88+900

DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P127

SCALE

1:2000





Horizontal Geometry	TANGENT 708.53															CURVE R=2500.00															TANGENT 874.77														
Superelevation	2.20% 2.20%															2.20% 2.20%															2.20% 2.20%														
Design levels	68.222	68.235	68.249	68.262	68.276	68.289	68.303	68.316	68.330	68.343	68.357	68.370	68.384	68.397	68.411	68.424	68.438	68.451	68.465	68.478	68.492	68.505	68.519	68.531	68.540	68.546	68.549	68.549	68.546	68.541	68.532	68.520	68.505	68.487	68.467										
Ground Levels	66.180	68.212	68.244	68.282	68.324	68.327	68.330	68.333	68.335	68.336	68.331	68.327	68.323	68.305	68.286	68.287	68.306	68.320	68.336	68.364	68.360	68.366	68.376	68.160	68.403	68.407	68.420	68.416	68.398	68.401	68.414	68.426	68.435	68.411	68.387	68.372									
Chainage	88+903.82			89+000			89+100			89+200			89+300			89+400			89+500			89+600.82																							

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

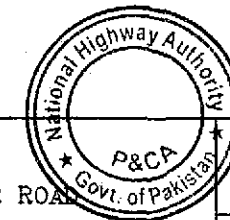
**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RA

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE

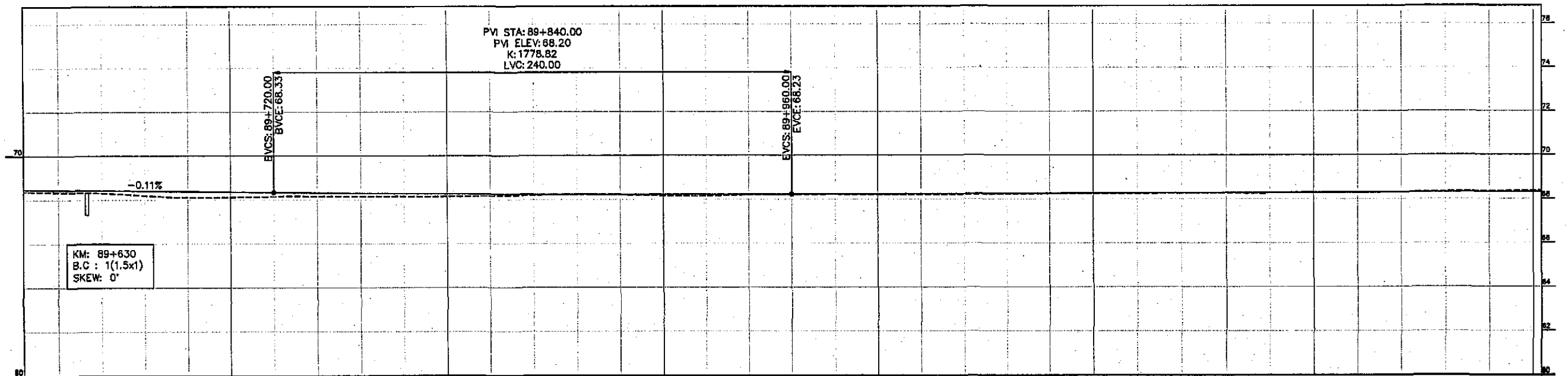
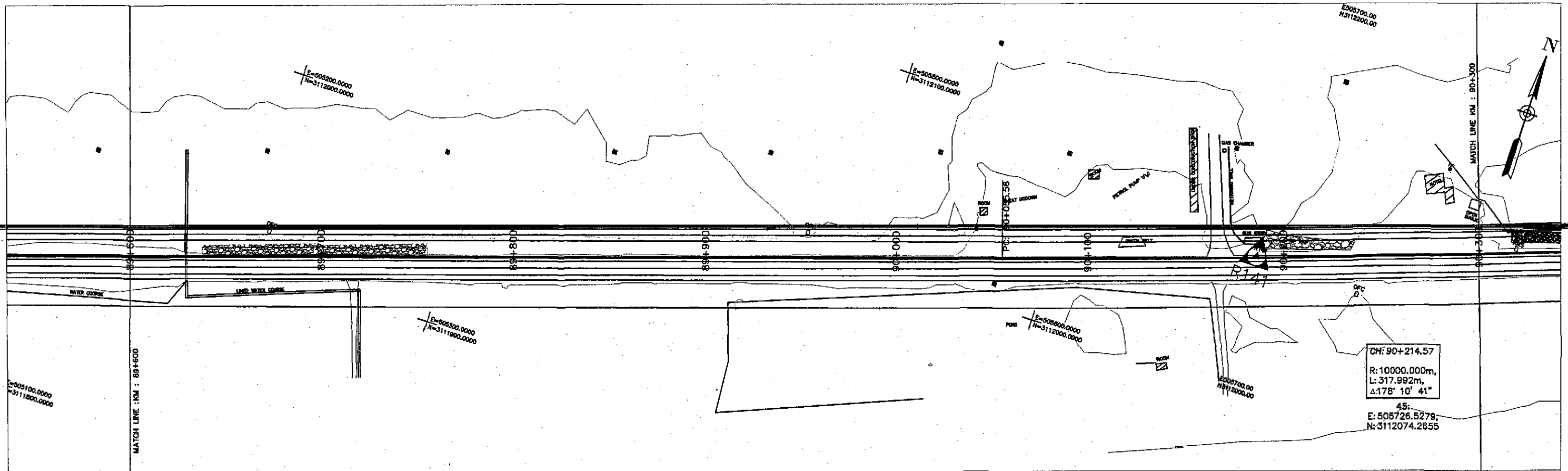
KM: 88+900 ~ KM: 89+600

SCALE

1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P12B



Horizontal Geometry	TANGENT 674.77																				CURVE R=10000.00																																																											
Superelevation																																																																																
Design Levels	68.444	68.422	68.400	68.378	68.356	68.333	68.312	68.293	68.277	68.262	68.250	68.240	68.233	68.228	68.224	68.224	68.225	68.229	68.233	68.238	68.243	68.248	68.252	68.257	68.262	68.267	68.271	68.276	68.281	68.286	68.290	68.295	68.300	68.305	68.310																																													
Ground Levels	68.370	68.341	68.303	68.193	68.109	68.115	68.144	68.153	68.145	68.142	68.146	68.161	68.198	68.235	68.206	68.172	68.154	68.198	68.217	68.230	68.210	68.201	68.211	68.227	68.236	68.244	68.249	68.256	68.259	68.273	68.284	68.295	68.299	68.331	68.354	68.374																																												
Chainage	89+603.82										89+700										89+800										89+900										90+000										90+100										90+200										90+300.82									

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

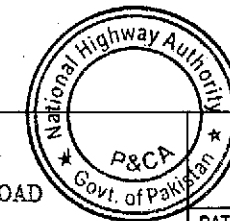


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



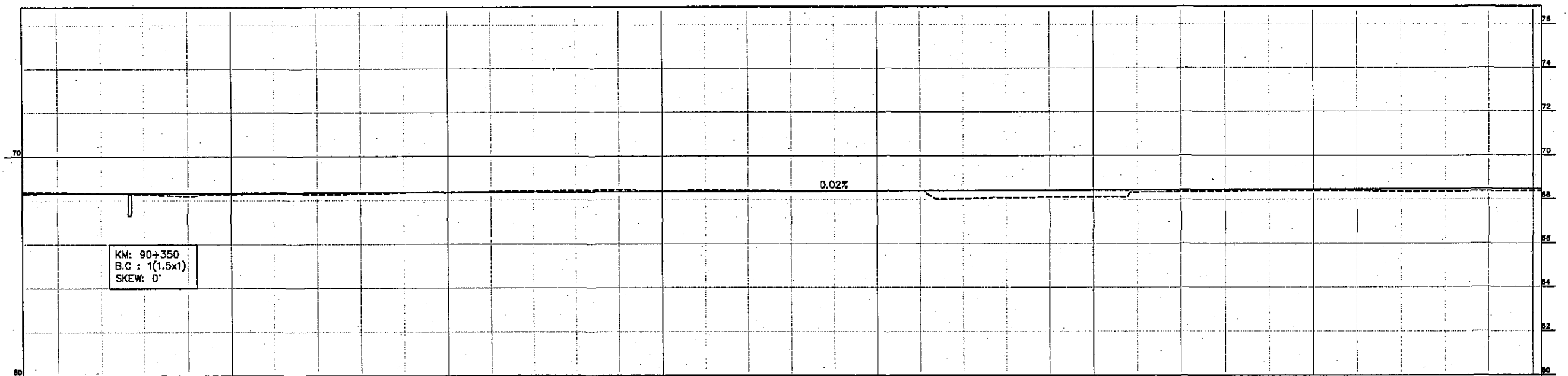
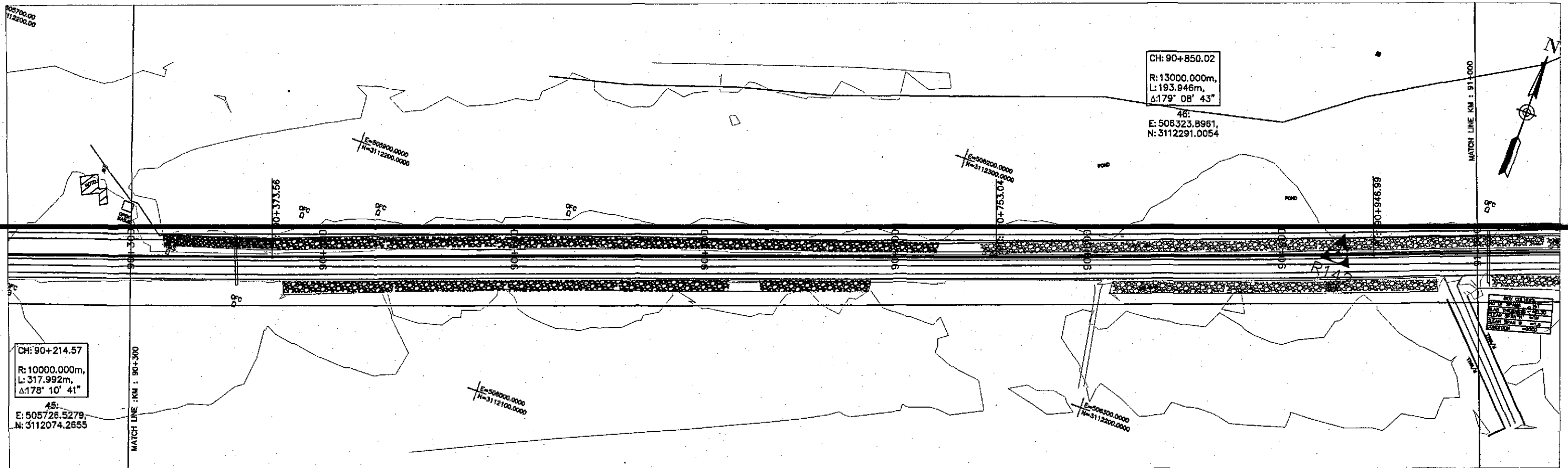
PLAN & PROFILE  
KM: 89+600 ~ KM: 90+300

SCALE

1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P129



Horizontal Geometry	CURVE R=10000.00										TANGENT 379.48										CURVE R=13000.00										TANGENT 1273.19									
Superelevation																																								
Design levels	68.314	68.319	68.324	68.329	68.333	68.338	68.343	68.348	68.352	68.357	68.362	68.367	68.371	68.376	68.381	68.386	68.390	68.395	68.400	68.405	68.410	68.414	68.419	68.424	68.429	68.433	68.438	68.443	68.448	68.452	68.457	68.462	68.467	68.471	68.476					
Ground Levels	68.376	68.365	68.331	68.285	68.177	68.286	68.309	68.268	68.295	68.342	68.330	68.394	68.427	68.446	68.465	68.408	68.452	68.437	68.374	68.395	68.401	68.420	68.418	68.039	68.086	68.104	68.118	68.338	68.359	68.377	68.395	68.406	68.384	68.359	68.364	68.372	68.381			
Chainage	90+303.82	90+400					90+500					90+600					90+700					90+800					90+900					91+000.82								

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

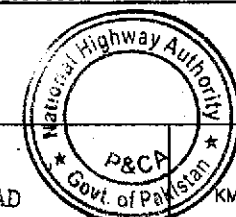


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 90+300 ~ KM: 91+000

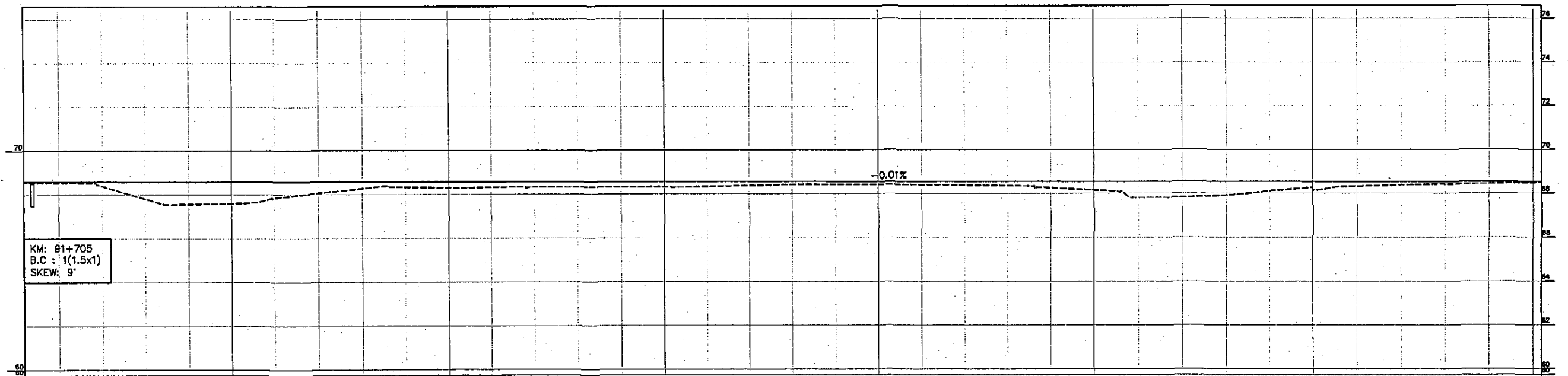
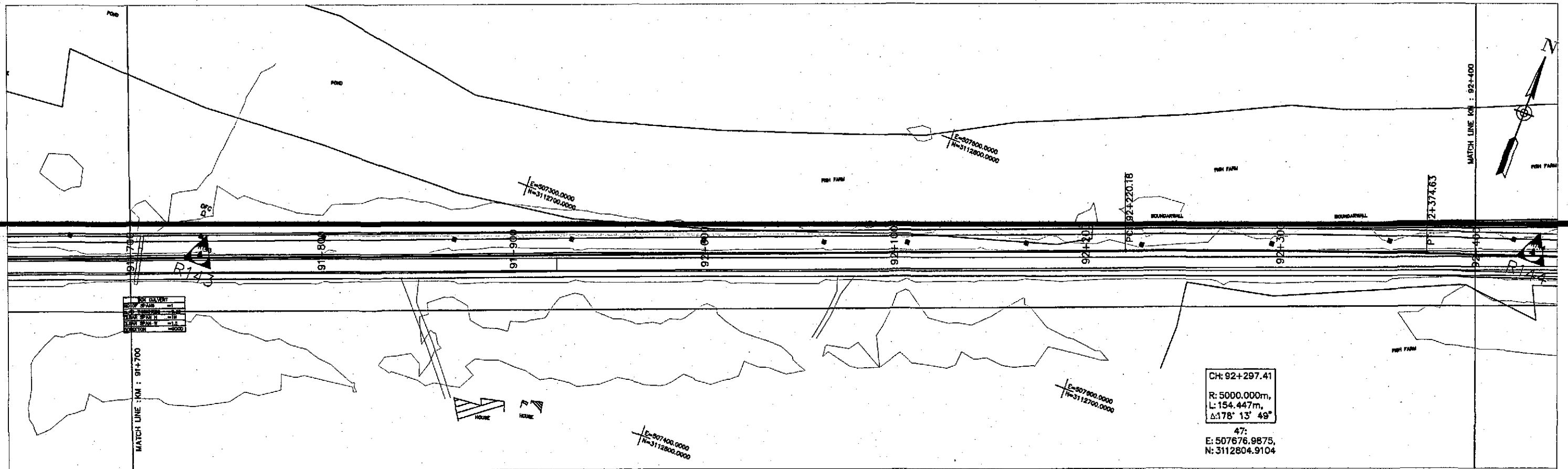
SCALE  
1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P130







Horizontal Geometry	TANGENT 1275.19																				CURVE R=5000.00										TANGENT 150.99					
Superelevation																																				
Design Levels		68.563	68.562	68.560	68.578	68.577	68.575	68.573	68.572	68.570	68.568	68.567	68.565	68.563	68.562	68.560	68.558	68.557	68.555	68.553	68.552	68.550	68.548	68.547	68.545	68.543	68.542	68.540	68.538	68.537	68.535	68.533	68.532	68.530	68.528	68.527
Ground Levels	68.343	68.527	68.373	67.800	67.562	67.596	67.847	68.060	68.269	68.326	68.293	68.316	68.334	68.327	68.323	68.327	68.332	68.373	68.414	68.421	68.414	68.398	68.380	68.358	68.256	68.158	67.811	67.824	67.915	68.118	68.152	68.331	68.378	68.403	68.446	68.474
Chainage	91+703.82	91+800					91+900					92+000					92+100					92+200					92+300					92+400.82				

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



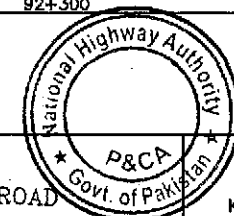
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



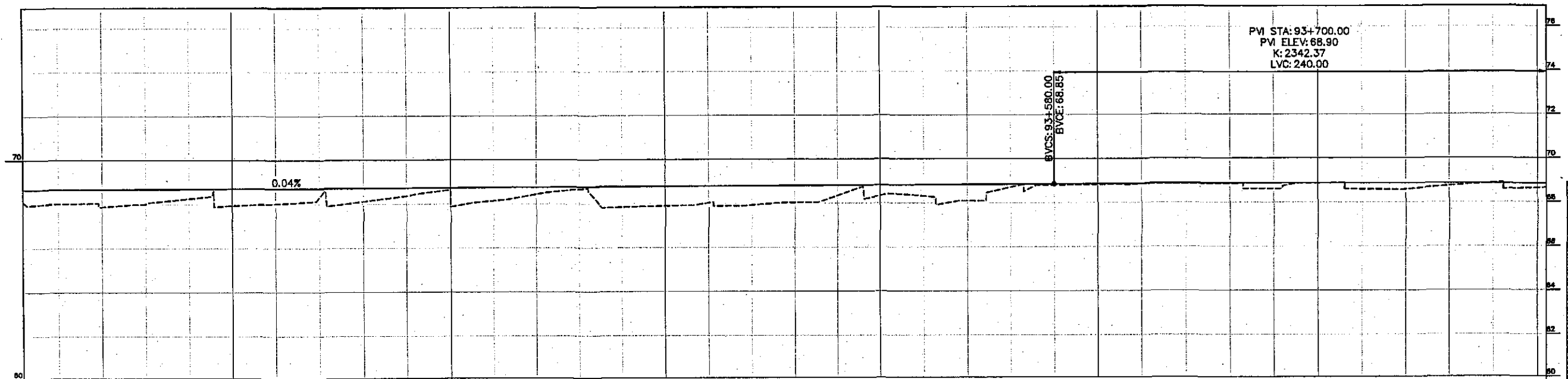
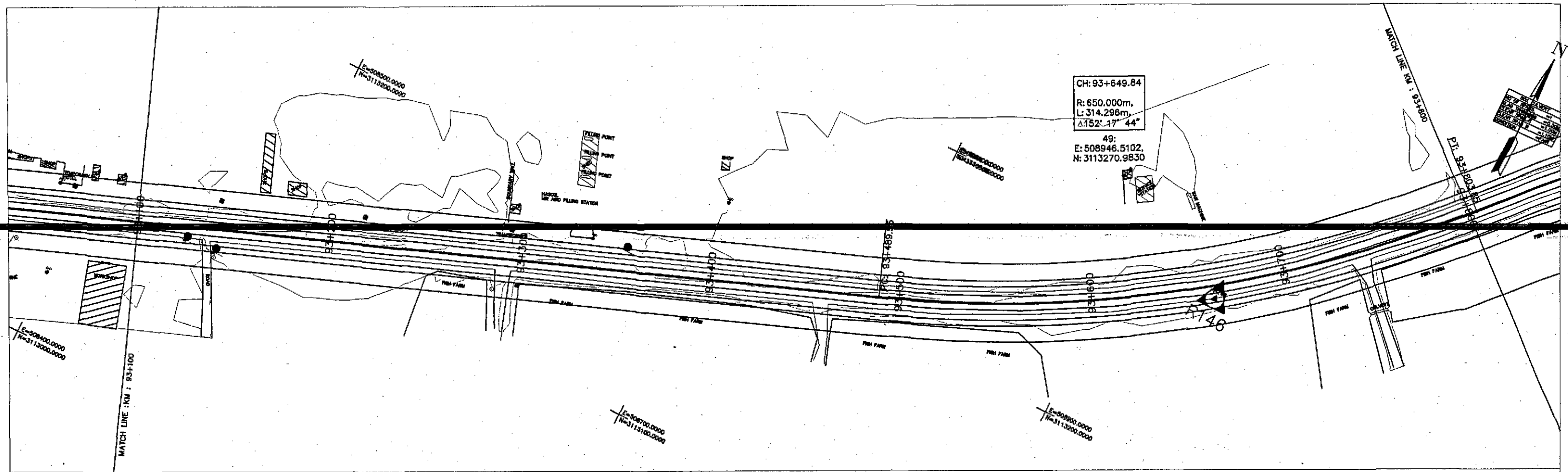
PLAN & PROFILE  
KM: 91+700 ~ km: 92+400

DATE	DWG NO.
JUNE, 2018	3905/102/TD/P&P132

SCALE  
1:2000







Horizontal Geometry	TANGENT 638.00																		CURVE R=650.00																	
Superelevation																																				
Design levels	68.663	68.671	68.680	68.688	68.696	68.704	68.712	68.720	68.729	68.737	68.745	68.753	68.761	68.769	68.778	68.786	68.794	68.802	68.810	68.818	68.827	68.835	68.843	68.851	68.858	68.864	68.868	68.870	68.870	68.869	68.866	68.862	68.855	68.847	68.839	
Ground Levels	68.099	68.019	67.877	68.007	68.251	67.928	68.018	68.305	68.111	68.364	68.023	68.135	68.432	68.654	67.839	68.021	67.919	68.036	68.339	68.330	68.315	68.091	68.700	68.799	68.822	68.846	68.857	68.847	68.818	68.868	68.590	68.578	68.735	68.867	68.632	
Chainage	93+103.82			93+200			93+300			93+400			93+500			93+600			93+700			93+800.82														

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



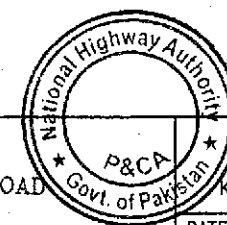
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

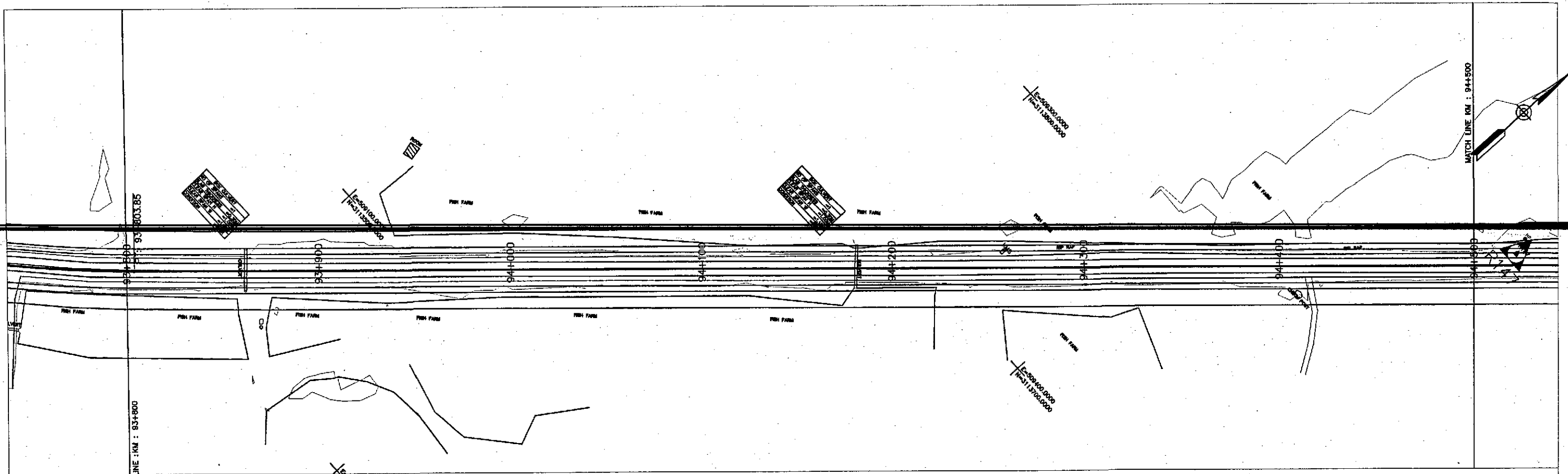
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 93+100 ~ km: 93+800

SCALE  
1:2000

DATE JUNE, 2018	DWG NO. 3905/102/TD/P&P134
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PVI STA: 93+700.00  
PVI ELEV: 68.90  
K: 2342.37  
LVC: 240.00

EVCS: 93+820.00  
ELEV: 68.83

KM: 93+865  
B.C : 1(1.1x1)  
SKEW: 0°

KM: 94+182  
B.C : 1(1.1x1)  
SKEW: 0°

-0.06%

Horizontal Geometry	TANGENT 2429.75																			
Superelevation																				
Design levels	68.826	68.814	68.801	68.789	68.777	68.764	68.752	68.740	68.727	68.715	68.703	68.690	68.678	68.666	68.653	68.641	68.629	68.616	68.604	68.592
Ground Levels	68.643	68.686	68.697	68.709	68.698	68.644	68.615	68.597	68.596	68.596	68.945	68.858	68.742	68.599	68.599	68.600	68.600	68.352	68.340	68.582
Chainage	93+803.82				93+900						94+000					94+100				94+200
																				94+300
																				94+400
																				94+500.82

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



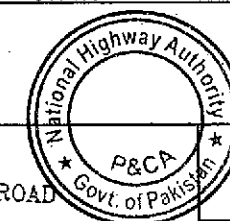
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWADUL HAQ**  
Project Manager  
M/S NESPAK

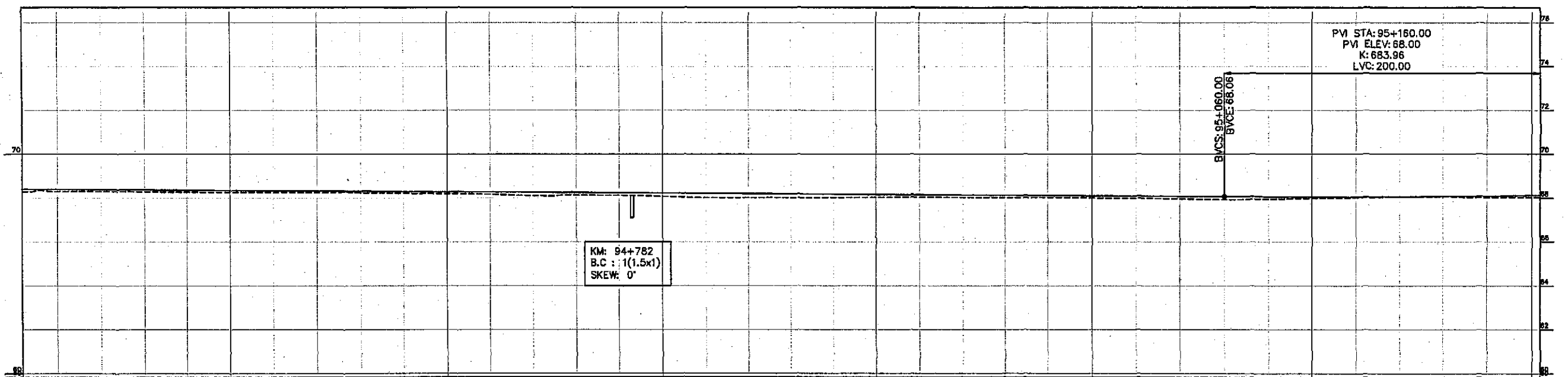
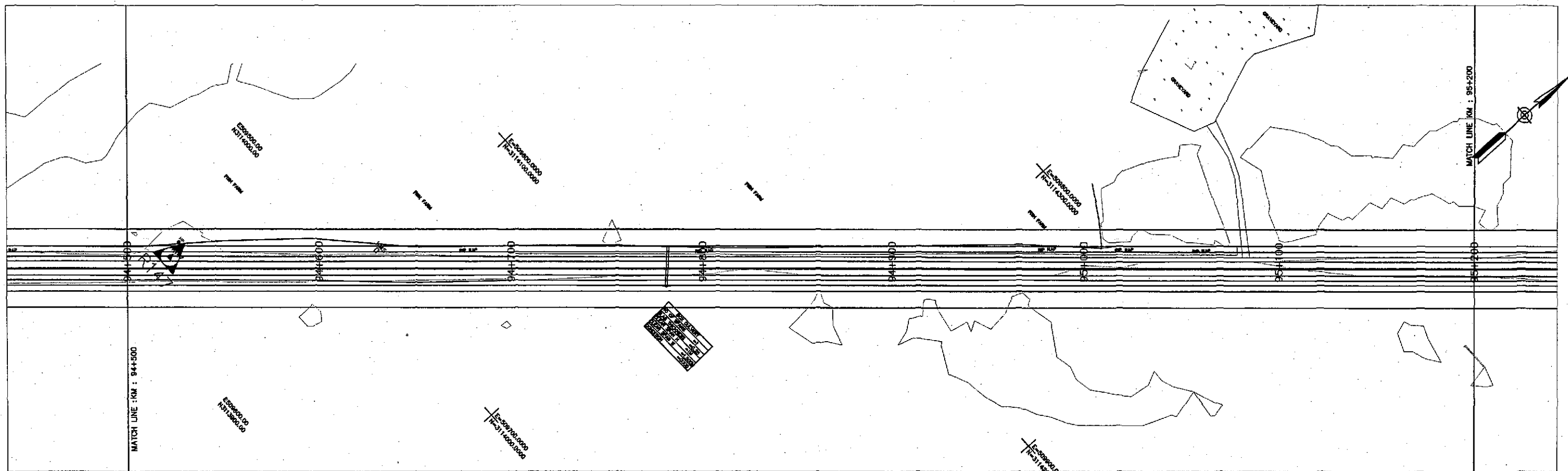
REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE KM: 93+800 ~ KM: 94+500		SCALE 1:2000
DATE JUNE, 2018	DWG NO. 3905/102/TD/P&P135	



Horizontal Geometry	TANGENT 2429.75																			
Superelevation																				
Design levels	68.395	68.392	68.370	68.358	68.345	68.333	68.321	68.308	68.296	68.284	68.271	68.259	68.247	68.234	68.222	68.210	68.197	68.185	68.173	68.160
Ground Levels	68.283	68.288	68.291	68.275	68.263	68.257	68.252	68.241	68.228	68.211	68.196	68.183	68.164	68.152	68.139	68.126	68.113	68.100	67.991	67.960
Chainage	94+503.82																			

KM: 94+782  
B.C : 1(1.5x1)  
SKEW: 0°

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

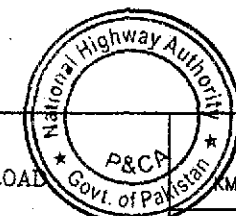


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE

KM: 94+500 ~ KM: 95+200

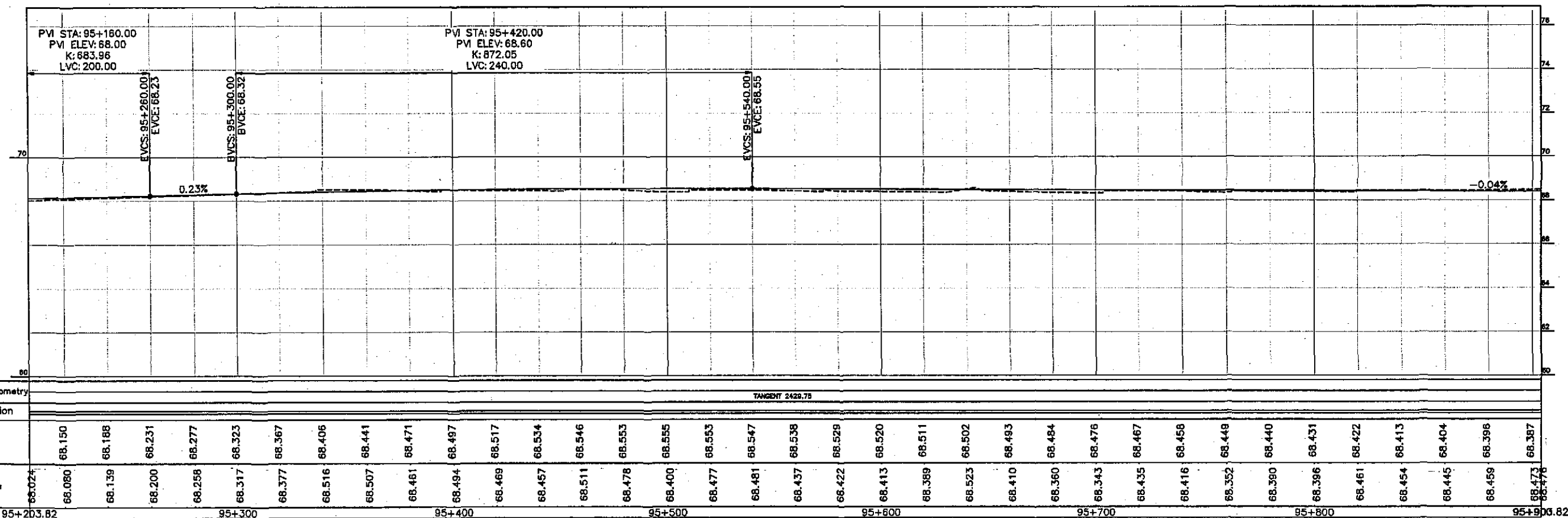
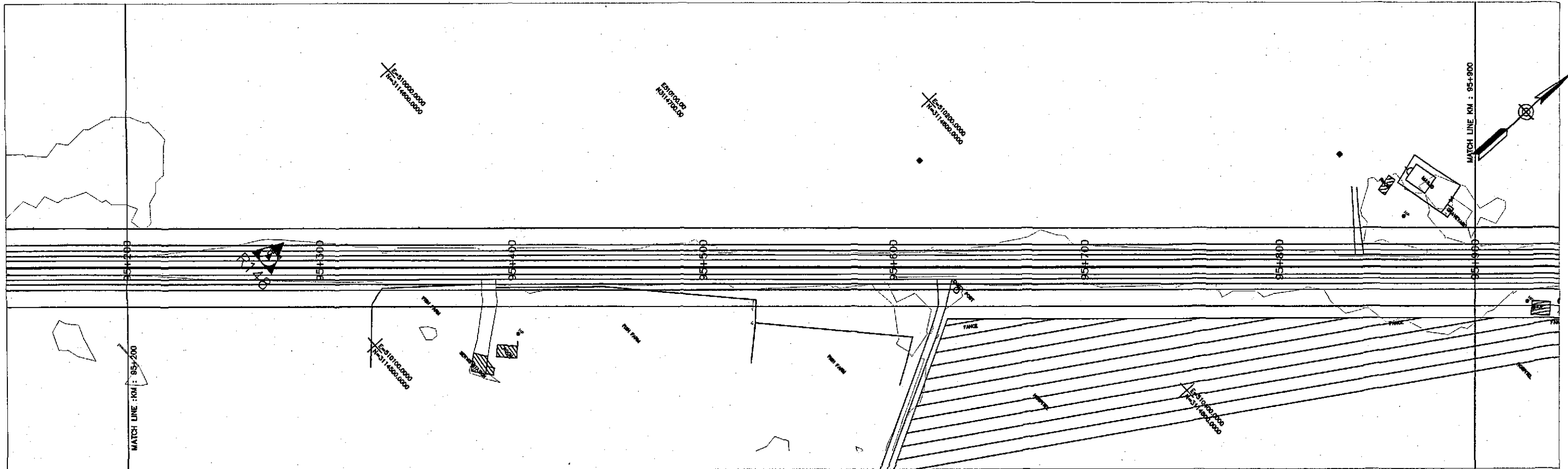
DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P136

SCALE

1:2000





LANDER DRAWINGS



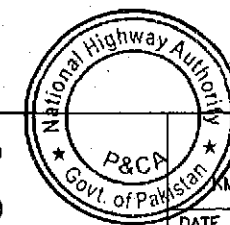
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



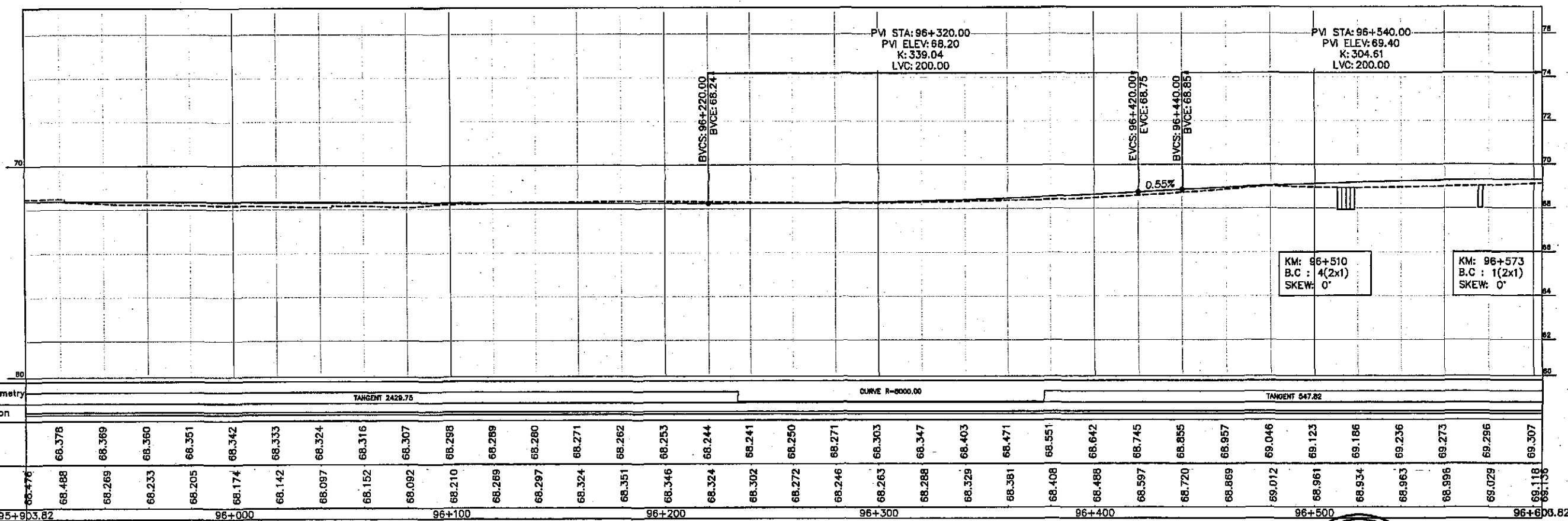
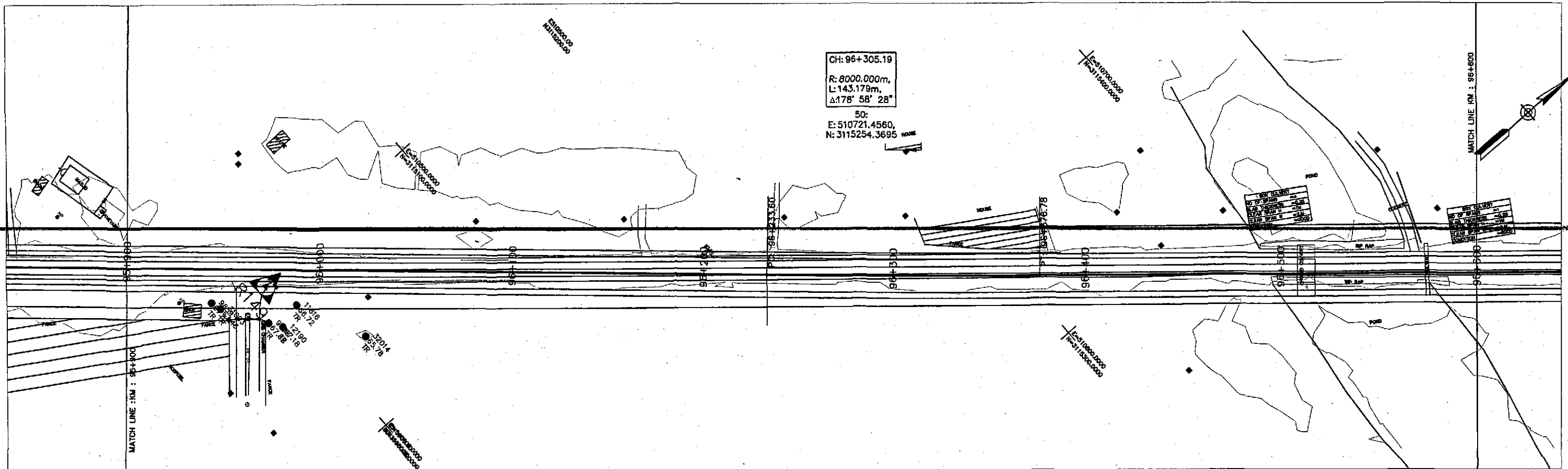
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ		DRAWN		M A NADEEM AWAN	
Project Manager		SUBMITTED			
M/S NESPAK		RECOMMENDED			
		CHD./VER.			
REV.	DATE	DESCRIPTION	APPROVED	APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
M: 95+200 ~ KM: 95+900		1:2000
DWG NO.		
E, 2018	3905/102/TD/P&P137	



Horizontal Geometry	TANGENT 2429.75										CURVE R=8000.00										TANGENT 547.82																			
Superelevation																																								
Design levels	68.378	68.369	68.360	68.351	68.342	68.333	68.324	68.316	68.307	68.298	68.289	68.280	68.271	68.262	68.253	68.244	68.241	68.250	68.271	68.303	68.347	68.403	68.471	68.551	68.642	68.745	68.855	68.957	69.046	69.123	69.186	69.236	69.273	69.296	69.307					
Ground Levels	68.376	68.488	68.269	68.233	68.205	68.174	68.142	68.097	68.092	68.210	68.269	68.297	68.324	68.351	68.346	68.324	68.302	68.272	68.246	68.263	68.288	68.329	68.381	68.408	68.488	68.597	68.720	68.869	69.012	68.961	68.934	68.963	68.996	69.029	69.118	69.130				
Chainage	95+903.82										96+000										96+300										96+600.82									

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



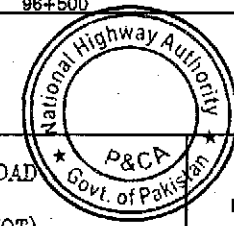
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWADUL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

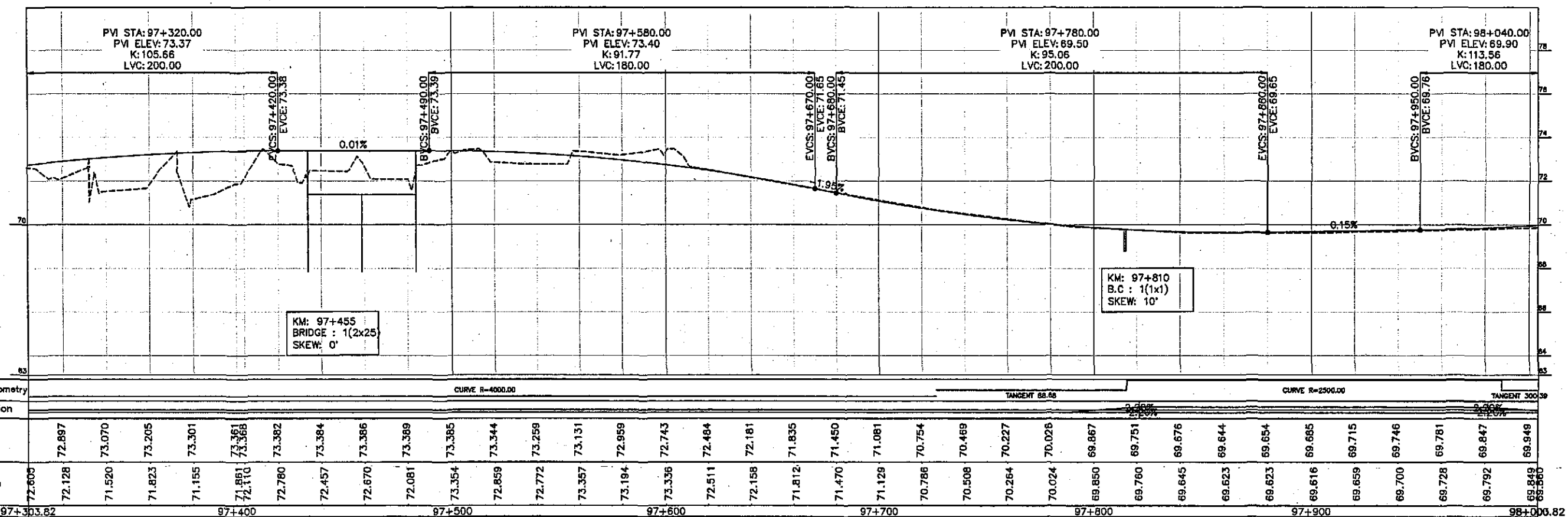
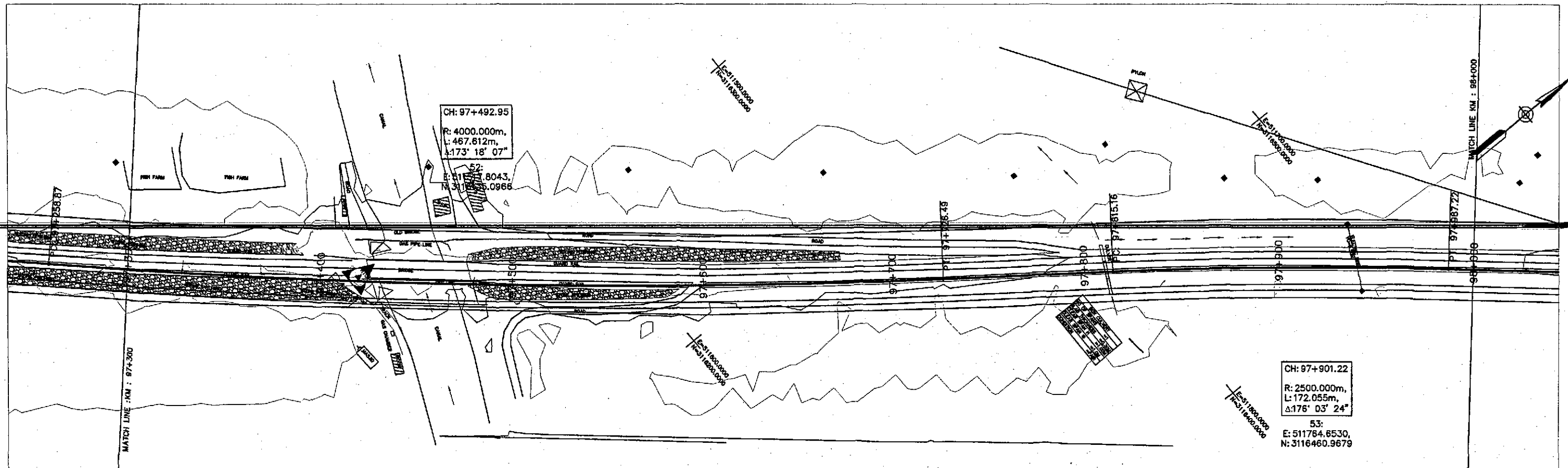


PLAN & PROFILE  
KM: 95+900 ~ KM: 96+600

SCALE  
1:2000

DATE JUNE, 2018	DWG NO. 3905/102/TD/P&P138
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GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

1 RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE

97+300 ~ KM: 98+000

DATE

JUNE, 2018

DWG NO.

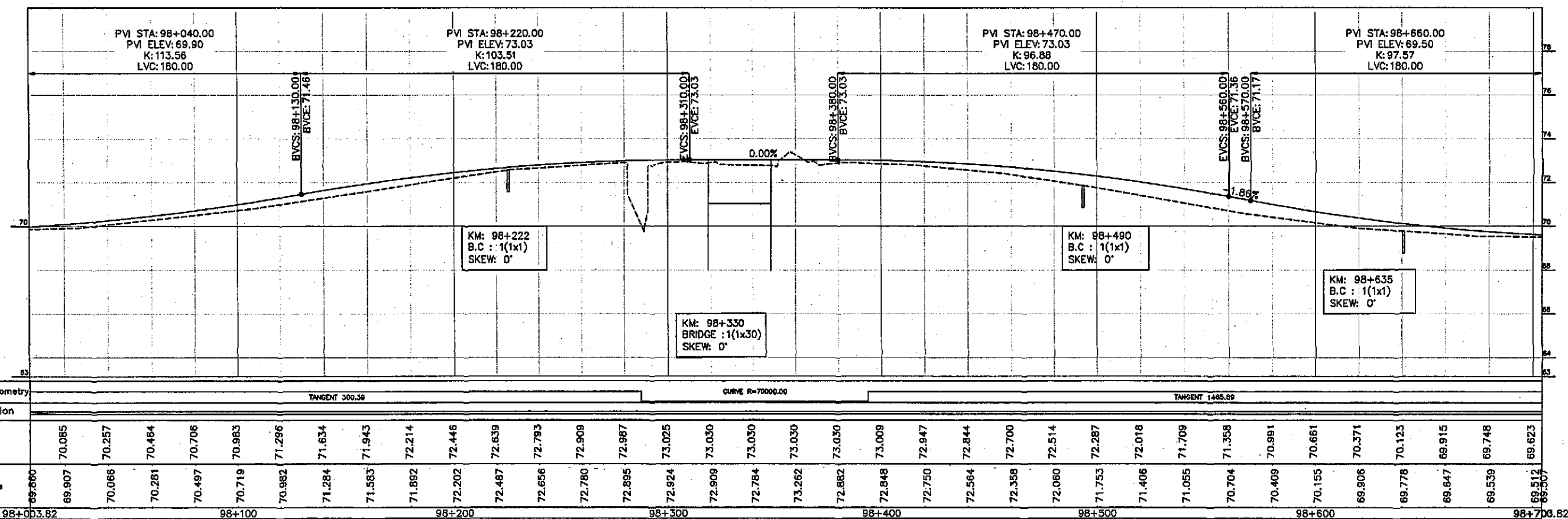
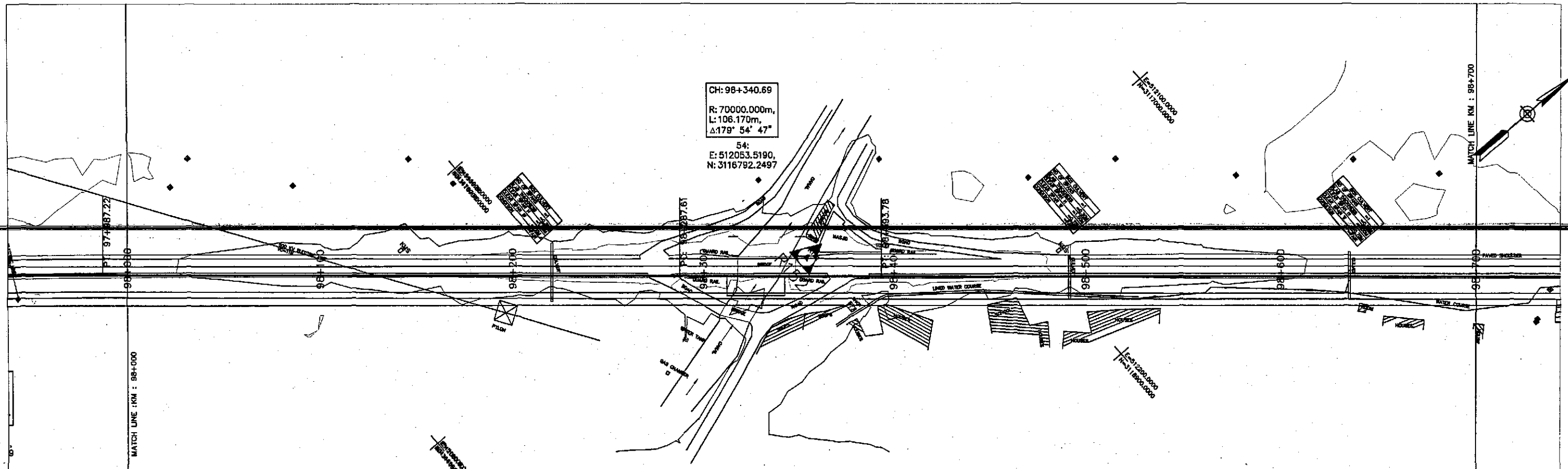
3905/102/TD/P&P140

TENDER DRAWINGS

SCALE

1:2000





TENDER DRAWING



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

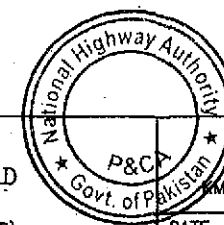


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE

KM: 98+000 ~ KM: 98+700

SCALE

1:2000

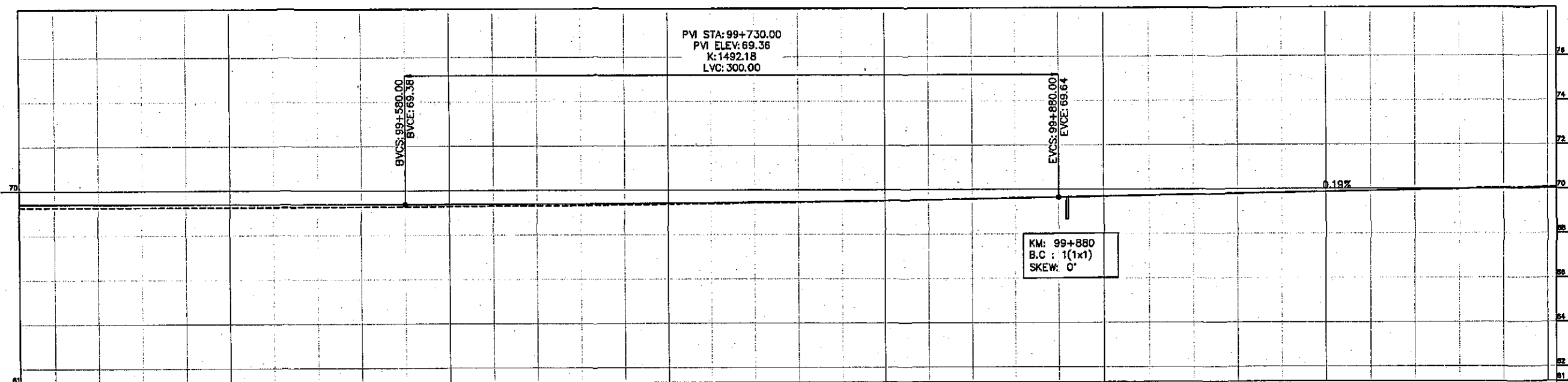
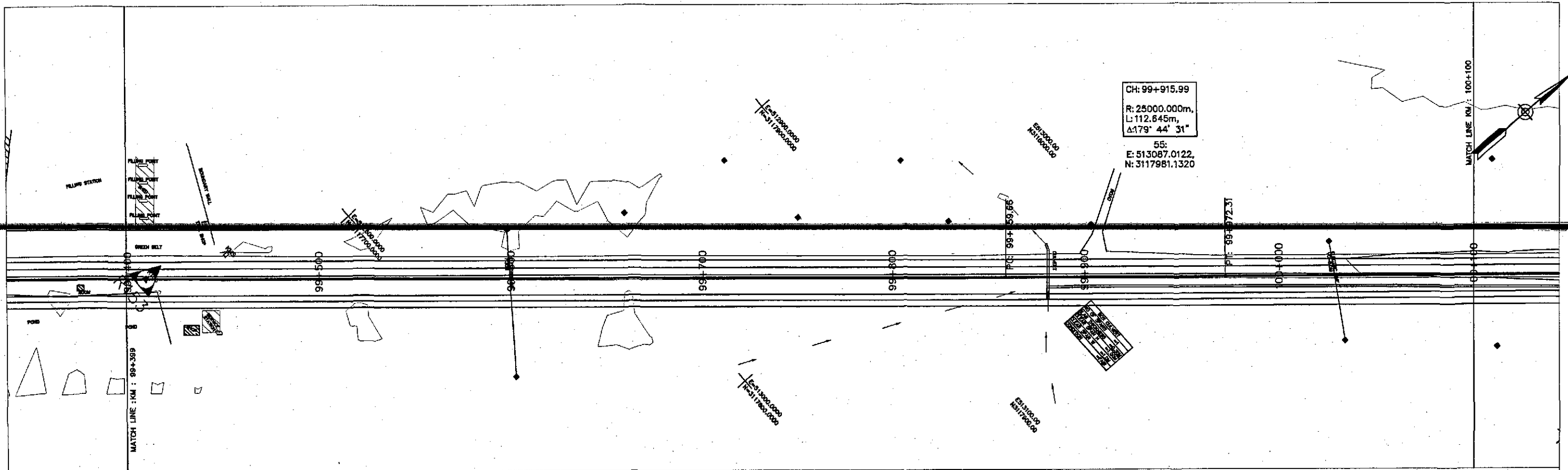
DATE

JUNE, 2018

DWG NO.

3905/102/TD/P&P141





Horizontal Geometry	TANGENT 1485.89																CURVE R=25000.00								TANGENT 518.71																																													
Superelevation																																																																						
Design Levels		69.401		69.398		69.395		69.393		69.390		69.388		69.385		69.382		69.380		69.378		69.380		69.384		69.391		69.400		69.412		69.427		69.445		69.465		69.488		69.513		69.541		69.572		69.606		69.642		69.680		69.717		69.755		69.792		69.830		69.868		69.905		69.943		69.980		70.018		70.056
Ground Levels	69.233	69.260		69.251		69.255		69.254		69.253		69.257		69.264		69.271		69.278		69.285		69.296		69.306		69.314		69.337		69.360		69.386		69.413		69.441		69.473		69.505		69.543		69.582		69.616		69.651		69.685		69.721		69.758		69.797		69.831		69.870		69.904		69.939		69.992		70.039		70.075
Chainage	99+403.82			99+500						99+600						99+700						99+800						99+900						100+000						100+100.82																														



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

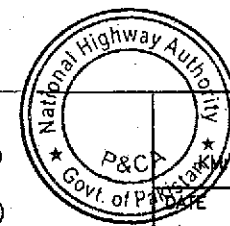


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**IAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

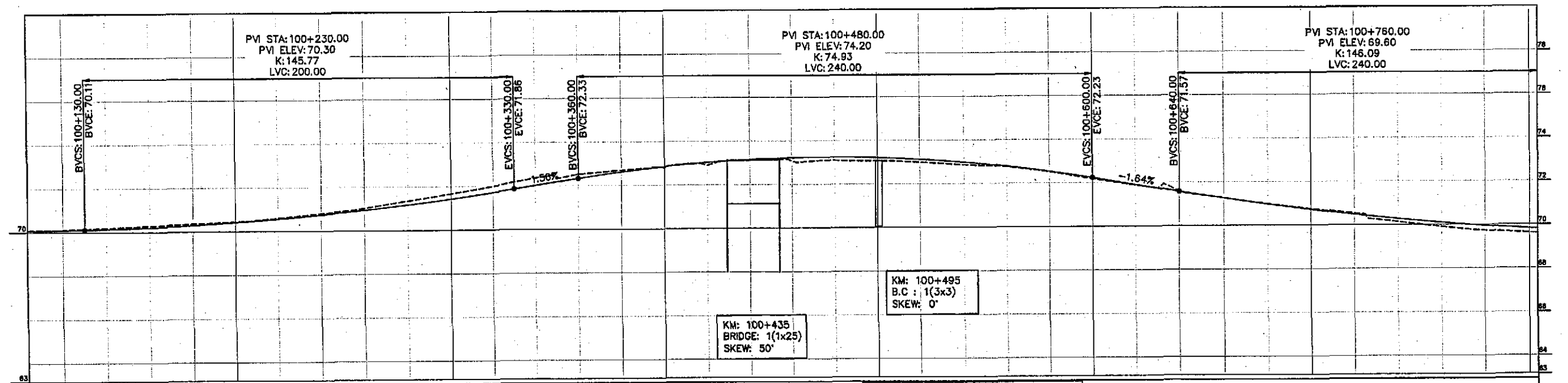
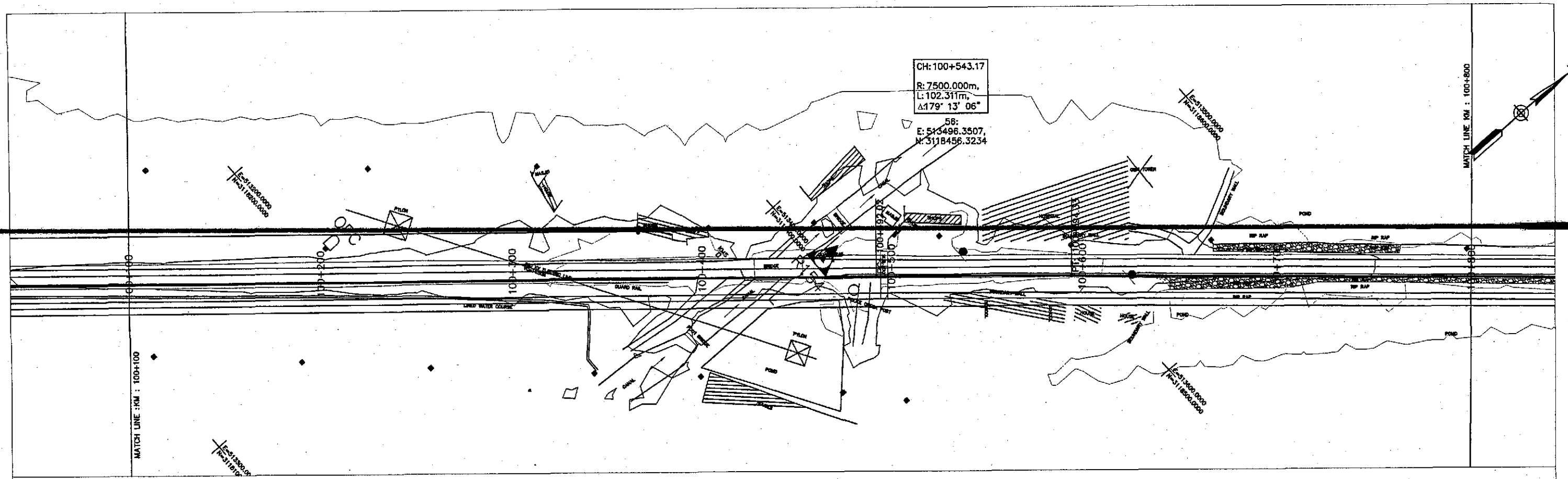
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
99+400 ~ km: 100+100  
JUNE, 2018  
DWG NO.  
3905/102/TD/P&P143

SCALE  
1:2000

TELEPHONIC DRAWINGS



Horizontal Geometry	TANGENT 510.71																		CURVE R=7500.00										TANGENT 1888.91									
Superelevation																																						
Design Levels		70.093	70.134	70.199	70.292	70.412	70.559	70.734	70.936	71.166	71.423	71.707	72.016	72.328	72.613	72.845	73.024	73.149	73.221	73.239	73.204	73.116	72.974	72.779	72.530	72.229	71.900	71.571	71.257	70.969	70.709	70.476	70.271	70.093	69.942	69.819		
Ground Levels	70.082	70.113	70.195	70.279	70.362	70.444	70.603	70.798	71.023	71.345	71.663	71.993	72.352	72.516	72.690	72.801	72.885	73.115	73.072	73.086	73.052	72.981	72.856	72.759	72.506	72.178	71.880	71.562	71.266	70.983	70.745	70.529	70.127	69.904	69.724	69.619	69.500	
Chainage	100+103.82				100+200				100+300				100+400				100+500				100+600				100+700				100+800				100+803.82					



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

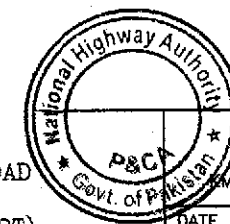


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE

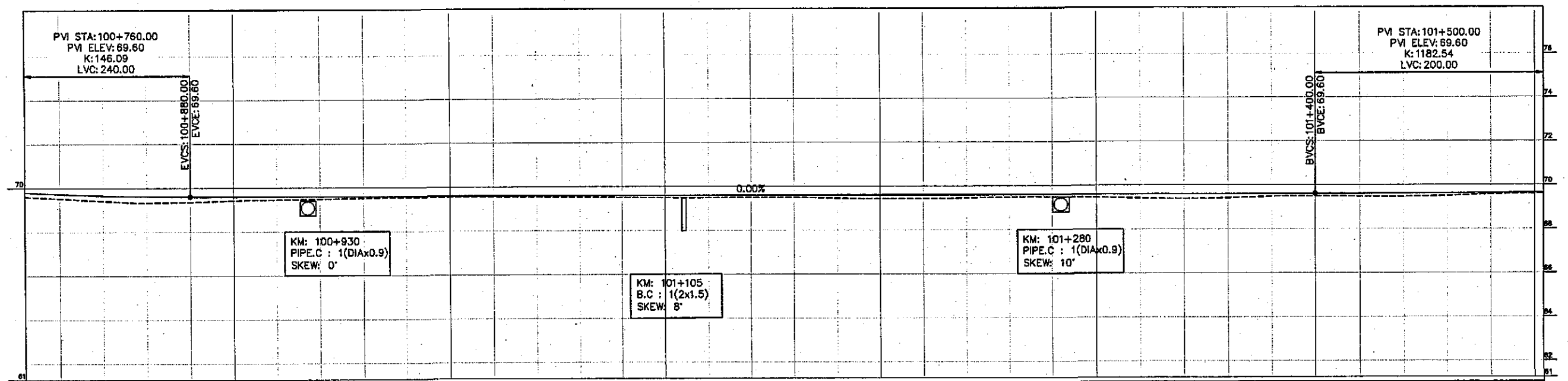
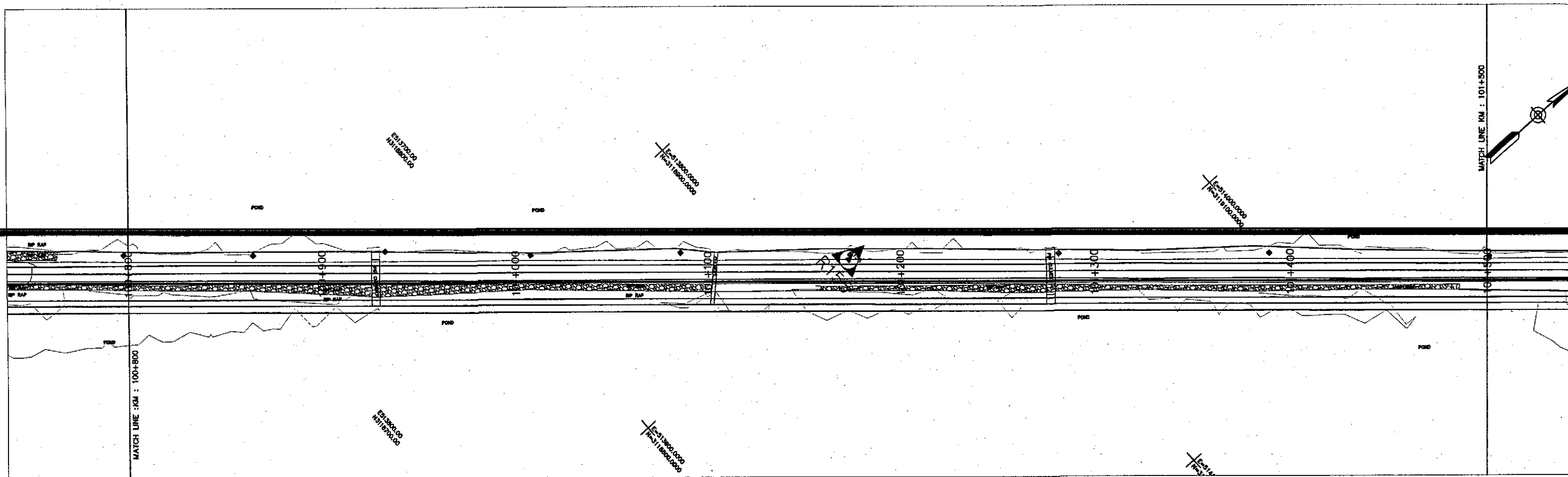
KM: 100+100 ~ KM: 100+800 1:2000

DATE  
JUNE, 2018

DWG NO.  
3905/102/TD/P&P144

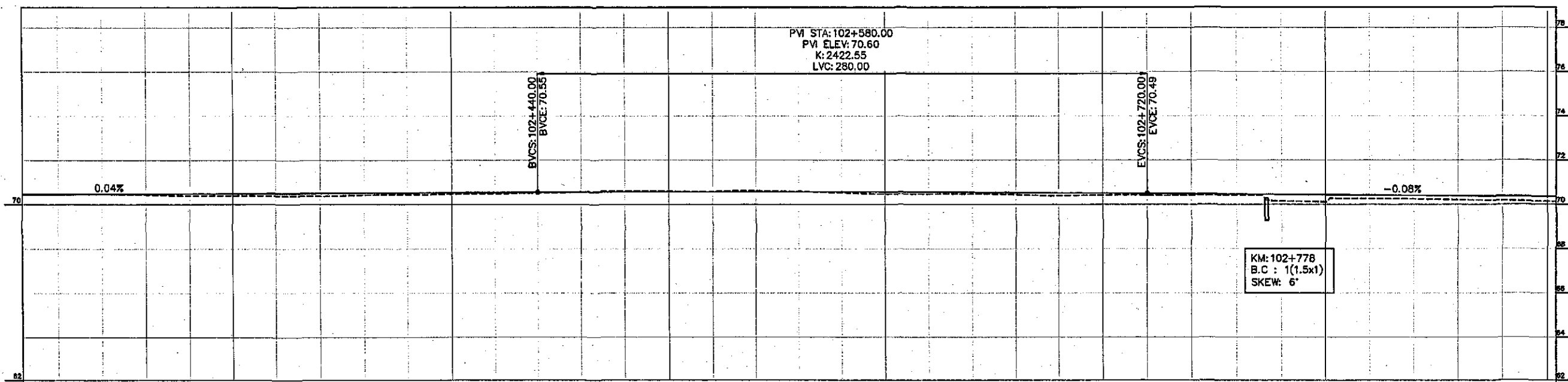
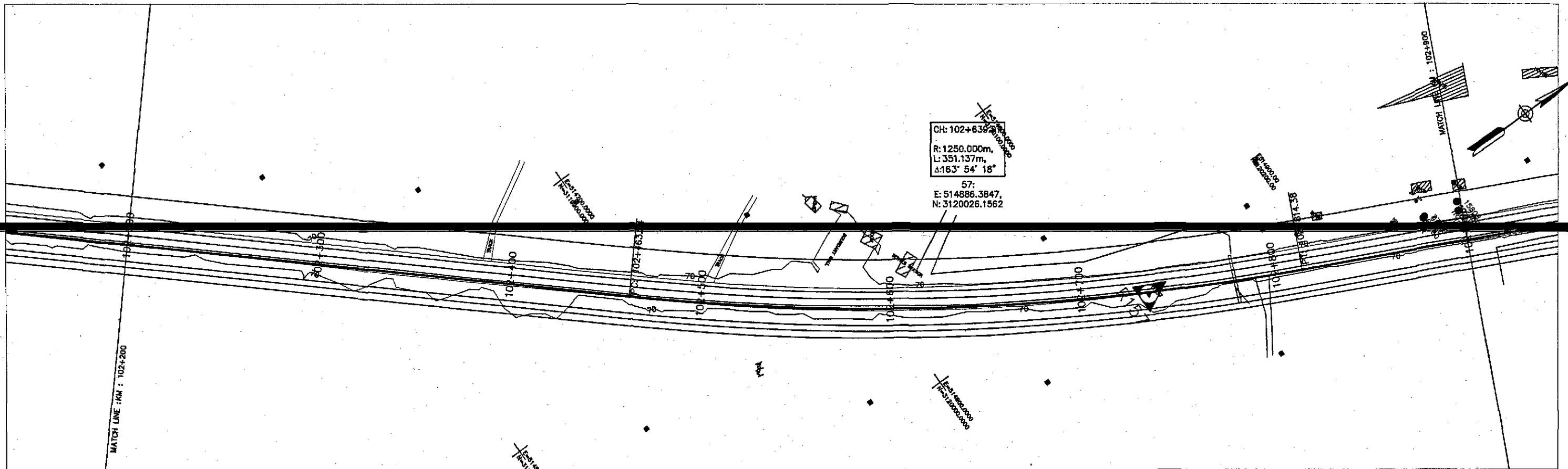
TENDER DRAWINGS





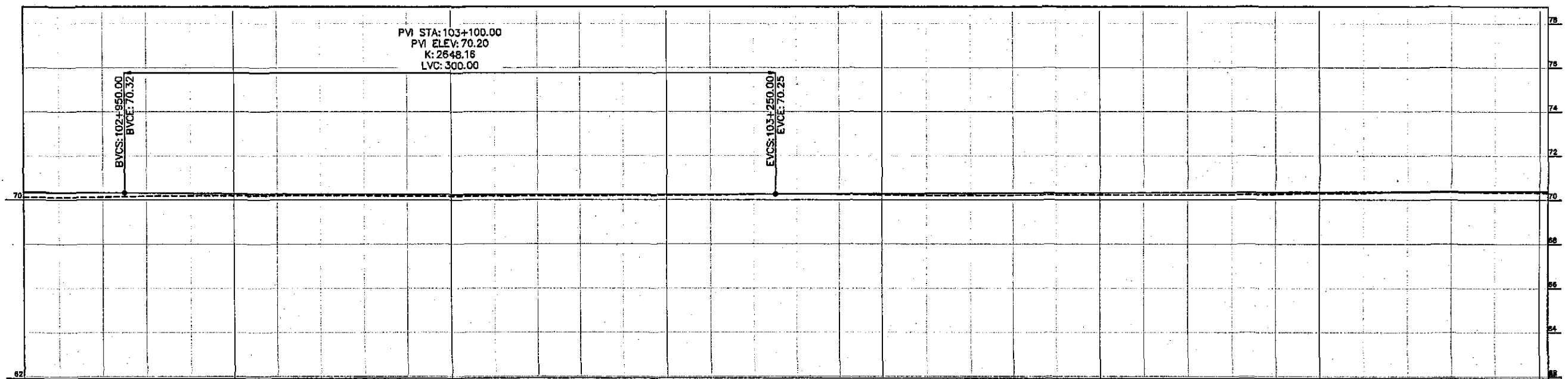
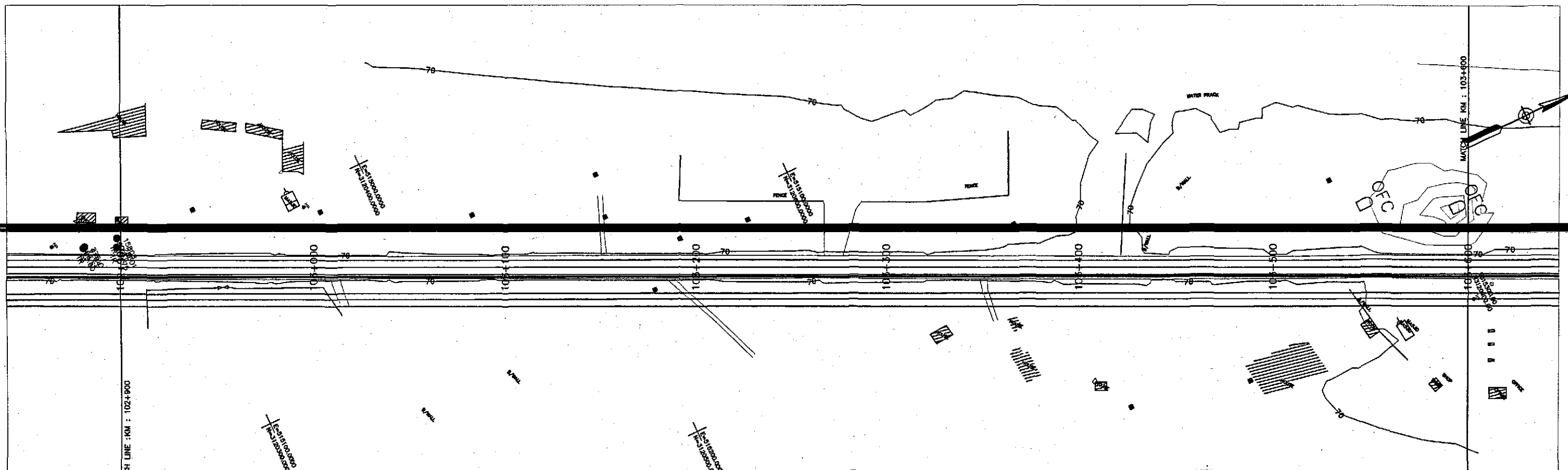
Horizontal Geometry	TANGENT 1668.81																																			
Superelevation																																				
Design levels	69.723	69.655	69.614	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.600	69.602	69.607	69.615	69.642										
Ground Levels	69.600	69.519	69.406	69.326	69.355	69.417	69.453	69.486	69.519	69.542	69.550	69.549	69.534	69.519	69.504	69.489	69.496	69.493	69.449	69.422	69.427	69.447	69.479	69.482	69.461	69.410	69.389	69.414	69.473	69.485	69.468	69.458	69.496	69.562	69.599	69.604
Chainage	100+803.82				100+900				101+000				101+100				101+200				101+300				101+400				101+503.82							





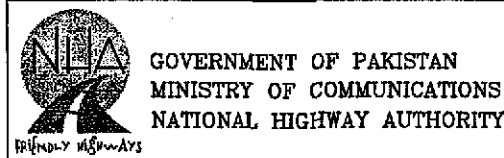
Horizontal Geometry	TANGENT 1588.91															CURVE R=1250.00															TANGENT 918.51									
Superelevation																																								
Design Levels		70.461	70.469	70.476	70.484	70.492	70.499	70.507	70.515	70.523	70.530	70.538	70.546	70.553	70.558	70.562	70.564	70.564	70.563	70.560	70.555	70.549	70.541	70.531	70.520	70.507	70.492	70.477	70.462	70.446	70.431	70.415	70.400	70.385	70.369	70.354				
Ground Levels	70.453	70.462	70.470	70.430	70.395	70.399	70.392	70.380	70.422	70.446	70.461	70.485	70.512	70.562	70.611	70.591	70.578	70.625	70.582	70.518	70.461	70.461	70.437	70.388	70.419	70.414	70.401	70.403	70.148	70.113	70.259	70.242	70.207	70.173	70.136	70.129				
Chainage	102+203.82	102+300					102+400					102+500					102+600					102+700					102+800					102+900.82								

TENDER DRAWINGS



Horizontal Geometry		TANGENT 918.51																																				
Superelevation																																						
Design Levels		70.338	70.323	70.308	70.294	70.282	70.271	70.261	70.254	70.247	70.239	70.237	70.237	70.238	70.241	70.245	70.251	70.258	70.265	70.273	70.280	70.287	70.295	70.302	70.309	70.316	70.324	70.331	70.338	70.345	70.353	70.360	70.367	70.375	70.382			
Ground Levels		70.129	70.120	70.130	70.167	70.187	70.189	70.190	70.194	70.185	70.177	70.166	70.171	70.176	70.182	70.188	70.195	70.210	70.242	70.251	70.251	70.246	70.217	70.188	70.195	70.203	70.215	70.223	70.217	70.217	70.229	70.252	70.275	70.305	70.336	70.338	70.331	70.324
Chainage		102+903.82	103+000				103+100				103+200				103+300				103+400				103+500				103+600.82											

TENDER DRAWINGS



**NESPAK**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

JAWAD UL HAQ Project Manager M/S NESPAK		DRAWN M A NADEEM AWAN	
REV.		DATE	
DESCRIPTION		APPROVED	

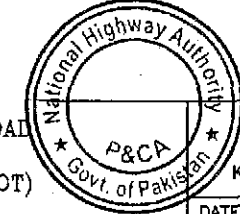
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

PLAN & PROFILE  
KM: 102+900 ~ KM: 103+600 1:2000

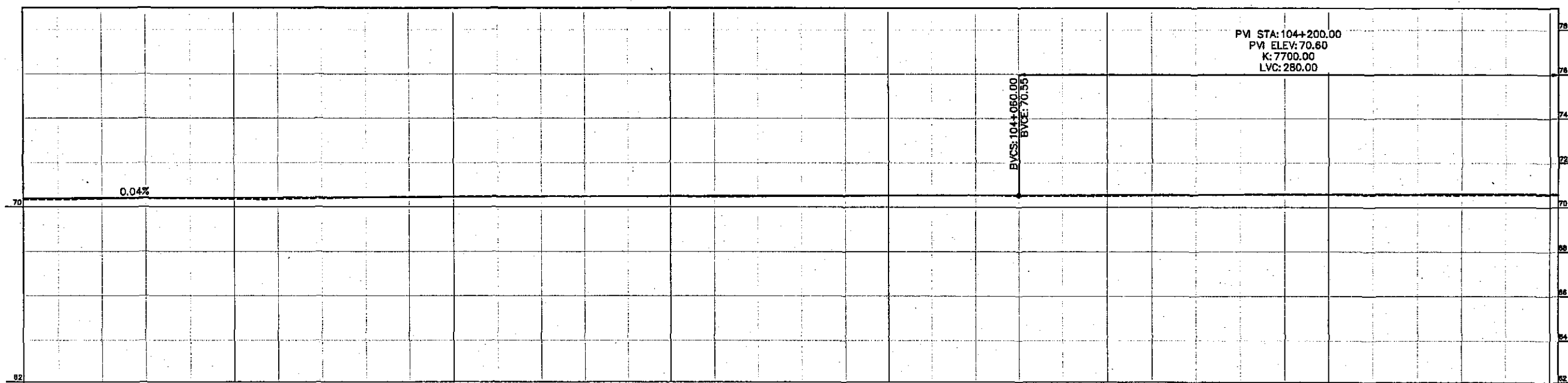
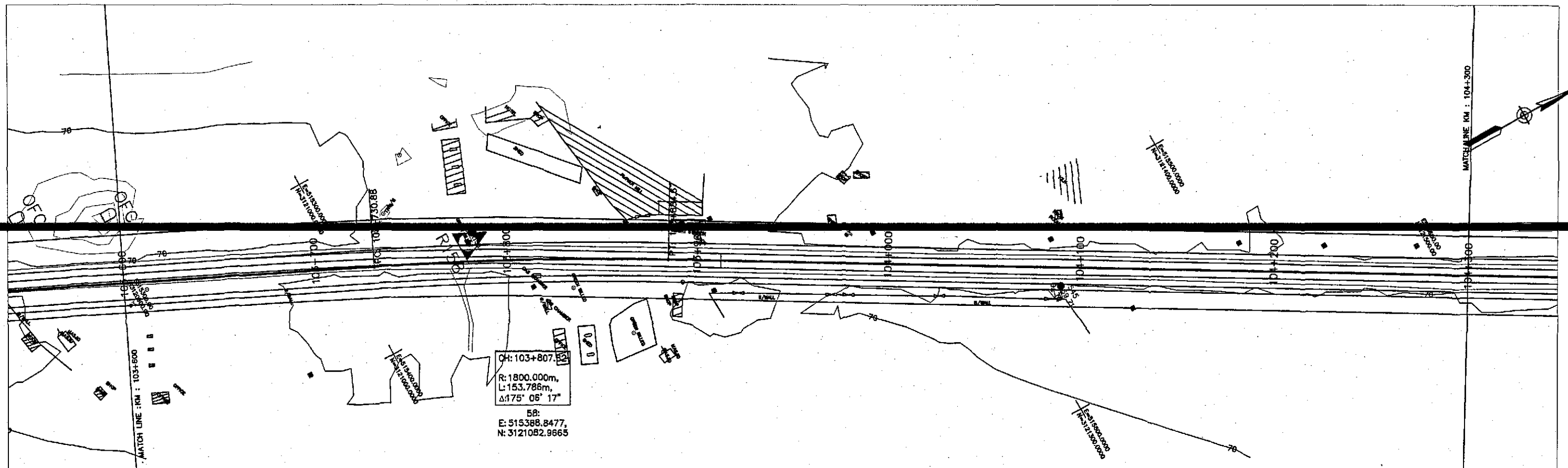
DATE: JUNE, 2018

DWG NO.: 3905/102/TD/P&P148

SCALE







Horizontal Geometry	TANGENT 918.51										CURVE R=1800.00										TANGENT 1043.58															
Superelevation	2.5% 2.5%																																			
Design Levels	70.389	70.396	70.404	70.411	70.418	70.425	70.433	70.440	70.447	70.455	70.462	70.469	70.476	70.484	70.481	70.488	70.505	70.513	70.520	70.527	70.535	70.542	70.549	70.556	70.563	70.569	70.574	70.579	70.583	70.591	70.594	70.596	70.598	70.599		
Ground Levels	70.325	70.331	70.363	70.395	70.379	70.356	70.353	70.385	70.425	70.456	70.478	70.488	70.483	70.482	70.481	70.475	70.463	70.473	70.480	70.503	70.525	70.544	70.536	70.516	70.498	70.506	70.527	70.552	70.558	70.557	70.559	70.555	70.550	70.547	70.566	70.582
Chainage	103+603.82		103+700				103+800				103+900				104+000				104+100				104+200				104+300.82									

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

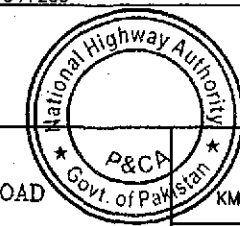


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

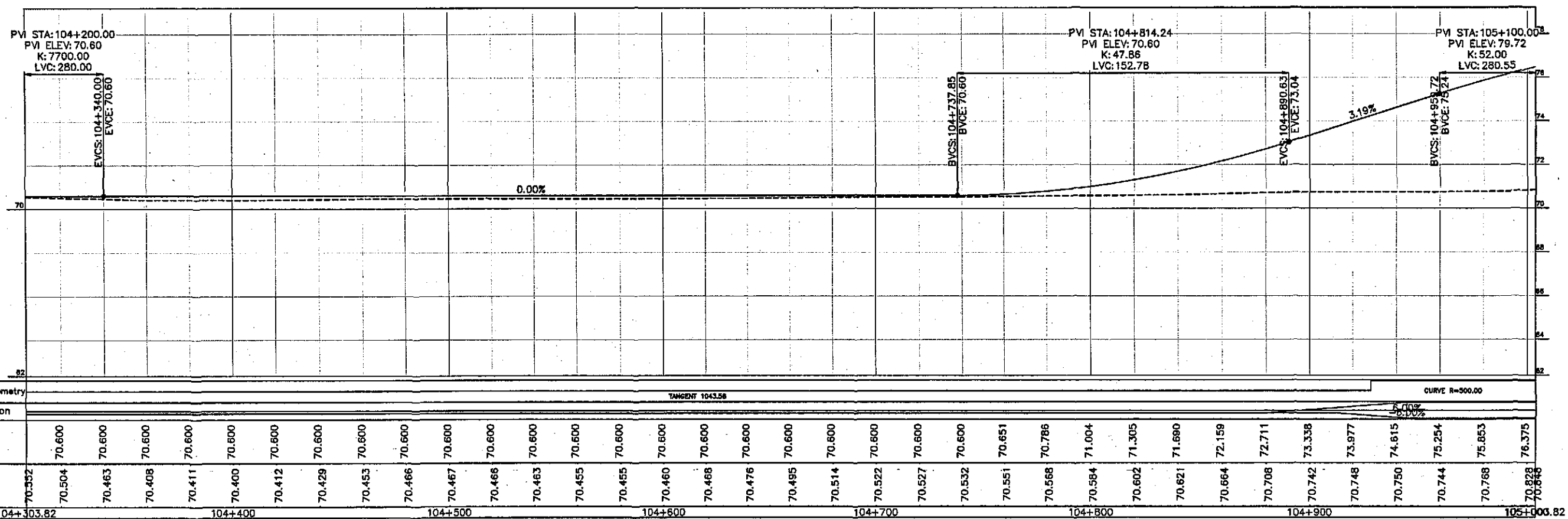
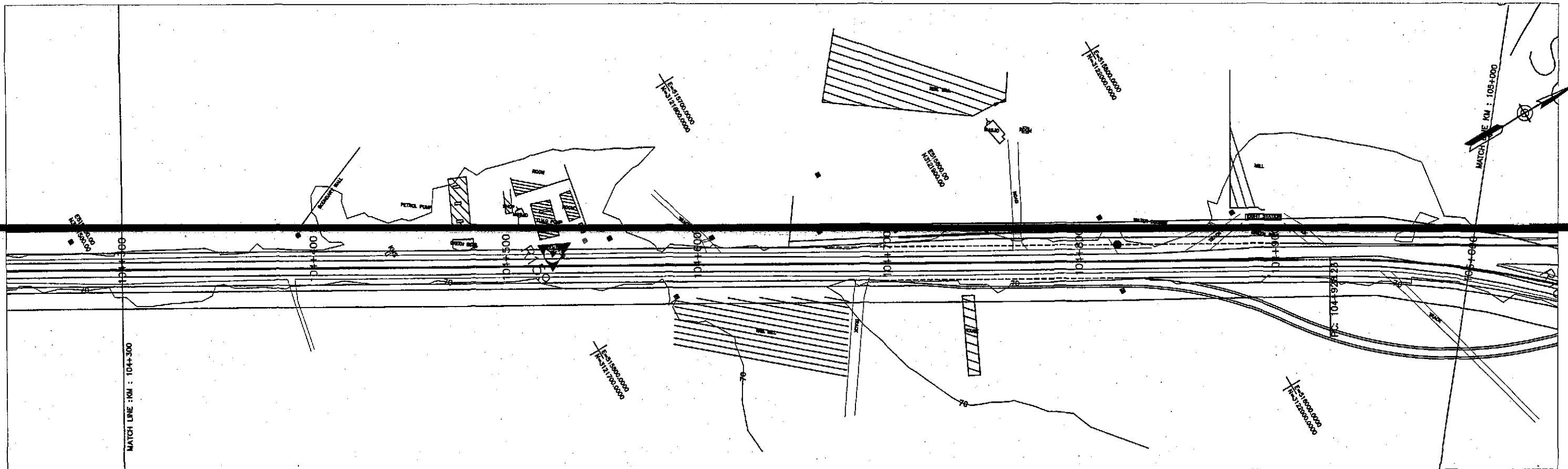
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE  
KM: 103+600 ~ KM: 104+300 1:2000

DATE: JUNE, 2018  
DWG NO.: 3905/102/TD/P&P149

SCALE



TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

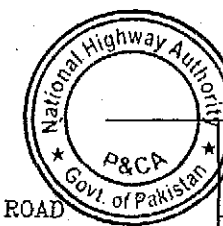


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

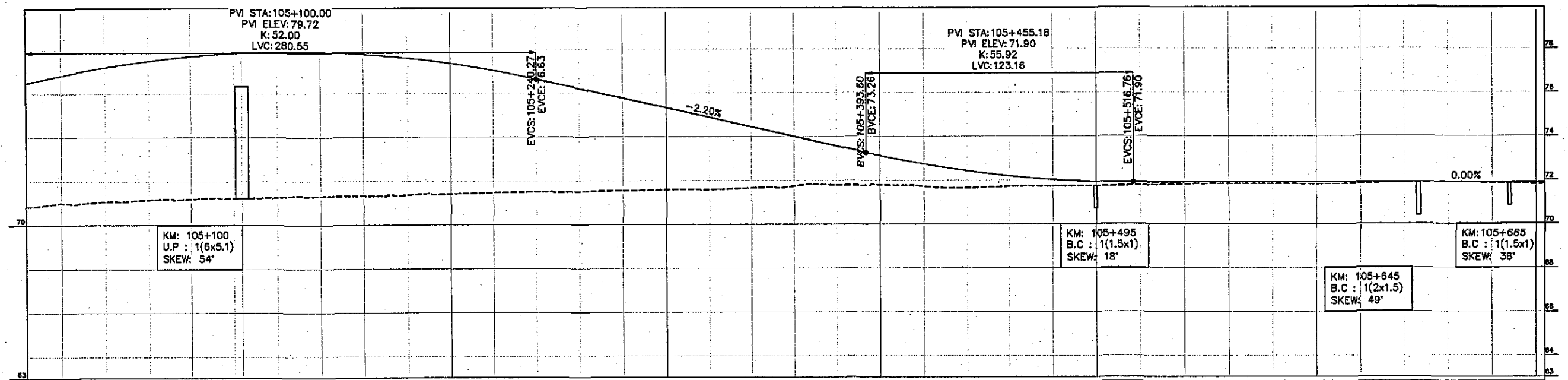
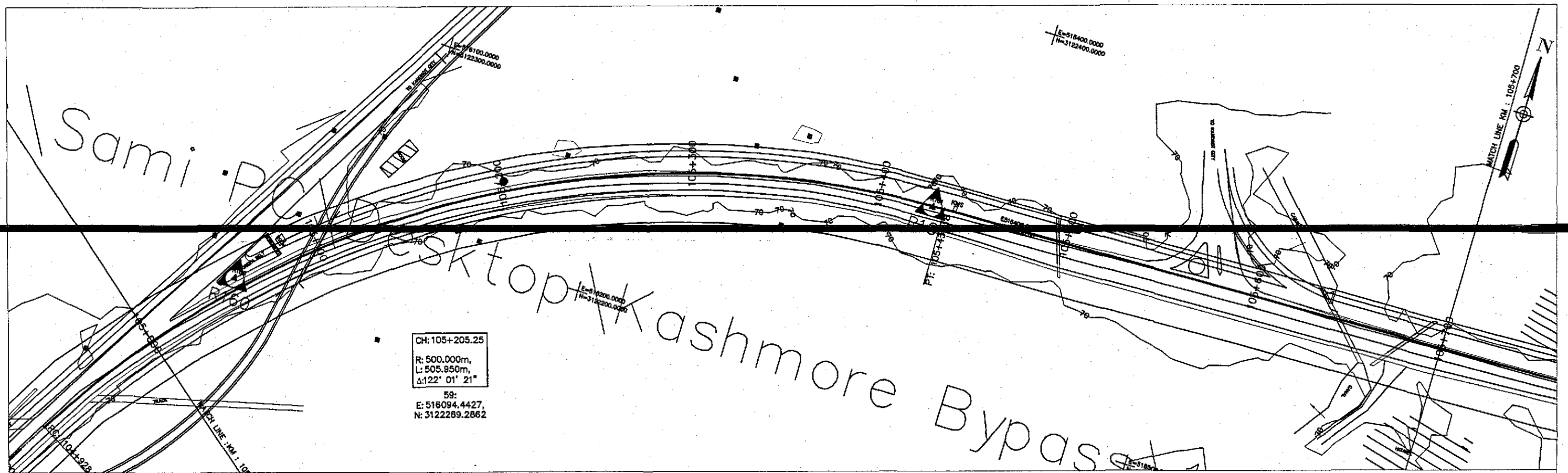
**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	M A NADEEM AWAN
				SUBMITTED	
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



PLAN & PROFILE		SCALE
KM: 104+300 ~ KM: 105+000		1:2000
DATE	DWG NO.	
JUNE, 2018	3905/102/TD/P&P150	



Horizontal Geometry	CURVE R=500.00																			
Superelevation	TANGENT 385.82																			
Design Levels	76.820	77.188	77.479	77.694	77.831	77.849	77.892	77.875	77.782	77.612	77.365	77.040	76.639	76.199	75.758	75.318	74.877	74.437	73.996	73.556
Ground Levels	70.999	71.064	71.147	71.185	71.218	71.228	71.255	71.302	71.319	71.359	71.407	71.459	71.502	71.497	71.554	71.577	71.571	71.652	71.733	71.786
Chainage	105+003.82				105+100					105+200					105+300				105+400	
																			105+500	
																				105+600
																				105+700
																				105+703.82



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY



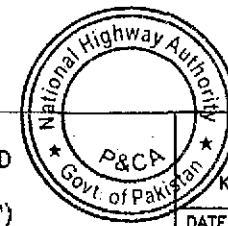
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	M A NADEEM AWAN
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

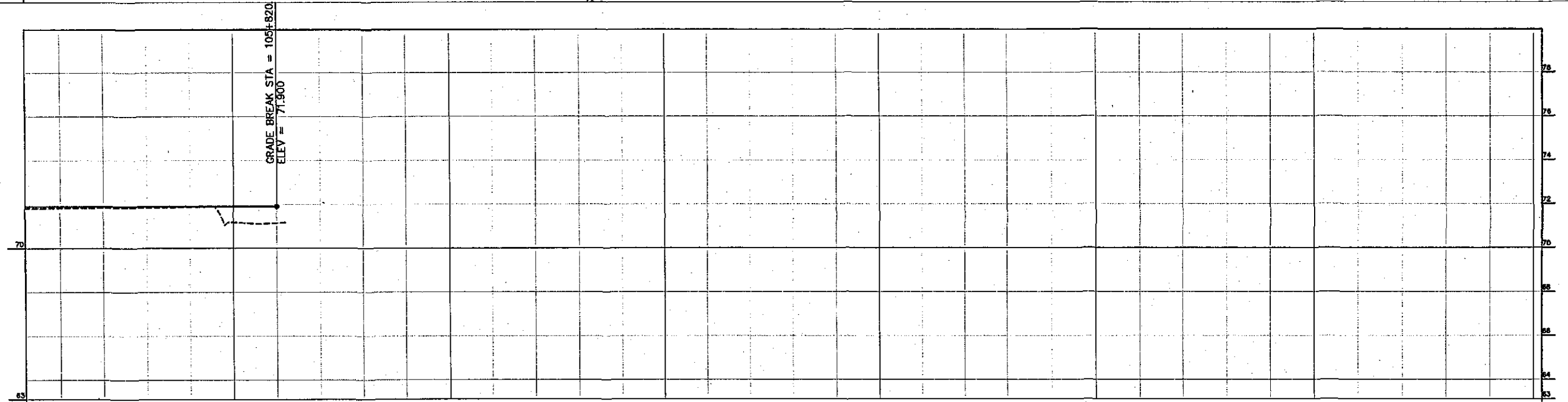
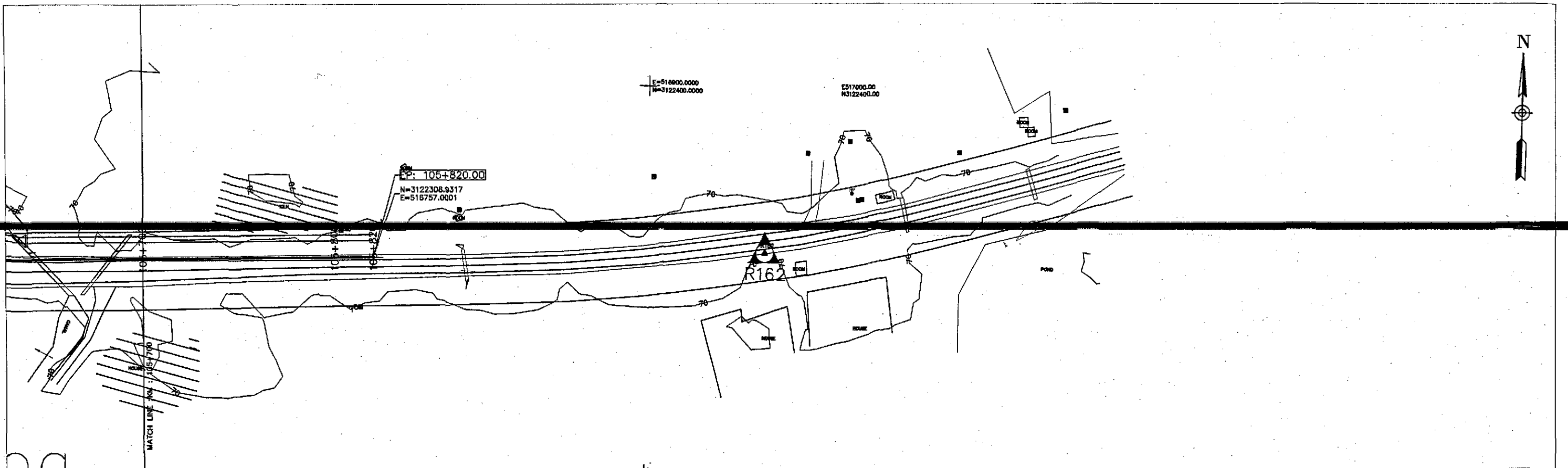
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)



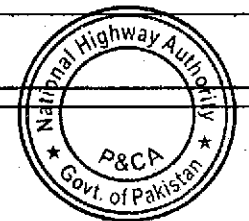
PLAN & PROFILE  
KM: 105+000 ~ KM: 105+700 1:2000

DATE: JUNE, 2018  
DWG NO.: 3905/102/TD/P&P151

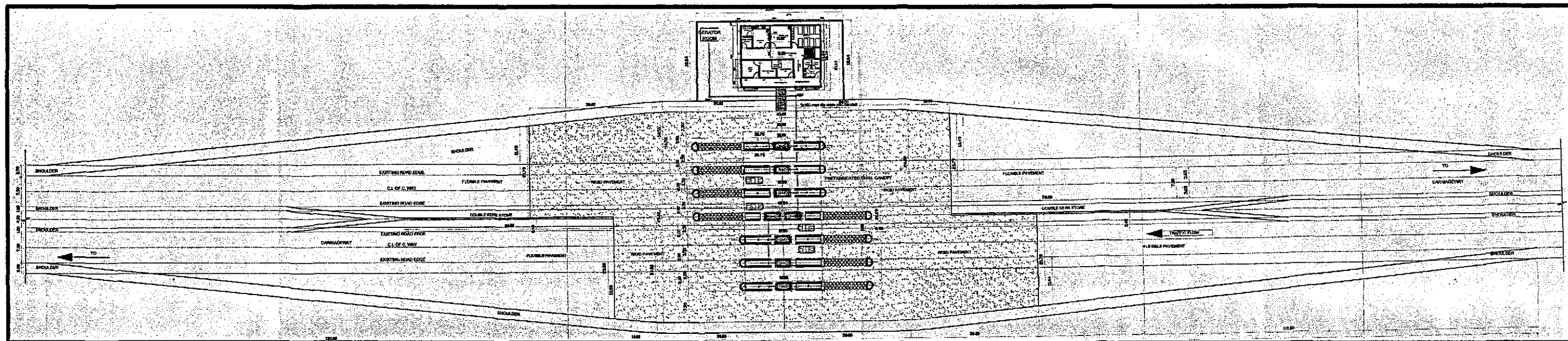
TENDER DRAWINGS



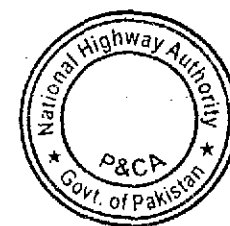
Horizontal Geometry						
Superelevation						
Design Levels	71.900	71.900	71.900	71.900	71.900	71.900
Ground Levels	71.813	71.824	71.834	71.852	71.872	71.177
Chainage	105+703.82	105+800	105+900	106+000	106+100	106+200
						106+300
						106+400.82





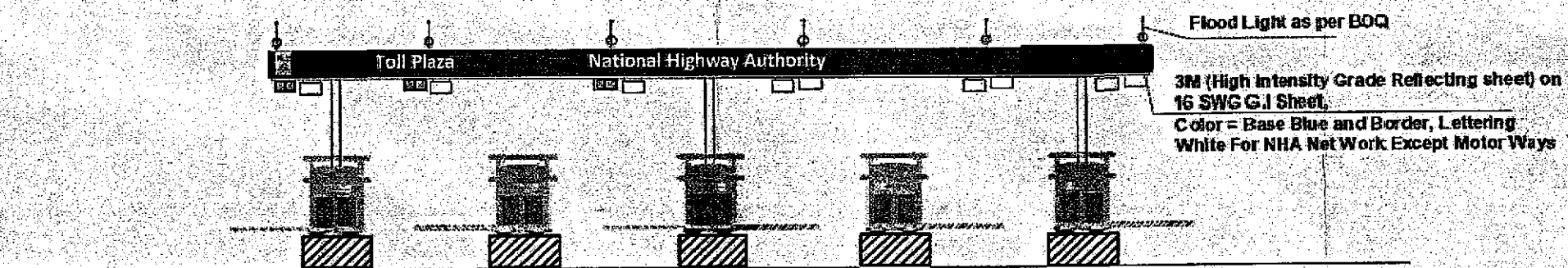




**TENDER DRAWINGS**



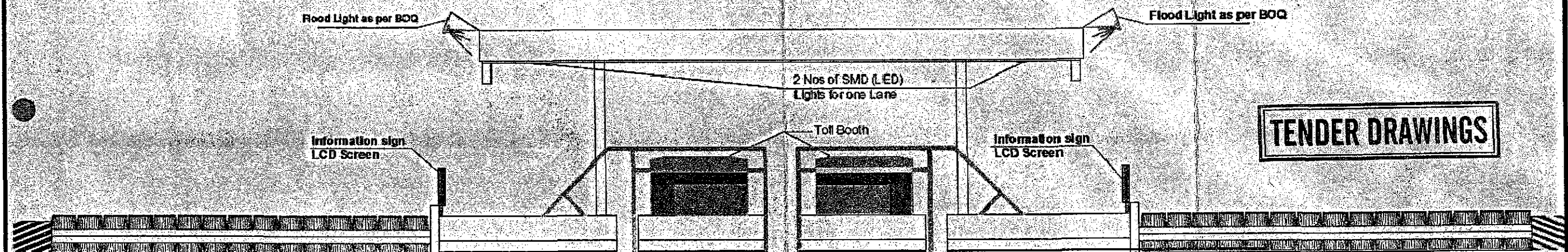
	GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY		NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	04	<b>JAWAD UL HAQ</b> Project Manager M/S NESPAK	DRAWN BY	RAJA SHAFIQ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	TITLE		SCALE
				03		SUBMITTED BY			PLAN		
				02		RECOMMENDED BY					
				01		CHD./VER. BY					
				REV.	DATE	DESCRIPTION	APPROVED		APPROVED BY		DATE
						MARCH 2018	3905/102/TD/ TP-01				



ELEVATION NO. 1 STANDARD COLOR FOR NHA NET WORK EXCEPT MOTOR WAYS



ELEVATION NO. 1 STANDARD COLOR FOR MOTOR WAYS



ELEVATION NO. 2



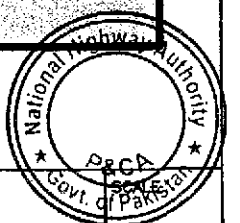
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

**NESPAK** NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

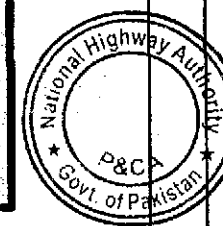
04	JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ
03	Project Manager	SUBMITTED BY	
02	M/S NESPAK	RECOMMENDED BY	
01		CHK./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED

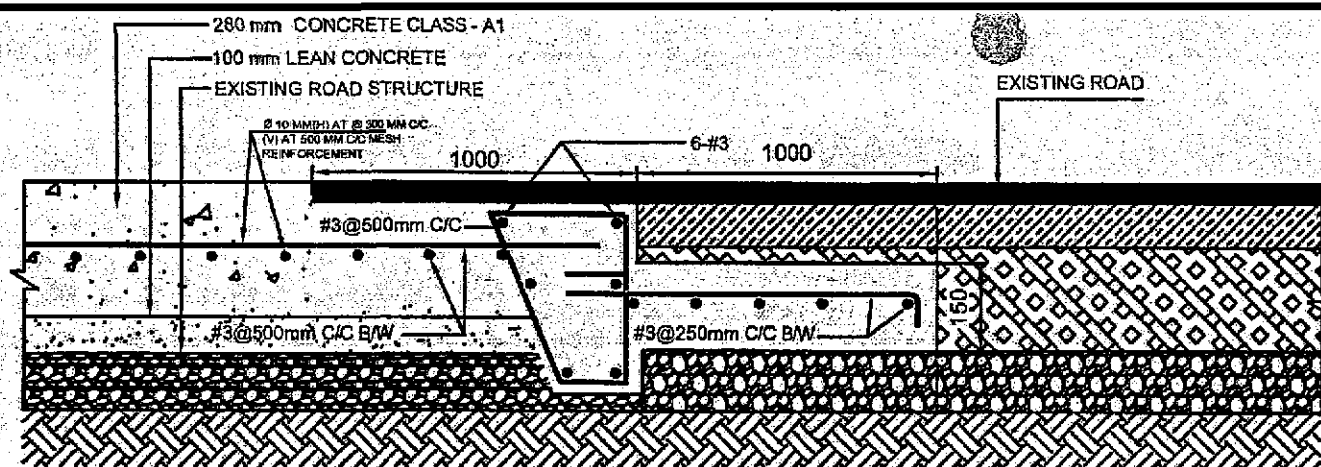
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	8 LANE TOLL PLAZA		
DATE	MARCH 2018	DRAWING NO.	3905/102/TD/ TP-02
REV.			

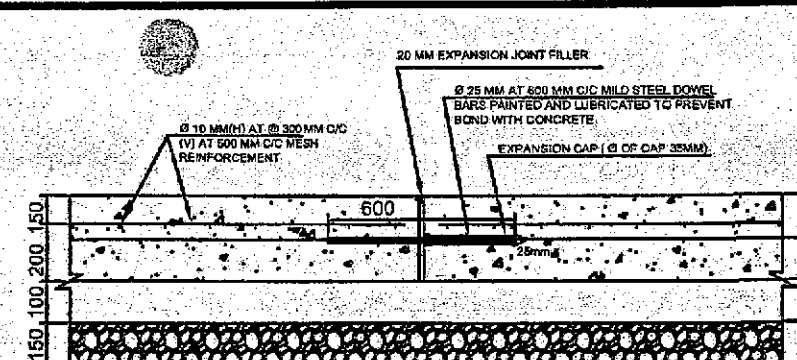




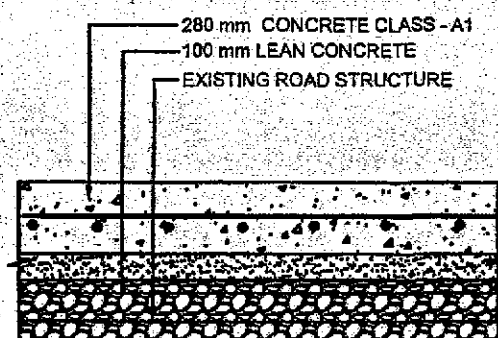




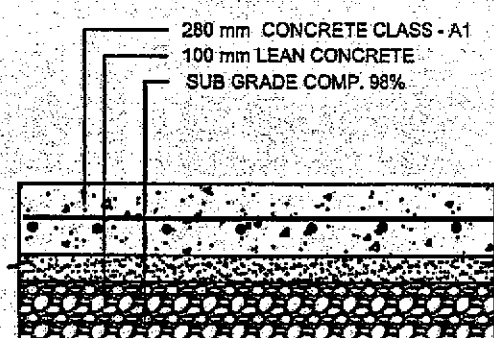
TYP. JOINT AT JUNCTION OF RIGID AND EXISTING ASPHALT PAVEMENTS



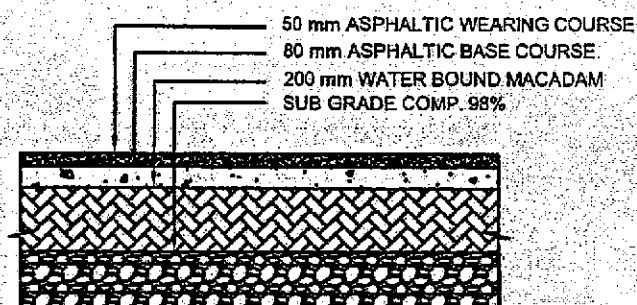
TYPICAL DETAIL OF REINFORCEMENT FOR RIGID PAVEMENT (EXPANSION JOINT AT EVERY 10 M)



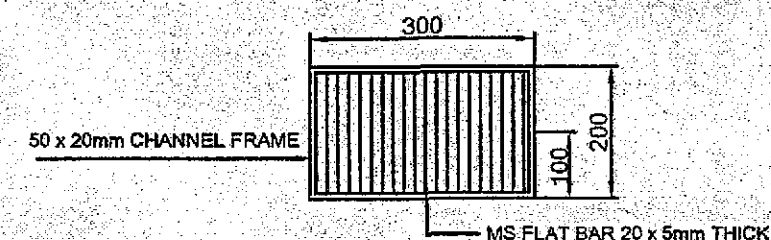
TYPICAL CROSS SECTION OF (RIGID) PAVEMENT ON EXISTING PAVEMENT STRUCTURE



TYPICAL CROSS SECTION OF (RIGID) PAVEMENT IN WINDING PORTION

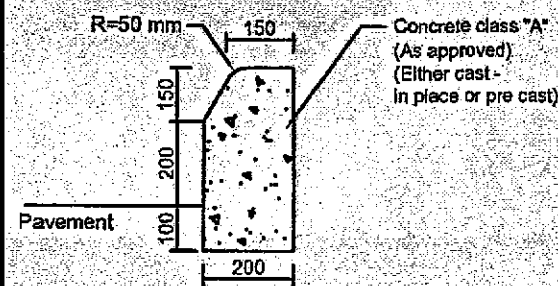


TYPICAL CROSS SECTION OF FLEXIBLE PAVEMENT IN WINDING PORTION

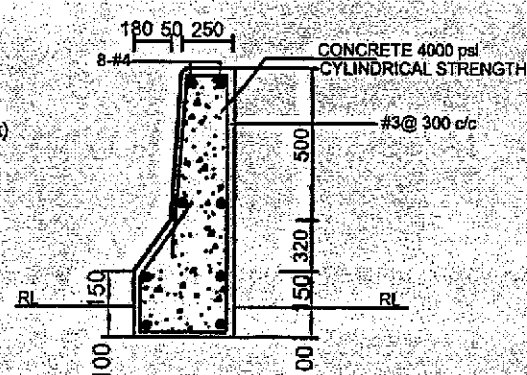


PLAN OF GRATING FOR RAIN WATER INLET

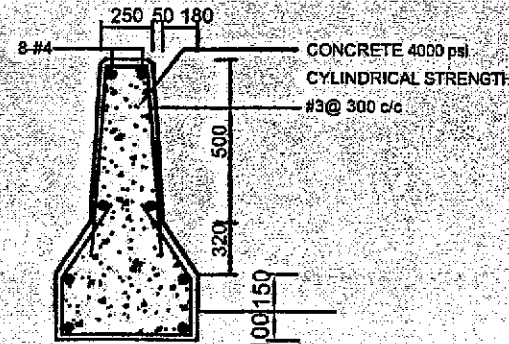
## TENDER DRAWINGS



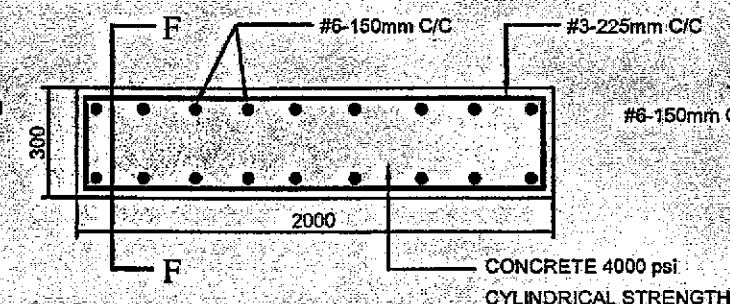
DETAIL OF KERB STONE



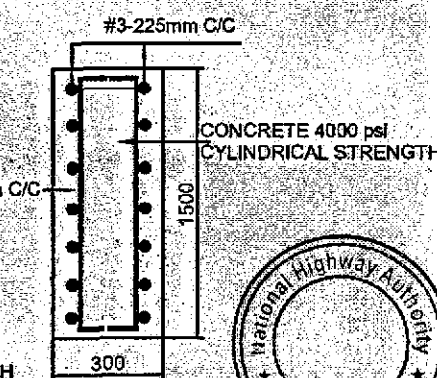
DETAIL OF MODIFIED JERSEY BARRIER



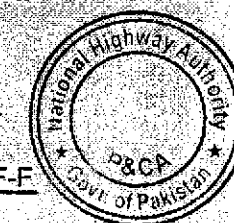
DETAIL OF STANDARD JERSEY BARRIER



DETAIL OF RCC WALL





SECTION AT F-F



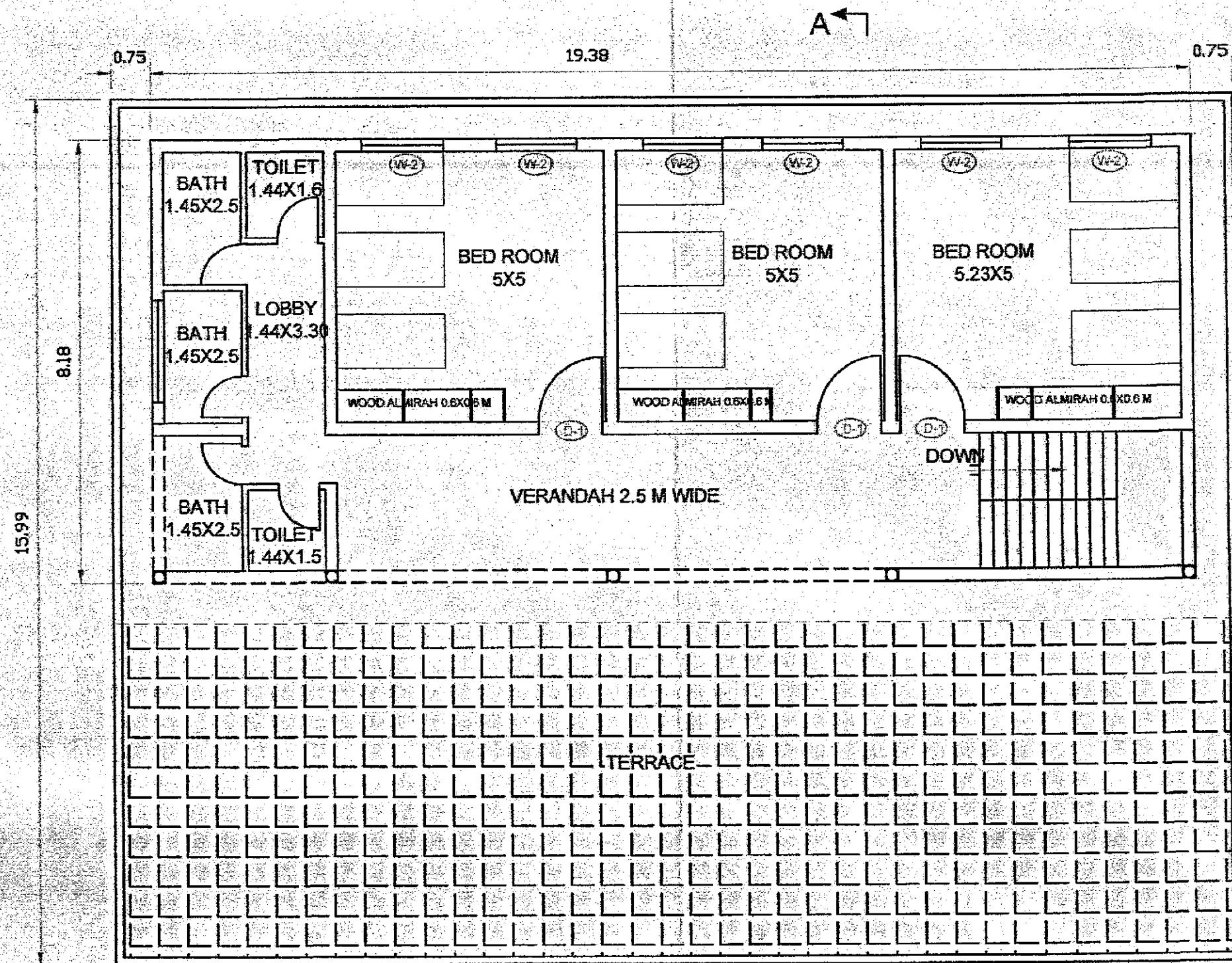
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATION

8 LANE TOLL PLAZA

	GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	04	<b>IAWAD UL HAQ</b> Project Manager M/S NESPAK	DRAWN BY	RAJA SHAFIQ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	TITLE		SCALE
			03		SUBMITTED BY					
			02		RECOMMENDED BY					
			01		CHD./VER. BY					
			REV.		DATE	DESCRIPTION		APPROVED	APPROVED BY	
					MARCH 2018	3905/102/TD/ TP-04				






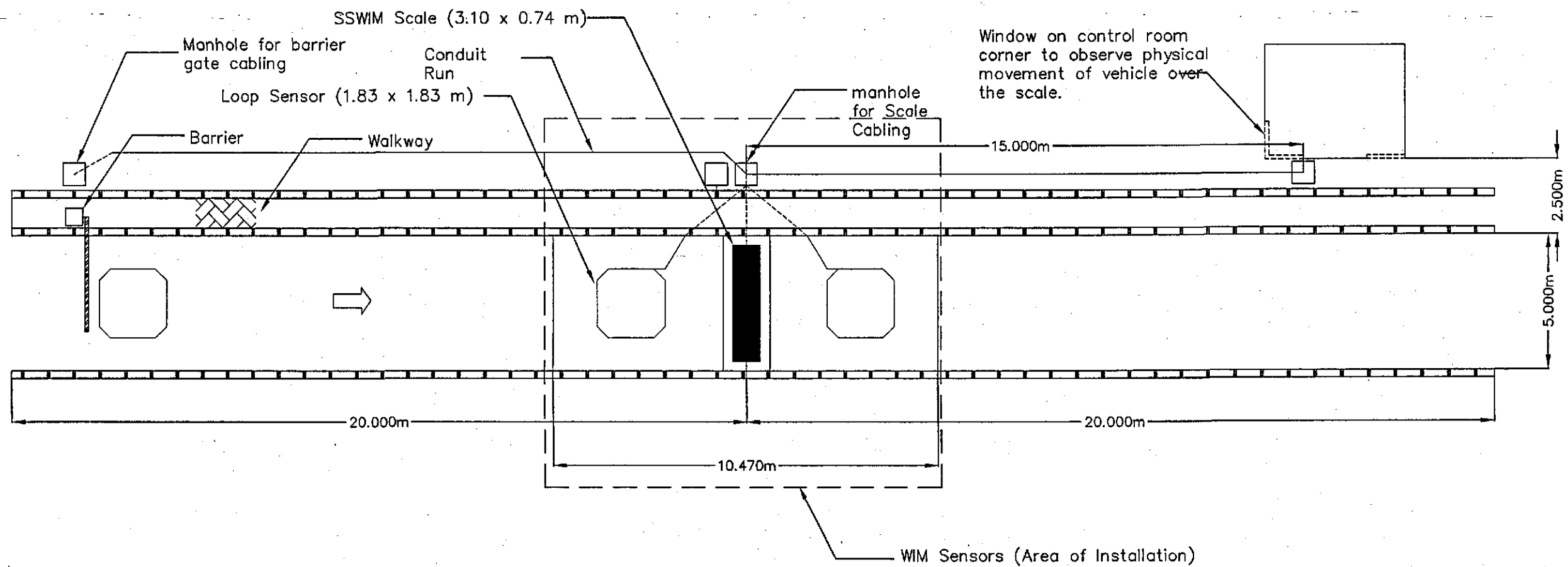


FIRST FLOOR OFFICE & RESIDENTIAL BUILDING PLAN

TENDER DRAWINGS






 <p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p><b>NESPAK</b> NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</p>	<p>04 03 <b>JAWAD UL HAQ</b> 02 Project Manager 01 M/S NESPAK</p>	<p>DRAWN BY RAJA SHAFIQ SUBMITTED BY RECOMMENDED BY CHD./VER. BY APPROVED BY</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)</p>	<p>TITLE STANDARD TOLL PLAZA OFFICE &amp; RESIDENTIAL BUILDING 1st/F PLAN</p> <p>DATE MARCH 2018</p> <p>DRAWING NO. 3905/102/TD/ TP-06</p>	<p>SCALE</p> <p>REV.</p>
---	---	---	--	--	--	--------------------------

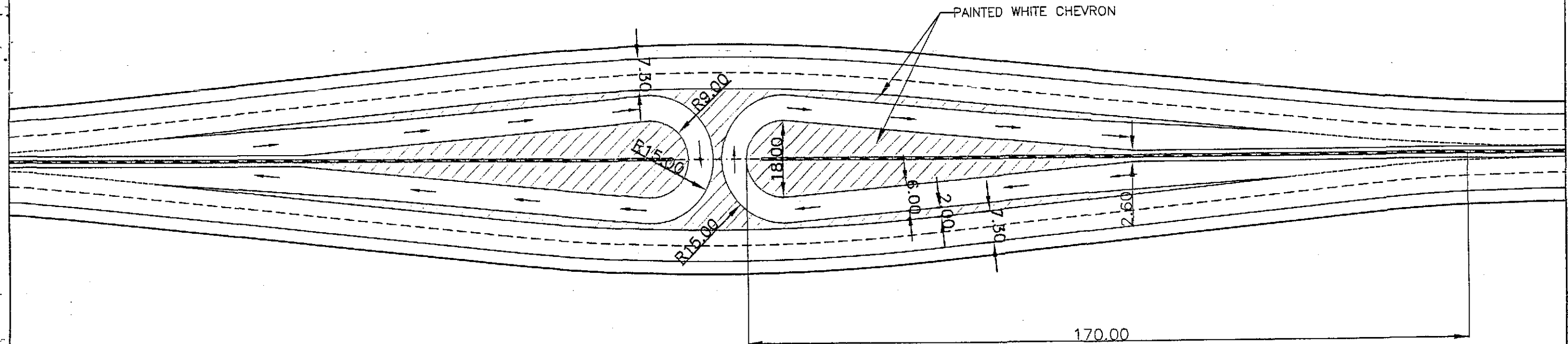


**TENDER DRAWINGS**



**NOTE:**  
1- ALL THE DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.

 GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	04	 <b>JAWAD UL HAQ</b> Project Manager <b>M/S NESPAK</b>	DRAWN BY	RAJA SHAFIQ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	TITLE		SSWIM SCALE (Typical Layout Plan)	SCALE
		03		SUBMITTED BY						
		02		RECOMMENDED BY						
		01		CHD./VER. BY						
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY		DATE	DRAWING NO.	REV.
							MARCH 2018	3905/102/TD/ TP-07		



# LIST OF U-TURN

CHAINAGE	
1	51+600
2	56+900
3	64+100
4	74+400
5	82+900
6	91+700
7	99+700



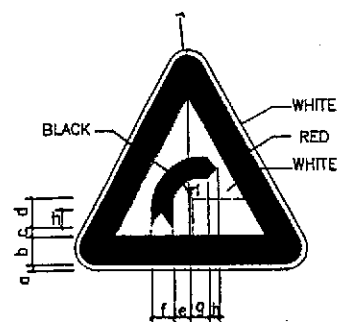
TENDER DRAWINGS

- NOTE—
- \* ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
  - \* U-TURN LOCATION ARE TENTATIVE ANY CHANGE IN LOCATION CAN BE DONE BY THE ENGINEERS REPRESENTATIVE KEEPING IN VIEW THE SITE REQUIREMENT.

JAWAD UL HAQ  
Project Manager  
M/S NESPAK

GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	04			DRAWN BY	RAJA SHAFIQ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	TITLE TYPICAL U-TURN DETAIL SCALE	DATE MARCH 2018	DRAWING NO. 3905/102/TD-U-TURN-01	REV.
		03			SUBMITTED BY						
		02			RECOMMENDED BY						
		01			CHD./VER. BY						
		REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY					

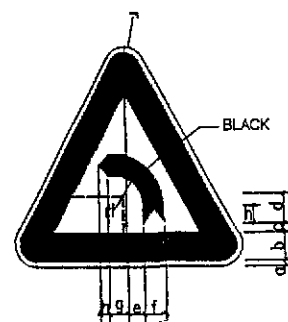




(W-1)  
CURVE TOWARDS RIGHT

DIMENSION (cm)

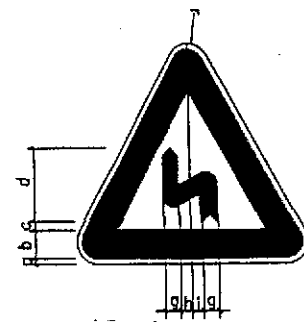
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	4.0	5.3
d	11.5	15.3
e	8.5	11.3
f	7.0	9.3
g	6.0	8.0
h	3.5	4.7
i	12.5	16.7



(W-2)  
CURVE TOWARDS LEFT

DIMENSION (cm)

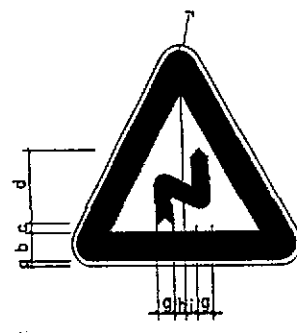
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	4.0	5.3
d	11.5	15.3
e	8.5	11.3
f	7.0	9.3
g	6.0	8.0
h	3.5	4.7
i	12.5	16.7



(W-3)  
LEFT REVERSE CURVE

DIMENSION (cm)

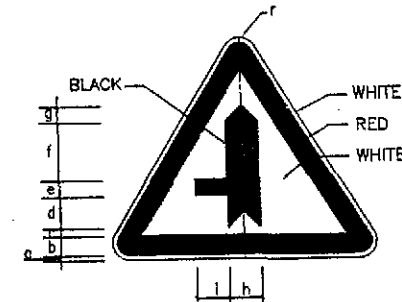
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	33.0	44.0
e	14.0	18.7
f	8.0	10.7
g	7.0	9.3
h	2.0	2.7
i	3.5	4.7
ri	4.5	6.0



(W-4)  
RIGHT REVERSE CURVE

DIMENSION (cm)

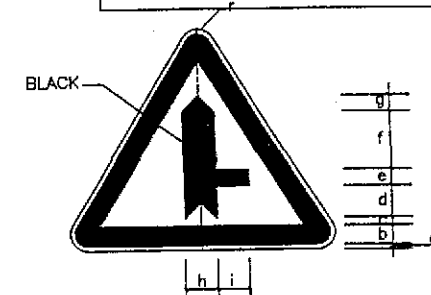
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	33.0	44.0
e	14.0	18.7
f	8.0	10.7
g	7.0	9.3
h	2.0	2.7
i	3.5	4.7
ri	4.5	6.0



(W-29)  
MINOR ROAD FROM LEFT

DIMENSION (cm)

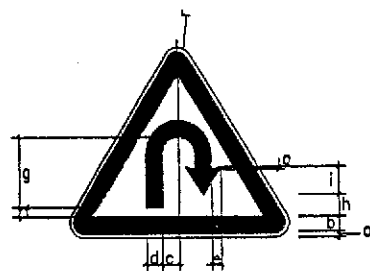
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	13.5	18.0
e	5.5	7.3
f	15.0	20.0
g	7.0	9.3
h	14.0	18.7
i	10.5	14.0



(W-29)  
MINOR ROAD FROM RIGHT

DIMENSION (cm)

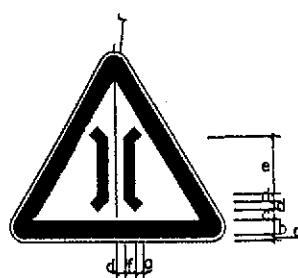
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	13.5	18.0
e	5.5	7.3
f	15.0	20.0
g	7.0	9.3
h	14.0	18.7
i	10.5	14.0



W - 34  
U-TURN SIGN

DIMENSION (cm)

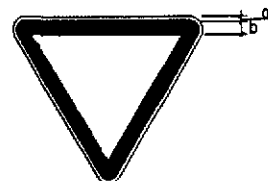
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	5.5	7.3
d	7.0	9.3
e	5.0	6.7
f	2.5	3.3
g	23.0	30.7
h	7.5	10.0
i	12.0	16.0



W - 35  
NARROW BRIDGE

DIMENSION (cm)

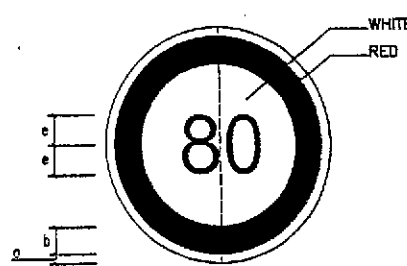
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	6.0	7.0
d	2.5	2.9
e	15.0	17.5
f	4.0	4.7
g	3.0	3.5



R - 2  
GIVEWAY SIGN

DIMENSION (cm)

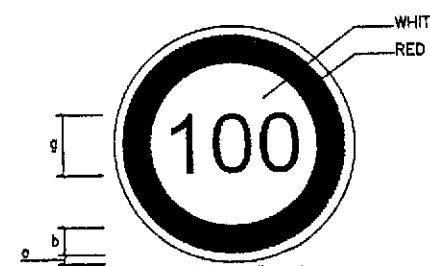
PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7



HTV  
R-25a  
MAXIMUM SPEED LIMIT (110)

DIMENSION (cm)

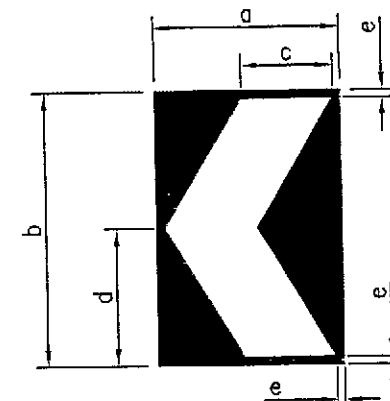
PARTS	SIGN SIZE	
	90cm	120cm
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	23.0	30.7
e	20.0	26.7



LTV  
R-25b  
MAXIMUM SPEED LIMIT (120)

DIMENSION (cm)

PARTS	SIGN SIZE	
	90cm	120cm
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	5.0	6.5
e	11.25	15.38
g	40.0	53.5

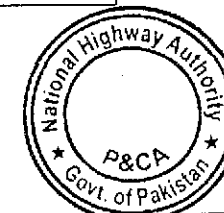


DETAILS "X"

a	b	c	d	e
300	450	150	225	12
450	600	225	300	18

\* BACKGROUND DREFLECTORISED YELLOW  
\* CHEVRON REFLECTORISED BLACK

**TENDER DRAWINGS**



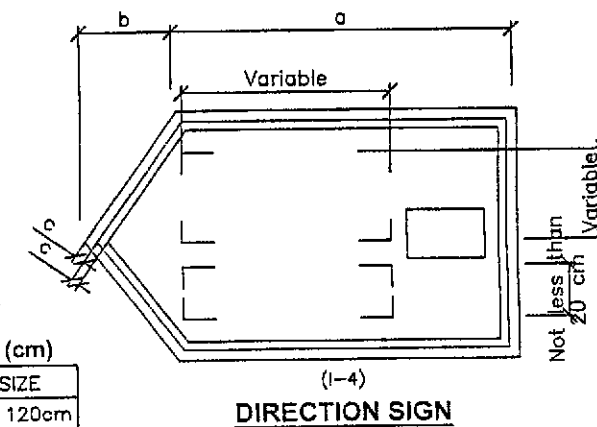
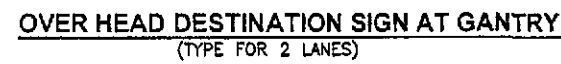
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04	JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ
03	Project Manager	SUBMITTED BY	Ans
02	M/SINESPAN	RECOMMENDED BY	Q
01		CHO./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED

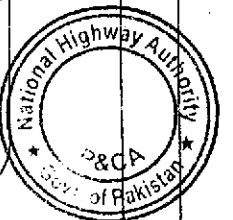
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

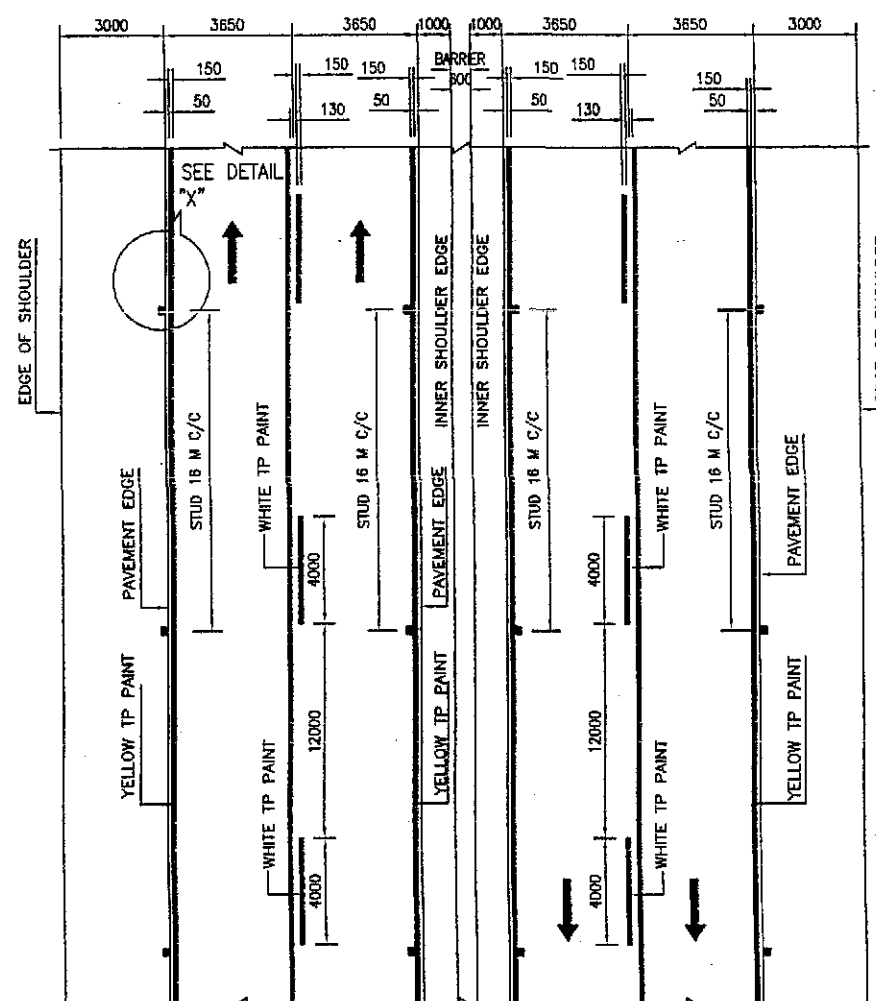
TITLE	DETAILS OF ROAD SIGNS	SCALE
DATE	DRAWING NO.	REV.
November 2017	3905/102/TU/13-01	



NOTES:-

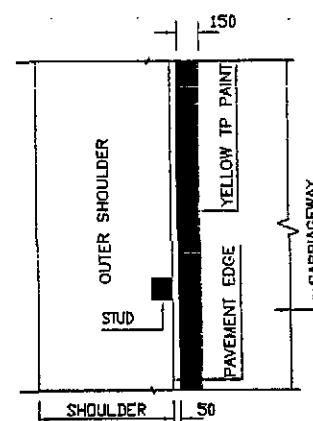
1. ALL DIMENSION ARE IN MILLIMETER UNLESS NOTED OTHERWISE.
2. WHERE ENGLISH WRITING OF DIMENSION NAMES APPEAR BELOW URDU WRITING, THE LEARN EXTENTS OF THE TWO SHOULD PREFERABLE COINCIDE.
3. EDGE CLEARANCES U1 & U2 MAY BE ADJUSTED TO ACHIEVE THE MINIMUM DIMENSIONS AS SHOWN.
4. THE LANE ARROWS SHOWN ON THE OVERHEAD SIGN SHALL COINCIDE WITH THE CENTER OF RESPECTIVE LANE.
5. NHA ROUTE NUMBERS SHALL BE MARKED AT ALL DIRECTIONAL SIGNS FOR MAJOR ROADS.
6. UPPER CASE LETTER SHALL BE USED FOR ALL OVERHEAD SIGN HOWEVER LOWER CASE LETTER MAY BE USED FOR DESTINATION NAMES WITH THE WIDTH EXCEEDING 4000 MM. WITH APPROVAL OF THE ENGINEER.
7. NAME OF THE FARTHEST DESTINATION SHALL APPEAR AT THE TOP OF THE SIGN, WHERE AS REST OF THE NAMES SHALL BE PLACED IN DESCENDING DISTANCE ORDER.
8. THE SIGN PLACEMENT DISTANCE AS SHOWN IN THE DRAWING ARE TYPICAL, ACTUAL LOCATION SHALL BE APPROVED BY THE ENGINEER.



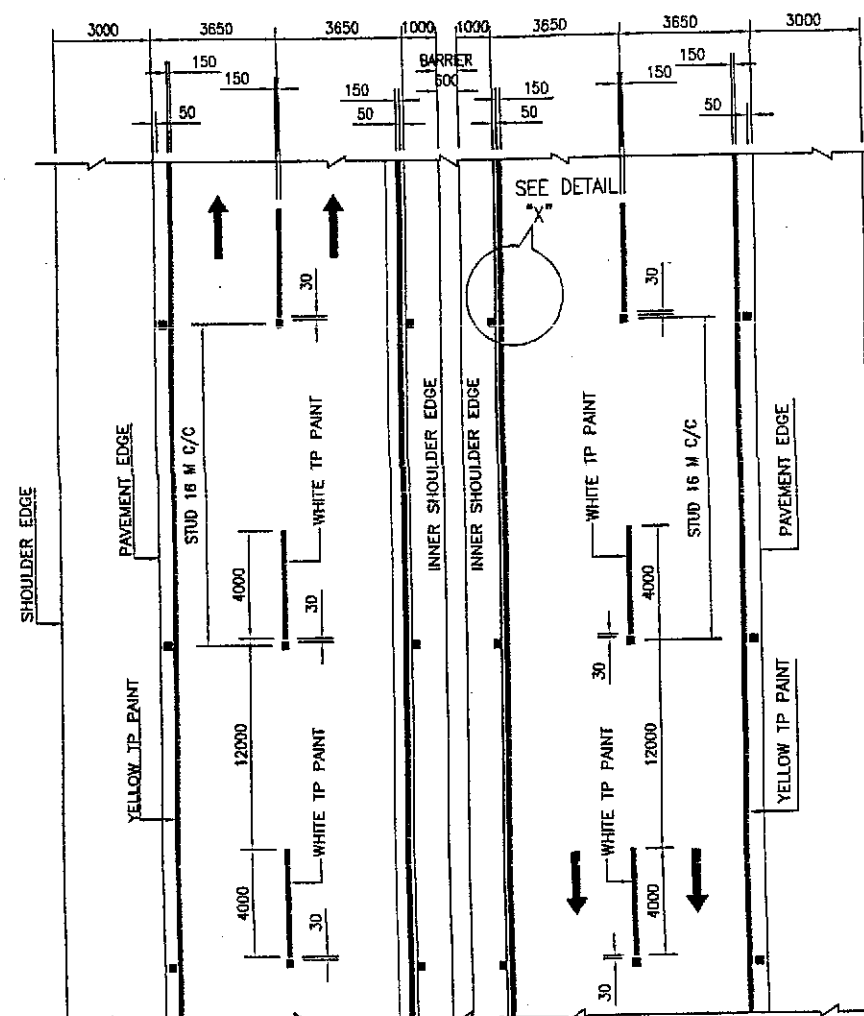


NO OVER TAKING DOUBLE LINE MARKINGS

SCALE:- 1:200

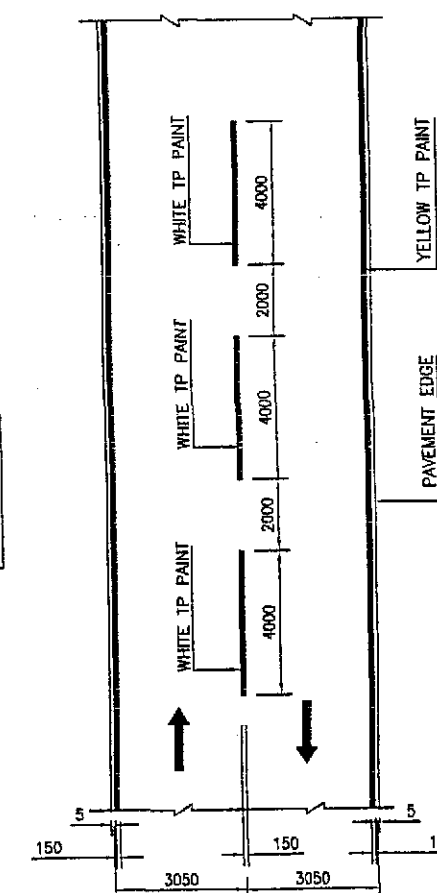


DETAIL "X"  
SCALE:- 1:50



PAVEMENT MARKING PLAN ON  
STRAIGHT PORTION

SCALE:- 1:200



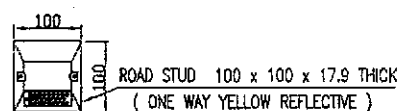
LINK ROADS  
PAVEMENT MARKING PLAN

ROAD STUD 100 x 100 x 17.9 THICK  
( ONE WAY YELLOW REFLECTIVE )

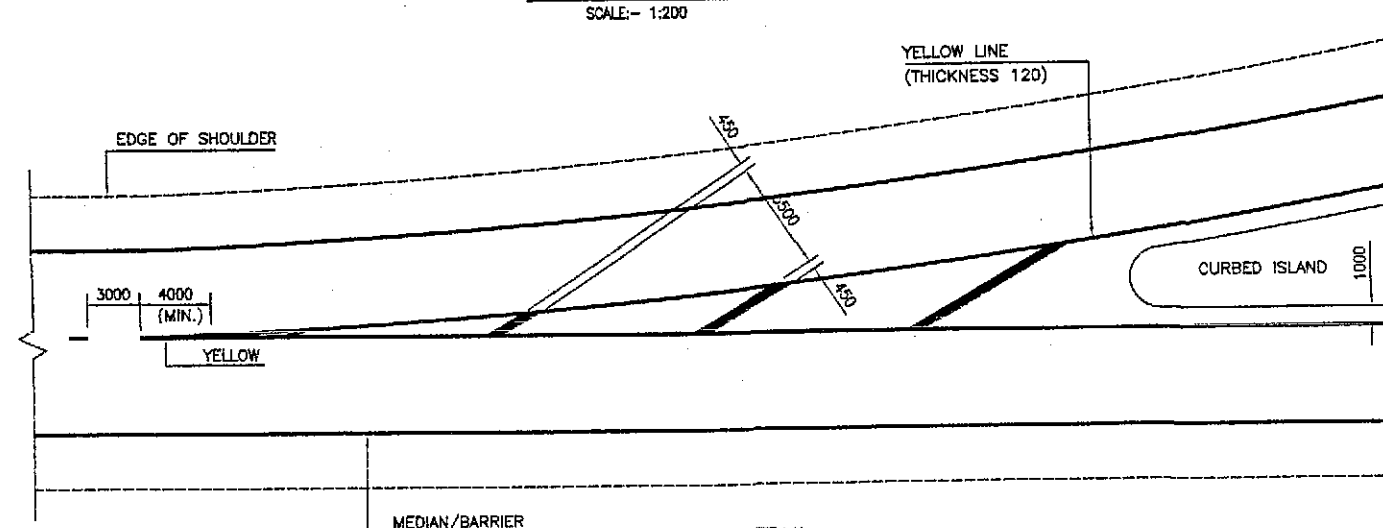


ELEVATION  
SCALE:- 1:5

ONE-WAY REFLECTIVE  
45 GLASS ELEMENTS PER SIDE (3 ROWS)  
18° TILTED FOR MAXIMUM REFLECTION  
DIMENSIONS: 100 X 100 X 17.9 MM



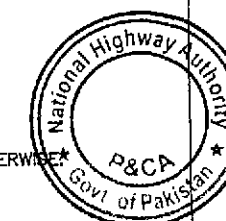
PLAN OF STUD  
SCALE:- 1:5



NOSE DETAIL  
SCALE:- 1:200

- NOTE
- \* ONLY WRITTEN DIMENSIONS TO BE FOLLOWED
  - \* ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE

TENDER DRAWINGS



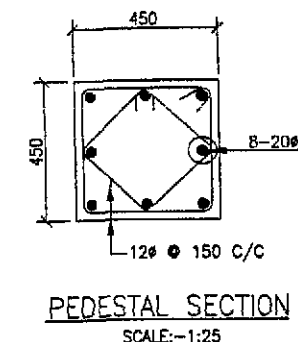
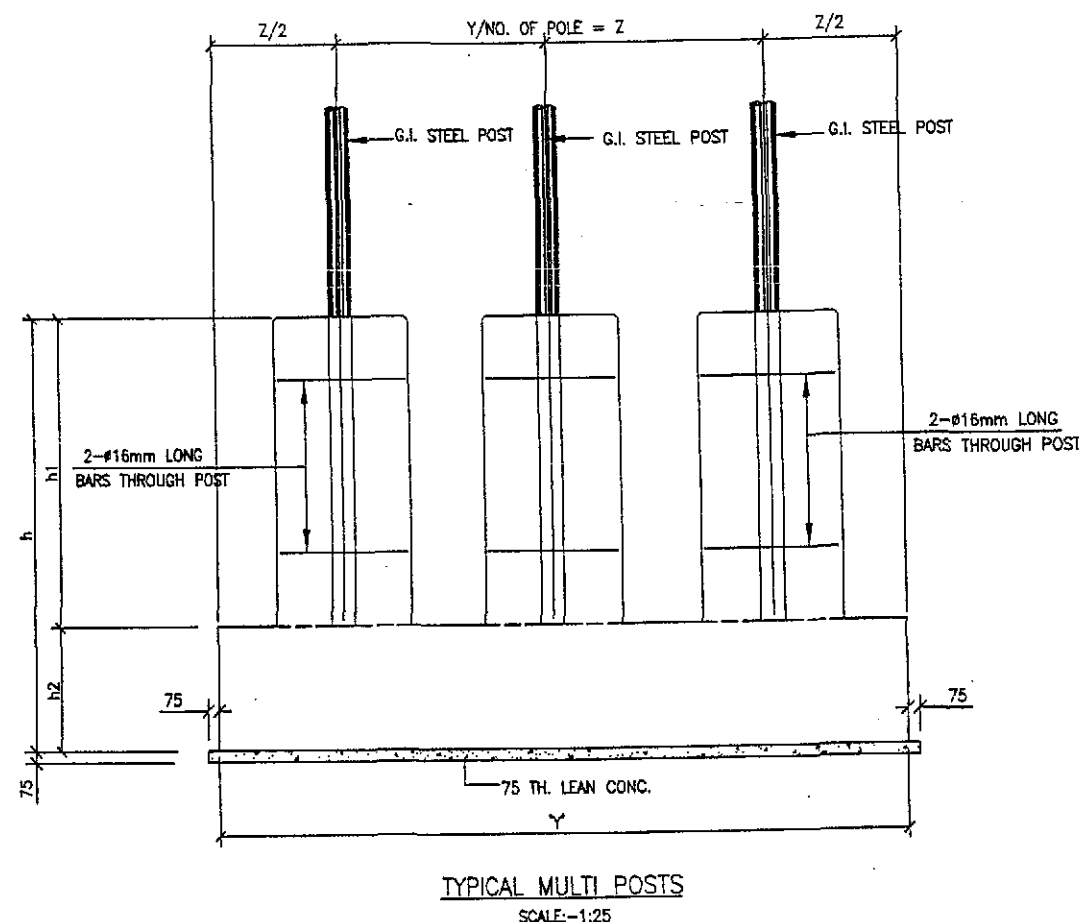
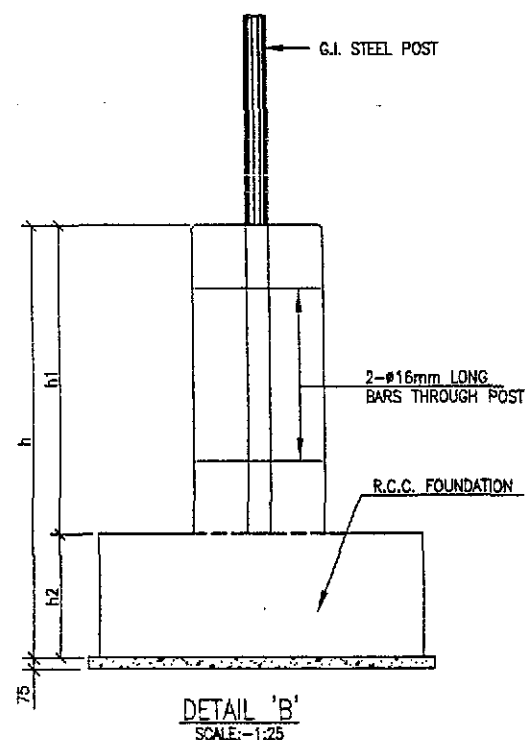
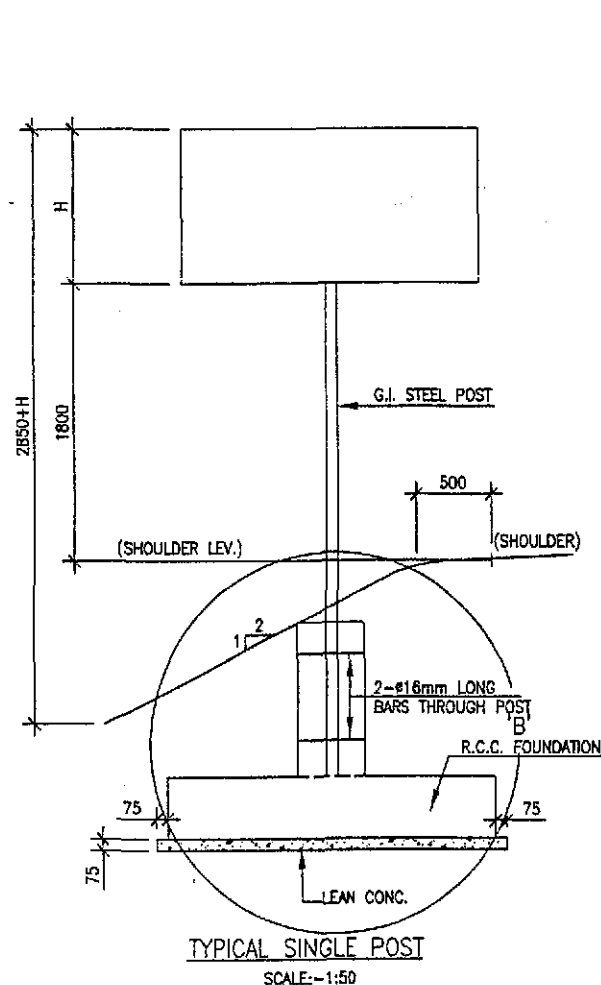
GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04	JAWAD UL MAQ	DRAWN BY	RAJA SHAFIQ
03	Project Manager	SUBMITTED BY	RAJA SHAFIQ
02	M/S NESPAK	RECOMMENDED BY	RAJA SHAFIQ
01		CHK./VER. BY	RAJA SHAFIQ
REV.	DATE	DESCRIPTION	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	DETAILS OF ROAD PAVEMENT MARKING & STUDS	SCALE
DATE	November 2017	DRAWING NO.
REV.	3985/102/TD/	73-03



TENDER DRAWINGS

TABLE - 2  
FOOTING AREA & REINFORCEMENT SCHEDULE

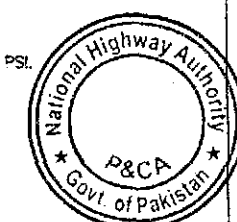
AREA M <sup>2</sup>	REINFORCEMENT IN 'X'	REINFORCEMENT IN 'Y'
1.5	12# @ 200 C/C (T & B)	12# @ 200 C/C (T & B)
1.5 < A < 3	12# @ 175 C/C (T & B)	12# @ 175 C/C (T & B)
3 < A < 5	12# @ 175 C/C (T & B)	12# @ 175 C/C (T & B)

TABLE - 1  
LIST OF FOUNDATION SIZE

AREA OF SIGN BOARD (M <sup>2</sup> )	PEDESTAL SIZE (MM)	WIDTH OF FOOTING 'X' (MM)	LENGTH OF FOOTING 'Y' (MM)	h1 (MM)	h2 (MM)	h (MM)	NUMBER OF POLES	TYPE OF POLES
1.5	450	950	950	600	400	1000	1-#150	ISOLATED
1.5 < A < 3	450	1250	1700	600	400	1000	2-#150	COMBINED
3 < A < 5	450	1350	2250	800	400	1200	3-#150	-

NOTES

- \* ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- \* POST LENGTH AS SHOWN FOR MOTORWAY SIGNS OF 1200mm NOMINAL SIZE FOR RAMPS, POST LENGTH SHALL BE ADJUSTED ACCORDINGLY.
- \* CONCRETE FOUNDATION SHALL BE CAST USING CLASS 'A' CONCRETE.
- \* SIGN PANELS SHALL BE MADE OF ALUMINUM ALLOY PLATES OF MINIMUM 3mm THICKNESS.
- \* ALL SIGN POSTS SHALL BE PAINTED WITH NON-REFLECTORISED BLACK AND WHITE PAINT STRIPES 300mm WIDE.
- \* ALL SIGN BACK PANELS SHALL BE PAINTED WITH GRAY ENAMEL PAINT.
- \* ALL POSTS SHALL BE 300mm SHORT OF SIGN TOP.
- \* CONCRETE SHALL HAVE A MINIMUM CYLINDRICAL STRENGTH OF 3,000 PSI.



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

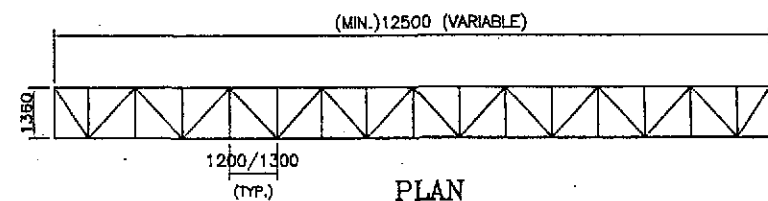
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04	JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ
03	Project Manager	SUBMITTED BY	
02	M/S NESPAK	RECOMMENDED BY	
01		CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED

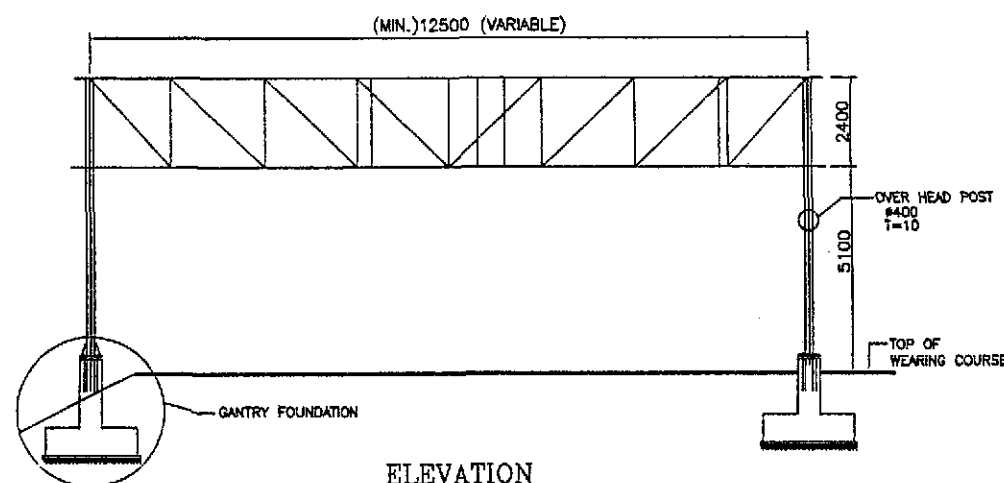
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	FOUNDATION DETAILS OF ROAD SIGNS	SCALE
DATE	November 2017	REV.
DRAWING NO.	3905/102/TD/	TS-04



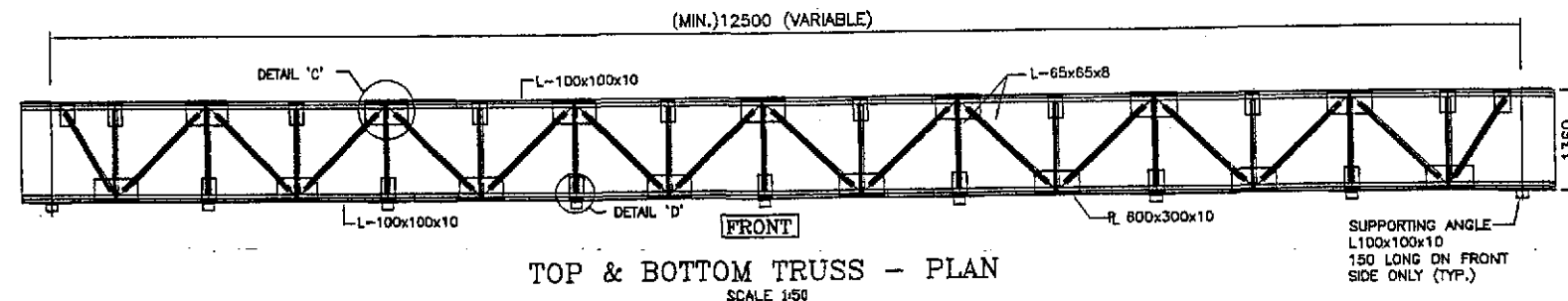


PLAN

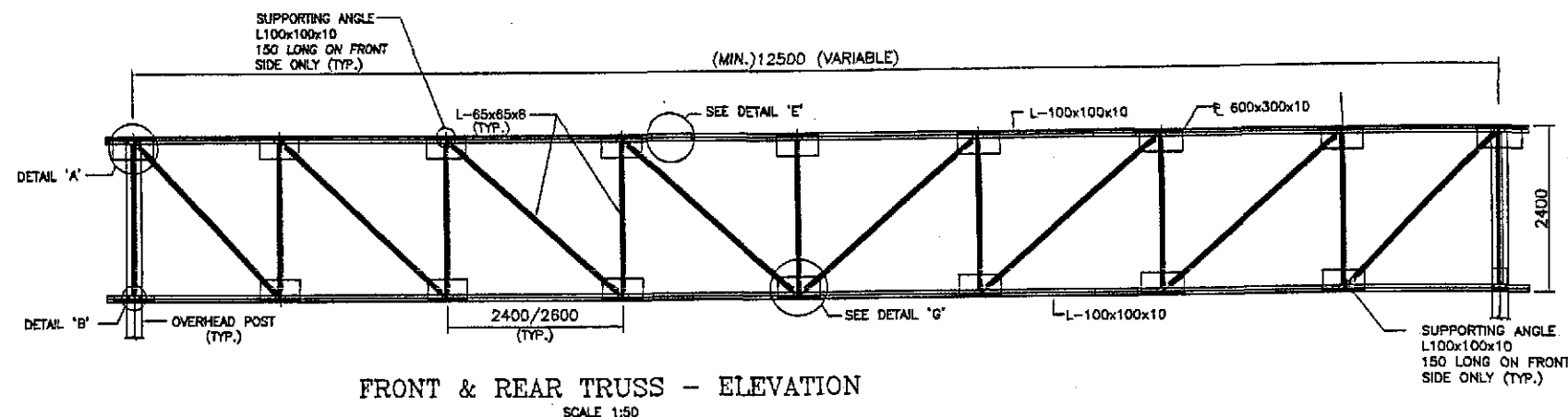


ELEVATION  
OVERHEAD INFORMATION SIGN

\* TYPICAL ARRANGEMENT FOR GANTRY SIGN. ACTUAL WIDTH IS TO BE DECIDED AS PER ACTUAL LOCATION OF THE ROAD.



TOP & BOTTOM TRUSS - PLAN  
SCALE 1:50



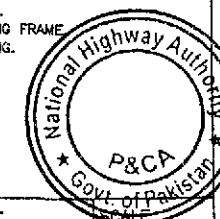
FRONT & REAR TRUSS - ELEVATION  
SCALE 1:50

LOCATIONS OF GANTRY SIGN	
SR. NO.	CHAINAGE (KM)
1	46+400
2	54+600
3	66+600
4	86+600
5	105+500

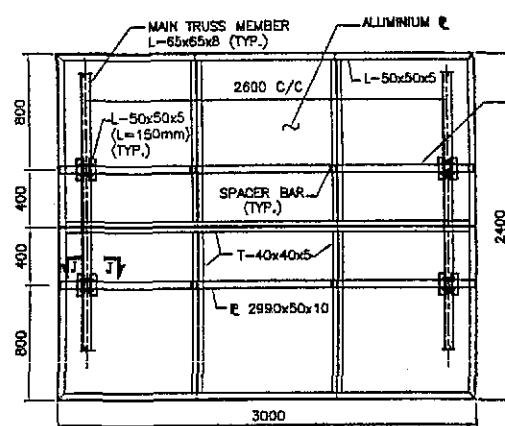
#### NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- LOCATION OF GANTRY SHALL BE FIXED BY THE ENGINEER AT SITE.
- GANTRY BEAM AND COLUMNS SHALL BE HATCH - PAINTED WITH LUMINOUS PAINT UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- UNLESS OTHERWISE NOTED, CONCRETE SHALL BE CLASSIFIED AS FOLLOWS.  
CONCRETE CLASS 28 DAYS (15x30 CM) CYLINDER STRENGTH Kg/sq. Cm  
REINFORCED A 210 (3000 psi)
- ALL STRUCTURAL STEEL ( PLATES, SHEET, CHANNELS AND ANGLES etc. SHALL CONFORM TO ASTM A-36 OR EQUIVALENT WITH MINIMUM YIELD STRENGTH OF 248 Kg./Sq. CM. (36,000 psi)
- ALL WELDING SHALL CONFORM TO THE APPLICABLE PROVISIONS OF A.W.S (AMERICAN WELDING SOCIETY) CODE. ALL WELDING ELECTRODES SHALL CONFORM TO ASTM NO. E 70XX.
- MINIMUM SIZE OF FILLET WELD SHALL BE 7mm. EXCEPT OTHERWISE NOTED.
- ALL INACCESSIBLE STRUCTURAL STEEL SECTIONS SHALL BE GIVEN TWO COATS OF RED-OXIDE PAINT BEFORE FABRICATION. ALL EXTERIOR FACES SHALL BE PAINTED WITH TWO COATS OF REDOXIDE PAINT AFTER FABRICATION AND ERECTION, AS PER DIRECTION OF THE ENGINEER.
- CONTRACTOR SHALL SUBMIT TO THE ENGINEER, FABRICATION DRAWING WITH COMPLETE DETAILS OF MATERIAL ALONG WITH WEIGHT AND SIZES FOR APPROVAL BEFORE PROCEEDING WITH CONSTRUCTION.
- THE MINIMUM CONCRETE COVER OF 75mm SHALL BE PROVIDED FOR STEEL IN FOOTING.
- THE BASE PLATE OF THE COLUMN SHALL BE LEVELED AND THEN GROUTED WITH NON SHRINK GROUT USING STANDARD APPROVED PROCEDURE.
- ALL ANCHOR BOLTS SHALL BE HOT DIPPED GALVANIZED.
- JOINT IN THE MAIN STEEL PIPE MAY BE OF FLANGE TYPE SUBJECT TO THE ENGINEERS APPROVAL.
- CONTRACTOR MAY USE ALUMINIUM PLATE (3mm THICK) FOR SIGN FACE.
- THE SIGN PLATE SHOULD BE RIVETED TO STEEL MEMBER OF SUPPORTING FRAME.
- NUTS & BOLTS FOR CLAMPS SHALL BE SPOT WELDED AFTER TIGHTENING.
- FOR DETAILS REF. DRG. NO. TS-07 & TS-08

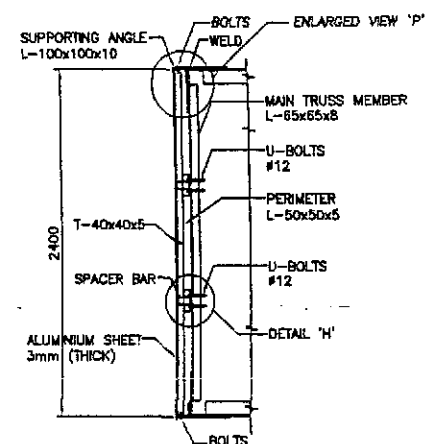
TENDER DRAWINGS



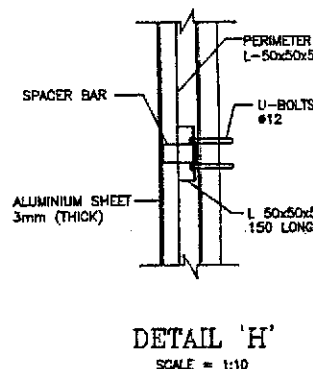
<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</p>	04	<p>JAWAD UL HAQ Project Manager M/S NESPAK</p>	<p>DRAWN BY SUBMITTED BY RECOMMENDED BY CHD./VER. BY APPROVED BY</p>	<p>RAJA SHAFIQ [Signature] [Signature] [Signature] [Signature] [Signature]</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)</p>	TITLE GENERAL ARRANGEMENT OF OVERHEAD GANTRY SIGN		REV.
		03					DATE	DRAWING NO.	
		02					November 2017	3905/102/TD/	
		01						TS-08	
		REV.							



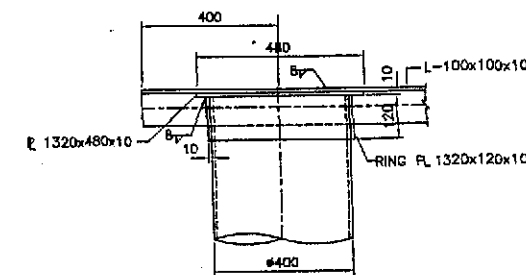
SIGN DETAIL-REAR VIEW  
SCALE = 1:25



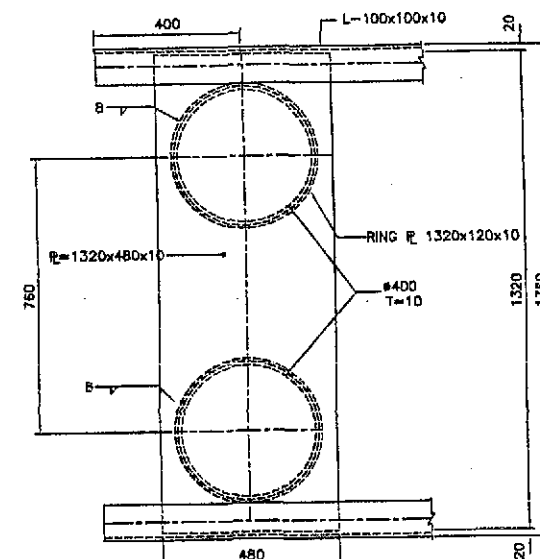
SIGN DETAIL-SECTION  
SCALE = 1:25



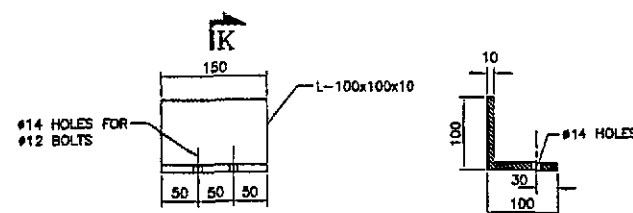
DETAIL 'H'  
SCALE = 1:10



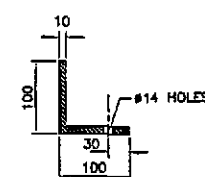
DETAIL 'A' ELEV.  
(GUSSET PLATE NOT SHOWN)  
SCALE = 1:10



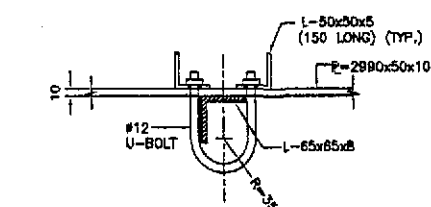
DETAIL 'A'-PLAN  
SCALE = 1:10



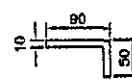
SUPPORTING ANGLE  
SCALE = 1:5



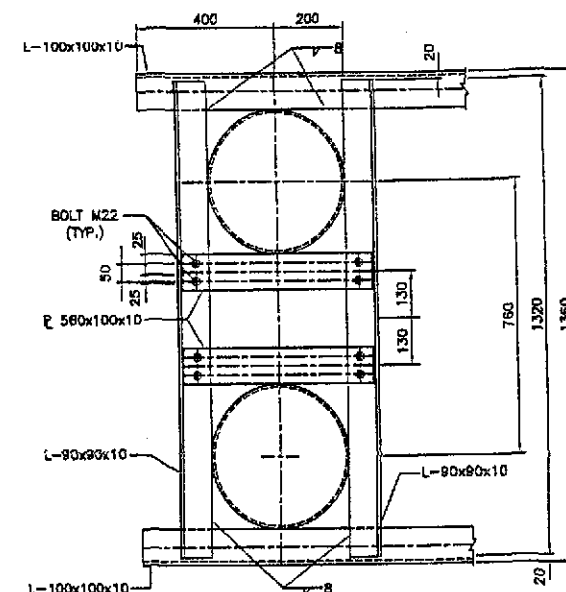
SEC. K-K  
SCALE = 1:5



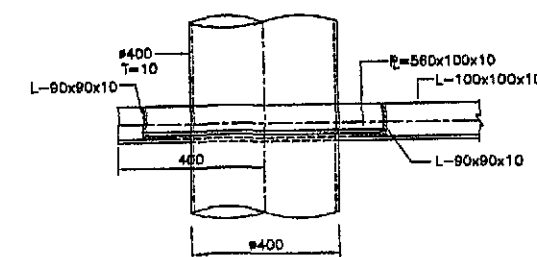
SECTIONAL PLAN J-J  
(Ø12 U-BOLTS ARRANGEMENT)  
SCALE = 1:5



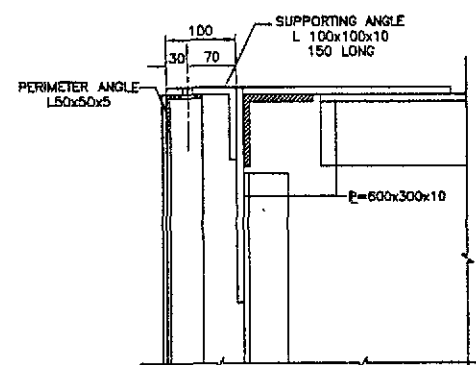
SPACER BAR  
SCALE = 1:5



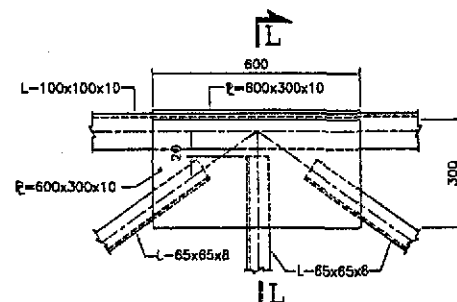
DETAIL 'B'-PLAN  
SCALE = 1:10



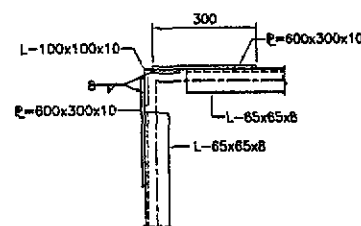
DETAIL 'B'-ELEVATION  
SCALE = 1:10



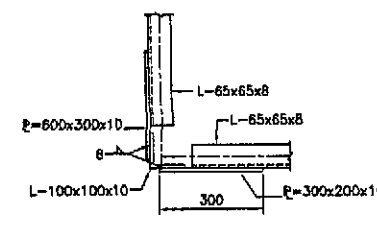
ENLARGED VIEW 'P'  
SCALE = 1:5



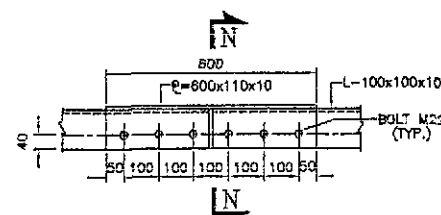
DETAIL 'C'-PLAN  
SCALE = 1:10



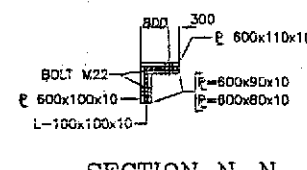
SECTION L-L  
SCALE = 1:10



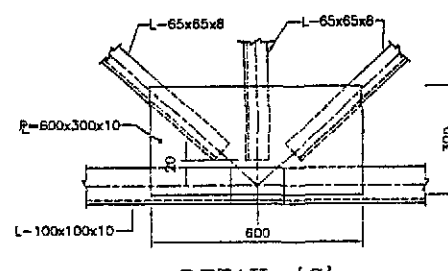
SECTION M-M  
SCALE = 1:10



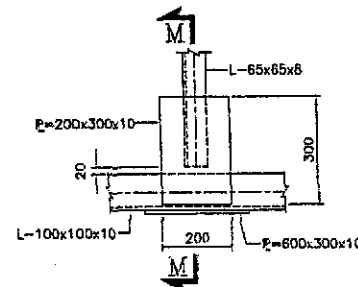
DETAIL 'E'-ELEVATION  
SCALE = 1:10



SECTION N-N  
SCALE = 1:10



DETAIL 'G'  
SCALE = 1:10

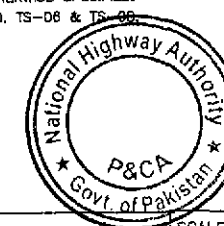


DETAIL 'D'-PLAN  
SCALE = 1:10

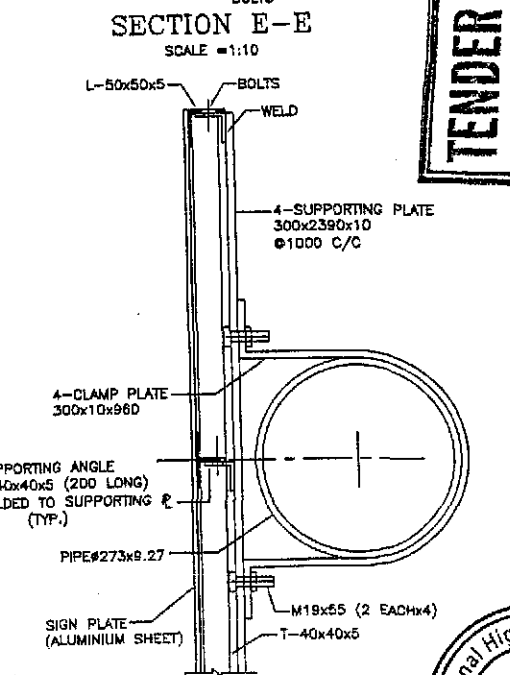
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. FOR GENERAL NOTES AND DETAILS REFER DWG. NO. TS-06 & TS-07.

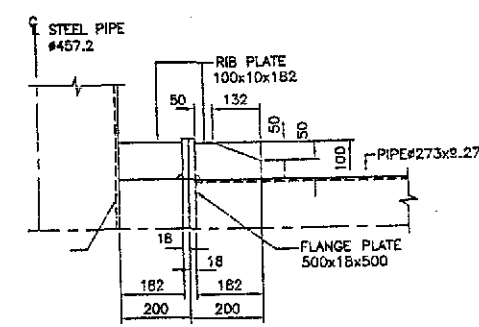
TENDER DRAWINGS




<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</p>	<p>04 JAWAD UL HAQ 03 Project Manager 02 M/S NESPAK 01</p>	<p>DRAWN BY RAJA SHAFIQ SUBMITTED BY RECOMMENDED BY CHD./VER. BY APPROVED BY</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)</p>	<p>TITLE GANTRY SIGN COLUMN DETAILS DATE November 2017 DRAWING NO. 3905/102/10/ TS-07 SCALE REV.</p>
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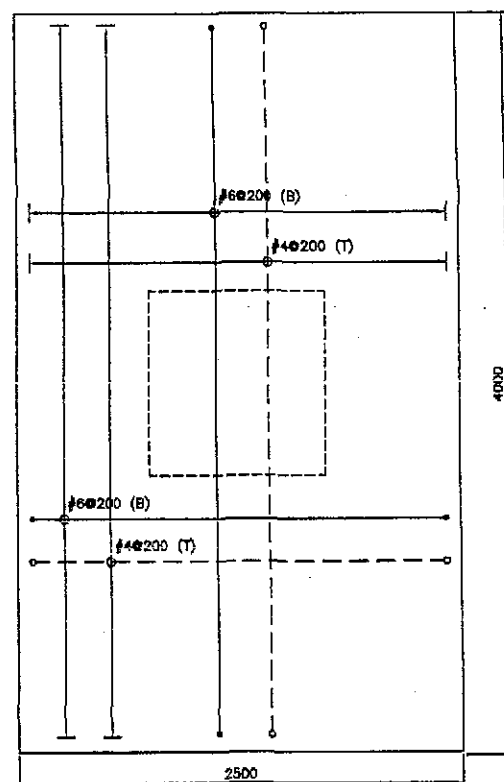


## TENDER DRAWINGS

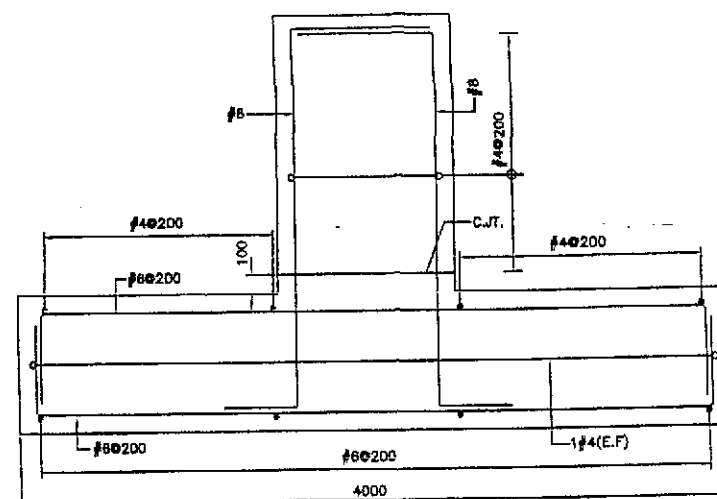


ENLARGED VIEW 'H'

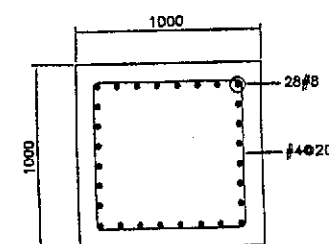
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|---|---|------|--|----------------|--------------|---|--|-----------------------------------|-------|
|  GOVERNMENT OF PAKISTAN<br>MINISTRY OF COMMUNICATIONS<br>NATIONAL HIGHWAY AUTHORITY | NATIONAL ENGINEERING SERVICES<br>PAKISTAN (PVT.) LTD. | 04   | <b>JAWAD UL HAQ</b><br>Project Manager<br>M/S NESPAK | DRAWN BY       | RAJIA SHAFIQ | RATODERO ~ RAJANPUR ROAD<br>PACKAGE-I<br>(SHIKARPUR TO KANDH KOT) | TITLE<br>CANTILEVER GANTRY SIGN TYPE - II<br>TYPICAL DETAILS |                                   | SCALE |
|   |   | 03   |  | SUBMITTED BY   | LM           |   | DATE<br>November 2017  | DRAWING NO.<br>3905/102/TD/ TS-10 | REV.  |
|   |   | 02   |  | RECOMMENDED BY | W            |   |  |                                   |       |
|   |   | 01   |  | CHD./VER. BY   | AD           |   |  |                                   |       |
|   |   | REV. |  | DATE           | DESCRIPTION  |   |  |                                   |       |



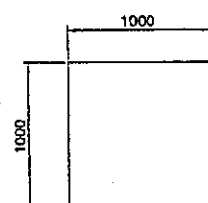
SEC. PLAN N-N  
SCALE = 1:20



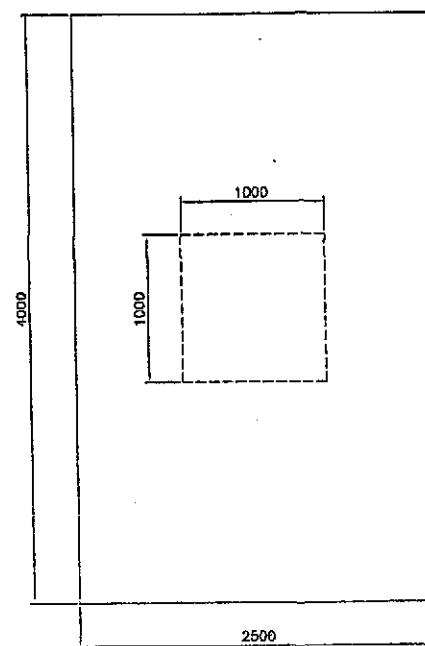
SIDE VIEW  
SCALE = 1:20



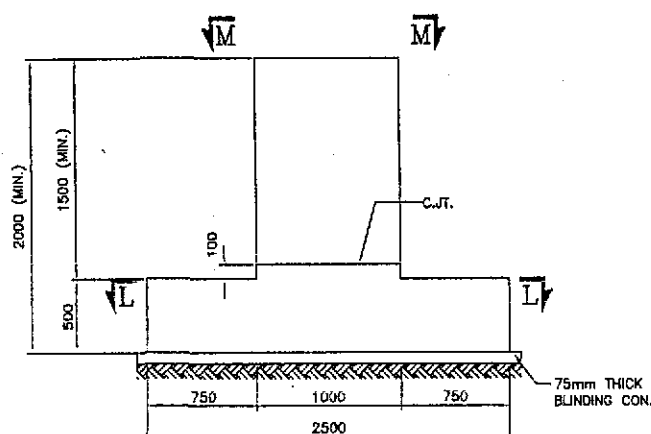
SEC. PLAN P-P  
SCALE = 1:20



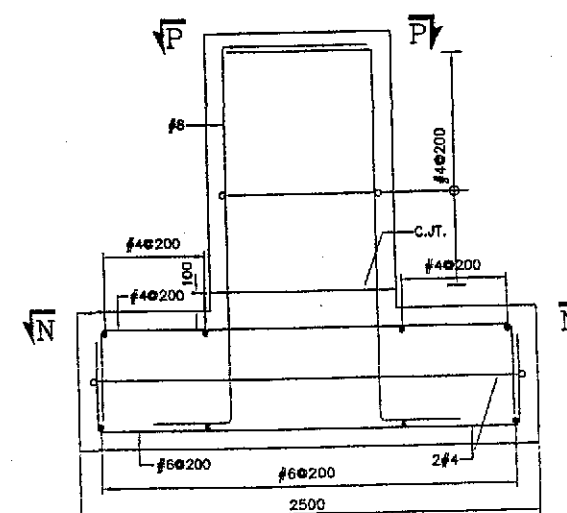
SEC. PLAN M-M  
SCALE = 1:25



SEC. PLAN L-L  
SCALE = 1:25



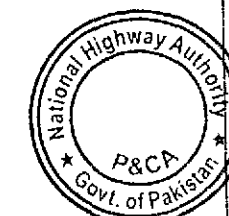
FRONT VIEW  
FOUNDATION DETAIL-1' (RS016)  
(CONC. OUTLINE)  
SCALE = 1:25



FRONT VIEW  
FOUNDATION DETAIL-1' (REINFORCEMENT)  
SCALE = 1:20

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
  2. FOR GENERAL NOTES REFER DWG. NO. TS-07.
  3. FOR GANTRY DETAILS REFER TO RELEVANT GANTRY DRAWINGS.

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04	JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ
03	Project Manager	SUBMITTED BY	km
02	M/S NESPAK	RECOMMENDED BY	Q
01		CHD/VER. BY	
REV.	DATE	DESCRIPTION	APPROVED

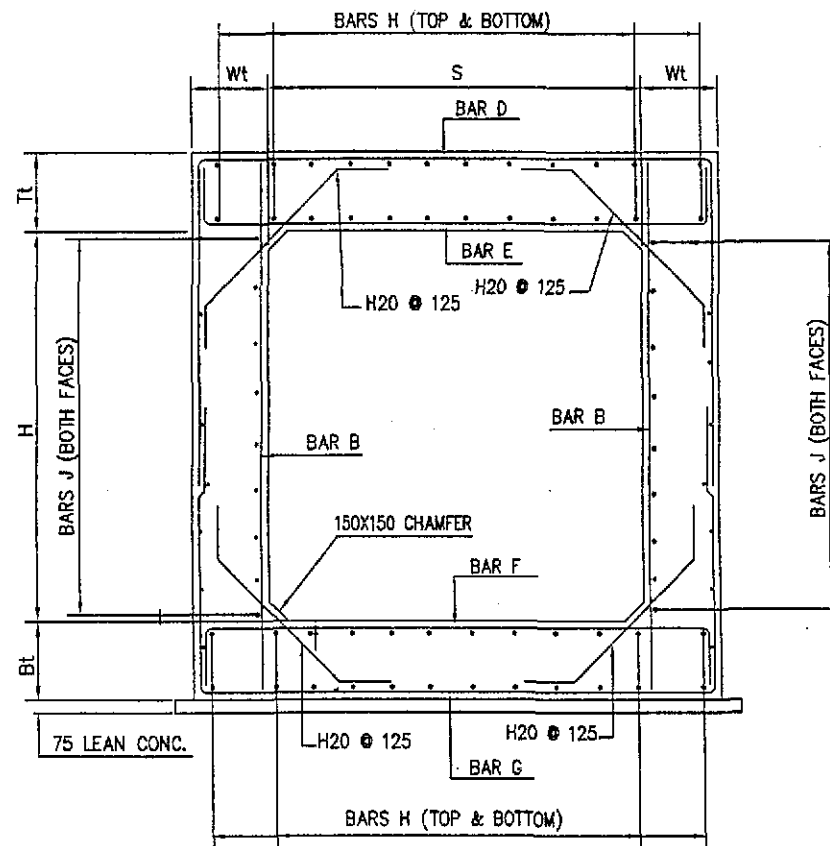
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	CANTILEVER GANTRY SIGN TYPICAL FOUNDATION DETAILS	SCALE
DATE	November 2017	REV.
DRAWING NO.	3905/102/TD/ TS-11	

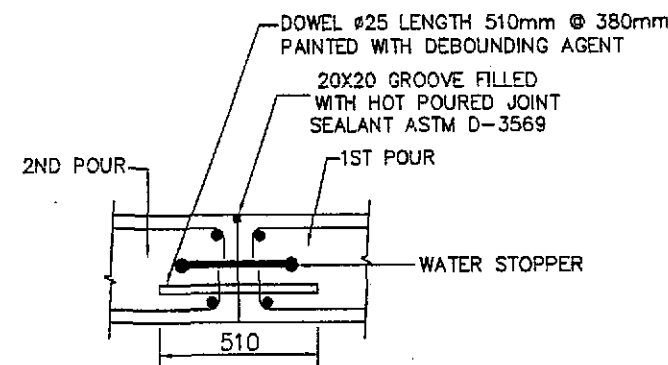


## REINFORCEMENT SCHEDULE OF R.C.C. COVERED DRAIN

NO. OF CELL	SPAN (M)	CLEAR HEIGHT (M)	Tt. (MM)	Bt. (MM)	Wt. (MM)	BAR MARK B	BAR MARK D	BAR MARK E	BAR MARK F	BAR MARK G	BAR MARK H	BAR MARK J
1	1.00	1.00	225	225	225	H12 @ 150 c/c	H12 @ 125 c/c	H16 @ 200 c/c	H12 @ 125 c/c	H12 @ 125 c/c	H12 @ 150 c/c	H12 @ 150 c/c



TYPICAL REINF. DRAIN SECTION

DETAIL OF  
CONTRACTION JOINT

## NOTES: -

- \* CLEAR COVER TO REINFORCEMENT IS 50mm
- \* THE CLEAR CONC. COVER TO SURFACES HAVING CONTACT WITH THE SOIL IS 75mm
- \* ALL BARS ARE (H.Y.S) HIGH YIELD DEFORMED STEEL WITH  $f_y = 410 \text{ N/mm}^2$  (60KSI)
- \* UNLESS OTHERWISE SHOWN ON THE DRAWINGS LAPS IN REINFORCING STEEL BARS SHALL BE STAGGERED, MINIMUM LENGTH OF LAP SHALL BE 48 TIMES THE SMALLER BAR DIAMETER SPLICED.
- \* CONCRETE SHALL HAVE A MINIMUM 28 DAYS CYLINDER STRENGTH OF 4000 psi
- \* LEAN CONCRETE SHALL HAVE A MINIMUM 28 DAYS CYLINDER STRENGTH OF 100 Kg/cm<sup>2</sup>
- \* ALL CONCRETE FACES BURIED IN SOIL BE PAINTED WITH TWO COATS OF HOT BITUMEN.
- \* CONTRACTION JOINT SHOULD BE PROVIDED FOR DRAIN LENGTH MORE THAN 12.00 M.
- \* DRAIN IS DESIGNED FOR BEARING CAPACITY OF 1T/ SF.
- \* ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

## LIST OF DRAIN DETAIL

SR. NO.	CHAINAGE (KM)		LENGTH (M)	REMARKS
	FROM	TO		
1	45+600	45+640	40	L.H.S
2	47+800	47+880	80	L.H.S
3	48+540	48+600	60	L.H.S
4	52+940	52+960	20	L.H.S
5	53+150	53+420	270	L.H.S & R.H.S
6	54+600	55+080	480	L.H.S & R.H.S
7	55+160	55+340	180	L.H.S
8	55+740	55+840	100	L.H.S
9	56+100	56+160	60	L.H.S
10	61+300	61+540	240	L.H.S
11	62+680	62+800	120	L.H.S & R.H.S
12	65+160	65+230	70	L.H.S
13	65+600	65+960	360	L.H.S
14	73+950	74+060	110	R.H.S
15	74+800	75+200	400	L.H.S & R.H.S
16	85+000	85+340	340	L.H.S & R.H.S
17	92+500	93+100	600	L.H.S
18	92+560	92+830	270	R.H.S
19	95+620	95+980	360	L.H.S
20	98+340	98+540	200	R.H.S
21	98+640	98+860	220	R.H.S
22	100+530	100+620	90	R.H.S
23	101+860	101+940	80	R.H.S
24	103+860	103+900	40	L.H.S
25	104+500	104+540	40	L.H.S
26	104+580	104+680	100	R.H.S
27	105+730	105+800	70	L.H.S



TENDER DRAWINGS

GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITYNATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

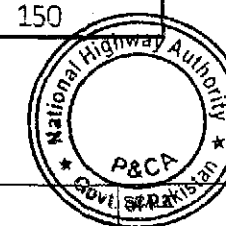
04	JAWAD UL HAQ	DRAWN BY	RAJA SHAFIQ
03	Project Manager	SUBMITTED BY	RAJA SHAFIQ
02	M/S NESPAK	RECOMMENDED BY	RAJA SHAFIQ
01		CHD./VER. BY	RAJA SHAFIQ
REV.	DATE	DESCRIPTION	APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	DETAILS OF R.C.C. DRAIN AT LINK ROAD	SCALE
DATE	November 2017	REV.
DRAWING NO.	3905/102/TD/ DR-03	

Sr No.	Chainage	Structure Type	No. of Spans/Pipes	Clear Span Width/Dia. (m)	Clear Height	Skew	Ts & Tb (m)	Tw1 (mm)	Tw2 (mm)	T1 (mm)	L1 (mm)
34	84+985	Box Culvert	1	1.5	1	0	250	250	250	150	150
35	85+770	Box Culvert	1	1.1	1	0	200	200	200	150	150
36	85+825	Box Culvert	1	2	2	0	300	300	300	150	300
37	85+927	Box Culvert	1	2	2	0	300	300	300	150	300
38	88+085	Box Culvert	1	1.5	1	0	250	250	250	150	150
39	88+435	Box Culvert	1	1.1	1	0	200	200	200	150	150
40	89+630	Box Culvert	1	1.5	1	0	250	250	250	150	150
41	90+350	Box Culvert	1	1.5	1	0	250	250	250	150	150
42	91+005	Box Culvert	1	1.5	1	0	250	250	250	150	150
43	91+705	Box Culvert	1	1.5	1	9	250	250	250	150	150
44	93+865	Box Culvert	1	1.1	1	0	200	200	200	150	150
45	94+182	Box Culvert	1	1.1	1	0	200	200	200	150	150
46	94+782	Box Culvert	1	1.5	1	0	250	250	250	150	150
47	96+510	Box Culvert	4	2	1	0	250	250	250	150	300
48	96+573	Box Culvert	1	2	1	0	250	250	250	150	300
49	96+900	Box Culvert	1	1	1	0	200	200	200	150	150
50	97+100	Box Culvert	1	1	1	20	200	200	200	150	150
51	97+185	Box Culvert	1	1	1	0	200	200	200	150	150
52	97+810	Box Culvert	1	1	1	10	200	200	200	150	150
53	98+222	Box Culvert	1	1	1	0	200	200	200	150	150
54	98+490	Box Culvert	1	1	1	0	200	200	200	150	150
55	98+635	Box Culvert	1	1	1	0	200	200	200	150	150
56	98+805	Box Culvert	1	1	1	0	200	200	200	150	150
57	99+230	Box Culvert	1	1	1	0	200	200	200	150	150
58	99+880	Box Culvert	1	1	1	0	200	200	200	150	150
59	100+495	Box Culvert	1	3	3	0	400	350	350	150	300
61	101+105	Box Culvert	1	2	1.5	8	250	250	250	150	300
63	101+942	Box Culvert	1	1.5	1	0	250	250	250	150	150
64	102+778	Box Culvert	1	1.5	1	6	250	250	250	150	150
65	105+495	Box Culvert	1	1.5	1	8	250	250	250	150	150
66	105+645	Box Culvert	1	2	1.5	49	250	250	250	150	300
67	105+685	Box Culvert	1	1.5	1	38	250	250	250	150	150

TENDER DRAWINGS



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04		JAWAD UL HAQ		DRAWN BY	RAJA SHAFIQ
03		Project Manager		SUBMITTED BY	
02		M/S NESPAK		RECOMMENDED BY	
01				CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY	

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	SCHEDULE OF STRUCTURES
DATE	MARCH 2018
DRAWING NO.	3905/102/TD/SCH-02
REV.	

# LIST OF DRAWINGS

## RATODERO TO RAJANPUR ROAD

(SECTION-I)





SHIKARPUR TO KANDH KOT

(Km. 43+400 - Km. 105+820)

Sr.No.	DESCRIPTION	DWG. Nos.
01	LIST OF DRAWINGS	3905/102/TD/P1G000
02	GENERAL NOTES	3905/102/TD/P1G001
03	LIST OF BRIDGES & UNDERPASS	3905/102/TD/P1B001
	<b>BRIDGES</b>	
04	GENERAL ARRANGEMENT PLAN & ELEVATION BRIDGE AT 43+287	3905/102/TD/P1G101
05	GENERAL ARRANGEMENT PLAN & ELEVATION BRIDGE AT 63+115	3905/102/TD/P1G102
06	GENERAL ARRANGEMENT PLAN & ELEVATION BRIDGE AT 73+415	3905/102/TD/P1G104
07	GENERAL ARRANGEMENT PLAN & ELEVATION BRIDGE AT 78+650	3905/102/TD/P1G105
08	GENERAL ARRANGEMENT PLAN & ELEVATION BRIDGE AT 97+455	3905/102/TD/P1G106
09	GENERAL ARRANGEMENT PLAN & ELEVATION BRIDGE AT 98+330	3905/102/TD/P1G107
10	GENERAL ARRANGEMENT PLAN & ELEVATION BRIDGE AT 100+435	3905/102/TD/P1G108
11	GENERAL ARRANGEMENT PLAN & ELEVATION FLYOVER AT 0+230	3905/102/TD/P1G109
12	15M RCC GIRDER CONCRETE OUTLINE & REINFORCEMENT DETAILS	3905/102/TD/P1G110
13	20M PRESTRESSED GIRDER CONCRETE OUTLINE & PRESTRESSING DETAILS	3905/102/TD/P1G111
14	20M PRESTRESSED GIRDER REINFORCEMENT DETAILS	3905/102/TD/P1G112
15	25M PRESTRESSED GIRDER CONCRETE OUTLINE & PRESTRESSING DETAILS	3905/102/TD/P1G113
16	25M PRESTRESSED GIRDER REINFORCEMENT DETAILS	3905/102/TD/P1G114
17	30M PRESTRESSED GIRDER CONCRETE OUTLINE & PRESTRESSING DETAILS	3905/102/TD/P1G115
18	30M PRESTRESSED GIRDER REINFORCEMENT DETAILS	3905/102/TD/P1G116
19	ABUTMENT AB1,AB2 & PIER REINFORCEMENT DETAILS	3905/102/TD/P1G117
20	MISCELLANEOUS DETAILS	3905/102/TD/P1G118
	<b>UNDERPASSES &amp; CULVERTS</b>	
21	GENERAL ARRANGEMENT CONCRETE OUTLINE ROAD UNDERPASS (6000x4000)	3905/102/TD/P1UP119
22	GENERAL ARRANGEMENT CONCRETE OUTLINE ROAD UNDERPASS (10000x5100)	3905/102/TD/P1UP120
23	GENERAL ARRANGEMENT CONCRETE OUTLINE ROAD UNDERPASS (10000x5100)	3905/102/TD/P1UP121
24	BOX CULVERT GENERAL ARRANGEMENT	3905/102/TD/P1G122
25	PIPE CULVERT-TRENCHING AND INLET/OUTLET DETAILS	3905/102/TD/P1PC123



**TENDER DRAWINGS**

	GOVERNMENT OF PAKISTAN		NATIONAL ENGINEERING SERVICES	04	<b>JAWAD UL HAQ</b> Project Manager M/S NESPAK	DRAWN	HAZ AHMAD	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	LIST OF DRAWINGS		SCALE
	MINISTRY OF COMMUNICATIONS		PAKISTAN (PVT.) LTD.	03		SUBMITTED			1:300		
	NATIONAL HIGHWAY AUTHORITY		HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	02		RECOMMENDED			DATE	DWG NO.	REV.
				01		CHD./VER.					
				REV.		DATE	DESCRIPTION				

Sr No.	Chainage	Structure Type	No. of Spans	Clear Span Width (m)	Clear Hieght	Skew
1	43+287	Bridge	1	30 ✓		0
2	63+115	Bridge	1	30 ✓		30
3	73+415	Bridge	1	20 ✓		49
4	78+650	Bridge	2	30 ✓		0
5	97+455	Bridge	2	25 ✓		0
6	98+330	Bridge	1	30 ✓		0
7	100+435	Bridge	1	25 ✓		50
8	0+230	Flyover	2	30 ✓		0
9	55+000	Underpass	1	10 ✓	5.1	43
10	62+740	Underpass	1	10 ✓	5.1	28
11	75+120	Underpass	1	10 ✓	5.1	26
12	80+980	Underpass	1	10 ✓	5.1	26
13	84+980	Underpass	1	10 ✓	5.1	32
14	101+880	Underpass	1	10 ✓	5.1	28
15	105+100	Underpass	1	6 ✓	5.1	54

Sr No.	Chainage	Structure Type	No. of Spans/Pipes	Clear Span Width/Dia. (m)	Clear Hieght	Skew
1	48+705	Pipe Culvert	1	0.9 ✓	-	0
2	100+930	Pipe Culvert	1	0.9 ✓	-	0
3	101+280	Pipe Culvert	1	0.9 ✓	-	10



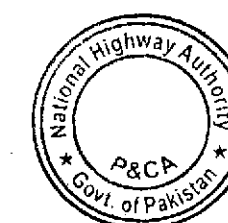
**TENDER DRAWINGS**

GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	04	<b>JAWAD UL HAQ</b> Project Manager M/S NESPAK	DRAWN BY	RAJA SHAFIQ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	TITLE		SCHEDULE OF STRUCTURES	SCALE
		03		SUBMITTED BY			DATE	DRAWING NO.		REV.
		02		RECOMMENDED BY						
		01		CHD./VER. BY						
		REV.		DATE	DESCRIPTION		APPROVED	APPROVED BY		



LIST OF BRIDGES AND UNDERPASS

PACKAGE II						
KAND KOT TO KASHMORE						
Sr No.	Chainage	Structure Type	No. of Spans	Clear Span Width (m)	Clear Hieght	Skew
1	43+287	Bridge	1	30		0
2	63+115	Bridge	1	30		30
3	73+415	Bridge	1	20		49
4	78+650	Bridge	2	30		0
5	97+455	Bridge	2	25		0
6	98+330	Bridge	1	30		0
7	100+435	Bridge	1	25		50
8	0+230	Flyover	2	30		0
9	55+000	Underpass	1	10	5.1	43
10	62+740	Underpass	1	10	5.1	28
11	80+980	Underpass	1	6	4.5	26
12	105+100	Underpass	1	6	5.1	54



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

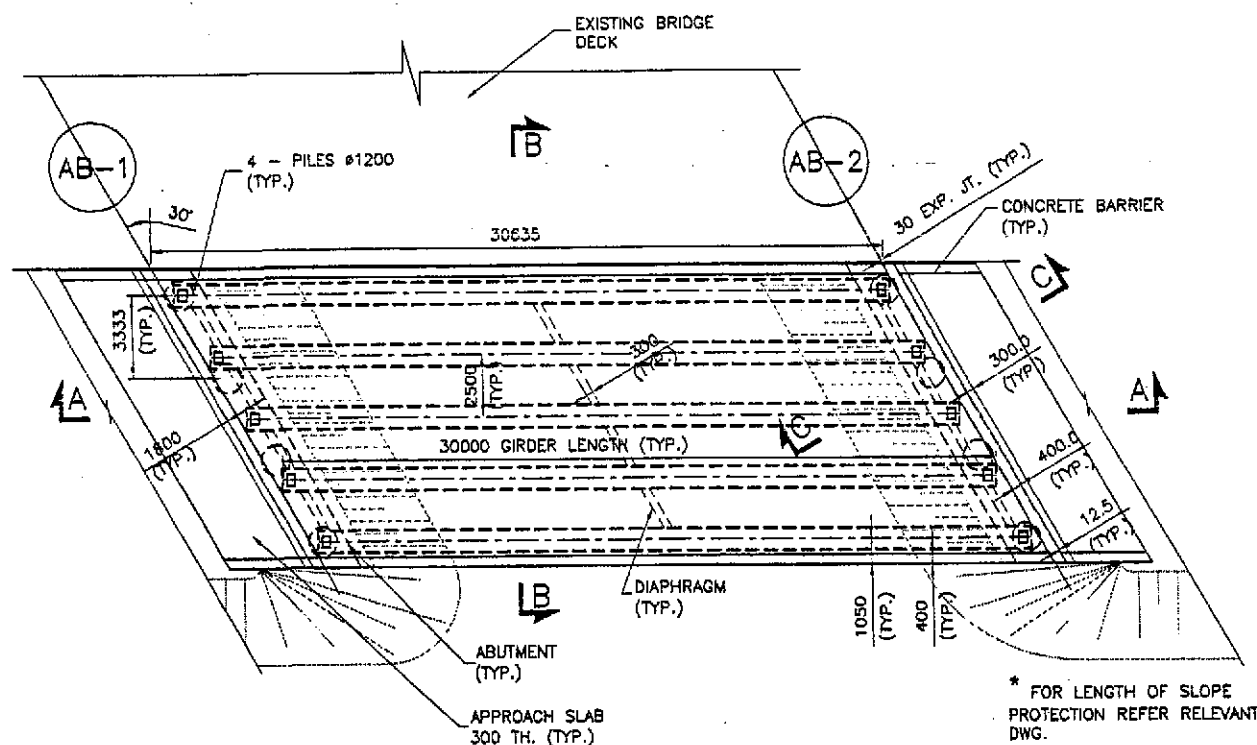
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

04				DRAWN BY	RAJA SHAFIQ
03				SUBMITTED BY	
02				RECOMMENDED BY	
01				CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY	

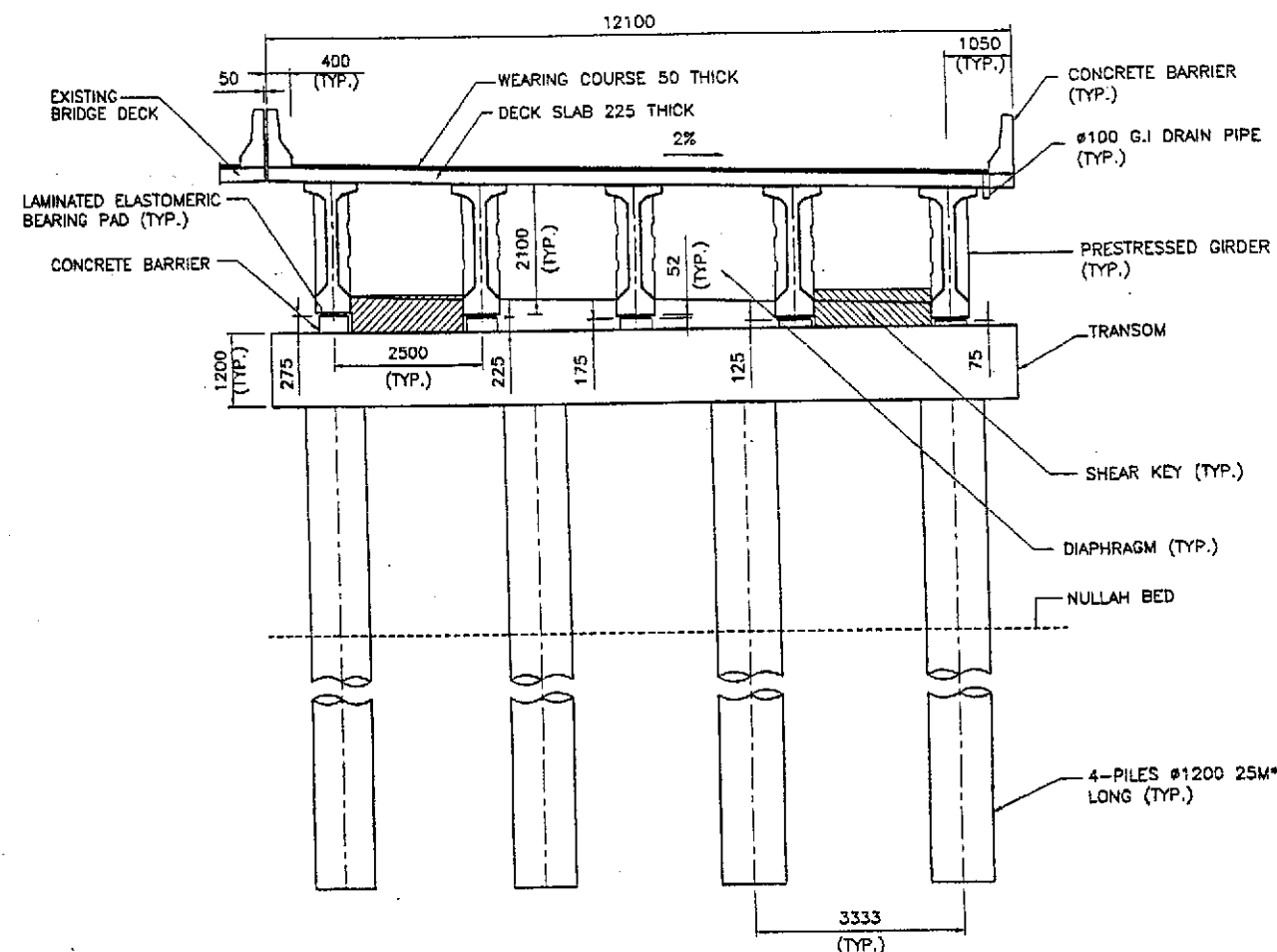
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

TITLE	LIST OF BRIDGES AND UNDERPASS		SCALE
DATE	MARCH 2018	DRAWING NO.	3005/102/TB/P2B001
		REV.	

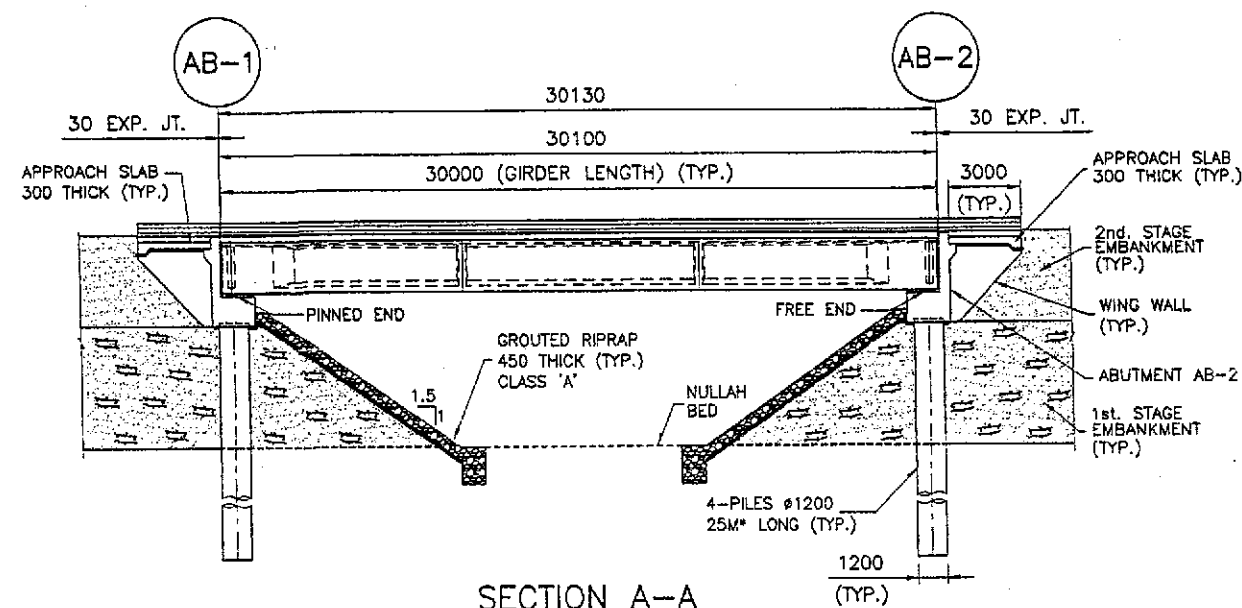
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NOT FOR CONSTRUCTION



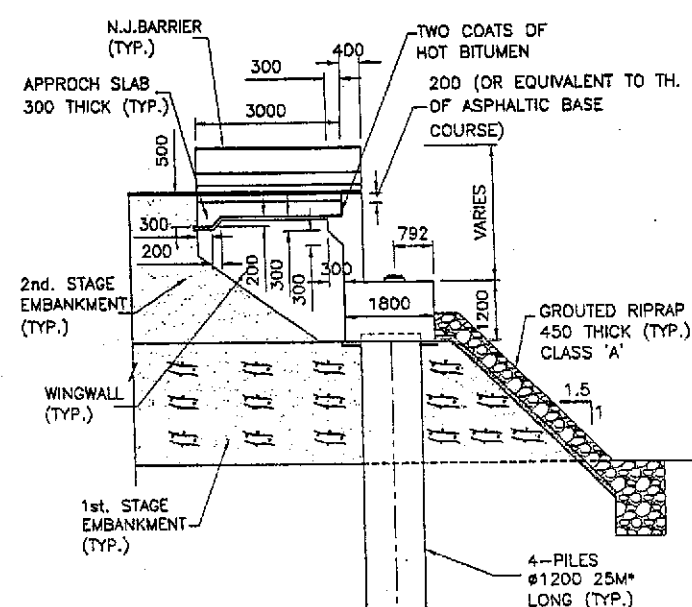
PLAN



SECTION B-B  
SCALE 1:60



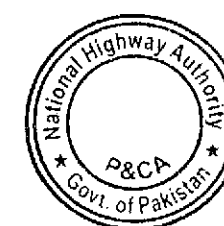
SECTION A-A



SECTION C-C  
SCALE: 1:75

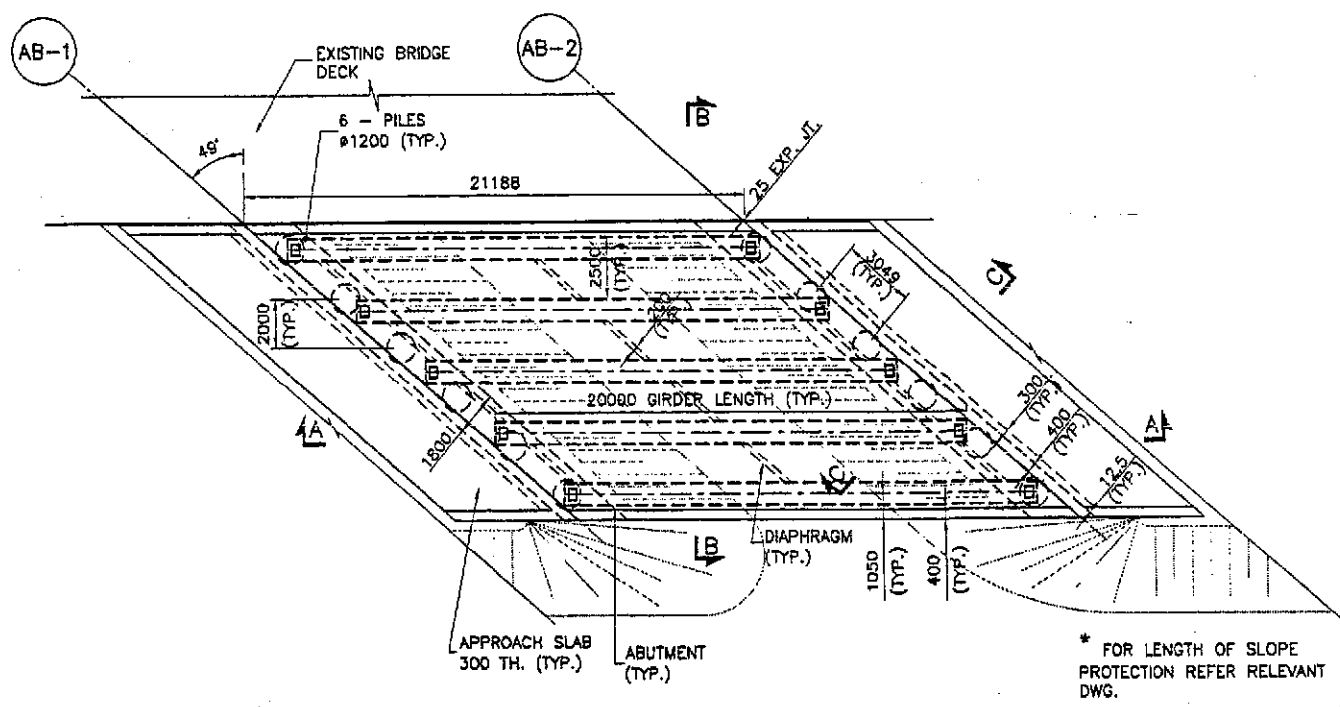
NOTES:

1. FOR GENERAL NOTES REFER DWG NO. P1G001.
2. WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.

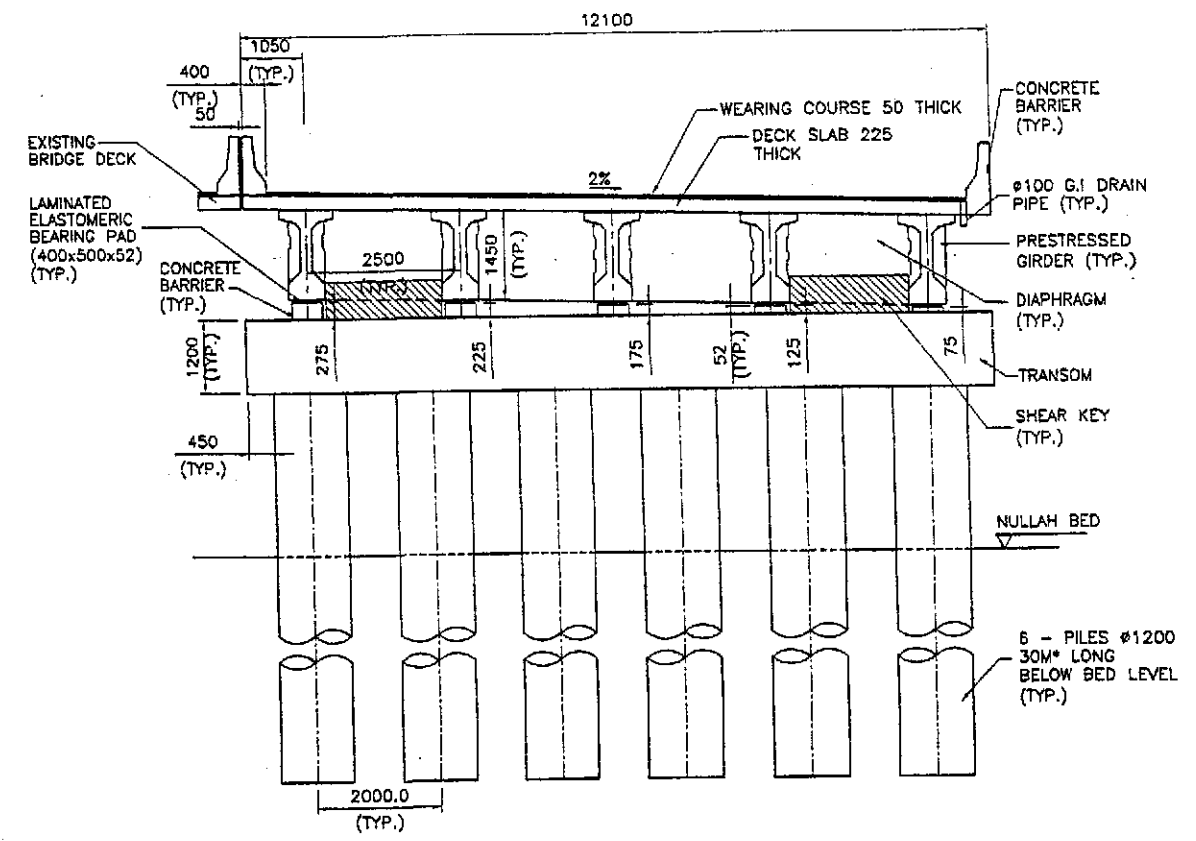


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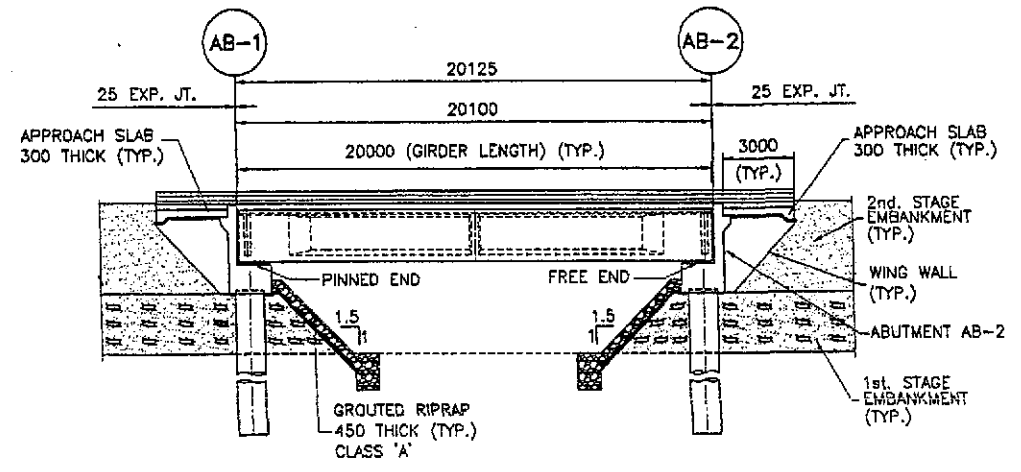
<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAK HOUSE, 1-C BLOCK N MODEL TOWN EXTENSION, LAHORE, PAKISTAN.</p>	<p>04 03 02 01</p> <p>JAWAD UL HAQ Project Manager M/S RESPAK</p>	<p>DRAWN SUBMITTED RECOMMENDED CHD./VER. APPROVED</p> <p>M. RASHID AZIZ</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE I (SHIMLAHUR TO KANBI KOT)</p>	<p>GENERAL ARRANGEMENT PLAN, ELEVATION AND SECTIONS BRIDGE AT CH. 63+115</p> <p>DATE: JULY 2018 DWG NO.: 3905/102/1D/PIG103</p> <p>SCALE: 1:150</p>
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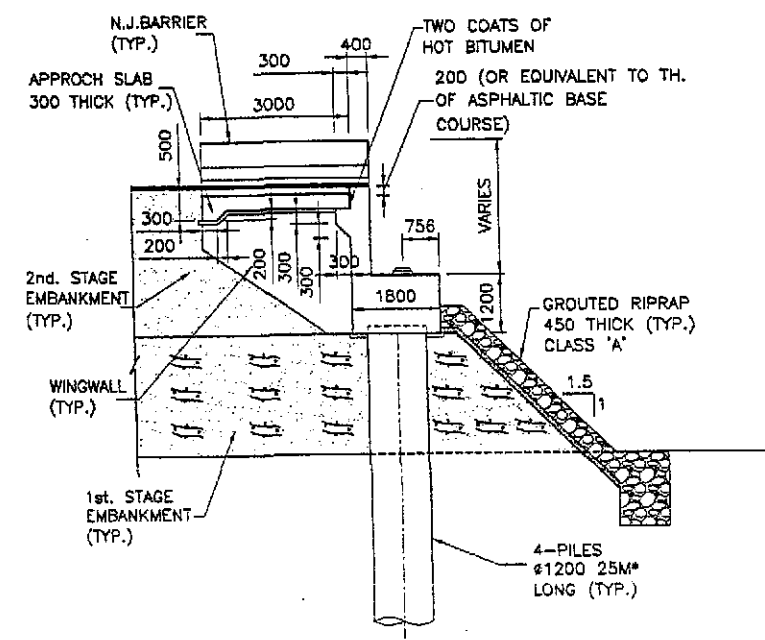
PLAN



SECTION B-B  
SCALE: 1:60



SECTION A-A



SECTION C-C  
SCALE: 1:75



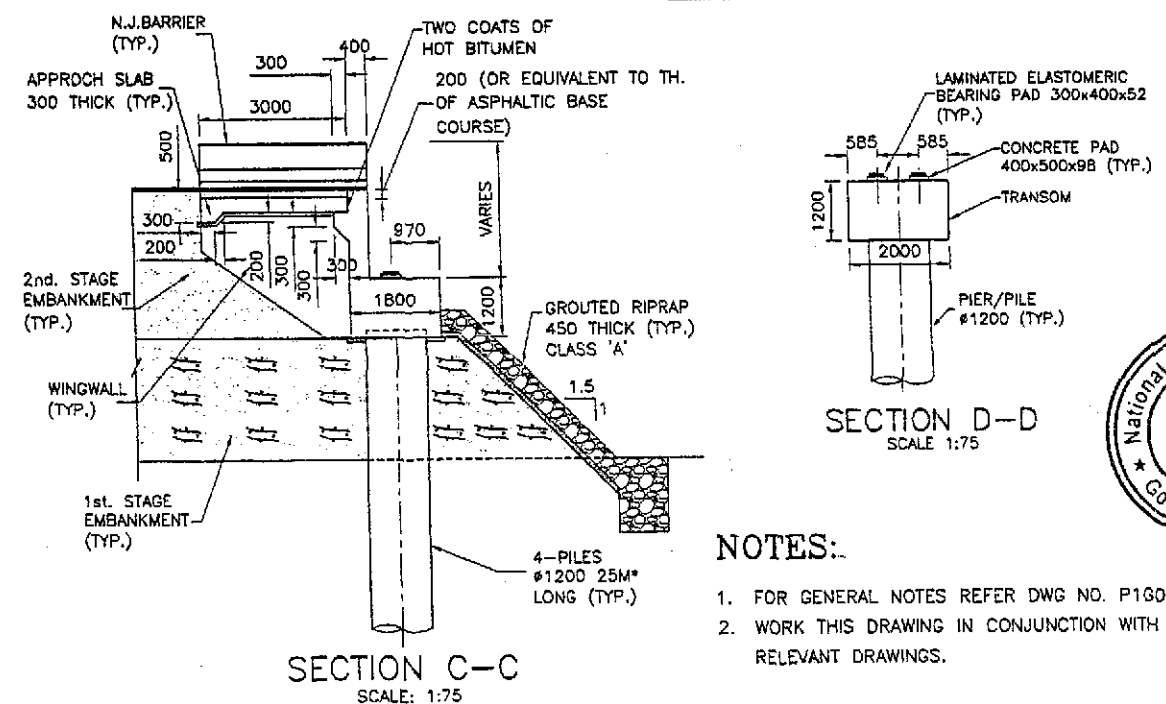
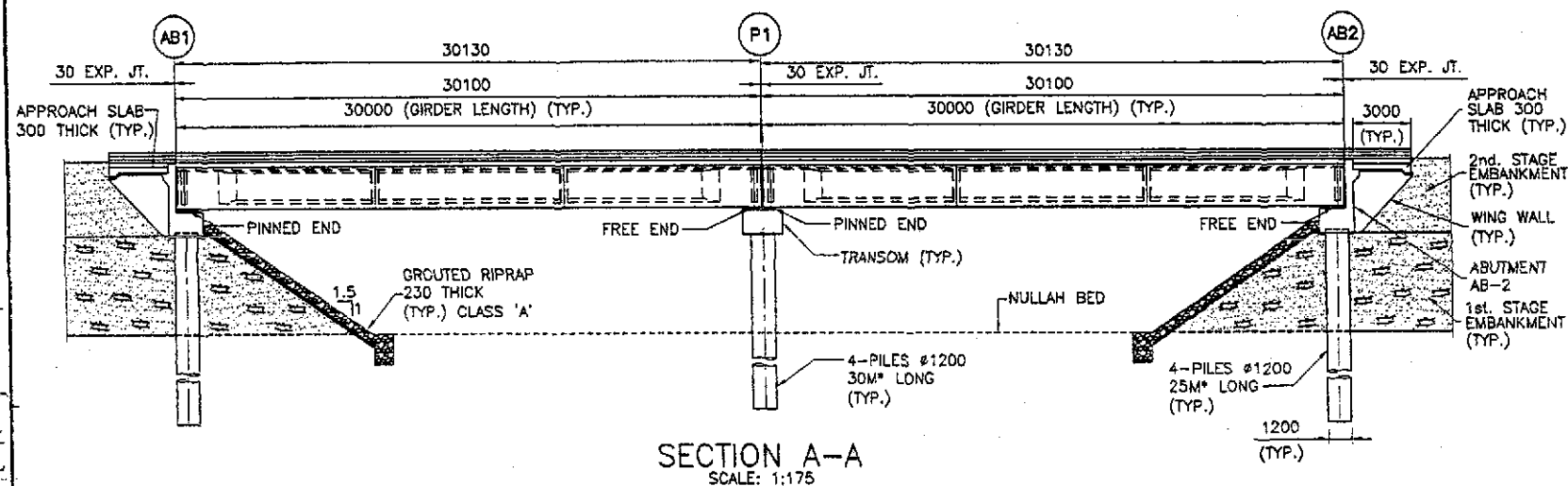
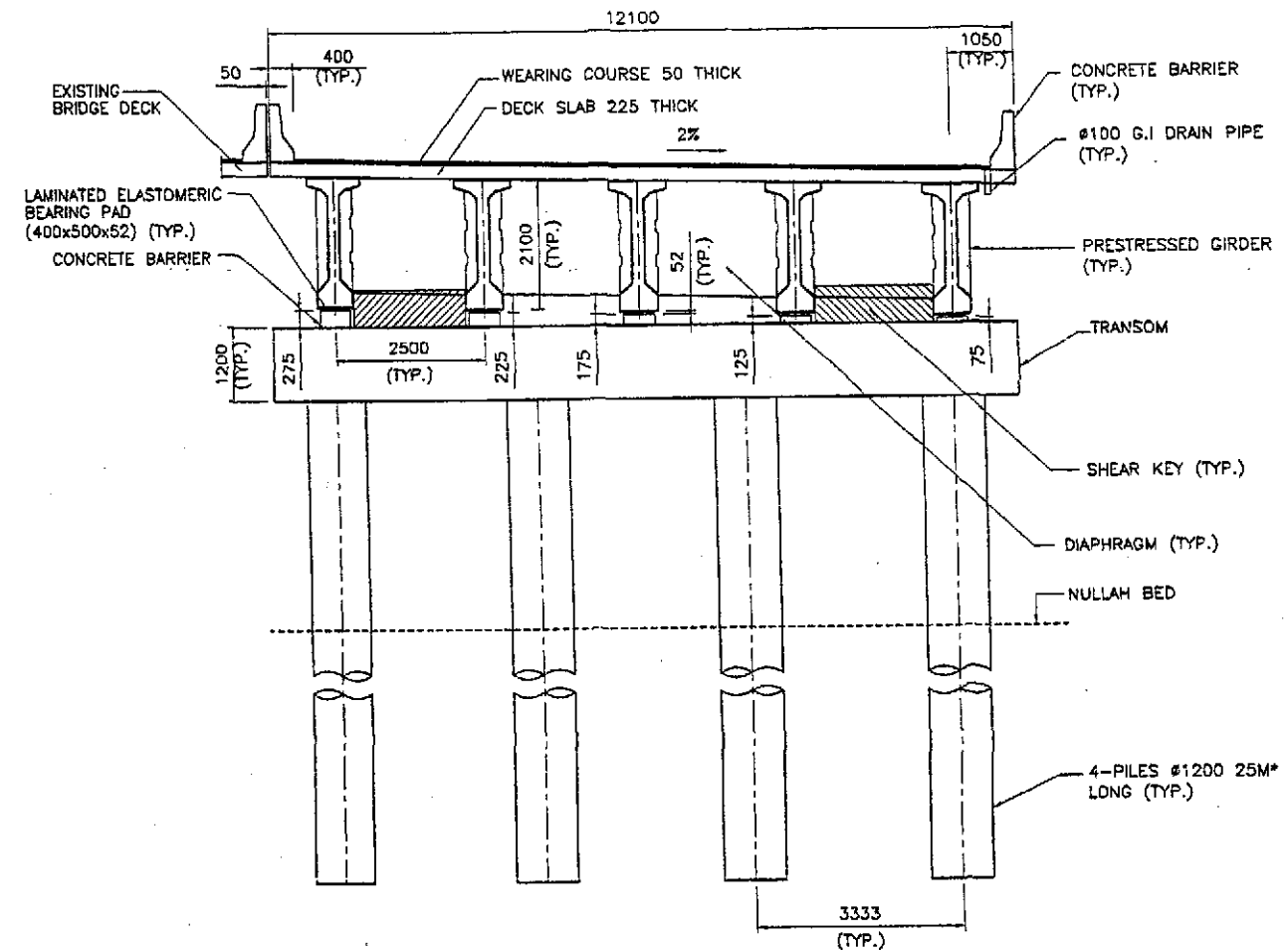
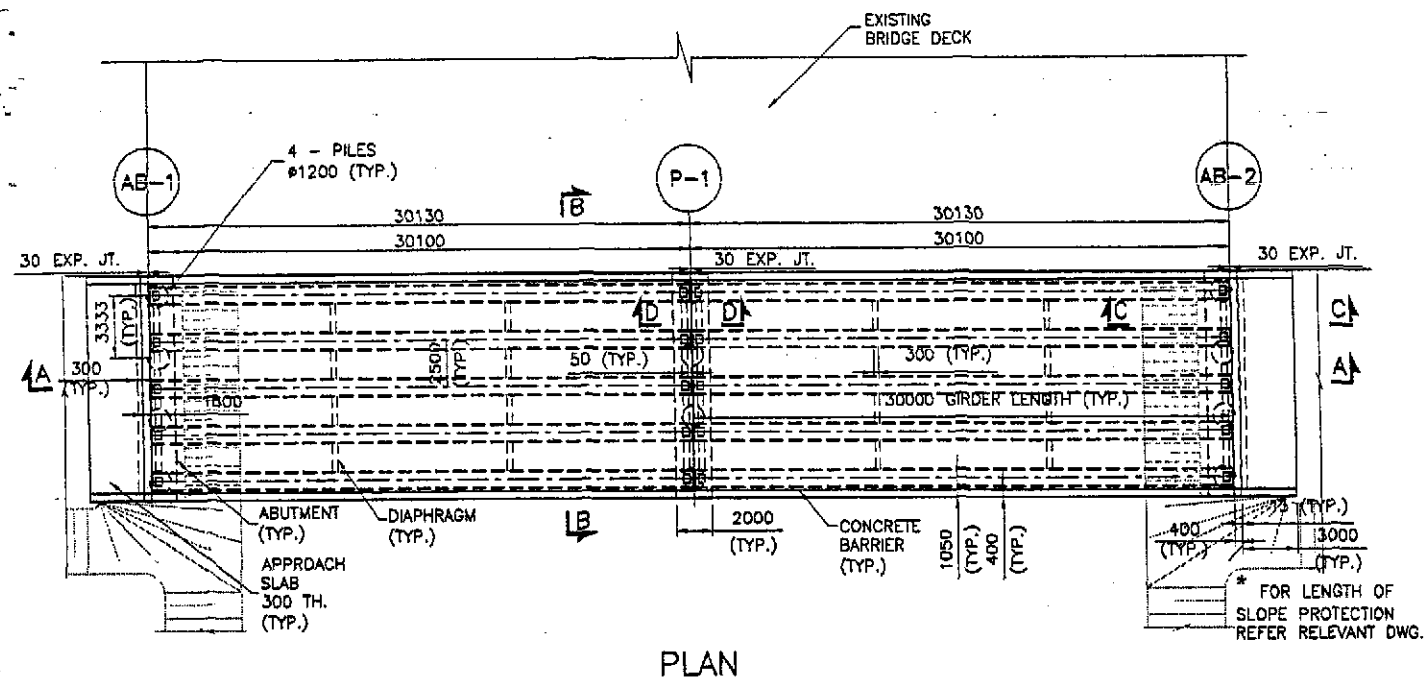
**TENDER DRAWINGS**

NOTES:

1. FOR GENERAL NOTES REFER DWG NO. P1G001.
2. WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.

<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p><b>NES</b> NATIONAL ENGINEERING SERVICES <b>PAK</b> PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.</p>	<p>04 03 02 01 REV. DATE DESCRIPTION APPROVED</p> <p><b>JAWAD UL HAQ</b> Project Manager M/S NESPAK</p>	<p>DRAWN M. RASHID AZIZ SUBMITTED RECOMMENDED CHD./VER. APPROVED</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)</p>	<p>GENERAL ARRANGEMENT PLAN, ELEVATION AND SECTIONS BRIDGE -AT- CH. 73+415</p> <p>DATE: JULY 2018 DWG NO.: 3905/102/ID/P1G104</p>	<p>SCALE 1:150</p>
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**TENDER DRAWINGS  
NOT FOR CONSTRUCTION**



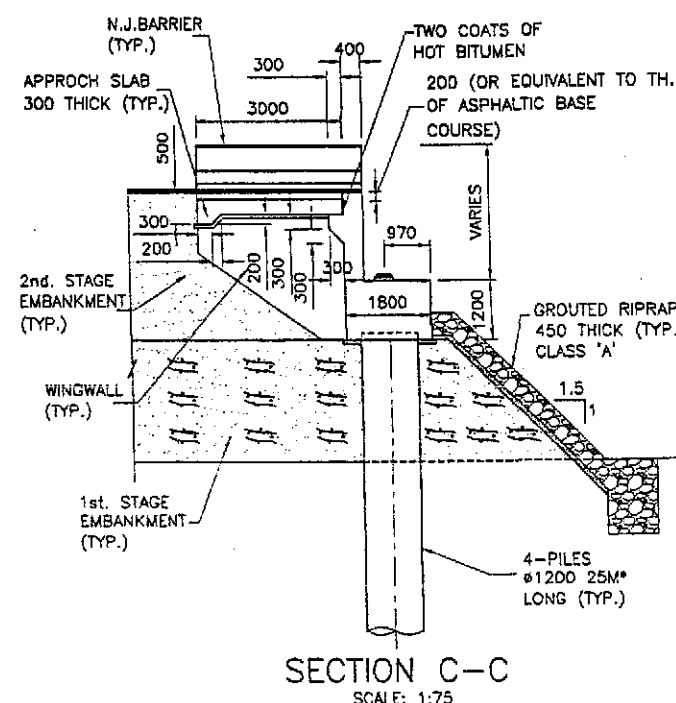
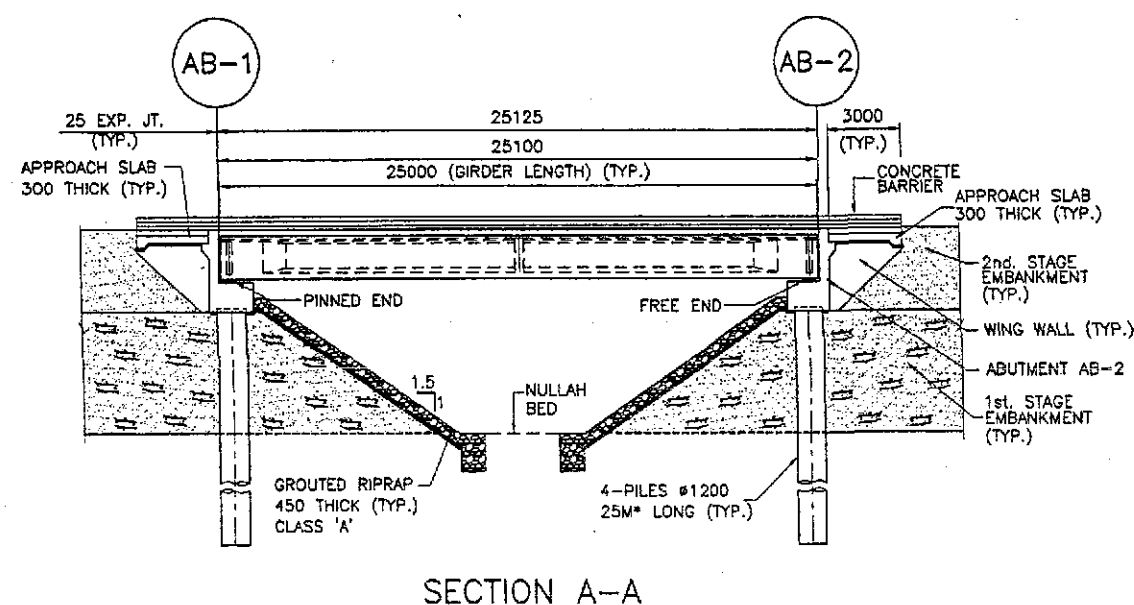
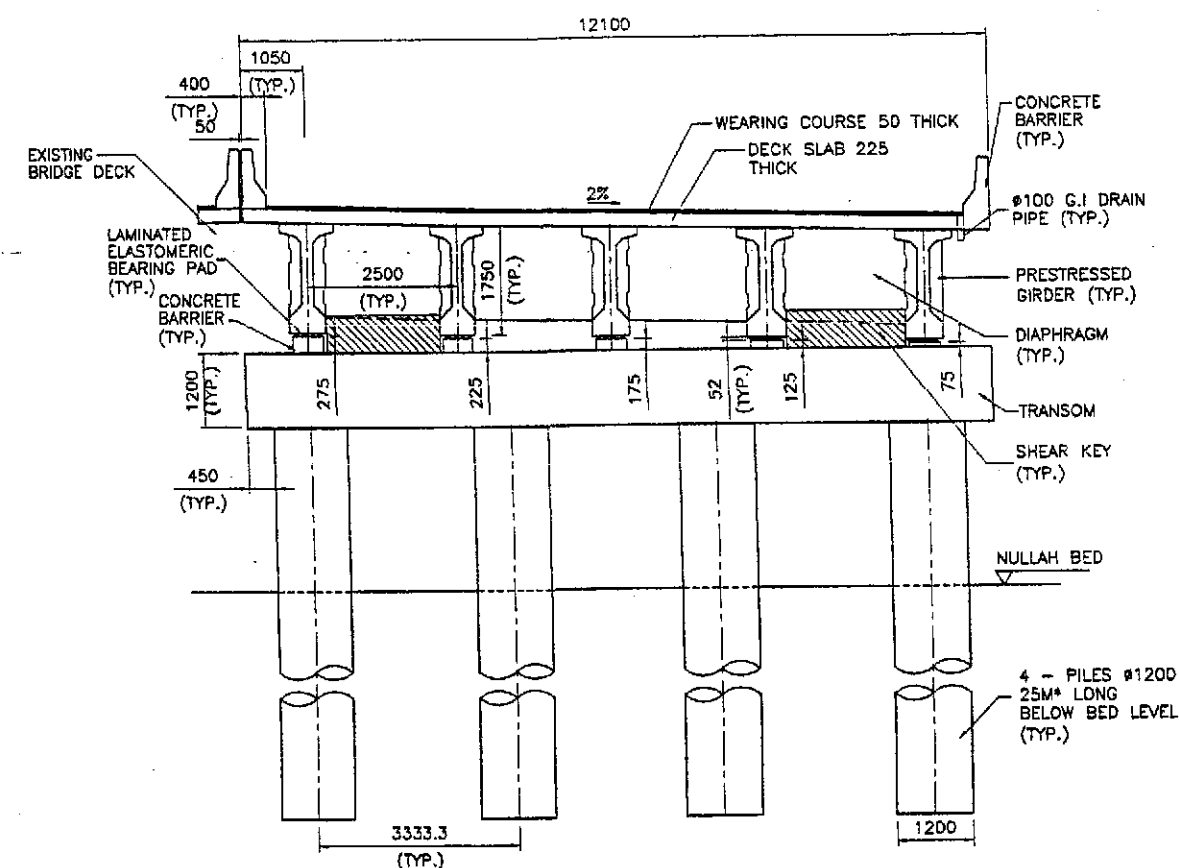
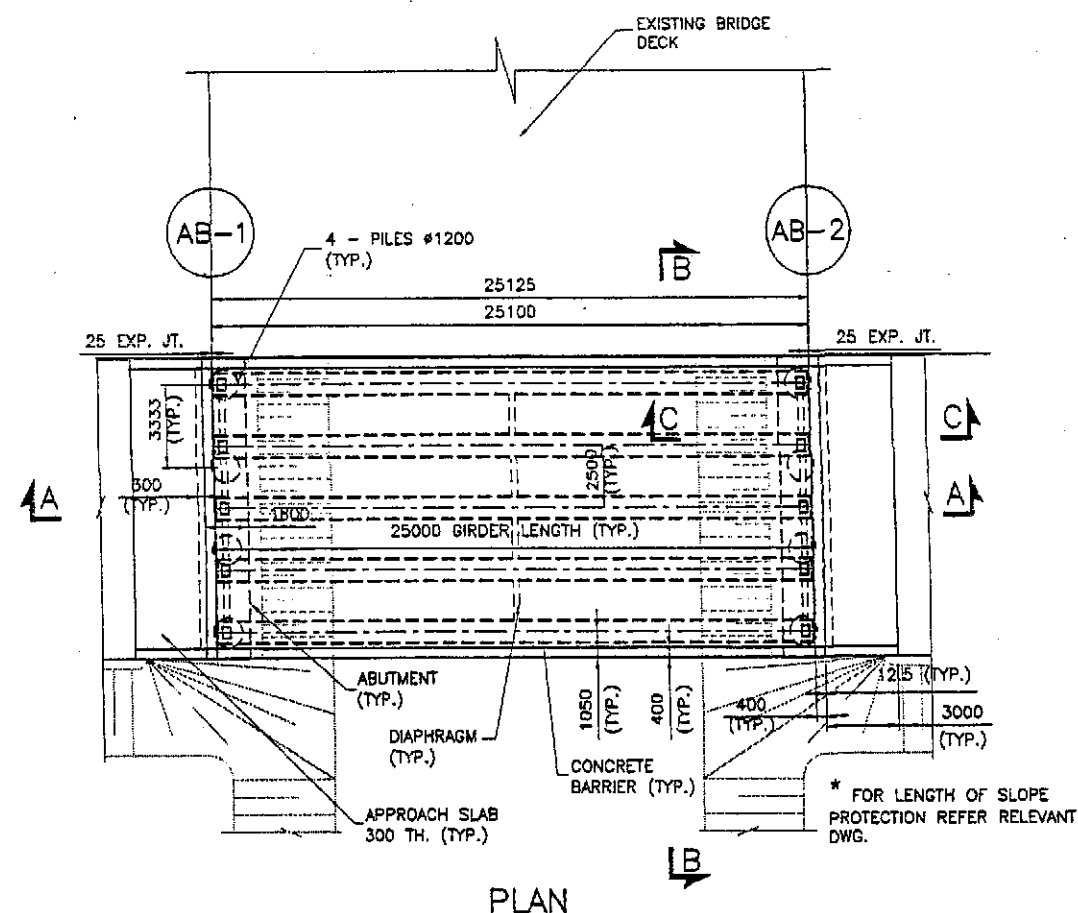
**NOTES:**

1. FOR GENERAL NOTES REFER DWG NO. P16001.
2. WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.



<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NES NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, DARE, PAKISTAN.</p>	<p>04 03 02 01</p> <p>JAWAD UL HAQ Project Manager M/S NESPAK</p>	<p>DRAWN SUBMITTED RECOMMENDED CHD./VER. APPROVED</p> <p>M. RASHID AZIZ</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDHI KOT)</p>	<p>GENERAL ARRANGEMENT PLAN, ELEVATION AND SECTIONS BRIDGE-AT-CH: 78+650</p> <p>DATE: JULY 2018 DWS NO.: 3905/102/10/PIG105</p>	<p>SCALE 1:200</p>
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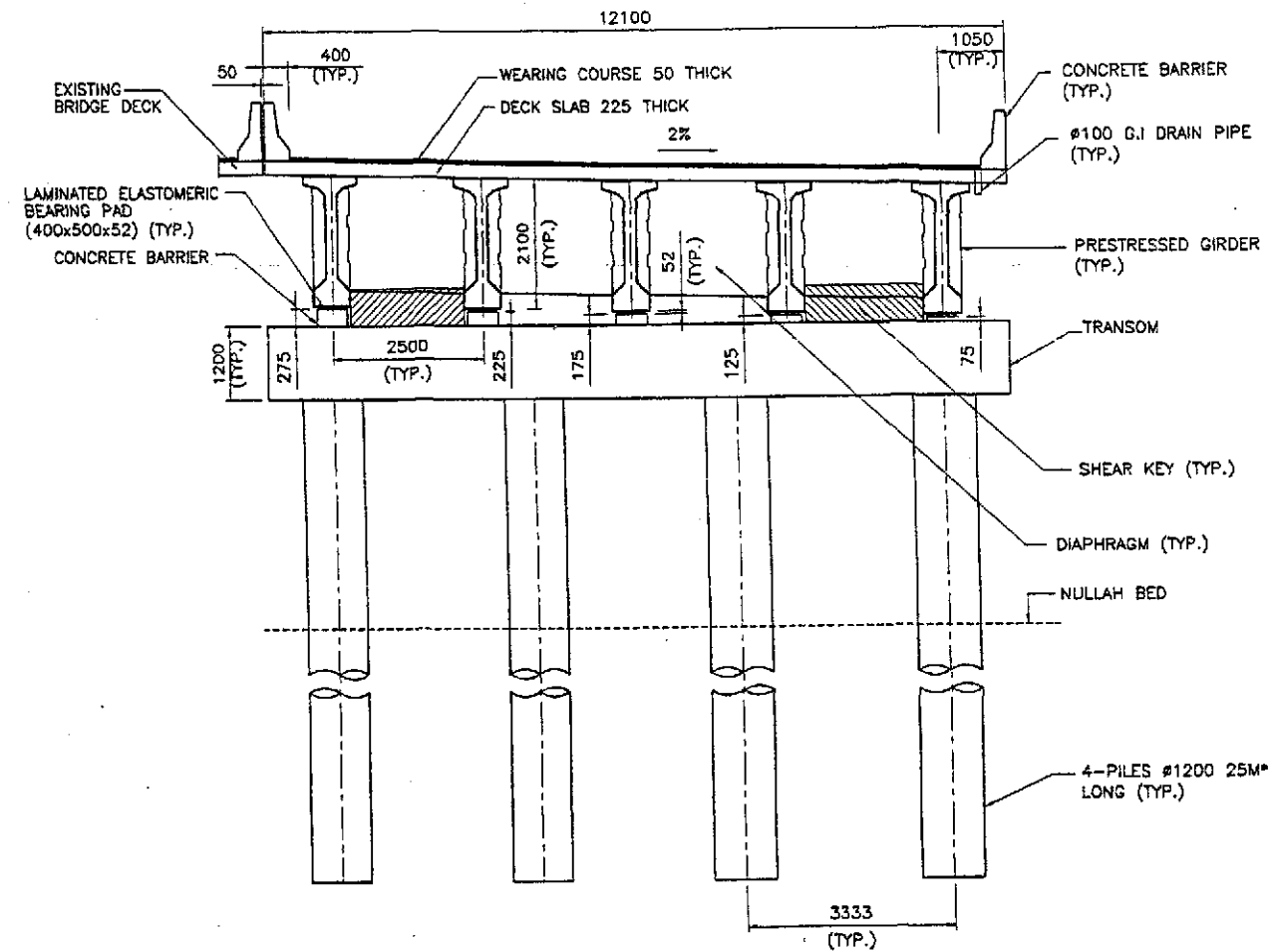
TENDER DRAWINGS

NOTES:

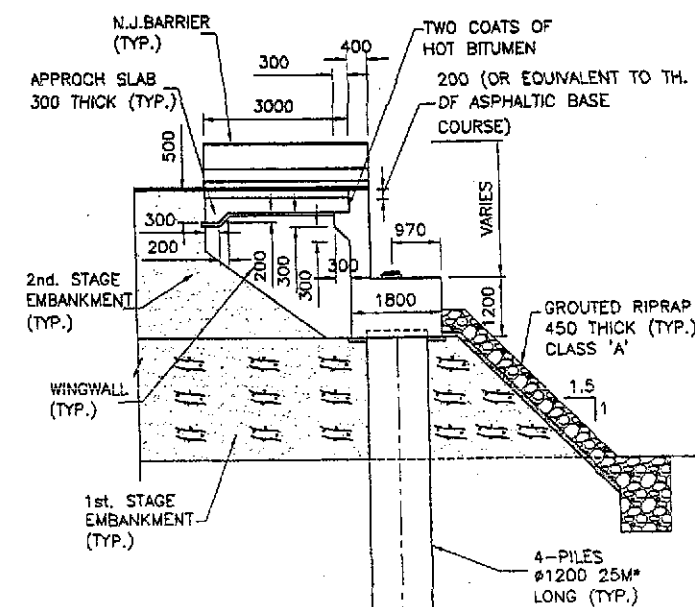
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2. WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.

	GOVERNMENT OF PAKISTAN		NATIONAL ENGINEERING SERVICES	04	JAWAD UL HAQ		DRAWN	M. RASHID AZIZ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	GENERAL ARRANGEMENT		SCALE	
	MINISTRY OF COMMUNICATIONS		PAKISTAN (PVT.) LTD.	03		Project Manager		SUBMITTED			PLAN, ELEVATION AND SECTIONS		1:150
	NATIONAL HIGHWAY AUTHORITY		HEAD OFFICE, NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	02		M/S NESPAK		RECOMMENDED			BRIDGE AT CH: 97+455		
				01				CHD./VER.		DATE	DWG NO.	REV.	
				REV.	DATE	DESCRIPTION	APPROVED	APPROVED	JULY 2018	3905/102/TD/P16106			

**TENDER DRAWINGS**



SECTION B-B  
SCALE 1:60



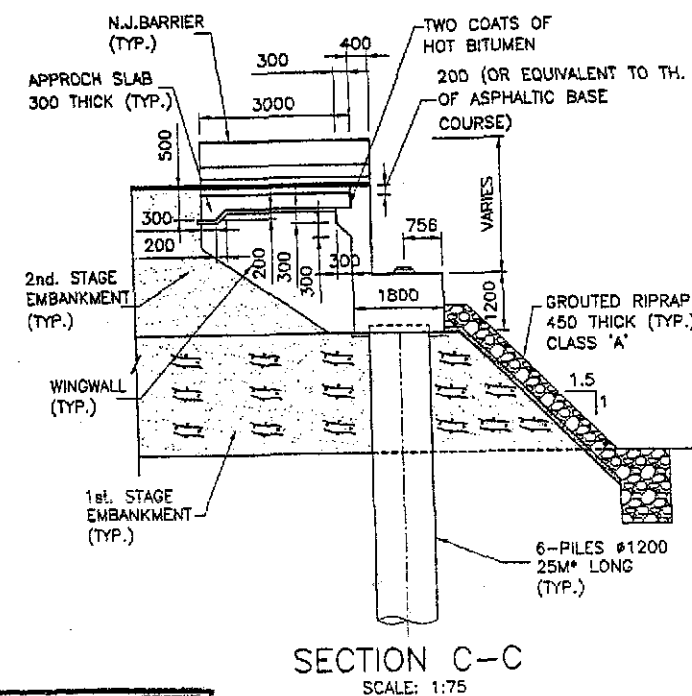
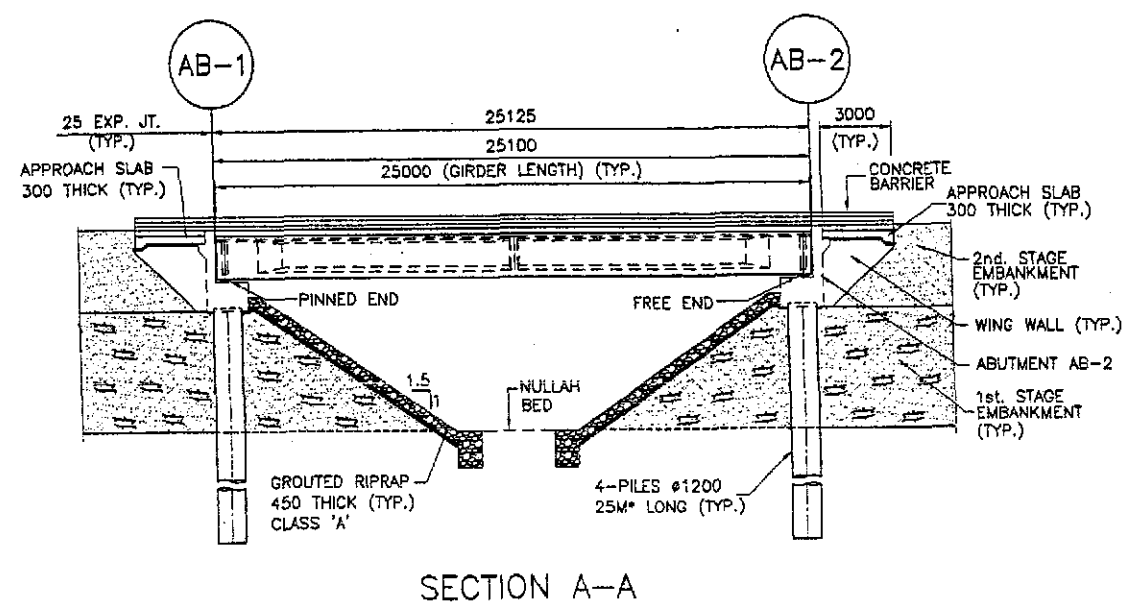
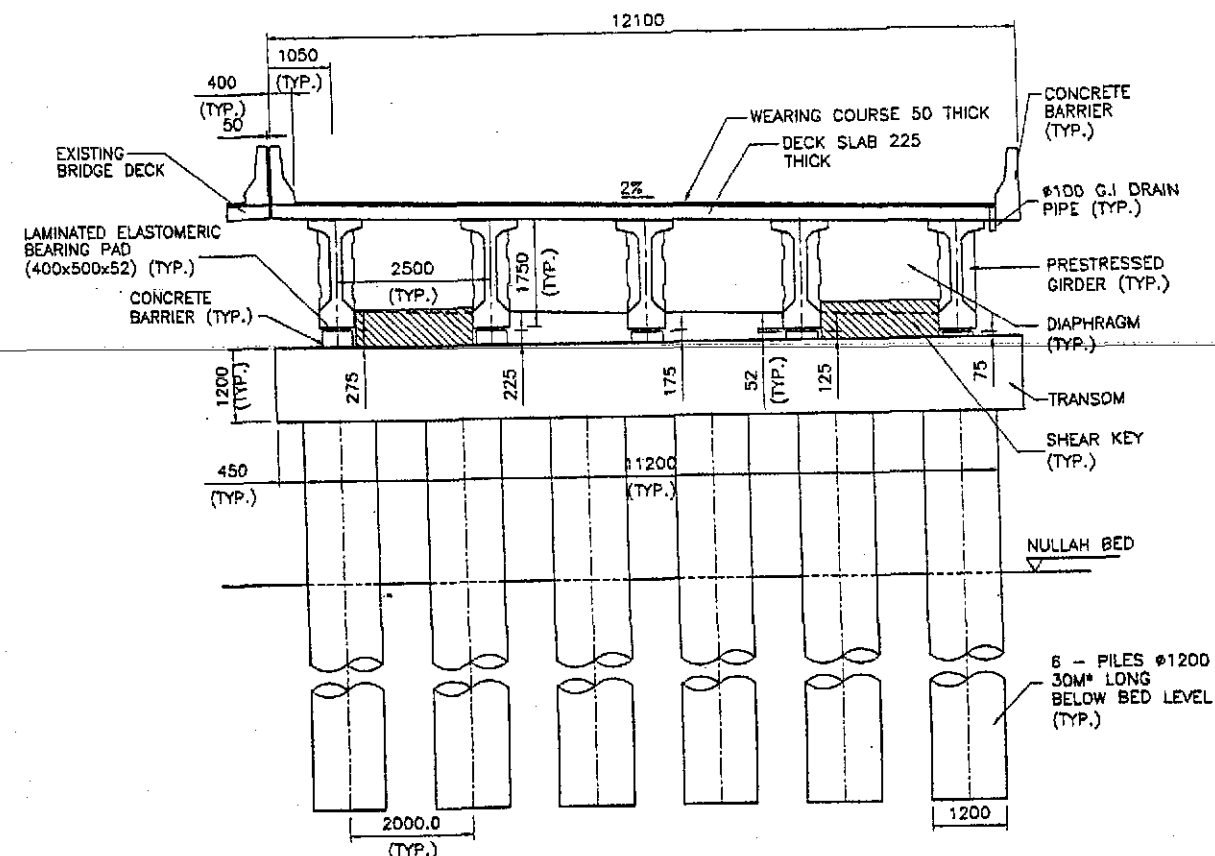
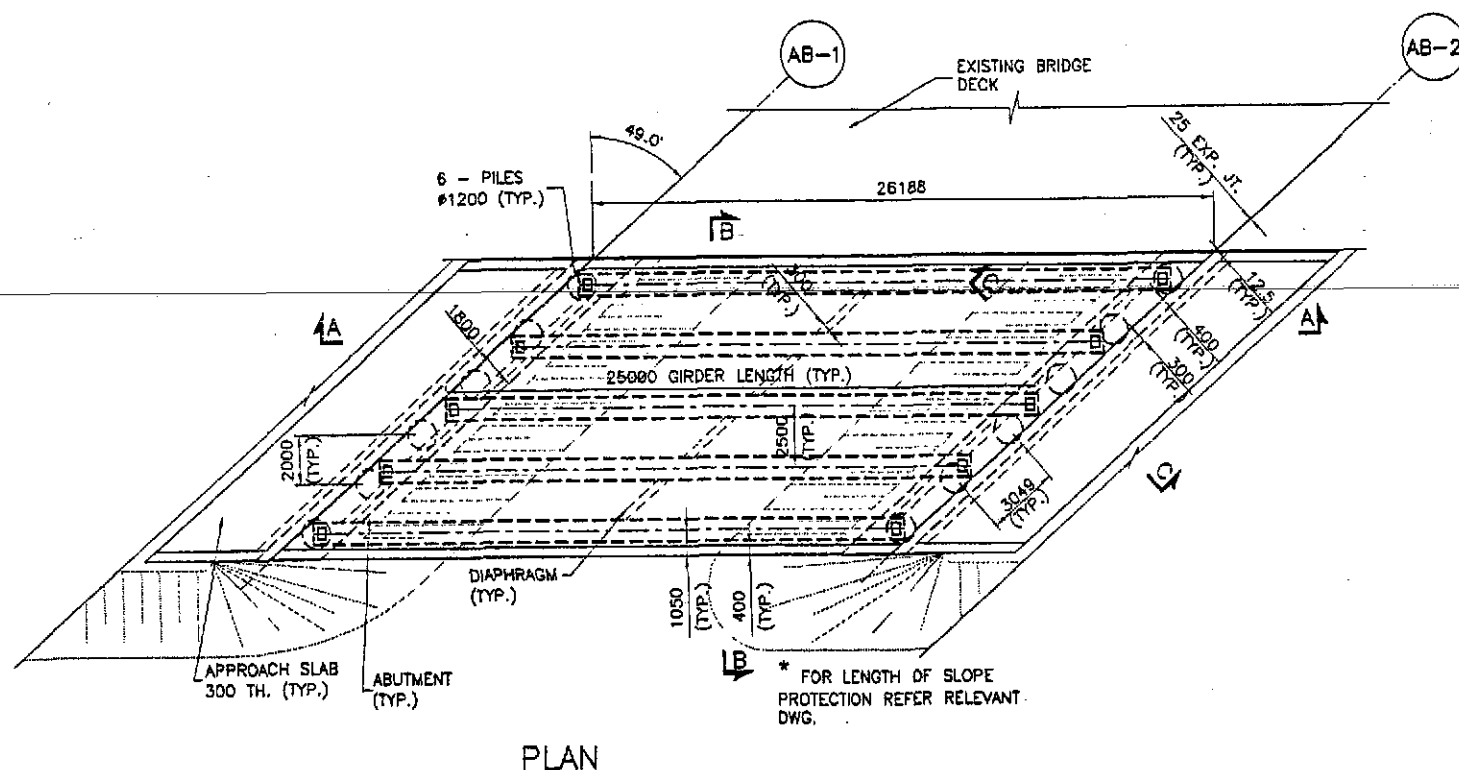
SECTION C-C  
SCALE: 1:75

1. FOR GENERAL NOTES REFER DWG NO. P1GDD1.
2. WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.



WRA, D:\Projects of H&T\3905 - RATODERO ~ RAJANPUR ROAD\1ENDEK\Package-1\01 - BRIDGE of CH. 98+330 (30m - 0d - 1span)\P1G107.dwg. 29.06.2018

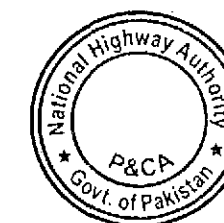
TENDER DRAWINGS  
NOT FOR CONSTRUCTION



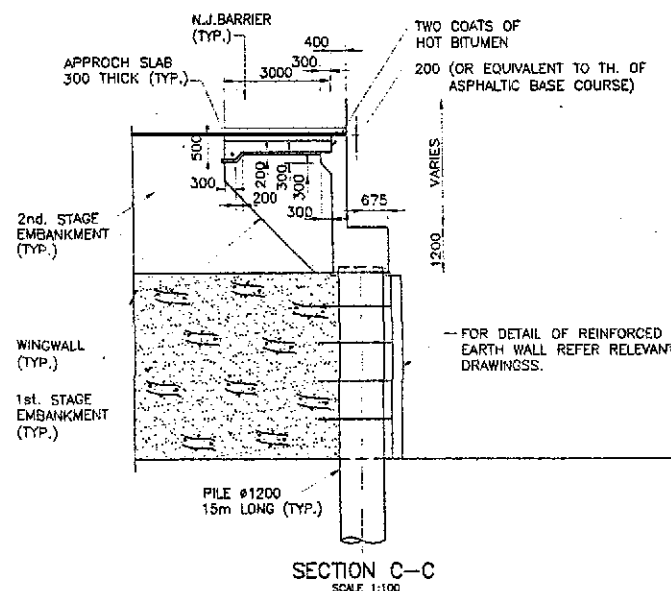
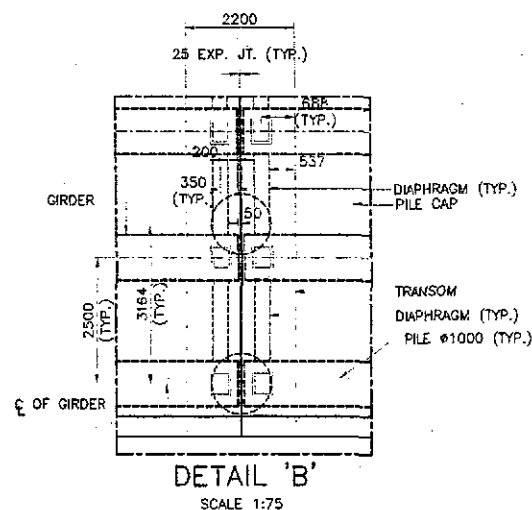
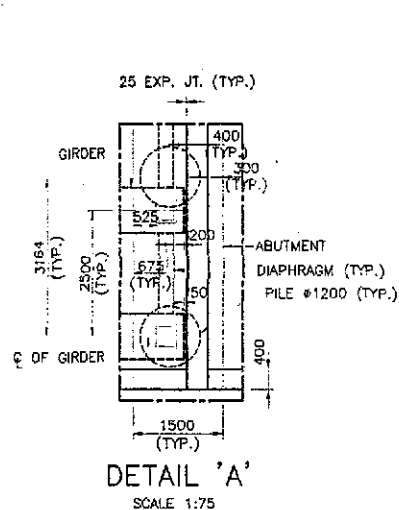
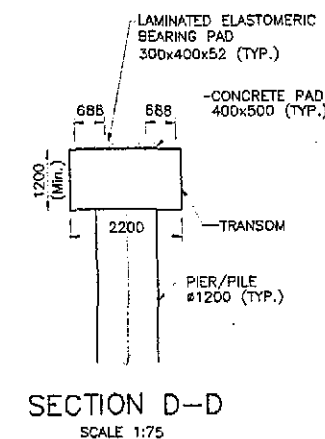
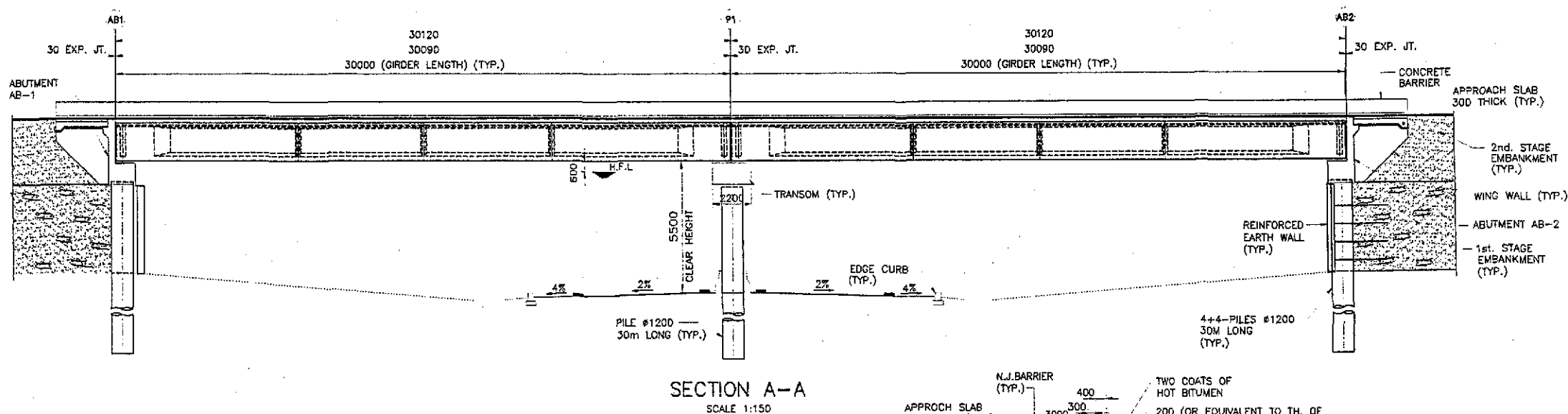
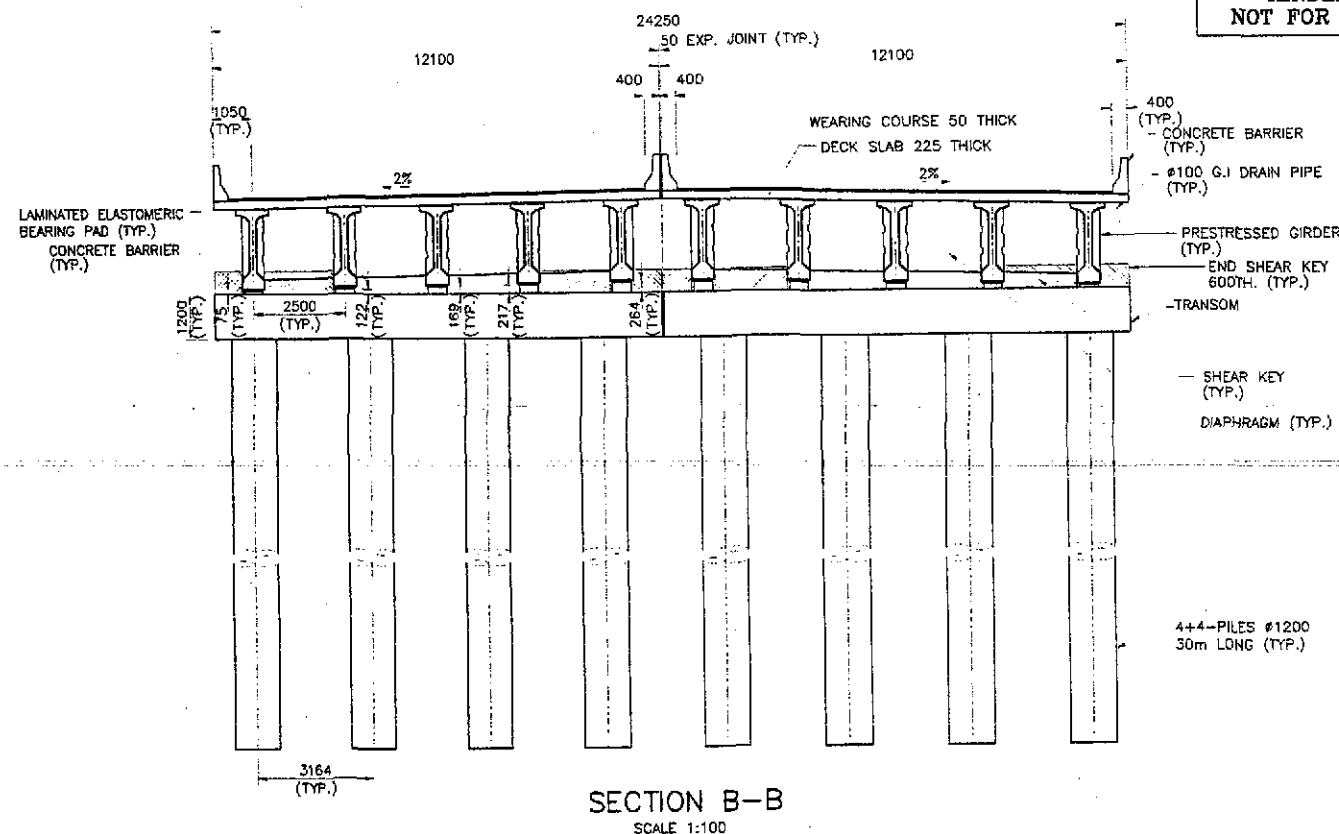
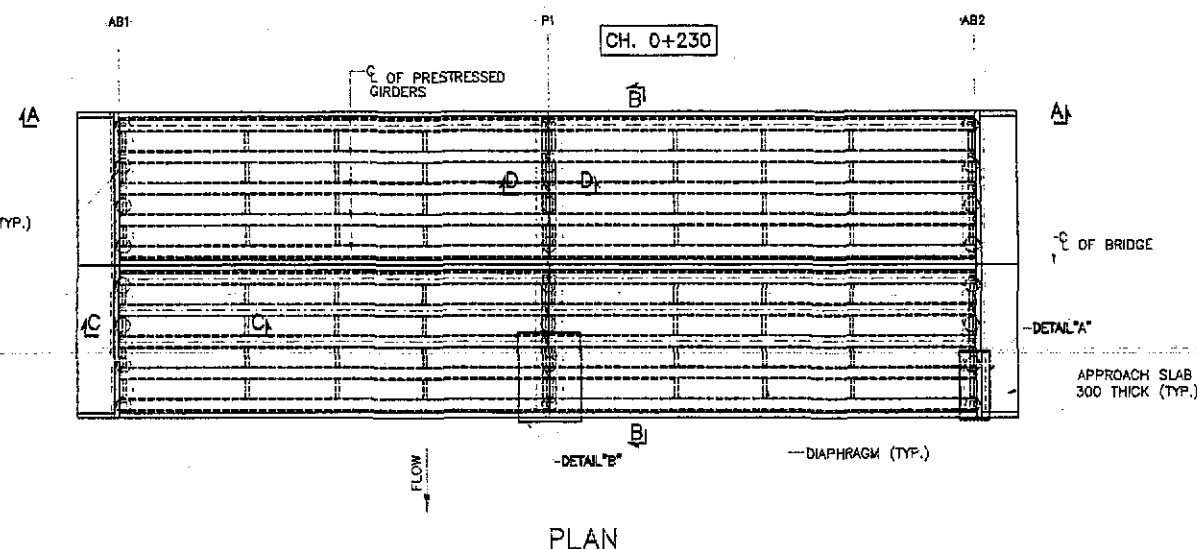
TENDER DRAWINGS

NOTES:

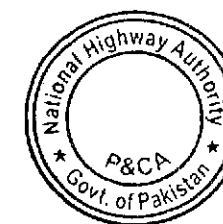
1. FOR GENERAL NOTES REFER DWG NO. P1G001.
2. WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.



<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NES NATIONAL ENGINEERING SERVICES PAK PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, GHAZI, PAKISTAN</p>	<p>04 03 02 01 REV. DATE DESCRIPTION APPROVED APPROVED</p> <p>JAWAD UL HAQ Project Manager M/S NESPAK</p>	<p>DRAWN M. RASHID AZIZ SUBMITTED RECOMMENDED CHD. VER.</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)</p>	<p>GENERAL ARRANGEMENT PLAN, ELEVATION AND SECTIONS BRIDGE AT CH. 100+435 SCALE 1:150 DATE JULY 2018 DWG. NO. 8905/102/TD/P1G108 REV.</p>
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**TENDER DRAWINGS**



**NOTES:**

1. FOR GENERAL NOTES REFER DWG. NO. P1G001.
2. WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.
3. FOR LENGTH OF PILE SHOWN ARE TENTATIVE & WILL BE FINALIZED AFTER DETAIL GEOTECHNICAL INVESTIGATION & PILE LOAD TEST.
4. SIZE OF BRIDGE WATERWAY, HFL, PROTECTION WORK, TRAINING WORK, SCOUR PROTECTION, PROFILE ETC. WILL BE FINALIZED AFTER HYDRAULICS/HIDROLOGY STUDIES.



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

**NES** NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

HEAD OFFICE: NESPAK HOUSE, T-6, BLOCK 'N', MODEL TOWN  
EXTENSION, LANDOR, KARACHI

04  
03  
02  
01  
REV. DATE DESCRIPTION APPROVED

**JAWAD UL HAQ**  
Project Manager  
M/S NESPAK

DRAWN M. RASHID AZIZ  
SUBMITTED  
RECOMMENDED  
END. VER.  
APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

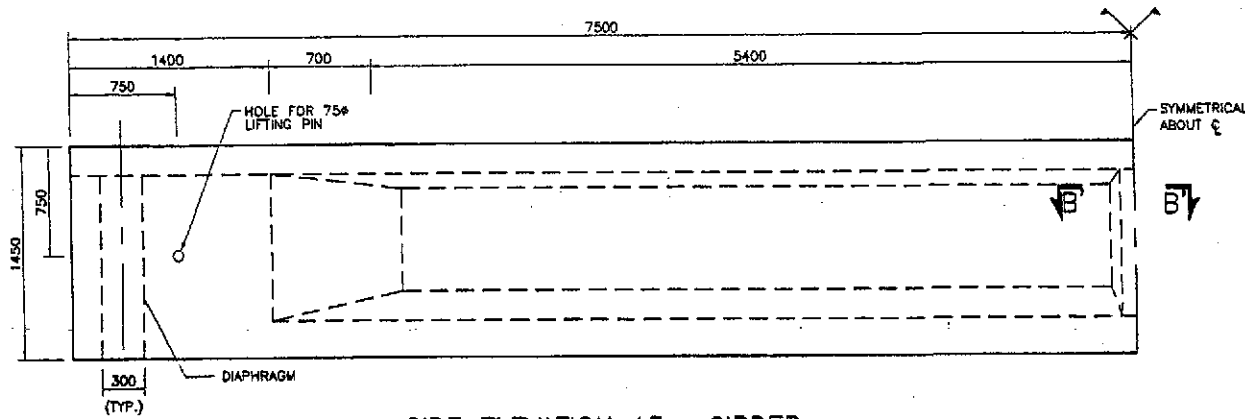
GENERAL ARRANGEMENT  
PLAN, ELEVATION AND SECTIONS  
FLYOVER AT CH. 0+230

DATE JULY 2010 DWG. NO. 3005/102/70/P1G109

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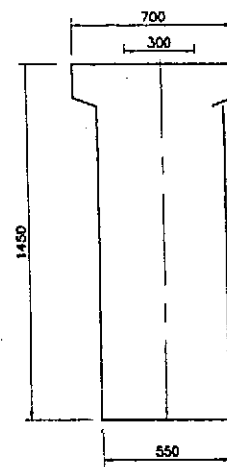


TENDER DRAWINGS  
NOT FOR CONSTRUCTION

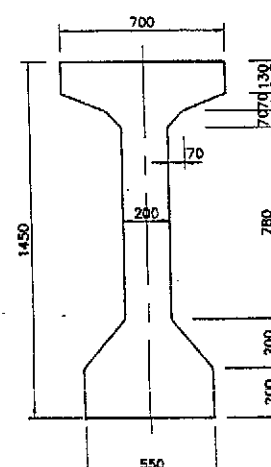


SIDE ELEVATION 15m GIRDER

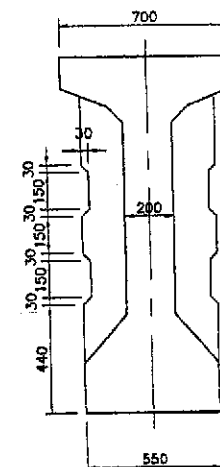
ELEVATION (TENDON PROFILE) 15m GIRDER



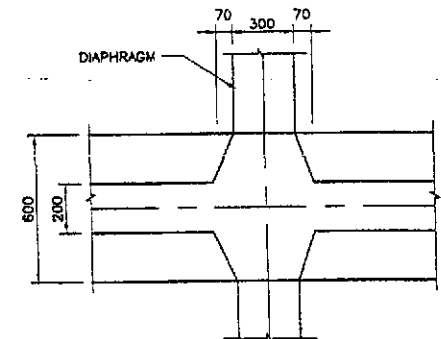
END VIEW OF GIRDER  
SCALE 1:15



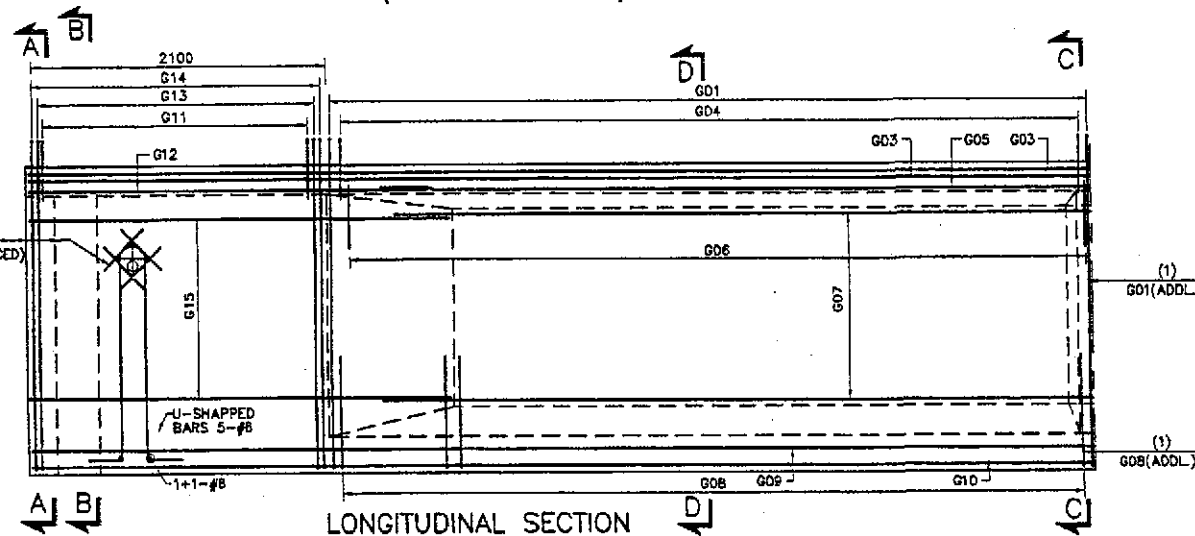
SECTION AT MIDSPAN  
SCALE 1:15



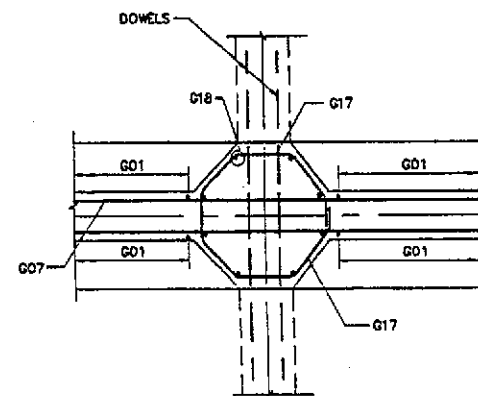
SECTION AT DIAPHRAGM  
SCALE 1:15



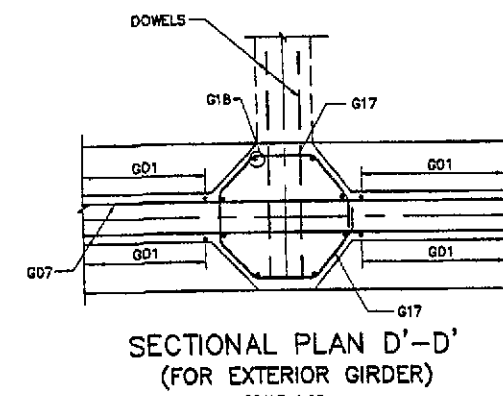
SECTIONAL PLAN B'-B'  
SCALE 1:15



LONGITUDINAL SECTION



SECTIONAL PLAN D'-D'  
(FOR INTERIOR GIRDER)  
SCALE 1:15



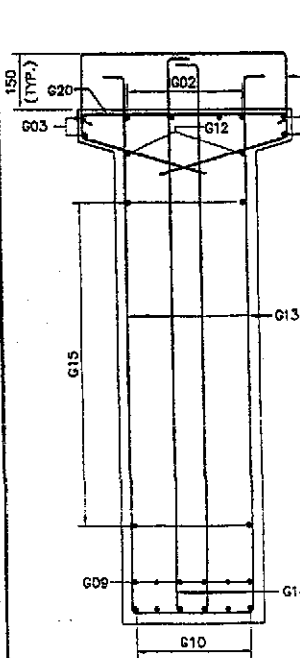
SECTIONAL PLAN D'-D'  
(FOR EXTERIOR GIRDER)  
SCALE 1:15

REINFORCEMENT  
SCHEDULE

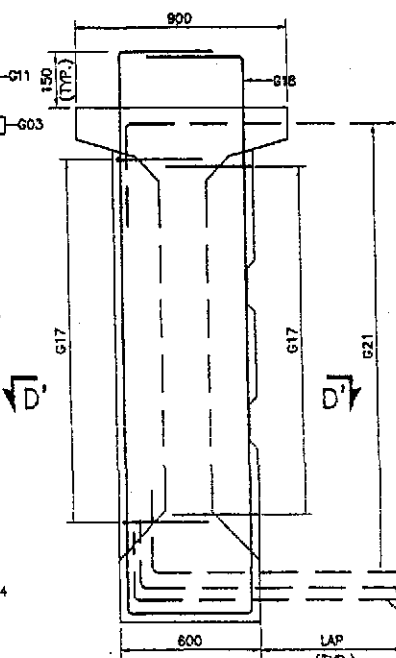
MARK	BAR DIA. & SPACING
G01	#4@150
G02	4-#4
G03	2#4(E.F)
G04	#4@150
G05	#4(E.F)
G06	#4@150
G07	4-#4(E.F)
G08	#4@150
G09	#4(E.F)
G10	6-#6-#8
G11	#4@100
G12	#4(E.F)
G13	#4@100
G14	#4@100
G15	4-#4(E.F)
G17	#4@150
G18	8-#4
G19	#4@150
G20	#4@100/150
G21	#4@200

NOTES:

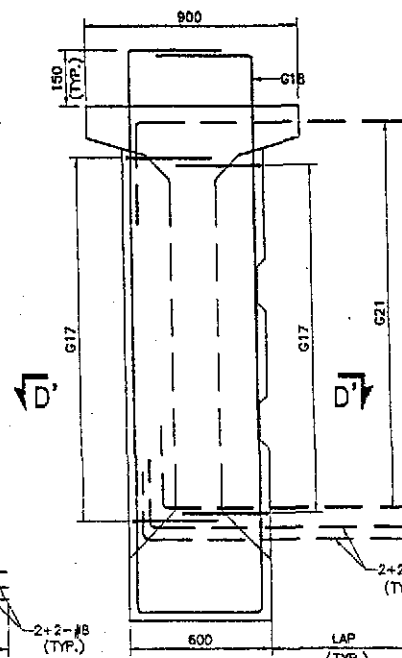
1. FOR GENERAL NOTES REFER DRAWING No. P3G001.
2. ALL PRESTRESSED CONCRETE SHALL BE CLASS D1.
3. REINFORCED CONCRETE SHALL BE DEFORMED ROUND BARS OF (GRADE 60) CONFORMING TO AASHTO M-31 (ASTM A-615) WITH MINIMUM YIELD STRENGTH OF 4200 Kg/Sq.Cm (60.000psi).



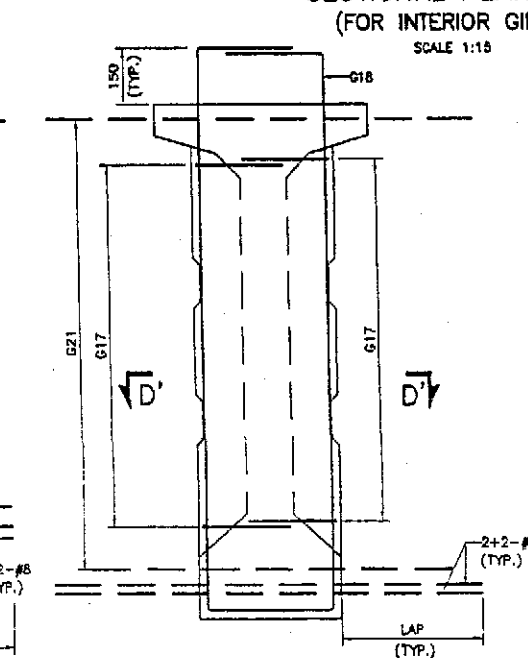
SECTION A-A  
SCALE 1:15



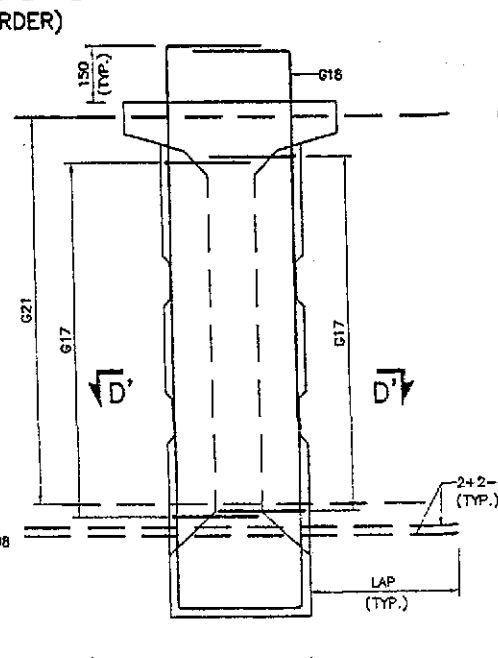
SECTION B-B  
(FOR EXTERIOR GIRDER)  
(EXTERIOR DIAPHRAGM)  
SCALE 1:15



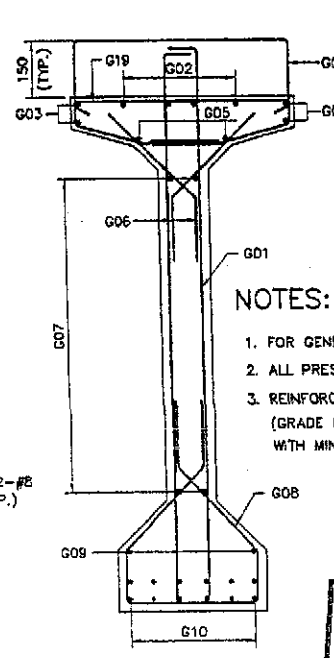
SECTION C-C  
(FOR EXTERIOR GIRDER)  
(INTERIOR DIAPHRAGM)  
SCALE 1:15



SECTION B-B  
(FOR INTERIOR GIRDER)  
(EXTERIOR DIAPHRAGM)  
SCALE 1:15

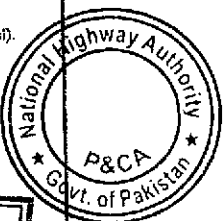


SECTION C-C  
(FOR INTERIOR GIRDER)  
(INTERIOR DIAPHRAGM)  
SCALE 1:15

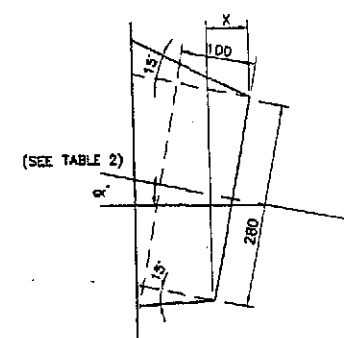


SECTION D-D  
SCALE 1:15

TENDER DRAWINGS

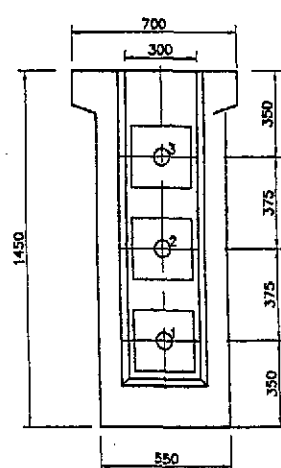


<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN CHUNKOR, LAHORE, PAKISTAN</p>	<p>JAWAD UL HAQ Project Manager M/S NESPAK</p>	<p>DRAWN: M. RASHID AZIZ SUBMITTED: [Signature] RECOMMENDED: [Signature] CHKD/VER: [Signature] REV. DATE DESCRIPTION APPROVED APPROVED</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDHI KOT)</p>	<p>15m R.C.C GIRDER CONC. OUTLINE &amp; REINFORCEMENT DETAILS DATE: JULY 2018 DWG NO: 5505/102/70/P10110 REV: 1</p>	<p>SCALE: 1:25</p>
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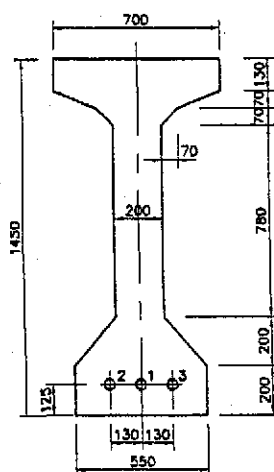
[illegible]

Technical drawing of a fabricated trumpet assembly. The drawing shows a cross-section of a structure with a central trumpet. Dimensions include a total width of 280, a central hole diameter of 130, and a trumpet diameter of 63. A length of 1000 (MIN.) is indicated for the trumpet section. Labels include "END RECESS TO BE GROUTED AFTER STRESSING" and "FABRICATED TRUMPET".

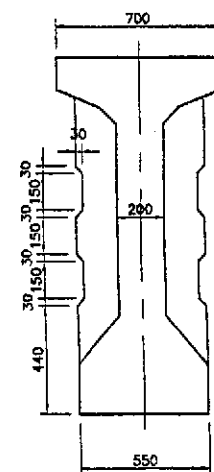
TYPICAL DETAIL  
(ANCHORAGE RECESS)



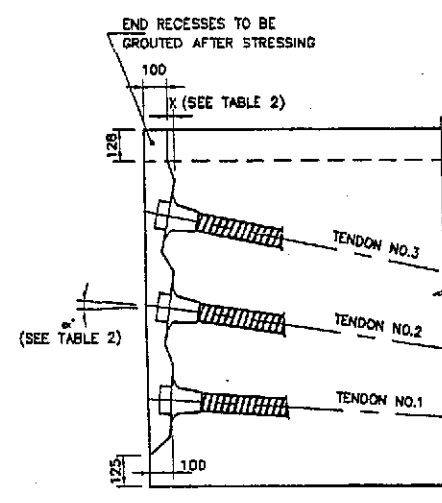
END VIEW OF GIRDER  
SCALE 1:15



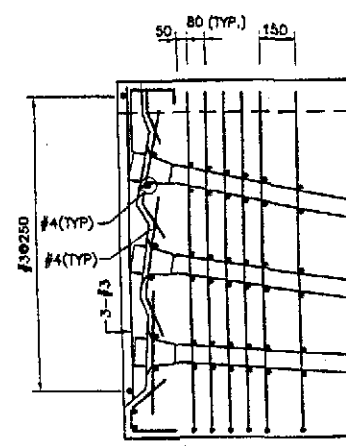
SECTION AT MIDSPAN  
SCALE 1:15



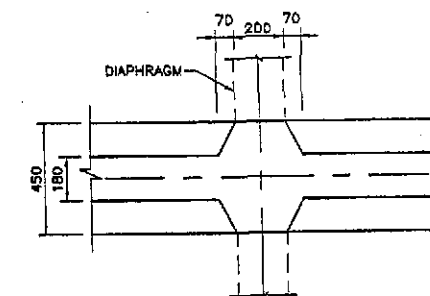
SECTION AT DIAPHRAGM  
SCALE 1:15



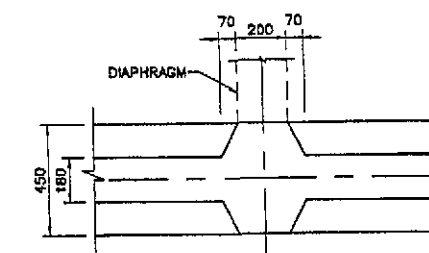
DETAIL OF ANCHORAGE RECESSES  
SCALE 1:15



BURSTING REINF. DETAIL



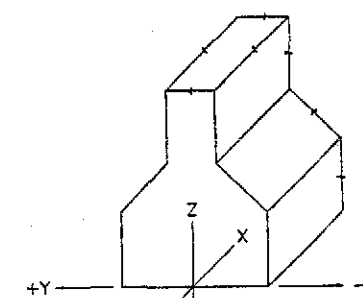
SECTIONAL PLAN D-D  
(FOR INTERIOR GIRDER)  
SCALE 1:15



SECTIONAL PLAN D-D  
(FOR EXTERIOR GIRDER)  
SCALE 1:15

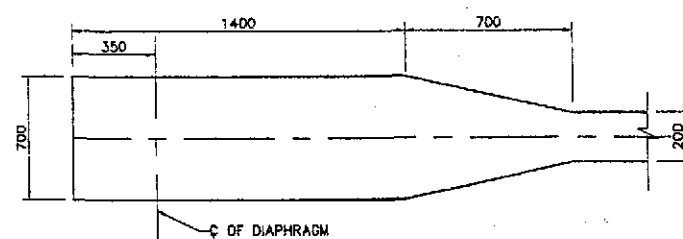
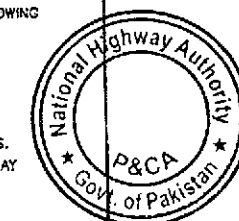
TENDON NO.		DATA FOR GARDER																		EXTENSION AT EACH END (MM)	SEQUENCE OF STRESSING			
		END 0.00	0.025L	0.05L	0.075L	0.10L	0.125L	0.15L	0.175L	0.20L	0.225L	0.25L	0.275L	0.30L	0.325L	0.35L	0.375L	0.40L	0.425L			0.45L	0.475L	0.50L
1	Z	350	328	307	288	268	252	235	220	206	193	181	171	161	153	145	139	134	130	127	128	125	69	A
	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	Z	725	567	511	559	509	463	419	379	341	307	275	247	221	199	179	163	149	139	131	127	125	68	B
	Y	0	0	0	0	0	0	0	0	0	0	0	20	40	55	70	85	100	115	123	128	130		
3	Z	1100	1005	915	829	749	673	603	537	476	420	369	322	281	244	213	186	164	147	135	127	125	67	C
	Y	0	0	0	0	0	0	0	0	0	0	0	-20	-40	-55	-70	-85	-100	-115	-123	-128	-130		

TENDON NO.	ANGLE $\alpha^\circ$	X (mm)
1	2° 34' 38"	5
2	6° 52' 22"	12
3	11° 10' 05"	20





REFERENCE CO-ORDINATES

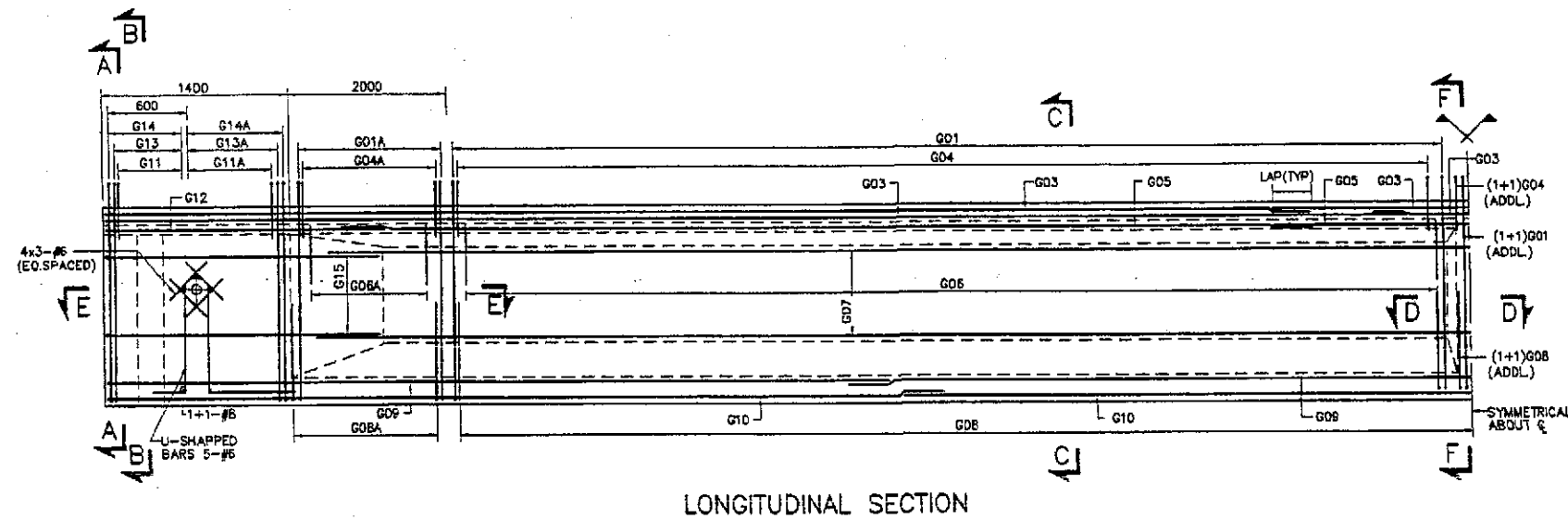
1. FOR GENERAL NOTES REFER DRAWING No. PIG001.
2. READ THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.
3. THE FOLLOWING VALUES HAVE BEEN ASSUMED IN THE CALCULATION OF THEORETICAL ELONGATION/EXTENSION ( $A_0$ ) OF TENDONS:  
MODULUS OF ELASTICITY,  $E=1,988,700 \text{ Kg/Sq.Cm (28,000 ksi)}$   
COEFFICIENT OF CURVATURE FRICTION= $0.25 \text{ PER RADIAN}$   
WOBBLE FRICTION COEFFICIENT= $0.0033 \text{ PER METER}$   
ANY DEVIATION FROM THE ABOVE VALUES SHALL BE REPORTED TO THE ENGINEER.
4. STRESSING SHALL BE STOPPED AS SOON AS ONE OF THE FOLLOWING CONDITIONS IS FULFILLED:  
-STRESS REACHES 0.75 TIMES GUARANTEED ULTIMATE TENSILE STRENGTH (GUTS)  
-ACTUAL ELONGATION/EXTENSION REACHES 1.10  $A_0$ .  
-IF AT 0.75 GUTS ACTUAL ELONGATION IS STILL BELOW 0.95  $A_0$   
STRESSING SHALL BE PROCEEDED UPTO MAXIMUM OF 0.80 GUTS.  
-IN THE EVENT OF NON-CONFORMANCE OF ABOVE, THE CABLE MAY BE REPLACED.
5. TENDON EXTENSION GIVEN IN TABLE IS FOR THE JACKING END.
6. STRESSING OF GIRDERS SHOULD BE DONE FROM BOTH ENDS.



SECTIONAL PLAN A-A  
SCALE 1:15

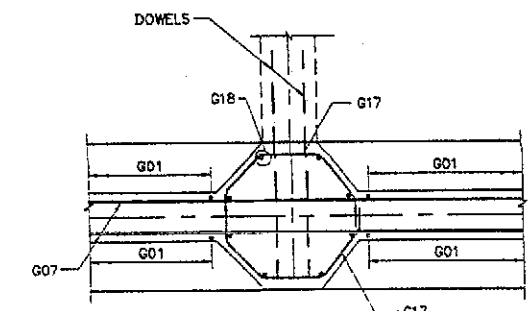
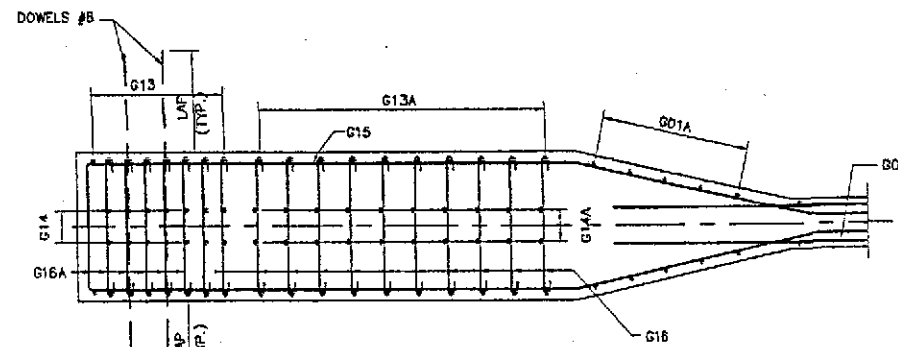
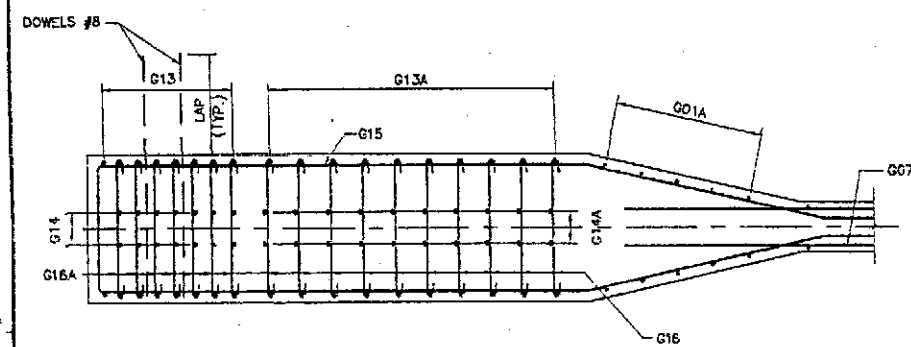
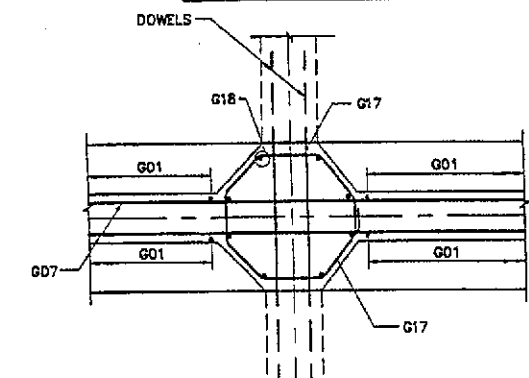
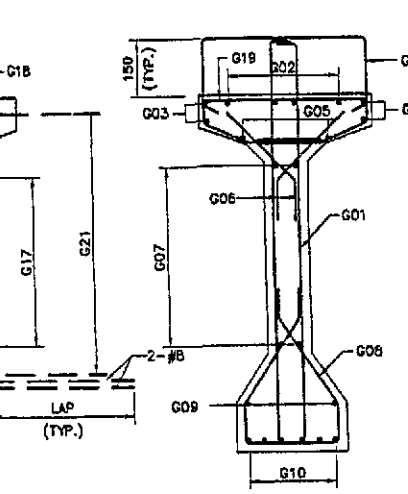
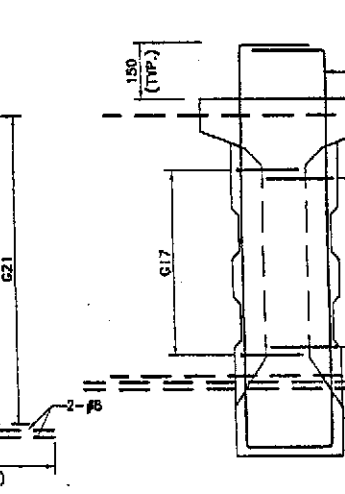
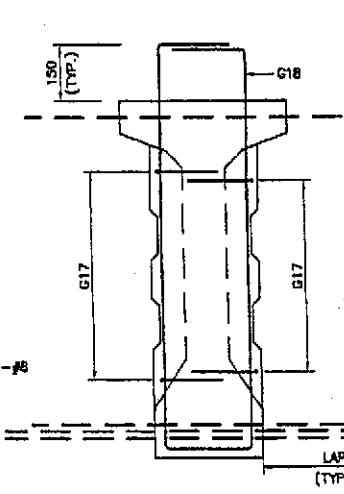
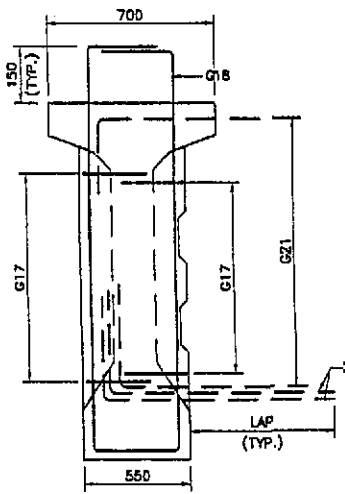
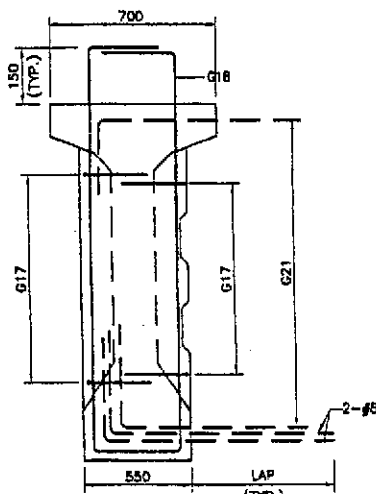
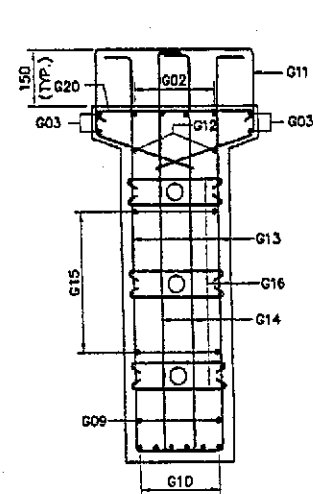
## TENDER DRAWINGS

 GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS <small>Ministry of Transport</small> NATIONAL HIGHWAY AUTHORITY	 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	04	<b>JAWAD UL HAQ</b> Project Manager M/S NESPAK	DRAWN	M. RASHID AZIZ	RATODERO ~ RAJANPUR ROAD PACKAGE-1 (SHIKARPUR TO KANDH KOT)	20m PRESTRESSED GIRDER CONC. OUTLINE & PRESTRESSING DETAILS		SCALE	
		03		SUBMITTED				1:25		
		02		RECOMMENDED						
		01		CHK./VER.						
HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.		REV.	DATE	DESCRIPTION	APPROVED	APPROVED		SHEET	DWG. NO.	REV.
								JULY 2018	3809/102/76/110111	



REINFORCEMENT  
SCHEDULE

MARK	BAR DIA. • SPACING
G01	#4@300
G01A	#4@175
G02	4-#4
G03	2#4(E.F)
G04	#4@300
G04A	#4@175
G05	#4(E.F)
G06	#4@300
G06A	#4@175
G07	4-#4(E.F)
G08	#4@300
G08A	#4@175
G09	#4(E.F)
G10	6-#6
G11	#4@80
G11A	#4@150
G12	#4(E.F)
G13	#4@80
G13A	#4@150
G14	#4@80
G14A	#4@150
G15	4-#4(E.F)
G16	6x6-#4
G16A	6x6-#4
G17	#4@150
G18	8-#4
G19	#4@300
G20	#4@80/150
G21	#4@200







NOTES:

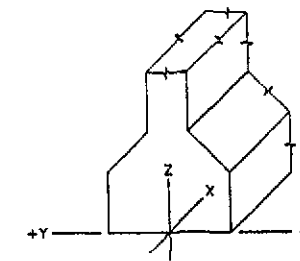
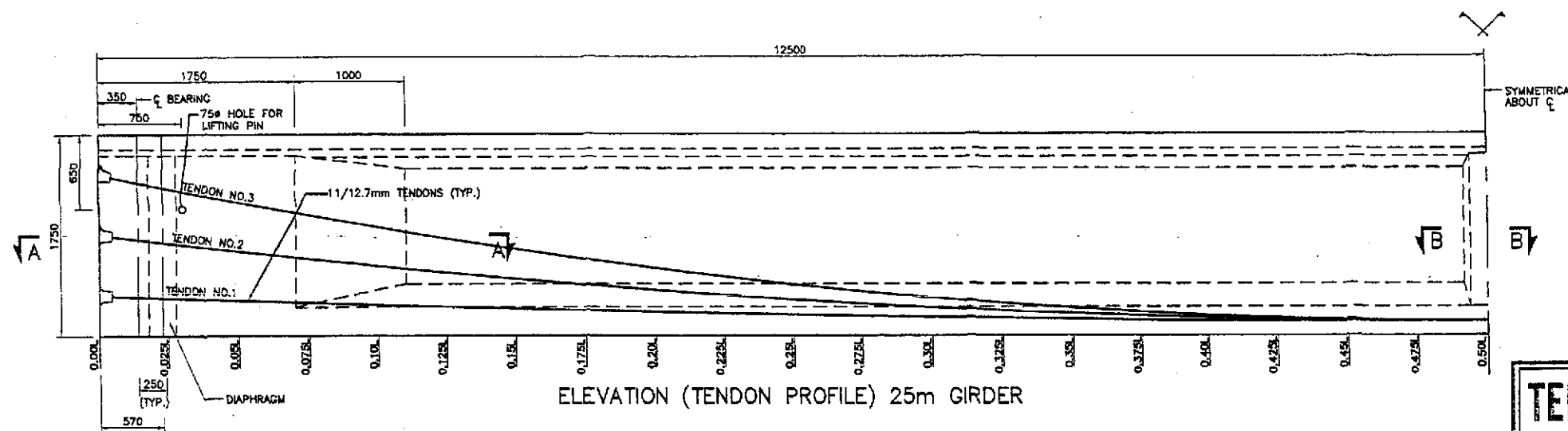
- FOR GENERAL NOTES REFER DWG NO. P10001.
- WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.
- ALL PRESTRESSED CONCRETE SHALL BE CLASS D1.
- REINFORCEMENT CONCRETE SHALL BE DEFORMED ROUND BARS OF (GRADE 60) CONFORMING TO AASHTO M-31 (ASTM A-615) WITH MINIMUM YIELD STRENGTH OF 4,200 Kg/Sq.Cm (60,000psi).

TENDER DRAWINGS

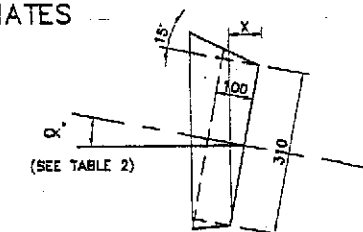


 <div>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</div>	<div>NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.</div> <div>HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN CHAK SHALIMAR, RAJANPUR ROAD, RATODERO</div>	<div>JAWAD UL HAQ Project Manager M/S NESPAK</div>	04		DRAWN	M. RASHID AZIZ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO RANDH KOT)	20m PRESTRESSED GIRDER REINFORCEMENT	SCALE 1 : 25
			03		SUBMITTED				
			02		RECOMMENDED				
			01		CHKD./VER				
			REV.	DATE	DESCRIPTION	APPROVED			
DATE: JULY 2018 DWG NO: 3905/102/10/PTG112									
PROJECT NAME: RATODERO ~ RAJANPUR ROAD TENDER PACKAGE-I 10 - GIRDER'S 20m - Girder/P1G112.dwg 29.06.2018									

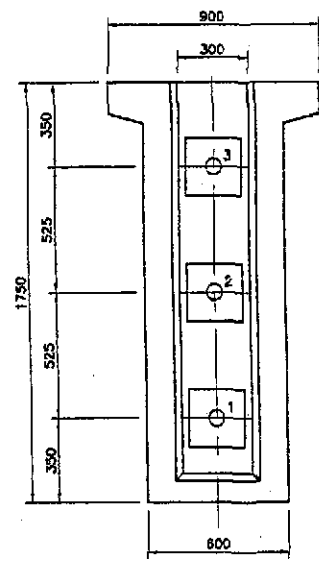
TENDER DRAWINGS  
NOT FOR CONSTRUCTION



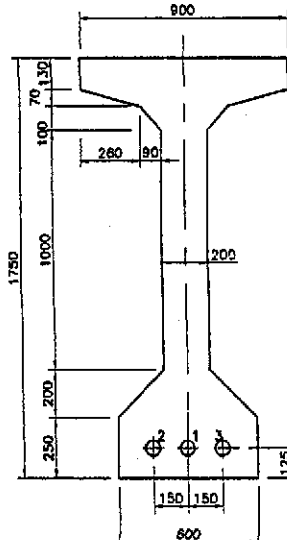
REFERENCE CO-ORDINATES



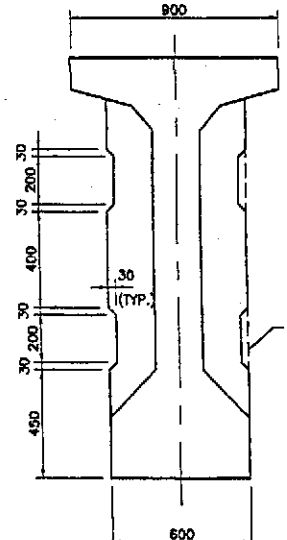
TENDER DRAWINGS



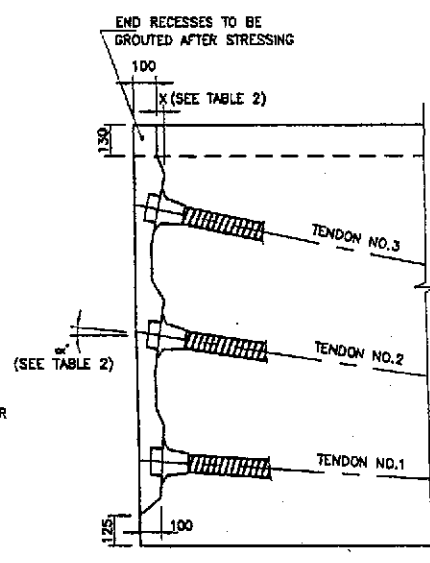
END VIEW OF GIRDER  
SCALE 1:15



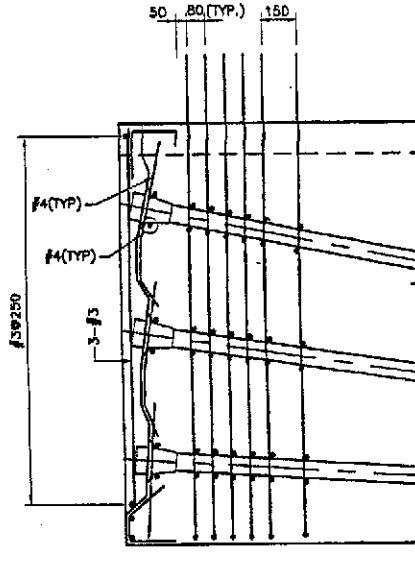
SECTION AT MIDSPAN  
SCALE 1:15



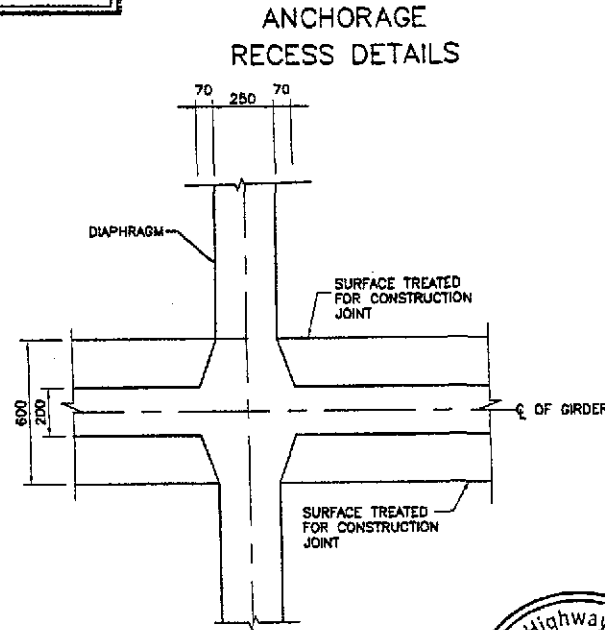
SECTION AT DIAPHRAGM  
SCALE 1:15



DETAIL OF ANCHORAGE RECESSES  
SCALE 1:15



BURSTING REINF. DETAIL  
SCALE 1:15



SECTIONAL PLAN B-B  
SCALE 1:15

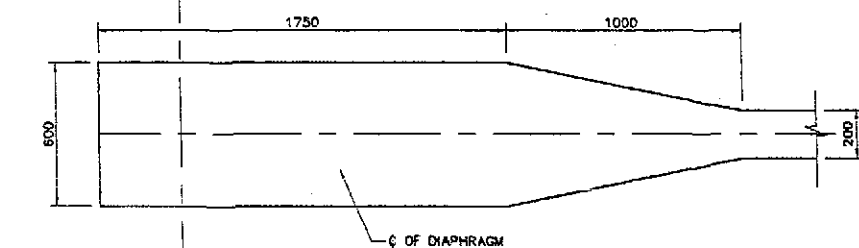
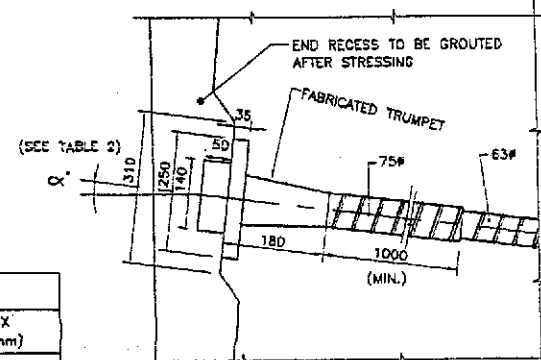


TABLE 1  
SECTIONAL PLAN A-A  
SCALE 1:15

TENDON NO.	END 0.00	DATA FOR GIRDER																EXTENSION AT EACH END (MM)	SEQUENCE OF STRESSING
		0.025L	0.05L	0.075L	0.10L	0.125L	0.15L	0.175L	0.20L	0.225L	0.25L	0.275L	0.30L	0.325L	0.35L	0.375L	0.40L		
1	350	328	307	286	269	252	235	220	206	193	181	171	161	153	145	139	134	66	A
2	875	802	733	667	605	547	493	442	395	352	313	277	245	217	193	172	155	84	C
3	1100	1005	915	829	749	673	603	537	476	420	369	322	281	244	213	188	164	82	B

TABLE 2  
ANCHORAGE RECESS DATA

TENDON NO.	ANGLE $\alpha'$	X (mm)
1	2° 03' 43"	11
2	5° 52' 22"	37
3	11° 41' 01"	64



TYPICAL DETAIL  
(ANCHORAGE RECESS)  
SCALE 1:15

NOTES:

- FOR GENERAL NOTES REFER DRAWING No. P16001.
- THE FOLLOWING VALUES HAVE BEEN ASSUMED IN THE CALCULATION OF THEORETICAL ELONGATION/EXTENSION ( $A_0$ ) OF TENDONS:  
MODULUS OF ELASTICITY,  $E=1,968,700$  Kg/Sq.Cm (28,000 ksi)  
COEFFICIENT OF CURVATURE FRICTION=0.25 PER RADIANT  
WOBBLE FRICTION COEFFICIENT=0.0033 PER METER  
ANY DEVIATION FROM THE ABOVE VALUES SHALL BE REPORTED TO THE ENGINEER.
- STRESSING SHALL BE STOPPED AS SOON AS ONE OF THE FOLLOWING CONDITIONS IS FULFILLED:  
-STRESS REACHES 0.75 TIMES GUARANTEED ULTIMATE TENSILE STRENGTH (GUTS)  
-ACTUAL ELONGATION/EXTENSION REACHES 1.10  $A_0$   
-IF AT 0.75 GUTS ACTUAL ELONGATION IS STILL BELOW 0.95  $A_0$  STRESSING SHALL BE PROCEEDED UPTO MAXIMUM OF 0.80 GUTS.  
-IN THE EVENT OF NON-CONFORMANCE OF ABOVE, THE CABLE MAY BE REPLACED.
- TENDON EXTENSION GIVEN IN TABLE IS FOR THE JACKING END.
- STRESSING OF GIRDERS SHOULD BE DONE FROM BOTH ENDS.

GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NES NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.  
HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN,  
EXTENSION, LAHORE, PAKISTAN.

JAWAD UL HAQ  
Project Manager  
M/S NESPAK

DRAWN M. RASHID AZIZ  
SUBMITTED  
RECOMMENDED  
CHD. OVER  
APPROVED

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

25m PRESTRESSED GIRDER  
CONC. OUTLINE & PRESTRESSING DETAILS  
DATE JULY 2018 DWG NO. 3905/102/TD/P16113

SCALE  
1 : 25  
REV.

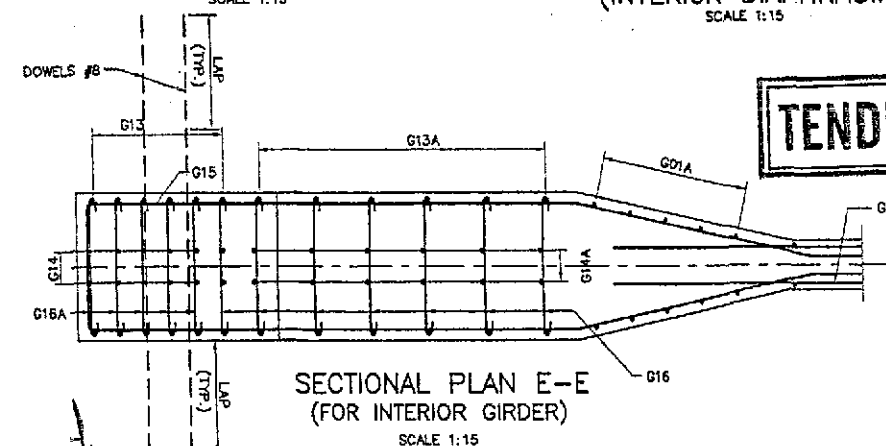
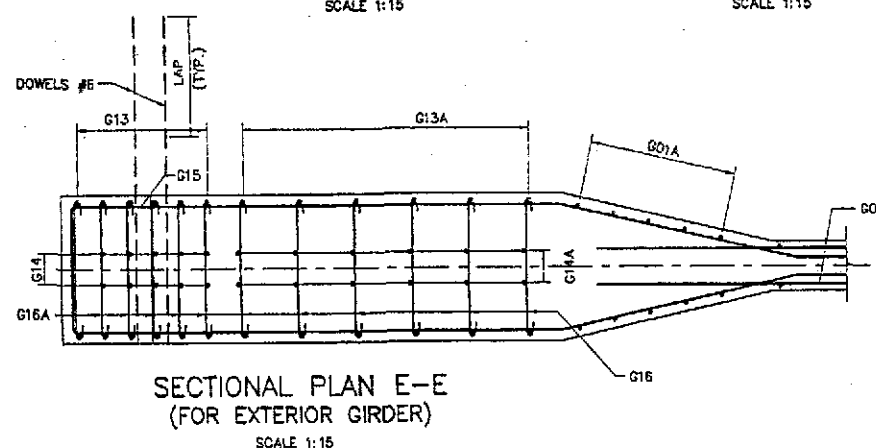
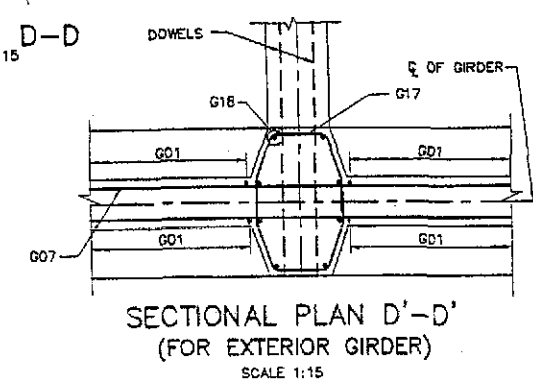
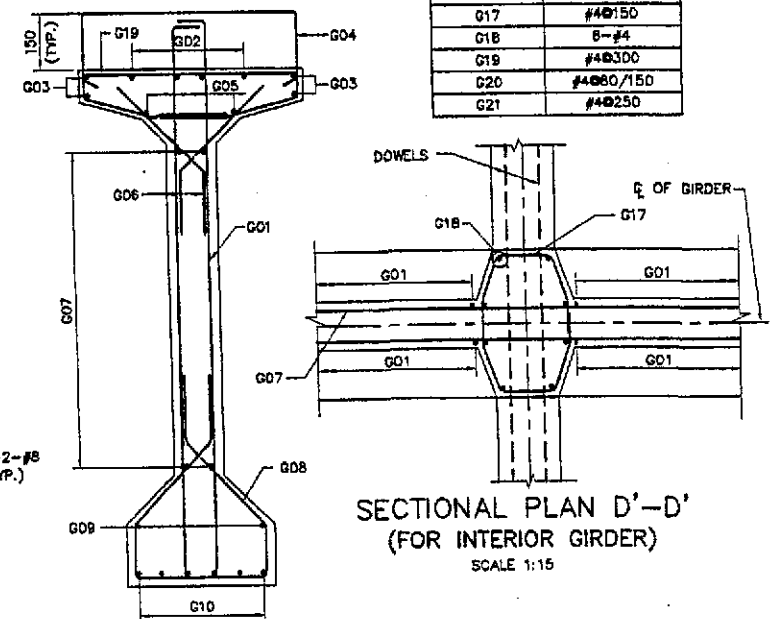
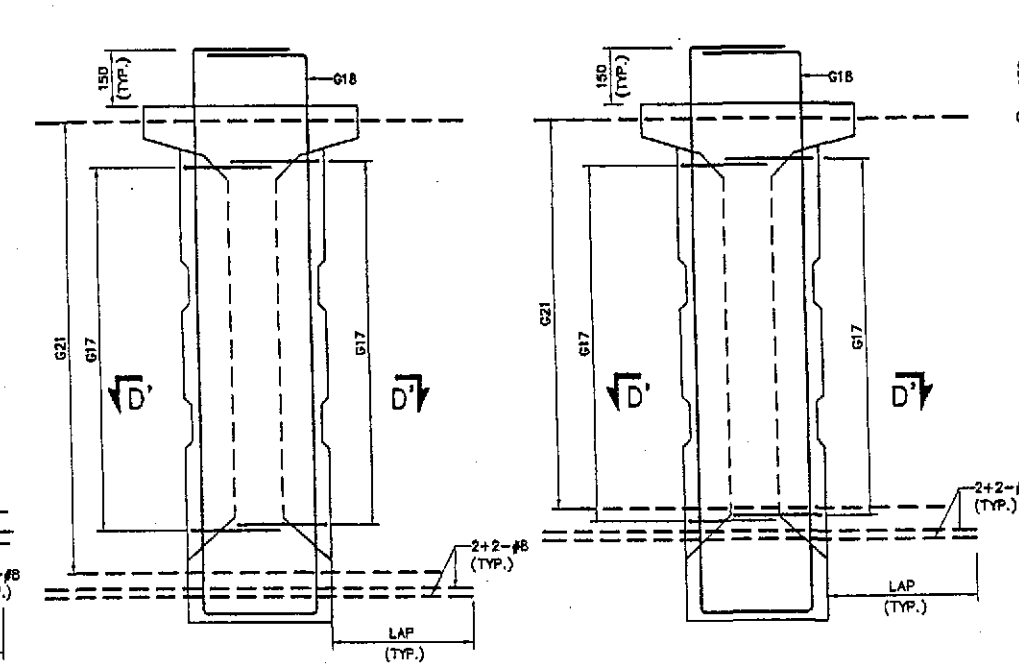
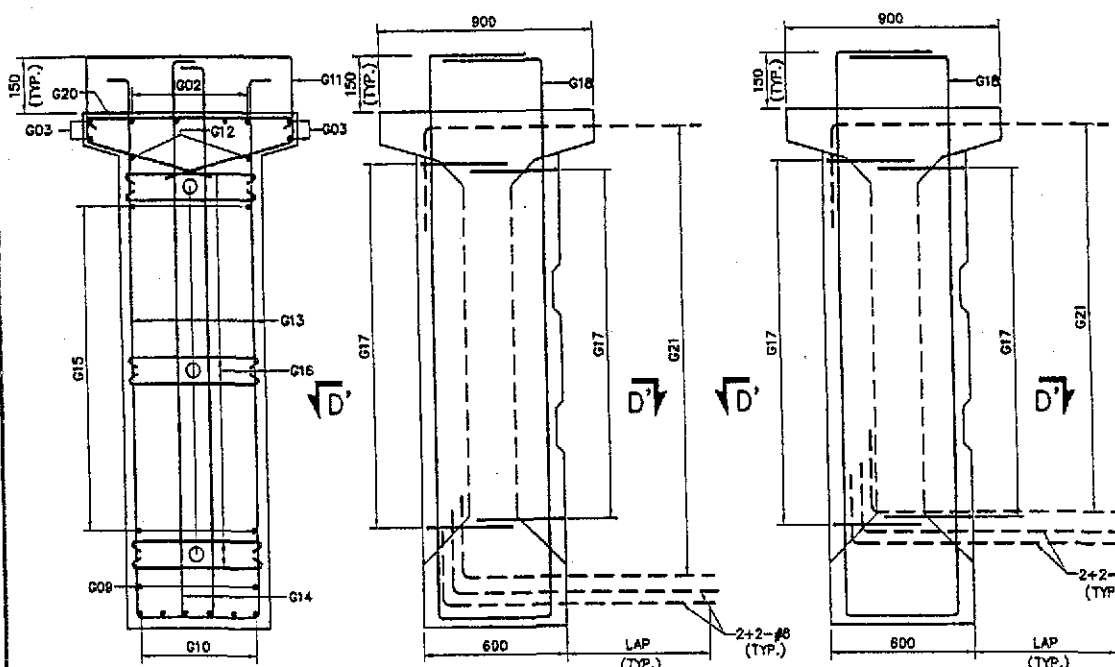
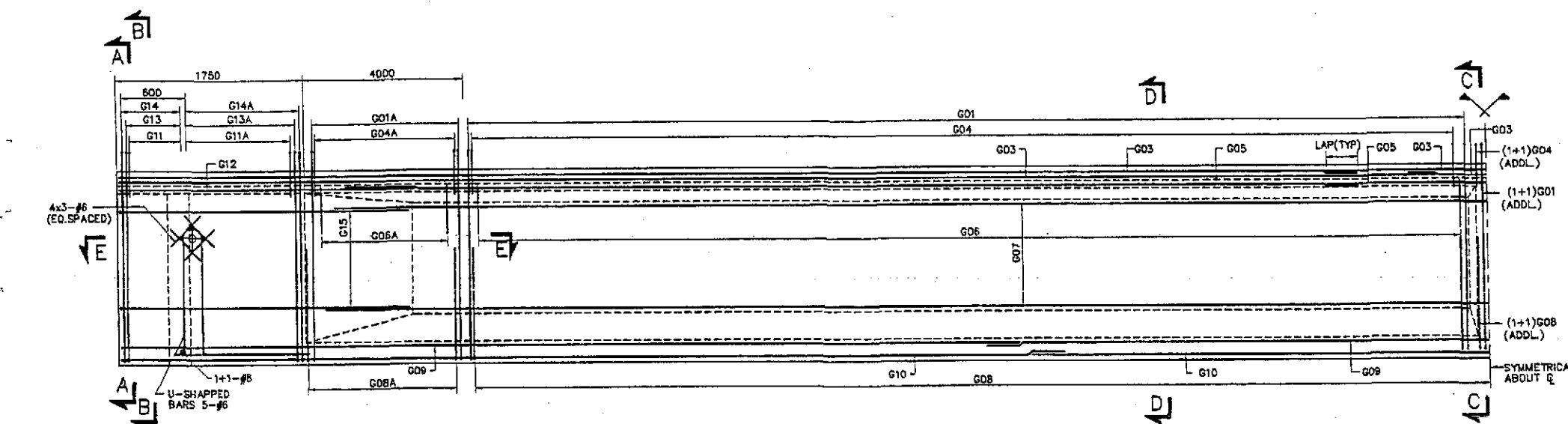


TENDER DRAWINGS  
NOT FOR CONSTRUCTION

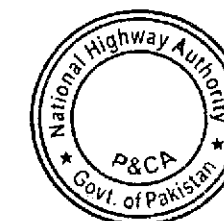
REINFORCEMENT  
SCHEDULE

MARK	BAR DIA. @ SPACING
G01	#4@300
G01A	#4@175
G02	4-#4
G03	2#4(E.F)
G04	#4@300
G04A	#4@175
G05	#4(E.F)
G06	#4@300
G06A	#4@175
G07	4-#4(E.F)
G08	#4@300
G08A	#4@175
G09	#4(E.F)
G10	6-#6
G11	#4@80
G11A	#4@150
G12	#4(E.F)
G13	#4@80
G13A	#4@150
G14	#4@80
G14A	#4@150
G15	4-#4(E.F)
G16	6x6-#4
G16A	6x6-#4
G17	#4@150
G18	8-#4
G19	#4@300
G20	#4@80/150
G21	#4@250

LONGITUDINAL SECTION



TENDER DRAWINGS



NOTES:

- FOR GENERAL NOTES REFER DWG. NO. P26001.
- ALL PRESTRESSED CONCRETE SHALL BE CLASS D1.
- REINFORCEMENT CONCRETE SHALL BE DEFORMED ROUND BARS OF (GRADE 60) CONFORMING TO AASHTO M-31 (ASTM A-615) WITH MINIMUM YIELD STRENGTH OF 4200 Kg/Sq.Cm (60,000psi).

GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NES NATIONAL ENGINEERING SERVICES  
PAK PAKISTAN (PVT.) LTD.  
HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN  
EXTENSION, LAHORE, PAKISTAN.

04	JAWAD UL HAQ	DRAWN	M. RASHID AZIZ
03	Project Manager	SUBMITTED	
02	M/S NESPAK	RECOMMENDED	
01		CHD./VER.	
REV.	DATE	DESCRIPTION	APPROVED

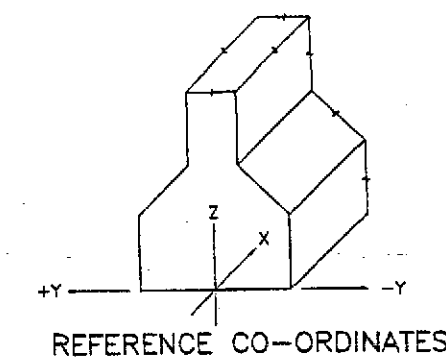
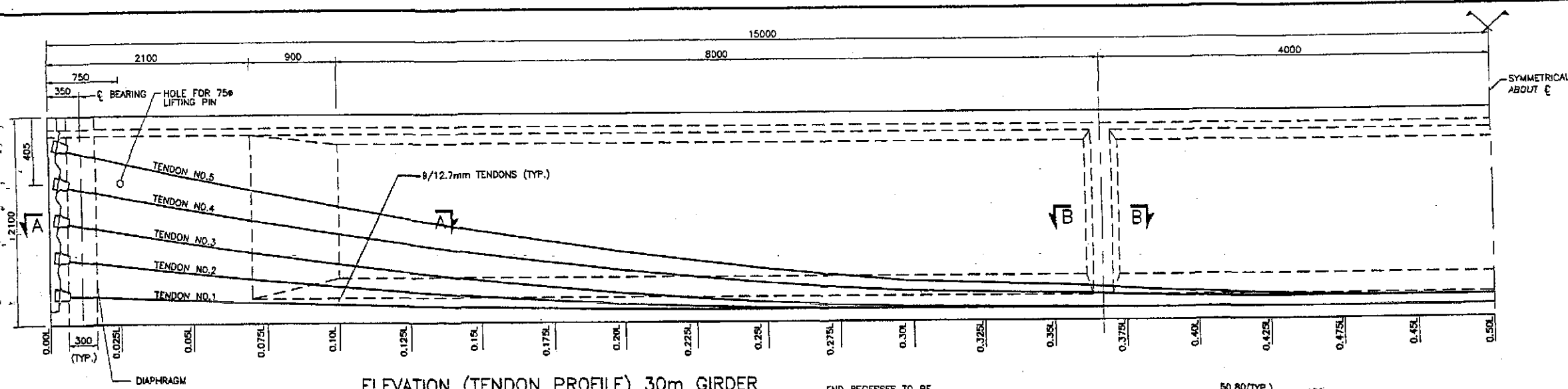
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

25m PRESTRESSED GIRDER  
REINFORCEMENT

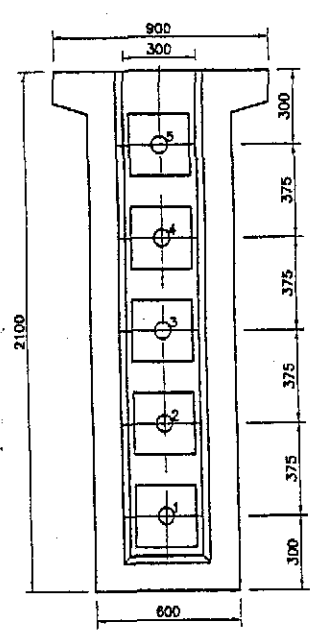
SCALE  
1 : 25

DATE: JULY 2018 DWG. NO.: 3005/102/70/P16114

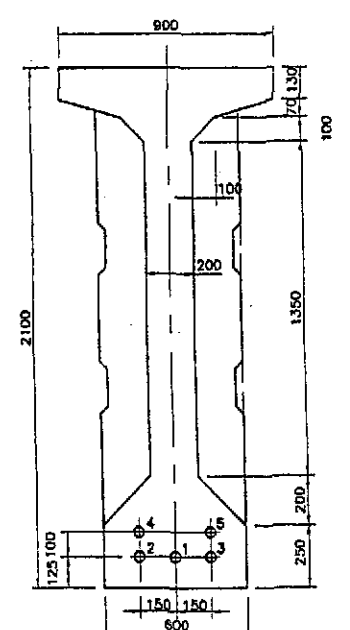
TENDER DRAWINGS  
NOT FOR CONSTRUCTION



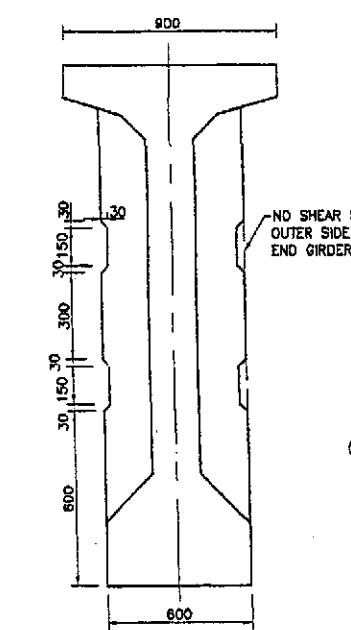
ELEVATION (TENDON PROFILE) 30m GIRDER



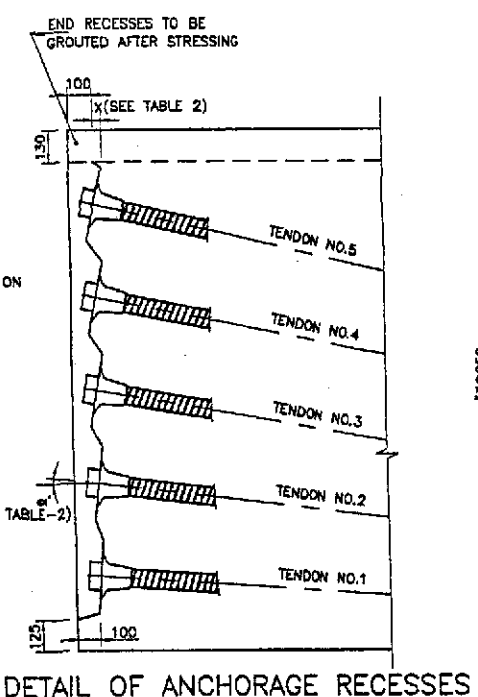
END VIEW OF GIRDER  
SCALE 1:15



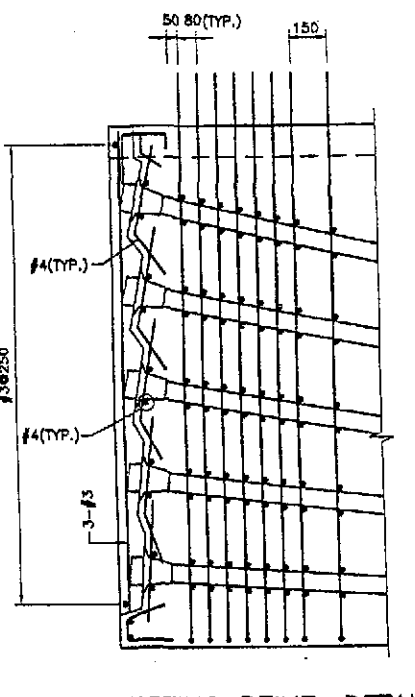
SECTION AT MIDSPAN  
SCALE 1:15



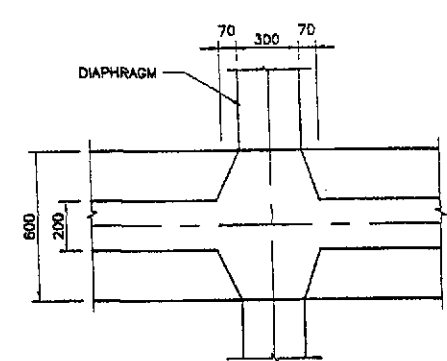
SECTION AT DIAPHRAGM  
SCALE 1:15



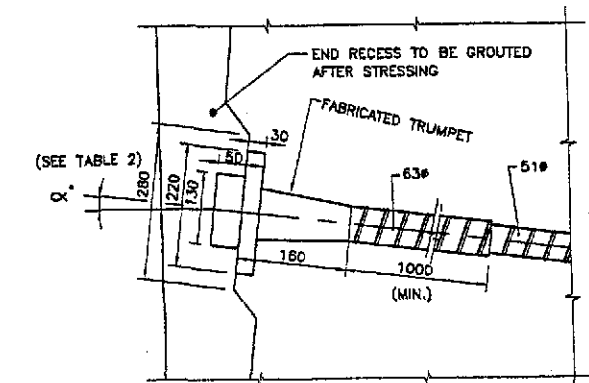
DETAIL OF ANCHORAGE RECESSES  
SCALE 1:15



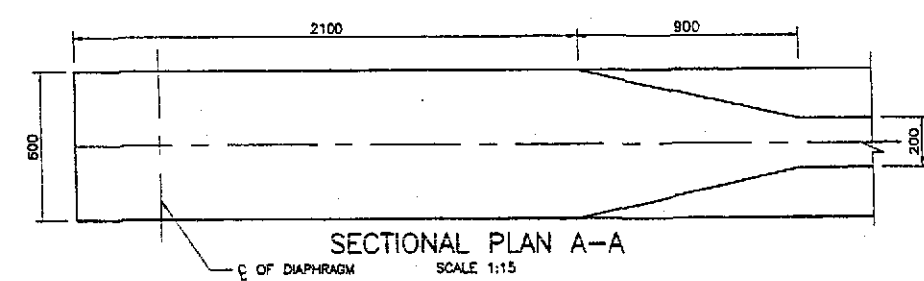
BURSTING REINF. DETAIL  
SCALE 1:15



SECTIONAL PLAN B-B  
SCALE 1:15



TYPICAL DETAIL  
(ANCHORAGE RECESS)



SECTIONAL PLAN A-A  
SCALE 1:15

TENDER DRAWINGS

TABLE-1

JACKING FORCE = 126 Tons

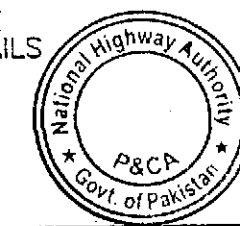
TENDON NO.	END 0.00	0.025L	0.05L	0.075L	0.10L	0.125L	0.15L	0.175L	0.20L	0.225L	0.25L	0.275L	0.30L	0.325L	0.35L	0.375L	0.40L	0.425L	0.45L	0.475L	0.50L	EXTENSION AT EACH END (mm)	SEQUENCE OF STRESSING
1	300	283	267	251	237	223	211	199	188	178	169	160	153	146	141	136	132	128	127	125	125	102	A
2	675	621	571	522	477	434	395	357	323	291	263	236	213	192	175	159	147	137	131	126	125	101	D
3	1050	980	914	853	793	737	685	636	588	545	505	468	432	398	367	338	312	288	267	248	230	100	C
4	1425	1308	1197	1092	993	900	813	732	657	588	525	468	417	372	333	300	273	252	237	228	225	99	E
5	1800	1646	1501	1363	1233	1111	997	890	792	701	619	544	477	418	367	323	288	260	241	229	225	98	B

TABLE-2

ANCHORAGE RECESS DATA

TENDON NO.	ANGLE $\alpha^\circ$	X (mm)
1	1' 20' 11"	7
2	4' 12' 00"	21
3	7' 03' 49"	35
4	9' 08' 49"	45
5	12' 01' 38"	80

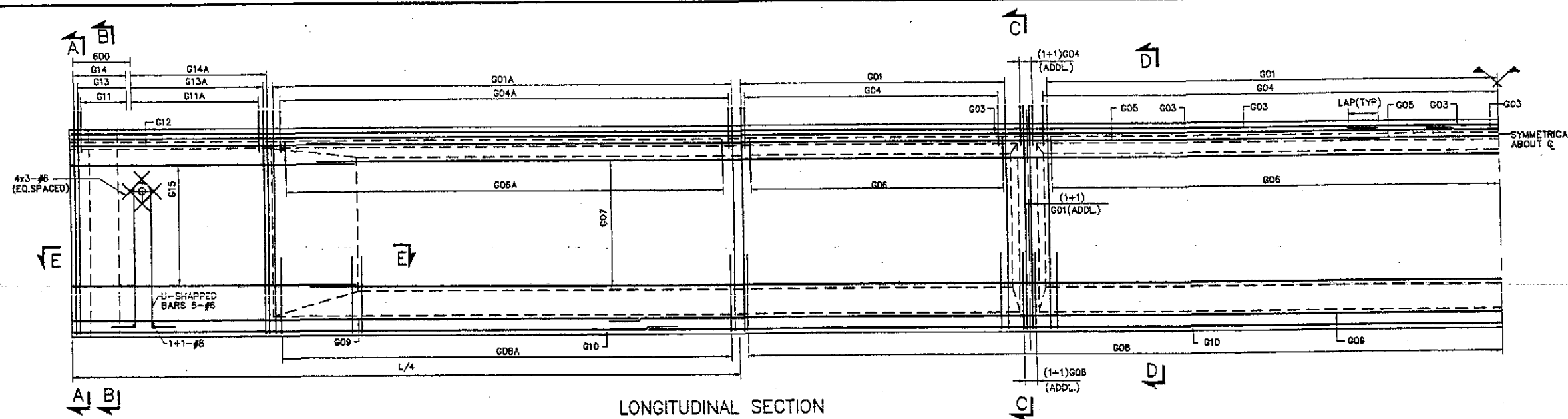
ANCHORAGE RECESS DETAILS



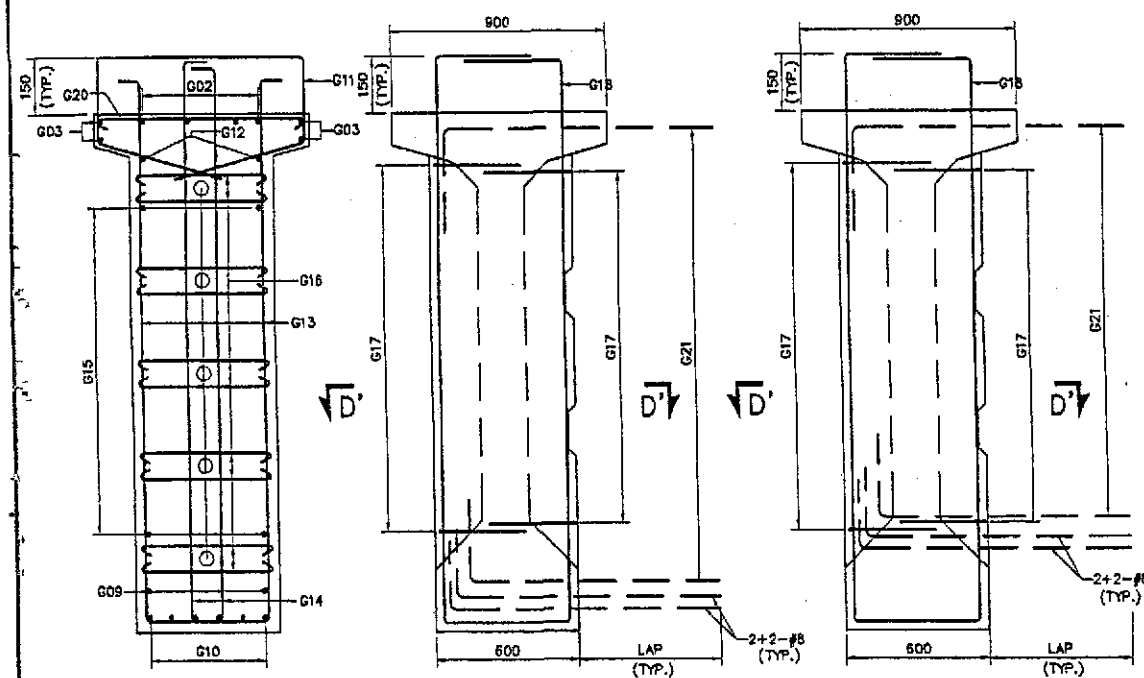
- NOTES:
- FOR GENERAL NOTES REFER DRAWING No. P16001.
  - THE FOLLOWING VALUES HAVE BEEN ASSUMED IN THE CALCULATION OF THEORETICAL ELONGATION/EXTENSION ( $A_0$ ) OF TENDONS:  
MODULUS OF ELASTICITY,  $E=1,968,700 \text{ Kg/Sq.Cm (28,000 ksi)}$   
COEFFICIENT OF CURVATURE FRICTION=0.25 PER RADIAN  
WOBBLE FRICTION COEFFICIENT=0.0033 PER METER  
ANY DEVIATION FROM THE ABOVE VALUES SHALL BE REPORTED TO THE ENGINEER.
  - STRESSING SHALL BE STOPPED AS SOON AS ONE OF THE FOLLOWING CONDITIONS IS FULFILLED:  
-STRESS REACHES 0.75 TIMES GUARANTEED ULTIMATE TENSILE STRENGTH (GUTS)  
-ACTUAL ELONGATION/EXTENSION REACHES 1.10  $A_0$   
-IF AT 0.75 GUTS ACTUAL ELONGATION IS STILL BELOW 0.85  $A_0$  STRESSING SHALL BE PROCEEDED UPTO MAXIMUM OF 0.80 GUTS.  
-IN THE EVENT OF NON-CONFORMANCE OF ABOVE, THE CABLE MAY BE REPLACED.  
TENDON EXTENSION GIVEN IN TABLE IS FOR THE JACKING END.
  - STRESSING OF GIRDERS SHOULD BE DONE FROM BOTH ENDS.

REINFORCEMENT  
SCHEDULE

MARK	BAR DIA. ⊙ SPACING
G01	#4⊙300
G01A	#4⊙175
G02	4-#4
G03	2#4(E.F)
G04	#4⊙300
G04A	#4⊙175
G05	#4(E.F)
G06	#4⊙300
G06A	#4⊙175
G07	4-#4(E.F)
G08	#4⊙300
G08A	#4⊙175
G09	#4(E.F)
G10	6-#6
G11	#4⊙80
G11A	#4⊙150
G12	#4(E.F)
G13	#4⊙80
G13A	#4⊙150
G14	#4⊙80
G14A	#4⊙150
G15	4-#4(E.F)
G16	10x10-#4
G16A	10x7-#4
G17	#4⊙150
G18	B-#4
G19	#4⊙300
G20	#4⊙80/150
G21	#4⊙250



LONGITUDINAL SECTION



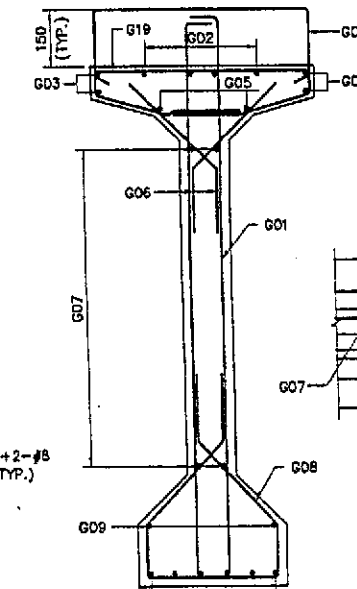
SECTION A-A  
SCALE 1:15

SECTION B-B  
(FOR EXTERIOR GIRDER)  
(EXTERIOR DIAPHRAGM)  
SCALE 1:15

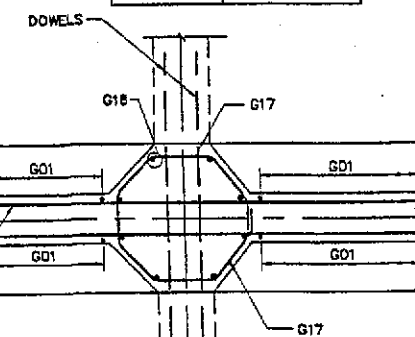
SECTION C-C  
(FOR EXTERIOR GIRDER)  
(INTERIOR DIAPHRAGM)  
SCALE 1:15

SECTION B-B  
(FOR INTERIOR GIRDER)  
(EXTERIOR DIAPHRAGM)  
SCALE 1:15

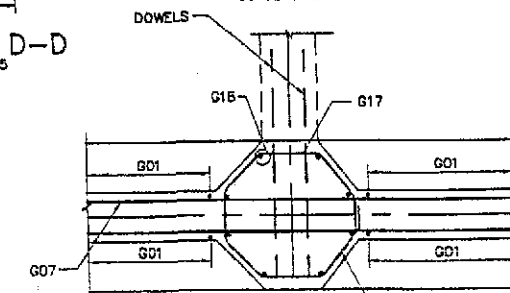
SECTION C-C  
(FOR INTERIOR GIRDER)  
(INTERIOR DIAPHRAGM)  
SCALE 1:15



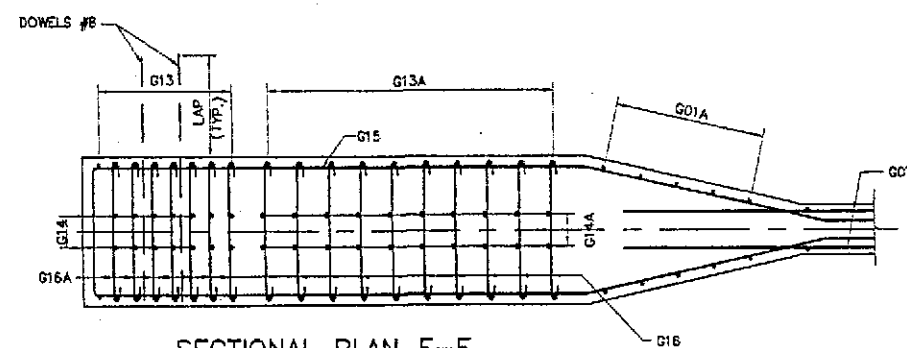
SECTION D-D  
SCALE 1:15



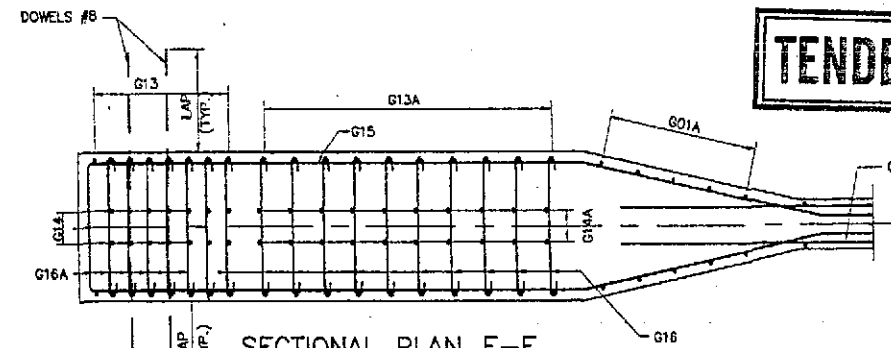
SECTIONAL PLAN D'-D'  
(FOR INTERIOR GIRDER)  
SCALE 1:15



SECTIONAL PLAN D'-D'  
(FOR EXTERIOR GIRDER)  
SCALE 1:15



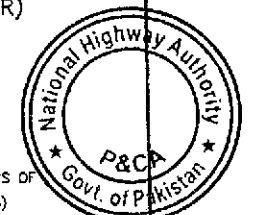
SECTIONAL PLAN E-E  
(FOR EXTERIOR GIRDER)  
SCALE 1:15





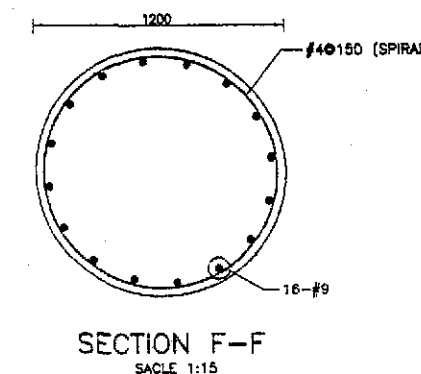
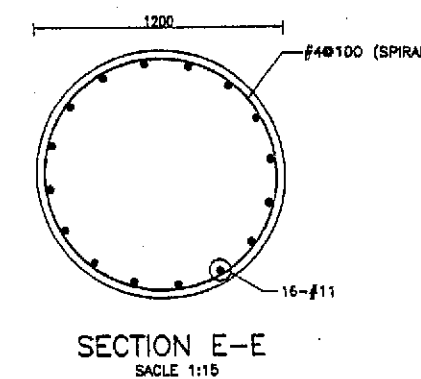
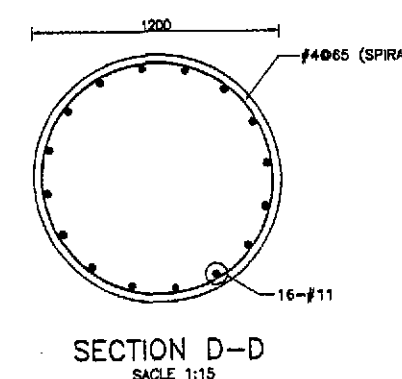
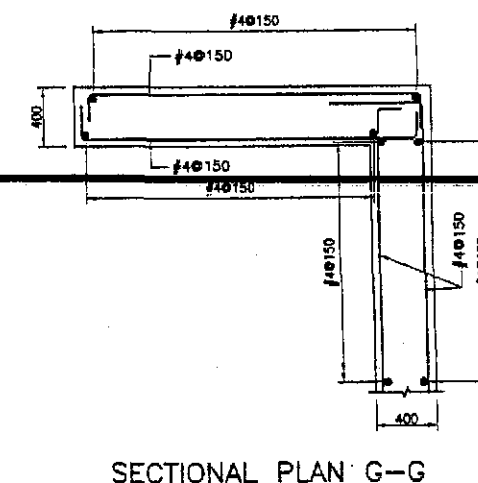
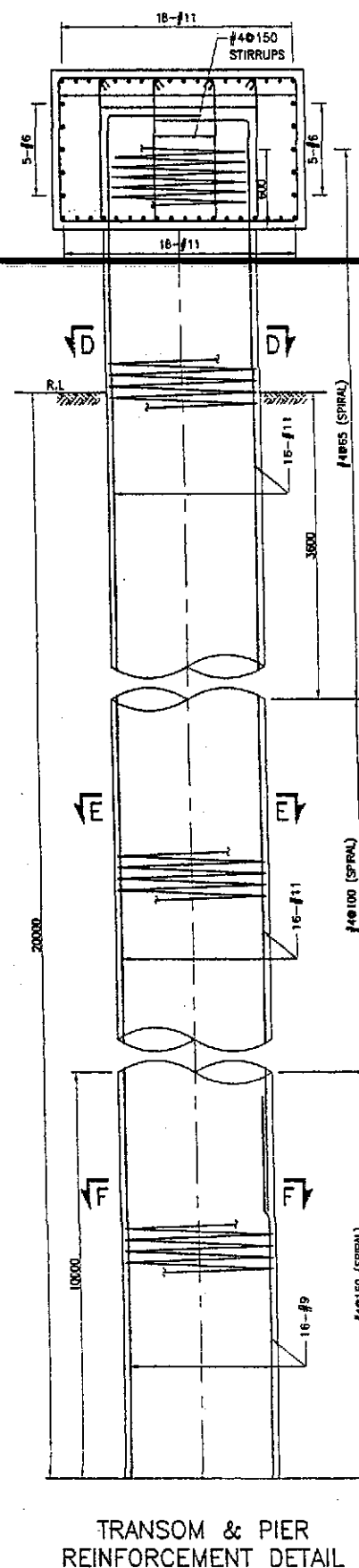
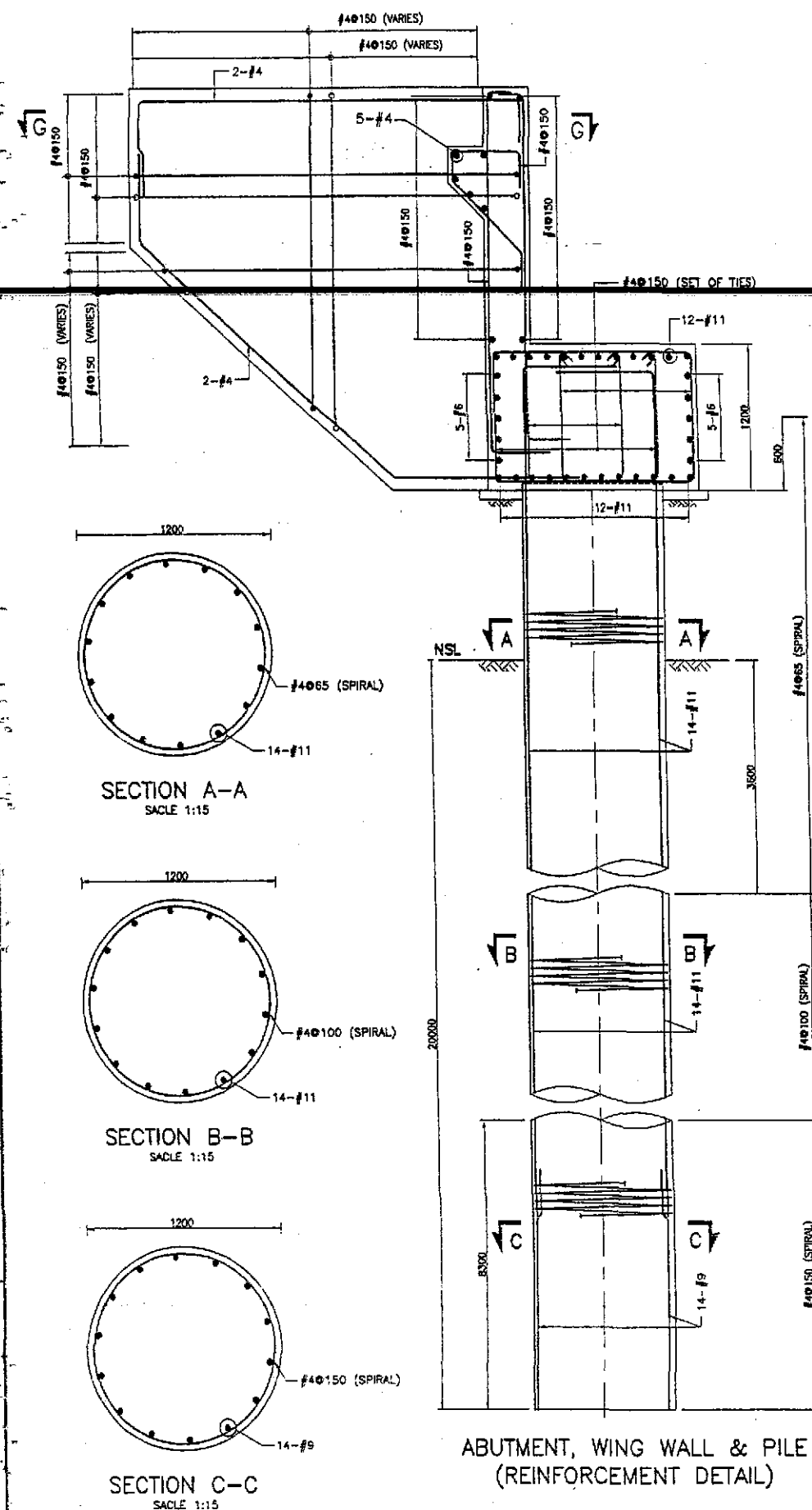
SECTIONAL PLAN E-E  
(FOR INTERIOR GIRDER)  
SCALE 1:15

## TENDER DRAWINGS

1. FOR GENERAL NOTES REFER DWG. NO. P16001.
2. ALL PRESTRESSED CONCRETE SHALL BE CLASS D1.
3. REINFORCED CONCRETE SHALL BE DEFORMED ROUND BARS OF (GRADE 60) CONFORMING TO AASHTO M-31 (ASTM A-615) WITH MINIMUM YIELD STRENGTH OF 4200 Kg./Sq.Cm (60,000psi).



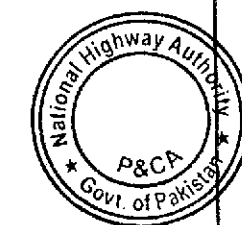
 GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	04				DRAWN	M. RASHID AZIZ	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPURE TO KANDH KOT)	30m PRESTRESSED GIRDER REINFORCEMENT	SCALE 1:25
		03				SUBMITTED				
		02				RECOMMENDED				
		01				CHD./VER.				
		REV.	DATE	DESCRIPTION	APPROVED					



NOTES: -

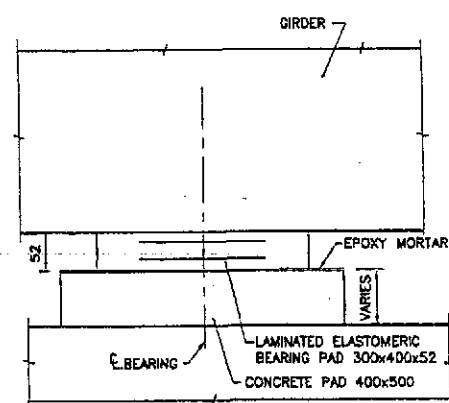
- FOR GENERAL NOTES REFER DWG. NO. P20001.
- READ THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DWGS.
- PROVIDE ONE AND HALF 1/2 EXTRA TURNS OF SPIRAL AT THE TOP AND BOTTOM OF EACH PILE & AT EACH SEGMENT OF REINFORCEMENT CAGE OR SPLICE OF MAIN REINFORCEMENT.

TENDER DRAWINGS

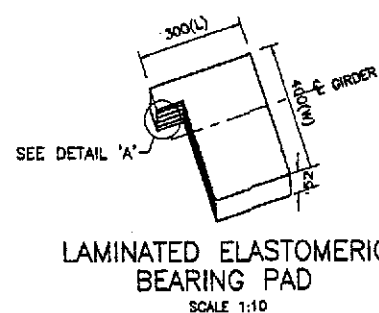


<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.</p>	<p>04 03 02 01 REV. DATE DESCRIPTION APPROVED</p> <p>JAWAD UL HAQ Project Manager M/S NESPAK</p>	<p>DRAWN M. RASHID AZIZ SUBMITTED RECOMMENDED CHD./VER. APPROVED</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)</p>	<p>ABUTMENT AB1, AB2 AND PIER P1 REINFORCEMENT DETAILS</p> <p>DATE JULY 2018 DWG NO. 3905/102/TD/P1G117</p>	<p>SCALE 1:25 REV</p>
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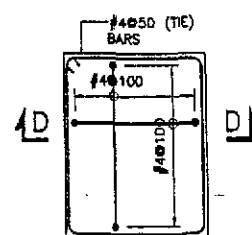
BEARING PAD & CONCRETE PAD  
DETAIL  
SCALE 1:5



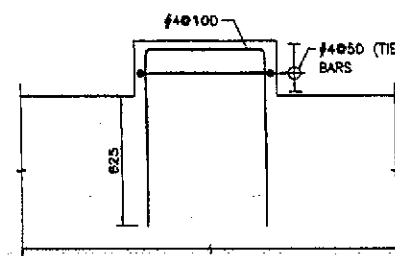
LAMINATED ELASTOMERIC  
BEARING PAD  
SCALE 1:10



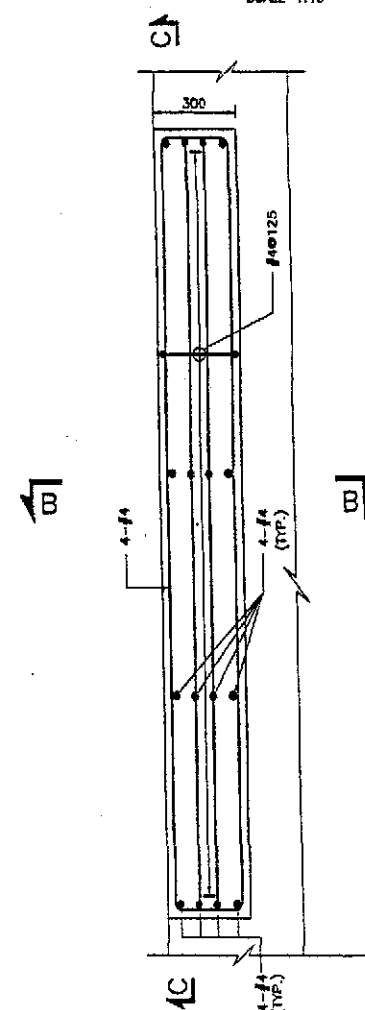
DETAIL 'A'  
SCALE 1:20



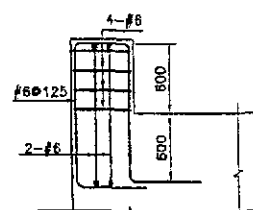
CONCRETE PAD  
REINFORCEMENT  
SCALE 1:10



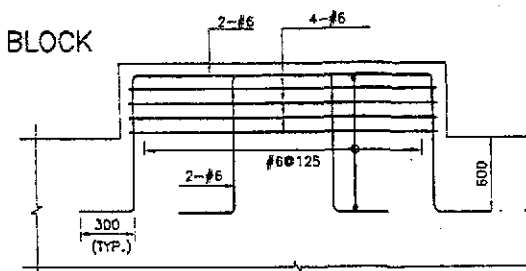
SECTION D-D  
SCALE 1:10



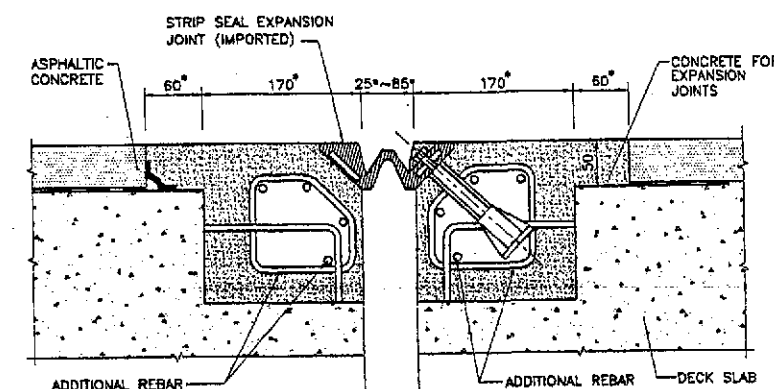
PLAN OF SHEAR BLOCK  
SCALE 1:20



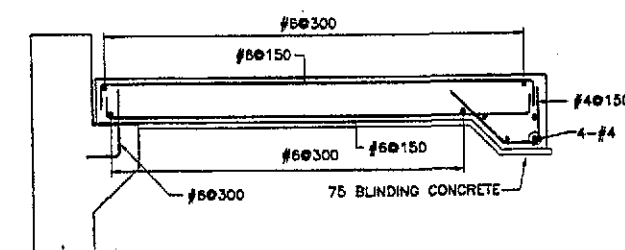
SECTION B-B  
SCALE 1:20



SECTION C-C  
SCALE 1:20



EXPANSION JOINT  
SCALE 1:4



REINFORCEMENT - APPROACH SLAB  
SCALE 1:25

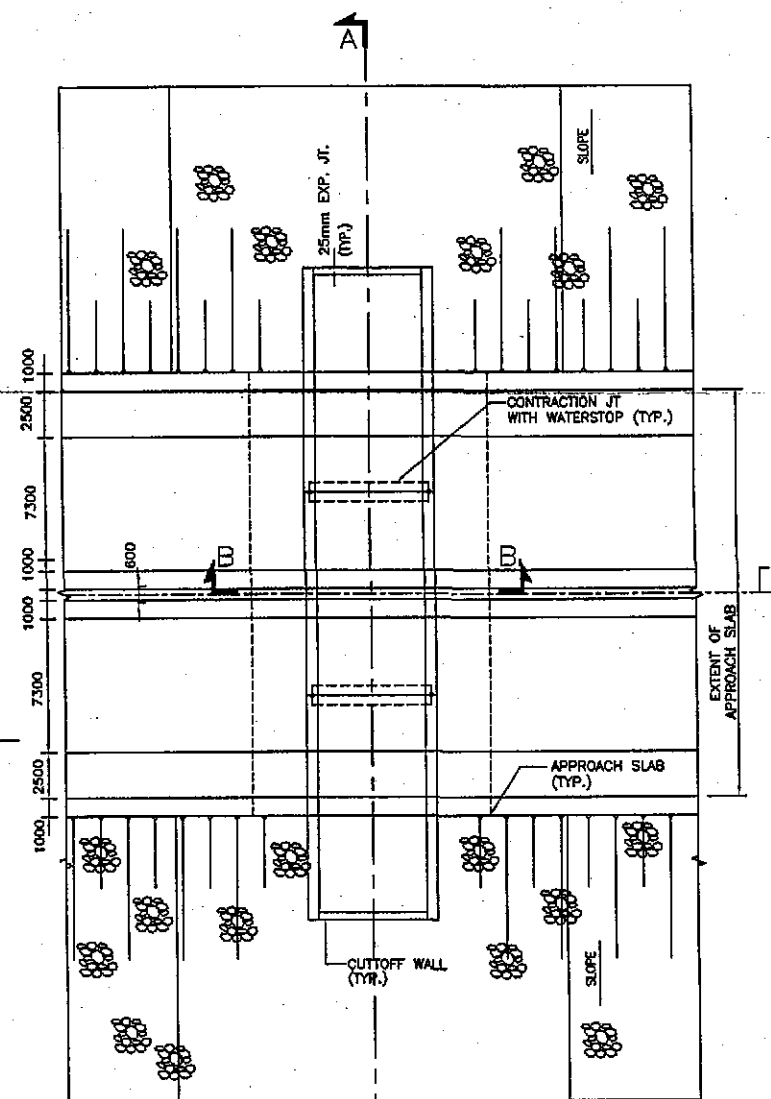
TENDER DRAWINGS

NOTES: -

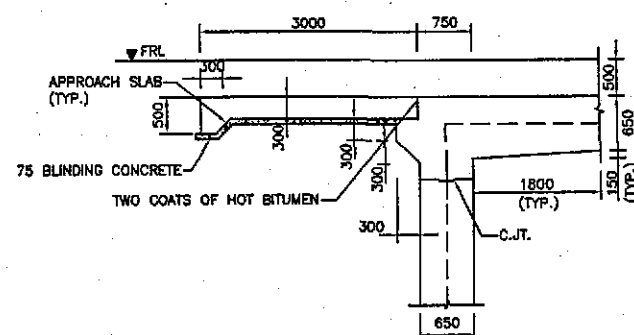
- FOR GENERAL NOTES REFER DWG. NO. P16001.
- WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.
- ALL REINFORCING STEEL SHALL BE DEFORMED ROUND BARS AND CONFORMING TO ASHTO M-31 OR ASTM A-615 GRADE 60 WITH MINIMUM YIELD STRENGTH OF 4,200 Kg/Sq.Cm (60,000 Psi).
- \*THE DIMENSIONS OF EXPANSION JOINT ARE TENTATIVE AND WILL BE FINALIZED ON RECEIPT OF VENDOR'S DRAWINGS.



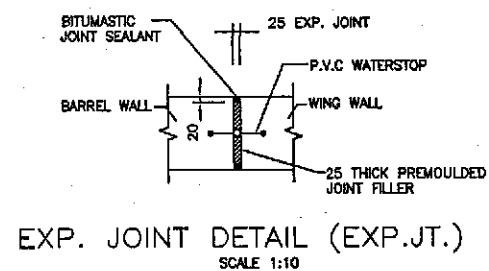
<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN</p>	<p>04 03 02 01 REV. DATE DESCRIPTION APPROVED</p> <p>JAWAD UL HAQ Project Manager M/S NESPAK</p>	<p>DRAWN M. RASHID AZIZ SUBMITTED RECOMMENDED CHD./VER. APPROVED</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)</p>	<p>MISCELLANEOUS DETAILS APPROACH SLAB, BEARING PAD, SHEAR BLOCK, AND EXPANSION JOINT DETAILS SCALE 1:50 DATE JULY 2018 DWS NO. 3905/102/10/PTG118</p>
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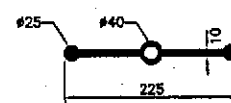
PLAN



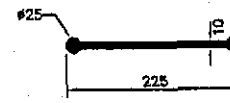
DETAIL 'A'  
SCALE 1:50



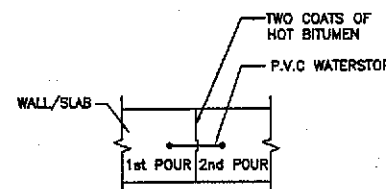
EXP. JOINT DETAIL (EXP.JT.)  
SCALE 1:10



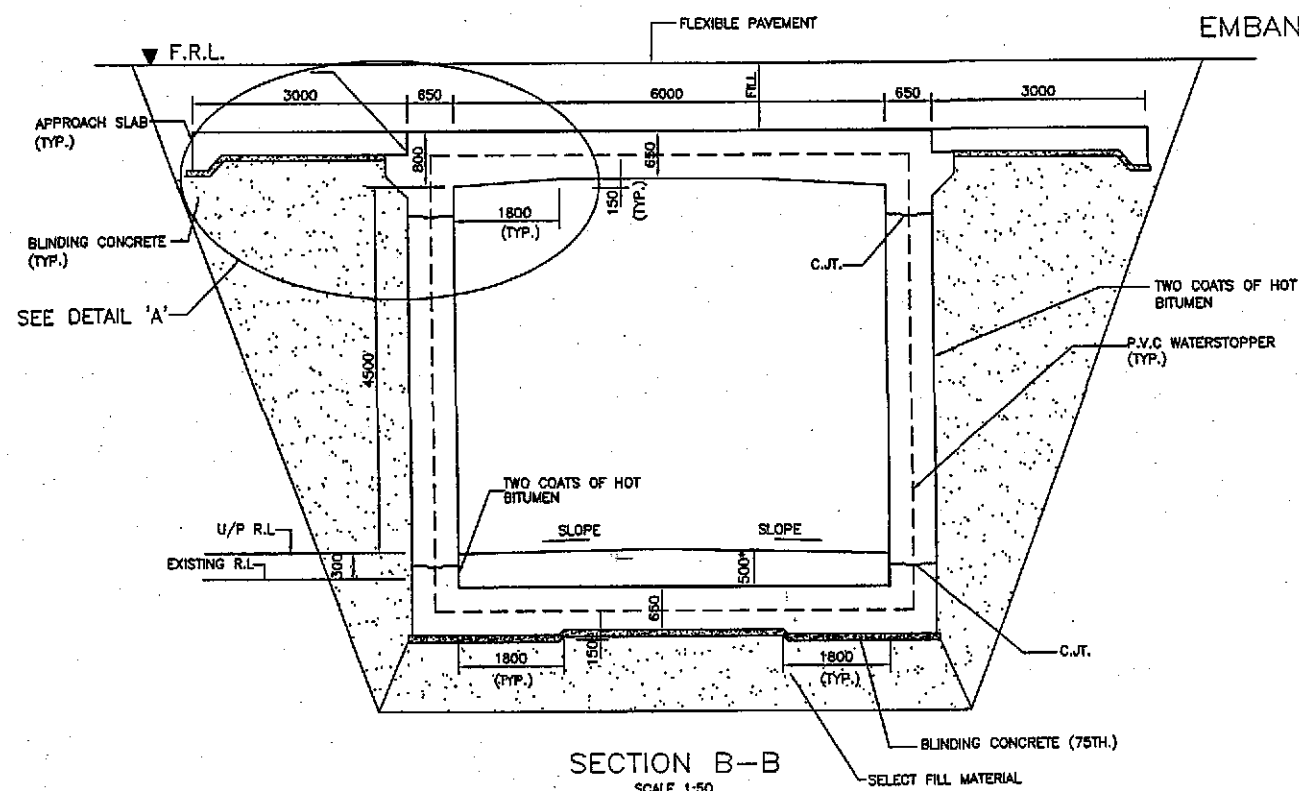
DETAIL OF UPVC WATER STOPPER  
(WITH HOLLOW HOLE AT EXPANSION JOINT)  
SCALE 1:50



DETAIL OF UPVC WATER STOPPER  
(AT CONSTRUCTION JOINT)  
SCALE 1:50

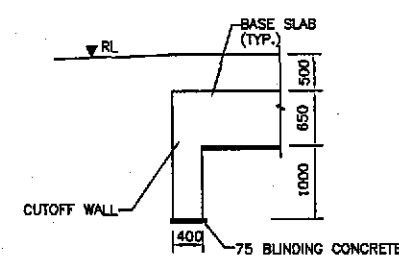


CONSTRUCTION JOINT DETAIL (C.JT.)  
SCALE 1:10

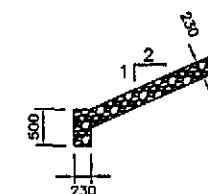


SECTION B-B  
SCALE 1:50

SECTION A-A



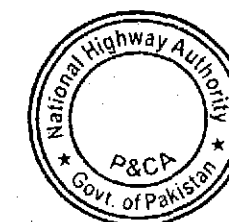
DETAIL 'B'  
SCALE 1:50



EMBANKMENT PROTECTION DETAIL  
SCALE 1:50

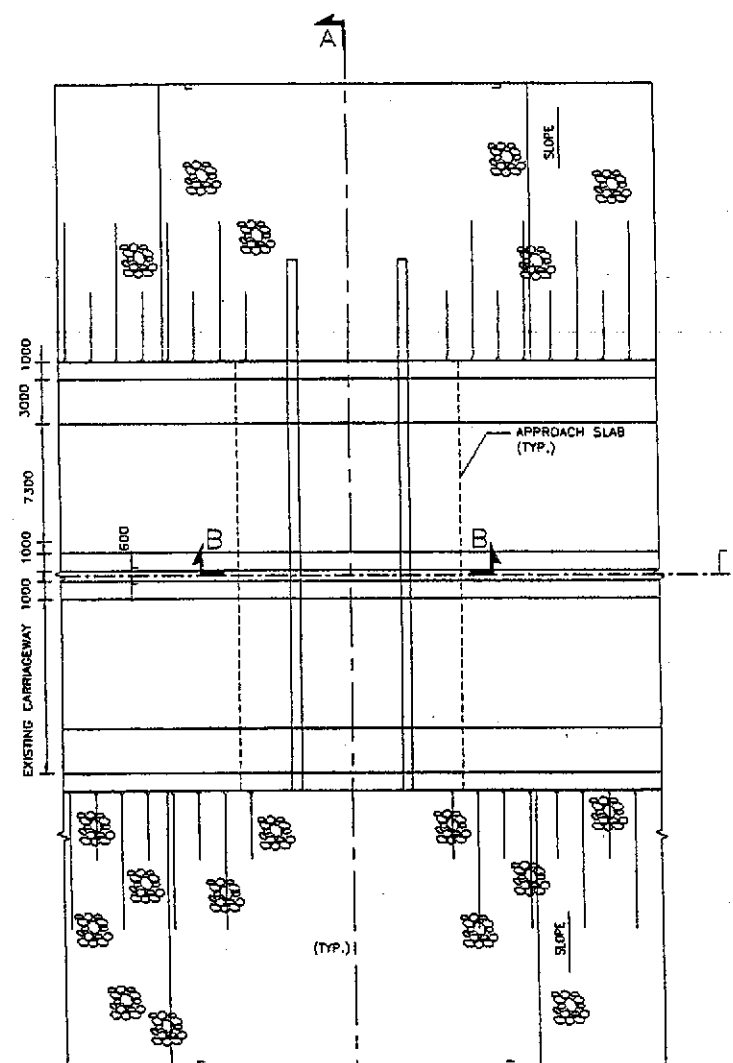
# NOTES:-

- 1-FOR GENERAL NOTES REFER DWG. NO. 3605/102/TD/P10NS001
- 2-READ THIS DRAWINGS WITH OTHER RELEVANT DRAWINGS
- 3-THE DEPTH OF SELECT FILL SHALL BE DECIDED BY THE GEOTECH ENGINEER AT SITE IF REQUIRED.
- 4-ALL FACES OF CONCRETE IN CONTACT WITH SOIL SHALL BE DAMP PROOFED WITH 2 COATS OF BITUMINOUS MATERIAL.
- 5-FOR LOCATION OF UNDERPASSES REFER PLAN & PROFILE DRAWINGS.
- 6-THE APPROACH SLAB ALONG WITH SUPPORT KEY IN WALL WILL BE PROVIDED ONLY IF THE FILL ABOVE THE CULVERT IS LESS THAN 1000.
- 7-UNDERPASS SHALL BE CONSTRUCTED WITH 1% (MIN.) LONGITUDINAL SLOPE TOWARDS ADDITIONAL CARRIAGEWAY FOR DRAINAGE PURPOSE.

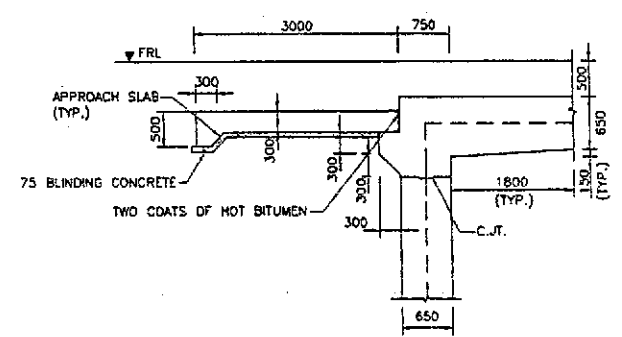


04				DRAWN BY	RAJA SHAFIQ
03				SUBMITTED BY	
02				RECOMMENDED BY	
01				CHD./VER. BY	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED BY	

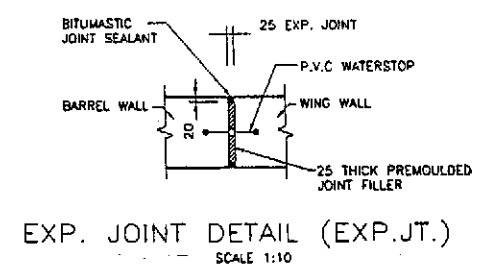
TITLE	GENERAL ARRANGEMENT CONCRETE OUTLINE ROAD UNDERPASS (6000 X 4500)		SCALE
DATE	MARCH 2018	DRAWING NO.	3905/102/CD/P10P119
REV.			



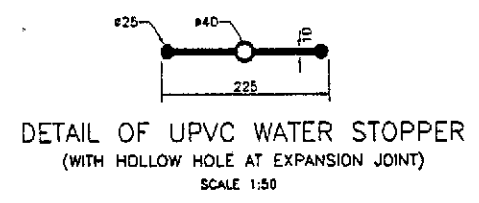
PLAN



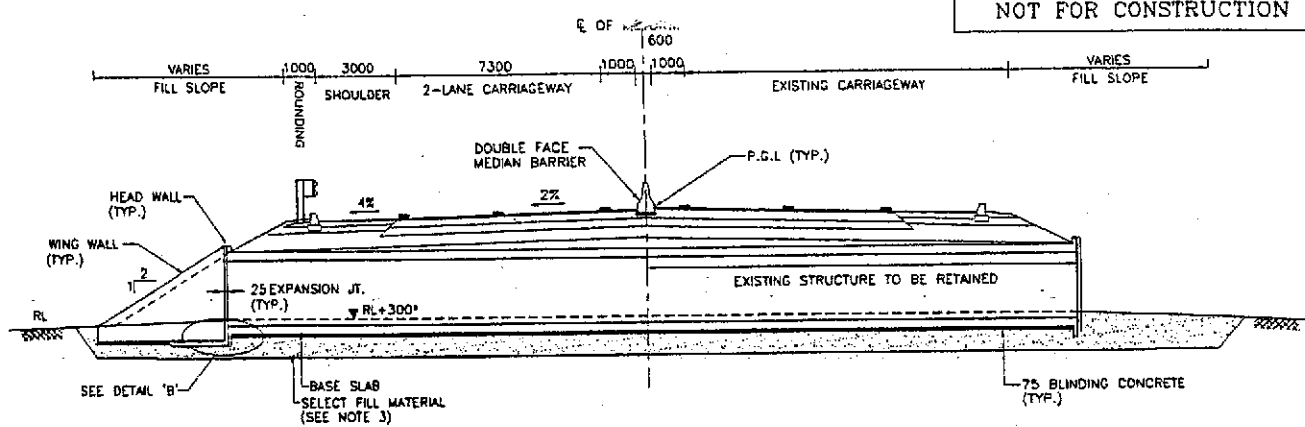
DETAIL 'A'  
SCALE 1:50



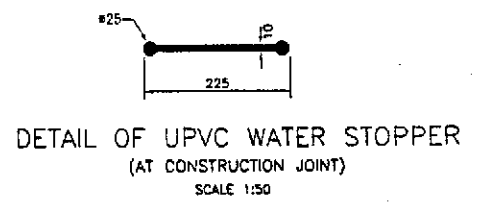
EXP. JOINT DETAIL (EXP.JT.)  
SCALE 1:10



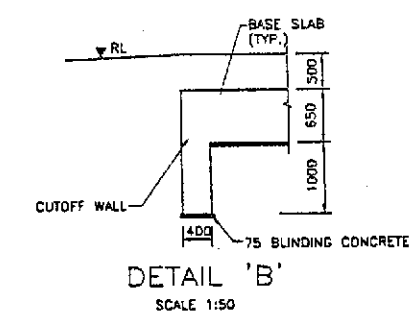
DETAIL OF UPVC WATER STOPPER  
(WITH HOLLOW HOLE AT EXPANSION JOINT)  
SCALE 1:50



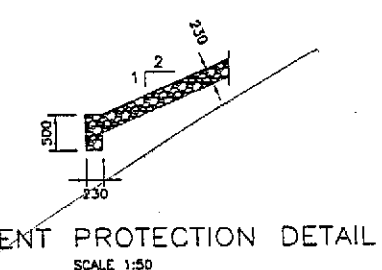
SECTION A-A



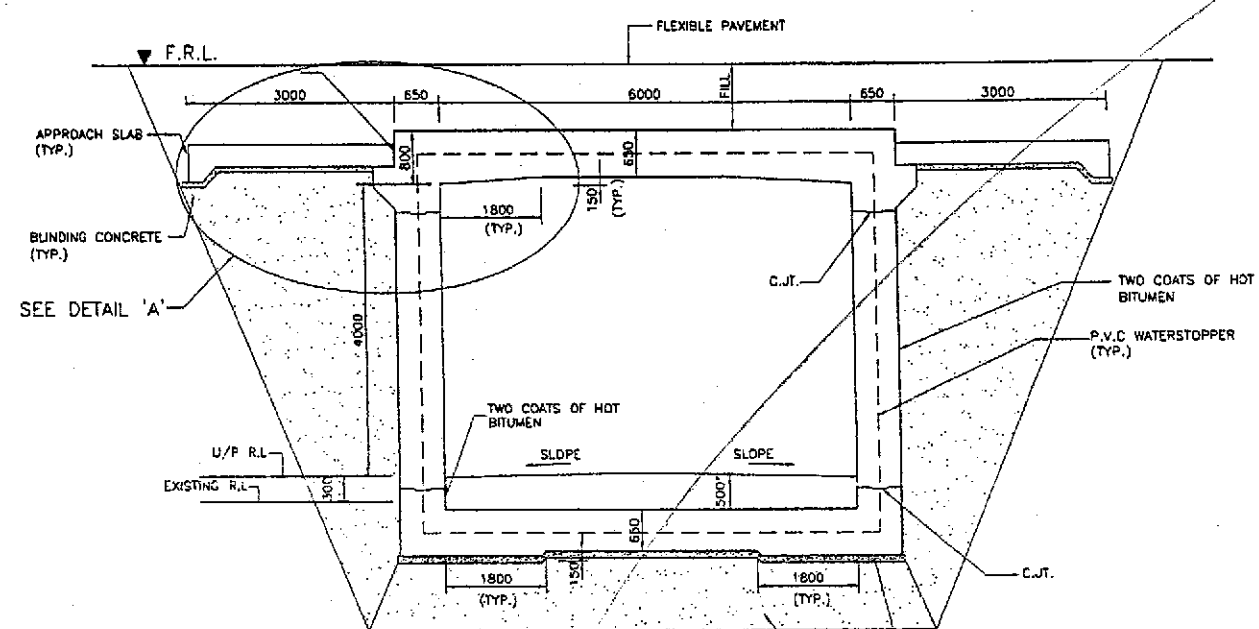
DETAIL OF UPVC WATER STOPPER  
(AT CONSTRUCTION JOINT)  
SCALE 1:50



DETAIL 'B'  
SCALE 1:50



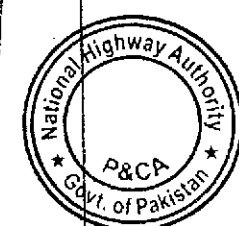
EMBANKMENT PROTECTION DETAIL  
SCALE 1:50



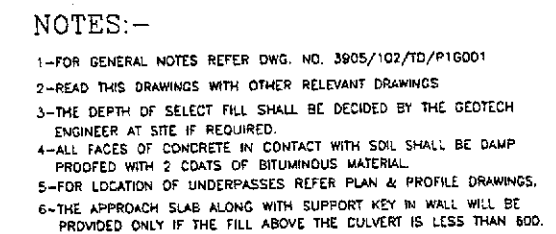
SECTION B-B  
SCALE 1:50



**TENDER DRAWINGS**

- NOTES:-
- 1-FOR GENERAL NOTES REFER DWG. NO. 3905/102/TD/P16001
  - 2-READ THIS DRAWINGS WITH OTHER RELEVANT DRAWINGS
  - 3-THE DEPTH OF SELECT FILL SHALL BE DECIDED BY THE GEOTECH ENGINEER AT SITE IF REQUIRED.
  - 4-ALL FACES OF CONCRETE IN CONTACT WITH SOIL SHALL BE DAMP PROOFED WITH 2 COATS OF BITUMINOUS MATERIAL.
  - 5-FOR LOCATION OF UNDERPASSES REFER PLAN & PROFILE DRAWINGS.
  - 6-THE APPROACH SLAB ALONG WITH SUPPORT KEY IN WALL WILL BE PROVIDED ONLY IF THE FILL ABOVE THE CULVERT IS LESS THAN 1000.



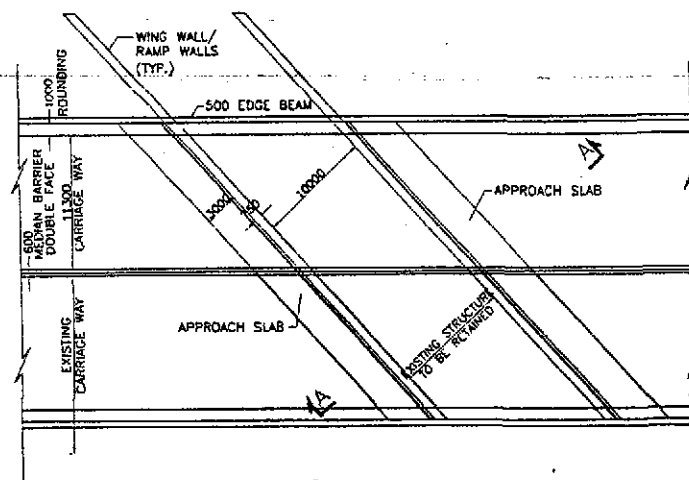
<p>GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY</p>	<p>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: "NESPARK HOUSE", T-1, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.</p>	<p>04 03 02 01 REV. DATE DESCRIPTION APPROVED APPROVED</p> <p>JAWAD UL HAQ Project Manager M/S NESPAK</p>	<p>DRAWN SUBMITTED RECOMMENDED CHD./VER.</p> <p>U/AZ AHMAD</p>	<p>RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)</p>	<p>GENERAL ARRANGEMENT CONCRETE OUTLINE ROAD UNDERPASS (6000x4000)</p> <p>DATE JULY 2018</p> <p>3905/102/TD/P1UP119</p> <p>SCALE 1:300</p> <p>REV.</p>
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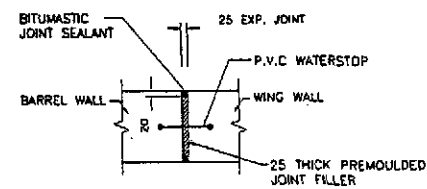
 GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	04				DRAWN	HAZ AHMAD	RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	GENERAL ARRANGEMENT CONCRETE OUTLINE ROAD UNDERPASS (10000x5100)		SCALE 1:300
		03				SUBMITTED					
		02				RECOMMENDED					
		01				CHD./VER.					
HEAD OFFICE: NESPAK HOUSE, T-C, BLOCK 'N', MODEL TOWN EXTENSION, LAHORE, PAKISTAN.		REV.	DATE	DESCRIPTION	APPROVED	APPROVED			DATE JULY 2018	DWG NO. 3905/102/TD/P1UP120	REV.

D:RATODERO TO RAJANPUR ROAD, UNDERPASS SECTION - K.T. 105.1 SLOWLY STOPPED. 07.05.2016





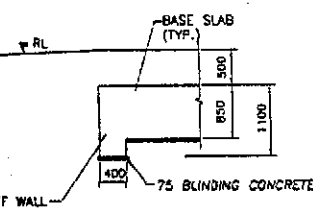
PLAN  
SCALE 1:200



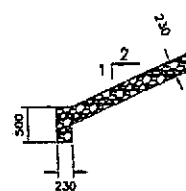
EXP. JOINT DETAIL  
SCALE 1:10



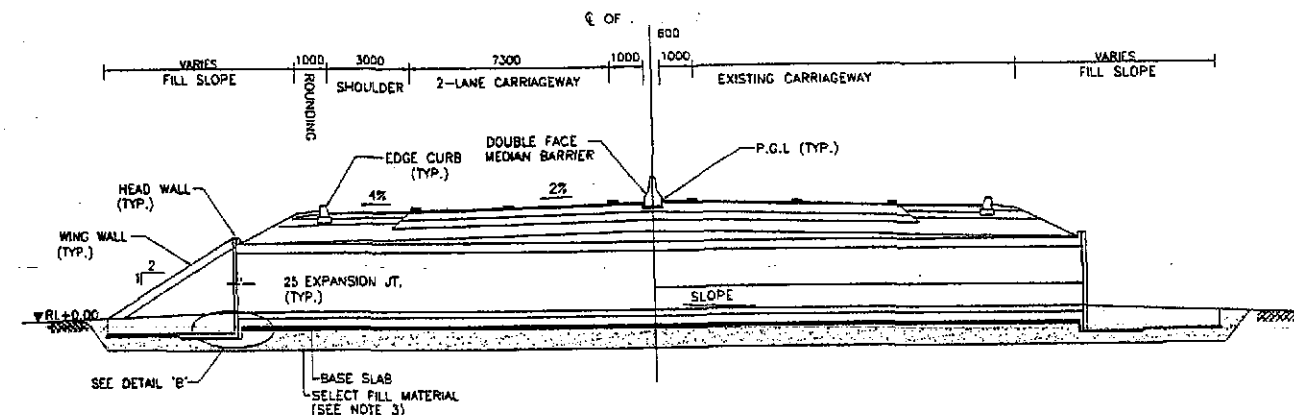
DETAIL OF WATERSTOP  
SCALE 1:50



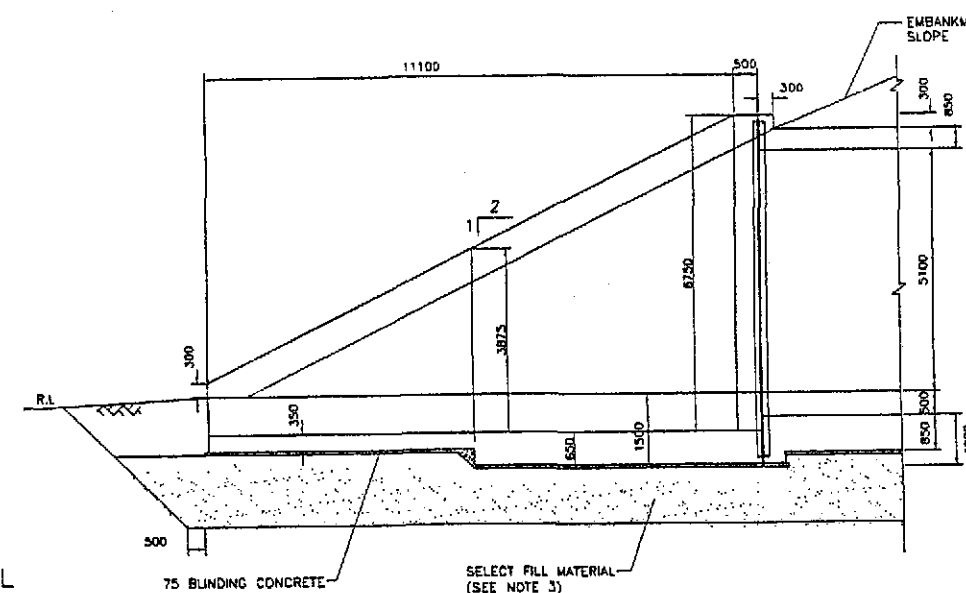
DETAIL 'B'  
SCALE 1:50



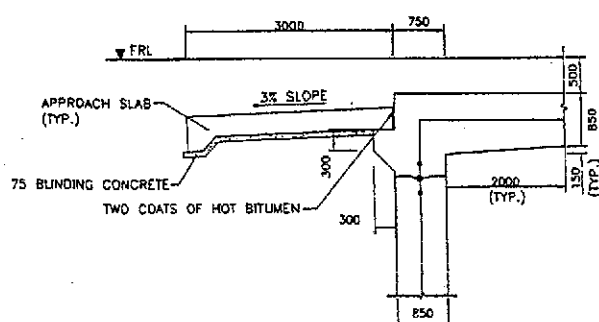
EMBANKMENT PROTECTION DETAIL  
SCALE 1:50



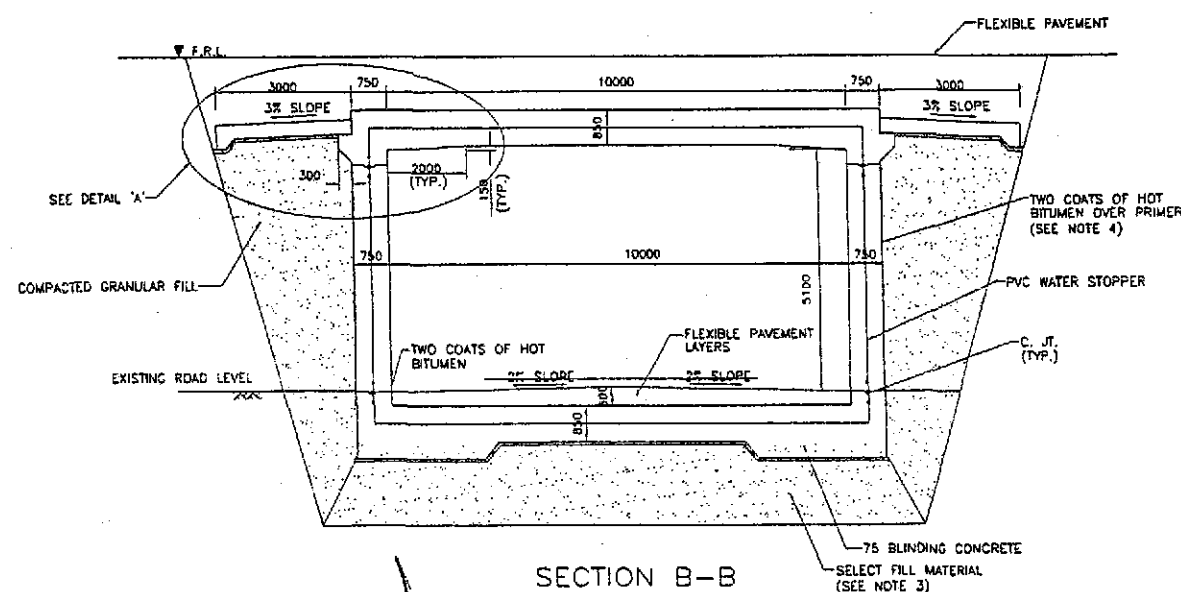
SECTION A-A



WING WALL ELEVATION  
SCALE 1:75



DETAIL 'A'  
SCALE 1:50



SECTION B-B  
SCALE 1:75

**TENDER DRAWINGS**

NOTES:-

- 1-FOR GENERAL NOTES REFER DWG. NO. 3905/102/TD/P10001
- 2-THE DEPTH OF SELECT FILL SHALL BE DECIDED BY THE GEOTECH ENGINEER AT SITE.
- 3-ALL FACES OF CONCRETE IN CONTACT WITH SOIL SHALL BE DAMP PROOFED WITH 2 COATS OF BITUMINOUS MATERIAL.
- 4-FOR LOCATION OF UNDERPASSES REFER PLAN & PROFILE DRAWINGS.



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

**NATIONAL ENGINEERING SERVICES**  
**PAKISTAN (PVT.) LTD.**  
HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN  
EXTENSION, LAHORE, PAKISTAN.

04		JAWAD UL HAQ	DRAWN	HAZ AHMAD
03		Project Manager	SUBMITTED	
02		M/S NESPAK	RECOMMENDED	
01			CHD./VER.	
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

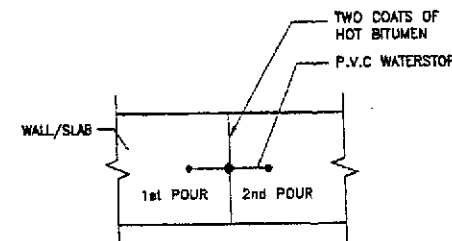
RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

GENERAL ARRANGEMENT CONCRETE OUTLINE ROAD UNDERPASS (10000x5100)		SCALE
DATE	DWG-NO.	REV.
JULY 2018	3905/102/TD/P10121	

# STANDARD DIMENSIONS SCHEDULE FOR BOX CULVERTS

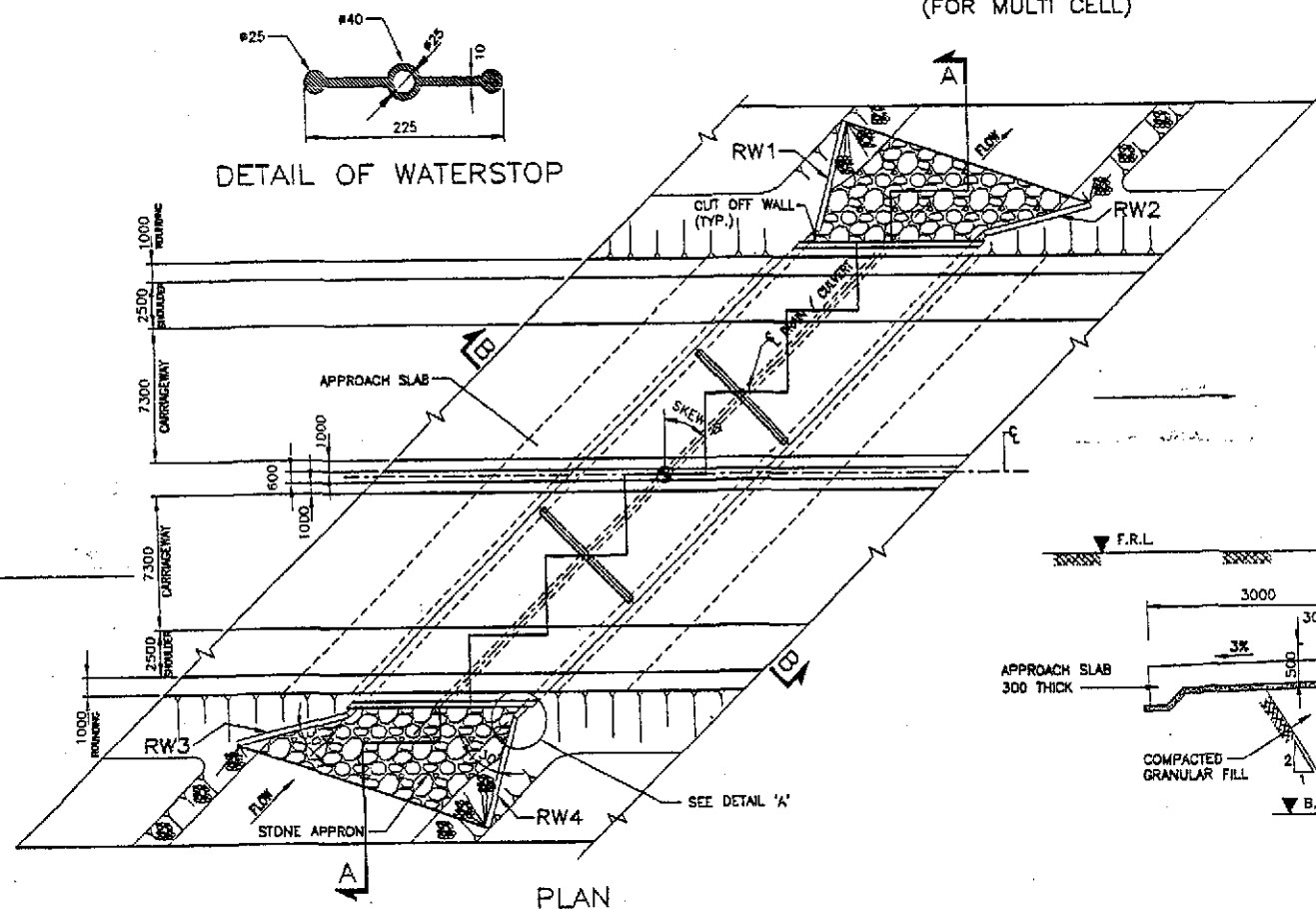
Sr No.	Chainage	Structure Type	No. of Spans/Pipes	Clear Span Width/Dia. (m)	Clear Height	Skew	Ts & Tb (m)	Tw1 (mm)	Tw2 (mm)	T3 (mm)	L1 (mm)
1	45+000	Box Culvert	1	1	1	0	200	200	200	150	150
2	45+215	Box Culvert	1	1.5	1	0	250	250	250	150	150
3	45+725	Box Culvert	1	2	2	26	250	250	250	150	300
4	46+485	Box Culvert	1	2	2	1.5	250	250	250	150	300
6	50+150	Box Culvert	1	1.25	1.5	0	225	225	225	150	150
7	60+685	Box Culvert	1	1.25	1.5	10	225	225	225	150	150
8	61+008	Box Culvert	1	1.25	1.5	0	225	225	225	150	150
9	61+280	Box Culvert	1	1.25	1.5	37	225	225	225	150	150
10	62+515	Box Culvert	1	1.1	1	0	200	200	200	150	150
11	62+680	Box Culvert	1	1.1	1	0	200	200	200	150	150
12	63+788	Box Culvert	1	1.1	1	0	200	200	200	150	150
13	64+300	Box Culvert	1	1.5	1.1	0	250	250	250	150	150
14	67+170	Box Culvert	3	3.2	2	19	400	350	350	150	300
15	68+445	Box Culvert	1	2	1	0	250	250	250	150	300
16	69+035	Box Culvert	1	1	1	0	200	200	200	150	150
17	69+610	Box Culvert	1	1	1	5	200	200	200	150	150
18	70+050	Box Culvert	1	1.5	1	0	250	250	250	150	150
19	70+315	Box Culvert	1	1.5	1	0	250	250	250	150	150
20	72+108	Box Culvert	1	1	1	85	200	200	200	150	150
21	72+865	Box Culvert	1	1.5	1	0	250	250	250	150	150
22	73+285	Box Culvert	1	1	1	0	200	200	200	150	150
23	73+490	Box Culvert	1	1	1	0	200	200	200	150	150
24	74+490	Box Culvert	1	1	1	0	200	200	200	150	150
25	75+885	Box Culvert	1	1	1	5	200	200	200	150	150
26	76+420	Box Culvert	1	1	1	0	200	200	200	150	150
27	78+355	Box Culvert	1	2.5	1.5	46	300	300	300	150	300
28	80+127	Box Culvert	1	2	1	0	250	250	250	150	300
29	80+575	Box Culvert	1	1.5	1.4	0	250	250	250	150	150
30	82+130	Box Culvert	1	1	1.1	0	200	200	200	150	150
31	82+668	Box Culvert	1	1	1.1	28	200	200	200	150	150
32	84+030	Box Culvert	1	1	1.1	0	200	200	200	150	150
33	84+570	Box Culvert	1	1	1.1	0	200	200	200	150	150
34	84+985	Box Culvert	1	1.5	1	0	250	250	250	150	150
35	85+770	Box Culvert	1	1.1	1	0	200	200	200	150	150
36	85+825	Box Culvert	1	2	2	0	300	300	300	150	300
37	85+827	Box Culvert	1	2	2	0	300	300	300	150	300
38	88+085	Box Culvert	1	1.5	1	0	250	250	250	150	150
39	88+435	Box Culvert	1	1.1	1	0	200	200	200	150	150
40	89+630	Box Culvert	1	1.5	1	0	250	250	250	150	150
41	90+350	Box Culvert	1	1.5	1	0	250	250	250	150	150
42	91+005	Box Culvert	1	1.5	1	0	250	250	250	150	150
43	91+705	Box Culvert	1	1.5	1	9	250	250	250	150	150
44	93+865	Box Culvert	1	1.1	1	0	200	200	200	150	150
45	94+182	Box Culvert	1	1.1	1	0	200	200	200	150	150
46	94+782	Box Culvert	1	1.5	1	0	250	250	250	150	150
47	96+510	Box Culvert	4	2	1	0	250	250	250	150	300
48	96+573	Box Culvert	1	2	1	0	250	250	250	150	300
49	96+900	Box Culvert	1	1	1	0	200	200	200	150	150
50	97+100	Box Culvert	1	1	1	20	200	200	200	150	150
51	97+185	Box Culvert	1	1	1	0	200	200	200	150	150
52	97+810	Box Culvert	1	1	1	10	200	200	200	150	150
53	98+222	Box Culvert	1	1	1	0	200	200	200	150	150
54	98+490	Box Culvert	1	1	1	0	200	200	200	150	150
55	98+635	Box Culvert	1	1	1	0	200	200	200	150	150
56	98+805	Box Culvert	1	1	1	0	200	200	200	150	150
57	99+230	Box Culvert	1	1	1	0	200	200	200	150	150
58	99+880	Box Culvert	1	1	1	0	200	200	200	150	150
59	100+495	Box Culvert	1	2	3	0	400	350	350	150	300
61	101+105	Box Culvert	1	2	1.5	8	250	250	250	150	300
63	101+942	Box Culvert	1	1.5	1	0	250	250	250	150	150
64	102+778	Box Culvert	1	1.5	1	6	250	250	250	150	150
65	105+495	Box Culvert	1	1.5	1	8	250	250	250	150	150
66	105+645	Box Culvert	1	2	1.5	49	250	250	250	150	300
67	105+685	Box Culvert	1	1.5	1	38	250	250	250	150	150

SECTION B-B  
(FOR MULTI CELL)



CONTRACTION JOINT DETAIL  
SCALE 1:10

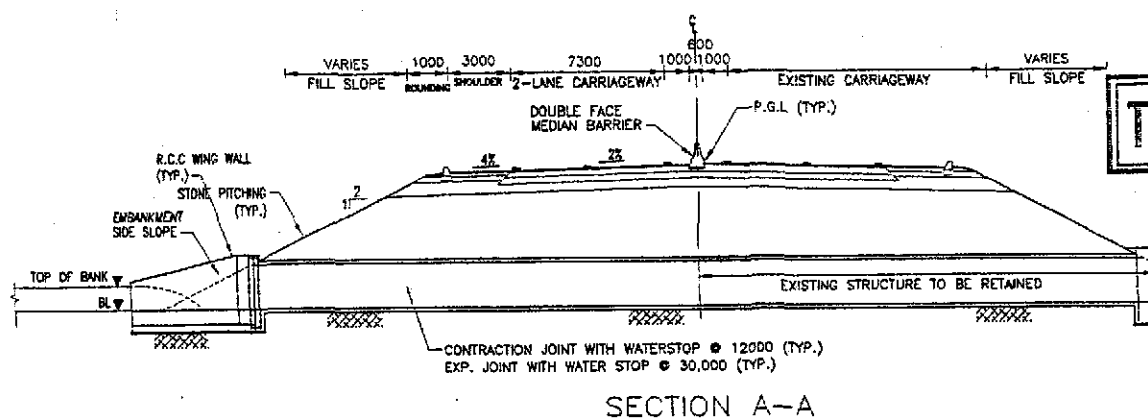
DETAIL OF WATERSTOP



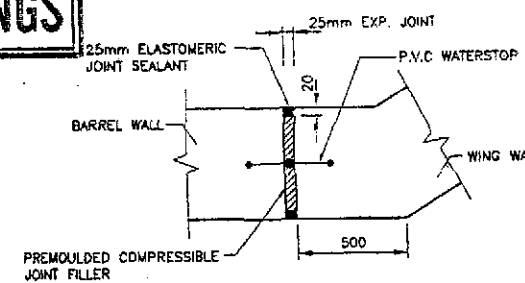
PLAN

SECTION B-B  
(FOR SINGLE CELL)

TENDER DRAWINGS



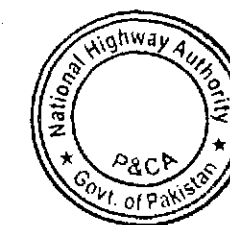
SECTION A-A



DETAIL 'A'  
SCALE 1:10

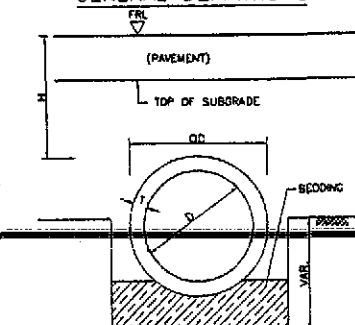
## NOTES:-

- 1-ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
- 2-READ THIS DRAWING WITH OTHER RELEVANT DRAWINGS
- 3-ALL CONCRETE SHALL BE REINFORCED CONCRETE CLASS A2.
- 4-REINFORCEMENT FOR REINFORCED CONCRETE SHALL BE DEFORMED ROUND BARS OF (GRADE 60) CONFORMING TO AASHTO M-31 (ASTM A615) WITH MINIMUM YIELD STRENGTH OF 4200 kg/cm<sup>2</sup> (60,000psi).
- 5-ALL FACES OF CONCRETE IN CONTACT WITH SOIL SHALL BE DAMP PROOFED WITH 2 LAYERS OF BITUMINOUS MATERIAL
- 6-GRANULAR FILL MATERIAL SHALL BE LAID IN LAYERS AND COMPACTED WITH MAX. DRY DENSITY OF 95%

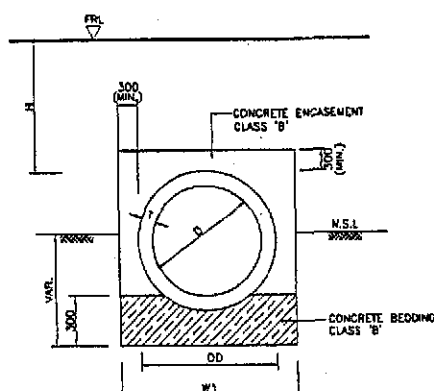
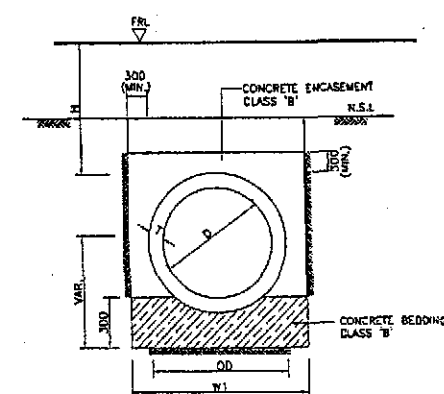
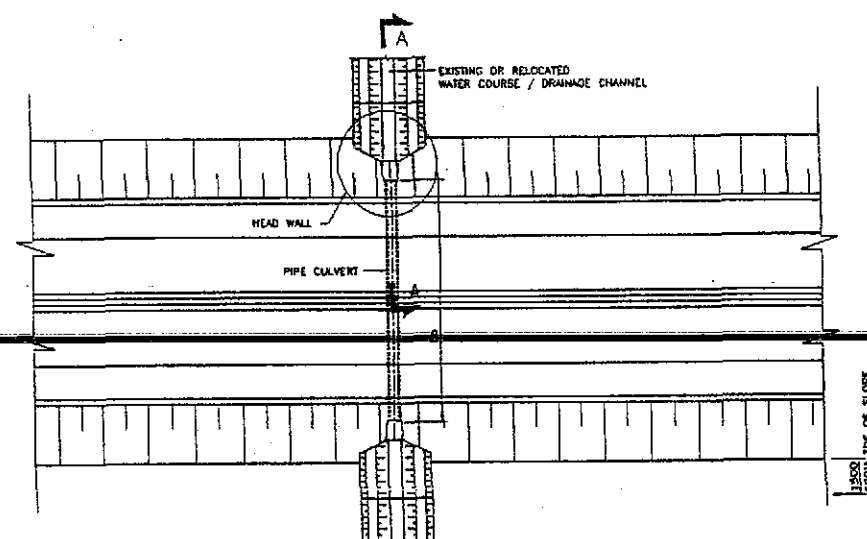


NATIONAL HIGHWAY AUTHORITY MINISTRY OF COMMUNICATIONS GOVERNMENT OF PAKISTAN	NESPAC NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. HEAD OFFICE: NESPAR HOUSE, T-6, BLOCK N, MODEL TOWN EXTENSION, LAHORE, PAKISTAN.	04	JAWAD UL HAQ	DRAWN	WARIS	F RATODERO ~ RAJANPUR ROAD PACKAGE-I (SHIKARPUR TO KANDH KOT)	BOX CULVERT GENERAL ARRANGEMENT	SCALE 1:200
		03	Project Manager	SUBMITTED	AK			
		02	M/S NESPAK	RECOMMENDED	AK			
		01		CHD. AFR				
REV.	DATE	DESCRIPTION	APPROVED	APPROVED			DATE	REV.
							JULY, 2018	3905/102/TD/F1G122

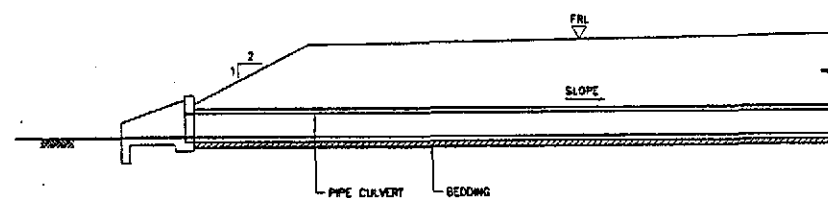
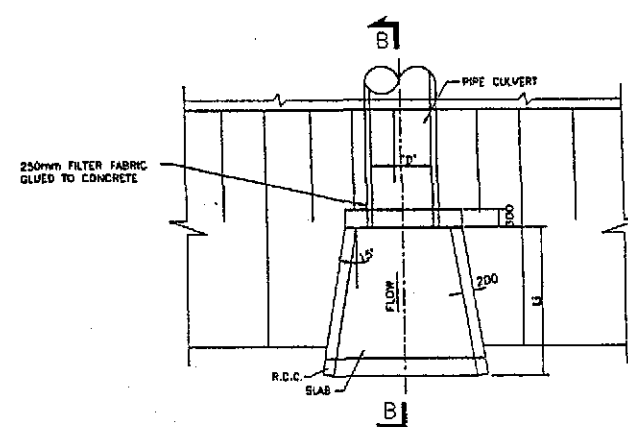
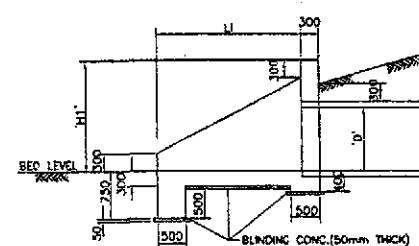
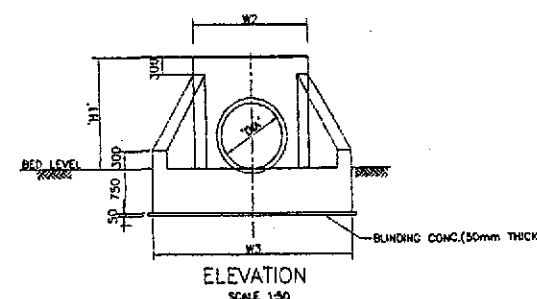
## GENERAL DEFINITIONS



SINGLE PIPE CULVERT

TRENCH DETAILS  
SINGLE PIPE CULVERT  
POSITIVE PROJECTIONFORMATION LEVEL  
TRENCH DETAILS  
SINGLE PIPE CULVERT  
NEGATIVE PROJECTION

PLAN

SECTION A-A  
SCALE 1:100HEAD WALL PLAN  
SCALE 1:50SECTION B-B  
SCALE 1:50ELEVATION  
SCALE 1:50

## PIPE SCHEDULE AND INLET / OUTLET DIMENSIONS

BEDDING TYPE	DIA. D	THICK-NESS T	OUTSIDE DIA. O D	H1	L1	POSITIVE PROJECTION			NEGATIVE PROJECTION			POSITIVE PROJECTION/NEGATIVE PROJECTION	
						W1	W2	W3	W1	W2	W3	CONCRETE ENCASEMENT	CONCRETE BEDDING
CONCRETE	750	90	940	1450	2150	1540	2000	3000	1710	2000	3000	CLASS 'B' CONCRETE	CLASS 'B' CONCRETE
CONCRETE	900	100	1100	1600	2400	1700	2000	3000	1700	2000	3000	CLASS 'B' CONCRETE	CLASS 'B' CONCRETE
CONCRETE	1200	125	1450	1925	3000	2050	2000	3000	1710	2000	3000	CLASS 'B' CONCRETE	CLASS 'B' CONCRETE

## LIST OF PIPE CULVERTS

## SECTION-1

## SHIKARPUR TO KANDH KOT

## KM. 43+400 TO KM. 105+820

Sr No.	Chainage	Structure Type	No. of Spans/Pipes	Clear Span Width/Dia. (m)	Clear Height	Skew
1	48+705	Pipe Culvert	1	0.9	-	0
2	100+930	Pipe Culvert	1	0.9	-	0
3	101+280	Pipe Culvert	1	0.9	-	10

TENDER DRAWINGS

## NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETER UNLESS NOTED OTHERWISE.
- FOR GENERAL NOTES REFER DWG. NO. 3905/102/P30001.
- FOR LOCATIONS AND INVERT LEVELS OF PIPE CULVERTS REFER PLAN AND PROFILE DRAWINGS.
- CULVERTS SHALL BE PROTECTED BY THE MINIMUM OF 0.9m OF COVER BEFORE PERMITTING HEAVY CONSTRUCTION EQUIPMENTS TO PASS OVER.
- CLASS 'B' CONCRETE SHALL BE USED FOR CONCRETE BEDDING AND CONCRETE ENCASEMENT.
- CONCRETE CLASS 'A1' SHALL BE USED FOR INLET/OUTLET STRUCTURES.
- DIMENSIONS OF CONCRETE PIPE CAN BE CHANGED UNDER THE RESIDENT ENGINEER'S APPROVAL HOWEVER = REINFORCED CONCRETE PIPES SHALL BE MANUFACTURED AND TESTED IN ACCORDANCE WITH ASTM DESIGNATION ASTM DESIGNATION C 76 W WALL TYPE 'B'.
- FOR NEGATIVE PROJECTION INSTALLATION TRENCH WIDTHS MUST NOT EXCEED DIMENSIONS INDICATED.



GOVERNMENT OF PAKISTAN  
MINISTRY OF COMMUNICATIONS  
NATIONAL HIGHWAY AUTHORITY

NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

HEAD OFFICE: NESPAK HOUSE, 1-C, BLOCK N, MODEL TOWN  
EXTENSION, LAHORE, PAKISTAN.

04  
03  
02  
01  
REV. DATE DESCRIPTION

JAWAD UL HAQ  
Project Manager  
M/S NESPAK

DRAWN  
SUBMITTED  
RECOMMENDED  
CHD./VER.  
APPROVED

IAJAZ AHMAD

RATODERO ~ RAJANPUR ROAD  
PACKAGE-I  
(SHIKARPUR TO KANDH KOT)

PIPE CULVERT-TRENCHING  
AND INLET/OUTLET DETAILS

DATE  
JULY 2018

DWG NO.  
3905/102/TD/P1PC123

SCALE  
1:300

REV.