

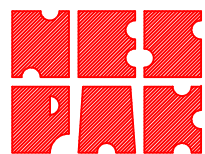
**GOVERNMENT OF KHYBER PAKHTUNKHWA  
C & W DEPARTMENT**



**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22Km)**

**TENDER DRAWINGS**

**MARCH, 2021**



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

## LIST OF DRAWINGS

Sr.No.	TITLE OF DRAWING	DRAWING No.	TOTAL NO OF SHEETS
1	LIST OF DRAWINGS AND GENERAL NOTES	38164/102/TD/LDG001	01
2	KEY MAP	38164/102/TD/KM002	01
3	SYMBOLS AND ABBREVIATIONS	38164/102/TD/SA002A	01
4	ROUTE LOCATION PLAN	38164/102/TD/RLP 01~16	16
5	TYPICAL CROSS SECTIONS	38164/102/TD/TS001	01
6	SCHEDULE OF STRUCTURES	38164/102/TD/SS003,004	02
7	TRAVERSE STATION DATA	38164/102/TD/TS005	01
8	SLAB CULVERT DETAILS (SINGLE CELL)	38164/102/TD/SC007	01
9	TYPICAL CULVERT DETAILS (MULTI CELL)	38164/102/TD/SC008	01
10	TYPICAL SLAB CULVERT REINFORCEMENT DETAILS	38164/102/TD/SC009	01
11	SUPERELEVATION SCHEME ROAD -1	4169/102/TD/SS001~006	06
12	SUPERELEVATION SCHEME ROAD -2	4169/102/TD/SS001~006	06
13	TYPICAL STONE MASONRY RETAINING WALL DETAILS	38164/102/TD/RW011	01
14	GENERAL NOTES FOR STRUCTURES	38164/102/TD/GNS0012	01
15	REBAR SHAPE CODE	38164/102/TD/RS0013	01
16	STRUCTURES DRAWINGS	38164/102/TD/P1G001,002,003	03
17	MISCELLANEOUS PROTECTION DETAIL	38164/102/TD/0014	01
18	TYPICAL DRAIN DETAIL	38164/102/TD/D0015	01
19	TYP DETAIL OF SERVICE DUCTS	38164/102/TD/D0016	01
20	TYPICAL RCC CAUSEWAY DETAILS	38164/102/TD/0017	01
21	TYPICAL SUPERELEVATION DETAILS	38164/102/TD/TS0018	01
22	TYPICAL ROAD SIGN DETAILS	38164/102/TD/RS0019~28	09
23	PAVEMENT MARKING AND ROAD STUDS	38164/102/TD/PMS0029	01
24	METAL GUARD RAIL	38164/102/TD/GRO30,031	02
25	DETAIL PLAN & PROFILE DRAWINGS	4169/102/TD/PL&PR 001~032	32

## GENERAL NOTES

- ALL DIMENSIONS SHOWN ON PLAN AND PROFILE DRAWINGS ARE IN METERS WHEREAS ANGULAR MEASUREMENTS ARE IN DEGREES, MINUTES AND SECONDS (360° TO A CIRCLE).
- EACH DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER DRAWINGS.
- GRID CO-ORDINATES AND ELEVATIONS ARE BASED ON UTM ZONE 42-N.
- MINOR CHANGES IN HORIZONTAL/VERTICAL ALIGNMENT MAY BE CARRIED OUT AT SITE WITH PRIOR APPROVAL OF THE ENGINEER.
- STRUCTURES SHOWN ON PLAN/PROFILE ARE SYMBOLIC. FOR DETAIL OF STRUCTURES AND PROTECTION WORKS SEE RELEVANT DRAWING. HOWEVER DETAILED INVENTORY OF STRUCTURES SHALL BE PREPARED AS PER SITE CONDITION/REQUIREMENTS AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES AT SITE.
- FOR PAVEMENT MARKING AND ROAD SIGNS, CONTRACTOR SHALL SUBMIT DETAILED PLANS DRAWINGS FOR APPROVAL OF THE ENGINEER.
- LOCATION OF UNDER GROUND CABLES/UTILITIES SHOWN ON PLANS ARE APPROXIMATE. EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR AT HIS OWN COST.
- ANY DAMAGE DONE TO THE UTILITIES DURING EXCAVATION/EXECUTION OF WORKS SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT HIS OWN COST TO THE SATISFACTION OF CONCERNED DEPARTMENTS.
- THE SUBGRADE MATERIAL SHALL HAVE A MINIMUM SOAKED C.B.R. OF 30% AT 95% M.D.D. AASHTO T-180 FOR BOTH FILL AND CUT SECTIONS.
- THE LENGTHS, SIZES, SLOPES, INVERT LEVELS AND OTHERS GIVEN DETAILS REGARDING CULVERTS, AS SHOWN IN SCHEDULE OF STRUCTURES ARE TENTATIVE. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS OF EACH CULVERT LOCATIONS WITH THE REQUIRED SKEW ANGLE AS PER SITE REQUIREMENTS AND SHALL SUBMIT THE SAME TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION EXECUTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CATER FOR ALL TEMPORARY TRAFFIC DIVERSIONS BEFORE START OF CONSTRUCTION OF THE ROAD TO THE ENTIRE SATISFACTION OF THE ENGINEER INCLUDING DETOUR ROAD IF REQUIRED AND ITS MAINTENANCE, SPRINKLING OF WATER, GRADING AND COMPACTION WHEN AND WHERE REQUIRED AT HIS OWN COST.
- RETAINING/BREAST/TOE WALL, GUARD RAIL, CONCRETE CURB STONES, FOOTPATH, ROAD SIGNS, GANTRY SIGNS, PAVEMENT STUDS AND OTHER ANCILLARY ITEMS SHALL BE PROVIDED AS PER THE BOQ ITEMS, AS PER SITE REQUIREMENT OR AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL PREPARE THE SHOP DRAWINGS FOR EACH ACTIVITY/ LOCATION ALONG WITH METHODOLOGY AND SHALL SUBMIT FOR APPROVAL TO THE ENGINEER PRIOR TO START OF CONSTRUCTION.
- TWO COATS OF BITUMEN PAINT SHALL BE APPLIED ON CONCRETE FACES IN CONTACT WITH THE SOIL. COST OF THIS ITEM IS DEEMED TO BE INCLUDED IN THE RELEVANT BOQ ITEM RATES AND NO SEPERATE PAYMENT SHALL BE MADE FOR THIS ITEM OF WORK.
- RETAINING/DRAINAGE STRUCTURES FOUNDATION SHALL BE PLACED ON FIRM, HARD AND ROCKY STRATA, OR AS DIRECTED BY ENGINEER.
- ROADWAY EXCAVATION MATERIAL SHALL BE UTILIZED IN MOST EFFECTIVE MANNER IN THE EMBANKMENT EVEN WITH BLENDING /MIXING WITH THE SUPERIOR MATERIALS (IF REQUIRED, WITHOUT AT ANY EXTRA COST). ROADWAY EXCAVATION SHALL NOT BE DISPOSED OFF OUTSIDE RIGHT OF WAY.
- NSL PROVIDED IN ROAD PROFILE DRAWING IS GENERATED USING TIN, WHICH MAY HAVE SLIGHT VARIATION FROM ACTUAL NSL AT SITE. PRIOR TO EXECUTION, JOINT CROSS SECTION / ACTUAL NSL OF DESIGN CENTER LINE WILL BE PROVIDED TO M/S NESPAK TO FINALIZE THE ROAD PROFILE PRIOR TO COMMENCE CONSTRUCTION ACTIVITIES AT SITE.



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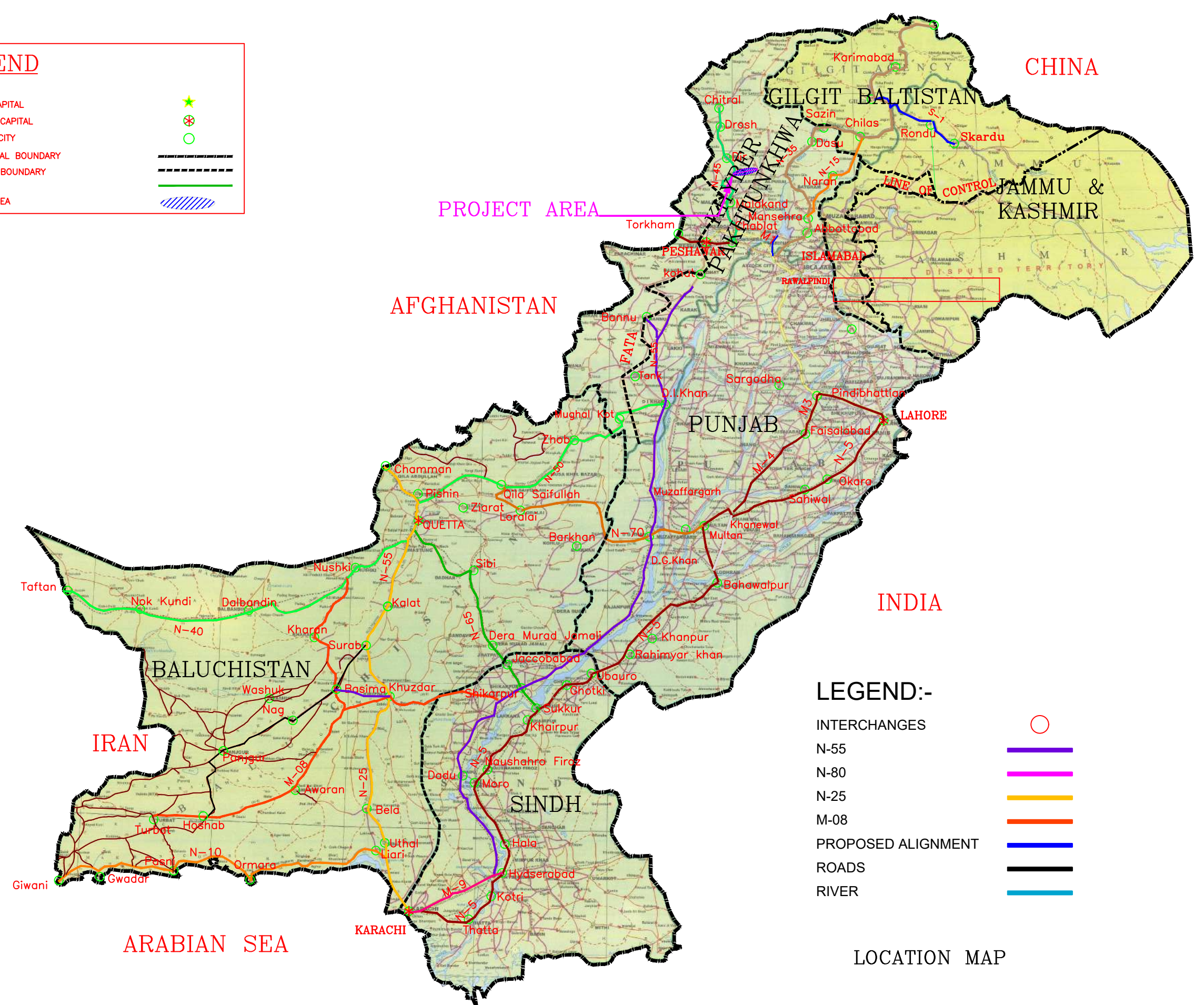
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PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE	
LIST OF DRAWINGS & GENERAL NOTES	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/LDG001

### LEGEND

NATIONAL CAPITAL	★
PROVINCIAL CAPITAL	⊗
IMPORTANT CITY	○
INTERNATIONAL BOUNDARY	— — — — —
PROVINCIAL BOUNDARY	— — — — —
ROADS	— — — — —
PROJECT AREA	▨▨▨▨▨



### LEGEND:-

INTERCHANGES	○
N-55	—
N-80	—
N-25	—
M-08	—
PROPOSED ALIGNMENT	—
ROADS	—
RIVER	—

LOCATION MAP

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**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

TITLE <b>KEY MAP</b>	
DATE JANUARY, 2021	DWG NO. 38164/102/TD/KM002

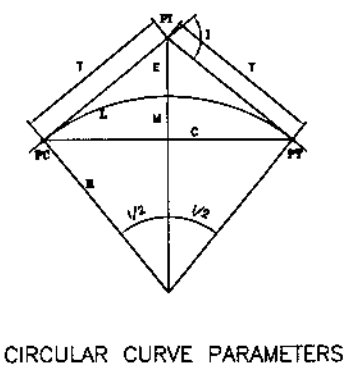
# SYMBOLS

DESIGN CENTER LINE	
AGRICULTURE LAND	
LAND ACQUISITION	
TREES	
BUSHES	
MOSQUE	
PERMANENT HOUSE / TEMPORARY	
GRAVES / GRAVE YARD	
TELEPHONE POLE	
ELECTRIC & T&T LINE	
DIRT TRACK	
METALLED ROAD	
ELECTRIC POLE	
HIGH TENSION LINE PYLON	
HORIZONTAL CURVE DATA	
GRID NORTH	
TRAVERSE /BM POINTS	
POINT OF INTERSECTION	
FENCE	
SUI GAS & WATER PIPE LINE	
TUBE WELL	
BOUNDARY LINE	

MANHOLE	
NULLAH	
CULVERT / BRIDGE	
T&T BOX	
HAND PUMP	
CANAL / DRAIN	
LINED WATER COURSE	
UNLINED WATER COURSE	
SPUR STRUCTURE	
GRID LINE	
SPOT LEVEL (TYP.)	
ROAD SIGN (IN PLAN)	
EXISTING GROUND LEVEL (PROFILE)	
FINISHED GRADE LINE	
C/WAYS IN PROFILE	
CULVERT IN PROFILE	
C/WAYS IN PLAN	

# ABBREVIATIONS

A	AREA	P	OFFSET OF TANGENT LINE TO PC OF SHIFTED CIRCLE CURVE
ALIG.	ALIGNMENT	PC	POINT OF HORIZONTAL CURVATURE (START OF HORIZONTAL CURVE)
B	BREADTH	P.C.	REINFORCED CONCRETE PIPE CULVERT
BC	BOX CULVERT	PGL	PROFILE GRADE LINE
B.M	BENCH MARK	P.L	PLASTICITY INDEX
BOP	BEGINNING OF PROJECT	PI	POINT OF HORIZONTAL INTERSECTION
C	CHORD LENGTH	PR	POINT OF ROTATION
C.B.R	CALIFORNIA BEARING RATIO	PT	POINT OF HORIZONTAL TANGENCY (END OF HORIZONTAL CURVE)
C/C	CENTER TO CENTER	R	RADIUS OF HORIZONTAL CURVE
CHD.	CHECKED	R.C	REINFORCED CONCRETE
C/L	CENTER LINE	REINF.	REINFORCEMENT
CM/cm	CENTIMETER	REV.	REVISION
CONC.	CONCRETE	RHS.	RIGHT HAND SIDE
CONST/JT	CONSTRUCTION JOINT	R.O.W.	RIGHT OF WAY
CS	CURVE TO SPIRAL	RT.	RIGHT
CUL	CULVERT	R/W	RETAINING WALL
Cu.m	CUBIC METER	RWC	RELOCATED WATER COURSE
CURVE LEN	VERTICAL CURVE LENGTH	S	SLOPE GRADIENT (PERCENT)
DC	DEPTH OF CUT	SE	SUPERELEVATION
D <sub>a</sub>	DEGREE OF CURVE (BY ARC)	S.B.P	SHOULDER BREAK POINT
D <sub>c</sub>	DEGREE OF CURVE (BY CHORD)	S.C.	SLAB CULVERT
DEG	DEGREE	SC	SPIRAL TO CURVE, SLAB CULVERT
DIA.	DIAMETER	SHLD	SHOULDER
DM.	DIMENSION	Sq.m	SQUARE METER
D/S	DOWNSTREAM	S.T.	SHORT TANGENT
D.S.T	DOUBLE SURFACE TREATMENT	ST	SPIRAL TO TANGENT
DRG.	DRAWING	STA./STA	STATION (CHAINAGE)
E	EASTING, EAST, EXTERNAL DISTANCE (SHIFT)	STRUCT	STRUCTURE
ELEV./EL	ELEVATION	SUPEREL	SUPERELEVATION
EOP	END OF PROJECT	S'WALK	SIDE WALK
EXP/JT	EXPANSION JOINT	T	TANGENT LENGTH OF HORIZONTAL CURVE
G.I	GALVANIZED IRON	TS	TANGENT TO SPIRAL
H/HOR.	HORIZONTAL	T.S.T	TRIPPLE SURFACE TREATMENT
H.T/LT	HIGH TENSION/LOW TENSION	TAN.	TANGENT
HF	HEIGHT OF FILL	TH	THICKNESS
HFL	HIGH FLOOD LEVEL	TR	TRANSITION
HWY.	HIGHWAY	TYP.	TYPICAL
I	DEFLECTION ANGLE (HORIZONTAL CURVE)	U/S	UPSTREAM
I <sub>c</sub>	CIRCULAR DEFLECTION ANGLE	V	VERTICAL
LL	INVERT LEVEL	VAR.	VARIABLE
K	SMOOTHNESS FACTOR (IN CASE OF VERTICAL CURVE)	VER.	VERIFIED
Kg.	KILOGRAM	VPC	VERTICAL POINT OF CURVATURE (START OF VERTICAL CURVE)
KM/Km	KILOMETER	VPI	VERTICAL POINT OF INTERSECTION OF PROFILE GRADE.
L	LENGTH OF HORIZONTAL CURVE/SPIRAL	VPT	VERTICAL POINT OF TANGENCY (END OF VERTICAL CURVE)
LN.M	LINEAR METER	W.	WEST, WIDTH OF ROADWAY
LHS.	LEFT HAND SIDE	W.B.M	WATER BOUND MACADAM
LT.	LEFT	WC	WATER COURSE
LT	LONG TANGENT	X	DISTANCE, PERPENDICULAR TO THE TANGENT, FROM BEGINNING TO THE END OF SPIRAL
M/m	METER	Y	DISTANCE, PERPENDICULAR TO THE TANGENT, FROM BEGINNING TO THE END OF SPIRAL
M	MIDDLE ORDINATE	φ	SKEW ANGLE
MAX.	MAXIMUM		
M.H	MAN HOLE		
MIN.	MINIMUM		
mm	MILLIMETER		
N.S.L	NATURAL SURFACE LEVEL (E.G.L)		
N	NORTHING, NORTH		
NO.	NUMBER		
N.T.S	NOT TO SCALE		



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	REV. DATE DESCRIPTION APPROVED APPROVED	DATE JANUARY, 2021	DWG NO. 38164/102/TD/SA002A		



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PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
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TITLE	ROUTE LOCATION PLAN		
DATE	JANUARY, 2021	DWG NO.	38164/102/TD/ RLP-01
			ROAD-1



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PROJECT:  
**CONSTRUCTION OF  
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TITLE <b>ROUTE LOCATION PLAN</b>		ROAD-1
DATE JANUARY, 2021	DWG NO. 38164/102/TD/ RLP-02	



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TITLE ROUTE LOCATION PLAN ROAD-1	
DATE JANUARY, 2021	DWG NO. 38164/102/TD/ RLP-03



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PROJECT:  
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TITLE	<b>ROUTE LOCATION PLAN</b>	
	ROAD-1	
DATE	JANUARY, 2021	DWG NO. 38164/102/TD/ RLP-04





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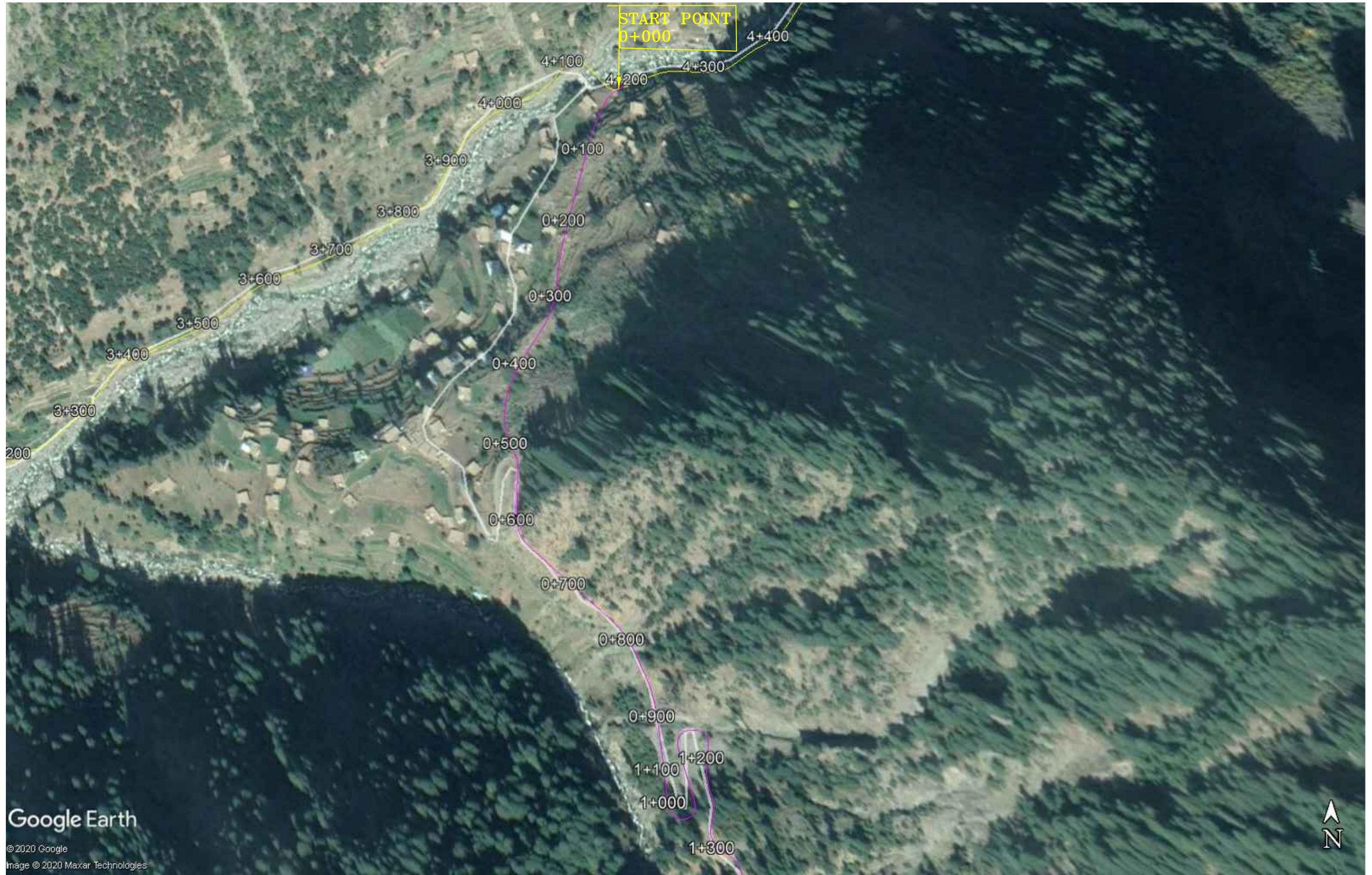


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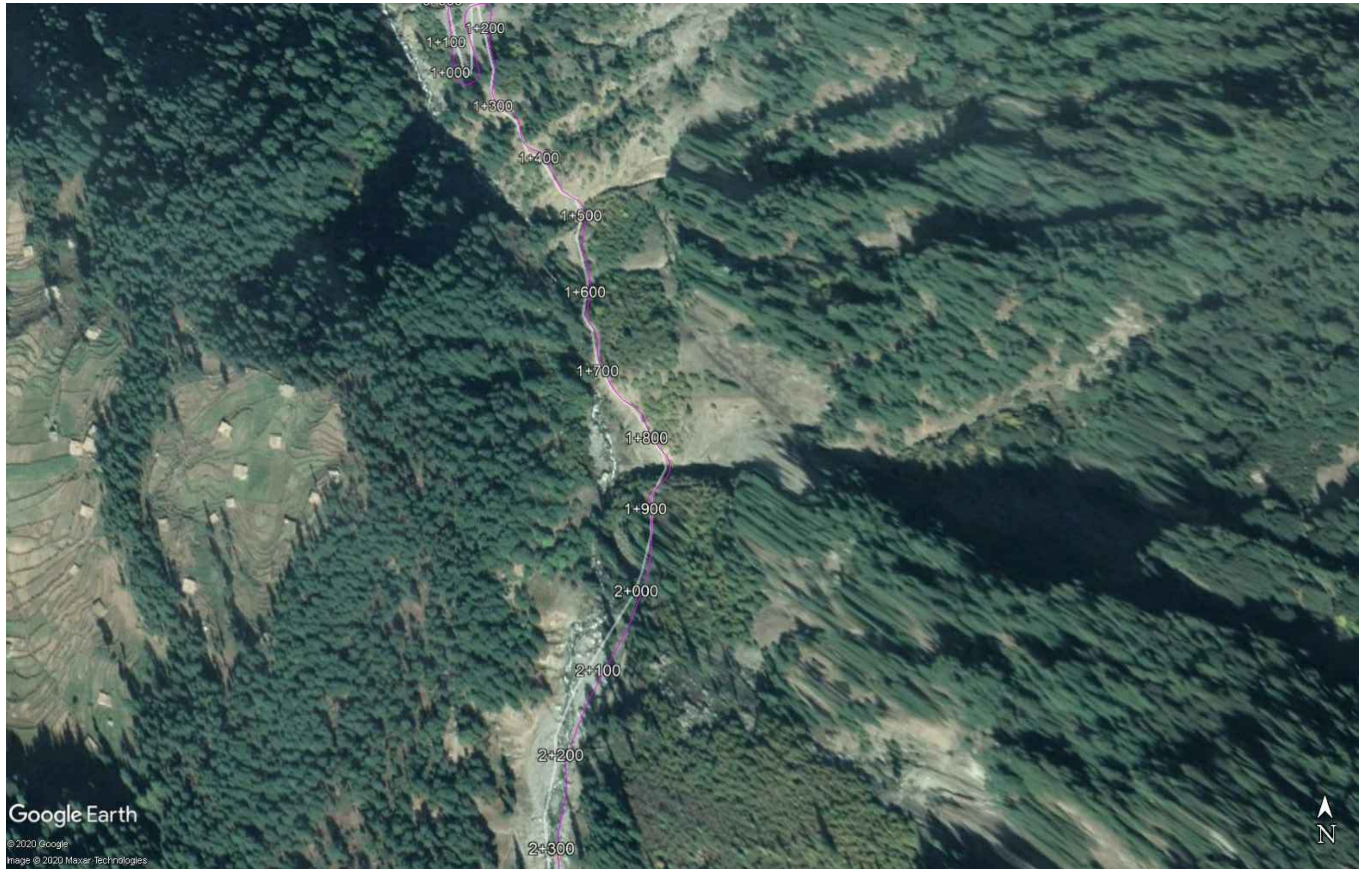


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TITLE	ROUTE LOCATION PLAN ROAD-2	
DATE	JANUARY, 2021	DWG NO. 38164/102/TD/ RLP-01



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	<b>ROAD-2</b>	
DATE	JANUARY, 2021	DWG NO.
		38164/102/TD/ RLP-02



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TITLE	<b>ROUTE LOCATION PLAN</b> <span style="float: right;">ROAD-2</span>	
DATE	<b>JANUARY, 2021</b>	DWG NO. <b>38164/102/TD/ RLP-03</b>



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ROUTE LOCATION PLAN ROAD-2	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/ RLP-04



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DATE <b>JANUARY, 2021</b>	DWG NO. <b>38164/102/TD/ RLP-05</b>	



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MANKIAL BADA SERA ROAD  
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TITLE

**ROUTE LOCATION PLAN**

**ROAD-2**

DATE

**JANUARY, 2021**

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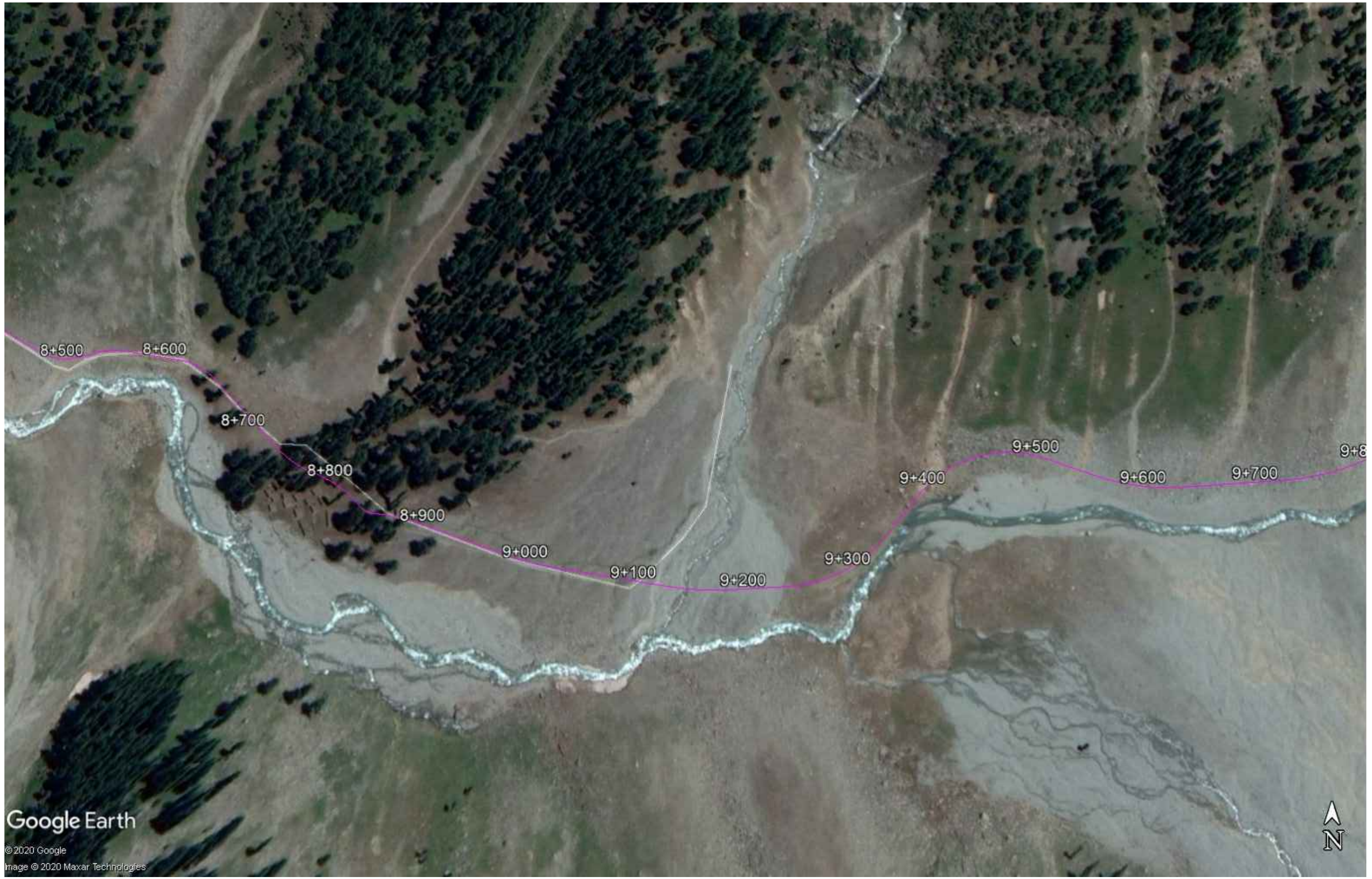


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TITLE <b>ROUTE LOCATION PLAN</b>		ROAD-2	
DATE JANUARY, 2021	DWG NO. 38164/102/TD/ RLP-07		



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PROJECT:	CONSTRUCTION OF MANKIAL BADA SERA ROAD PROJECT (22 Km)
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TITLE	ROUTE LOCATION PLAN ROAD-2	
DATE	JANUARY, 2021	DWG NO. 38164/102/TD/ RLP-08



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				CHD./VER.

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TITLE

**ROUTE LOCATION PLAN**

**ROAD-2**

DATE

**JANUARY, 2021**

DWG NO.

**38164/102/TD/ RLP-09**



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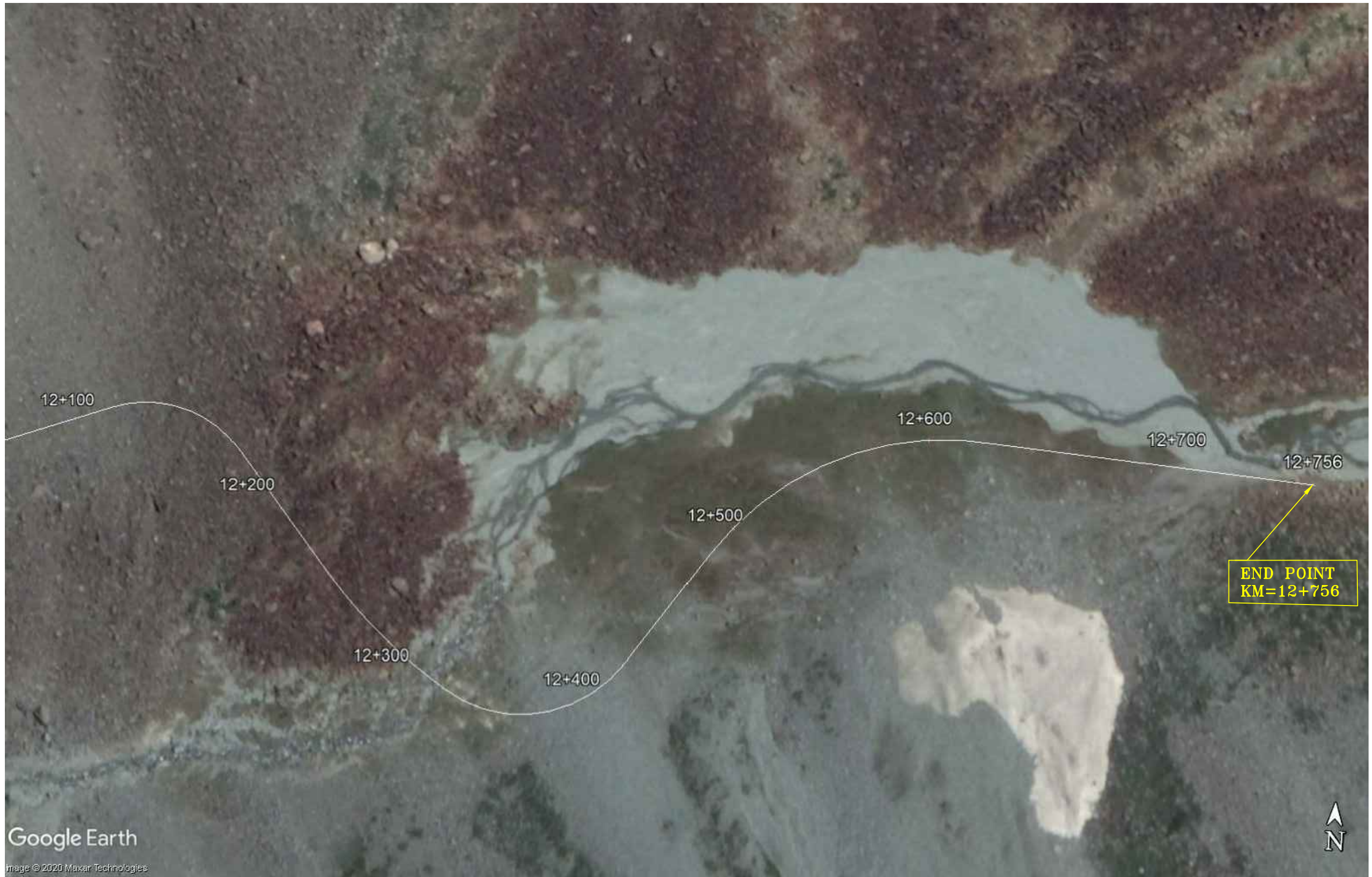


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REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

TITLE <b>ROUTE LOCATION PLAN</b>		<b>ROAD-2</b>
DATE <b>JANUARY, 2021</b>	DWG NO. <b>38164/102/TD/ RLP-010</b>	



Google Earth

Image © 2020 Maxar Technologies



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



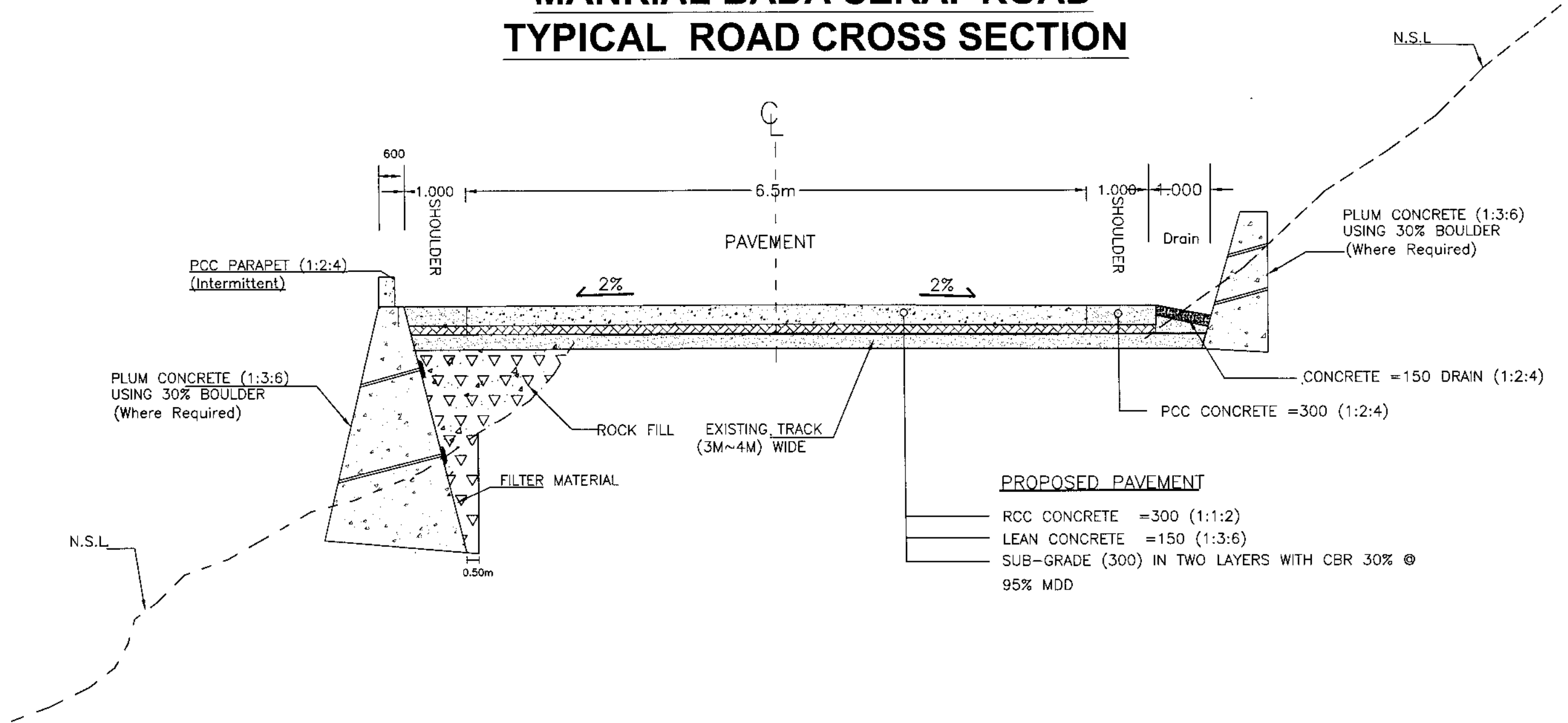
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

TITLE <b>ROUTE LOCATION PLAN</b>		ROAD-2
DATE <b>JANUARY, 2021</b>	DWG NO. <b>38164/102/TD/ RLP-011</b>	

# MANKIAL BADA SERAI ROAD TYPICAL ROAD CROSS SECTION



### PROPOSED PAVEMENT

- RCC CONCRETE = 300 (1:1:2)
- LEAN CONCRETE = 150 (1:3:6)
- SUB-GRADE (300) IN TWO LAYERS WITH CBR 30% @ 95% MDD

**NOTE:-**

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- EXISTING GRADIENT IS FOLLOWED MAJORLY, HOWEVER HIGH GRADIENTS ARE REDUCED UPTO 15% WITH RE-ALIGNMENT.
- MINOR GEOMETRY MAY IMPROVE WHERE POSSIBLE.
- ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.



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REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE	
TYPICAL ROAD CROSS SECTION	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/ TS001

**SUMMARY OF SURVEY CONTROL POINTS**

SR. No.	Easting (m)	Northing (m)	Elevation (m)	Code	SR. No.	Easting (m)	Northing (m)	Elevation (m)	Code
1	185838.79	3087089.97	1368.40	BK-1/CP-138	36	253535.00	3074925.34	1289.37	BK-36
2	186537.59	3082353.05	1412.03	BK-2	37	253676.01	3074862.46	1288.25	BK-37
3	186583.60	3081938.91	1414.28	BK-3	38	258564.58	3074486.67	1288.12	BK-38
4	188000.67	3077640.99	1476.53	BK-4	39	259003.26	3074734.04	1282.74	BK-39
5	188299.31	3077119.14	1476.41	BK-5	40	265168.76	3075304.87	1220.53	BK-40
6	190494.00	3073513.35	1434.17	BK-6	41	267485.96	3071646.20	1230.97	BK-40A
7	190599.66	3073344.95	1432.25	BK-7	42	267304.37	3071940.87	1236.25	BK-41
8	193574.38	3069231.04	1437.73	BK-8	43	185843.88	3087075.09	1368.98	BM-1
9	194437.32	3068864.47	1466.58	BK-9	44	185886.39	3086688.61	1371.36	BM-2
10	196510.39	3069085.22	1457.76	BK-10	45	188016.96	3077634.16	1476.90	BM-3
11	196870.77	3068929.37	1432.54	BK-11	46	188320.20	3077108.76	1474.73	BM-4
12	202128.29	3065216.25	1305.24	BK-12	47	193987.84	3068989.10	1444.42	BM-5
13	202421.54	3065227.74	1300.96	BK-13	48	194474.49	3068761.13	1456.00	BM-6
14	205884.23	3063305.82	1271.54	BK-14	49	201870.99	3065606.53	1308.01	BM-7
15	205839.31	3062816.20	1270.03	BK-15	50	210118.18	3061248.78	1270.12	BM-7A
16	210661.63	3061602.44	1275.02	BK-16	51	202024.68	3065416.60	1304.84	BM-8
17	210983.02	3062140.22	1292.13	BK-17	52	210425.39	3061485.61	1271.13	BM-8A
18	213449.71	3063620.71	1247.89	BK-18	53	217453.08	3061470.52	1193.19	BM-09
19	214086.22	3063344.61	1234.69	BK-19	54	218019.56	3061072.97	1182.37	BM-10
20	219044.66	3061405.99	1178.37	BK-20	55	225390.70	3065658.60	1183.80	BM-11
21	219477.51	3061550.24	1180.63	BK-21	56	225732.66	3065975.56	1186.97	BM-12
22	222445.68	3063380.33	1162.29	BK-22	57	235197.72	3069377.50	1266.17	BM-13
23	222704.22	3063536.18	1162.19	BK-23	58	235495.23	3069461.26	1267.78	BM-14
24	226034.09	3066166.04	1189.59	BK-24	59	243711.37	3071573.75	1350.26	BM-15
25	226495.67	3066470.58	1197.39	BK-25	60	244014.31	3071620.97	1346.11	BM-16
26	230337.92	3067276.84	1208.14	BK-26	61	252361.44	3074956.51	1292.76	BM-17
27	230748.54	3067418.83	1211.79	BK-27	62	252818.91	3075136.51	1300.68	BM-18
28	234667.28	3069232.63	1252.41	BK-28	63	261600.27	3075953.44	1249.07	BM-19
29	235192.19	3069411.70	1265.20	BK-29	64	261817.46	3075944.64	1254.76	BM-20
30	239748.26	3070658.00	1308.78	BK-30	65	267497.24	3071635.18	1230.69	BM-21
31	240173.01	3070732.39	1325.63	BK-31	66	267502.09	3071531.05	1229.01	BM-22
32	244127.35	3071682.51	1350.72	BK-32	67	223930.09	3066420.57	1188.05	F-C
33	244769.53	3071767.24	1336.00	BK-33	68	263125.31	3079825.61	1269.96	NHA
34	248954.22	3073626.92	1322.08	BK-34	69	188130.92	3088698.65	1385.90	TP-12
35	249237.99	3073754.75	1319.26	BK-35	70	188809.12	3089029.15	1395.26	TP-14



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INTEGRATED TOURISM  
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DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



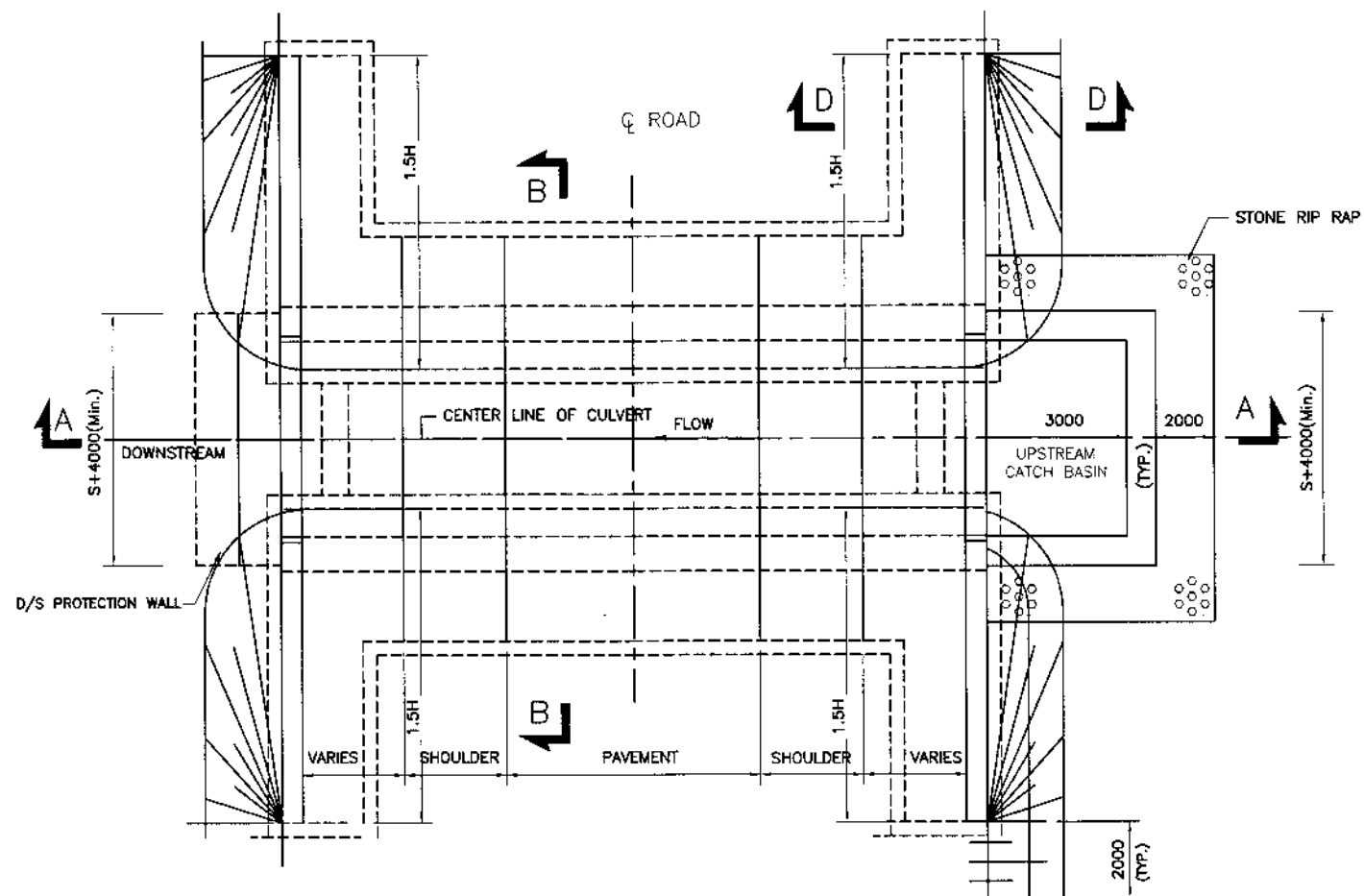
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REV.	DATE	DESCRIPTION	APPROVED	APPROVED

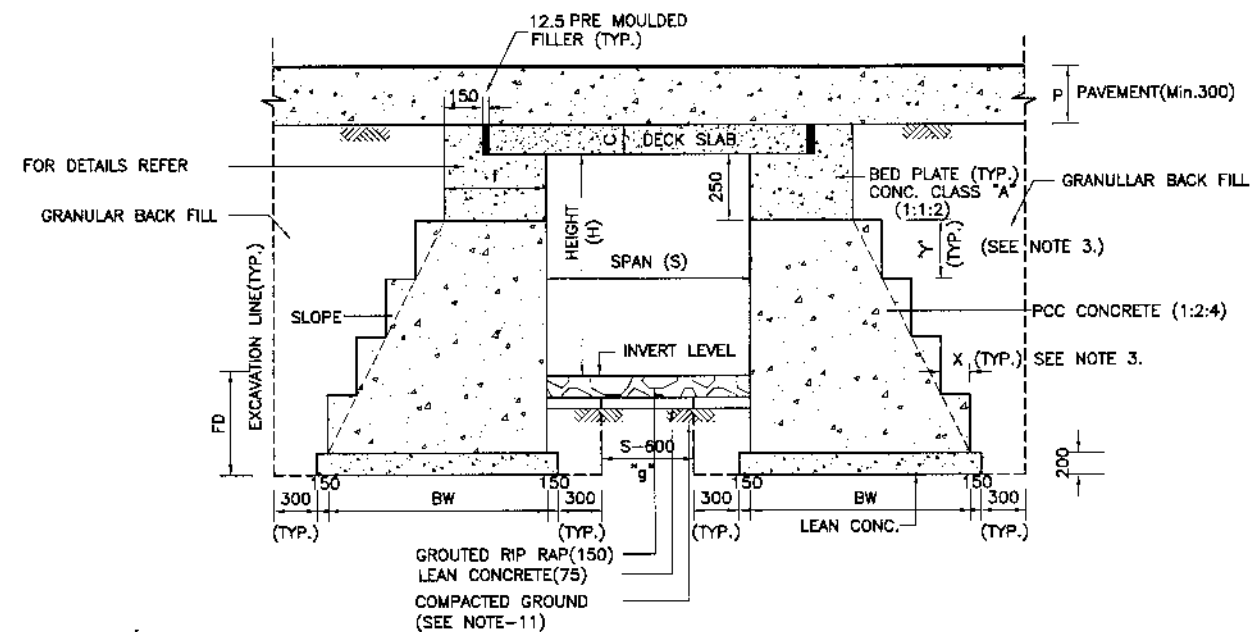
DRAWN	SUBMITTED	RECOMMENDED	CHD./VER.	APPROVED

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

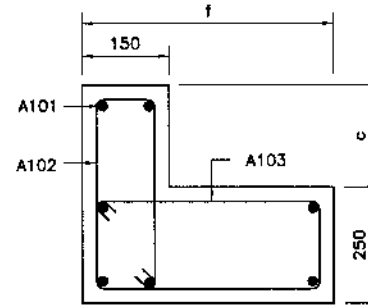
TITLE	
<b>TRAVERSE STATIONS</b>	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/ SS003D



PLAN OF CULVERT



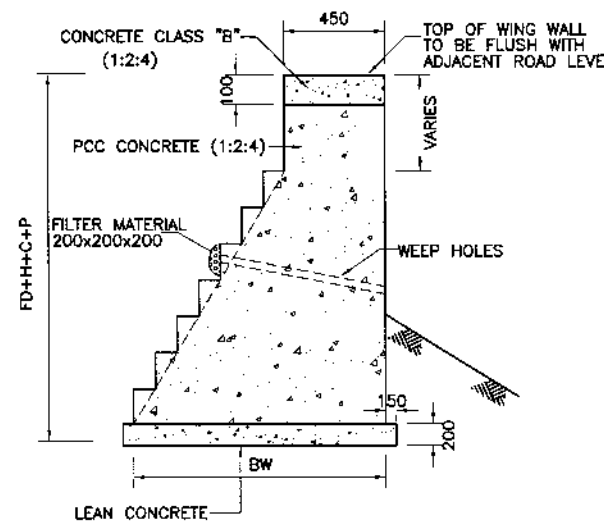
SECTION B-B



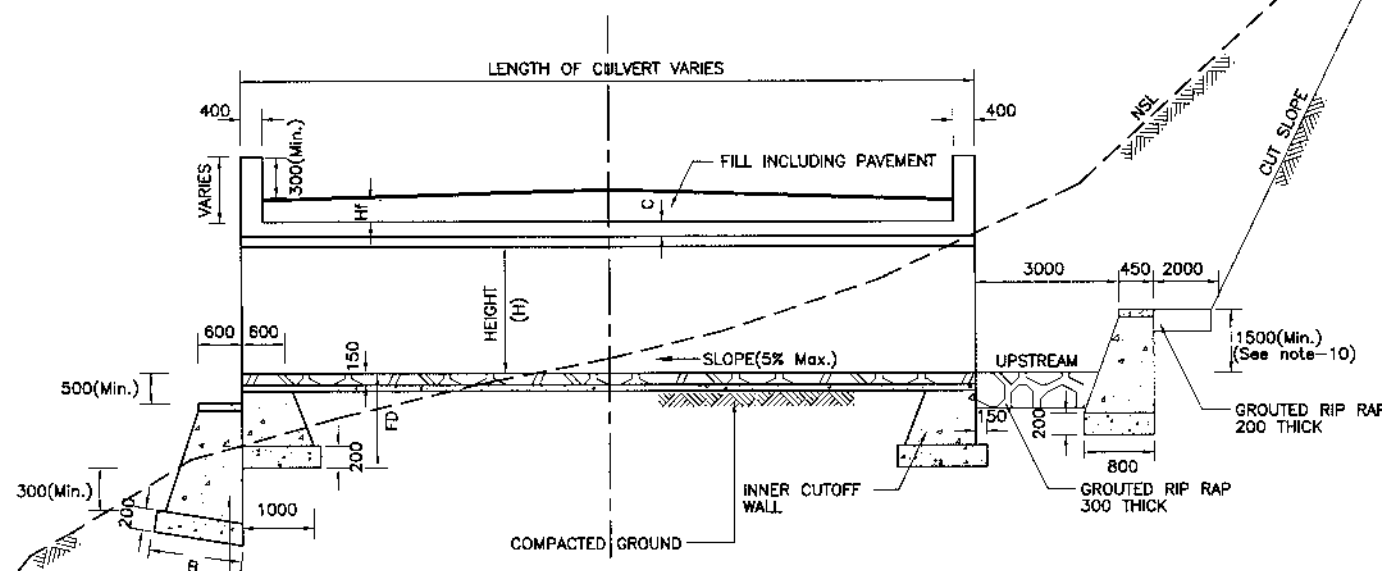
REINFORCEMENT  
DETAIL OF BED PLATE  
FOR ABUTMENT

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. READ THIS DWG. IN CONJUNCTION WITH DWG. No 38164/102/TD/009.
3. DIMENSION 'X' & 'Y' SHALL BE FIXED FOR EACH INDIVIDUAL CASE DEPENDING UPON SLOPE OF THE MASONARY WALL.
4. FOR DIMENSION BW,c,f,FD,H AND S REFER TABLES ON DWG. No. 38164/102/TD/008
5. EXPANSION JOINT BETWEEN DECK SLAB AND BED PLATE SHALL NOT BE PAID SEPERATELY.
6. FOR DETAILS OF REINFORCEMENT IN BED PLATE REFER DWG.No.38164/102/TD/007
7. FOR DECK SLAB AND EDGE BEAM REINFORCEMENT, SEE DETAILS ON DWG.
8. A MINIMUM OF 1500 mm HIGH RETAINING WALL TYPE RW-1 SHALL BE CONSTRUCTED AT D/S OF ALL THOSE CULVERTS WHOSE INTRUSION OF CULVERT ABUTMENT INTO NATURAL GROUND IS LESS THAN 1000 AT D/S OF CULVERT. THIS HEIGHT MAY BE INCREASED DEPENDING UPON D/S SLOPE WITH PRIOR APPROVAL OF THE ENGINEER.
9. IN CASE OF MILD SLOPES AT D/S, CUTOFF WALL MAY BE CONSTRUCTED AT AN HORIZONTAL OFFSET (MAX. UPTO 2000) AWAY FROM THE ABUTMENT. IN SUCH CASES, SPACE BETWEEN THE ABUTMENT AND D/S CUTOFF WALL SHALL BE LINED WITH 300 THICK GRouted RIPRAP.
10. HEIGHT OF WALL ALONG U/S CATCH BASIN MAY VARY DEPENDING UPON SITE CONDITION WITH PRIOR APPROVAL OF THE ENGINEER.
11. IN CASE DIMENSION 'g' IS LESS THAN 1000, THE EARTHEN WEDGE SHALL BE REMOVED AND REPLACED WITH APPROVED BACKFILL MATERIAL.
12. WEEP HOLES SHALL BE PROVIDED ALONG OUTLET WING WALL AT A LEVEL FLUSH WITH CULVERT INLET AT @2.0m C/C .



WING WALL  
SECTION D-D



SECTION A-A

FOR DIMENSION AND TYPE OF  
RETAINING WALLS REFER  
(See note-8 & 9)



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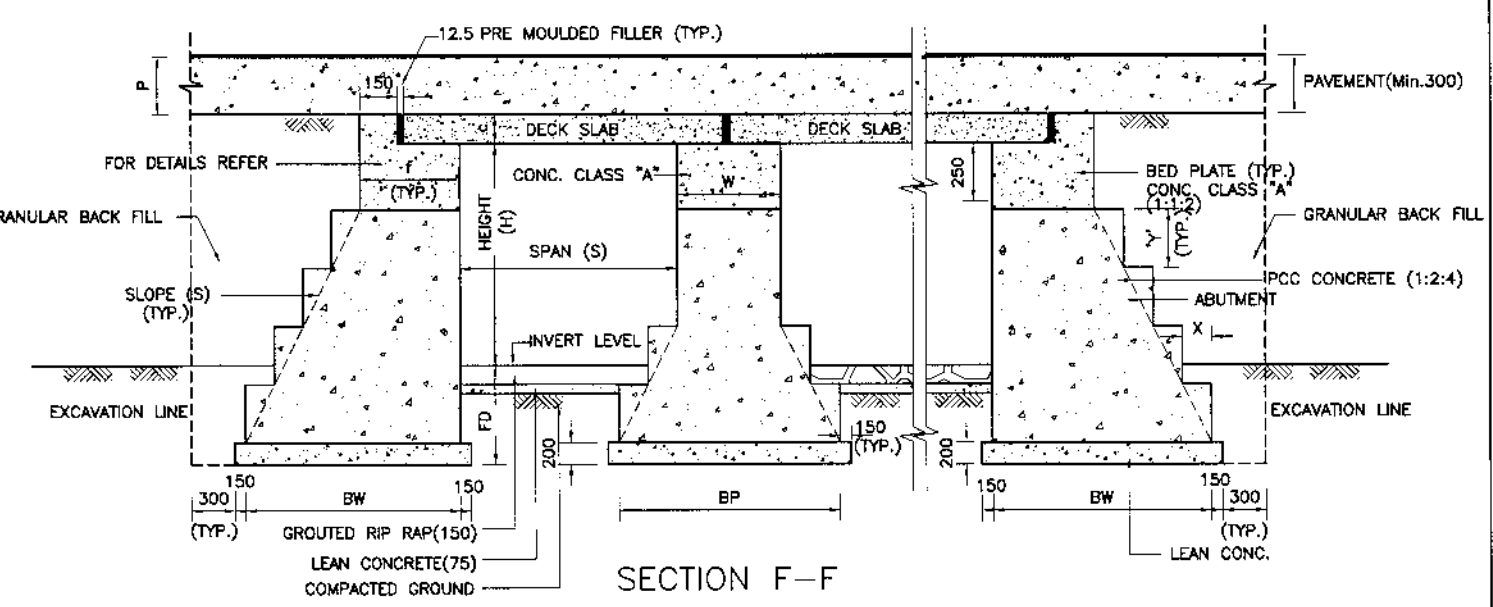
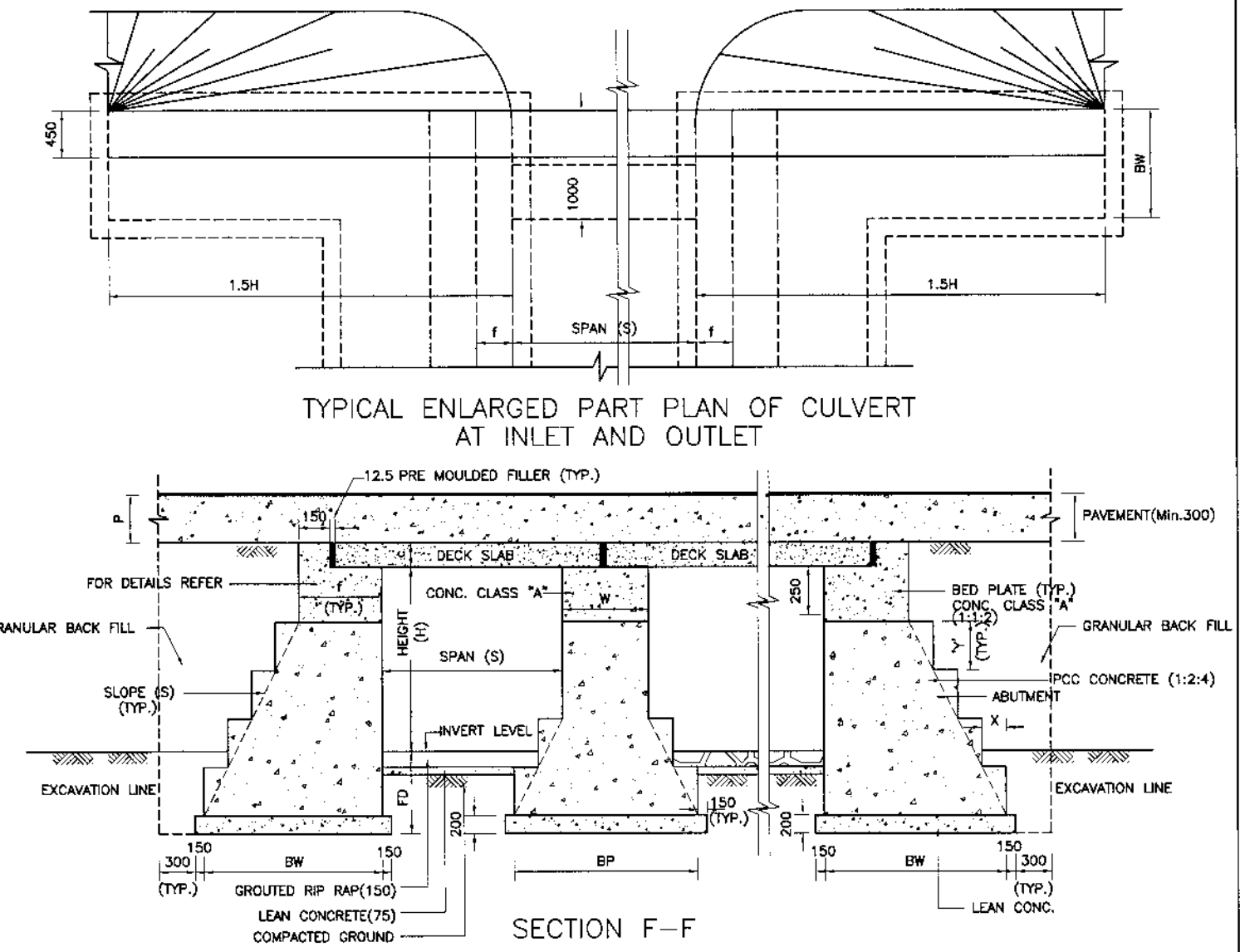
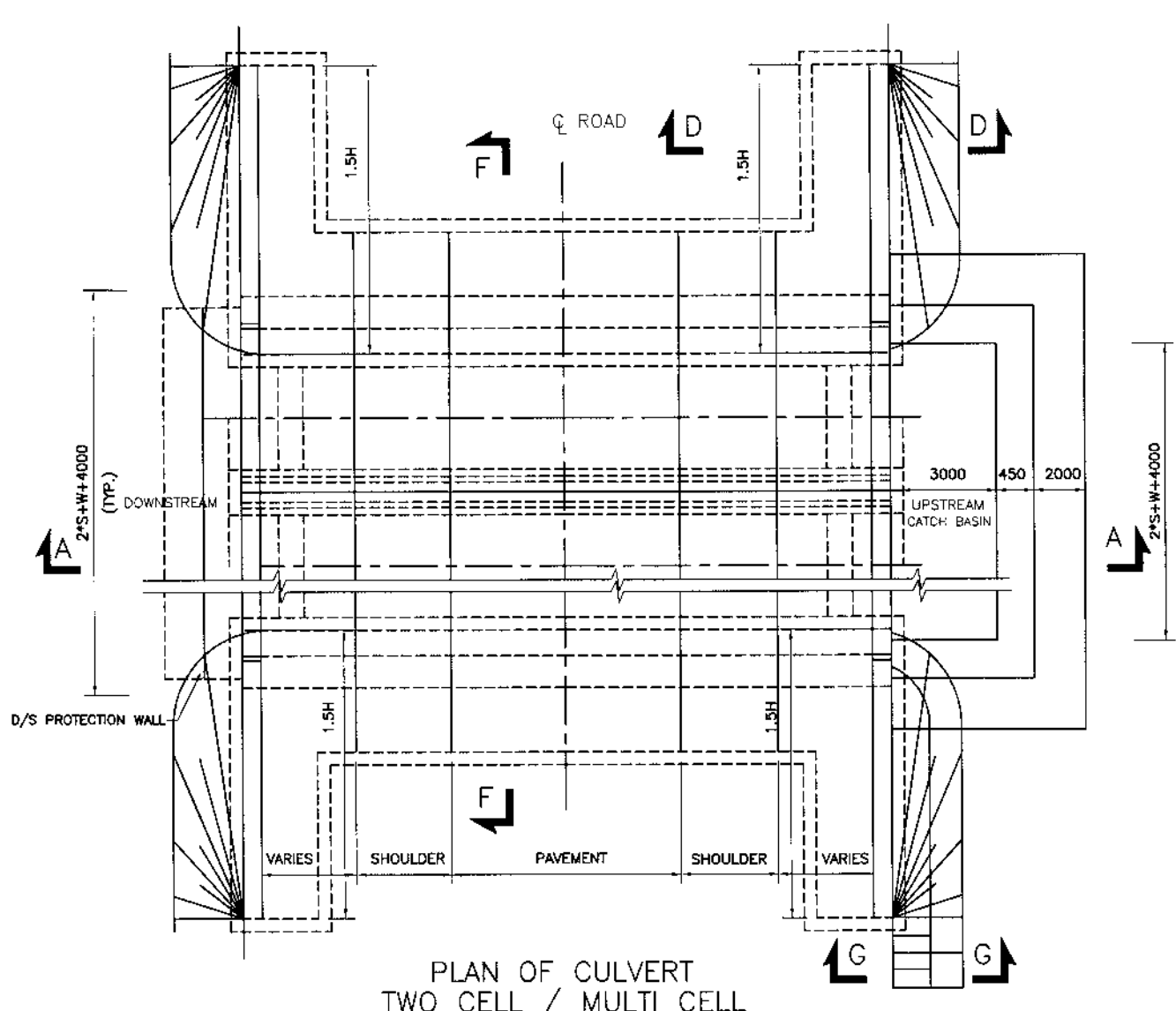
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	PROJECT:
SUBMITTED	CONSTRUCTION OF
RECOMMENDED	MANKIAL BADA SERA ROAD
CHD./VER.	PROJECT (22 Km)
APPROVED	

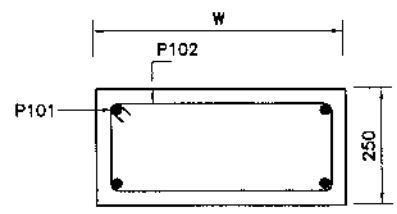
TITLE	TYPICAL CULVERT DETAILS (SINGLE CELL)	
DATE	JANUARY, 2021	DWG NO. 38164/102/TD/ SC007





BED PLATE REINFORCEMENT

ABUTMENT						PIER						
SPAN (m)	BAR MARK	DIA mm	NOS.	BAR MARK	DIA mm	SPACING	BAR MARK	DIA mm	NOS.	BAR MARK	DIA mm	SPACING
0.6	A101	13	7	A102, A103	10	200	-	-	-	-	-	-
1.0	✓	13	✓	✓	10	✓	-	-	-	-	-	-
1.5	✓	13	✓	✓	10	✓	-	-	-	-	-	-
2.0	✓	13	✓	✓	10	✓	-	-	-	-	-	-
2.5	✓	16	✓	✓	10	✓	-	-	-	-	-	-
3.0	✓	16	✓	✓	10	✓	-	-	-	-	-	-
3.5	✓	16	✓	✓	10	✓	P101	16	4	P102	10	200
4.0	✓	16	✓	✓	10	✓	P101	16	4	P102	10	200
4.5	✓	19	✓	✓	13	✓	✓	19	✓	✓	13	✓
5.0	✓	19	✓	✓	13	✓	✓	✓	✓	✓	✓	✓
5.5	✓	19	✓	✓	13	✓	✓	✓	✓	✓	✓	✓
6.0	✓	19	✓	✓	13	✓	✓	✓	✓	✓	✓	✓
6.5	✓	19	✓	✓	13	✓	✓	✓	✓	✓	✓	✓
7.0	✓	19	✓	✓	13	✓	✓	✓	✓	✓	✓	✓



REINFORCEMENT DETAIL OF BED PLATE FOR PIER

ABUTMENT BED PLATE DIMENSIONS

SPAN (m)	c mm	f mm
0.6	200	450
1.0	200	450
1.5	200	450
2.0	250	450
2.5	250	450
3.0	300	600
3.5	300	600
4.0	350	600
4.5	350	600
5.0	400	600
5.5	400	600
6.0	450	650
6.5	450	650
7.0	500	700

ABUTMENT AND PIER DIMENSIONS (WITHOUT FILL)

HEIGHT (m) H	FD mm	BW mm	W mm	BP mm
0.6	1120	1204	-	-
1.0	1200	1540	-	-
1.5	1300	1960	-	-
2.0	1400	2380	-	-
2.5	1500	2800	600	3950
3.0	1600	3220	600	3950
3.5	1700	3640	750	4150
4.0	1800	4060	750	4350
4.5	1900	4480	750	4550
5.0	2000	4900	900	4900
5.5	2100	5320	900	5100
6.0	2200	5740	1000	5400
6.5	2300	6160	1000	5600
7.0	2400	6580	1000	5800

- FD = FOUNDATION DEPTH
- BW = BASE WIDTH OF ABUTMENT AND BASE WIDTH OF CUT-OFF WALL
- W = WIDTH OF PIER
- BP = BASE WIDTH OF PIER
- f = WIDTH OF ABUTMENT BED PLATE
- S = SPAN

NOTE:-  
1. FOR NOTES REFER DWG. NO.38164/102/TD/SC008



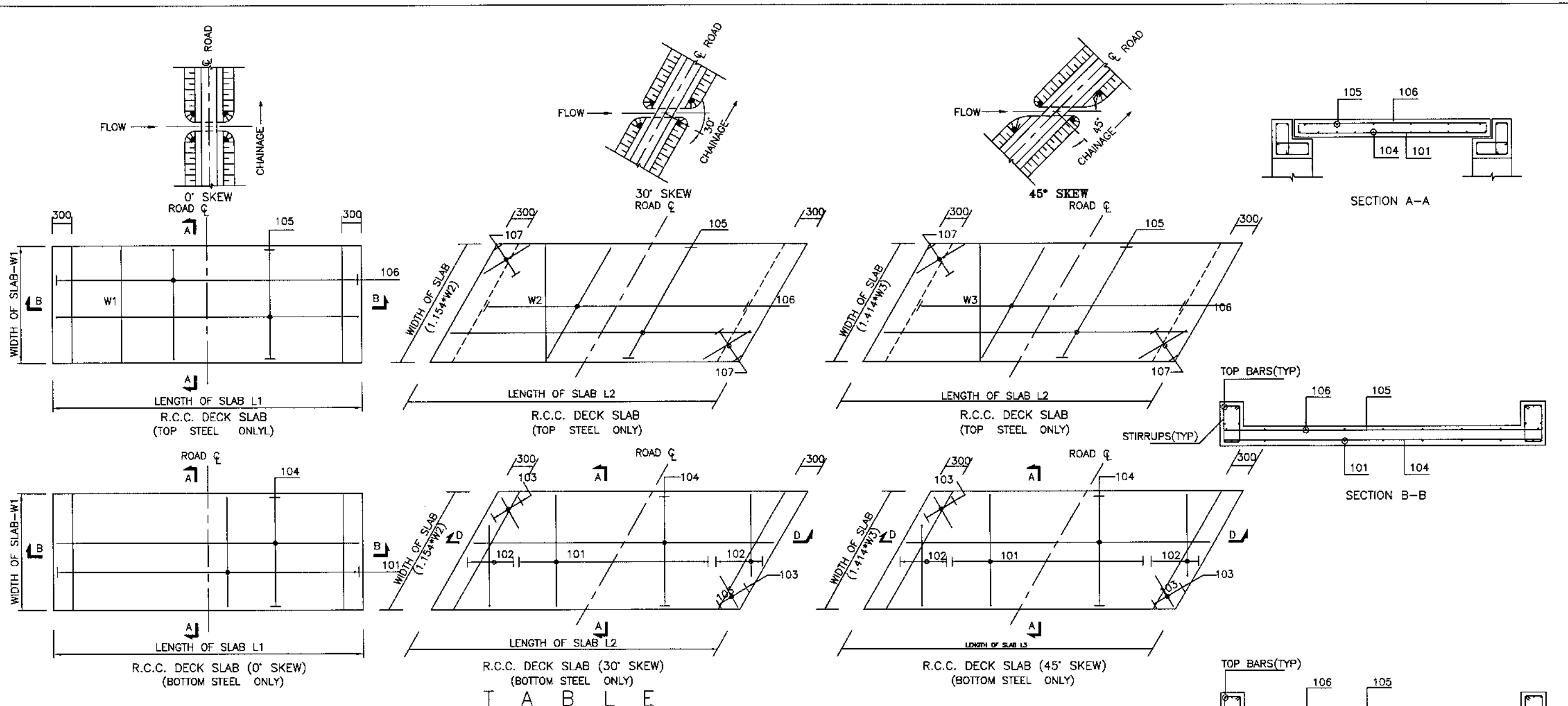
KHYBER PAKHTUNKHWA INTEGRATED TOURISM AND ENTERPRISE DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP

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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT: CONSTRUCTION OF MANKIAL BADA SERA ROAD PROJECT (22 Km)

TITLE: TYPICAL CULVERT DETAILS (MULTI CELL)  
DATE: JANUARY, 2021  
DWG NO: 38164/102/TD/ SC008



T A B L E

DECK SLAB REINFORCEMENT														EDGE BEAM REINFORCEMENT																								
SPAN	MARK	DIA. mm	SPAC. mm	MARK	DIA. mm	SPAC. mm	MARK	DIA. mm	SPAC. mm	MIN. NOS.	L m	MARK	DIA. mm	SPAC. mm	MARK	DIA. mm	SPAC. mm	MARK	DIA. mm	SPAC. mm	MIN. NOS.	NORMAL		SKEW 30°		SKEW 45°		TOP BARS										
																						LONG BARS	STIRRUPS	LONG BARS	STIRRUPS	LONG BARS	STIRRUPS	DIA. mm	NOS.									
0.60	101	13	160	102	13	160	103	13	200	3	0.75	104	13	200	105	13	300	106	13	300	107	13	300	2	13	4	10	300	13	6	10	300	13	8	10	300	13	4
1.00	101	16	160	102	16	160	103	13	200	4	0.75	104	13	200	105	13	300	106	13	300	107	13	300	2	16	4	10	300	16	6	10	300	16	8	10	300	14	4
1.50	101	16	110	102	16	110	103	13	170	6	1.00	104	13	170	105	13	300	106	13	300	107	13	300	2	16	4	10	250	16	6	10	250	16	8	13	250	16	4
2.00	101	19	150	102	19	150	103	13	170	7	1.25	104	13	170	105	13	300	106	13	300	107	13	300	3	19	4	13	300	19	6	13	250	19	8	13	250	19	4
2.50	101	19	120	102	19	120	103	16	250	7	1.50	104	16	250	105	13	300	106	13	300	107	13	300	3	19	4	13	300	19	6	13	250	19	8	13	200	19	4
3.00	101	19	110	102	19	110	103	16	250	9	1.75	104	16	250	105	13	300	106	13	300	107	13	300	3	19	4	13	300	19	6	13	250	19	8	13	200	19	4
3.50	101	25	150	102	25	150	103	16	220	10	1.75	104	16	220	105	13	300	106	16	300	107	16	300	3	25	4	13	300	25	6	13	300	25	8	13	300	19	4
4.00	101	25	150	102	25	150	103	16	220	12	2.00	104	16	220	105	13	300	106	16	300	107	16	300	4	25	4	13	300	25	6	13	300	25	8	13	300	19	4
4.50	101	25	130	102	25	130	103	16	200	13	2.00	104	16	200	105	16	300	106	16	300	107	16	300	4	25	4	13	300	25	6	13	300	25	8	13	300	19	4
5.00	101	25	130	102	25	130	103	16	200	14	2.25	104	16	200	105	16	300	106	16	300	107	16	300	4	25	4	13	300	25	6	13	300	25	8	13	300	19	4
5.50	101	25	110	102	25	110	103	16	200	15	2.25	104	16	200	105	16	300	106	16	300	107	16	300	4	25	4	13	300	25	6	13	300	25	8	13	300	19	4
6.00	101	32	180	102	32	180	103	16	200	16	2.50	104	16	200	105	16	300	106	16	300	107	16	300	4	32	4	13	250	32	6	13	250	32	8	13	250	19	4
6.50	101	32	160	102	32	160	103	16	200	18	2.75	104	16	200	105	16	300	106	16	300	107	16	300	4	32	4	13	250	32	6	13	250	32	8	13	250	19	4
7.00	101	32	140	102	32	140	103	16	200	18	2.75	104	16	200	105	16	300	106	16	300	107	16	300	4	32	4	13	250	32	6	13	250	32	8	13	250	19	4

SHAPE OF BARS

BARS	SHAPE
101	┌──────────┐
102	┌──────────┐
103	┌──────────┐
104	┌──────────┐
105	┌──────────┐
106	┌──────────┐
107	┌──────────┐

NOTE :-  
 1- ALL CONCRETE SHALL BE CLASS 'A' WHERE AS REINFORCEMENT BARS SHALL BE GRADE 40'.  
 2- CLEAR COVER TO ALL REINFORCEMENT SHALL BE 40 mm.



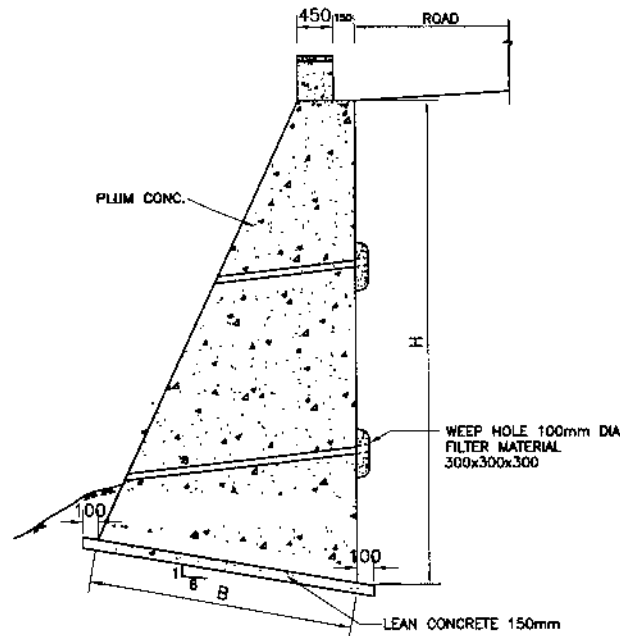
KHYBER PAKHTUNKHWA INTEGRATED TOURISM AND ENTERPRISE DEVELOPMENT PROJECT C&W DEPARTMENT, KP

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

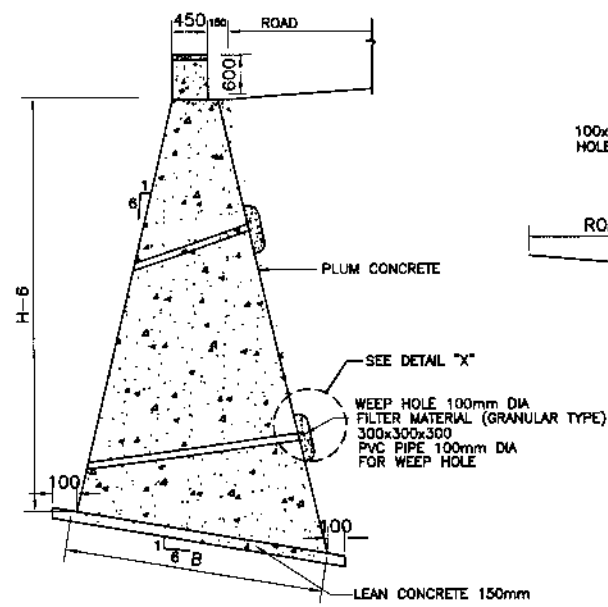
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT: CONSTRUCTION OF MANKIAL BADA SERA ROAD PROJECT (22 Km)

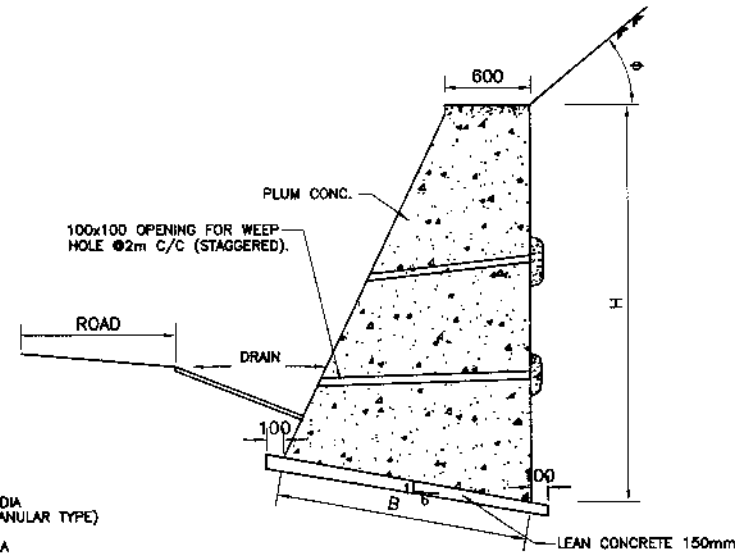
TITLE: TYPICAL SLAB CULVERT REINFORCEMENT DETAILS  
 DATE: JANUARY, 2021  
 DWG NO. 38164/102/TD/ SC009



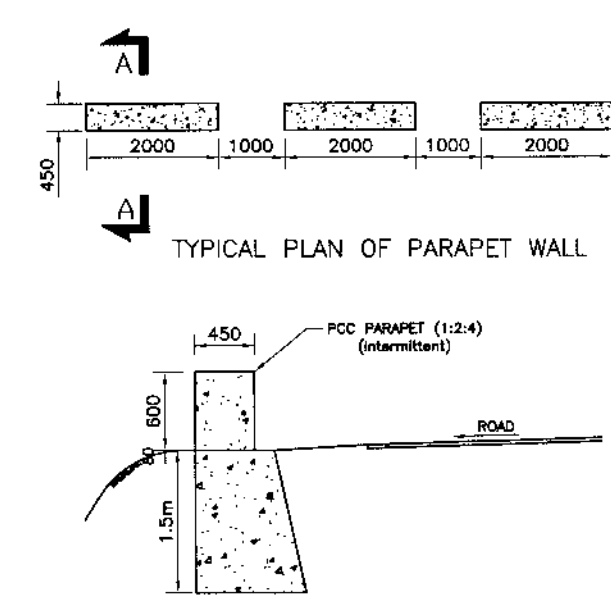
TYPICAL SECTION OF PLUM CONCRETE RETAINING WALL TYPE 1



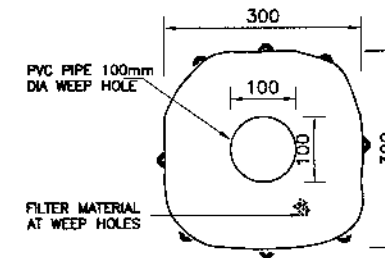
TYPICAL SECTION OF PLUM CONCRETE RETAINING WALL TYPE 2



TYPICAL SECTION OF PLUM CONCRETE RETAINING/BREAST WALL TYPE 3



APPLICABLE WHERE NO RETAINING WALL EXISTS SECTION A-A



DETAIL "X"

TABLE:-

TYPE-1		TYPE-2		TYPE-3 $\theta < 40^\circ$		TYPE-3 $\theta > 40^\circ$	
H (m)	B (m)	H (m)	B (m)	H (m)	B (m)	H (m)	B (m)
1.50	0.60	1.50	0.80	1.50	0.80	1.50	1.10
2.00	0.80	2.00	1.05	2.00	1.00	2.00	1.40
2.50	1.00	2.50	1.40	2.50	1.40	2.50	1.70
3.00	1.20	3.00	1.70	3.00	1.70	3.00	2.00
3.50	1.50	3.50	2.10	3.50	2.00	3.50	2.30
4.00	1.80	4.00	2.40	4.00	2.40	4.00	2.70
4.50	2.00	4.50	2.70	4.50	2.70	4.50	3.00
5.00	2.30	5.00	3.00	5.00	3.00	5.00	3.60
5.50	2.60	5.50	3.30	5.50	3.30	5.50	3.90
6.00	2.90	6.00	4.00	6.00	3.70	6.00	4.30
7.00	3.40	7.00	4.70	6.50	4.00	6.50	4.70
8.00	3.90	8.00	5.50	7.00	4.40	7.00	5.00
		9.00	6.00	7.50	4.70		
		10.00	6.60	8.00	5.00		
		11.00	7.20				
		12.00	7.80				

NOTES

- 1- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
- 2- WEEP HOLES PVC PIPE 100mm DIA SHALL BE STAGGERED AT AN INTERVAL OF 2m VERTICAL AND HORIZONTAL AND AS ADDITIONALLY DIRECTED BY THE ENGINEER.
- 3- 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.
- 4- TYPE OF RETAINING WALL SHALL BE DECIDED BY THE ENGINEER AS PER SITE CONDITIONS KEEPING FOLLOWING IN VIEW.
- 5- PLUM CONCRETE (70% CONCRETE & 30% ROCK FILL MATERIAL HAVING STONE SIZE RANGING BETWEEN 200~300) BE UTILIZED.
- 6- TYPE 1 RETAINING WALL SHALL BE PROVIDED WHERE THE ROAD IS WELL AWAY FROM THE NALLAH, RIVER/RVINE.
- 7- TYPE 2 RETAINING WALL SHALL BE PROVIDED WHERE THE ROAD IS IN CLOSE VICINITY OF THE RIVER/RVINE OR CLIFF FACE.
- 8- TYPE 3 RETAINING WALL SHALL BE PROVIDED TO RETAIN THE SCREED MATERIAL (BREAST WALL).
- 9- 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.
- 10- VERTICAL SLOPE TO THE OUTER FACE OF THE RETAINING WALL TYPE 2 CAN BE CHANGE UP TO 1 IN 10.
- 11- PAYMENT FOR WEEP HOLES AND FILTER MATERIAL IS INCLUDED IN THE COST OF OTHER ITEMS AND SHALL NOT BE PAID SEPARATELY.



KHYBER PAKHTUNKHWA INTEGRATED TOURISM AND ENTERPRISE DEVELOPMENT PROJECT C&W DEPARTMENT, KP



NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT: CONSTRUCTION OF MANKIL BADA SERA ROAD PROJECT (22 Km)

TITLE	TYPICAL PLUM CONC. RETAINING WALL DETAILS	
DATE	JANUARY, 2021	DWG NO. 38164/102/TD/RWP011













Superelevation Region	Station	Description	Left Outside Lane	Right Outside Lane	Superelevation Region	Station	Description	Left Outside Lane	Right Outside Lane	Superelevation Region	Station	Description	Left Outside Lane	Right Outside Lane	Superelevation Region	Station	Description	Left Outside Lane	Right Outside Lane
158	8+880.13m	Begin Full Super	4.80%	-4.80%	161	9+130.21m	Reverse Crown	2.00%	-2.00%	164	9+341.82m	Begin Normal Crown	-2.00%	-2.00%	168	9+617.15m	Level Crown	0.00%	-2.00%
158	8+894.04m	End Full Super	4.80%	-4.80%	161	9+139.49m	Level Crown	0.00%	-2.00%	165	9+414.11m	End Normal Crown	-2.00%	-2.00%	168	9+626.82m	Reverse Crown	2.00%	-2.00%
158	8+907.45m	Reverse Crown	2.00%	-2.00%	161	9+148.78m	Begin Normal Crown	-2.00%	-2.00%	165	9+423.49m	Level Crown	-2.00%	0.00%	168	9+646.15m	Begin Full Super	6.00%	-6.00%
158	8+917.04m	Level Crown	0.00%	-2.00%	162	9+121.06m	End Normal Crown	-2.00%	-2.00%	165	9+432.86m	Reverse Crown	-2.00%	2.00%	168	9+657.16m	End Full Super	6.00%	-6.00%
158	8+926.62m	Begin Normal Crown	-2.00%	-2.00%	162	9+130.71m	Level Crown	-2.00%	0.00%	165	9+438.49m	Begin Full Super	-3.20%	3.20%	168	9+676.50m	Reverse Crown	2.00%	-2.00%
159	8+883.96m	End Normal Crown	-2.00%	-2.00%	162	9+140.37m	Reverse Crown	-2.00%	2.00%	165	9+492.73m	End Full Super	-3.20%	3.20%	168	9+686.16m	Level Crown	0.00%	-2.00%
159	8+893.55m	Level Crown	-2.00%	0.00%	162	9+158.71m	Begin Full Super	-5.80%	5.80%	165	9+498.36m	Reverse Crown	-2.00%	2.00%	168	9+695.83m	Begin Normal Crown	-2.00%	-2.00%
159	8+903.13m	Reverse Crown	-2.00%	2.00%	162	9+175.06m	End Full Super	-5.80%	5.80%	165	9+507.73m	Level Crown	-2.00%	0.00%	169	9+693.58m	End Normal Crown	-2.00%	-2.00%
159	8+916.55m	Begin Full Super	-4.80%	4.80%	162	9+193.40m	Reverse Crown	-2.00%	2.00%	165	9+517.11m	Begin Normal Crown	-2.00%	-2.00%	169	9+703.08m	Level Crown	0.00%	-2.00%
159	8+940.06m	End Full Super	-4.80%	4.80%	162	9+203.06m	Level Crown	-2.00%	0.00%	166	9+496.32m	End Normal Crown	-2.00%	-2.00%	169	9+712.58m	Reverse Crown	2.00%	-2.00%
159	8+953.48m	Reverse Crown	-2.00%	2.00%	162	9+212.71m	Begin Normal Crown	-2.00%	-2.00%	166	9+505.90m	Level Crown	-2.00%	0.00%	169	9+722.08m	Begin Full Super	4.00%	-4.00%
159	8+963.06m	Level Crown	-2.00%	0.00%	163	9+182.78m	End Normal Crown	-2.00%	-2.00%	166	9+515.48m	Reverse Crown	-2.00%	2.00%	169	9+744.01m	End Full Super	4.00%	-4.00%
159	8+972.65m	Begin Normal Crown	-2.00%	-2.00%	163	9+192.44m	Level Crown	0.00%	-2.00%	166	9+528.90m	Begin Full Super	-4.80%	4.80%	169	9+753.51m	Reverse Crown	2.00%	-2.00%
160	8+952.73m	End Normal Crown	-2.00%	-2.00%	163	9+202.11m	Reverse Crown	2.00%	-2.00%	166	9+562.18m	End Full Super	-4.80%	4.80%	169	9+763.01m	Level Crown	0.00%	-2.00%
160	8+962.21m	Level Crown	0.00%	-2.00%	163	9+221.44m	Begin Full Super	6.00%	-6.00%	166	9+575.60m	Reverse Crown	-2.00%	2.00%	169	9+772.51m	Begin Normal Crown	-2.00%	-2.00%
160	8+971.68m	Reverse Crown	2.00%	-2.00%	163	9+233.25m	End Full Super	6.00%	-6.00%	166	9+585.18m	Level Crown	-2.00%	0.00%	169	9+757.04m	End Alignment	-2.00%	-2.00%
160	8+980.21m	Begin Full Super	3.80%	-3.80%	163	9+252.58m	Reverse Crown	2.00%	-2.00%	166	9+594.76m	Begin Normal Crown	-2.00%	-2.00%					
160	9+032.02m	End Full Super	3.80%	-3.80%	163	9+262.25m	Level Crown	0.00%	-2.00%	167	9+548.54m	End Normal Crown	-2.00%	-2.00%					
160	9+040.54m	Reverse Crown	2.00%	-2.00%	163	9+271.92m	Begin Normal Crown	-2.00%	-2.00%	167	9+558.14m	Level Crown	0.00%	-2.00%					
160	9+050.02m	Level Crown	0.00%	-2.00%	164	9+264.83m	End Normal Crown	-2.00%	-2.00%	167	9+567.74m	Reverse Crown	2.00%	-2.00%					
160	9+059.49m	Begin Normal Crown	-2.00%	-2.00%	164	9+274.83m	Level Crown	-2.00%	0.00%	167	9+582.14m	Begin Full Super	5.00%	-5.00%					
161	9+068.67m	End Normal Crown	-2.00%	-2.00%	164	9+284.83m	Reverse Crown	-2.00%	2.00%	167	9+600.29m	End Full Super	5.00%	-5.00%					
161	9+077.96m	Level Crown	0.00%	-2.00%	164	9+286.83m	Begin Full Super	-2.40%	2.40%	167	9+614.69m	Reverse Crown	2.00%	-2.00%					
161	9+087.25m	Reverse Crown	2.00%	-2.00%	164	9+319.82m	End Full Super	-2.40%	2.40%	167	9+624.29m	Level Crown	0.00%	-2.00%					
161	9+090.96m	Begin Full Super	2.80%	-2.80%	164	9+321.82m	Reverse Crown	-2.00%	2.00%	167	9+633.89m	Begin Normal Crown	-2.00%	-2.00%					
161	9+126.49m	End Full Super	2.80%	-2.80%	164	9+331.82m	Level Crown	-2.00%	0.00%	168	9+607.48m	End Normal Crown	-2.00%	-2.00%					



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	
SUBMITTED	
RECOMMENDED	
CHD./VER.	
PROJECT:	UPGRADATION OF MANKIAL BADA SERI ROAD SWAT

TITLE	SUPERELEVATION SCHEME		
DATE	JANUARY 2021	DWG NO.	4169/(iii)/TD PD006











Superelevation Region	Station	Description	Left Outside Lane	Right Outside Lane	Superelevation Region	Station	Description	Left Outside Lane	Right Outside Lane	Superelevation Region	Station	Description	Left Outside Lane	Right Outside Lane	Superelevation Region	Station	Description	Left Outside Lane	Right Outside Lane
124	10+744.62m	Level Crown	0.00%	-2.00%	126	11+199.94m	Level Crown	-2.00%	0.00%	127	11+601.42m	Level Crown	0.00%	-2.00%	129	11+796.76m	Level Crown	0.00%	-2.00%
124	10+754.62m	Begin Normal Crown	-2.00%	-2.00%	126	11+209.22m	Reverse Crown	-2.00%	2.00%	127	11+610.94m	Begin Normal Crown	-2.00%	-2.00%	129	11+806.17m	Reverse Crown	2.00%	-2.00%
124	10+769.62m	Begin Normal Shoulder	-2.00%	-2.00%	126	11+212.94m	Begin Full Super	-2.80%	2.80%	127	11+625.23m	Begin Normal Shoulder	-2.00%	-2.00%	129	11+812.76m	Begin Full Super	3.40%	-3.40%
125	11+088.36m	End Normal Shoulder	-2.00%	-2.00%	126	11+317.19m	End Full Super	-2.80%	2.80%	128	11+616.78m	End Normal Shoulder	-2.00%	-2.00%	129	11+948.05m	End Full Super	3.40%	-3.40%
125	11+103.36m	End Normal Crown	-2.00%	-2.00%	126	11+320.90m	Reverse Crown	-2.00%	2.00%	128	11+631.13m	End Normal Crown	-2.00%	-2.00%	129	11+954.64m	Reverse Crown	2.00%	-2.00%
125	11+113.36m	Level Crown	-2.00%	0.00%	126	11+330.19m	Level Crown	-2.00%	0.00%	128	11+640.69m	Level Crown	-2.00%	0.00%	129	11+964.05m	Level Crown	0.00%	-2.00%
125	11+123.36m	Begin Full Super	-2.00%	2.00%	126	11+339.47m	Begin Normal Crown	-2.00%	-2.00%	128	11+650.26m	Reverse Crown	-2.00%	2.00%	129	11+973.46m	Begin Normal Crown	-2.00%	-2.00%
125	11+123.36m	Reverse Crown	-2.00%	2.00%	126	11+353.40m	Begin Normal Shoulder	-2.00%	-2.00%	128	11+662.69m	Begin Full Super	-4.60%	4.60%	129	11+987.58m	Begin Normal Shoulder	-2.00%	-2.00%
125	11+173.52m	End Full Super	-2.00%	2.00%	127	11+445.25m	End Normal Shoulder	-2.00%	-2.00%	128	11+739.47m	End Full Super	-4.60%	4.60%	12+078.36m	End Alignment	-2.00%	-2.00%	
125	11+173.52m	Reverse Crown	-2.00%	2.00%	127	11+459.53m	End Normal Crown	-2.00%	-2.00%	128	11+751.90m	Reverse Crown	-2.00%	2.00%					
125	11+183.52m	Level Crown	-2.00%	0.00%	127	11+469.06m	Level Crown	0.00%	-2.00%	128	11+761.47m	Level Crown	-2.00%	0.00%					
125	11+193.52m	Begin Normal Crown	-2.00%	-2.00%	127	11+478.58m	Reverse Crown	2.00%	-2.00%	128	11+771.03m	Begin Normal Crown	-2.00%	-2.00%					
125	11+208.52m	Begin Normal Shoulder	-2.00%	-2.00%	127	11+489.06m	Begin Full Super	4.20%	-4.20%	128	11+785.38m	Begin Normal Shoulder	-2.00%	-2.00%					
126	11+176.72m	End Normal Shoulder	-2.00%	-2.00%	127	11+581.42m	End Full Super	4.20%	-4.20%	129	11+773.23m	End Normal Shoulder	-2.00%	-2.00%					
126	11+190.65m	End Normal Crown	-2.00%	-2.00%	127	11+591.90m	Reverse Crown	2.00%	-2.00%	129	11+787.35m	End Normal Crown	-2.00%	-2.00%					



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

PROJECT:  
UPGRADATION OF MANKIAL  
BADA SERI ROAD SWAT

TITLE	
SUPERELEVATION SCHEME	
DATE	DWG NO.
JANUARY 2021	4169/(iii)/TD SS006

1. GENERAL:

- 1.1 SPECIFIC TO PROJECT ONLY AND SHOULD BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS, STRUCTURAL ENGINEERING DRAWINGS, RELEVANT CONTRACT CONDITIONS AND ENGINEER'S INSTRUCTIONS.
- 1.2 ALL DRAWINGS SHALL BE CO-ORDINATED WITH OTHER SPECIALTY DRAWINGS / DETAILS. ANY DISCREPANCY, ERROR OR RECTIFICATION IF REQUIRED, SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER FOR NECESSARY APPROVAL.
- 1.3 ALL DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS IN METRES. UNLESS SPECIFIED OTHERWISE.
- 1.4 ALL ELEVATIONS SHOWN ON DRAWINGS ARE FINISHED SURFACE LEVELS UNLESS NOTED OTHERWISE.
- 1.5 ALL EXPOSED CONCRETE CORNERS, EDGES AND ANGLES SHALL BE CHAMFERED OR FILLETED 20mm x 20 mm UNLESS SPECIFIED OTHERWISE.
- 1.6 THE CONTRACTOR SHALL SUBMIT, COMPLETE METHODOLOGY FOR DIFFERENT WORK ITEMS LIKE EXCAVATION/BACKFILLING, DEWATERING/DRAINAGE, CONCRETING, JOINTS ETC FOR APPROVAL OF ENGINEER.
- 1.7 ALL EXPOSED SURFACES SHALL HAVE CLASS 1 SURFACE FORM FINISH UNLESS SPECIFIED OTHERWISE.

2. MATERIALS:

2.1 ALL THE MATERIALS AND WORKMANSHIP SHALL BE ACCORDING TO THE AASHTO SPECIFICATIONS AND ASTM STANDARDS EXCEPT WHERE MODIFIED BELOW, OR IN "PARTICULAR SPECIFICATIONS AND SPECIAL PROVISIONS" OF TENDER DOCUMENTS.

2.2 CONCRETE

CONCRETE CLASSIFICATION AND STRENGTHS SHALL BE AS PER TABLE GIVEN BELOW:

CONCRETE	CLASS	28 DAYS (150cm X 30 Cm) CYLINDER STRENGTH Kg/Sq.Cm
-----		

CULVERT (TOP SLAB), BOTTOM SLAB, WALLS  
BRIDGES (PIER, PILES, PILES CAP, TRANSOM, ABUTMENT CAP WING WALL----- 1 : 1 : 2 (4000 psi)

APPROACH SLAB, CUTOFF WALL ----- 1 : 2 : 4 (3000 psi)  
LEAN----- 1 : 3 : 6 (1,500 psi)

2.3 REINFORCEMENT

REINFORCING STEEL SHALL BE DEFORMED ROUND BARS OF INTERMEDIATE GRADE (GRADE 60) CONFORMING TO AASHTO M-31 (ASTM A-615) WITH MINIMUM YIELD STRENGTH OF 4,200 Kg/Sq.Cm (60,000 Psi).

3. CONCRETE COVER:

THE MINIMUM COVER TO REINFORCEMENT SHALL BE AS UNDER UNLESS SPECIFIED OTHERWISE.

- TOP SLAB	
TOP .....	40 mm
BOTTOM .....	25 mm
- APPROACH SLAB	
BOTTOM .....	50 mm
TOP .....	75 mm
- WALLS	
EARTH SIDE .....	50 mm
OTHER SIDE .....	40 mm

4. FOUNDATIONS:

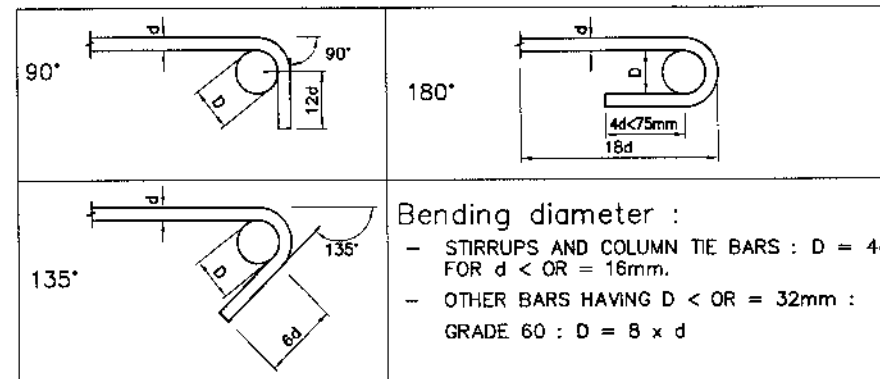
- 4.1 ALL THE EXCAVATION FOR OPEN FOUNDATIONS / BOX CULVERTS SHALL BE SUBJECTED TO INSPECTION BY THE ENGINEER PRIOR TO POURING OF CONCRETE.
- 4.2 BEHIND THE ABUTMENT AND WING WALLS, COMPACTED GRANULAR BACKFILL SHALL BE PLACED IN LAYERS OF THICKNESS APPROPRIATE TO THE COMPACTION EQUIPMENT ENSURING A MINIMUM IN SITU COMPACTION OF 95% MODIFIED PROCTOR.

5. JOINTS:

- 5.1 THE CONTRACTOR SHALL SUBMIT COMPLETE LAYOUT AND DETAILS OF ALL CONSTRUCTION JOINTS FOR APPROVAL OF THE ENGINEER.
- 5.2 CONCRETE IN DECK SLAB SHALL BE PLACED IN FULL WIDTH. NO CONSTRUCTION JOINT SHALL BE PERMITTED, DIAPHRAGMS AND DECK SLAB SHALL BE CAST MONOLITHICALLY, EXCEPT AS SHOWN ON DRAWING AT LOCATION FOR INSTALLATION OF EXPANSION JOINTS.
- 5.3 CONCRETE FOR THE BARRIERS AND SIDEWALKS SHALL BE PLACED NO SOONER THAN 20 DAYS AFTER PLACING OF CONCRETE.

6. BAR BENDING SCHEDULE

DETAILED BAR BENDING SCHEDULE SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED FOR ENGINEER'S APPROVAL LAP LENGTHS AND STANDARD HOOKS SHALL BE AS GIVEN BELOW:



7. TENDER DOCUMENTS, DRAWINGS & CONSTRUCTION DRAWINGS:

7.1 TENDER DRAWINGS ISSUED WITH TENDER DOCUMENTS ARE TO APPRAISE THE BIDDERS OF THE GENERAL NATURE & FAIR IDEA OF THE WORK TO PREPARE BOQ & TENDER DOCUMENTS. ENGINEER SHALL ISSUE THE DETAILED CONSTRUCTION DRAWINGS & SUCH FIELD SKETCHES FROM TIME TO TIME AS NECESSARY FOR THE EASE OF CONSTRUCTION.

7.2 THE CONTRACTOR SHALL CHECK ALL CONSTRUCTION DRAWINGS AND CONTRACT DOCUMENTS CAREFULLY AS SOON AS PRACTICABLE AFTER RECEIPT THERE OF, AND SHALL PROMPTLY ADVISE THE ENGINEER'S REP OF ANY ERRORS OR OMISSIONS THERE IN PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES.

8. SCAFFOLDING:

ALL SCAFFOLDING SHALL BE DESIGNED BY THE CONTRACTOR & THE TRAFFIC MOVEMENT UNDERNEATH SUCH SCAFFOLDING MAY REMAIN UNOBSTRUCTED.

9. LIST OF SYMBOLS AND ABBREVIATIONS:

B	=	BOTTOM
○ B.H	=	BORE HOLE
C. JT.	=	CONSTRUCTION JOINT
℄	=	CENTRELINE
C/C	=	CENTER TO CENTER
DIA.	=	DIAMETER
EXP. JT.	=	EXPANSION JOINT
E.F.	=	EACH FACE
ELE.	=	ELEVATION
F.F.	=	FAR FACE
G.I	=	GALVANIZED IRON
ID	=	INTERNAL DIAMETER
I.F	=	INNER FACE
m	=	METER
mm	=	MILLIMETER
N.F	=	NEAR FACE
N.S.L	=	NATURAL SURFACE LEVEL
P.G.L	=	PROFILE GRADE LEVEL
SYM.	=	SYMMETRICAL
T	=	TOP
TH.	=	THICK
TYP.	=	TYPICAL
θ	=	SKEW ANGLE IN DEGREES

TABLE NO.1

(i) SPLICE LENGTH IN TENSION

(a) TOP BARS

Bar Size fc' Kg/cm <sup>2</sup>	SPLICE LENGTH mm									
	#3	#4	#5	#6	#7	#8	#9	#10	#11	
210	710	945	1180	1410	2060	2355	2645	2940	3240	
280	610	820	1020	1225	1780	2040	2395	2550	2805	
350	425	565	705	845	1215	1390	1565	1765	1960	

(b) OTHER BARS

Bar Size fc' Kg/cm <sup>2</sup>	SPLICE LENGTH mm									
	#3	#4	#5	#6	#7	#8	#9	#10	#11	
210	550	730	905	1085	1590	1815	2035	2265	2490	
280	475	630	790	945	1375	1570	1785	1960	2160	
350	325	435	540	650	935	1070	1205	1360	1505	

(ii) SPLICE LENGTH IN COMPRESSION

SPLICE LENGTH (mm) IN COMPRESSION (Fy=4220Kg/cm<sup>2</sup>)

Bar Size	#3	#4	#5	#6	#7	#8	#9	#10	#11
Splice Length	300	380	480	575	670	765	860	955	1050

(iii) EMBEDMENT LENGTH IN TENSION

(a) TOP BARS

Bar Size fc' Kg/cm <sup>2</sup>	SPLICE LENGTH mm									
	#3	#4	#5	#6	#7	#8	#9	#10	#11	
210	545	730	910	1090	1590	1820	2050	2310	2565	
280	475	630	785	945	1360	1555	1755	1975	2190	
350	425	565	705	845	1215	1390	1565	1765	1960	

(b) OTHER BARS

Bar Size fc' Kg/cm <sup>2</sup>	SPLICE LENGTH mm									
	#3	#4	#5	#6	#7	#8	#9	#10	#11	
210	420	560	700	840	1225	1400	1580	1775	1970	
280	365	485	605	725	1045	1195	1350	1520	1685	
350	325	435	540	650	935	1070	1205	1360	1505	



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE		GENERAL NOTES FOR STRUCTURES	
DATE	JANUARY, 2021	DWG NO.	38164/102/TD/GNS0012



SHAPE CODE	METHOD OF MEASUREMENT OF BENDING DIMENSIONS	TOTAL LENGTH OF BAR (L) MEASURED ALONG CENTERLINE	SKETCH AND DIMENSIONS TO BE GIVEN IN SCHEDULE	SHAPE CODE	METHOD OF MEASUREMENT OF BENDING DIMENSIONS	TOTAL LENGTH OF BAR (L) MEASURED ALONG CENTERLINE	SKETCH AND DIMENSIONS TO BE GIVEN IN SCHEDULE	SHAPE CODE	METHOD OF MEASUREMENT OF BENDING DIMENSIONS	TOTAL LENGTH OF BAR (L) MEASURED ALONG CENTERLINE	SKETCH AND DIMENSIONS TO BE GIVEN IN SCHEDULE	SHAPE CODE	METHOD OF MEASUREMENT OF BENDING DIMENSIONS	TOTAL LENGTH OF BAR (L) MEASURED ALONG CENTERLINE	SKETCH AND DIMENSIONS TO BE GIVEN IN SCHEDULE
1.		A	Straight	17.		A+B+C Where D is at least 2 diameters		33.		A+0.57B+C		48.		2A+2B+C+2D-R-2d	
2.		A+H		18.		A+2B+C+E If angle with horizontal is 45° or less		34.		A+B+C+D If angle with horizontal is 45° or less		50.		A+B	
3.		A+2H		19.		A+B+C+D+E-R-2d		35.		A+B+C-1/2R-d		51.		A+2B+2C-2R-4d	
4.		A+B		20.		2A+1.14B		36.		A+B+C If angle with horizontal is 45° or less		52.		A+2B-R-2d	
5.		A+2B		21.		2A+B+2D		37.		A+B+C+D-1/2R-3d		53.		A+B+C	
6.		A+B-1/2R-d		22.		A+B+C+D+E-2R-4d		38.		A+B+C+D+E If angle with horizontal is 45° or less		54.		A+B+C+D-1/2R-3d	
7.		A+B+C-R-2d		23.		A+2B+C+10d		39.		A		55.		A+B+C+D+E	
8.		A+B+C+D+E-2R-4d		24.		A+ap		40.		A+B+C+D+E+F-1/2R-d		56.		A+B+C+D-1/2R-d	
9.		A+B+C-R-2d		25.		2A+2B+2D		41.		A+B+C		57.		A+B+C+D+E-2/2R-3d	
10.		A+B+C+D-1/2R-3d		26.		A+B+0.57C+D-1/2R-2.57d		42.		A+2B+2C-2R-4d		58.		A+B+C+D-R+32d	
11.		A+B+C+D+E-R-2d		27.		2A+B+2D		43.		A+2B+2C-2R-4d		59.		A+B+C-1/2R-d	
12.		A+B+C+D-1/2R-d		28.		2A+2B+C+2D		44.		A+2B+2C-R-2d		60.		2(A+B)+C-R-2d	
13.		A+B+C+D+E-1/2R-d		29.		A+B+C+10d		45.		A+2(B+C+D)-R-2d		61.		A+2B+C+D-R-2d	
14.		2(A+B+C)+D-R-2d		30.		w+2D		46.		2(A+B+C)+D-R-2d					
15.		$(C/B) \times 3.14 \times (A+d) + 5d$ Where, B is not greater than A/B. d = dia. of bar.	HELIX A = internal dia.(mm) B = pitch of helix(mm) C = overall height(mm)	31.		A+B+C+D-1/2R-d		47.		A+B+C+D+E-2R-4d					
16.		A+B		32.		2(A+B+C)+D-R-2d		48.		A+B+C-1/2R-d					

NOTES:  
1- "d" AND "D" ARE THE DIAMETER OF REINFORCEMENTS.  
2- "R" IS THE RADIUS OF BEND IN RADII.



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP

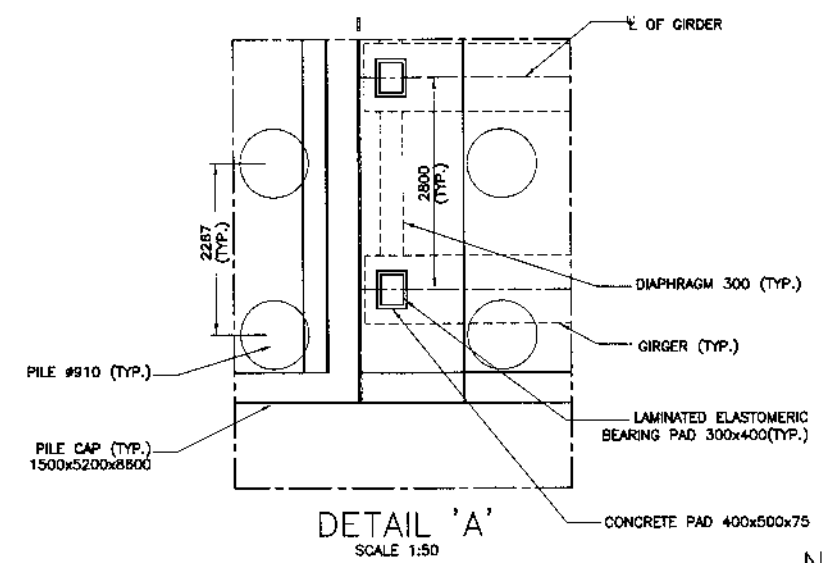
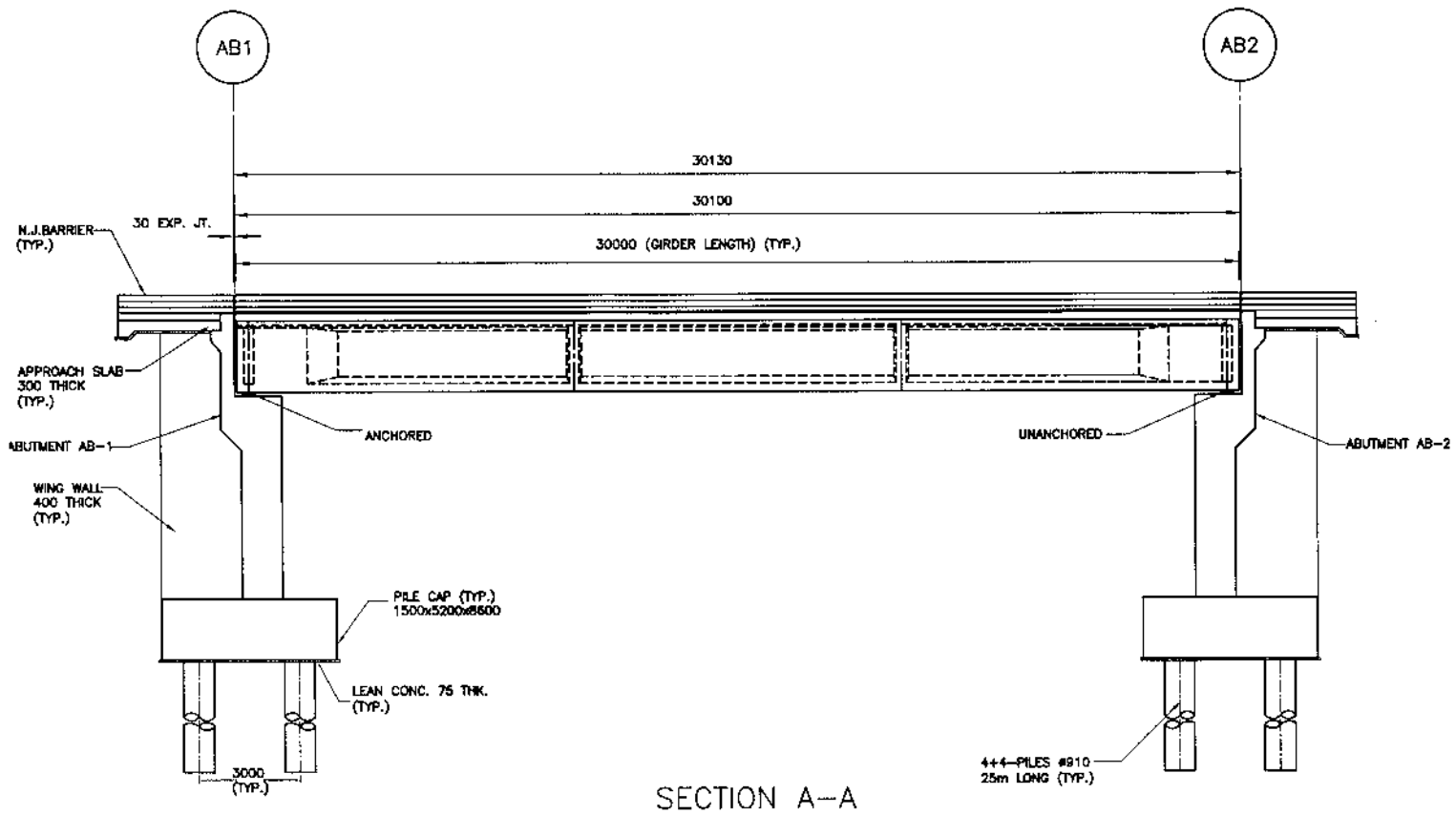
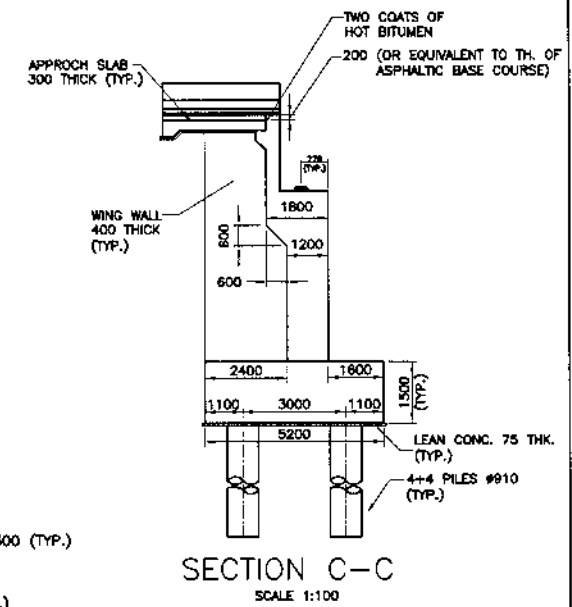
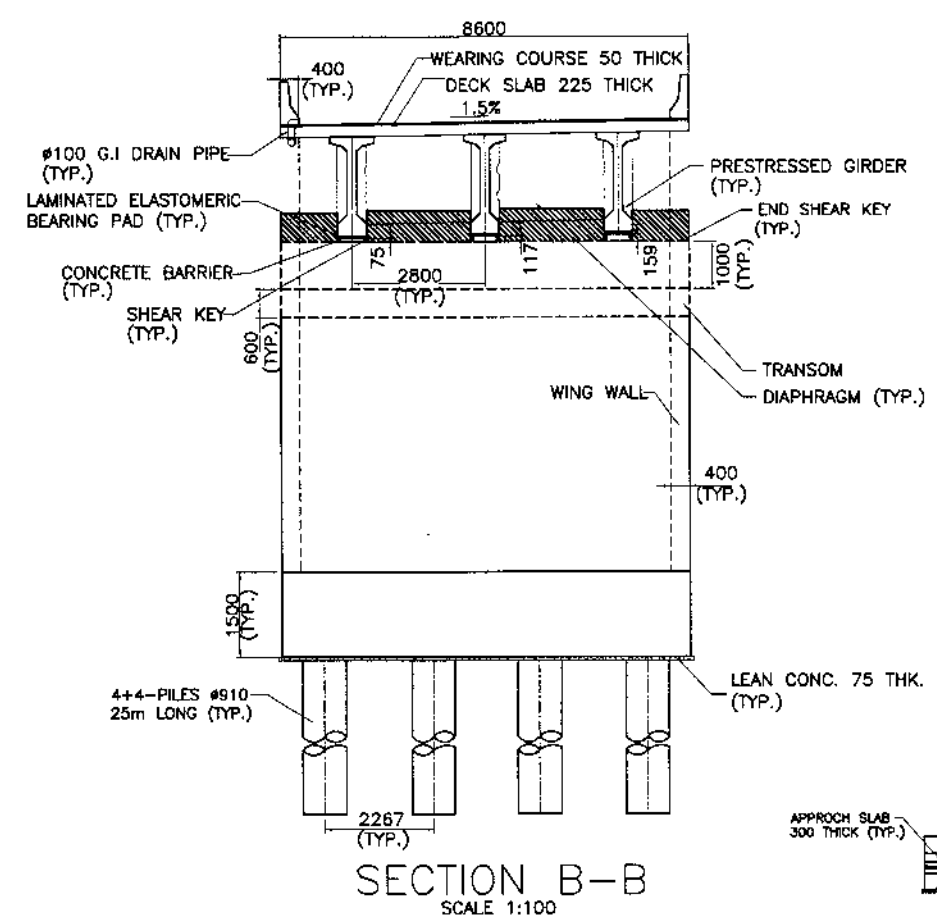
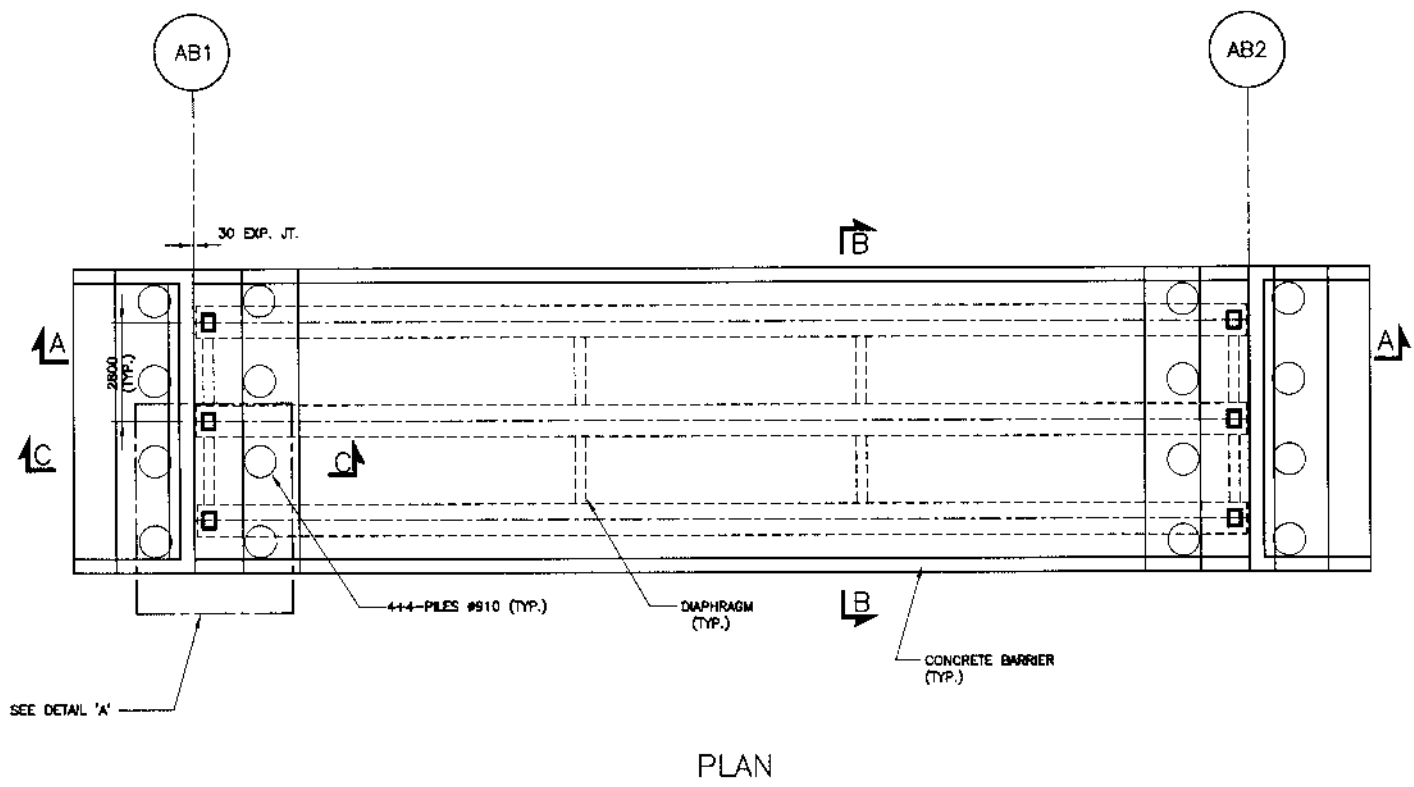


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE  
REBAR SHAPE CODE  
DATE  
JANUARY, 2021  
DWG NO.  
38164/102/TD/RS0013



- NOTES:
1. FOR GENERAL NOTES REFER DWG. NO. P1GNS0012
  2. WORK THIS DRAWING IN CONJUNCTION WITH OTHER RELEVANT DRAWINGS.
  3. LENGTH OF PILE SHOWN ARE AS PER GEOTECH REPORTS OF THE SAME BRIDGE AND SHALL BE FINALIZED AFTER PILE LOAD TEST RESULTS.

	<b>KHYBER PAKHTUNKHWA INTEGRATED TOURISM AND ENTERPRISE DEVELOPMENT PROJECT</b> C&W DEPARTMENT, KP	<b>NES PAK</b> NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.	DRAWN	PROJECT: <b>CONSTRUCTION OF MANKIAL BADA SERA ROAD PROJECT (22 Km)</b>	TITLE: <b>GENERAL ARRANGEMENT PLAN, ELEVATION AND SECTION BRIDGE-4+150, 4+820, 5+645 &amp; 7+335</b>
			SUBMITTED		
REV. DATE DESCRIPTION APPROVED APPROVED	RECOMMENDED	CHD./VER.	DWG NO. 4169 (iii)/102/TD/P1G001		

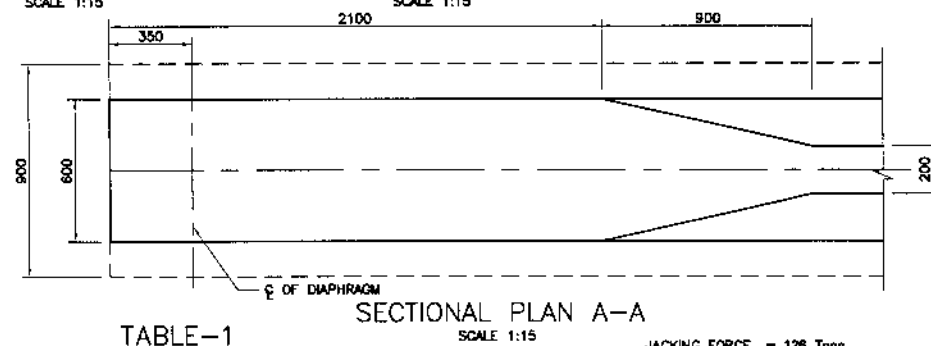
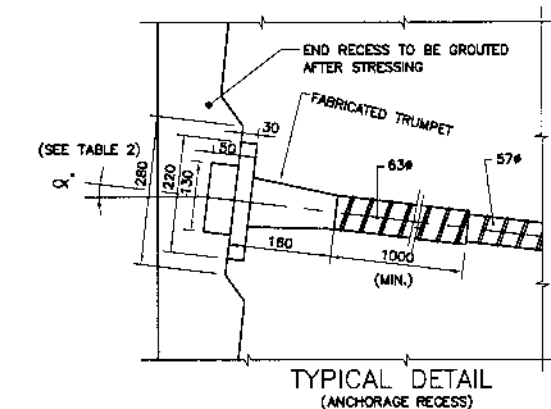
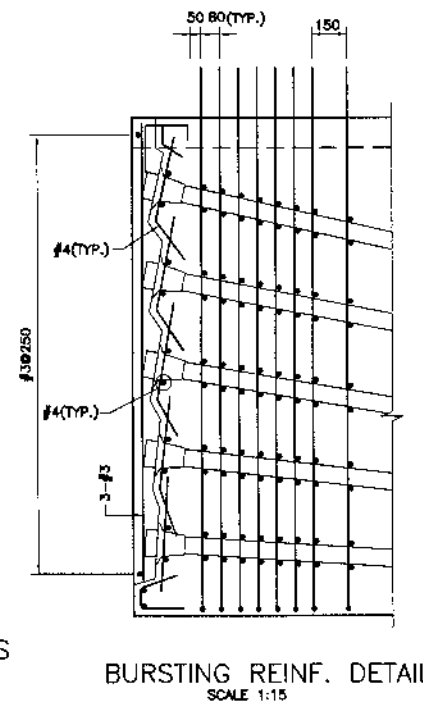
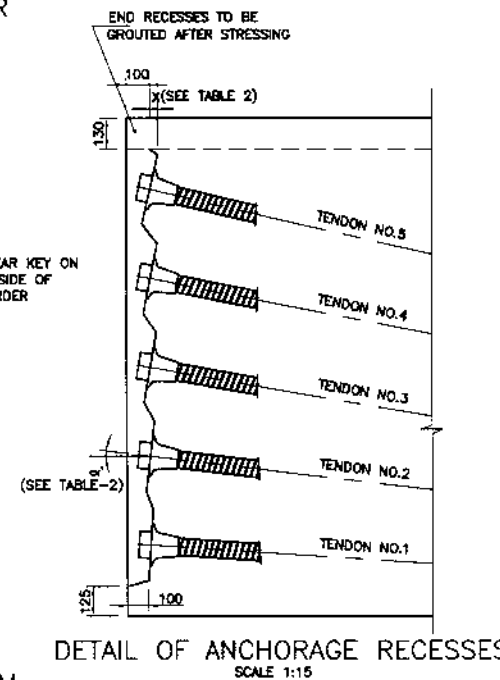
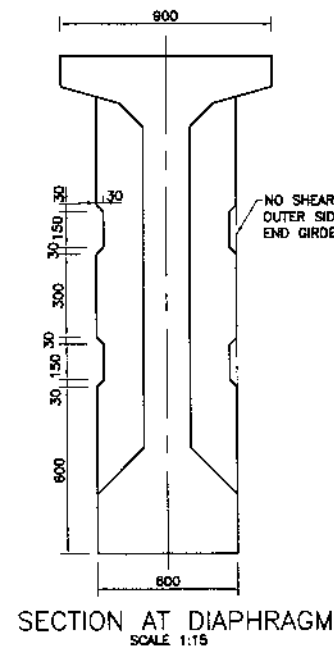
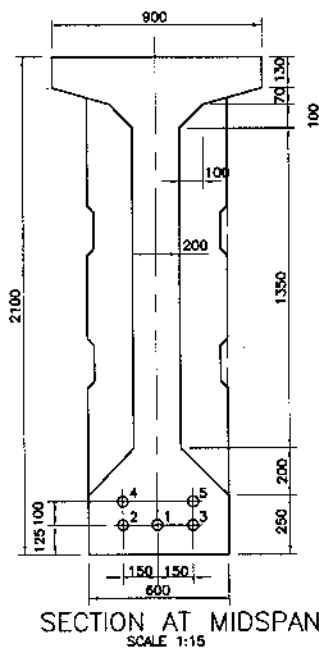
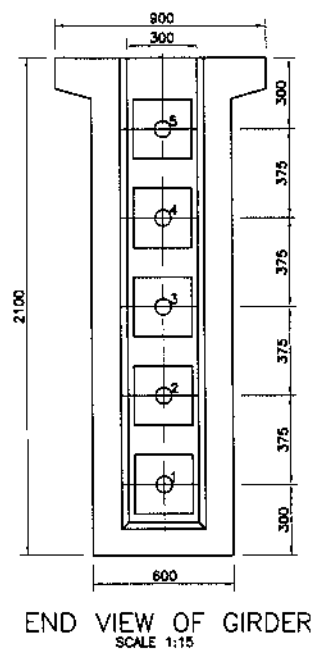
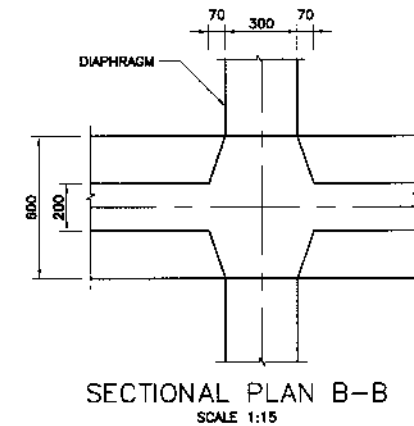
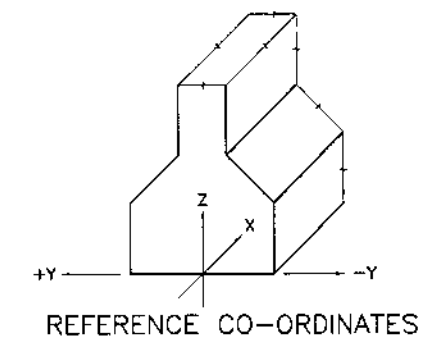
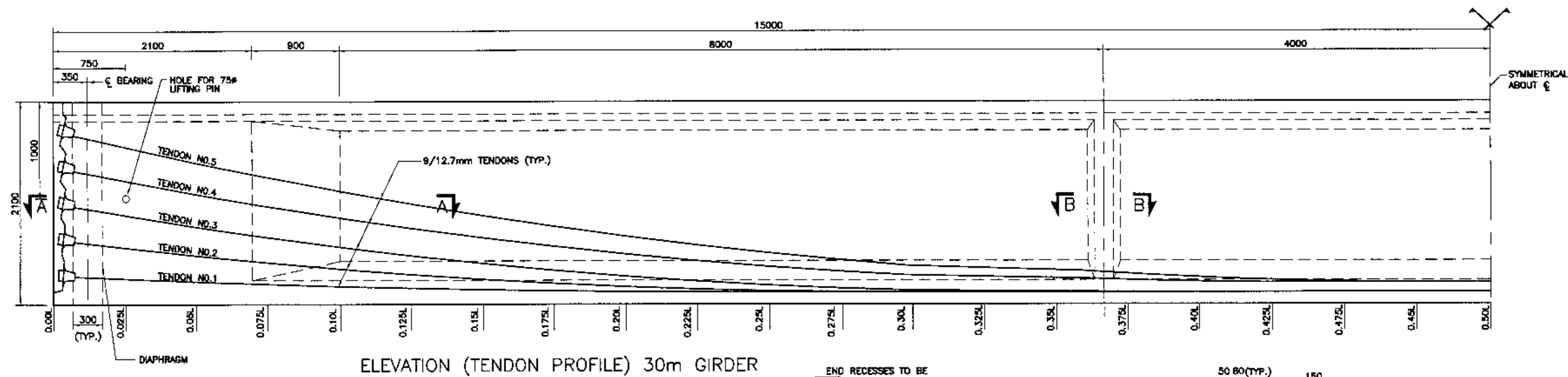
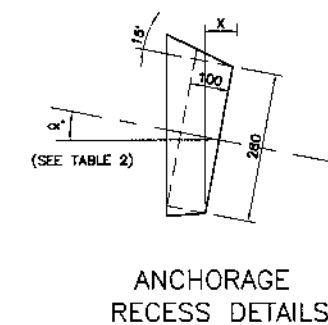


TABLE-1 DATA FOR GIRDER JACKING FORCE = 128 Tons.

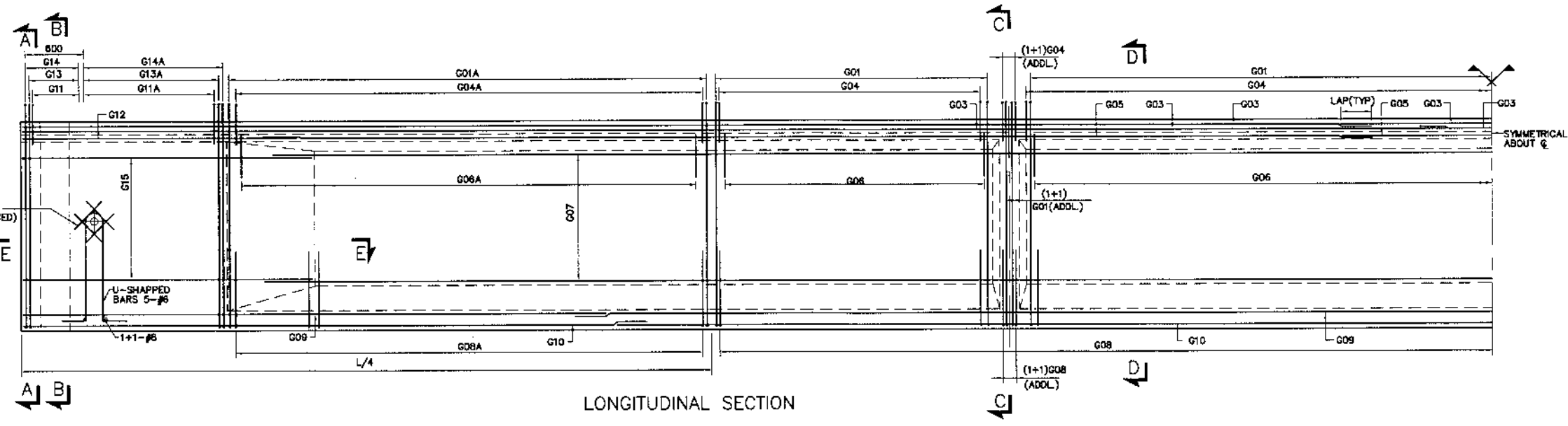
TENDON NO.	END 0.00L	0.025L	0.05L	0.075L	0.10L	0.125L	0.15L	0.175L	0.20L	0.225L	0.25L	0.275L	0.30L	0.325L	0.35L	0.375L	0.40L	0.425L	0.45L	0.475L	0.50L	EXTENSION AT EACH END (mm)	SEQUENCE OF STRESSING	
1	Z	300	283	267	251	237	223	211	199	188	178	169	160	153	146	141	136	132	129	127	125	125	102	A
	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	Z	875	821	571	522	477	434	395	357	323	291	263	238	213	192	175	159	147	137	131	128	125	101	B
	Y	0	0	0	0	0	0	0	0	0	-25	-45	-80	-80	-90	-100	-120	-130	-140	-145	-150			
3	Z	1050	960	874	793	717	645	578	518	458	405	356	312	273	238	208	183	162	148	134	127	125	100	C
	Y	0	0	0	0	0	0	0	0	0	25	45	60	80	90	100	120	130	140	145	150			
4	Z	1425	1308	1197	1092	993	900	813	732	657	588	525	468	417	372	333	300	273	252	237	228	225	99	D
	Y	0	0	0	0	0	0	0	0	0	0	0	0	-15	-25	-50	-75	-110	-130	-145	-150			
5	Z	1800	1648	1501	1383	1233	1111	997	890	792	701	618	544	477	418	367	323	288	260	241	229	225	98	E
	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	15	25	50	75	110	130	145	150		

TABLE-2 ANCHORAGE RECESS DATA

TENDON NO.	ANGLE α°	X (mm)
1	1° 20' 11"	7
2	4° 12' 00"	21
3	7° 03' 49"	35
4	9° 09' 49"	45
5	12° 01' 38"	60

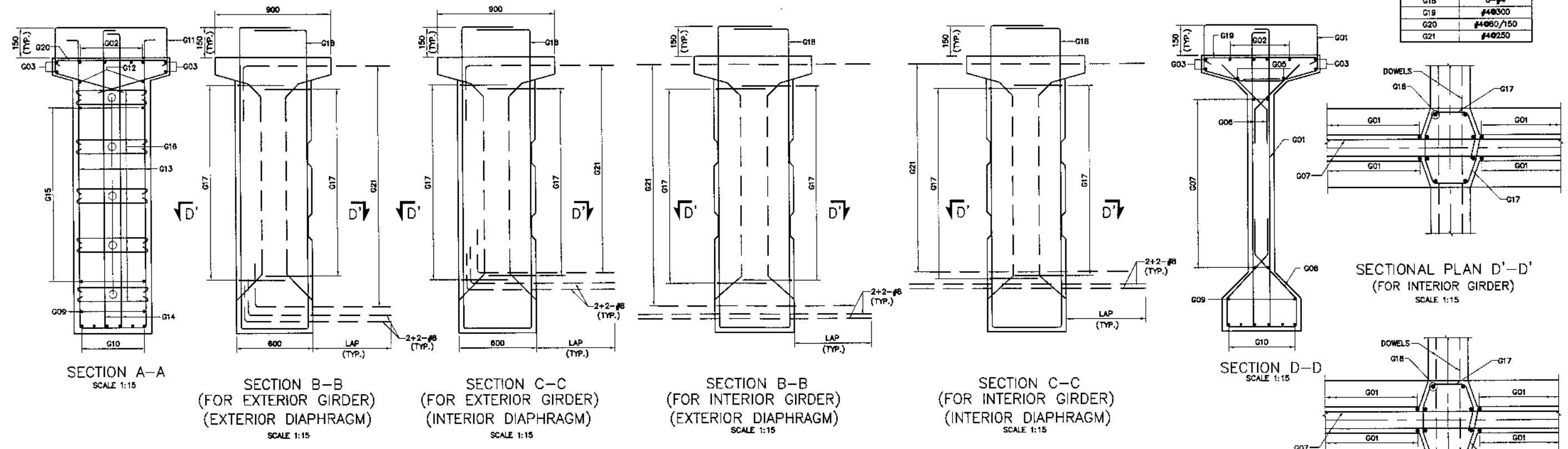


- NOTES:
- FOR GENERAL NOTES REFER DRAWING No. GNS0012.
  - THE FOLLOWING VALUES HAVE BEEN ASSUMED IN THE CALCULATION OF THEORETICAL ELONGATION/EXTENSION (A<sub>0</sub>) OF TENDONS:  
 MODULUS OF ELASTICITY, E=1,968,700 Kg/Sq.Cm (28,000 ksi)  
 COEFFICIENT OF CURVATURE FRICTION=0.25 PER RADIAN  
 WOBBLE 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<sub>0</sub>.  
 -IF AT 0.75 GUTS ACTUAL ELONGATION IS STILL BELOW 0.95 A<sub>0</sub> STRESSING SHALL BE PROCEEDED UP TO 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	8-#8
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	8-#4
G19	#4@300
G20	#4@80/150
G21	#4@250



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

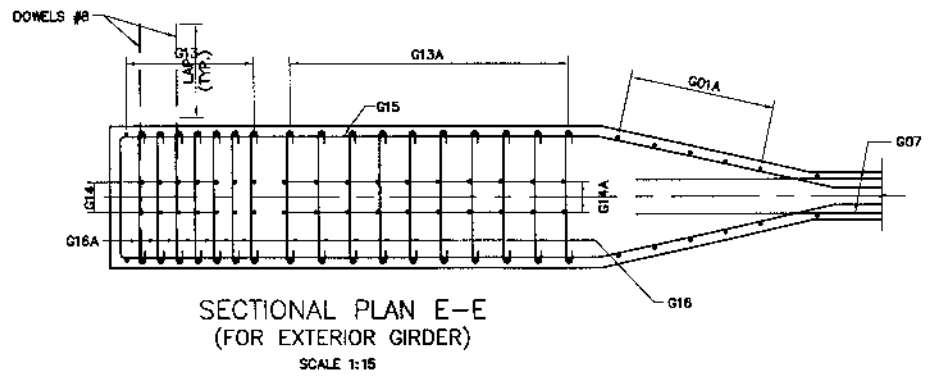
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(FOR INTERIOR GIRDER)  
(EXTERIOR DIAPHRAGM)  
SCALE 1:15

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

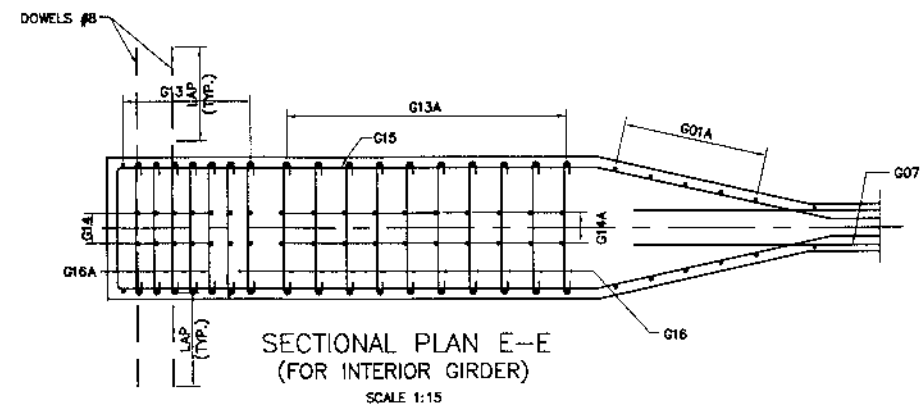
SECTION D-D  
SCALE 1:15

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

- NOTES:**
- FOR GENERAL NOTES REFER DWG. NO. GNS0012.
  - ALL PRESTRESSED CONCRETE SHALL BE CLASS D1.
  - 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).



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP

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

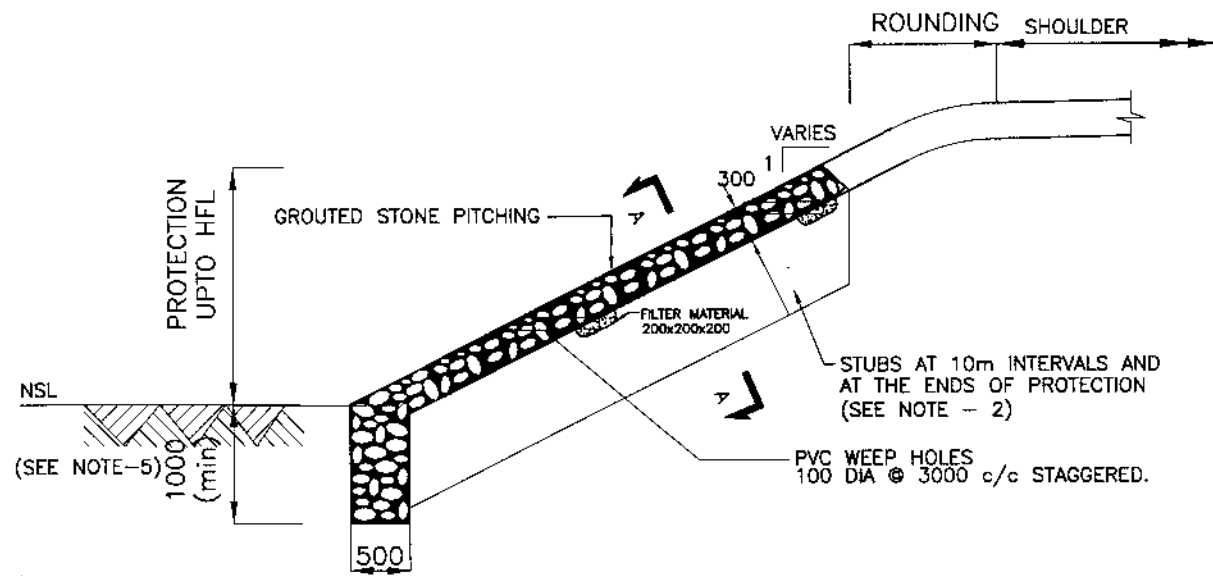
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

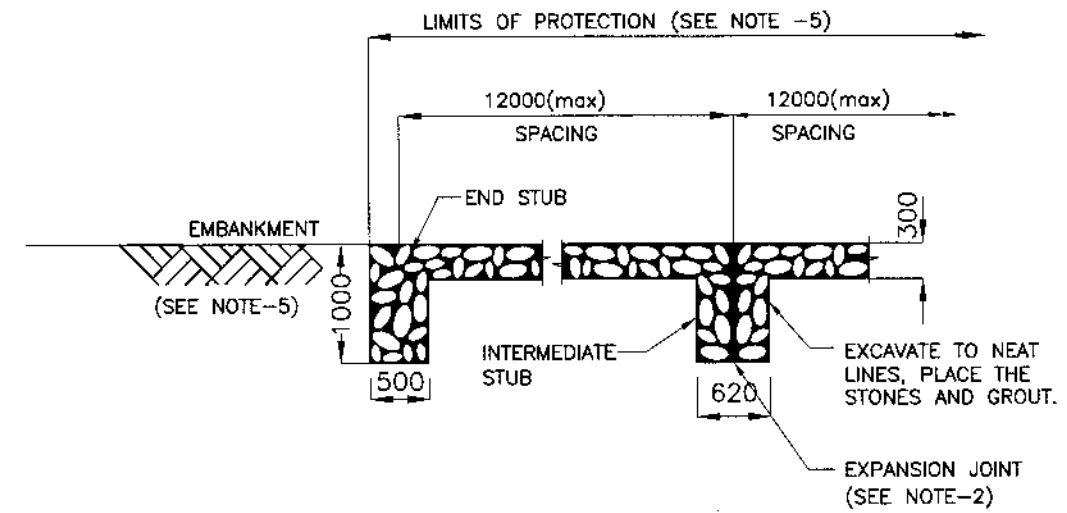
TITLE: 30m PRESTRESSED GIRDER  
REINFORCEMENT  
BRIDGE AT 4+150, 4+820, 5+645 & 7+335

DATE: JANUARY, 2021

DWG NO.  
38164/102/TD/P1G003



EMBANKMENT PROTECTION



SECTION A - A

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. EXPANSION JOINT IN MORTARED RIPRAP SHALL BE PROVIDED AT AN MAXIMUM INTERVAL OF 10m. TYPE OF MATERIAL TO BE USED SHALL BE AS APPROVED BY THE ENGINEER. NO SEPRATE PAYMENT SHALL BE MADE FOR PROVISION AND FIXATION OF EXPANSION JOINTS AND WEEP HOLES.
3. SUPPLY AND ERECTION OF STEEL ANGLE STAKES SHALL BE PROVIDED AS SHOWN ON DRAWINGS AT NO EXTRA COST TO THE EMPLOYER.
4. IN CASE ROCK IS ENCOUNTERED DEPTH OF PROTECTION WORKS SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER (MINIMUM DEPTH IN ROCK SHALL BE KEPT 300MM)
5. LOCATION & HEIGHT OF PROTECTION WORKS SHALL BE DECIDED BY THE ENGINEER ON COMPLETION OF EMBANKMENT WORKS.



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP

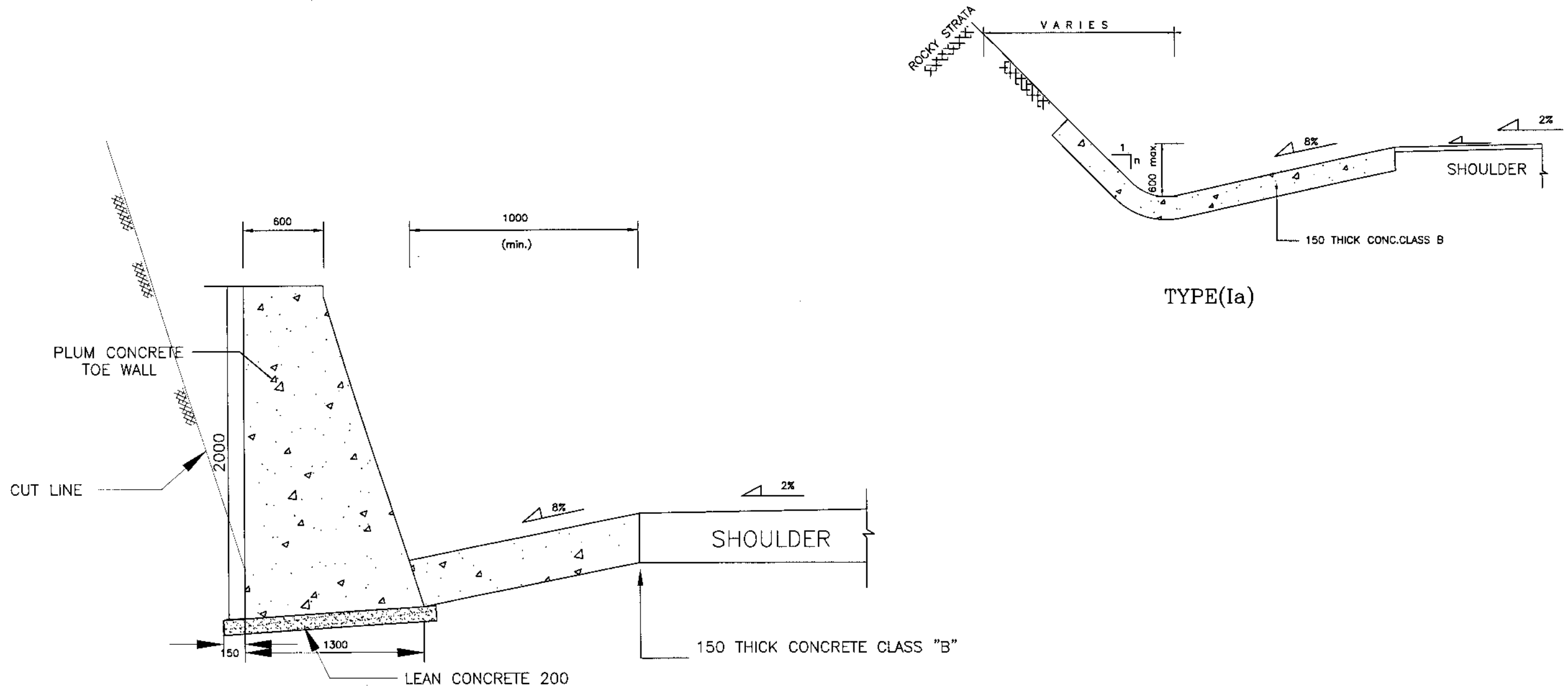


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

TITLE	
MISCELLANEOUS PROTECTION DETAILS	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/0014



TYPE(Ib)  
(In Common Rock)

NOTES: —

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. INVERT LEVEL OF DRAIN SHALL GENERALLY FOLLOW PROFILE GRADE AND SHALL BE CONNECTED TO ADJOINING CULVERTS/CHUTES.
3. ACTUAL TYPE ,LOCATION, LENGTH, SLOPE AND INVERT LEVEL OF DRAIN SHALL BE AS APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION AT SITE.
4. TOE WALL ALONG DRAIN TYPE(1b) SHALL BE PROVIDED WITH PLUM CONCRETE. WHERE HEIGHT EXCEEDING 2M, THE BASE SHOULD BE FOLLOWED AS PER DWG 4169/102/TD/ RW011.



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:

CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE

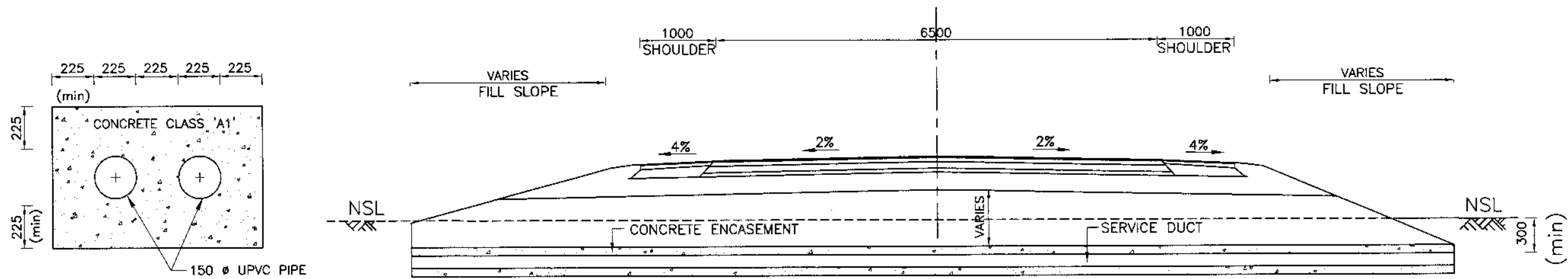
TYPICAL DRAIN DETAIL

DATE

JANUARY, 2021

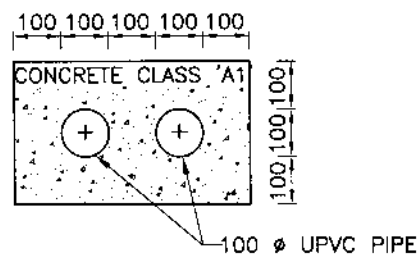
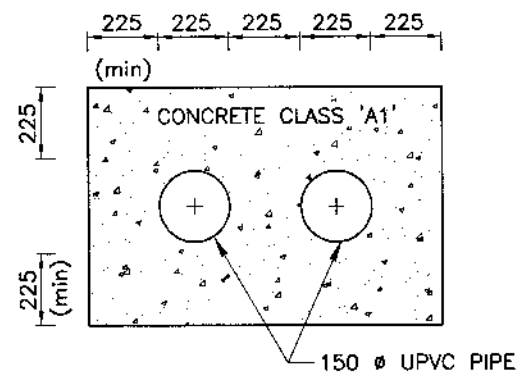
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38164/102/TD/D0015

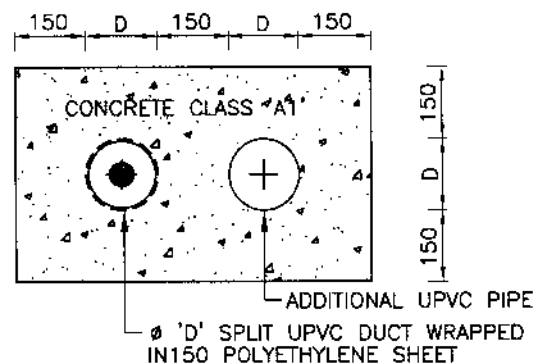


TYPICAL CROSS SECTION OF SERVICE DUCTS ACROSS

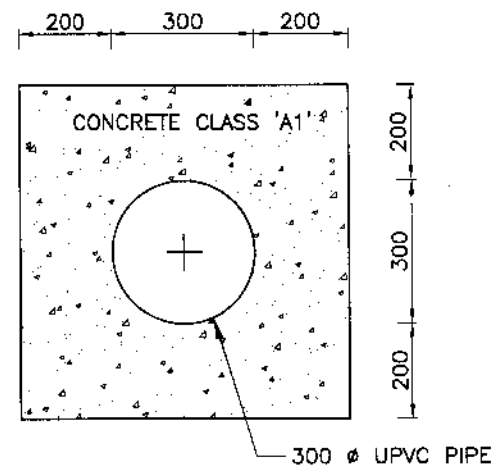
(FUTURE DUCTS FOR ELECTRICAL CABLES)



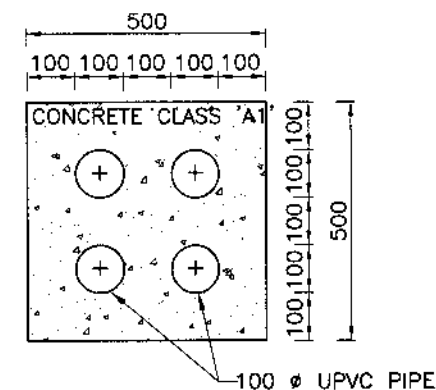
(FUTURE DUCTS FOR TELEPHONE CABLES TWO WAY)



DUCT FOR PROTECTION OF EXISTING SERVICES



(FUTURE DUCTS FOR WATER LINES)



(FUTURE DUCTS FOR TELEPHONE CABLES 4 WAY)

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE.
2. SERVICE DUCTS WILL BE PROVIDED AS PER SITE REQUIREMENT. POSITION OF SERVICE DUCTS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE CONCERNED AUTHORITY DURING CONSTRUCTION WITH APPROVAL OF THE ENGINEER'S REPRESENTATIVE.



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
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DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP

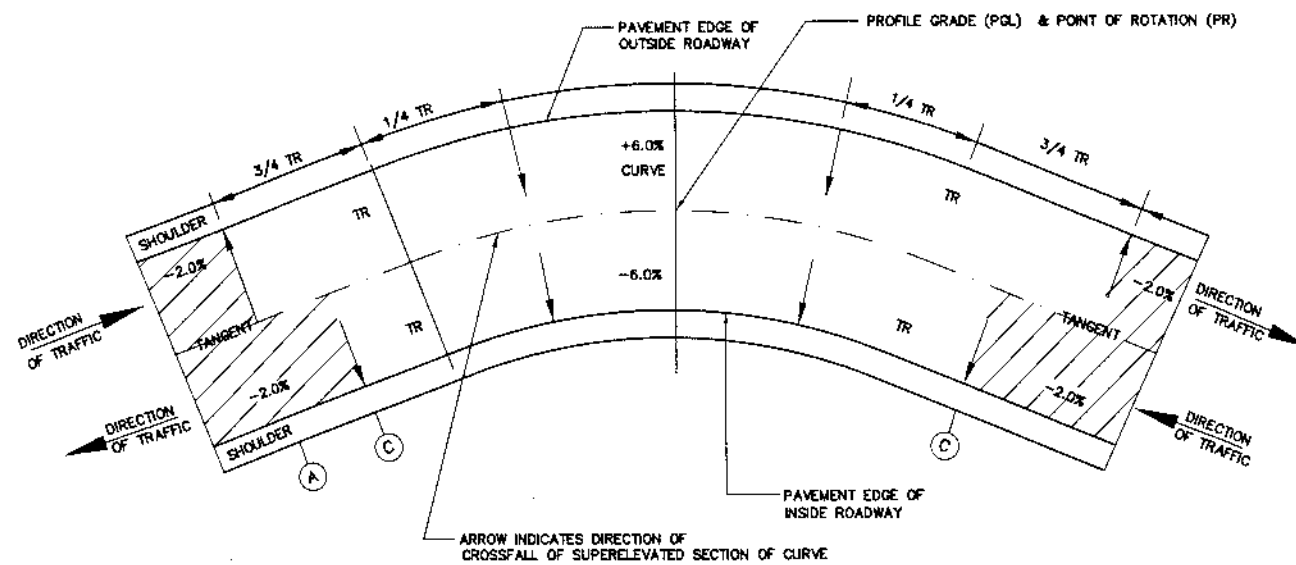


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE	
DETAILS OF SERVICE DUCTS	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/00016

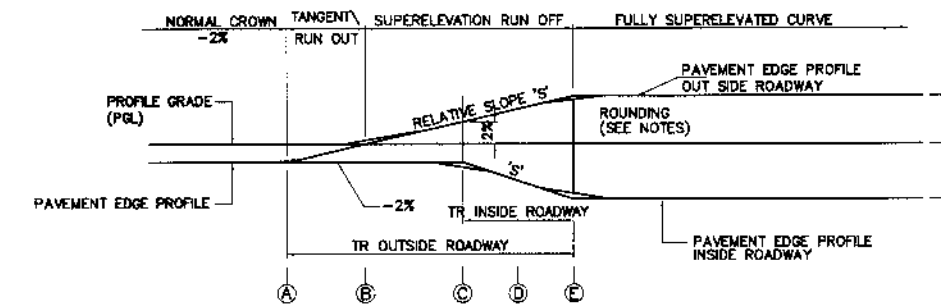


PLAN OF TYPICAL SUPERELEVATION TRANSITION

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.



PROFILE OF TYPICAL EDGE SUPERELEVATION TRANSITIONS

	SHOULDER	PAVEMENT	PAVEMENT	SHOULDER
(A)	-4%	-2%	-2%	-4%
(B)	-2%	0%	-2%	-4%
(C)	-1%	+1%	-2%	-4%
(D)	-1%	+3%	-3%	-4%
(E)	2%	+4%	-4%	-4%
(F)	2%	+6%	-6%	-6%

SECTIONS OF TYPICAL DISTRIBUTION OF SUPERELEVATION

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:-
  - LENGTH OF TR =  $\frac{\text{REQUIRED S.E.} \times \text{CROSS SLOPE}}{\text{S FACTOR}} \times \text{PAVEMENT WIDTH TO BE ROTATED}$
  - '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%.



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



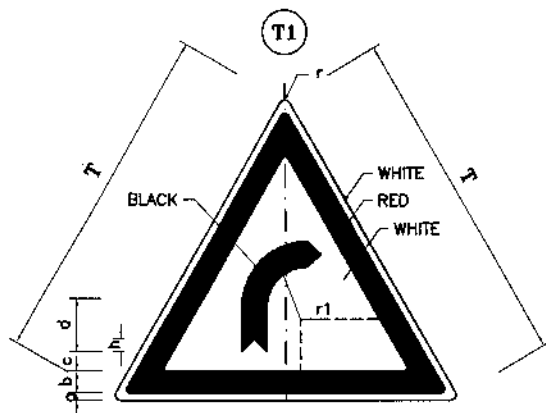
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED

PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

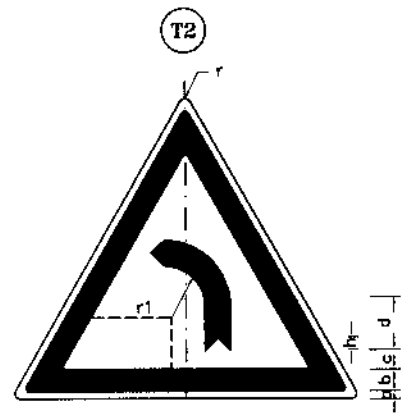
TITLE TYPICAL SUPERELEVATION DETAILS	
DATE JANUARY, 2021	DWG NO. 38164/102/TD/ TS0018





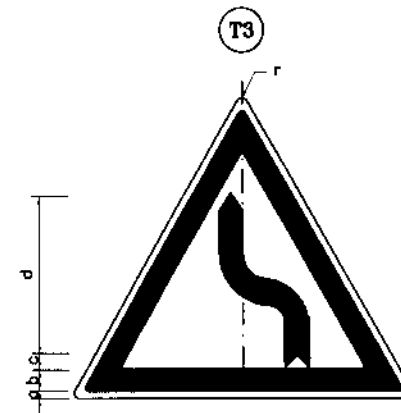
**RIGHT BEND  
DIMENSION(cm)**

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
r1	12.5	16.7



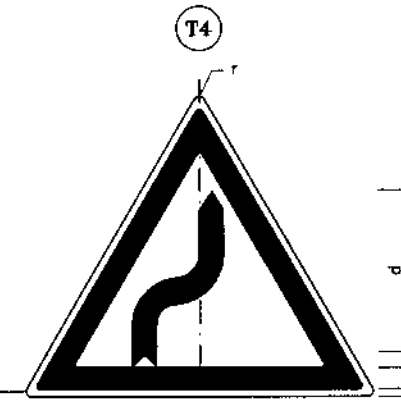
**LEFT BEND  
DIMENSION(cm)**

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
r1	12.5	16.7



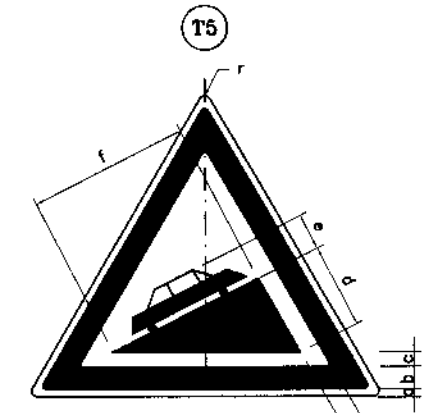
**SERIES OF CURVES  
(FIRST TO LEFT)  
DIMENSION(cm)**

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	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
r1	4.5	6.0



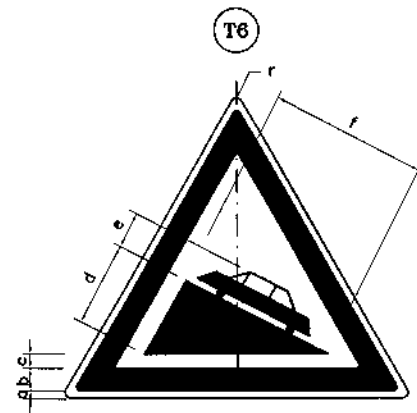
**SERIES OF CURVES  
(FIRST TO RIGHT)  
DIMENSION(cm)**

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	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
r1	4.5	6.0



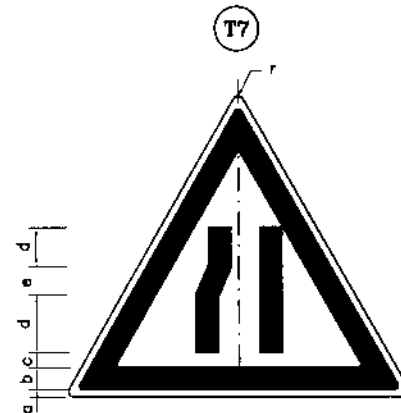
**STEEP ASCEND  
DIMENSION(cm)**

PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.5	4.7
d	23.5	31.3
e	11.5	15.3
f	33.0	44.0



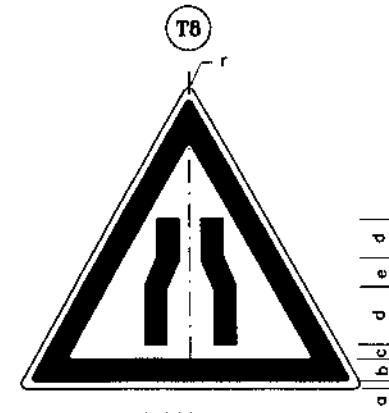
**STEEP DESCEND  
DIMENSION(cm)**

PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.5	4.7
d	23.5	31.3
e	11.5	15.3
f	33.0	44.0



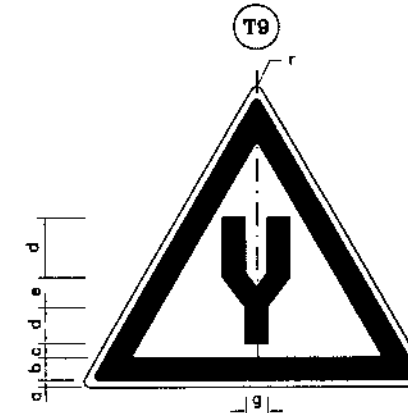
**ROADWAY NARROWS  
(FROM LEFT)  
DIMENSION(cm)**

PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.5	4.7
d	10.0	13.3
e	14.0	18.7
f	2.5	3.3
g	5.0	6.7



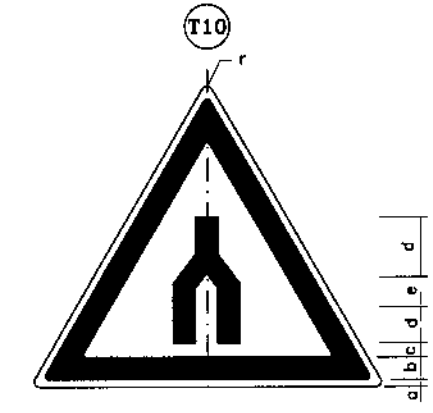
**ROADWAY NARROWS  
DIMENSION(cm)**

PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.5	4.7
d	10.0	13.3
e	14.0	18.7
f	2.5	3.3
g	5.0	6.7



**DUAL CARRIAGEWAY STARTS  
DIMENSION(cm)**

PARTS	SIGN SIZE	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	4.5	6.0
d	15.0	20.0
e	9.0	12.0
f	12.0	16.0
g	9.0	12.0
h	7.0	9.3



**DUAL CARRIAGEWAY ENDS  
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	5.30
d	15.0	20.0
e	9.0	12.0
f	12.0	16.0
g	9.0	12.0
h	7.0	9.3



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

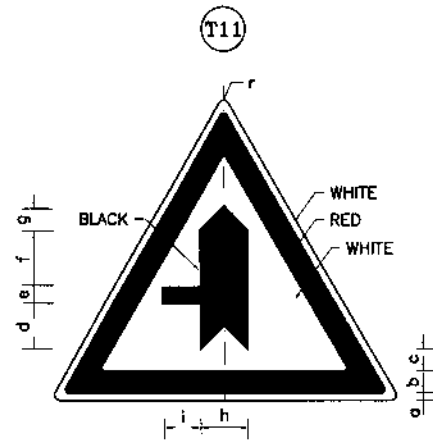
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE  
**ROAD SIGNS (1)  
(INFORMATORY SIGN)**

DATE  
JANUARY, 2021

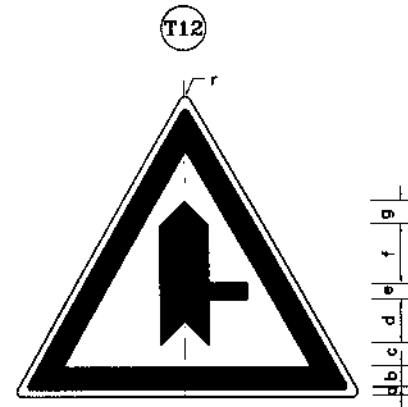
DWG NO.  
38164/102/TD/RS0019



MINOR ROAD FROM LEFT

DIMENSION(cm)

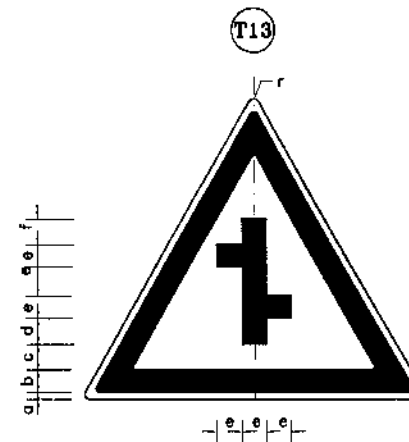
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	13.5	18.0
e	5.5	7.3
f	15.0	20.0
g	7.0	9.3
h	14.0	18.7
i	10.5	14.0



MINOR ROAD FROM RIGHT

DIMENSION(cm)

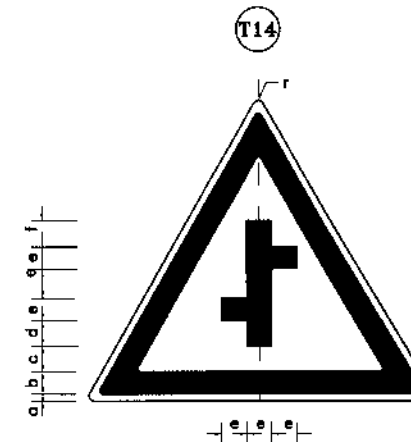
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	13.5	18.0
e	5.5	7.3
f	15.0	20.0
g	7.0	9.3
h	14.0	18.7
i	10.5	14.0



MINOR ROAD CROSSING WITH AN OFFSET

DIMENSION(cm)

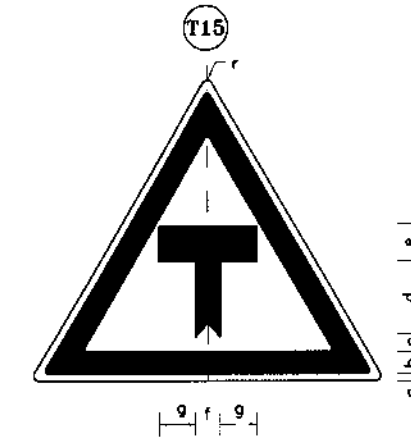
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	2.5	3.3
d	8.0	10.7
e	7.5	10.0
f	9.0	12.0



MINOR ROAD CROSSING WITH AN OFFSET

DIMENSION(cm)

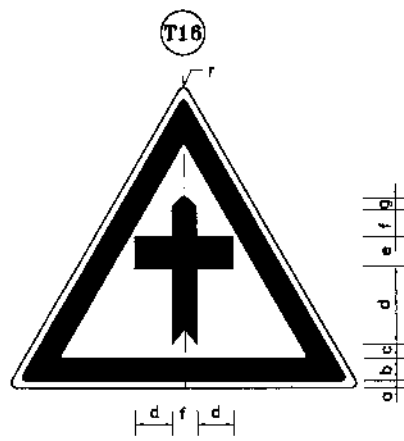
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	2.5	3.3
d	8.0	10.7
e	7.5	10.0
f	9.0	12.0



T- JUNCTION AHEAD

DIMENSION(cm)

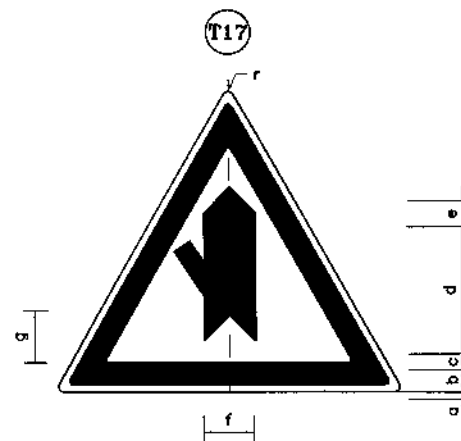
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	15.5	20.7
e	7.0	9.3
f	5.0	6.7
g	11.0	14.7
h	2.5	3.3



CROSS ROAD AHEAD

DIMENSION(cm)

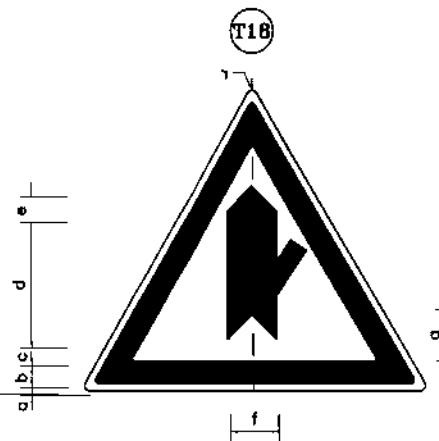
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	13.0	17.3
e	7.0	9.3
f	10.0	13.3
g	2.5	3.3
i	5.0	6.7



MINOR ROAD FROM LEFT

DIMENSION(cm)

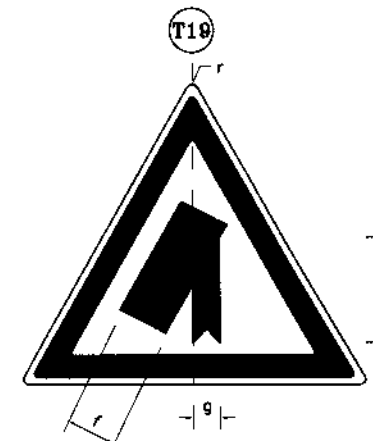
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.5	4.7
d	33.0	44.0
e	7.0	9.3
f	14.0	18.7
g	15.0	20.0
h	3.0	4.0
i	5.5	7.3



MINOR ROAD FROM RIGHT

DIMENSION(cm)

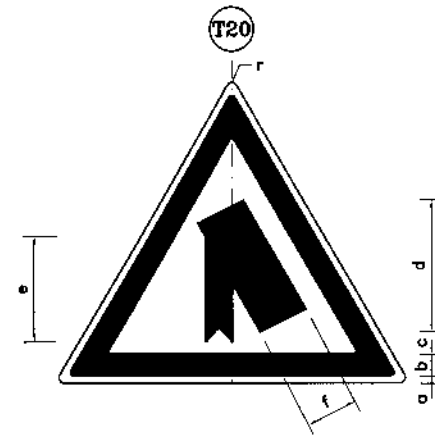
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.5	4.7
d	33.0	44.0
e	7.0	9.3
f	14.0	18.7
g	15.0	20.0
h	3.0	4.0
i	5.5	7.3



MAIN ROAD (ON LEFT)

DIMENSION(cm)

PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	2.5	3.3
d	39.0	52.0
e	27.0	36.0
f	13.0	17.3
g	5.0	6.7



MAIN ROAD (ON RIGHT)

DIMENSION(cm)

PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	2.5	3.3
d	39.0	52.0
e	27.0	36.0
f	13.0	17.3
g	5.0	6.7



KHYBER PAKHTUNKHWA INTEGRATED TOURISM AND ENTERPRISE DEVELOPMENT PROJECT C&W DEPARTMENT, KP



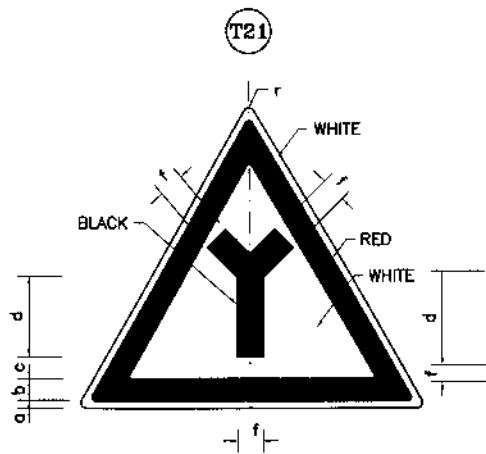
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

PROJECT: CONSTRUCTION OF MANKIAL BADA SERA ROAD PROJECT (22 Km)

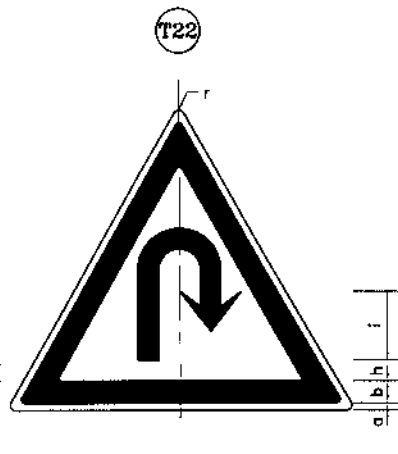
TITLE	
ROAD SIGNS (2) (INFORMATORY SIGN)	
DATE	DWC NO.
JANUARY, 2021	38164/102/TD/ RS0020



Y-JUNCTION

DIMENSION(cm)

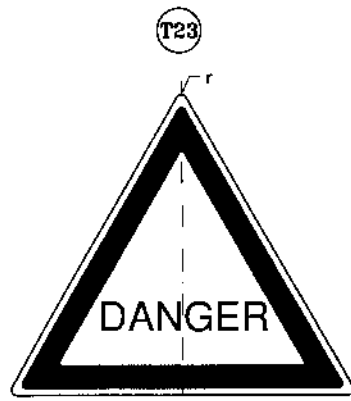
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	17.0	22.7
e	13.0	17.3
f	7.0	9.3



U-TURN

DIMENSION(cm)

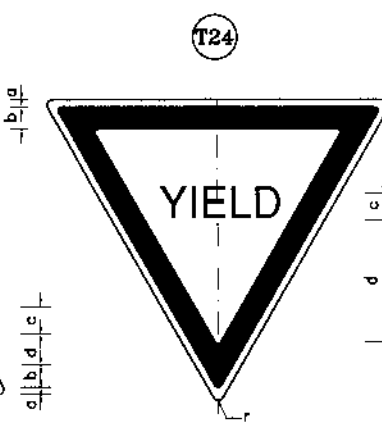
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	5.5	7.3
d	7.0	9.3
e	5.0	6.7
f	2.5	3.3
g	23.0	30.7
h	7.5	10.0
i	12.0	16.0



DANGER WARNING

DIMENSION(cm)

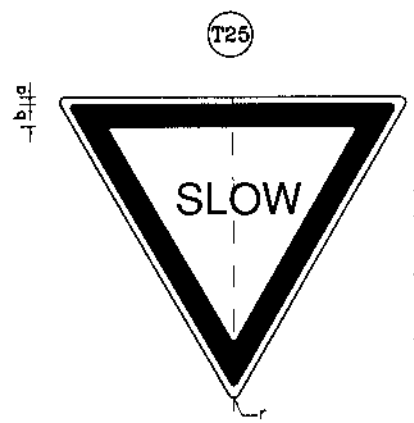
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	6.5	8.7
d	7.0	9.5



GIVE WAY

DIMENSION(cm)

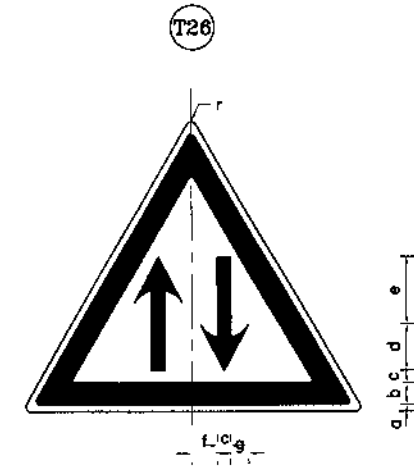
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	6.5	8.7
d	16.0	21.3



SLOW

DIMENSION(cm)

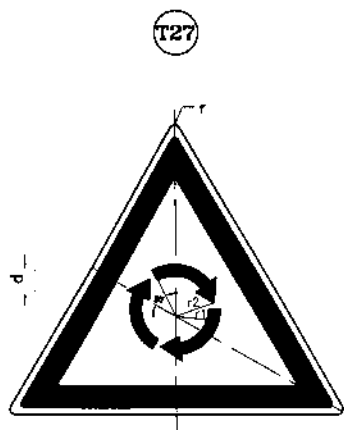
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	6.5	8.7
d	16.0	21.3



TWO WAY TRAFFIC

DIMENSION(cm)

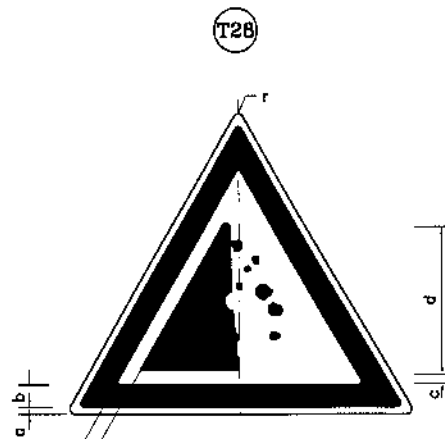
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	4.0	8.7
d	9.0	21.3
e	19.0	21.3
f	5.0	21.3
g	3.5	21.3



ROUNDABOUT

DIMENSION(cm)

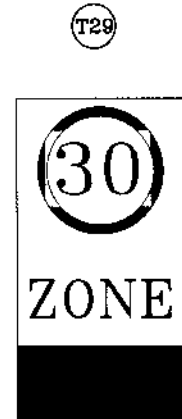
PARTS	Sign Size	
	90cm	120cm
r	3.5	120
a	1.0	-
b	6.5	-
c	3.0	-
d	9.0	-
r1	12.0	-
r2	16.0	-



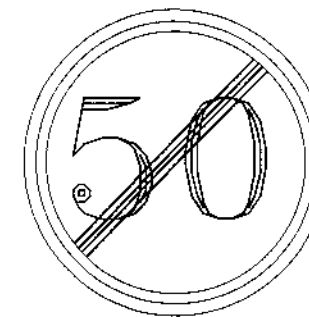
FALLING ROCKS

DIMENSION(cm)

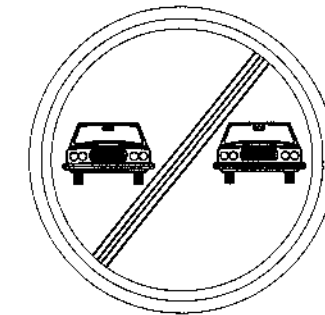
PARTS	Sign Size	
	90cm	120cm
r	3.5	4.7
a	1.0	1.3
b	6.5	8.7
c	3.5	4.7
d	38.0	50.7
e	12.0	16.0



Entry to 30KM/h zone



END OF SPEED LIMIT IMPOSED



END OF PROHIBITION OF OVERTAKING



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP

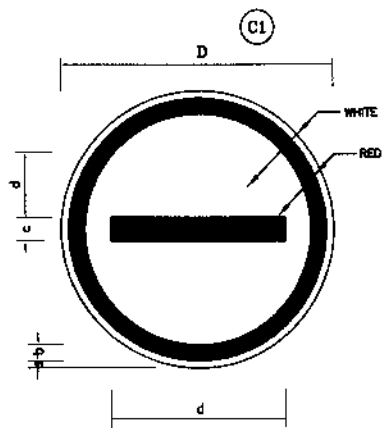


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

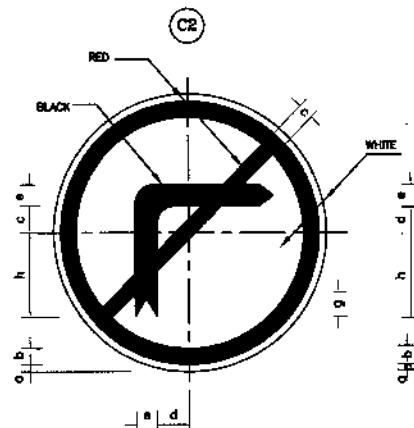
PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE	
ROAD SIGNS (3) (WARNING SIGN)	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/RS0021



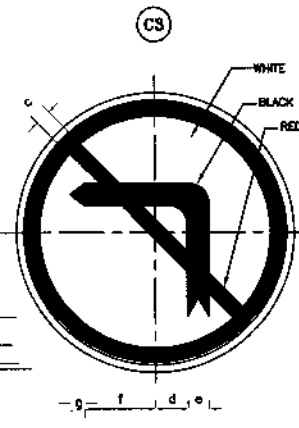
**NO ENTRY**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm	120cm
a	1.0	1.3
b	4.0	5.3
c	8.0	10.7
d	64.0	85.3



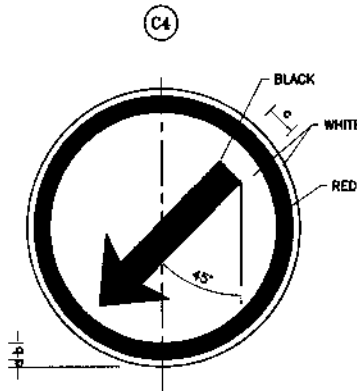
**NO RIGHT TURN**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm	120cm
a	1.0	1.3
b	6.5	8.7
c	5.5	7.3
d	8.0	8.0
e	10.0	13.3
f	25.0	33.3
g	5.0	6.7
h	30.0	40.0



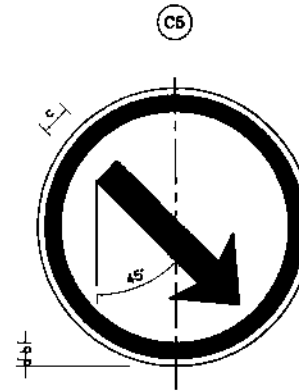
**NO LEFT TURN**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm(C13)	120cm(C7)
a	1.0	1.3
b	6.5	8.7
c	5.5	7.3
d	8.0	8.0
e	10.0	13.3
f	25.0	33.3
g	5.0	6.7
h	30.0	40.0



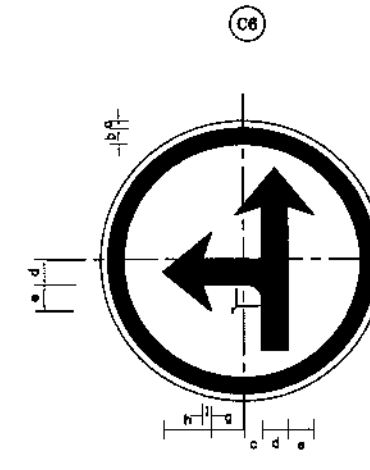
**KEEP LEFT**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm(C4)	120cm(C3)
a	1.0	1.3
b	4.0	5.3
c	8.0	10.7
d	8.0	12.0
e	32.0	42.7
f	23.0	30.7
g	4.5	6.0



**KEEP RIGHT**  
DIMENSION(cm)

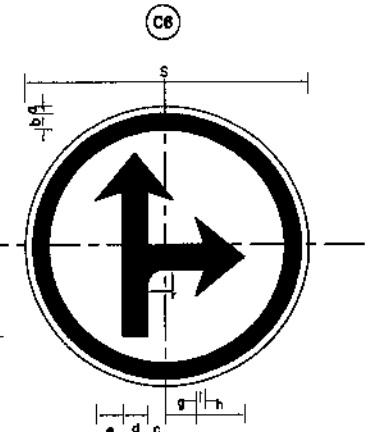
PARTS	SIGN SIZE	
	90cm(C4)	120cm(C3)
a	1.0	1.3
b	4.0	5.3
c	8.0	10.7
d	8.0	12.0
e	32.0	42.7
f	23.0	30.7
g	4.5	6.0



STRAIGHT OR LEFT ONLY SIGN

**DIMENSION(cm)**

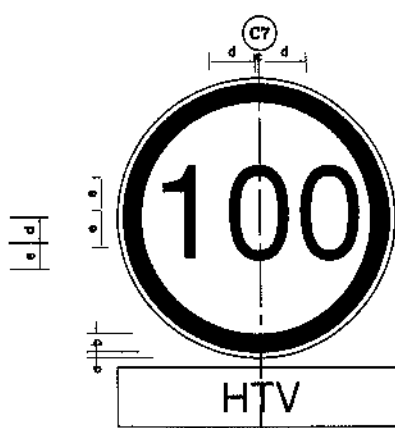
PARTS	SIGN SIZE	
	90cm(C4)	120cm(C3)
a	1.0	1.3
b	6.5	8.7
c	10.0	13.3
d	8.0	10.7
e	8.0	12.0
f	34.0	45.3
g	10.5	14.0
h	23.5	31.3
i	4.5	6.0
r	8.0	10.7



STRAIGHT OR RIGHT ONLY SIGN

**DIMENSION(cm)**

PARTS	SIGN SIZE	
	90cm(C4)	120cm(C3)
a	1.0	1.3
b	6.5	8.7
c	10.0	13.3
d	8.0	10.7
e	8.0	12.0
f	34.0	45.3
g	10.5	14.0
h	23.5	31.3
i	4.5	6.0
r	8.0	10.7



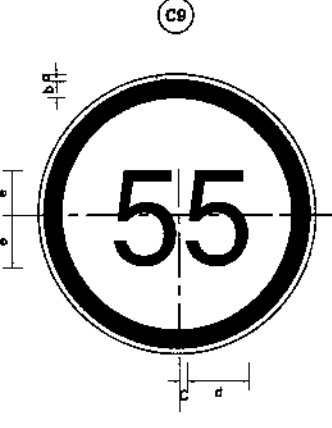
**SPEED LIMIT (100)**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm(C4)	120cm(C3)
a	1.0	1.3
b	6.5	8.7
c	3.0	4.0
d	23.0	30.7
e	20.0	28.7



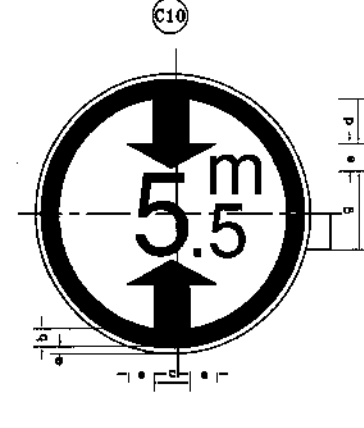
**SPEED LIMIT (120)**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm	120cm
a	1.0	1.3
b	6.5	8.7
c	2.5	3.25
d	5.0	6.5
e	11.25	15.38
f	35.0	47.0
g	40.0	53.5



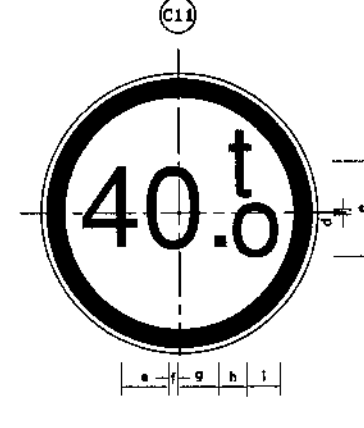
**SPEED LIMIT (55)**  
DIMENSION(cm)

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



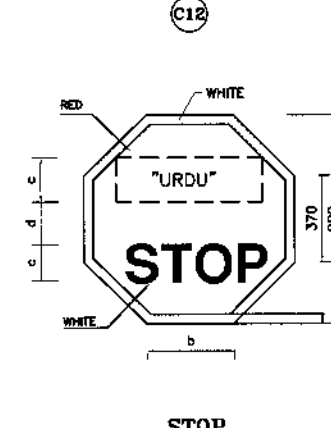
**MIN. VERTICAL CLEARANCE**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm	120cm
a	1.0	1.3
b	6.5	8.7
c	13.5	18.0
d	12.5	17.0
e	8.5	11.5
f	31.0	41.0
g	24.5	32.5
h	12.5	16.5



**MAX. GROSS WEIGHT LIMIT**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm	120cm
a	1.0	1.3
b	6.5	8.7
c	32.0	42.50
d	2.5	3.50
e	17.0	22.50
f	1.5	2.0
g	17.0	22.50
h	3.5	4.90
i	10.0	13.50



**STOP**  
DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm	120cm
a	1.0	1.30
b	37.0	46.5
c	20.0	25.0
d	15.0	20.0
e	38.0	43.0
f	90.0	120.0



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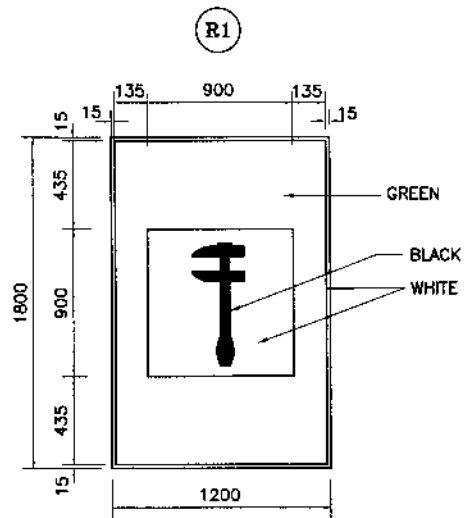
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED

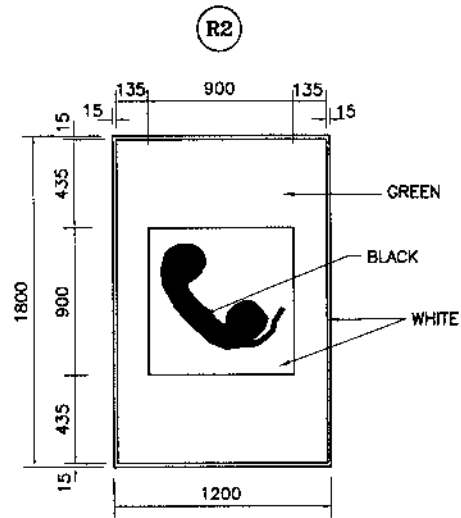
DRAWN	
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

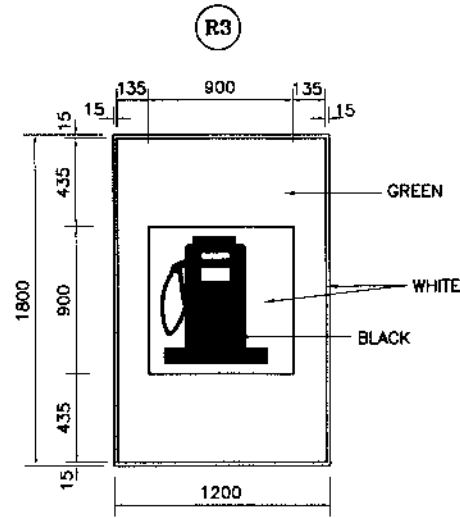
TITLE	
ROAD SIGNS (4) (REGULATORY SIGN)	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/RS0022



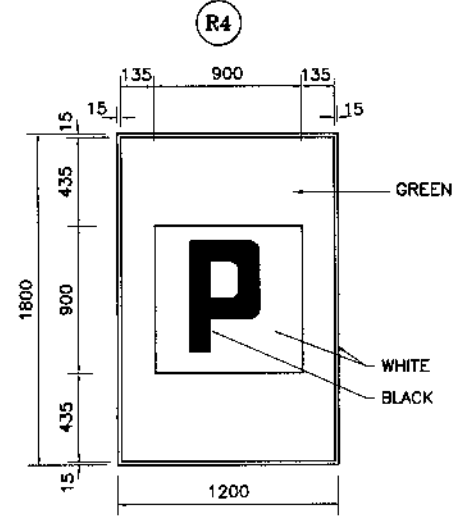
**BREAKDOWN SERVICE**



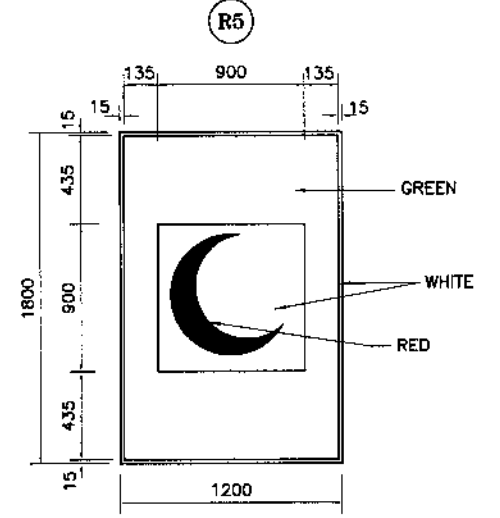
**TELEPHONE**



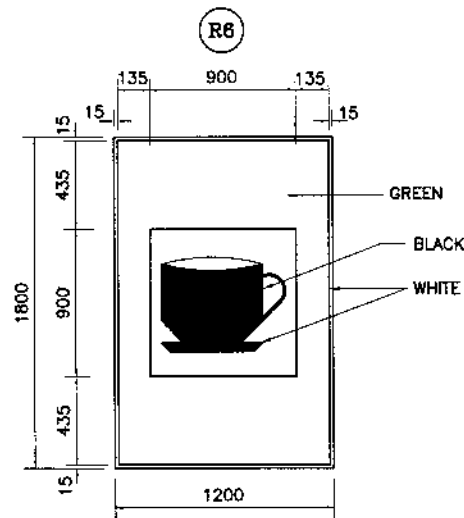
**FILLING STATION**



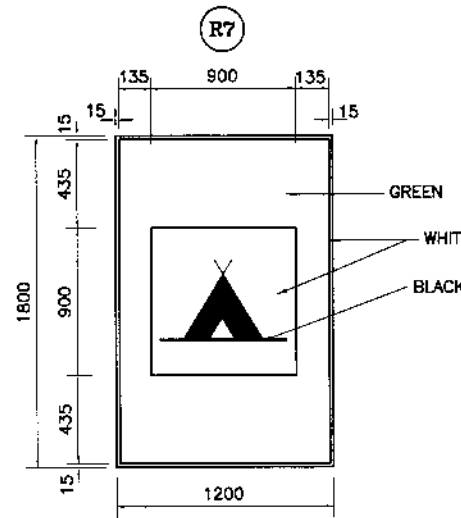
**PARKING**



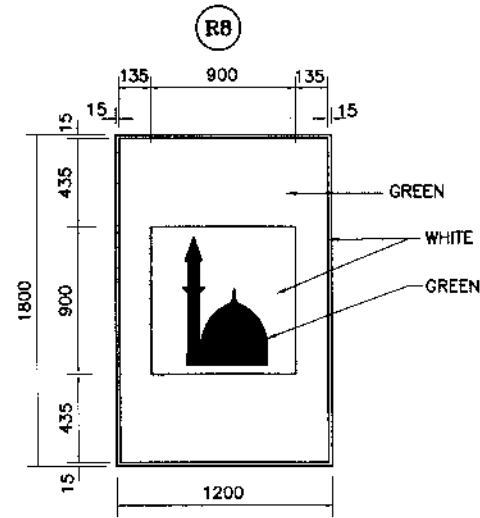
**FIRST AID STATION**



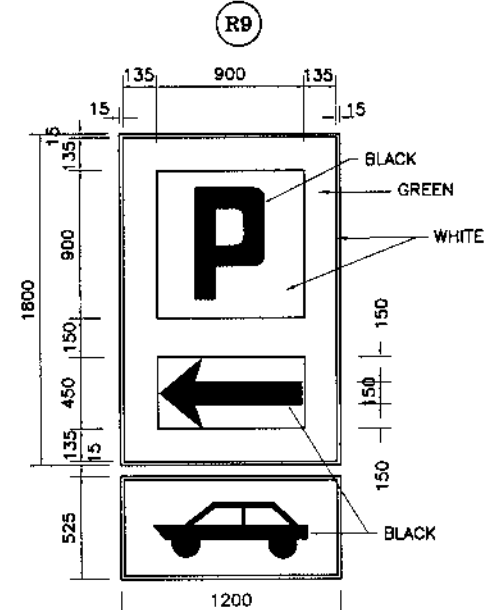
**REFRESHMENT/CAFETERIA**



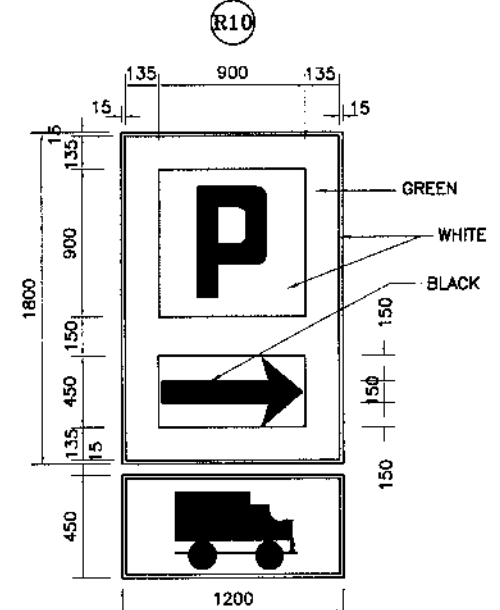
**CAMPING SITE**



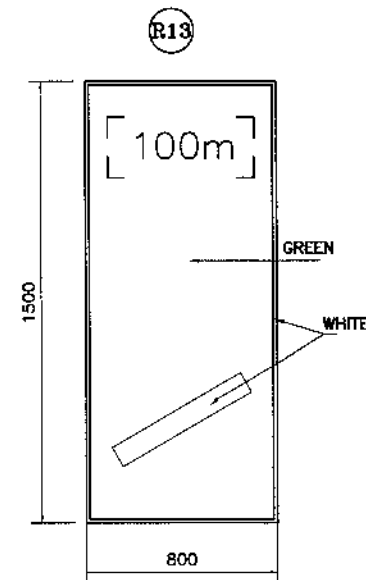
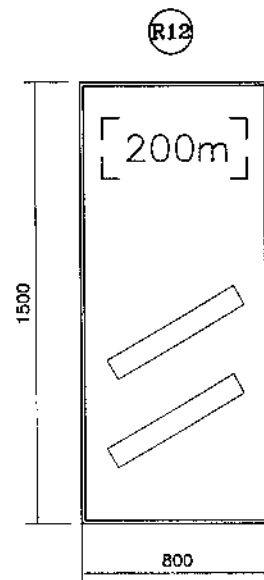
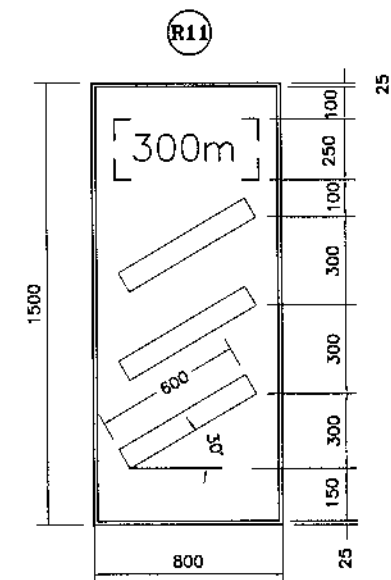
**MOSQUE**



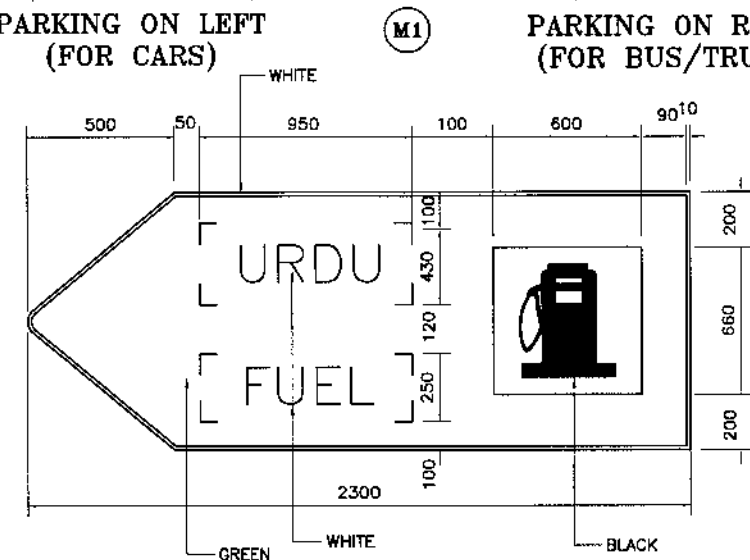
**PARKING ON LEFT  
(FOR CARS)**



**PARKING ON RIGHT  
(FOR BUS/TRUCK)**



**COUNT DOWN MARKERS**



**FILLING STATION ON LEFT**



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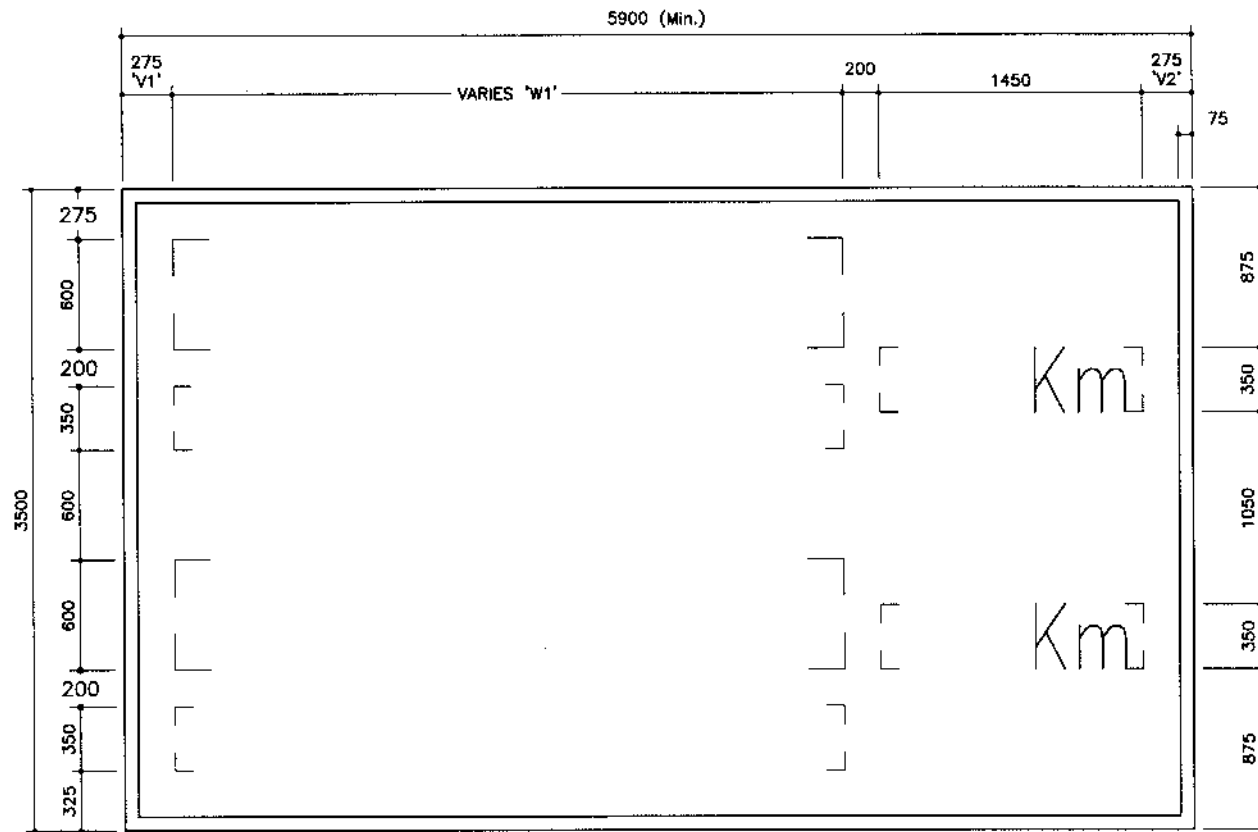


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REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

TITLE	
<b>ROAD SIGNS (5) (INFORMATORY SIGN)</b>	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/RS0023



R21

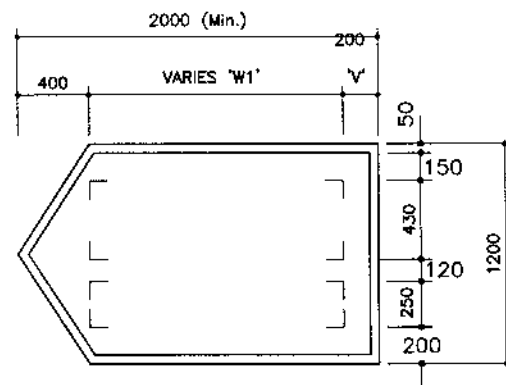
**DISTANCE SIGN**  
(After the junction)



(Beginning of built up area)

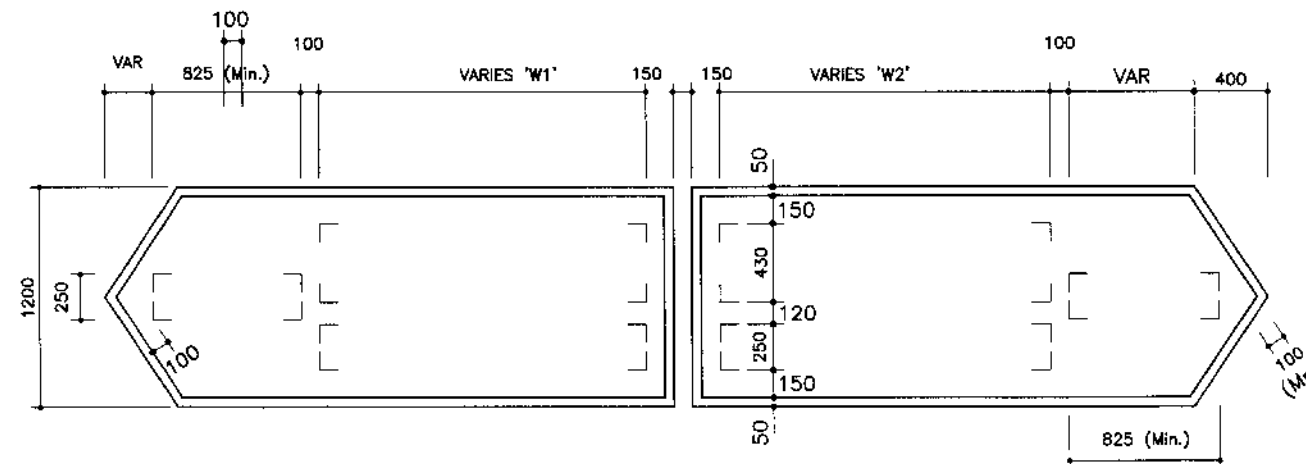


(End of built up area)



R20

**EXIT SIGN**  
(At exit ramp nose)



R19

**DISTANCE & DESTINATION SIGN**  
(At T- Junction)

**NOTE**

FOR NOTES REFER DRAWING NO. 3829/102/TD/RS0026.



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AND ENTERPRISE  
DEVELOPMENT PROJECT  
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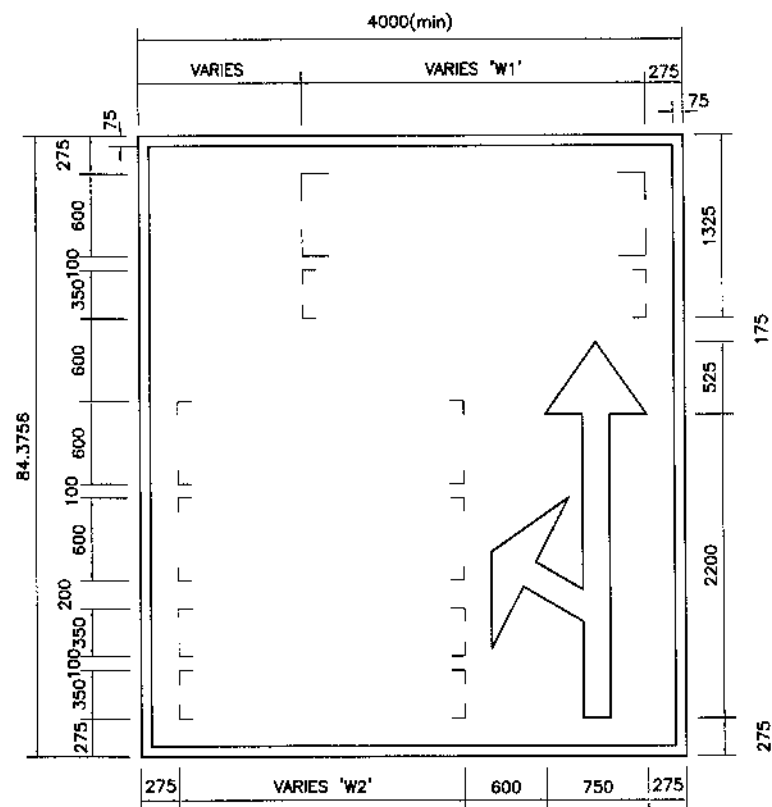


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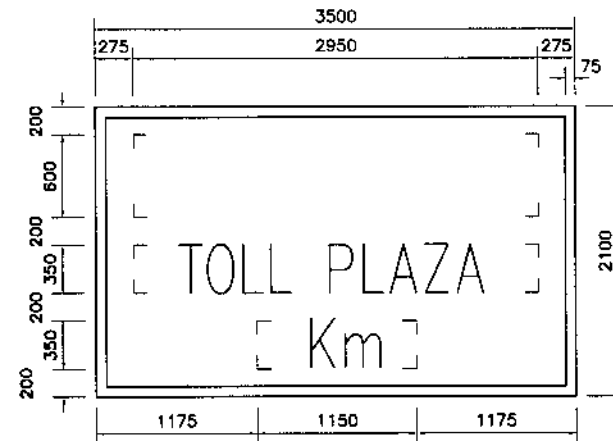
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

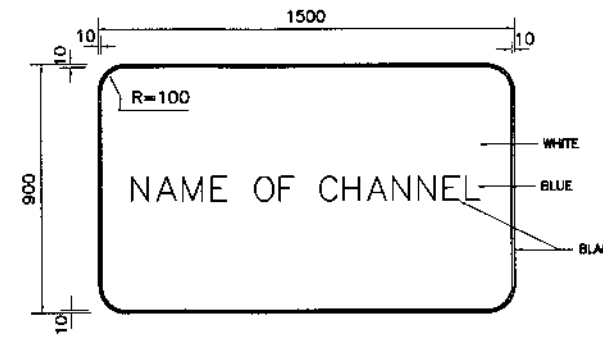
TITLE	
<b>ROAD SIGNS (6) (REGULATORY SIGN)</b>	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/RS0024



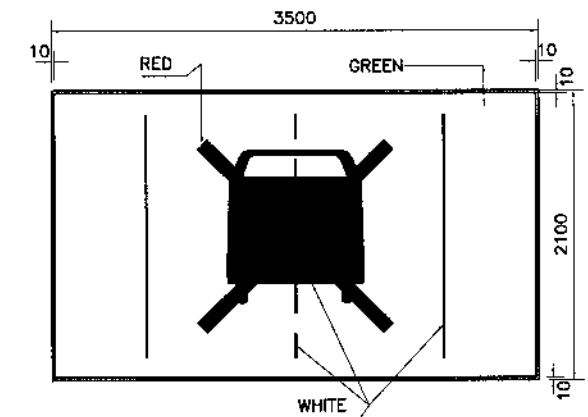
**(R22)**  
**DESTINATION SIGN**  
 ( 500m SHORT OF EXIT RAMP )



**(R23)**  
**TOLL PLAZA SIGN**  
 ( 2 Km./1 Km. SHORT OF TOLL PLAZA )

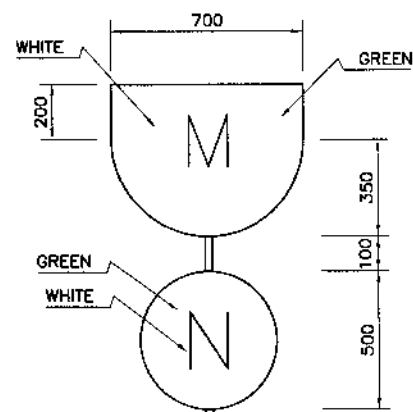


**(R32)**  
**CHANNEL NAME**

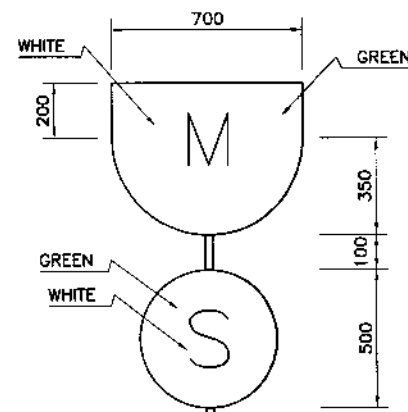


**(R33)**  
**DO NOT DRIVE ON LANE MARKING**  
**WARNING SIGN**

**INFORMATORY SIGN**

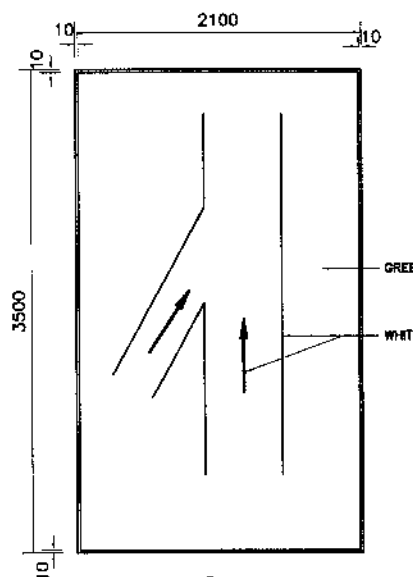


**(R29)**  
**MOTORWAY NORTH BOUND CARRIAGEWAY**

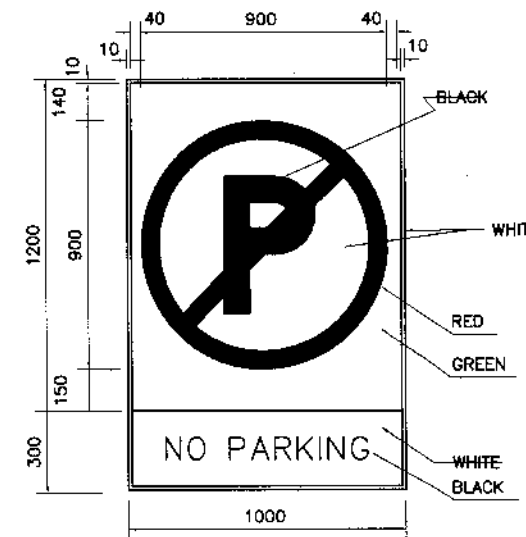


**(R30)**  
**MOTORWAY SOUTH BOUND CARRIAGEWAY**

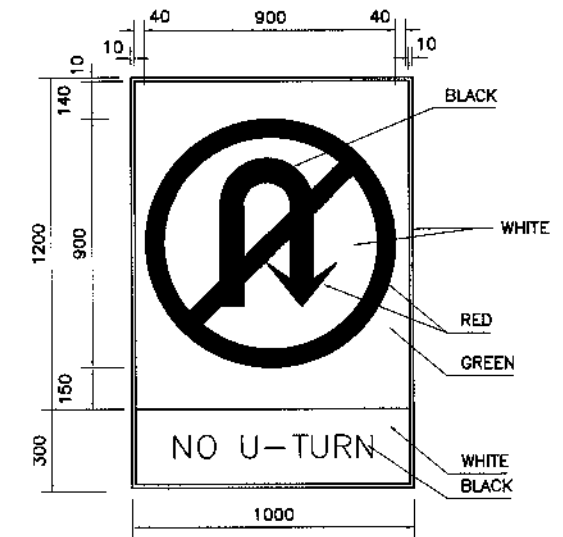
**INFORMATORY SIGN**



**(R31)**  
**ENTRY LANE AHEAD**



**(R27)**  
**NO PARKING**



**(R28)**  
**NO U-TURN**

**REGULATORY SIGN**



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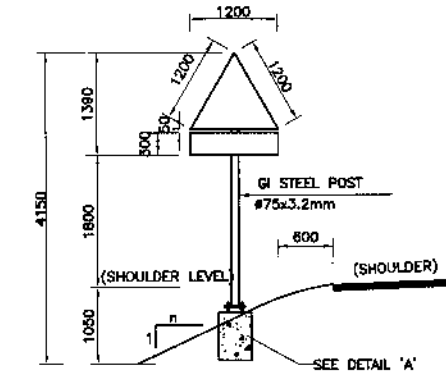
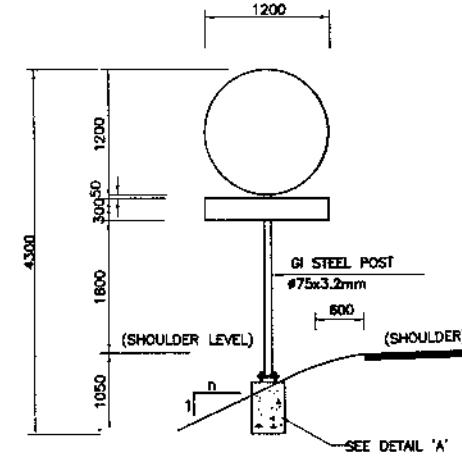
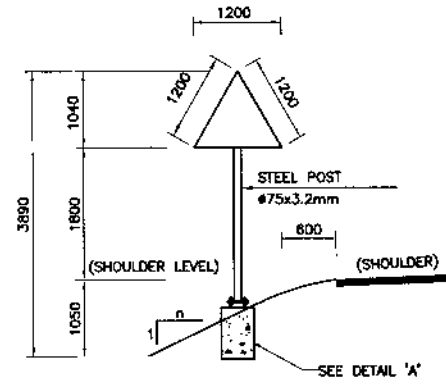
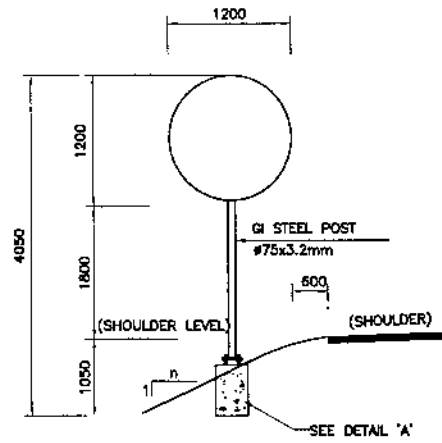


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REV.	DATE	DESCRIPTION	APPROVED	APPROVED

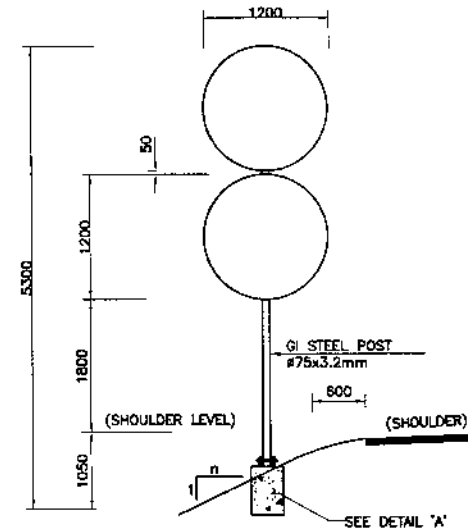
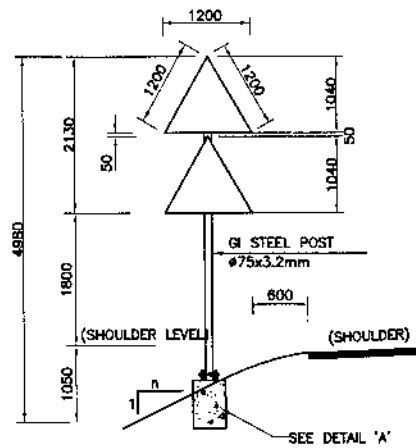
PROJECT:  
**CONSTRUCTION OF  
 MANKIAL BADA SERA ROAD  
 PROJECT (22 Km)**

TITLE	
<b>ROAD SIGNS (7)</b>	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/RS0025

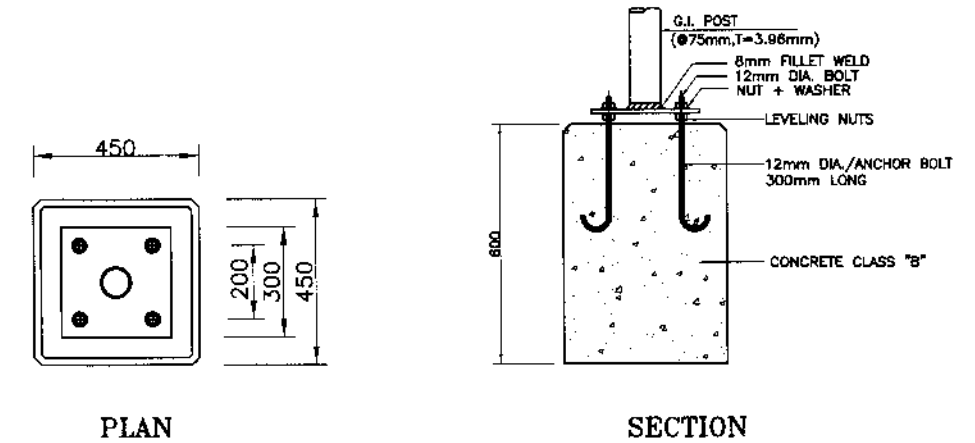


SINGLE SIGNS

SINGLE SIGNS WITH ADDITIONAL PLATE



DOUBLE SIGNS



PRECAST CONCRETE FOUNDATION  
(TYPE-1)  
DETAIL 'A'

NOTES:-

- 1- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- 2- POST LENGTH AS SHOWN ARE FOR EXPRESSWAY SIGNS OF 1200mm NOMINAL SIZE. FOR RAMPS, POST LENGTH SHALL BE ADJUSTED ACCORDINGLY.
- 3- PRECAST CONCRETE FOUNDATION BLOCKS SHALL BE CAST USING CLASS "B" CONCRETE.
- 4- SIGN PANELS SHALL BE MADE OF ALUMINUM ALLOY PLATES OF MINIMUM 3mm THICKNESS.
- 5- FOR ALL TRIANGULAR, CIRCULAR SIGNS AND INFORMATION SIGNS OF LESS THEN 1.5m Sq.m AREA, USE INNER DIA 75mm, 3.2mm THICK CIRCULAR GI POST WITH.
- 6- ALL SIGN POSTS SHALL BE PAINTED WITH NON-REFLECTORISED BLACK AND WHITE PAINT STRIPES 300mm WIDE.
- 7- ALL SIGN BACK PANELS SHALL BE PAINTED WITH GRAY ENAMEL PAINT.
- 8- ALL POSTS SHALL BE 300mm SHORT OF SIGN TOP.



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REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE	
TYPICAL PLACEMENT OF ROAD SIGNS	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/RS0026



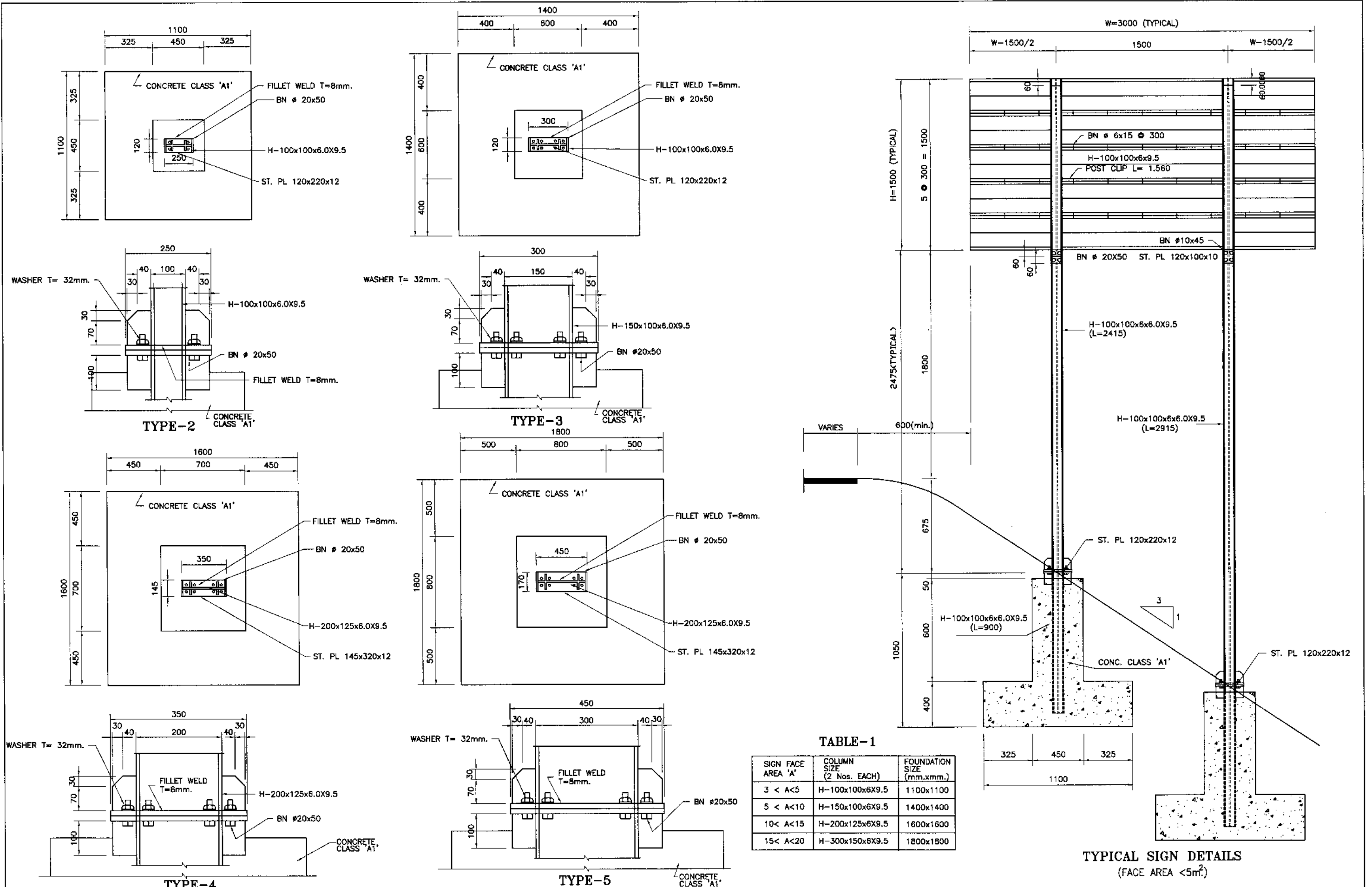
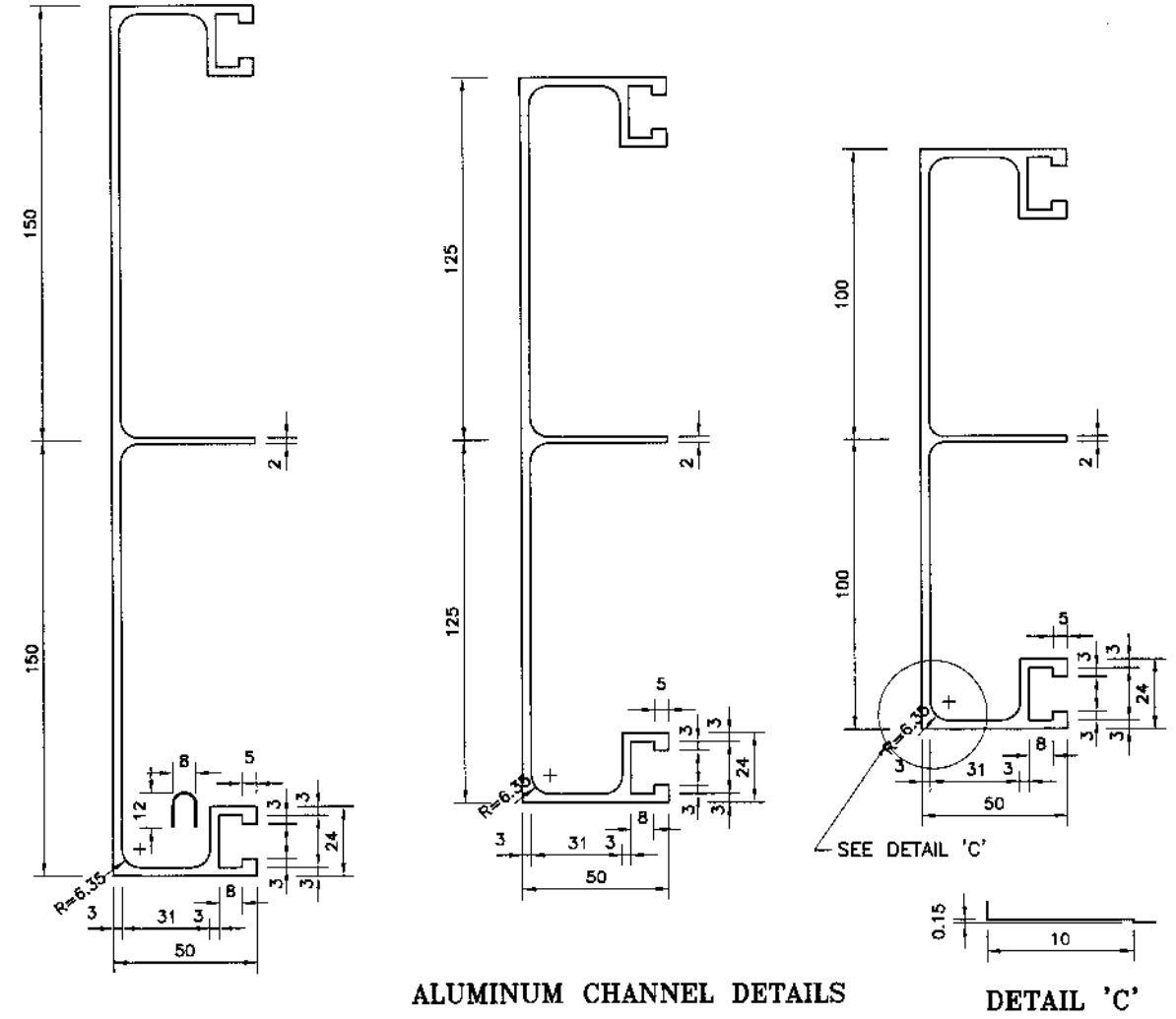
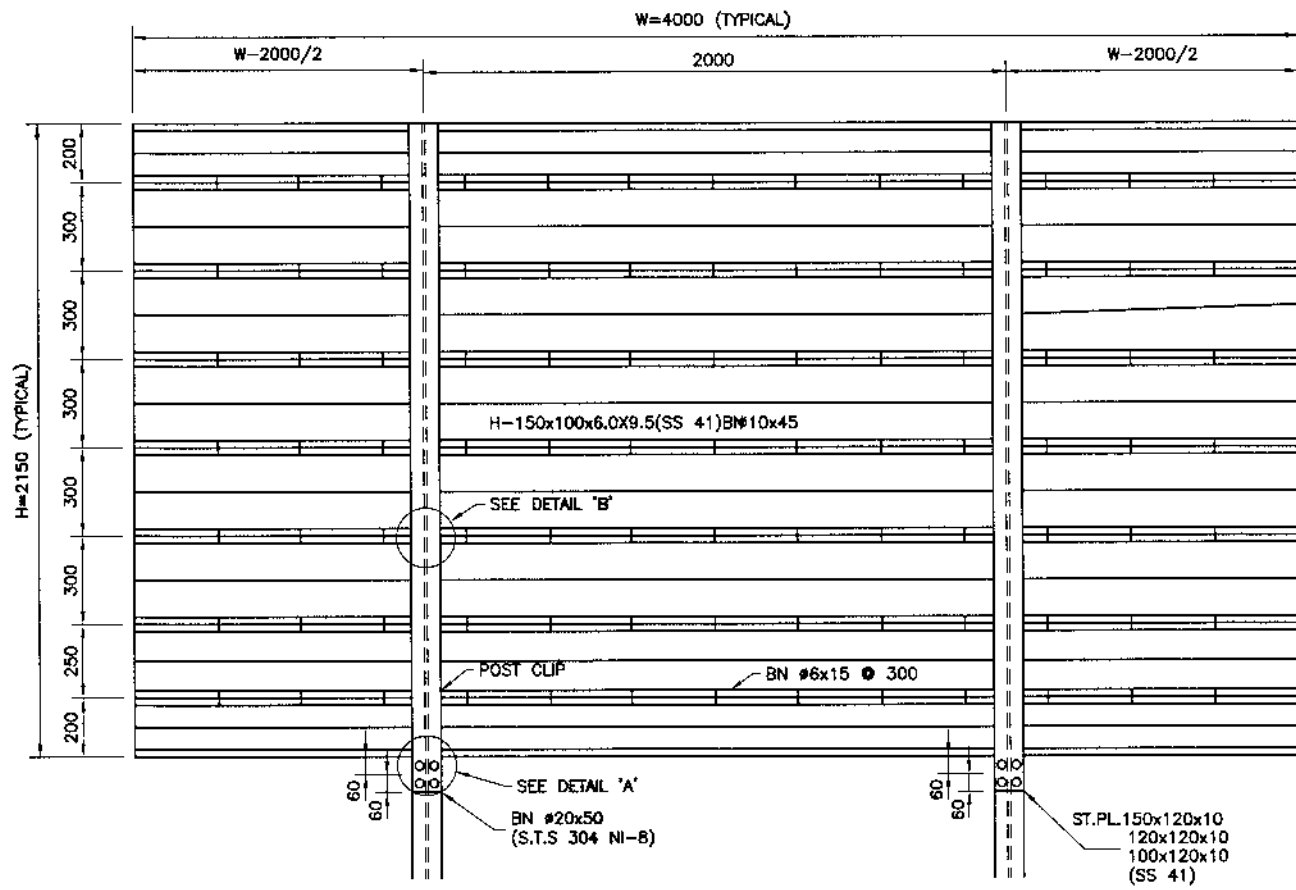


TABLE-1

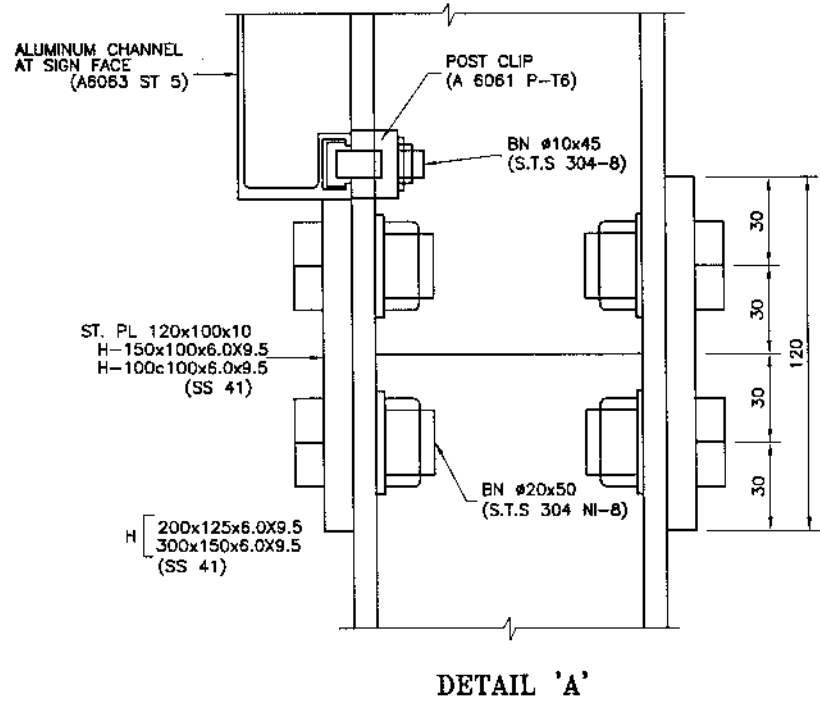
SIGN FACE AREA 'A'	COLUMN SIZE (2 Nos. EACH)	FOUNDATION SIZE (mm.xmm.)
3 < A < 5	H-100x100x6x9.5	1100x1100
5 < A < 10	H-150x100x6x9.5	1400x1400
10 < A < 15	H-200x125x6x9.5	1600x1600
15 < A < 20	H-300x150x8x9.5	1800x1800

TYPICAL SIGN DETAILS (FACE AREA < 5m<sup>2</sup>)

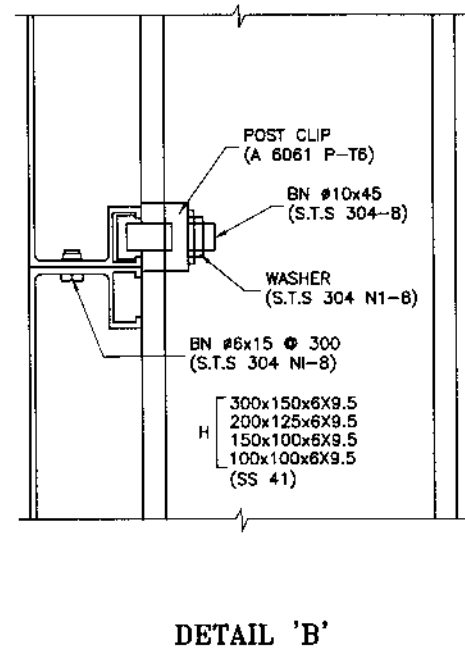
REV.	DATE	DESCRIPTION	APPROVED	APPROVED



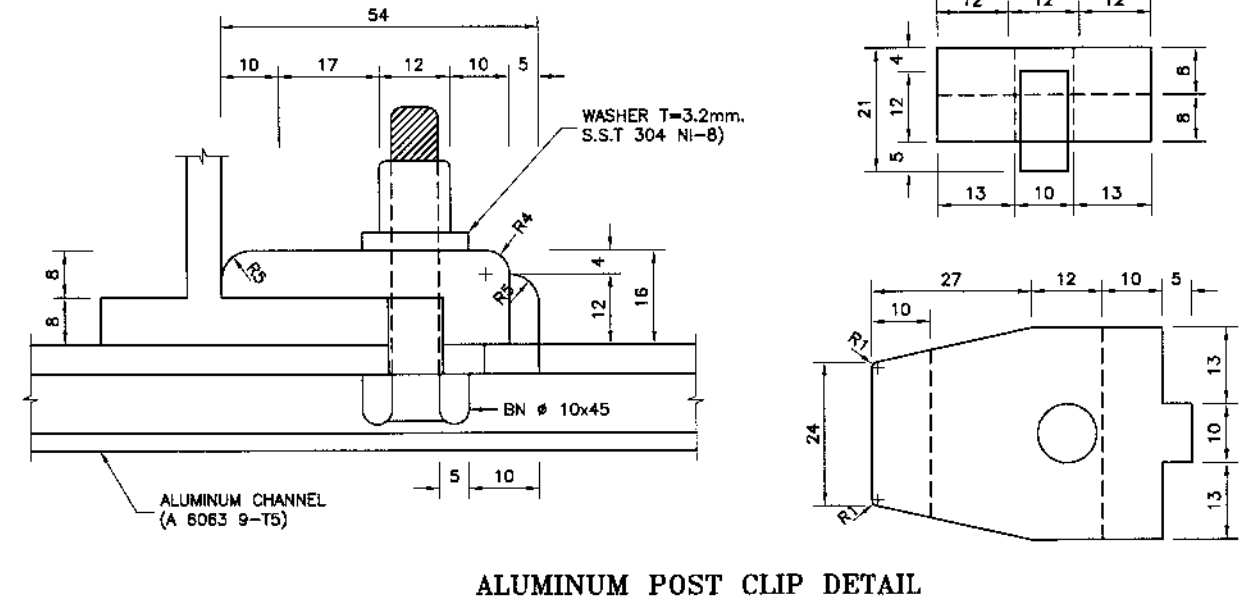
ALUMINUM CHANNEL DETAILS  
DETAIL 'C'



DETAIL 'A'



DETAIL 'B'



ALUMINUM POST CLIP DETAIL

NOTES:-  
1 - ALL DIMENSIONS ARE IN MILLIMETERS



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REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:

CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE

ROAD SIGNS  
FIXATION DETAILS (3)

DATE

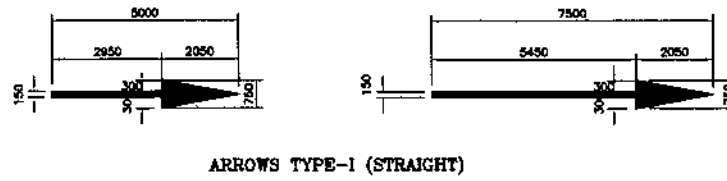
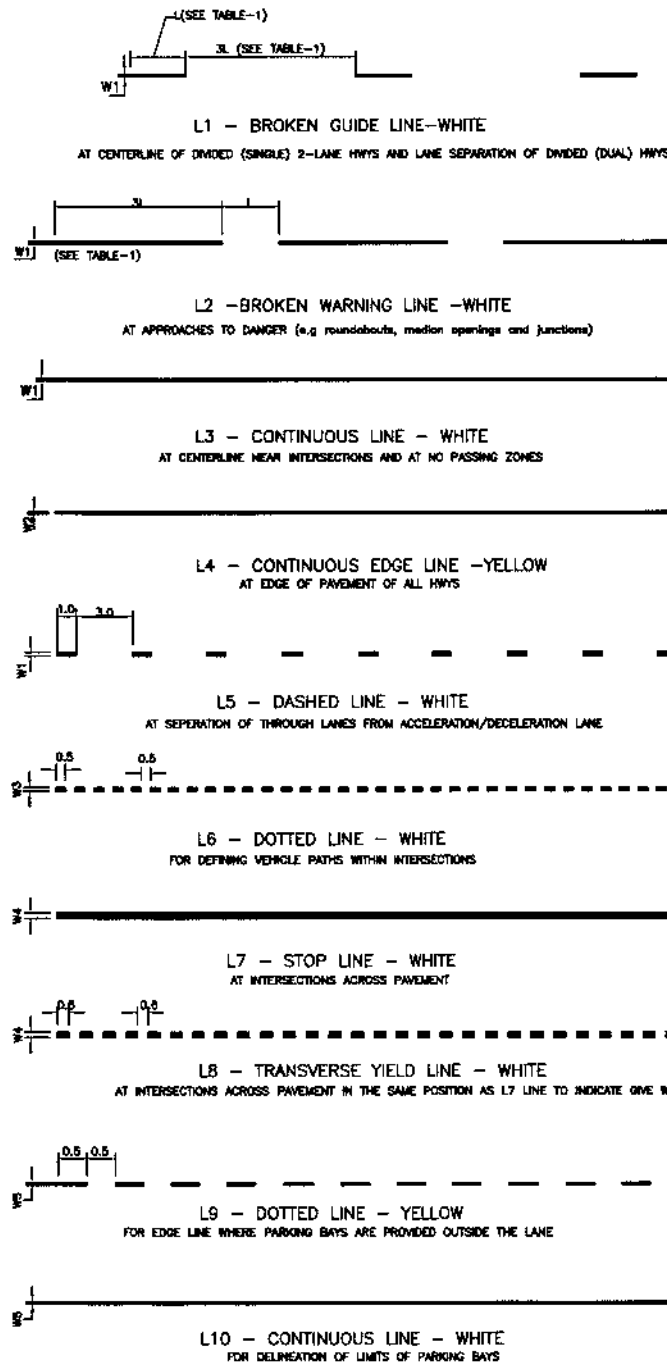
JANUARY, 2021

DWG NO.

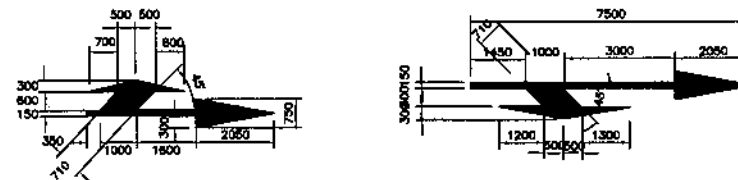
38164/102/TD/RSD028

**PAVEMENT MARKING LINES**

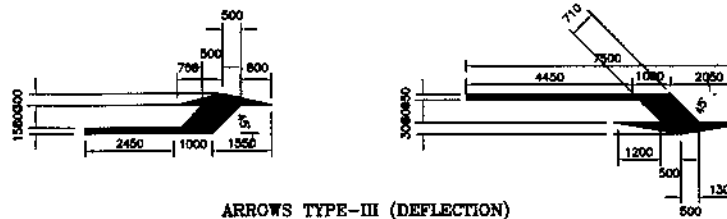
SCALE 1:200  
FOR DIMENSIONS L & W1 TO W5 (SEE TABLE-1)



ARROWS TYPE-I (STRAIGHT)



ARROWS TYPE-II (COMBINED)

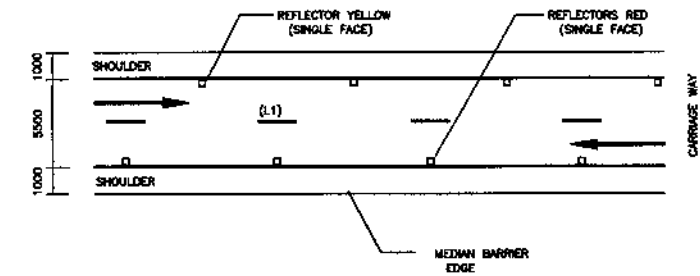


ARROWS TYPE-III (DEFLECTION)

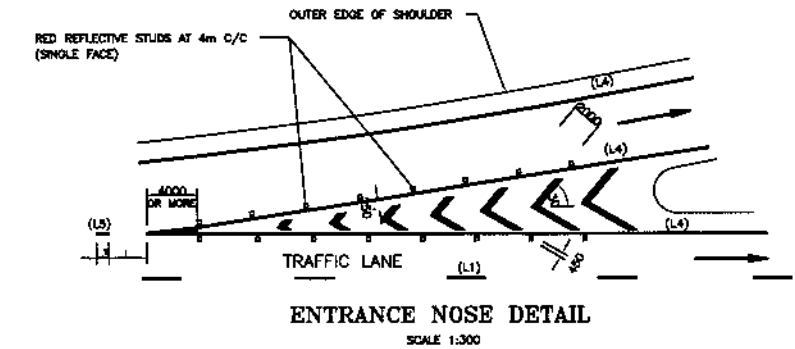
(FOR <80 Km/hr)

(FOR >80 Km/hr)

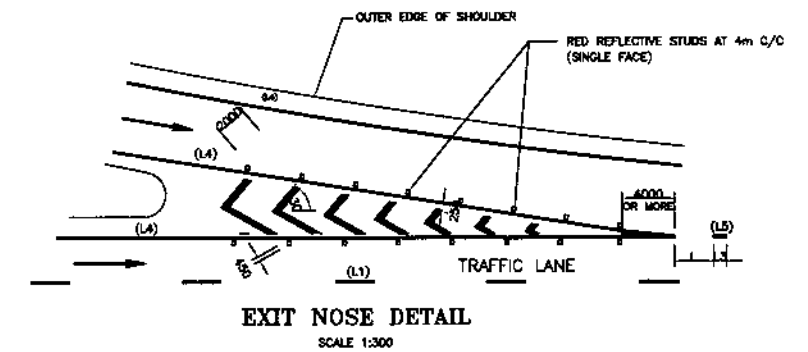
LANE SELECTION ARROWS - WHITE



ADDITIONAL DETAIL FOR MEDIAN AND CARRIAGE WAY



ENTRANCE NOSE DETAIL  
SCALE 1:300



EXIT NOSE DETAIL  
SCALE 1:300

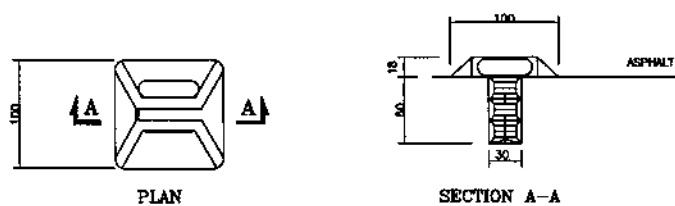
PAVEMENT MARKING & ROAD STUDS DETAILS

**NOTES :-**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. AT APPROACHES TO INTERSECTIONS/ROUNDBABOUTS, CENTER LINE OR LANE SEPARATION LINE (L1) BECOMES (L2) FOR A LENGTH = 150m AND CONTINUOUS LINE (L3) FOR LAST 50m.
3. LENGTH OF STORKE IN (L2) = LENGTH OF GAP IN MATCHING (L1).
4. LOCATION OF DIRECTIONAL ARROWS, NOSES AND STOP SIGN SHALL BE PLACED AS DIRECTED BY THE ENGINEER.

TABLE - 1

ROADWAY SPEED	L (mm)	W1	W2	W3	W4	W5
>120 Km/hr	4000	200	200	200	400	100



REFLECTORISED PAVEMENT STUD  
(RAISED PROFILE TYPE)



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REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:

CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)

TITLE

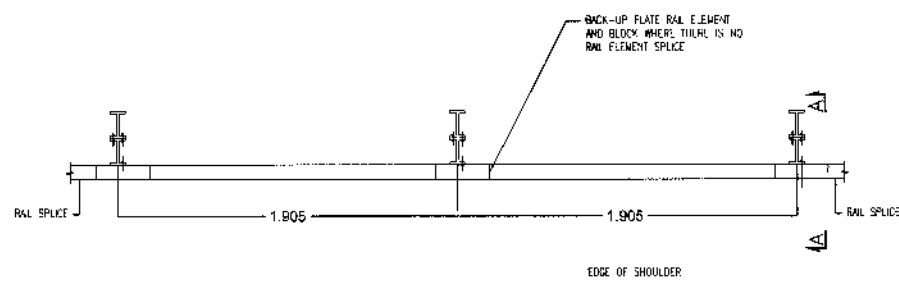
PAVEMENT MARKING AND ROAD STUDS

DATE

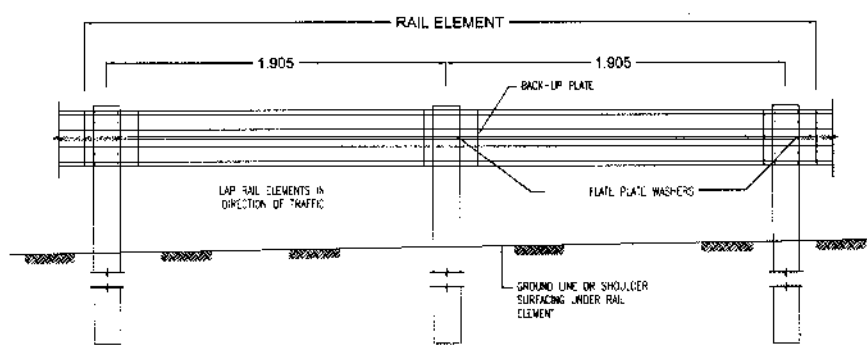
JANUARY, 2021

DWG NO.

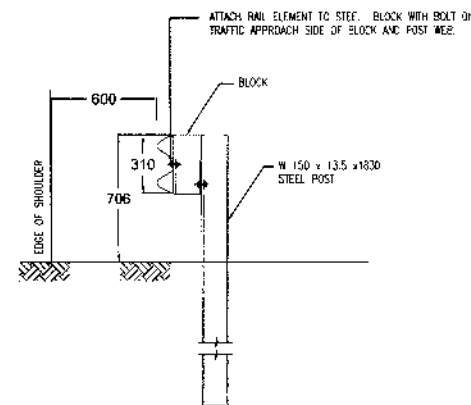
38164/102/TD/PMS0029



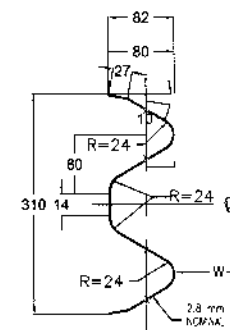
PLAN



METAL W-BEAM GUARD RAILING WITH W150x13.5 STEEL POSTS AND BLOCKS



SECTION A-A  
POST SPACING 1.905m C/C



SECTION THROUGH  
W-BEAM RAIL ELEMENT

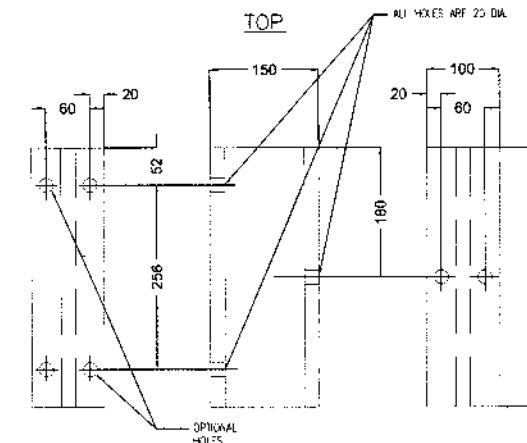
SYM. ABOUT

2.8 mm NOMINAL  
SAME SHAPE AS RAIL  
ELEMENT SECTION

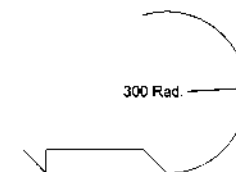
20 mm x 85 mm  
BOLT 5-07

W150x13.5  
STRUCTURAL  
SHAPE

W-BEAM BACK-UP PLATE

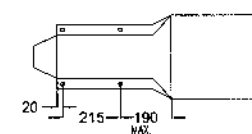


POST FACE SIDE TRAFFIC FACE  
W-BEAM GUARD RAIL BLOCK

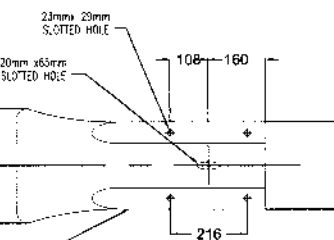
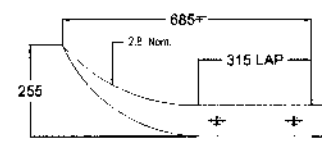


APPLICABLE REACHES

GUARD RAIL SHALL BE PROVIDED ADDITIONALLY ON CULVERT APPROACHES AND AT CRITICAL LOCATIONS/SHARP BENDS.

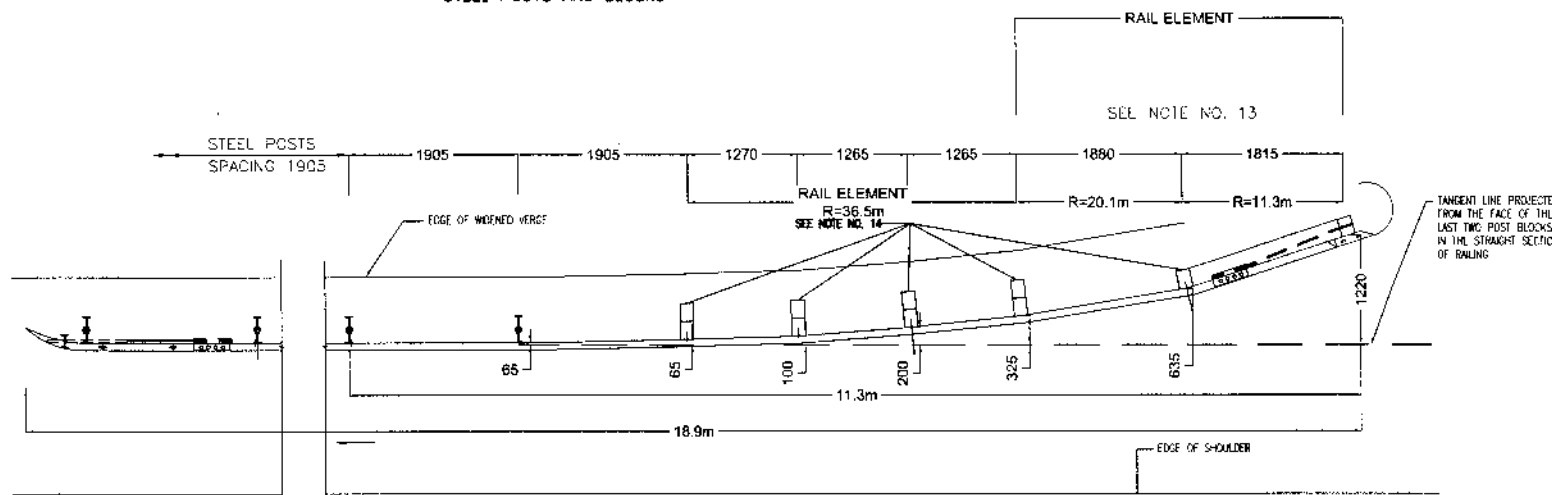


ELEVATION  
TERMINAL SECTION TYPE No. 1  
W-BEAM

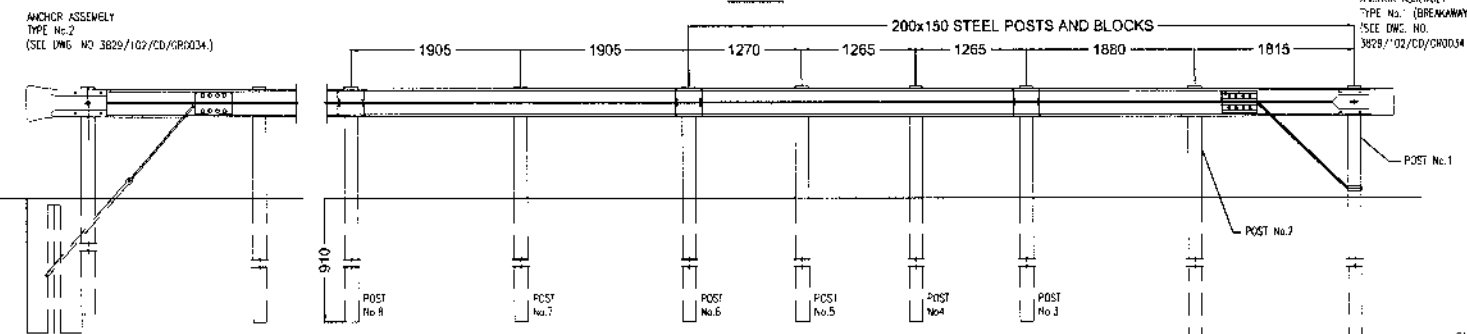


ELEVATION  
TERMINAL SECTION TYPE No. 2  
W-BEAM

SAME SHAPE AS RAIL  
ELEMENT SECTION



PLAN



ELEVATION  
APPROACH FLARE AND END ANCHORS

NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE.
- ALL LAPS SHALL BE IN THE DIRECTION OF TRAFFIC.
- W-BEAM TERMINAL SECTIONS SHALL BE USED IN PLACE OF END ANCHORAGE RAIL AT THE DEPARTURE END ONLY OR AT OTHER RESTRICTED LOCATIONS AS APPROVED BY THE ENGINEER.
- W-BEAM RAIL SECTION SHALL CONFORM TO AASHTO M-180 AND SHALL BE TYPE-II, CLASS 'B'.
- WHERE THE GUARD RAIL HAS TO FOLLOW A CURVE OF LESS THAN 45m RADIUS, THE BEAM SHALL BE CURVED TO SUIT, BY THE BEAM MANUFACTURER.
- THE HOLES FOR ANCHORAGE POSTS SHALL BE BACKFILLED WITH WELL COMPACTED GRANULAR MATERIAL. THE SPACE INSIDE THE TERMINAL NOSE SHALL BE FILLED WITH CONCRETE, CLASS 20.
- THE CONTRACTOR SHALL PREPARE DRAWINGS SHOWING LOCATIONS, ELEVATIONS AND SPACING OF POSTS AT EACH CULVERT/HIGH FILL LOCATION AND SHALL OBTAIN APPROVAL OF THE ENGINEER.
- BACKFILLING OF THE POST HOLES SHALL BE CARRIED OUT AS FOLLOWS:
  - IN CASE OF ROCK, CORED HOLES-250 DIA (AS MADE) WILL BE BACKFILLED WITH LEAN CONCRETE CLASS 15
  - IN CASE OF STRATA OTHER THAN ROCK, HOLES-300 DIA (AS MADE) WILL BE BACKFILLED WITH LEAN CONCRETE CLASS 15 OR THE POSTS MAY BE HAMMERED IN PLACE AS APPROVED BY THE ENGINEER.
- NO EXTRA PAYMENT SHALL BE MADE TO THE CONTRACTOR FOR CORING AND OR CONCRETING FOR POST FIXATION.
- EXISTING EMBANKMENT MAY BE WIDENED WHERE NECESSARY TO ACCOMMODATE GUARD RAIL FLARE AT APPROACH END.
- BACK-UP PLATE TO BE USED BETWEEN GUARD RAIL ELEMENT AND STEEL BLOCK ON STEEL POST WHERE THERE IS NO RAIL ELEMENT SPLICE.
- DIRECTION OF TRAFFIC INDICATED BY ARROW (→).
- POST SPACING AND HEIGHT IS AS PER TYPE OF RAIL SPECIFIED IN HIGHWAY DESIGN STANDARDS SECTION 16.
- THE RAIL ELEMENT CONNECTING POST NOS. 1, 2, AND 3 HAS A COMPOUND BEND WITH A RADIUS OF 11.3m BETWEEN POST NOS. 1 AND 2, AND A RADIUS OF 20.1m BETWEEN POST NOS. 2 AND 3. THE RADJS CHANGES AT POST NO. 2.
- SHELF ANGLES TO SUPPORT THE RAIL ELEMENT SHALL BE INSTALLED ON POST NOS. 2, 3, 4, 5 AND 6 OF THE FLARE. SEE DWG. NO. 3829/102/CD/GR0034 FOR GUARD RAIL EXTENDED INTO CUT BANK, THE THE POSTS INSTALLED ON SLOPES GREATER THAN 10:1, SHOULD BE 2400 LONG.
- THE FLARE RATE FOR THE GUARD RAIL EXTENDED INTO CUT BANKS MAY BE INCREASED AFTER CROSSING THE DITCH BOTTOM (AT THE ANGLE POINT), TO SHORTEN THE LENGTH OF TERMINAL (UPTO 8:1).
- TYPE NO.2 WOULD BE USED ON THE TRAIL END OF A 1WAY SINGLE CARRIAGEWAY, AND ON THE TRAIL END FOR A DUAL CARRIAGEWAY.
- MINOR ADJUSTMENTS TO POST SPACING AND OFFSETS MAY BE REQUIRED TO FIT SITE CONDITIONS.



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM  
AND ENTERPRISE  
DEVELOPMENT PROJECT  
C&W DEPARTMENT, KP



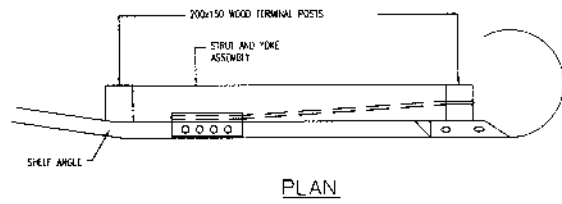
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

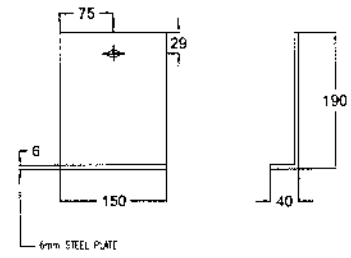
DRAWN	
SUBMITTED	
RECOMMENDED	
CHD./VER.	
APPROVED	

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

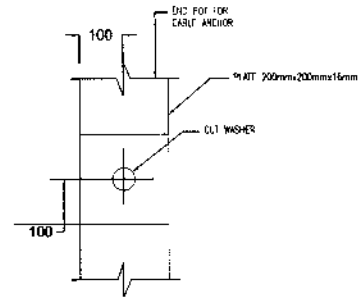
TITLE <b>TYPICAL GUARD RAIL DETAILS (1)</b>	
DATE JANUARY, 2021	DWG NO. 38164/102/TD/GR0030



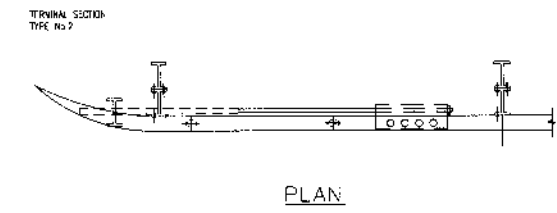
PLAN



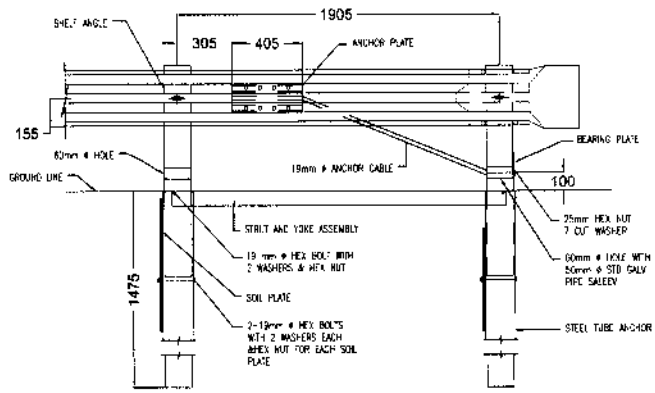
SHELF ANGLE



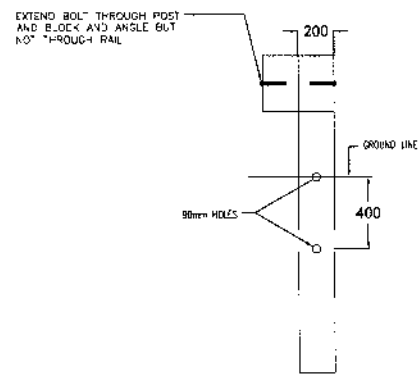
BEARING PLATE DETAIL



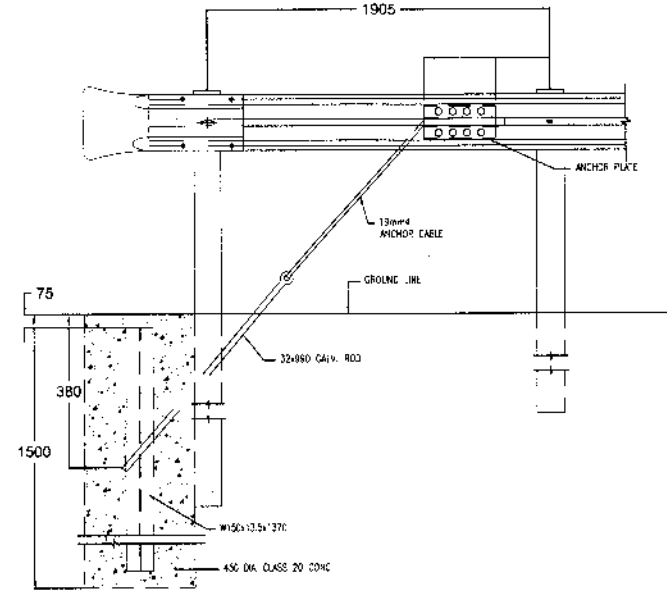
PLAN



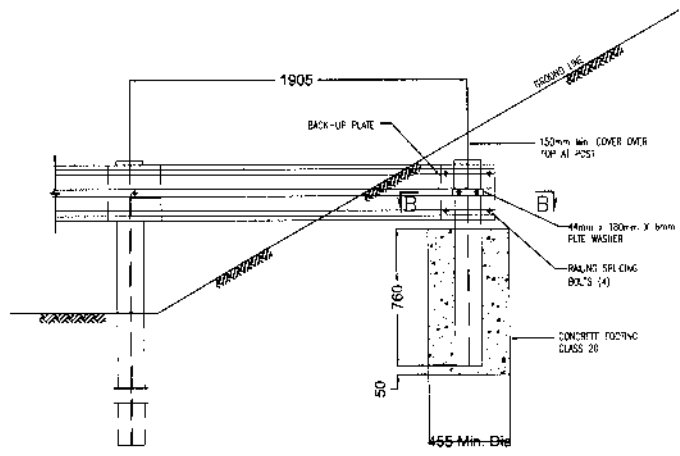
ELEVATION  
ANCHORS ASSEMBLY  
TYPE NO.1 (BREAKAWAY)



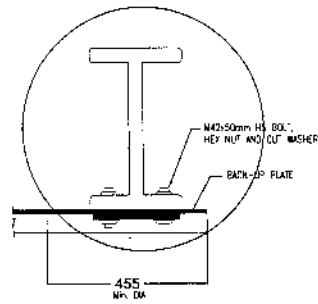
BREAKAWAY POST  
(POST NO. 2, 3, 4, 5, AND 6)



ELEVATION  
ANCHORS ASSEMBLY  
TYPE NO.2



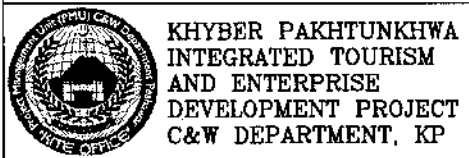
ELEVATION  
BURIED POST ANCHOR



SECTION B - B

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS. UNLESS NOTED OTHERWISE.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DWG. NO. 38164/102/TD/GR0030.)
3. THE LAYOUT AND DETAILS SHOWN ON THIS PLAN ARE INDICATIVE ONLY OF THE VARIOUS POSSIBILITIES AVAILABLE FOR THE APPROACH AND TAIL ENDS FOR GUARD RAIL INSTALLATION.
4. IN CASE SOLID ROCK IS ENCOUNTERED, THE POST MAY BE SHORTENED, PROVIDED IT EXTENDS INTO THE SOLID ROCK A MIN. OF 900mm.



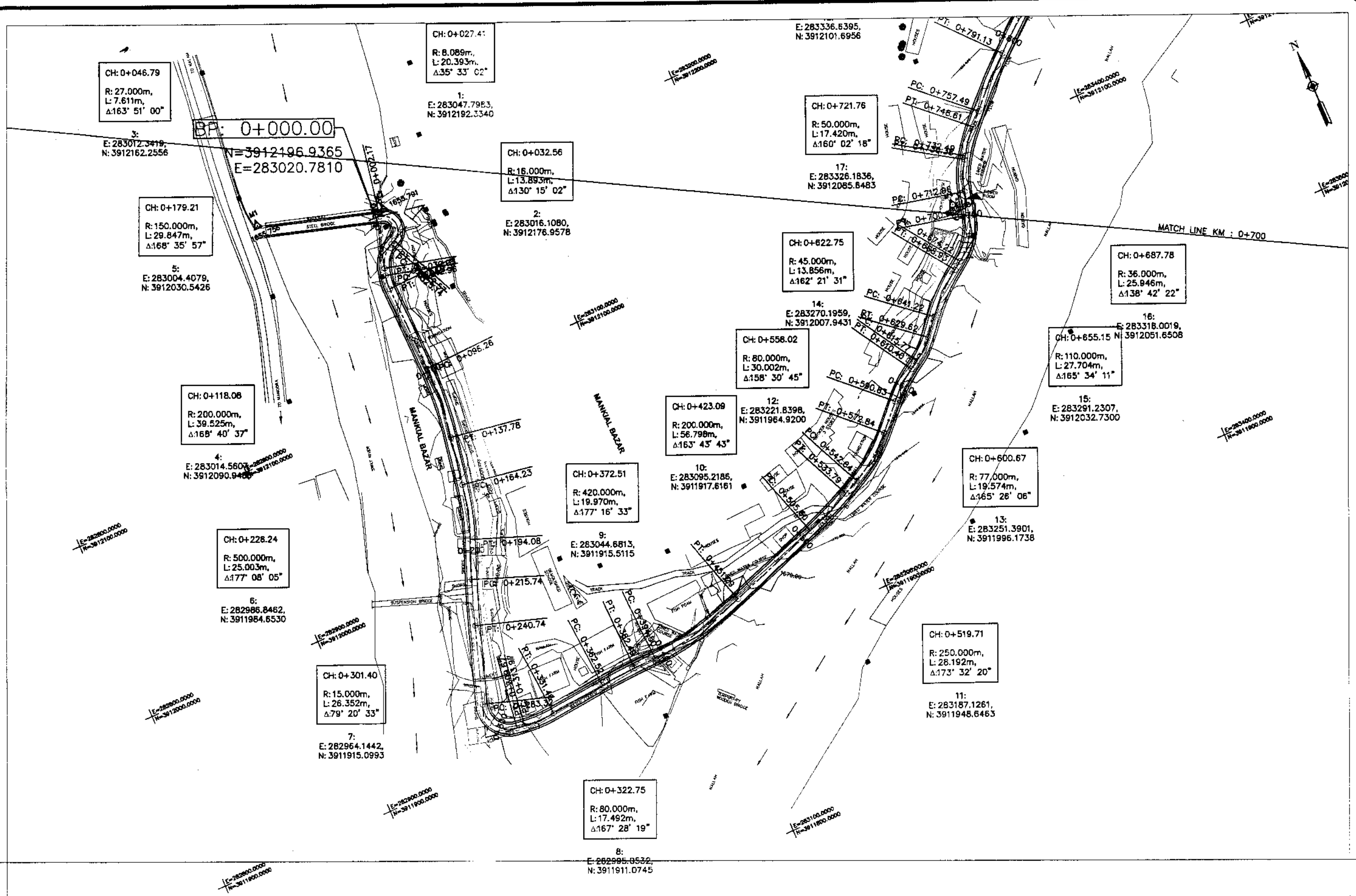
**NES**  
**PAK**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

PROJECT:  
**CONSTRUCTION OF  
MANKIAL BADA SERA ROAD  
PROJECT (22 Km)**

TITLE	
TYPICAL GUARD RAIL DETAILS (2)	
DATE	DWG NO.
JANUARY, 2021	38164/102/TD/GR0030

**PLAN AND PROFILE**  
**ROAD -1**



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

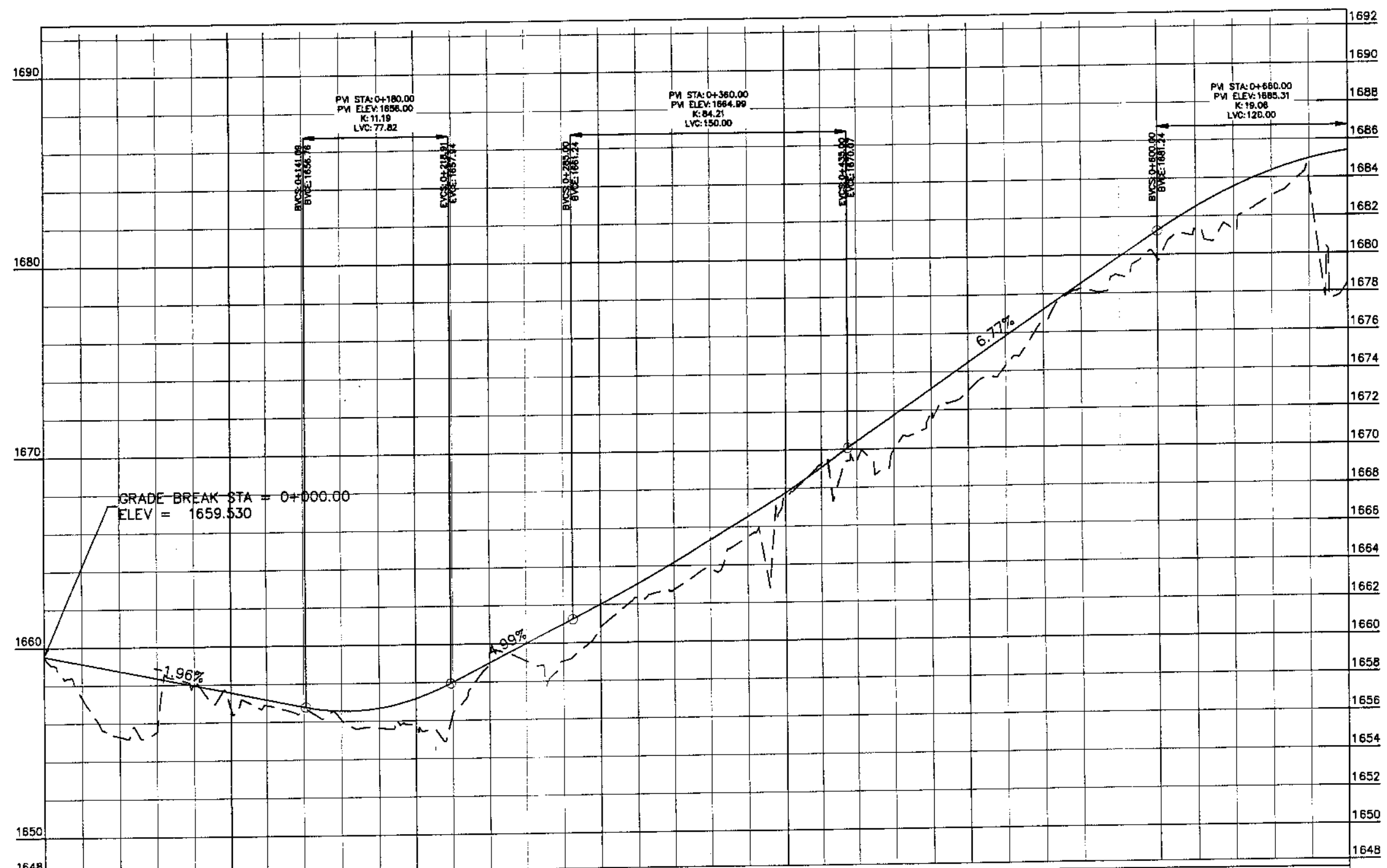
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NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN: JUNAJD KHAN  
SUBMITTED: NOSHERWAN NAEEM  
RECOMMENDED:   
CHD./VER.   
APPROVED:   
UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 1

PLAN  
KM: 0+000 ~ KM: 0+700  
SCALE: 1:2000  
DATE: November 2020  
DWG NO.: 4169/(iii)/TD/P 1

MANKIAL TO JABBAH ROAD SWAT-R1-practice.rizwan sb.dwg



Station	Design Level	Ground Level
0+000	1659.530	1659.530
0+010	1659.138	1657.342
0+020	1658.745	1655.286
0+030	1658.353	1655.514
0+040	1657.961	1655.105
0+050	1657.569	1656.721
0+060	1657.177	1656.884
0+070	1656.784	1656.547
0+080	1656.392	1656.079
0+090	1656.000	1655.627
0+100	1655.608	1655.762
0+110	1655.216	1655.368
0+120	1654.824	1655.048
0+130	1654.432	1659.503
0+140	1654.040	1659.080
0+150	1653.648	1659.048
0+160	1653.256	1660.747
0+170	1652.864	1662.371
0+180	1652.472	1662.727
0+190	1652.080	1663.831
0+200	1651.688	1665.461
0+210	1651.296	1666.520
0+220	1650.904	1667.511
0+230	1650.512	1668.287
0+240	1650.120	1669.382
0+250	1649.728	1669.961
0+260	1649.336	1671.759
0+270	1648.944	1673.114
0+280	1648.552	1674.979
0+290	1648.160	1675.823
0+300	1647.768	1676.580
0+310	1647.376	1677.178
0+320	1646.984	1678.260
0+330	1646.592	1678.936
0+340	1646.200	1679.887
0+350	1645.808	1679.770
0+360	1645.416	1681.242
0+370	1645.024	1681.311
0+380	1644.632	1681.271
0+390	1644.240	1683.037
0+400	1643.848	1684.362
0+410	1643.456	1684.982
0+420	1643.064	1685.392

KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

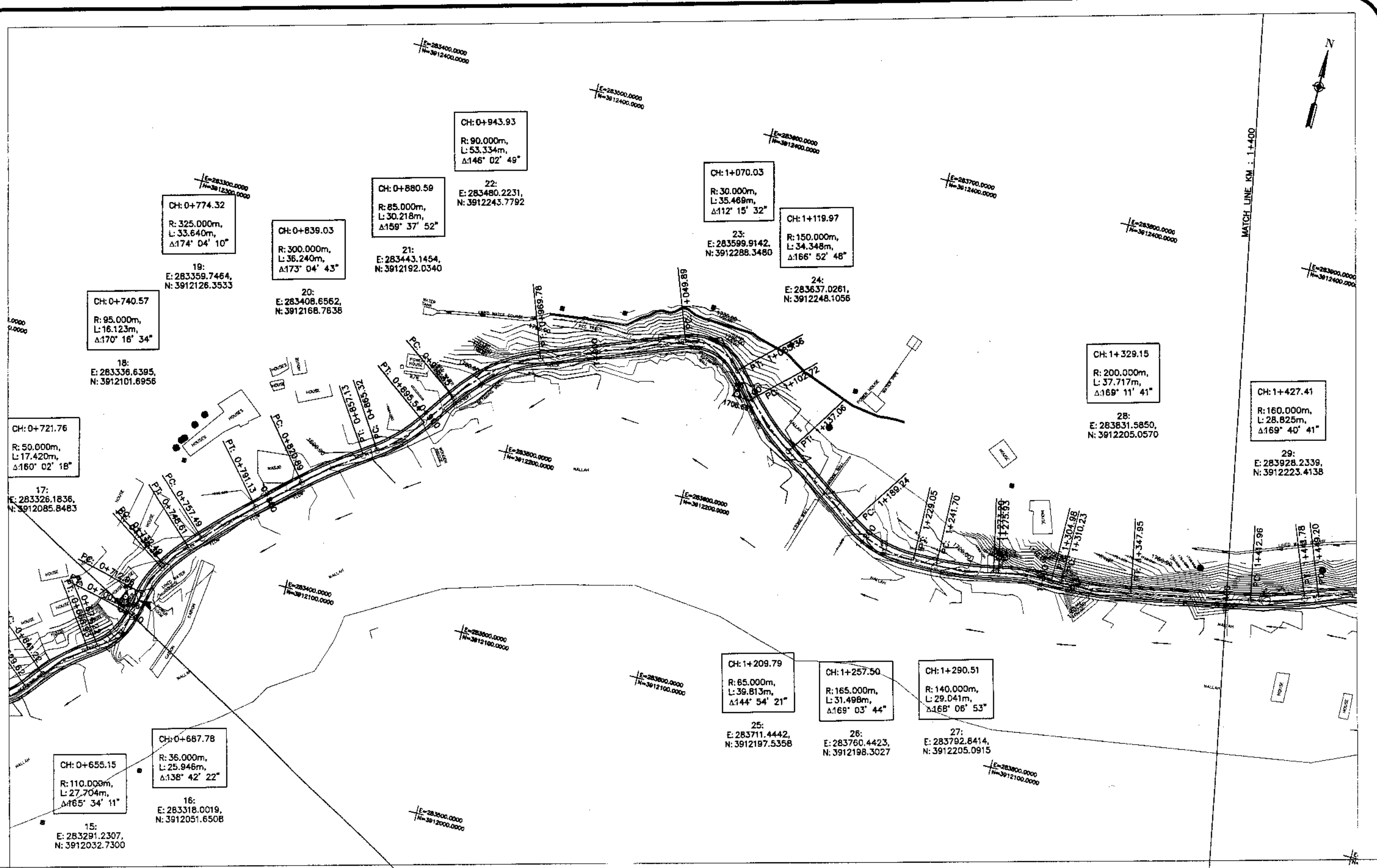
REV.	DATE	DESCRIPTION	APPROVED	APPROVED


UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 1


PROFILE  
KM: 0+000 ~ KM: 0+700  
DATE: November 2020  
DWG NO.: 4169/(iii)/TD/P 001

DRAWN: JUNAID KHAN  
SUBMITTED: MOSHERWAN NAEEM  
RECOMMENDED:  
CHD./VER.:  
APPROVED:






**KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT**  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KPK


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

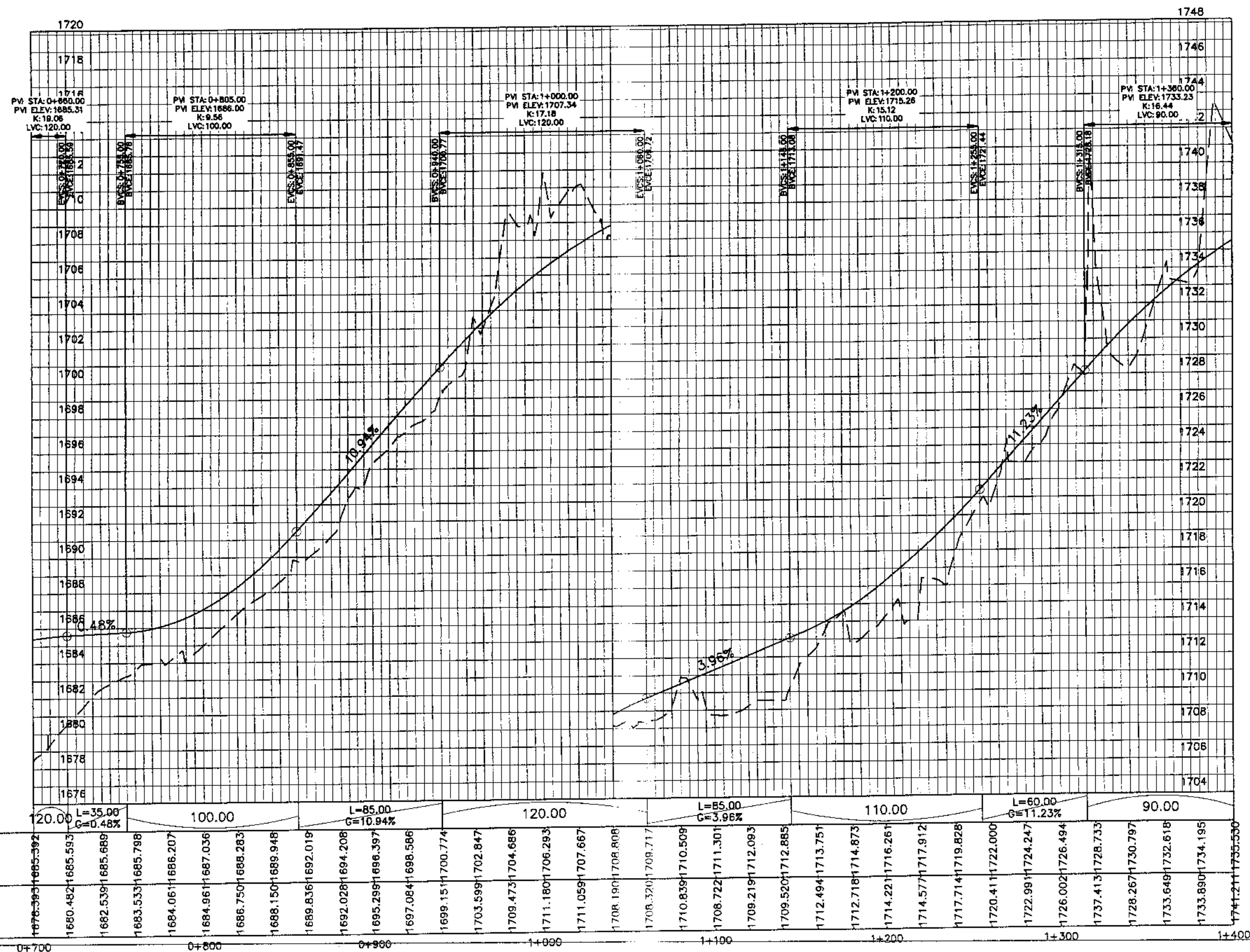
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
 SUBMITTED NOSHERWAN NAEEM  
 RECOMMENDED  
 CHD./VER.  
 APPROVED


**UPGRADING OF MANKIAL BADA SERI ROAD  
 IN DISRTICT SWAT -23.00 KM  
 ROAD - 1**


PLAN		SCALE
KM: 0+700 ~ KM: 1+400		1:2000
DATE	DWG NO.	
November 2020	4169/(ii)/TD/P 2	

MANKIAL TO JABBAH ROAD SWAT-R1-practice.rizwan sb.dwg



Vertical Geometry	120.00	L=35.00 G=0.48%	100.00	L=85.00 G=10.94%	120.00	L=55.00 G=3.96%	110.00	L=60.00 G=11.23%	90.00																											
Design Levels	1678.392	1685.392	1685.593	1685.689	1685.798	1686.207	1687.036	1688.283	1689.948	1692.019	1694.208	1696.397	1698.586	1700.774	1702.847	1704.686	1706.293	1707.667	1708.808	1709.717	1710.509	1711.301	1712.093	1712.885	1713.751	1714.873	1716.261	1717.912	1719.828	1722.000	1724.247	1726.494	1728.733	1730.797	1732.618	1734.195
Ground Levels	1678.392	1685.392	1685.593	1685.689	1685.798	1686.207	1687.036	1688.283	1689.948	1692.019	1694.208	1696.397	1698.586	1700.774	1702.847	1704.686	1706.293	1707.667	1708.808	1709.717	1710.509	1711.301	1712.093	1712.885	1713.751	1714.873	1716.261	1717.912	1719.828	1722.000	1724.247	1726.494	1728.733	1730.797	1732.618	1734.195


 KHYBER PAKHTUNKHWA  
 INTEGRATED TOURISM AND  
 ENTERPRISE DEVELOPMENT  
 PROJECT  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KPK

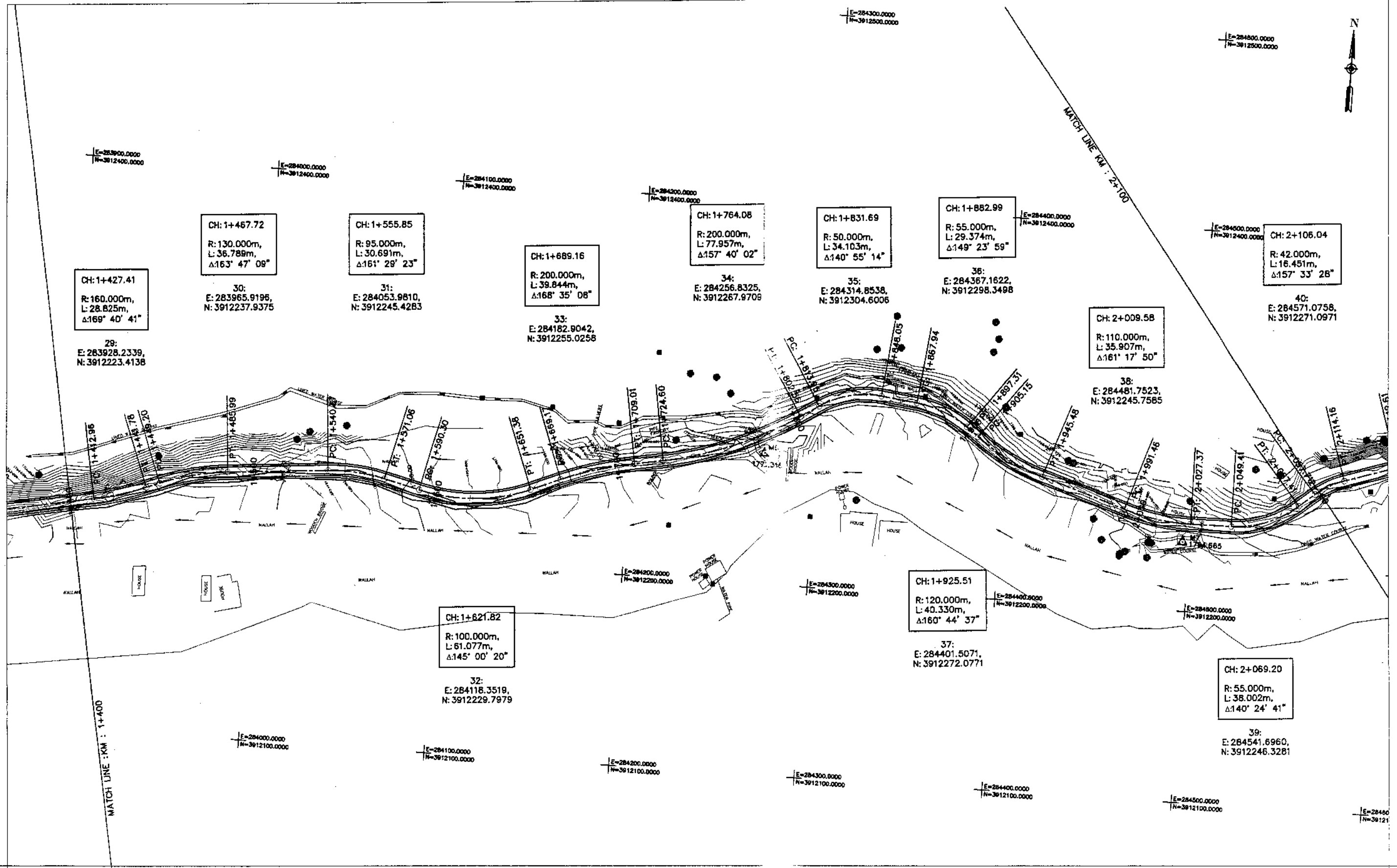

 NATIONAL ENGINEERING SERVICES  
 PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
 SUBMITTED NOSHERWAN NAEEM  
 RECOMMENDED  
 CHD./VER.  
 APPROVED

UPGRADING OF MANKIAL BADA SERI  
 ROAD IN DISTRICT SWAT - 23 KM  
 ROAD - 1

PROFILE  
 KM: 0+700 ~ KM: 1+400  
 DATE November 2020  
 DWG NO. 4169/(iii)/TD/P 002



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT - 23.00 KM  
ROAD - 1

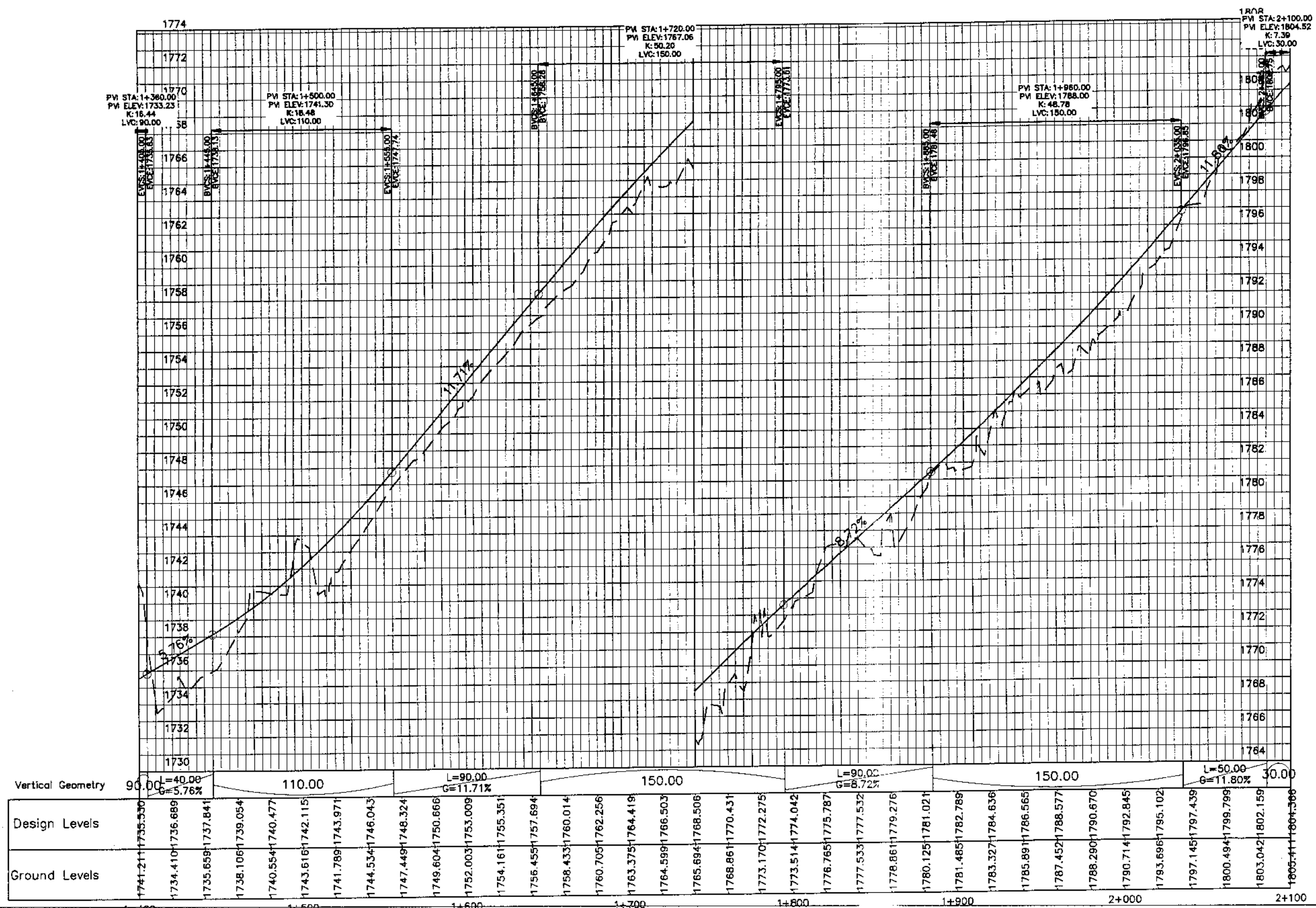
PLAN		SCALE
KM: 1+400 ~ KM: 2+100		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 3	

MANKIAL TO JARSHI ROAD SWAT - 23.00 KM

MATCH LINE : KM : 1+400

MATCH LINE : KM : 2+100

MANKIAL TO JABBAH ROAD SWAT--R1--practice.rizwan\_sb.dwg



Vertical Geometry	90.00	110.00	L=90.00 G=11.71%	150.00	L=90.00 G=8.72%	150.00	L=50.00 G=11.80%	30.00																																																											
Design Levels	1741.211	1734.410	1735.689	1737.841	1739.054	1740.477	1741.115	1741.789	1743.971	1744.534	1746.043	1747.449	1748.324	1749.604	1750.666	1752.003	1753.009	1754.161	1755.351	1756.455	1757.694	1758.433	1760.014	1760.705	1762.256	1763.375	1764.419	1764.599	1766.503	1768.894	1768.506	1768.861	1770.431	1773.170	1772.275	1773.514	1774.042	1776.765	1775.787	1777.533	1777.532	1778.861	1779.276	1780.125	1781.021	1781.485	1782.789	1783.327	1784.636	1785.891	1786.565	1787.452	1788.577	1788.290	1790.670	1790.714	1792.845	1793.696	1795.102	1797.145	1797.439	1800.494	1799.799	1803.042	1802.159	1805.411	1804.386
Ground Levels	1741.211	1734.410	1735.689	1737.841	1739.054	1740.477	1741.115	1741.789	1743.971	1744.534	1746.043	1747.449	1748.324	1749.604	1750.666	1752.003	1753.009	1754.161	1755.351	1756.455	1757.694	1758.433	1760.014	1760.705	1762.256	1763.375	1764.419	1764.599	1766.503	1768.894	1768.506	1768.861	1770.431	1773.170	1772.275	1773.514	1774.042	1776.765	1775.787	1777.533	1777.532	1778.861	1779.276	1780.125	1781.021	1781.485	1782.789	1783.327	1784.636	1785.891	1786.565	1787.452	1788.577	1788.290	1790.670	1790.714	1792.845	1793.696	1795.102	1797.145	1797.439	1800.494	1799.799	1803.042	1802.159	1805.411	1804.386



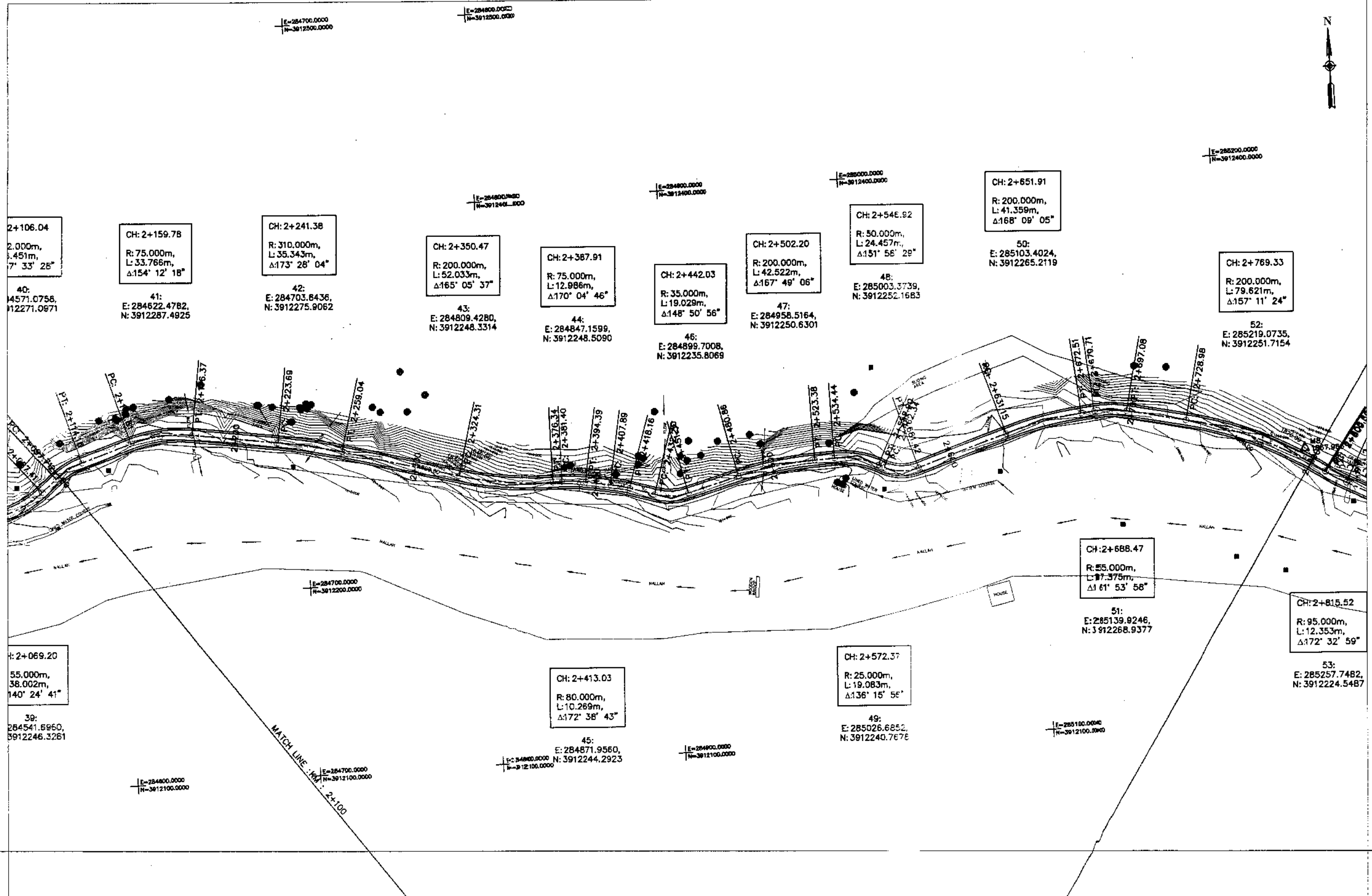
KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAJI KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 1

PROFILE  
KM: 1+400 ~ KM: 2+100  
DATE November 2020  
DWG NO. 4169/(iii)/TD/P 003



CH: 2+106.04  
R: 2.000m,  
L: 3.451m,  
Δ: 7° 33' 28"

40:  
E: 284571.0756,  
N: 3912271.0971

CH: 2+159.78  
R: 75.000m,  
L: 33.766m,  
Δ: 154° 12' 18"

41:  
E: 284622.4782,  
N: 3912287.4925

CH: 2+241.38  
R: 310.000m,  
L: 35.343m,  
Δ: 173° 26' 04"

42:  
E: 284703.8436,  
N: 3912275.9062

CH: 2+350.47  
R: 200.000m,  
L: 52.033m,  
Δ: 165° 05' 37"

43:  
E: 284809.4280,  
N: 3912248.3314

CH: 2+387.91  
R: 75.000m,  
L: 12.886m,  
Δ: 170° 04' 46"

44:  
E: 284847.1599,  
N: 3912248.5090

CH: 2+442.03  
R: 35.000m,  
L: 19.029m,  
Δ: 148° 50' 56"

46:  
E: 284899.7008,  
N: 3912235.8069

CH: 2+502.20  
R: 200.000m,  
L: 42.522m,  
Δ: 167° 49' 06"

47:  
E: 284958.5164,  
N: 3912250.6301

CH: 2+546.92  
R: 50.000m,  
L: 24.457m,  
Δ: 151° 56' 29"

48:  
E: 285003.3739,  
N: 3912252.1683

CH: 2+651.91  
R: 200.000m,  
L: 41.359m,  
Δ: 168° 09' 05"

50:  
E: 285103.4024,  
N: 3912265.2119

CH: 2+769.33  
R: 200.000m,  
L: 79.621m,  
Δ: 157° 11' 24"

52:  
E: 285219.0735,  
N: 3912251.7154

CH: 2+688.47  
R: 55.000m,  
L: 17.375m,  
Δ: 61° 53' 58"

51:  
E: 285139.9246,  
N: 3912268.9377

CH: 2+815.52  
R: 95.000m,  
L: 12.353m,  
Δ: 172° 32' 59"

53:  
E: 285257.7482,  
N: 3912224.5487

CH: 2+069.20  
R: 55.000m,  
L: 38.002m,  
Δ: 140° 24' 41"

39:  
E: 284541.6960,  
N: 3912246.3261

CH: 2+413.03  
R: 80.000m,  
L: 10.269m,  
Δ: 172° 38' 43"

45:  
E: 284871.9560,  
N: 3912244.2923

CH: 2+572.37  
R: 25.000m,  
L: 19.083m,  
Δ: 136° 15' 56"

49:  
E: 285026.6852,  
N: 3912240.7678



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

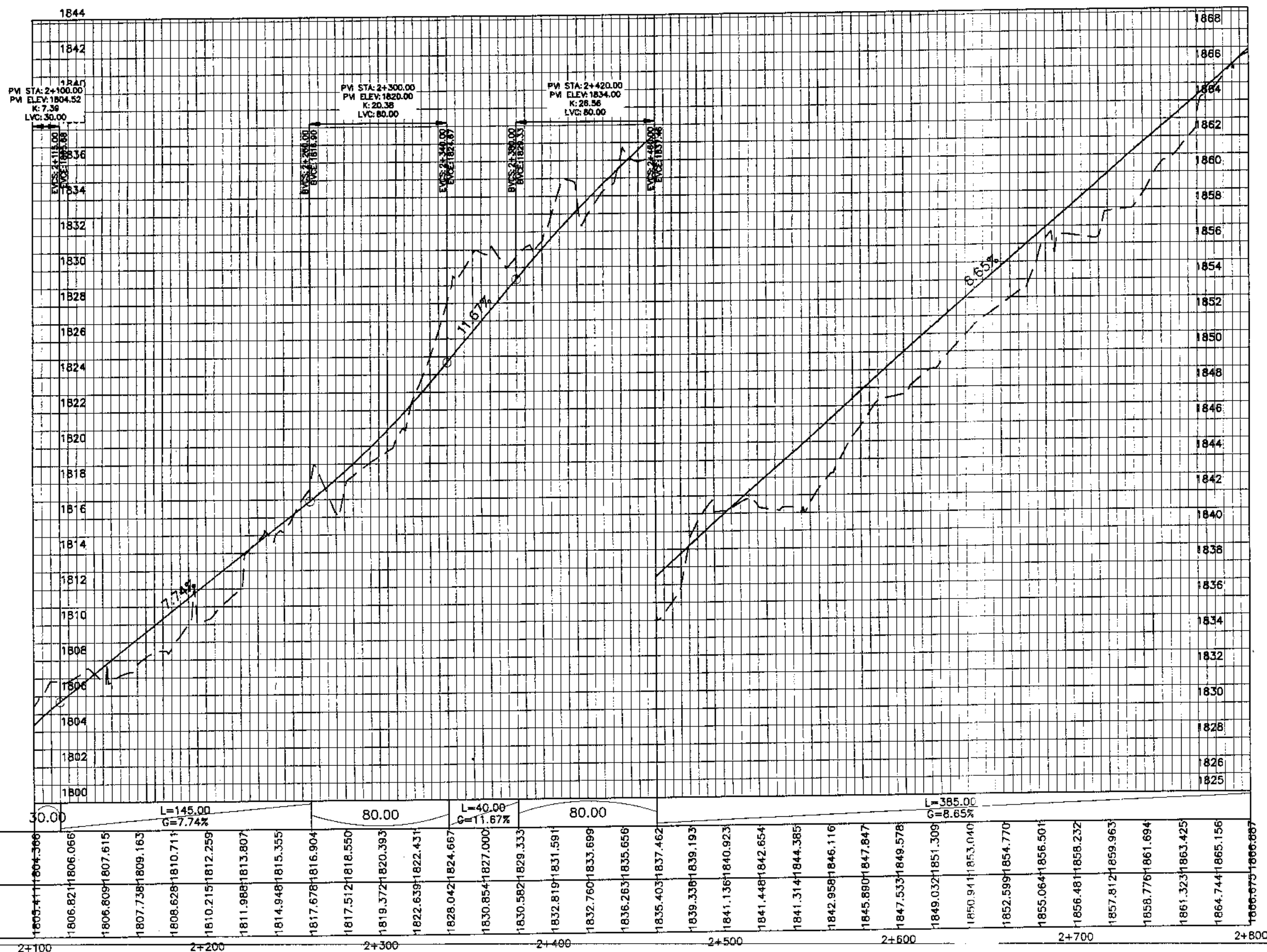
REVISION	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHK./VER.	

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT - 23.00 KM  
ROAD -

PLAN		SCALE
KM: 2+100 ~ KM: 2+800		1:2000
DATE	DWG. NO.	
November 2020	4169/(H)/TD/P 4	

MANKIAL TO JABBAH ROAD SWAT-R1-practice.rzwan\_sb.dwg



Vertical Geometry	30.00	L=145.00 G=7.74%	80.00	L=40.00 G=11.67%	80.00	L=385.00 G=8.65%																																																																	
Design Levels	1805.41	1806.82	1807.73	1808.62	1809.51	1810.40	1811.29	1812.18	1813.07	1813.96	1814.85	1815.74	1816.63	1817.52	1818.41	1819.30	1820.19	1821.08	1821.97	1822.86	1823.75	1824.64	1825.53	1826.42	1827.31	1828.20	1829.09	1829.98	1830.87	1831.76	1832.65	1833.54	1834.43	1835.32	1836.21	1837.10	1837.99	1838.88	1839.77	1840.66	1841.55	1842.44	1843.33	1844.22	1845.11	1846.00	1846.89	1847.78	1848.67	1849.56	1850.45	1851.34	1852.23	1853.12	1854.01	1854.90	1855.79	1856.68	1857.57	1858.46	1859.35	1860.24	1861.13	1862.02	1862.91	1863.80	1864.69	1865.58	1866.47	1867.36	1868.25
Ground Levels	1805.41	1806.82	1807.73	1808.62	1809.51	1810.40	1811.29	1812.18	1813.07	1813.96	1814.85	1815.74	1816.63	1817.52	1818.41	1819.30	1820.19	1821.08	1821.97	1822.86	1823.75	1824.64	1825.53	1826.42	1827.31	1828.20	1829.09	1829.98	1830.87	1831.76	1832.65	1833.54	1834.43	1835.32	1836.21	1837.10	1837.99	1838.88	1839.77	1840.66	1841.55	1842.44	1843.33	1844.22	1845.11	1846.00	1846.89	1847.78	1848.67	1849.56	1850.45	1851.34	1852.23	1853.12	1854.01	1854.90	1855.79	1856.68	1857.57	1858.46	1859.35	1860.24	1861.13	1862.02	1862.91	1863.80	1864.69	1865.58	1866.47	1867.36	1868.25

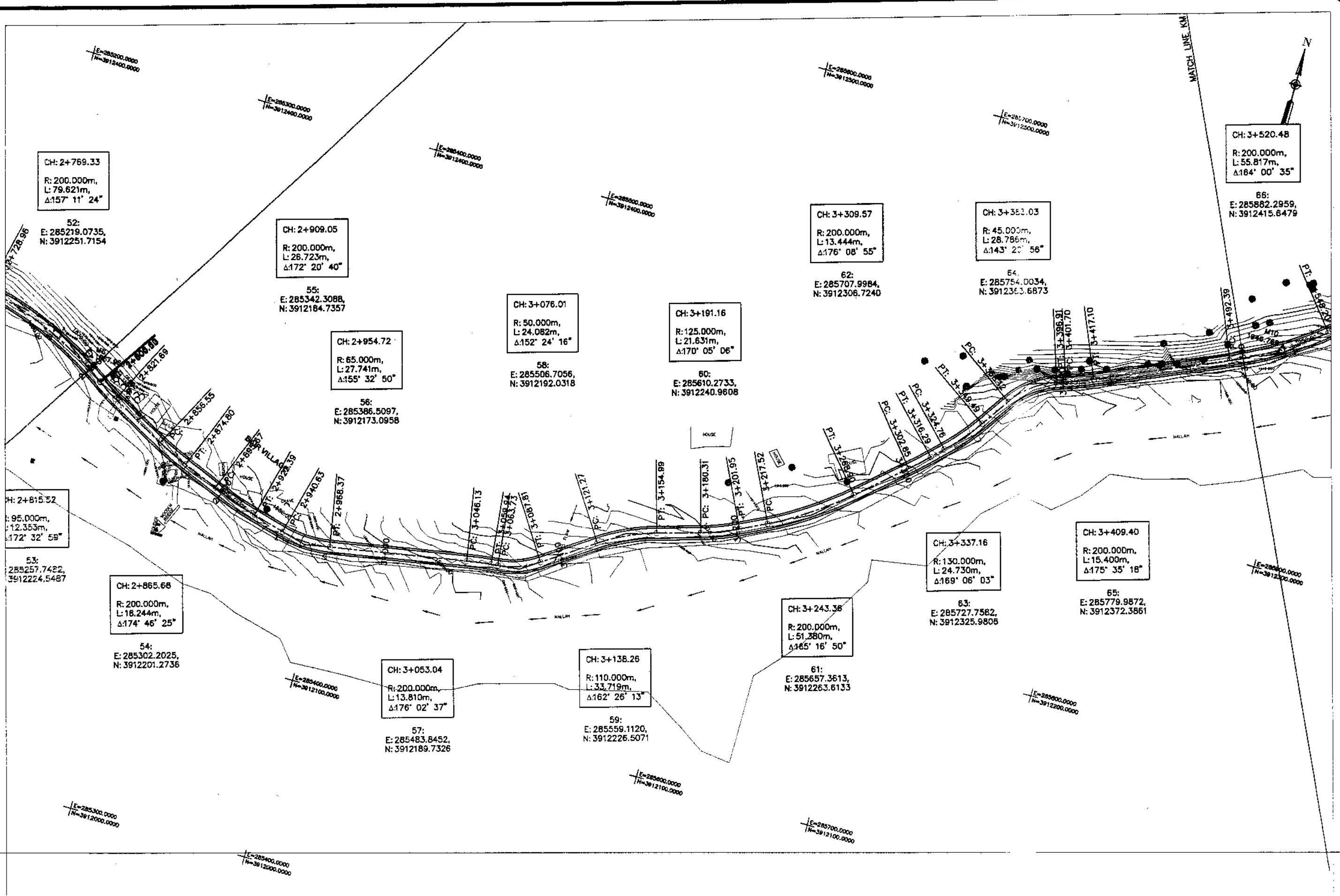
KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAD KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 1

PROFILE  
KM: 2+100 ~ KM: 2+800  
DATE November 2020  
DWG NO. 4169/(iii)/TD/P 004



CH: 2+769.33  
R: 200.000m,  
L: 79.621m,  
Δ: 157° 11' 24"

CH: 2+909.05  
R: 200.000m,  
L: 26.723m,  
Δ: 172° 20' 40"

CH: 3+076.01  
R: 50.000m,  
L: 24.082m,  
Δ: 152° 24' 16"

CH: 3+191.16  
R: 125.000m,  
L: 21.631m,  
Δ: 170° 05' 06"

CH: 3+309.57  
R: 200.000m,  
L: 13.444m,  
Δ: 176° 08' 55"

CH: 3+353.03  
R: 45.000m,  
L: 28.786m,  
Δ: 143° 20' 56"

CH: 3+520.48  
R: 200.000m,  
L: 55.817m,  
Δ: 164° 00' 35"

CH: 2+815.52  
R: 95.000m,  
L: 12.353m,  
Δ: 172° 32' 59"

CH: 2+954.72  
R: 65.000m,  
L: 27.741m,  
Δ: 155° 32' 50"

CH: 3+076.01  
R: 50.000m,  
L: 24.082m,  
Δ: 152° 24' 16"

CH: 3+191.16  
R: 125.000m,  
L: 21.631m,  
Δ: 170° 05' 06"

CH: 3+337.16  
R: 130.000m,  
L: 24.730m,  
Δ: 169° 06' 03"

CH: 3+409.40  
R: 200.000m,  
L: 15.400m,  
Δ: 175° 35' 18"

CH: 2+865.68  
R: 200.000m,  
L: 16.244m,  
Δ: 174° 46' 25"

CH: 3+053.04  
R: 200.000m,  
L: 13.810m,  
Δ: 176° 02' 37"

CH: 3+138.26  
R: 110.000m,  
L: 33.719m,  
Δ: 162° 26' 13"

CH: 3+243.36  
R: 200.000m,  
L: 51.380m,  
Δ: 165° 16' 50"

CH: 2+815.52  
R: 95.000m,  
L: 12.353m,  
Δ: 172° 32' 59"

CH: 2+865.68  
R: 200.000m,  
L: 16.244m,  
Δ: 174° 46' 25"

CH: 3+053.04  
R: 200.000m,  
L: 13.810m,  
Δ: 176° 02' 37"

CH: 3+138.26  
R: 110.000m,  
L: 33.719m,  
Δ: 162° 26' 13"

CH: 3+243.36  
R: 200.000m,  
L: 51.380m,  
Δ: 165° 16' 50"

KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

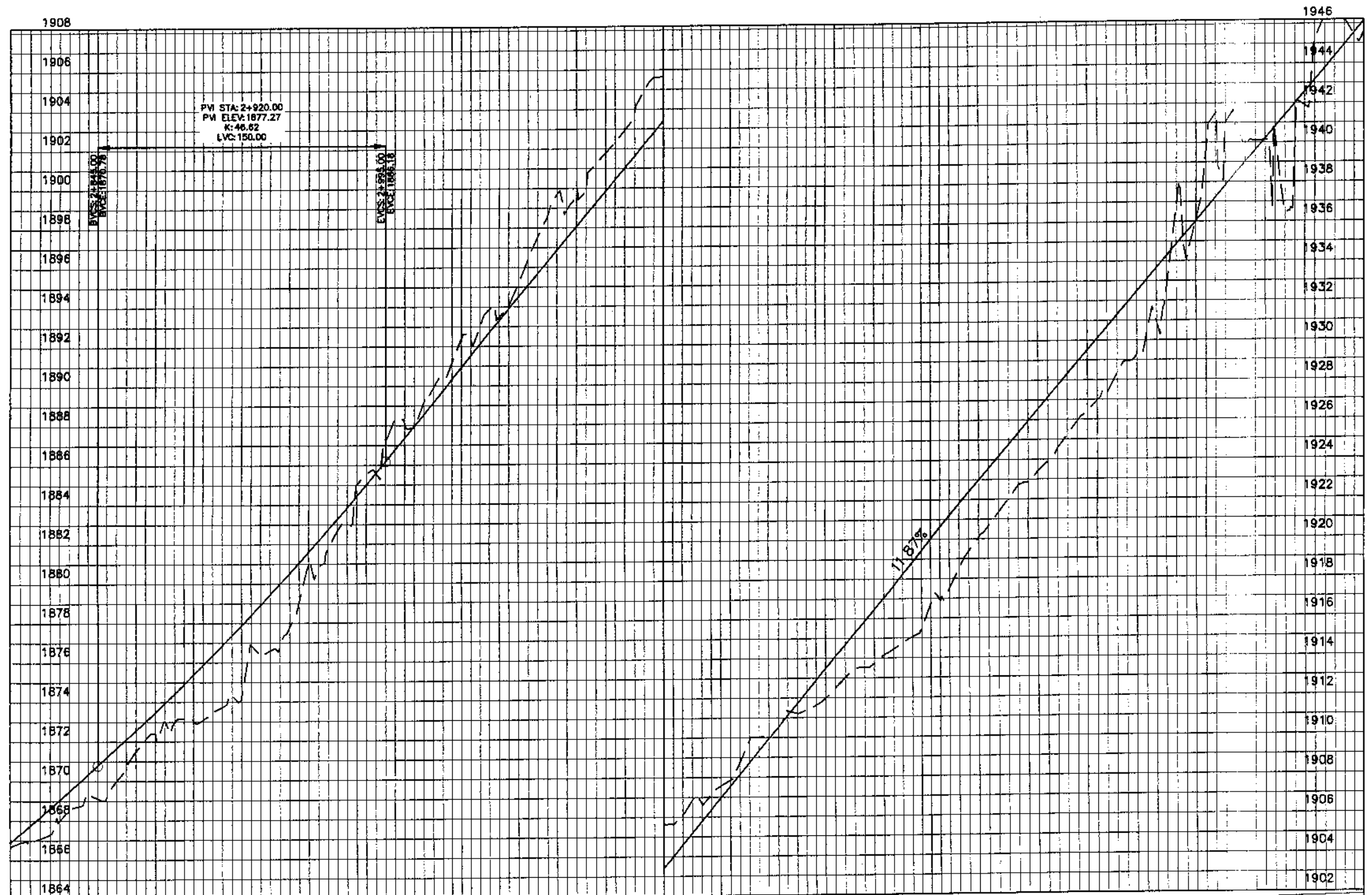
**NEEPAR**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
UPGRADING OF MANKAL BADA SERI ROAD  
IN DISTRICT SWAT - 2500 KM  
ROAD - 1

PLAN		SCALE
KM: 2+800 ~ KM: 3+500		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 5	

MANKIAL TO JABBAH ROAD SWAT - R1 - practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
2+800	1866.675	1866.667
2+820	1867.307	1868.617
2+840	1869.318	1870.348
2+860	1870.755	1872.103
2+880	1872.994	1873.941
2+900	1873.081	1875.865
2+920	1874.242	1877.875
2+940	1876.795	1879.971
2+960	1880.692	1882.152
2+980	1885.012	1884.419
3+000	1888.345	1886.769
3+020	1889.903	1889.144
3+040	1892.321	1891.518
3+060	1894.042	1893.892
3+080	1898.602	1896.267
3+100	1899.893	1898.641
3+120	1902.936	1901.015
3+140	1905.531	1903.390
3+160	1906.689	1905.764
3+180	1908.762	1908.139
3+200	1910.515	1910.513
3+220	1911.620	1912.887
3+240	1913.476	1915.262
3+260	1914.441	1917.636
3+280	1916.703	1920.010
3+300	1919.365	1922.385
3+320	1922.030	1924.759
3+340	1923.893	1927.133
3+360	1926.448	1929.508
3+380	1928.949	1931.882
3+400	1932.626	1934.256
3+420	1939.652	1936.631
3+440	1939.931	1939.005
3+460	1936.443	1941.380
3+480	1946.404	1943.754
3+500	1945.562	1946.128

KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

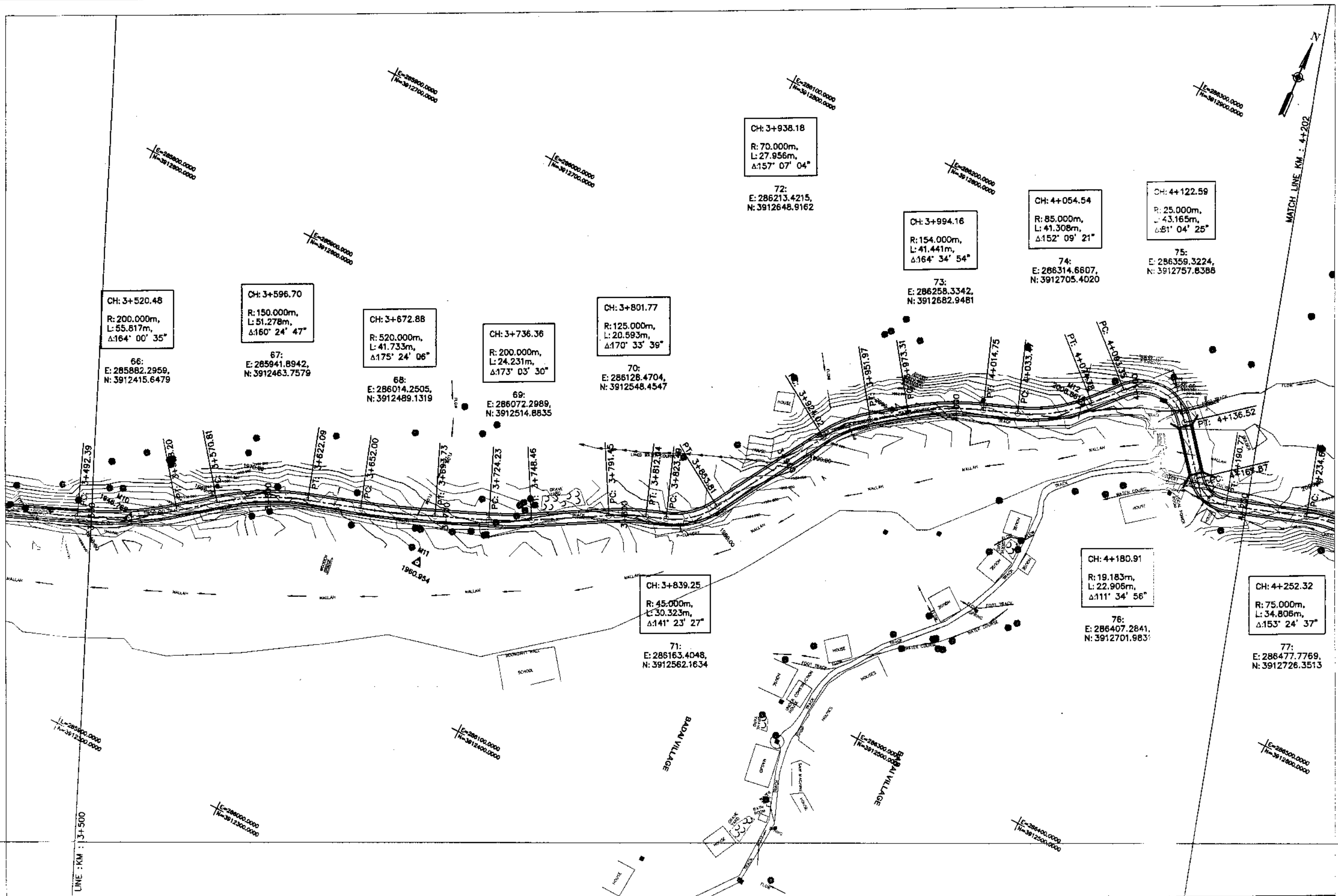

**NEEFAR**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED


DRAWN: JUNAID KHAN  
SUBMITTED: NOSHERWAN NAEEM  
RECOMMENDED:   
CHD./VER.   
UPGRADING OF MANKIAL BADA SEF  
ROAD IN DISTRICT SWAT - 23 KI  
ROAD - 1

PROFILE  
KM: 2+800 ~ KM: 3+500  
DATE: November 2020  
DWG NO.: 4169/(iii)/TD/P 005



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

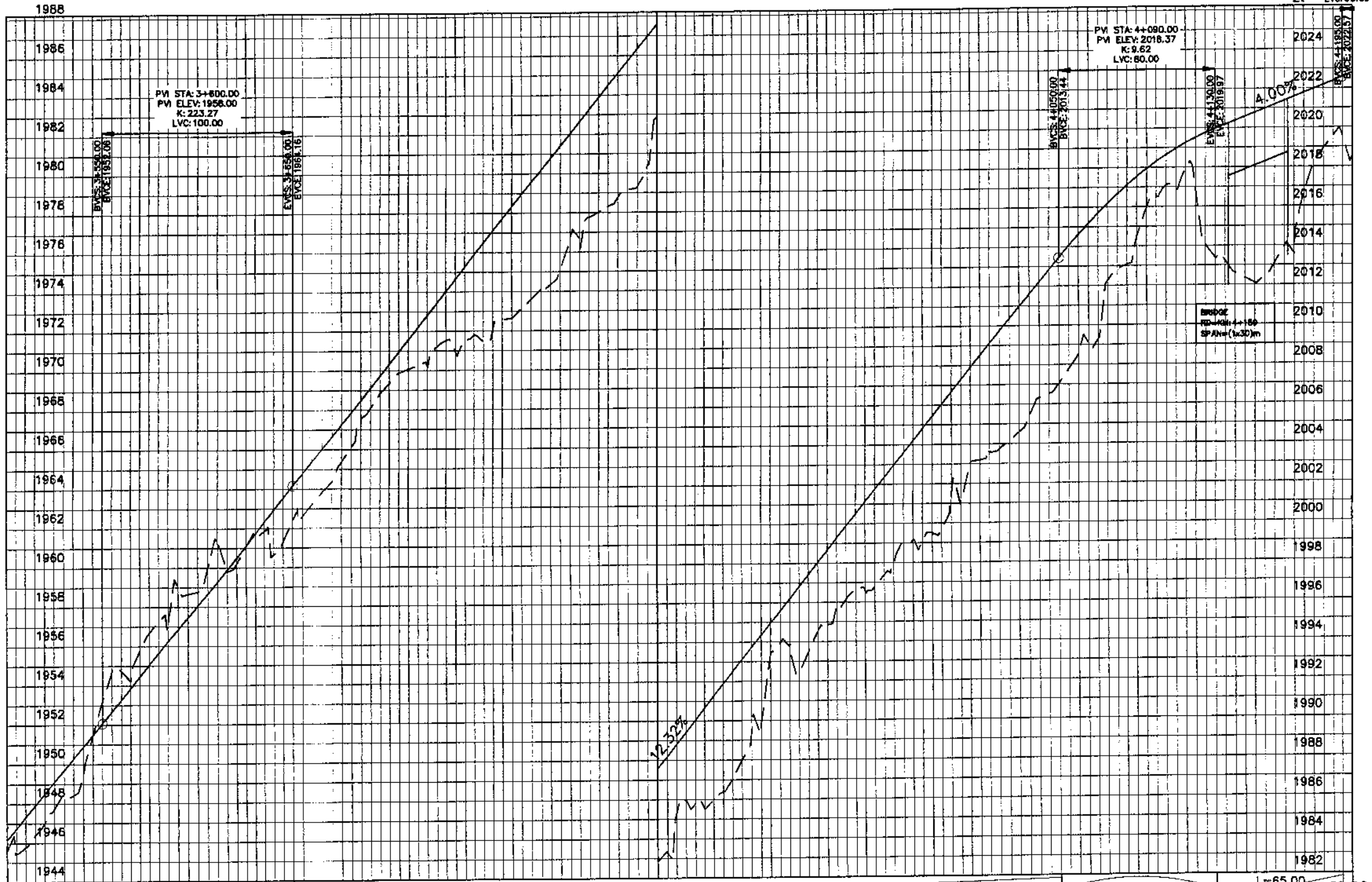
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISRDTIC SWAT -23.00 KM  
ROAD - 1

PLAN	SCALE
KM: 3+500 ~ KM: 4+200	1:2000
DATE	DWG NO.
November 2020	4169/(III)/TD/P 5

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

PVI STA: 4+225.00  
 PVI ELEV: 2023.77  
 K: 5.50  
 LVC: 60.00



Station	Ground Level (m)	Design Level (m)
3+500	1945.30	1946.126
3+550	1947.01	1948.503
3+600	1949.48	1950.877
3+650	1954.72	1953.254
3+700	1957.25	1955.646
3+750	1958.75	1958.056
3+800	1960.20	1960.484
3+850	1960.64	1962.930
3+900	1963.20	1965.392
3+950	1966.10	1967.856
4+000	1969.34	1970.320
4+050	1970.24	1972.784
4+100	1971.51	1975.248
4+150	1972.55	1977.711
4+200	1974.09	1980.175
4+250	1976.66	1982.639
4+300	1978.75	1985.103
4+350	1982.84	1987.567
4+400	1985.79	1990.031
4+450	1987.07	1992.495
4+500	1993.42	1994.959
4+550	1993.49	1997.423
4+600	1996.15	1999.887
4+650	1997.39	2002.351
4+700	1999.06	2004.815
4+750	2001.02	2007.279
4+800	2003.73	2009.743
4+850	2006.32	2012.207
4+900	2008.66	2014.618
4+950	2012.85	2016.666
4+000	2015.45	2018.299
4+050	2016.80	2019.515
4+100	2012.62	2020.367
4+150	2013.08	2021.167
4+200	2018.24	2021.967
4+250	2016.51	2022.790

MANKIAL TO JABBAH ROAD SWAT-R1-practice.rizwan sb.dwg

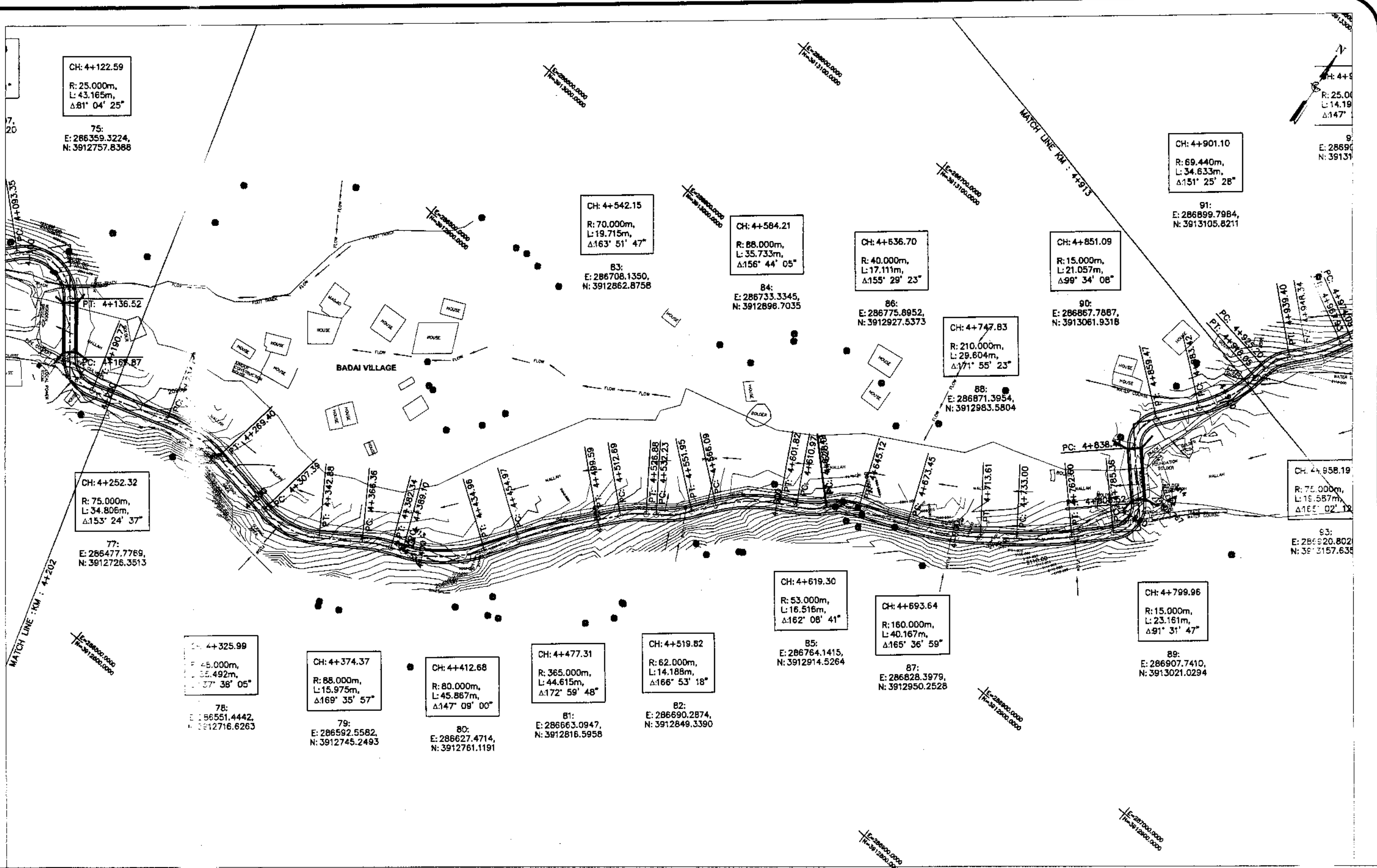
**KHYBER PAKHTUNKHWA**  
 INTEGRATED TOURISM AND  
 ENTERPRISE DEVELOPMENT  
 PROJECT  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT KPK

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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN: JUNAID KHAN  
 SUBMITTED: NOSHERWAN NAEEM  
 RECOMMENDED:   
 CHD./VER.   
 APPROVED:   
 UPGRADING OF MANKIAL BADA SERI  
 ROAD IN DISTRICT SWAT - 23 KM  
 ROAD - 1

PROFILE  
 KM: 3+500 ~ KM: 4+200  
 DATE: November 2020  
 DWG NO.: 4169/(iii)/TD/P 006



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS  
DEPARTMENT, KPK

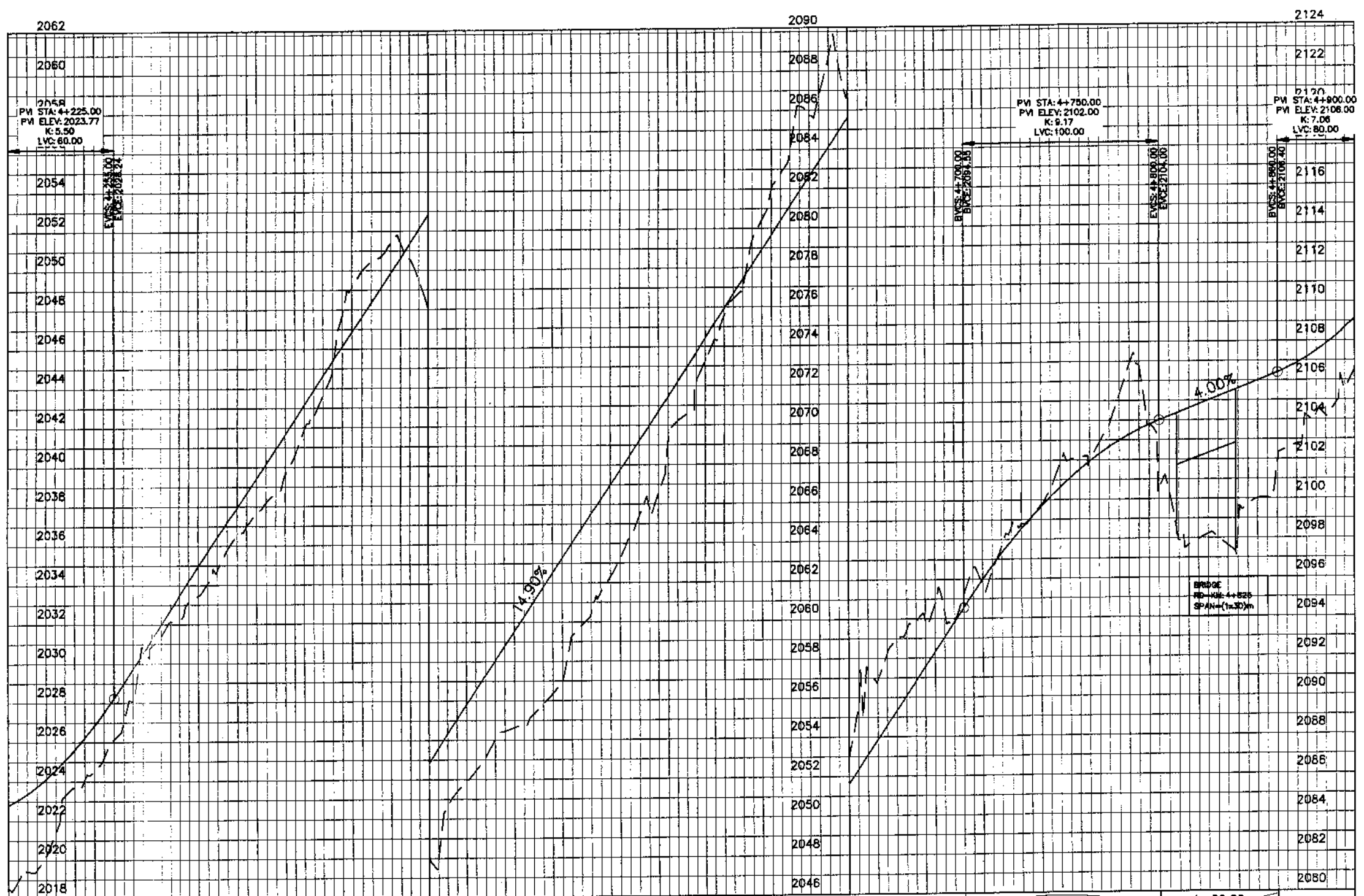
**NEP**  
**PAR**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT - 23.00 KM  
ROAD - 1

PLAN SCALE  
KM: 4+200 ~ KM: 4+900 1:2000  
DATE DWG NO.  
November 2020 4169/(iii)/20 7

MANKIAL TO JABBAH ROAD SWAT-R1-practice.rizwan.sb.dwg



Vertical Geometry	60.00	L=445.00 G=14.90%	100.00	L=60.00 G=4.00%	80.00
Design Levels	2022.790	2024.136	2026.208	2028.983	2106.133
Ground Levels	2018.513	2020.265	2024.069	2027.002	2104.257



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

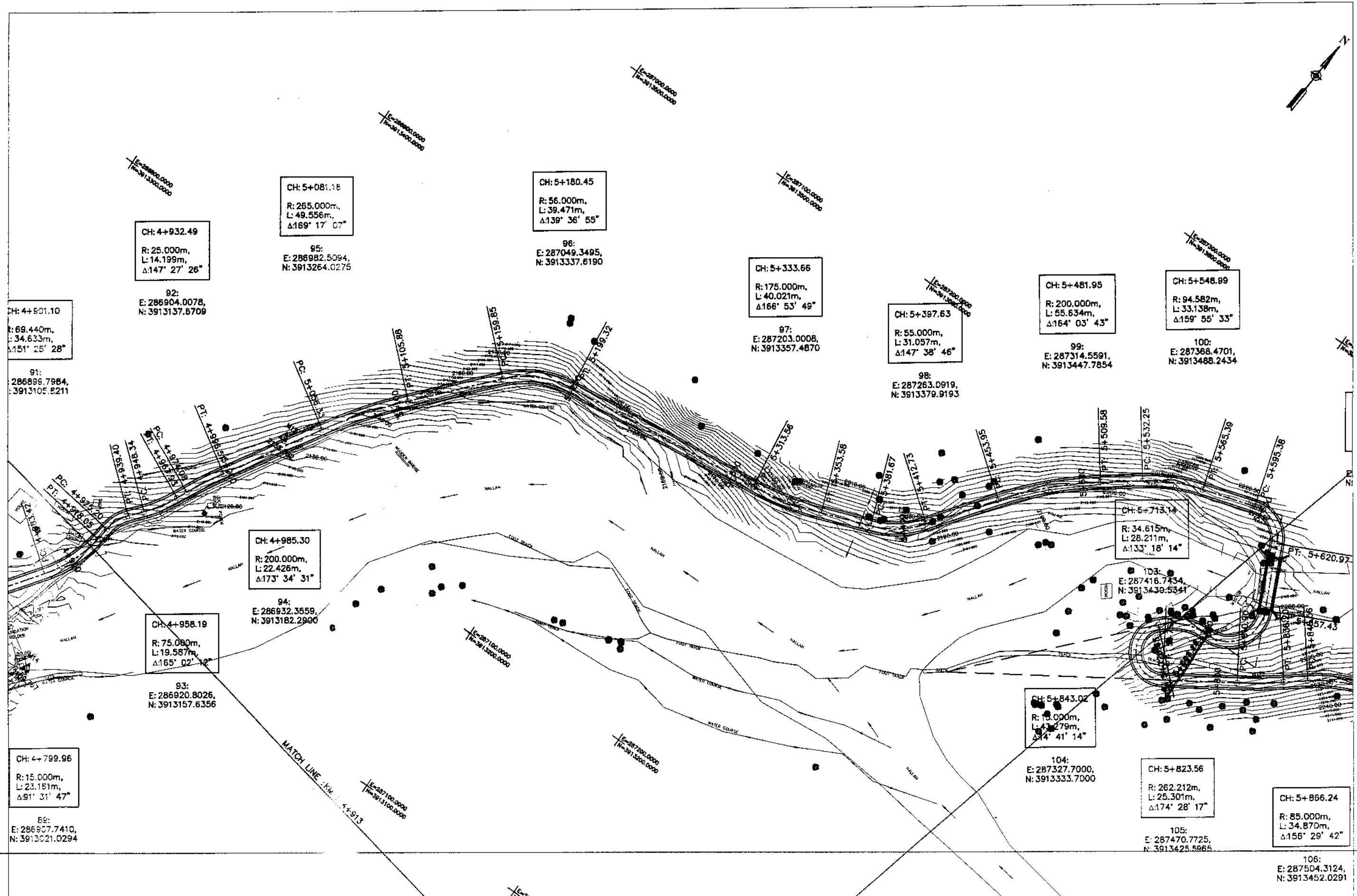
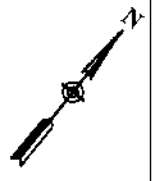



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.


REV.	DATE	DESCRIPTION	APPROVED	APPROVED

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 1

PROFILE	
KM: 4+200 ~ KM: 4+900	
DATE	DWG NO.
November 2020	4169/(III)/TD/P 007




**KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT**  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KPK

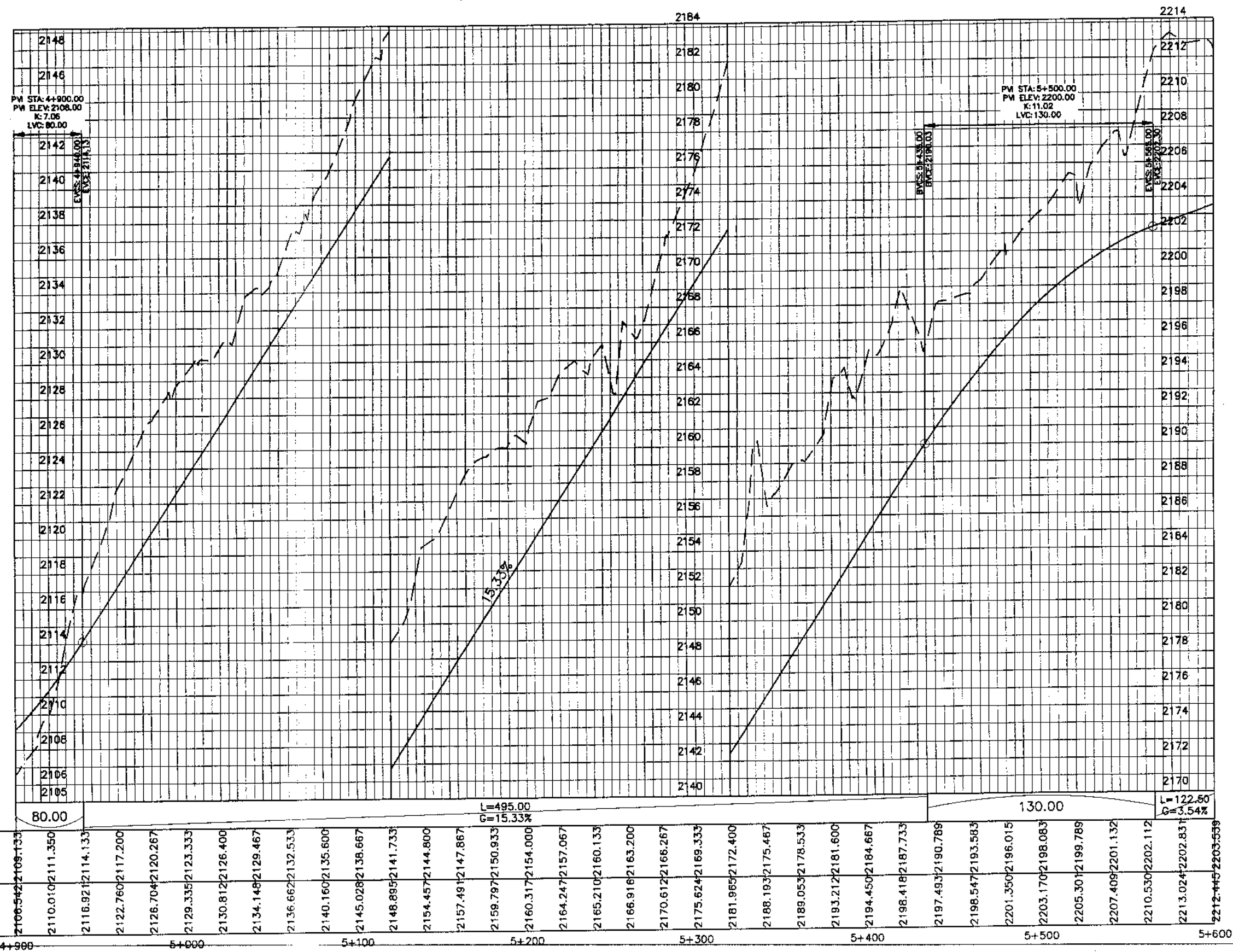

**NATIONAL ENGINEERING SERVICES  
PAKISTAN (FMT.) LTD.**

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

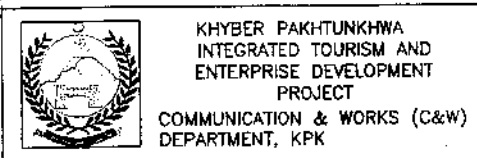
DRAWN JUNAID KHAN  
 SUBMITTED NOSHERWAN NAEEM  
 RECOMMENDED  
 CHD./VER.  
**UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 1**

PLAN		SCALE
KM: 4+900 ~ KM: 5+600		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P/B	

MANKIAL TO JABBAH ROAD SWAT-R1-practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
4+900	2106.54	2108.13
4+950	2110.01	2111.35
5+000	2116.92	2114.13
5+050	2122.76	2117.20
5+100	2126.70	2120.26
5+150	2129.33	2123.33
5+200	2130.81	2126.40
5+250	2134.14	2129.46
5+300	2136.66	2132.53
5+350	2140.16	2135.60
5+400	2145.02	2138.66
5+450	2148.89	2141.73
5+500	2154.45	2144.80
5+550	2157.49	2147.86
5+600	2159.79	2150.93
5+650	2160.31	2154.00
5+700	2164.24	2157.06
5+750	2165.21	2160.13
5+800	2166.91	2163.20
5+850	2170.61	2166.26
5+900	2175.62	2169.33
5+950	2181.96	2172.40
6+000	2188.19	2175.46
6+050	2189.05	2178.53
6+100	2193.21	2181.60
6+150	2194.45	2184.66
6+200	2198.41	2187.73
6+250	2197.49	2190.78
6+300	2198.54	2193.83
6+350	2201.35	2196.89
6+400	2203.17	2198.94
6+450	2205.30	2199.78
6+500	2207.40	2201.12
6+550	2210.53	2202.11
6+600	2213.02	2202.83
6+650	2212.44	2203.55



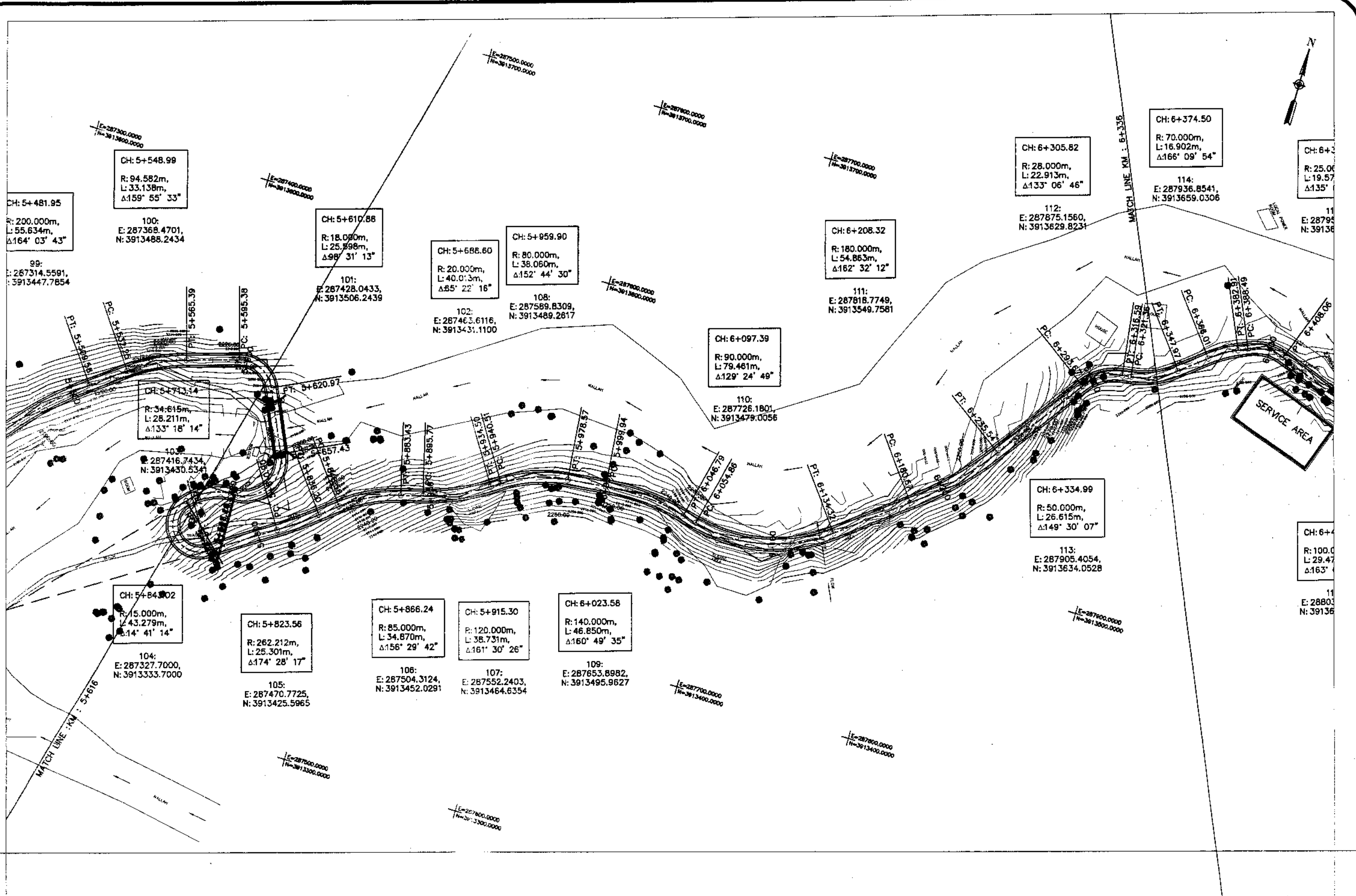
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**NATIONAL ENGINEERING SERVICES**  
**PAKISTAN (PVT.) LTD.**

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 1

PROFILE	
KM: 4+900 ~ KM: 5+600	
DATE	DWG NO.
November 2020	4169/(iii)/TD/P 008



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



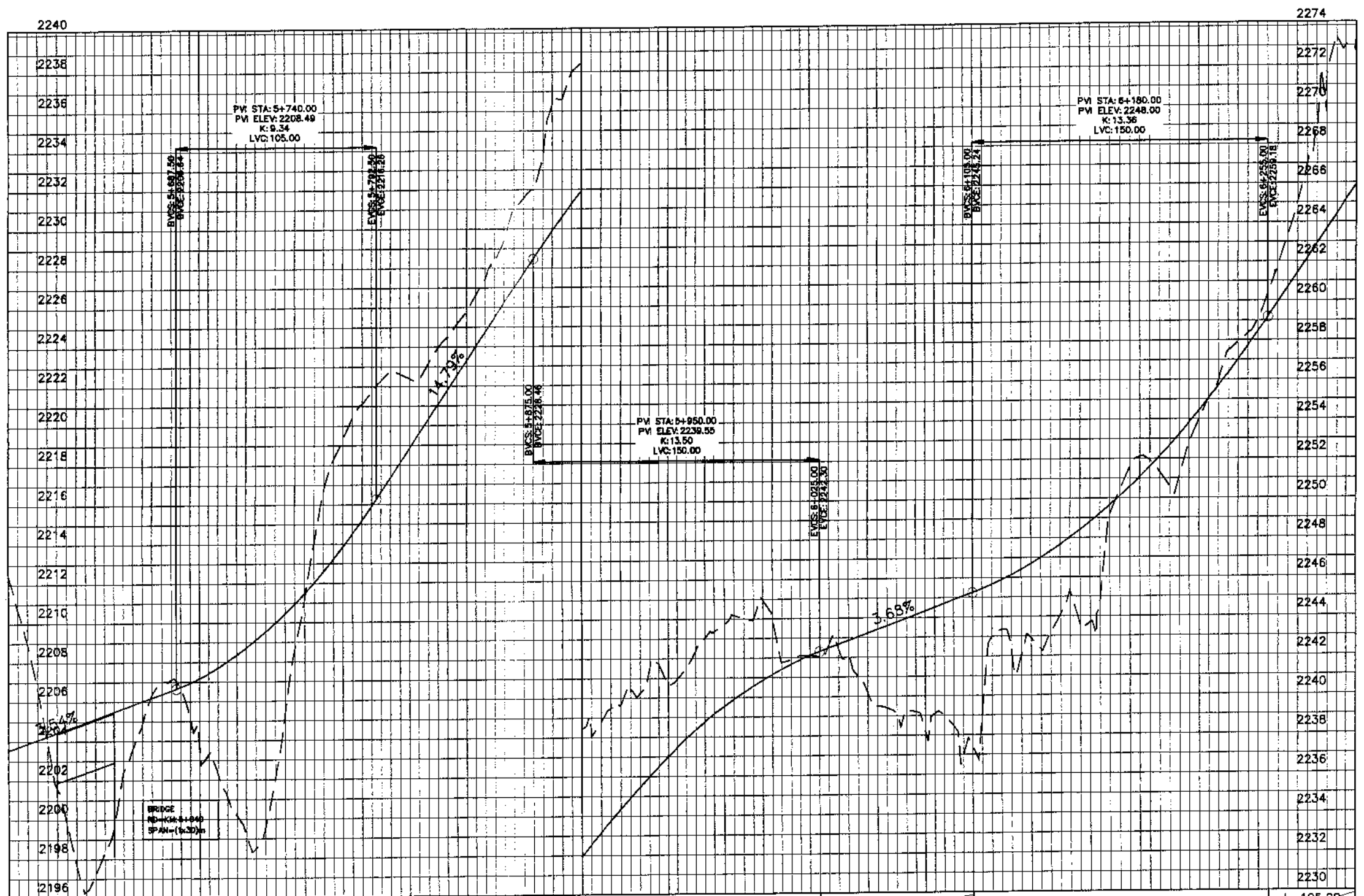
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT - 23.00 KM  
ROAD - 1

PLAN  
KM: 5+600 ~ KM: 6+300  
SCALE 1:2000  
DATE November 2020  
DWG NO. 4169/(iii)/TD/P 9

MANKIAL TO JABBAH ROAD SWAT-R1-practice.rizwan sb.dwg



Vertical Geometry	L=122.50 G=3.54%		105.00		L=82.50 G=14.79%		150.00		L=80.00 G=3.68%		150.00		L=105.00 G=14.90%																											
Design Levels	2203.559	2204.247	2204.955	2205.662	2206.370	2207.162	2208.351	2209.970	2212.017	2214.492	2217.365	2220.323	2223.280	2226.237	2229.185	2231.921	2234.359	2236.502	2238.348	2239.898	2241.152	2242.109	2242.854	2243.589	2244.324	2245.059	2245.879	2246.988	2248.397	2250.105	2252.112	2254.419	2257.025	2259.922	2262.902	2265.862				
Ground Levels	2212.445	2204.001	2196.357	2202.422	2206.985	2203.547	2200.178	2202.075	2214.077	2220.422	2222.794	2223.163	2225.806	2229.375	2233.743	2238.423	2239.666	2241.731	2242.394	2244.171	2243.917	2242.081	2241.885	2239.406	2238.182	2236.972	2243.337	2242.315	2250.440	2251.313	2253.989	2257.905	2261.777	2269.017	2273.291					
	5+600		5+700		5+800		5+900		6+000		6+100		6+200		6+300																									



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

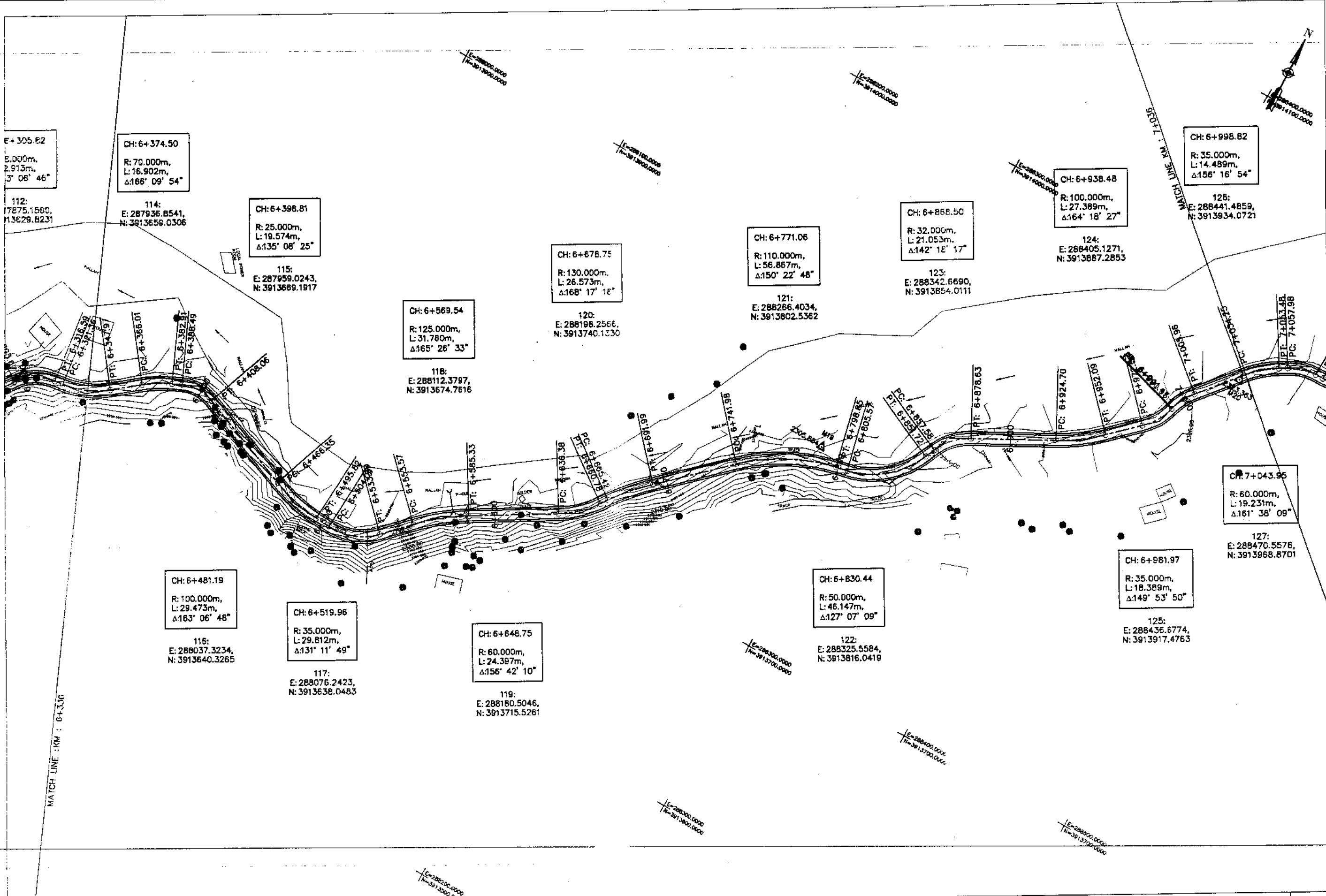
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED

PROFILE  
KM: 5+600 ~ KM: 6+300  
DATE November 2020  
DWG NO. 4169/(ii)/TD/P 009

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 1





KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

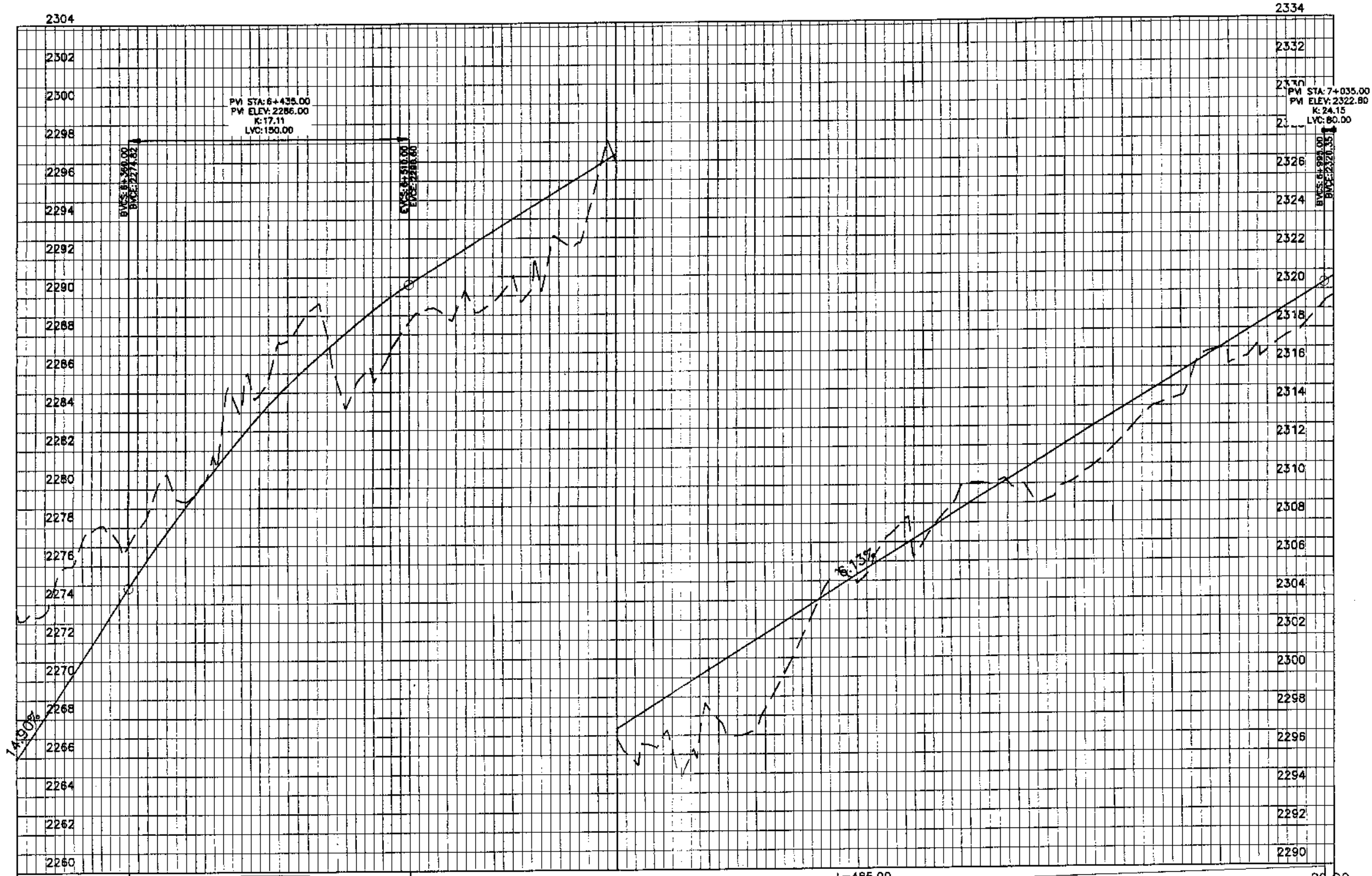
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED APPROVED


UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 1


PLAN		SCALE
KM: 6+300 ~ KM: 7+000		1:2000
DATE	DWG. NO.	
November 2020	4169/(iii)/TD/P 10	

MANKIAL TO JABBAH ROAD SWAT-R1 -practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
6+300	2273.29	2265.802
6+350	2274.91	2268.863
6+400	2277.764	2271.843
6+450	2277.020	2274.824
6+500	2280.752	2277.687
6+550	2280.348	2280.317
6+600	2284.272	2282.712
6+650	2287.544	2284.874
6+700	2289.566	2286.803
6+750	2285.256	2288.497
6+800	2287.346	2289.956
6+850	2289.320	2291.213
6+900	2290.258	2292.440
6+950	2290.162	2293.667
7+000	2290.575	2294.894
7+050	2292.743	2296.120
7+100	2296.916	2297.347
7+150	2296.435	2298.574
7+200	2295.957	2299.800
7+250	2297.031	2301.027
7+300	2298.365	2302.254
7+350	2302.095	2303.480
7+400	2305.522	2304.707
7+450	2306.423	2305.934
7+500	2306.248	2307.160
7+550	2308.880	2308.387
7+600	2310.023	2309.614
7+650	2309.739	2310.841
7+700	2309.957	2312.067
7+750	2311.379	2313.294
7+800	2313.504	2314.521
7+850	2314.497	2315.747
7+900	2316.956	2316.974
7+950	2317.181	2318.201
8+000	2317.833	2319.427
8+050	2318.660	2320.659


**KHYBER PAKHTUNKHWA INTEGRATED TOURISM AND ENTERPRISE DEVELOPMENT PROJECT**  
 COMMUNICATION & WORKS (C&W) DEPARTMENT, KPK

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

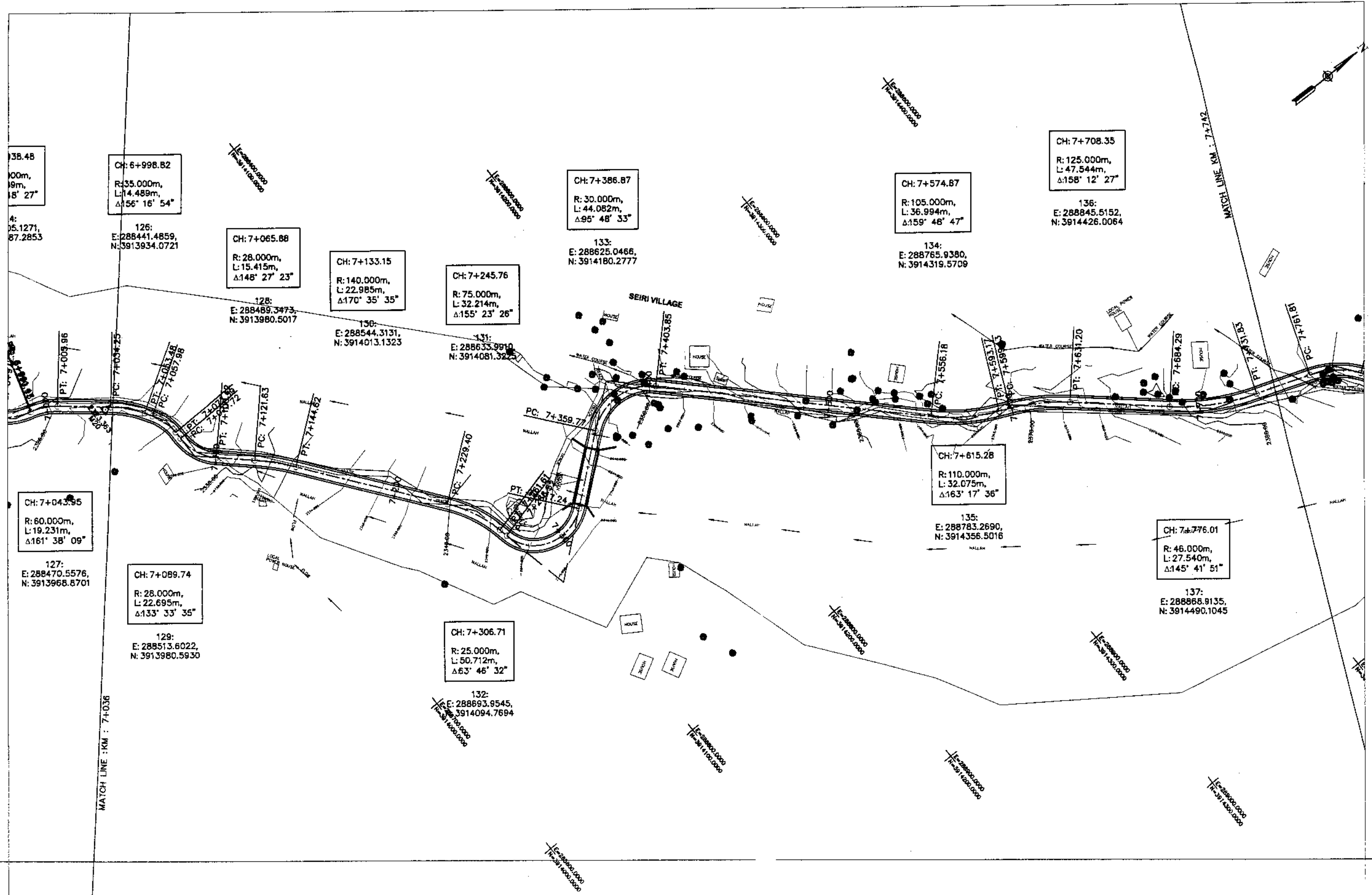
REV.	DATE	DESCRIPTION	APPROVED	APPROVED


DRAWN: JUNAID KHAN  
 SUBMITTED: NOSHERWAN NAEEM  
 RECOMMENDED:  
 CHD./VER.:  
 APPROVED:


**UPGRADING OF MANKIAL BADA SERI ROAD IN DISTRICT SWAT - 23 KM ROAD - 1**

**PROFILE**  
 KM: 6+300 ~ KM: 7+000

DATE	DWG NO.
November 2020	4169/(iii)/TD/P 010




**KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT**  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KPK

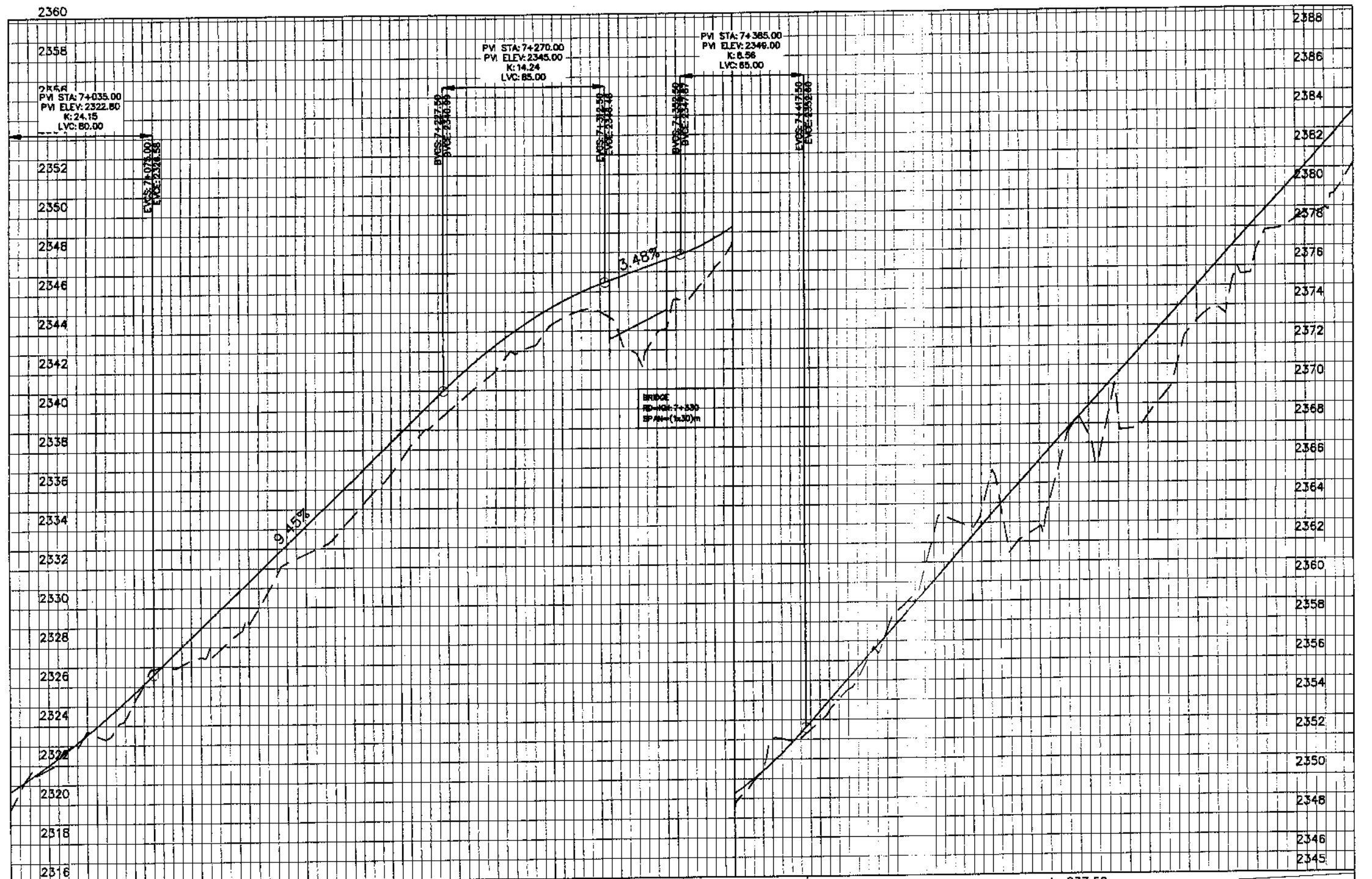

**NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.**

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN: JUNAID KHAN  
 SUBMITTED: NOSHERWAN NAEEM  
 RECOMMENDED:  
 CHD./VER.:  
**UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT - 23.00 KM  
ROAD - 1**

**PLAN**  
 KM: 7+000 ~ KM: 7+700  
 SCALE: 1:2000  
 DATE: November 2020  
 DWG NO.: 4169/(iii)/TD/P 11

MANKIAL TO JARBAH ROAD SWAT-R1-practice.rizwan\_sb.dwg



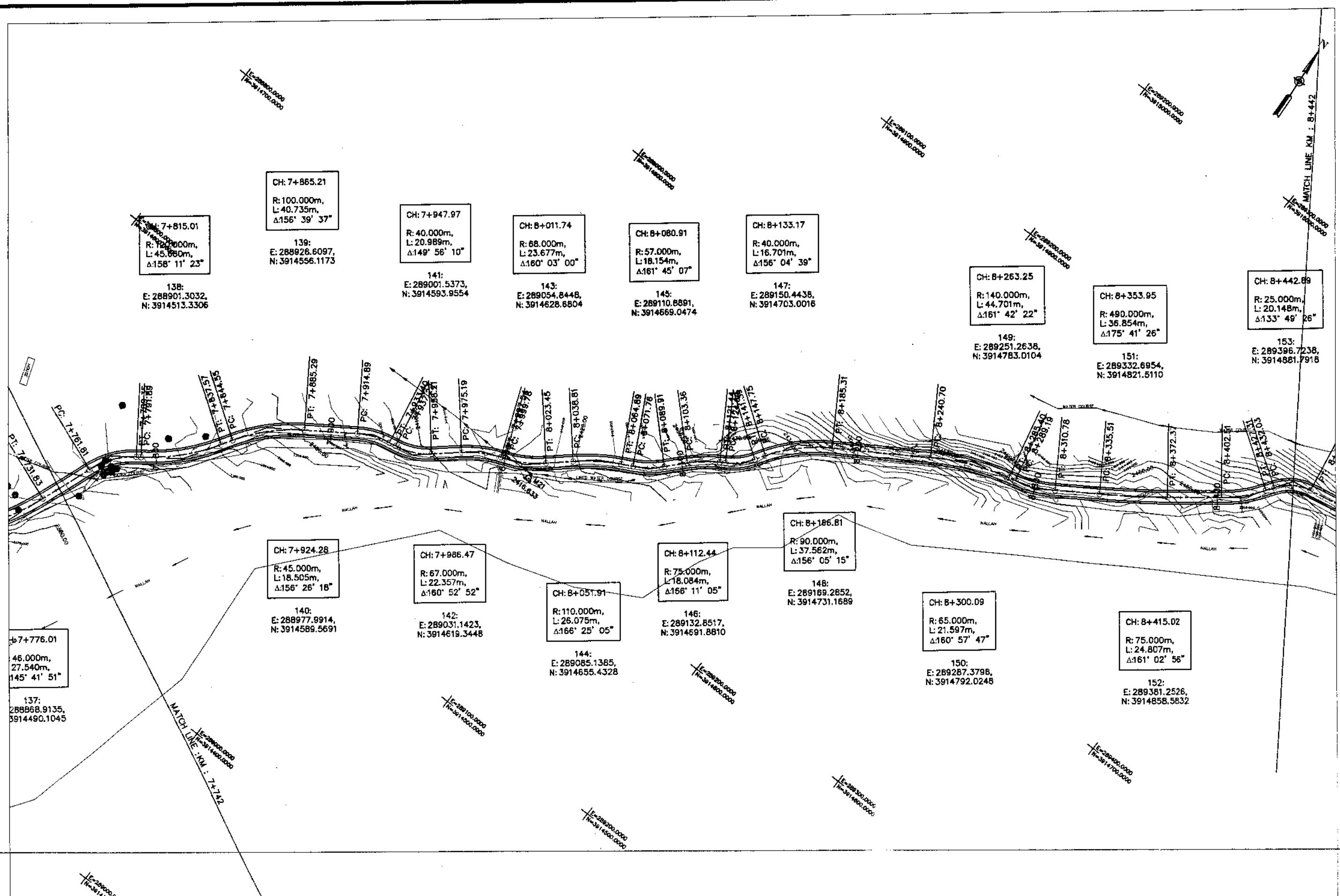
KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK


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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 1

PROFILE  
KM: 7+000 ~ KM: 7+700  
DATE: November 2020  
DWG NO.: 4169/(iii)/TD/P 011




**KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK**

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

REV.	DATE	DESCRIPTION	APPROVED

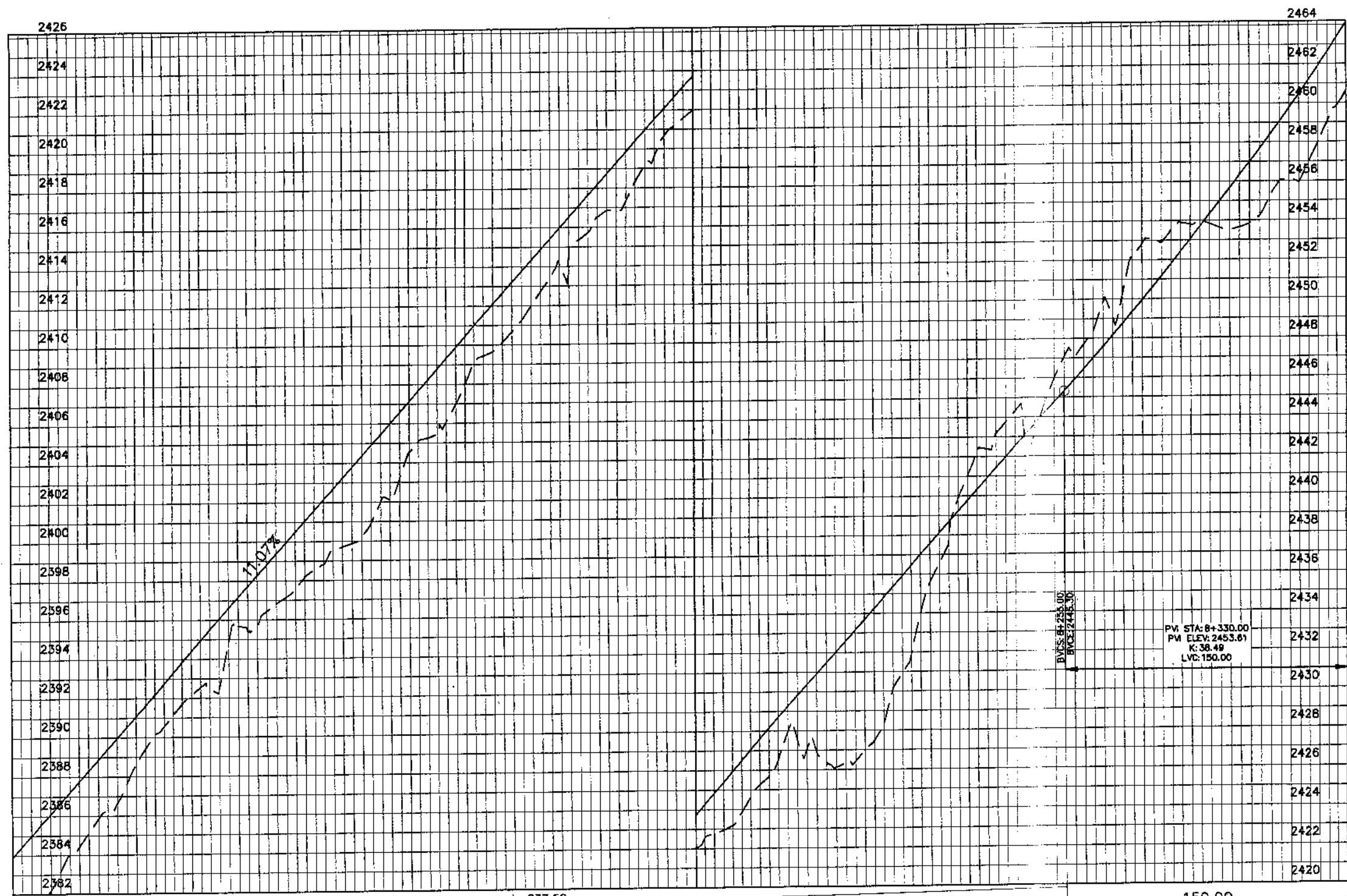
DRAWN JUNAID KHAN  
 SUBMITTED NOSHERWAN NAEEM  
 RECOMMENDED  
 CHD./VER.  
 APPROVED

**UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 1**

**PLAN**  
 KM: 7+700 ~ KM: 8+400  
 SCALE 1:2000

DATE November 2020  
 DWG NO. 4169/(iii)/TD/P 12

MANKIAL TO JABBAH ROAD SWAT-R1-practice.r1zwan sb.dwg



Station	Ground Levels	Design Levels
7+700	2381.200	2383.889
	2382.181	2386.083
	2385.137	2388.297
	2387.618	2390.511
	2390.542	2392.725
	2392.539	2394.939
	2395.674	2397.152
	2396.806	2399.366
	2398.545	2401.580
	2399.874	2403.794
	2402.111	2406.008
	2405.252	2408.222
	2407.991	2410.436
	2410.117	2412.650
	2412.705	2414.864
	2415.343	2417.078
	2416.848	2419.292
	2419.588	2421.505
	2421.975	2423.719
	2423.182	2425.933
	2425.674	2428.147
	2427.082	2430.361
	2426.372	2432.575
	2428.258	2434.789
	2434.015	2437.003
	2439.868	2439.217
	2443.169	2441.431
	2443.169	2443.645
	2447.172	2445.862
	2449.019	2448.154
	2453.137	2450.549
	2453.810	2453.049
	2453.521	2455.653
	2455.182	2458.360
	2456.957	2461.171
	2460.616	2464.087



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



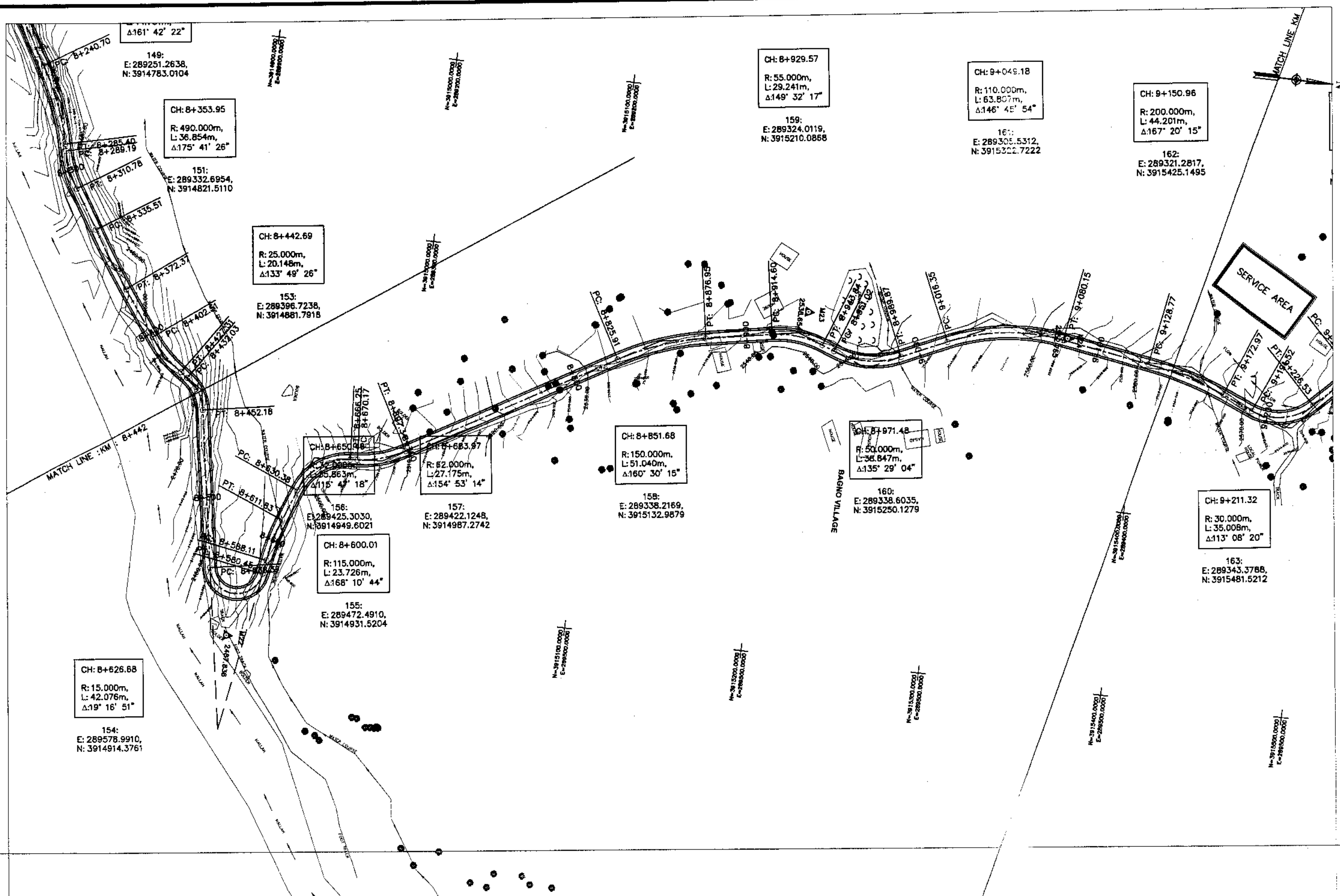
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.


REV.	DATE	DESCRIPTION	APPROVED	APPROVED


UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD -

PROFILE	
KM: 7+700 ~ KM: 8+400	
DATE	DWG NO.
November 2020	4169/(iii)/TD/P 012

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED




**KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK**


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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

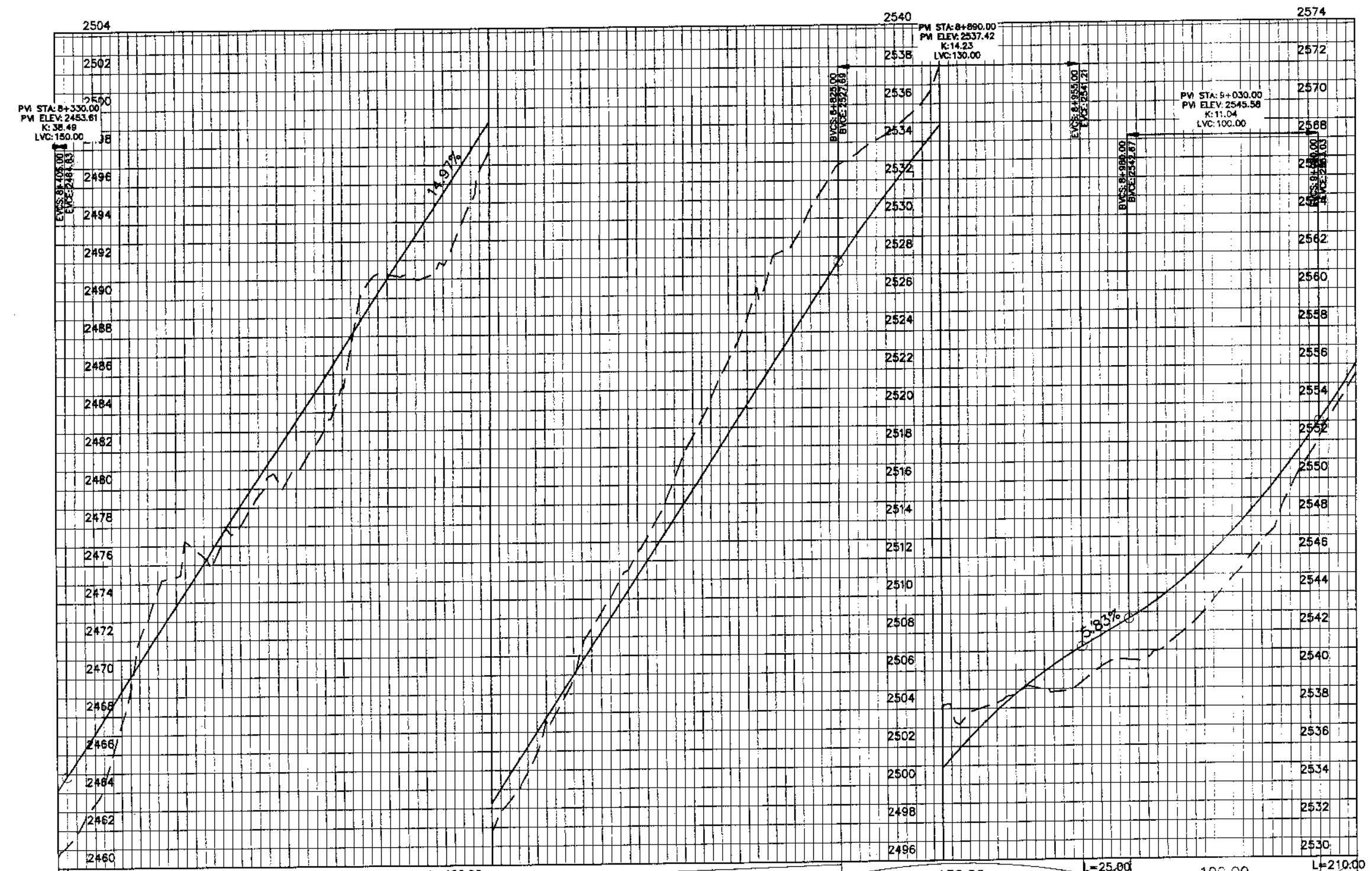
DRAWN JUNAID KHAN  
 SUBMITTED NOSHERWAN NAEEM  
 RECOMMENDED  
 CHD./VER.  
 APPROVED APPROVED

**UPGRADING OF MANJAL BADA SERI ROAD  
IN DISTRICT SWAT - 23.00 KM  
ROAD - 1**

**PLAN**  
 KM: 8+400 ~ KM: 9+100  
 SCALE 1:2000

DATE November 2020  
 DWG NO. 4169/(iii)/TD/P 13

MANKIAL TO JABBAH ROAD SWAT-R1-practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
8+400	2460.61	2460.61
8+410	2461.07	2461.07
8+420	2461.53	2461.53
8+430	2462.00	2462.00
8+440	2462.46	2462.46
8+450	2462.93	2462.93
8+460	2463.39	2463.39
8+470	2463.86	2463.86
8+480	2464.32	2464.32
8+490	2464.79	2464.79
8+500	2465.25	2465.25
8+510	2465.72	2465.72
8+520	2466.18	2466.18
8+530	2466.65	2466.65
8+540	2467.11	2467.11
8+550	2467.58	2467.58
8+560	2468.04	2468.04
8+570	2468.51	2468.51
8+580	2468.97	2468.97
8+590	2469.44	2469.44
8+600	2469.90	2469.90
8+610	2470.37	2470.37
8+620	2470.83	2470.83
8+630	2471.30	2471.30
8+640	2471.76	2471.76
8+650	2472.23	2472.23
8+660	2472.69	2472.69
8+670	2473.16	2473.16
8+680	2473.62	2473.62
8+690	2474.09	2474.09
8+700	2474.55	2474.55
8+710	2475.02	2475.02
8+720	2475.48	2475.48
8+730	2475.95	2475.95
8+740	2476.41	2476.41
8+750	2476.88	2476.88
8+760	2477.34	2477.34
8+770	2477.81	2477.81
8+780	2478.27	2478.27
8+790	2478.74	2478.74
8+800	2479.20	2479.20
8+810	2479.67	2479.67
8+820	2480.13	2480.13
8+830	2480.60	2480.60
8+840	2481.06	2481.06
8+850	2481.53	2481.53
8+860	2481.99	2481.99
8+870	2482.46	2482.46
8+880	2482.92	2482.92
8+890	2483.39	2483.39
8+900	2483.85	2483.85
8+910	2484.32	2484.32
8+920	2484.78	2484.78
8+930	2485.25	2485.25
8+940	2485.71	2485.71
8+950	2486.18	2486.18
8+960	2486.64	2486.64
8+970	2487.11	2487.11
8+980	2487.57	2487.57
8+990	2488.04	2488.04
9+000	2488.50	2488.50
9+010	2488.97	2488.97
9+020	2489.43	2489.43
9+030	2489.90	2489.90
9+040	2490.36	2490.36
9+050	2490.83	2490.83
9+060	2491.29	2491.29
9+070	2491.76	2491.76
9+080	2492.22	2492.22
9+090	2492.69	2492.69
9+100	2493.15	2493.15



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 IV  
ROAD - 1

PROFILE  
KM: 8+400 ~ KM: 9+100

DATE November 2020  
DWG NO. 4169/(iii)/TD/P 013





CH: 9+273.64  
 R: 20.000m,  
 L: 31.138m,  
 Δ90° 47' 42"

164:  
 E: 289295.6850,  
 N: 3915528.4608

EP: 9+290.00

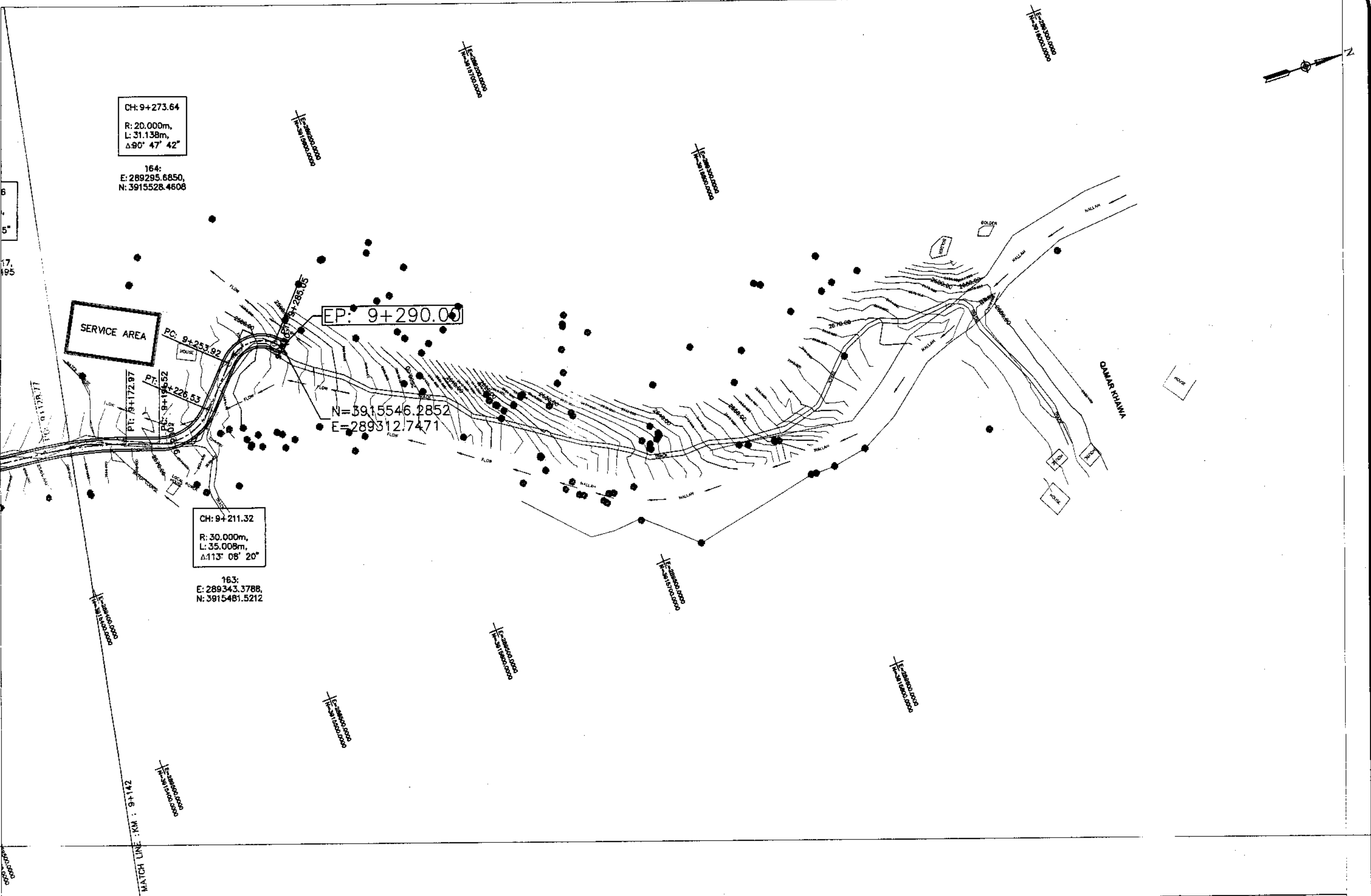
N=3915546.2852  
 E=289312.7471

CH: 9+211.32  
 R: 30.000m,  
 L: 35.008m,  
 Δ113° 08' 20"

163:  
 E: 289343.3788,  
 N: 3915481.5212

SERVICE AREA

6  
 5'  
 17,  
 195



KHYBER PAKHTUNKHWA  
 INTEGRATED TOURISM AND  
 ENTERPRISE DEVELOPMENT  
 PROJECT  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KPK



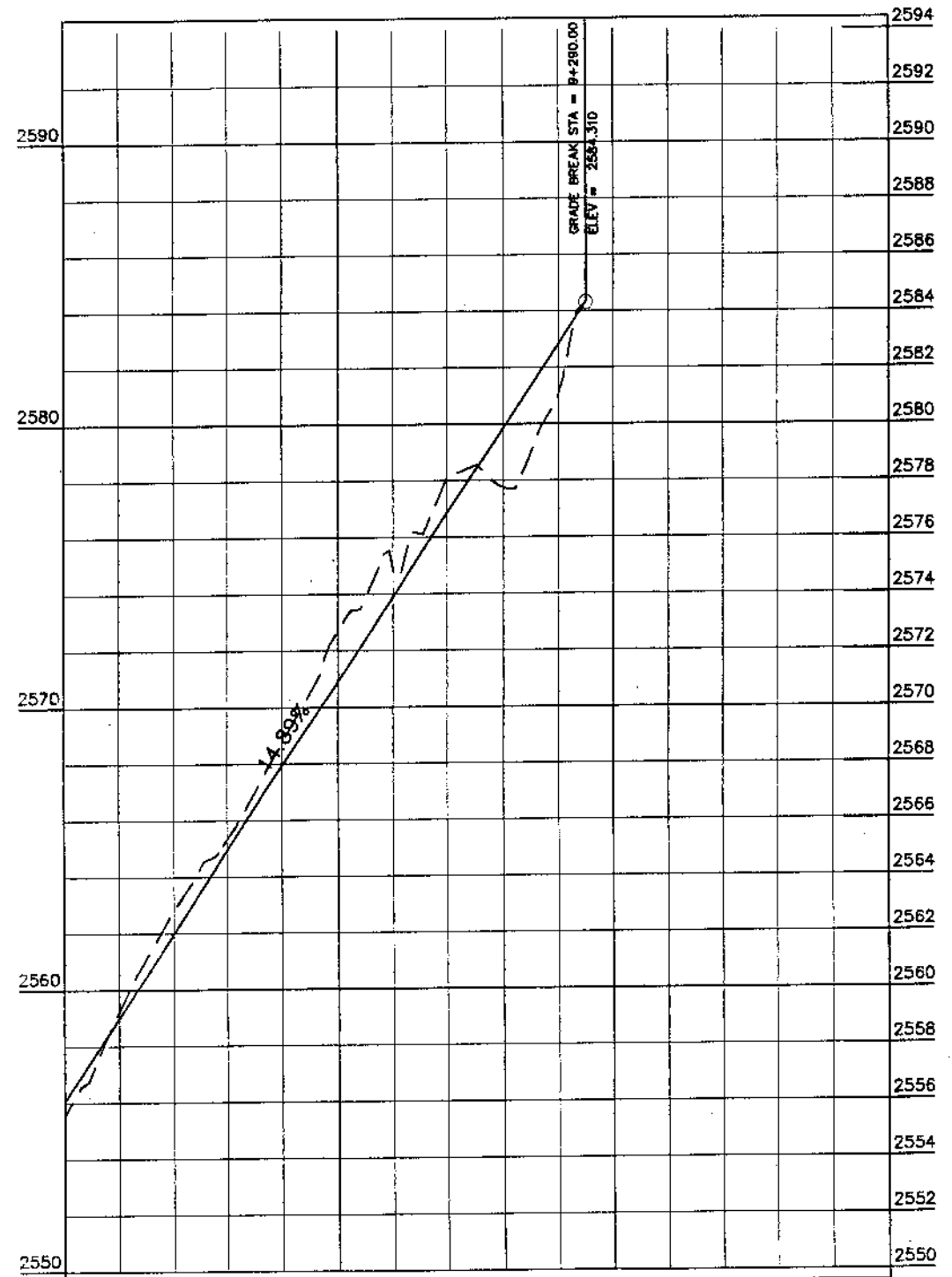
NATIONAL ENGINEERING SERVICES  
 PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

UPGRADING OF MANKIAL BADA SERI ROAD  
 IN DISRTICT SWAT -23.00 KM  
 ROAD - 1

PLAN  
 KM: 9+100 ~ KM: 9+777  
 SCALE 1:2000  
 DATE November 2020  
 DWG NO. 4169/(iii)/TD/P 14

UNIVERSITY OF JAMSHEDPUR



Vertical Geometry

L = 210.00  
G = 14.89%

Station	Design Levels	Ground Levels
9+100	2555.506	2555.010
9+125	2559.238	2558.989
9+150	2562.790	2561.968
9+175	2565.320	2564.946
9+200	2568.720	2567.925
9+225	2572.700	2570.904
9+250	2574.867	2573.883
9+275	2578.092	2576.862
9+300	2577.750	2579.841
9+325	2581.043	2582.819

KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

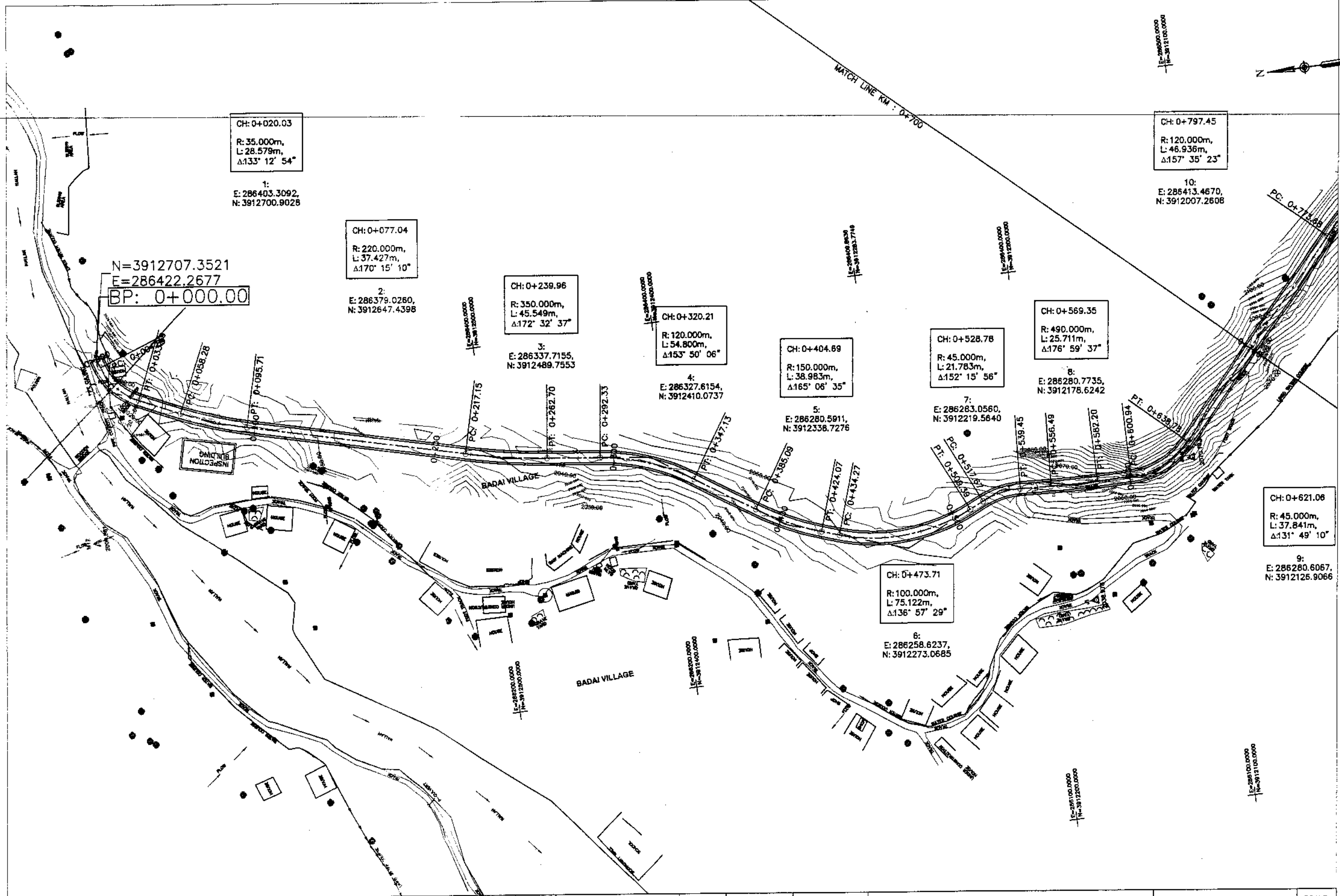
DRAWN	JUNAD KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 1

PROFILE	
KM: 9+100 ~ End	
DATE	DWG NO.
November 2020	4169/(III)/TD/P 014

MANKIAL TO JARBAH ROAD SWAT-RI-practice.rizwan\_sb.dwg

**PLAN & R O F I L E S**  
**(ROAD -02)**



CH: 0+020.03  
 R: 35.000m,  
 L: 28.579m,  
 Δ133° 12' 54"  
 1:  
 E: 286403.3092,  
 N: 3912700.9028

CH: 0+077.04  
 R: 220.000m,  
 L: 37.427m,  
 Δ170° 15' 10"  
 2:  
 E: 286379.0260,  
 N: 3912647.4398

CH: 0+239.96  
 R: 350.000m,  
 L: 45.549m,  
 Δ172° 32' 37"  
 3:  
 E: 286337.7155,  
 N: 3912489.7553

CH: 0+320.21  
 R: 120.000m,  
 L: 54.800m,  
 Δ153° 50' 06"  
 4:  
 E: 286327.6154,  
 N: 3912410.0737

CH: 0+404.69  
 R: 150.000m,  
 L: 38.983m,  
 Δ165° 06' 35"  
 5:  
 E: 286280.5911,  
 N: 3912336.7276

CH: 0+528.78  
 R: 45.000m,  
 L: 21.783m,  
 Δ152° 15' 56"  
 7:  
 E: 286283.0560,  
 N: 3912219.5640

CH: 0+569.35  
 R: 490.000m,  
 L: 25.711m,  
 Δ176° 59' 37"  
 8:  
 E: 286280.7735,  
 N: 3912178.6242

CH: 0+797.45  
 R: 120.000m,  
 L: 46.936m,  
 Δ157° 35' 23"  
 10:  
 E: 286413.4670,  
 N: 3912007.2608

N=3912707.3521  
 E=286422.2677  
 BP: 0+000.00

CH: 0+621.06  
 R: 45.000m,  
 L: 37.841m,  
 Δ131° 49' 10"  
 9:  
 E: 286280.6067,  
 N: 3912126.9066

CH: 0+473.71  
 R: 100.000m,  
 L: 75.122m,  
 Δ136° 57' 29"  
 6:  
 E: 286258.6237,  
 N: 3912273.0685



KHYBER PAKHTUNKHWA  
 INTEGRATED TOURISM AND  
 ENTERPRISE DEVELOPMENT  
 PROJECT  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KPK



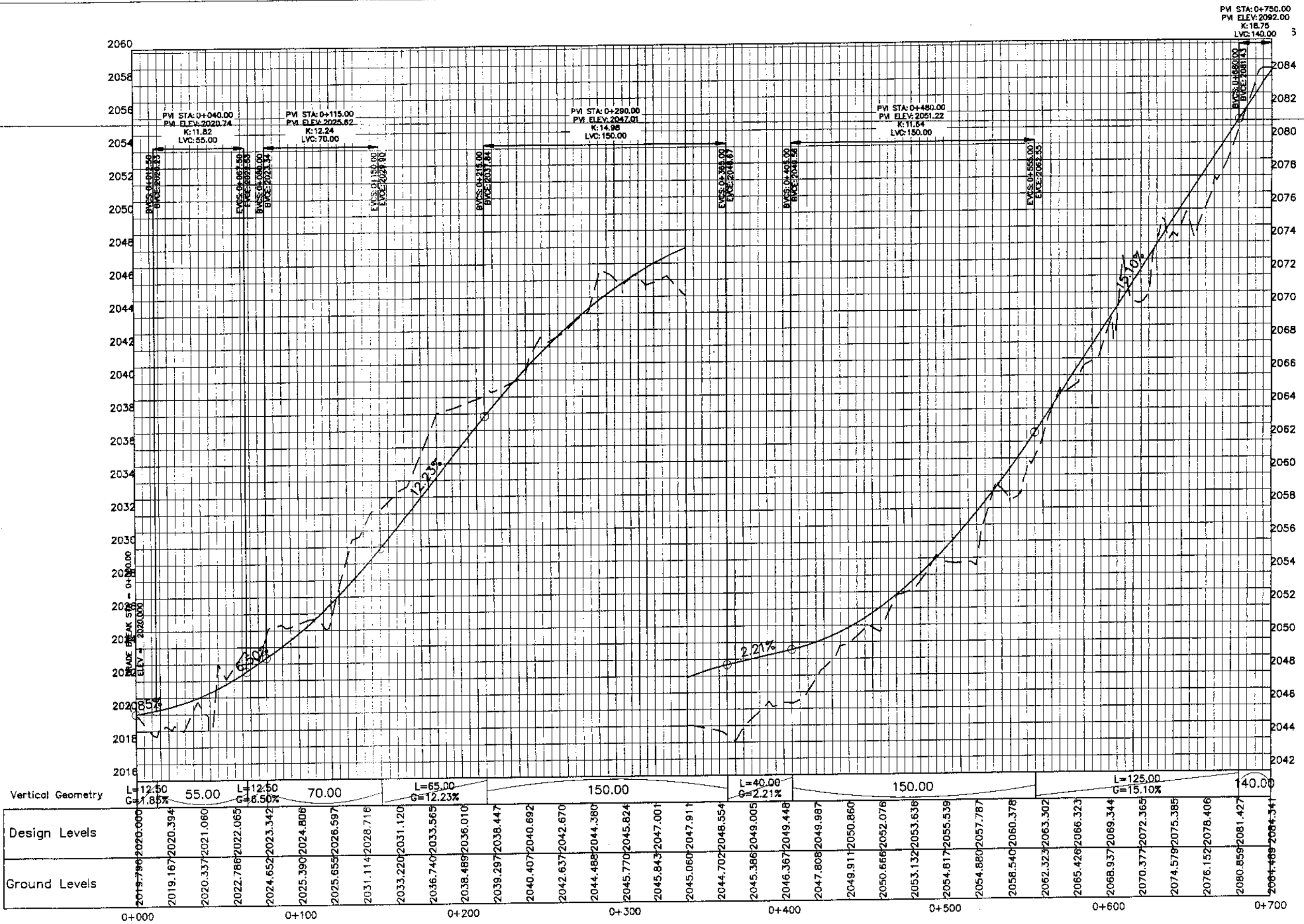
NATIONAL ENGINEERING SERVICES  
 PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
 SUBMITTED NOSHERWAN NAEEM  
 RECOMMENDED  
 CHD./VER.  
 UPGRADING OF MANKIAL BADA SERI ROAD  
 IN DISTRICT SWAT - 23.00 KM  
 ROAD - 2

PLAN		SCALE
KM: 0+000 ~ KM: 0+700		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 15	

MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

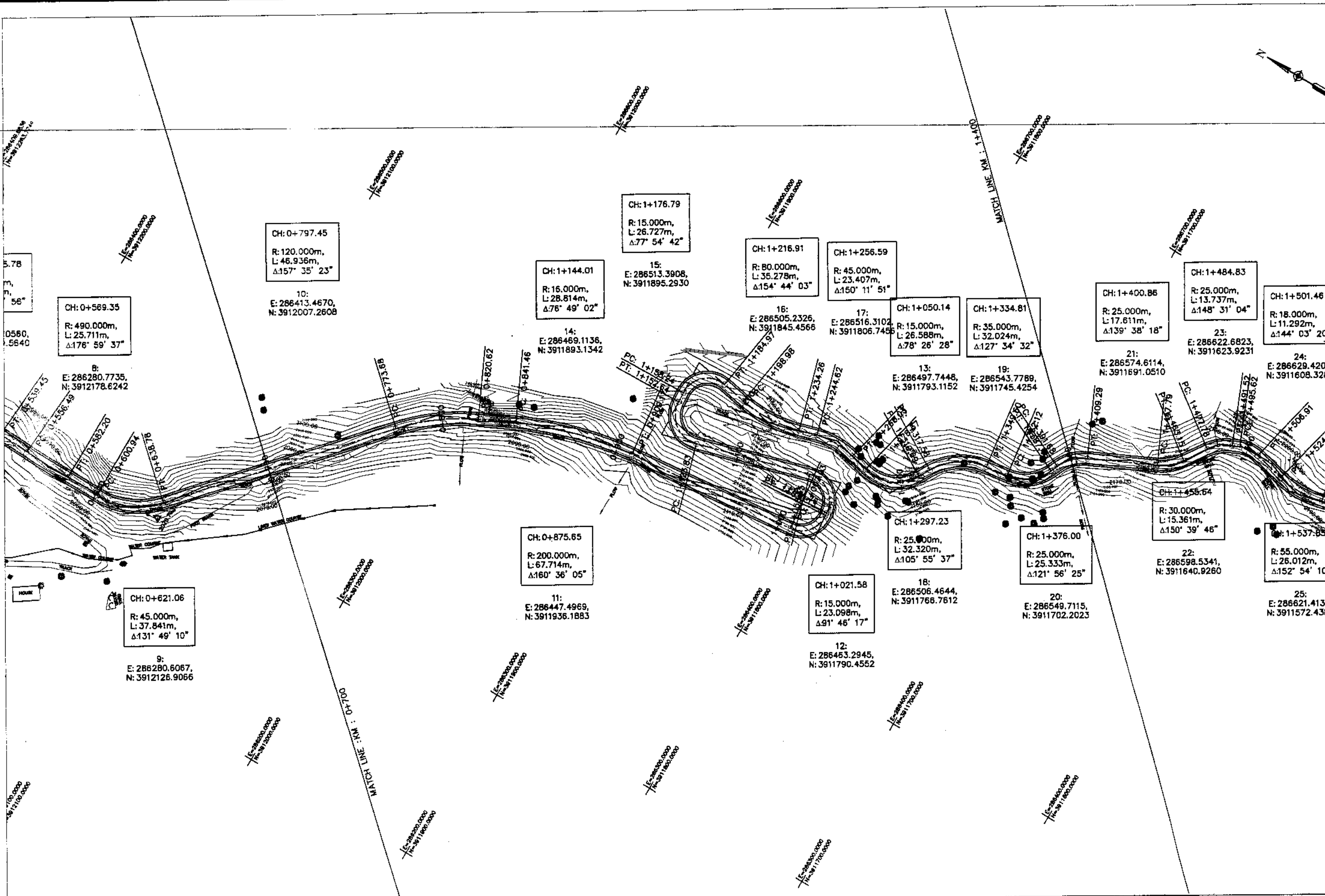



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.


REV.	DATE	DESCRIPTION	APPROVED	DRAWN	JUNAID KHAN
				SUBMITTED	NOSHERWAN NAEEM
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE KM: 0+000 ~ KM: 0+700	
DATE October 2020	DWG NO. 4169/(iii)/TD/P 015




**KHYBER PAKHTUNKHWA**  
 INTEGRATED TOURISM AND  
 ENTERPRISE DEVELOPMENT  
 PROJECT  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KP&K

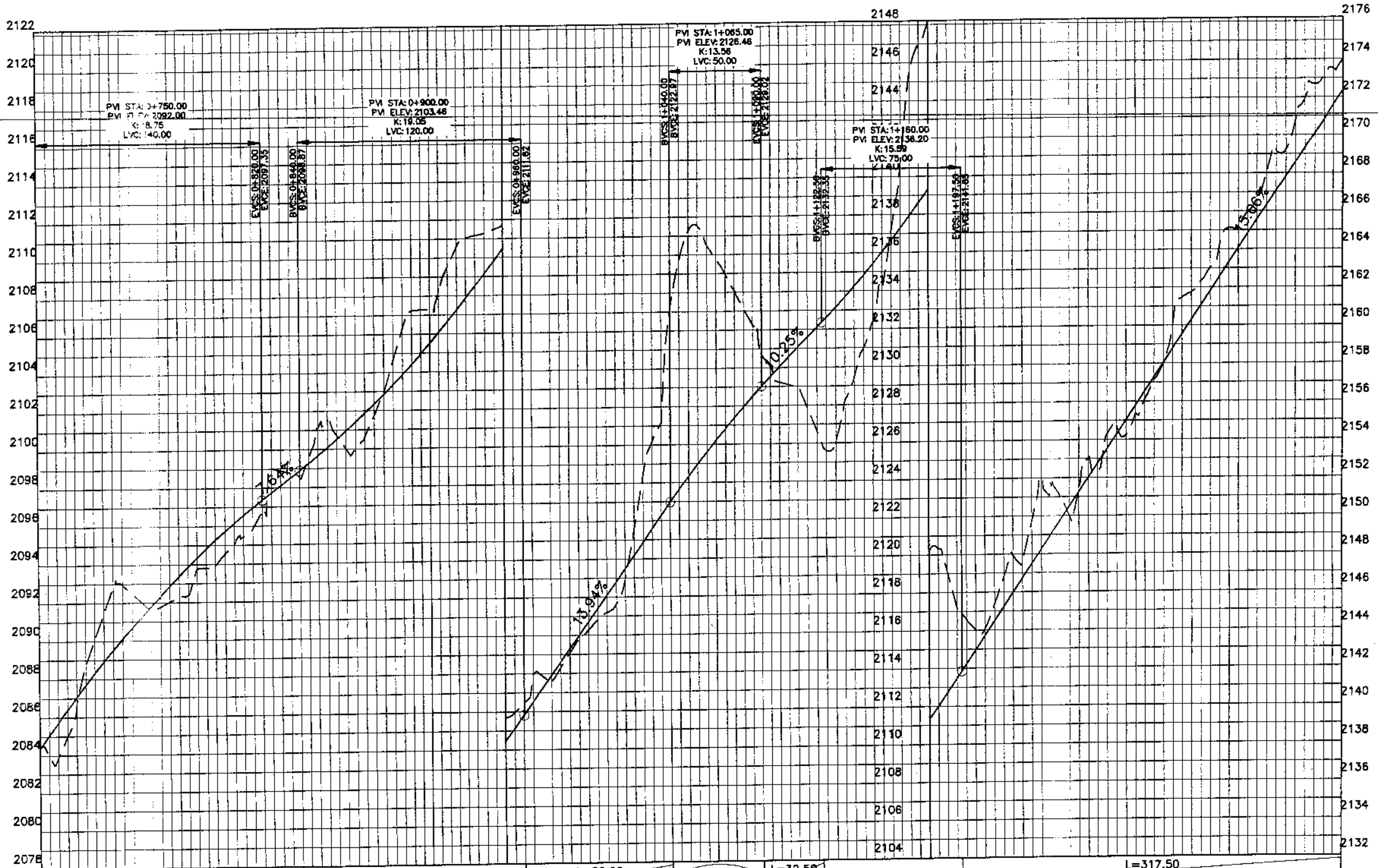

**NATIONAL ENGINEERING SERVICES**  
 PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN: JUNAD KHAN  
 SUBMITTED: NOSHERWAN NAEEM  
 RECOMMENDED:  
 CHD./VER.:  
 ROAD - 2

**PLAN**  
 KM: 0+700 ~ KM: 1+400  
 SCALE: 1:2000  
 DATE: November 2020  
 DWG NO.: 4169/(iii)/TD/P 16

MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



Vertical Geometry	1+0.00	L=20.00 G=7.64%	120.00	L=80.00 G=13.94%	50.00	L=32.50 G=10.25%	75.00	L=317.50 G=15.06%																																																																
Design Levels	2084.469	2084.341	2086.599	2087.042	2092.815	2089.530	2091.617	2091.804	2092.369	2093.865	2094.534	2095.713	2096.736	2097.347	2098.530	2098.875	2100.720	2100.507	2101.758	2102.350	2107.215	2104.403	2109.535	2106.666	2111.267	2109.138	2112.450	2111.821	2114.309	2114.609	2116.824	2117.397	2121.537	2120.184	2133.122	2122.972	2136.483	2125.612	2133.100	2127.958	2129.224	2130.045	2126.591	2132.095	2129.475	2134.244	2137.175	2135.647	2148.139	2139.307	2144.585	2142.222	2146.809	2145.235	2152.028	2148.247	2151.317	2151.260	2154.701	2154.273	2157.166	2157.286	2161.724	2160.298	2165.120	2163.311	2168.096	2166.324	2171.950	2169.337	2173.959	2172.590
Ground Levels	2084.469	2084.341	2086.599	2087.042	2092.815	2089.530	2091.617	2091.804	2092.369	2093.865	2094.534	2095.713	2096.736	2097.347	2098.530	2098.875	2100.720	2100.507	2101.758	2102.350	2107.215	2104.403	2109.535	2106.666	2111.267	2109.138	2112.450	2111.821	2114.309	2114.609	2116.824	2117.397	2121.537	2120.184	2133.122	2122.972	2136.483	2125.612	2133.100	2127.958	2129.224	2130.045	2126.591	2132.095	2129.475	2134.244	2137.175	2135.647	2148.139	2139.307	2144.585	2142.222	2146.809	2145.235	2152.028	2148.247	2151.317	2151.260	2154.701	2154.273	2157.166	2157.286	2161.724	2160.298	2165.120	2163.311	2168.096	2166.324	2171.950	2169.337	2173.959	2172.590



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

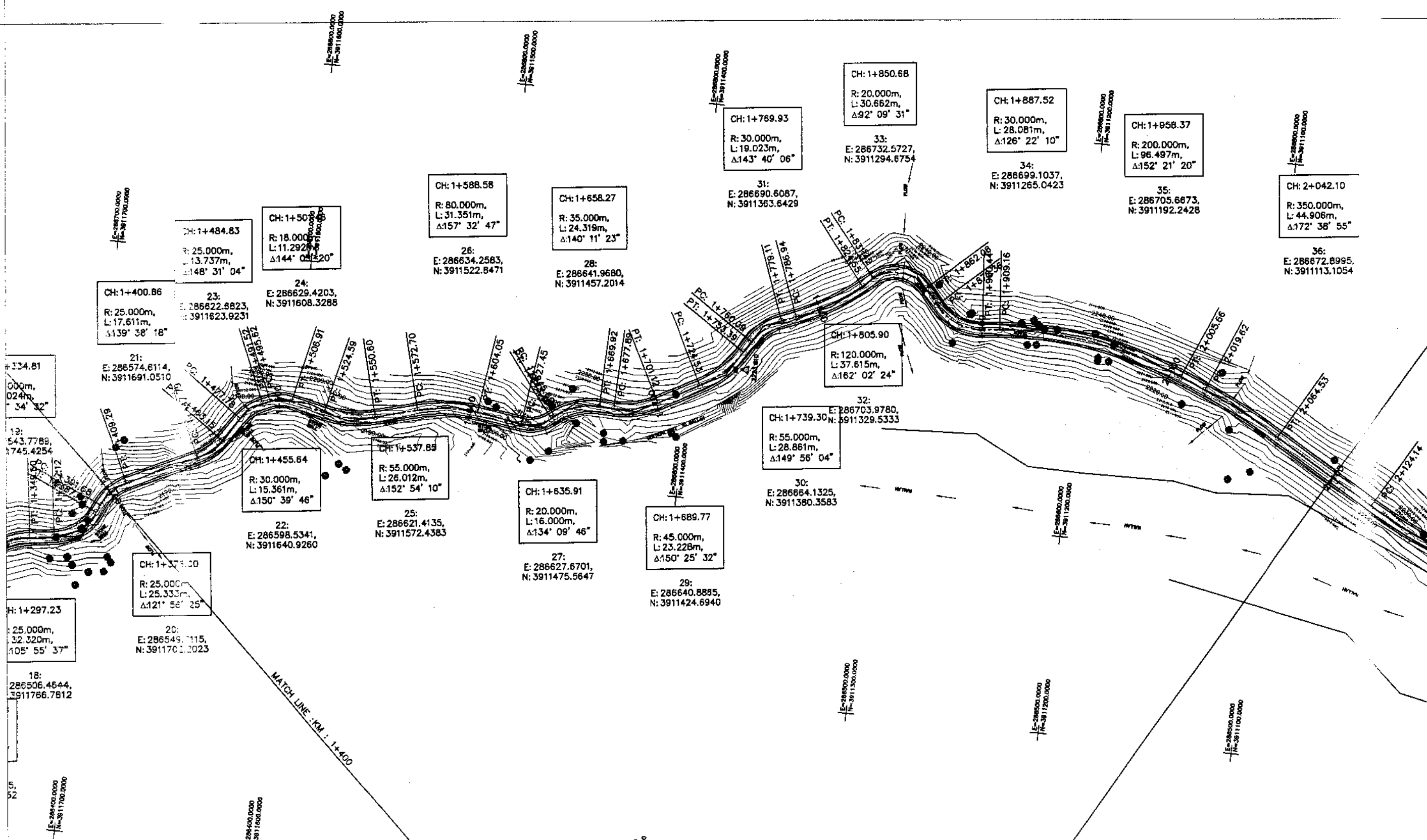
**NES  
PAK**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE KM: 0+700 ~ KM: 1+400	
DATE October 2020	DWG NO. 4169/(H)/TD/P 016.



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

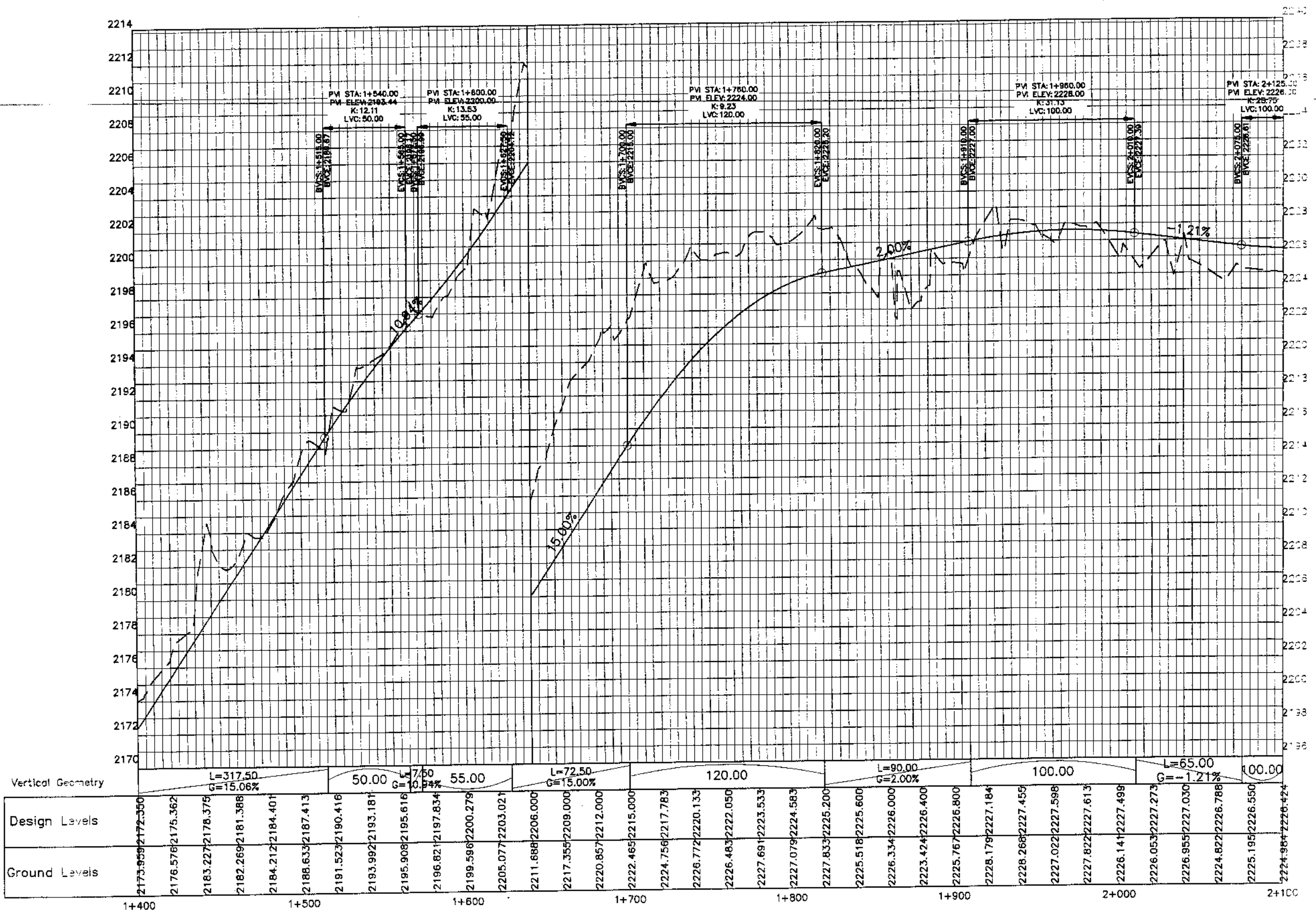
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISRTICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 1+400 ~ 2+100		1:2000
DATE	DWG NO.	
November 2020	4169 - RD/TD/P 17	



MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



Station	Ground Level	Design Level
1+400	2173.99	2172.350
1+425	2176.57	2175.362
1+450	2183.22	2178.375
1+475	2182.26	2181.388
1+500	2184.21	2184.401
1+525	2188.63	2187.413
1+550	2191.52	2190.416
1+575	2183.99	2193.181
1+600	2195.90	2195.616
1+625	2196.82	2197.834
1+650	2199.59	2200.279
1+675	2205.07	2203.021
1+700	2211.68	2206.000
1+725	2217.35	2209.000
1+750	2220.85	2212.000
1+775	2222.46	2215.000
1+800	2224.75	2217.783
1+825	2226.77	2220.133
1+850	2226.48	2222.050
1+875	2227.69	2223.533
1+900	2227.07	2224.583
1+925	2227.83	2225.200
1+950	2225.51	2225.600
1+975	2226.33	2226.000
2+000	2223.42	2226.400
2+025	2225.76	2226.800
2+050	2228.17	2227.184
2+075	2228.26	2227.455
2+100	2227.02	2227.598
2+125	2227.82	2227.613
2+150	2226.14	2227.498
2+175	2226.05	2227.273
2+200	2226.95	2227.030
2+225	2224.82	2226.788
2+250	2225.19	2226.550
2+275	2224.98	2226.424



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN: JUNAID KHAN  
SUBMITTED: NOSHERWAN NAEM  
RECOMMENDED:  
CHD./VER.:  
UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE	
KM: -400 ~ KM: 2+100	
DATE	DWG NO.
October 2000	4169/(iii)/TD/P 017

2+142.10  
R: 50.000m,  
L: 4.906m,  
 $\Delta 72^\circ 38' 55''$   
36:  
E: 286672.3995,  
N: 391113.1054

CH: 2+141.41  
R: 260.000m,  
L: 34.484m,  
 $\Delta 172^\circ 24' 03''$   
37:  
E: 286623.4524,  
N: 3911026.9189

CH: 2+206.71  
R: 42.000m,  
L: 20.900m,  
 $\Delta 151^\circ 29' 19''$   
38:  
E: 286598.7122,  
N: 3910966.4300

CH: 2+293.14  
R: 120.000m,  
L: 32.298m,  
 $\Delta 164^\circ 34' 43''$   
40:  
E: 286589.1829,  
N: 3910880.7825

CH: 2+336.09  
R: 490.000m,  
L: 35.509m,  
 $\Delta 175^\circ 50' 53''$   
41:  
E: 286591.6789,  
N: 3910837.7073

CH: 2+433.90  
R: 65.000m,  
L: 41.377m,  
 $\Delta 143^\circ 31' 39''$   
42:  
E: 286604.3934,  
N: 3910740.7167

CH: 2+485.58  
R: 60.000m,  
L: 34.673m,  
 $\Delta 146^\circ 53' 23''$   
43:  
E: 286578.6289,  
N: 3910694.2443

CH: 2+526.34  
R: 80.000m,  
L: 27.991m,  
 $\Delta 159^\circ 57' 11''$   
44:  
E: 286581.6190,  
N: 3910652.5946

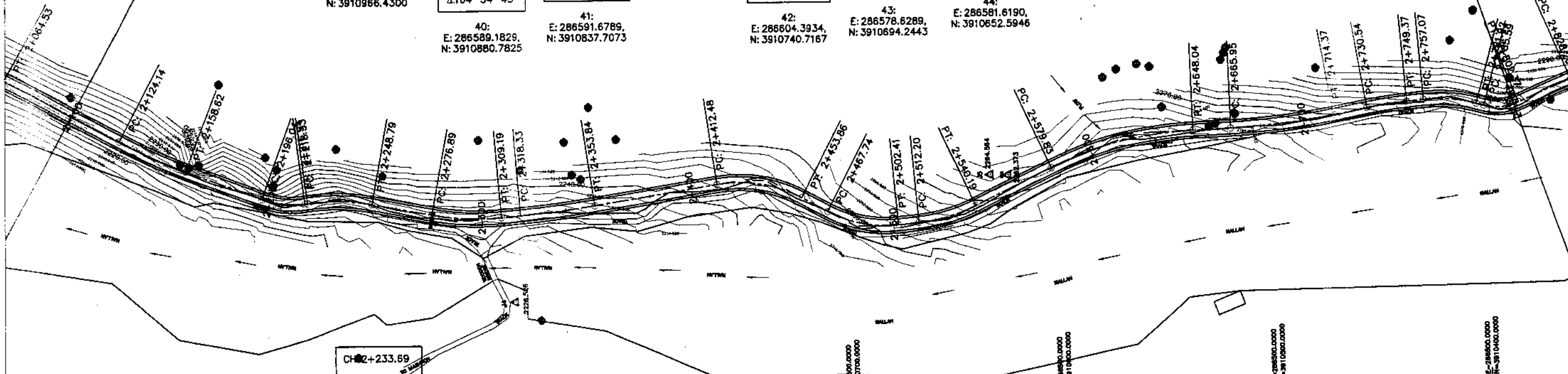
CH: 2+614.40  
R: 170.000m,  
L: 68.213m,  
 $\Delta 157^\circ 00' 35''$   
45:  
E: 286617.7721,  
N: 3910571.9739

CH: 2+690.21  
R: 330.000m,  
L: 48.425m,  
 $\Delta 171^\circ 35' 32''$   
46:  
E: 286619.3295,  
N: 3910495.2565

CH: 2+739.96  
R: 200.000m,  
L: 18.825m,  
 $\Delta 174^\circ 38' 25''$   
47:  
E: 286627.6164,  
N: 3910446.1091

CH: 2+769.63  
R: 70.000m,  
L: 24.850m,  
 $\Delta 159^\circ 39' 37''$   
48:  
E: 286629.7790,  
N: 3910416.5033

CH: 2+233.89  
R: 95.000m,  
L: 30.461m,  
 $\Delta 161^\circ 37' 42''$   
39:  
E: 286601.7056,  
N: 3910939.1704



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



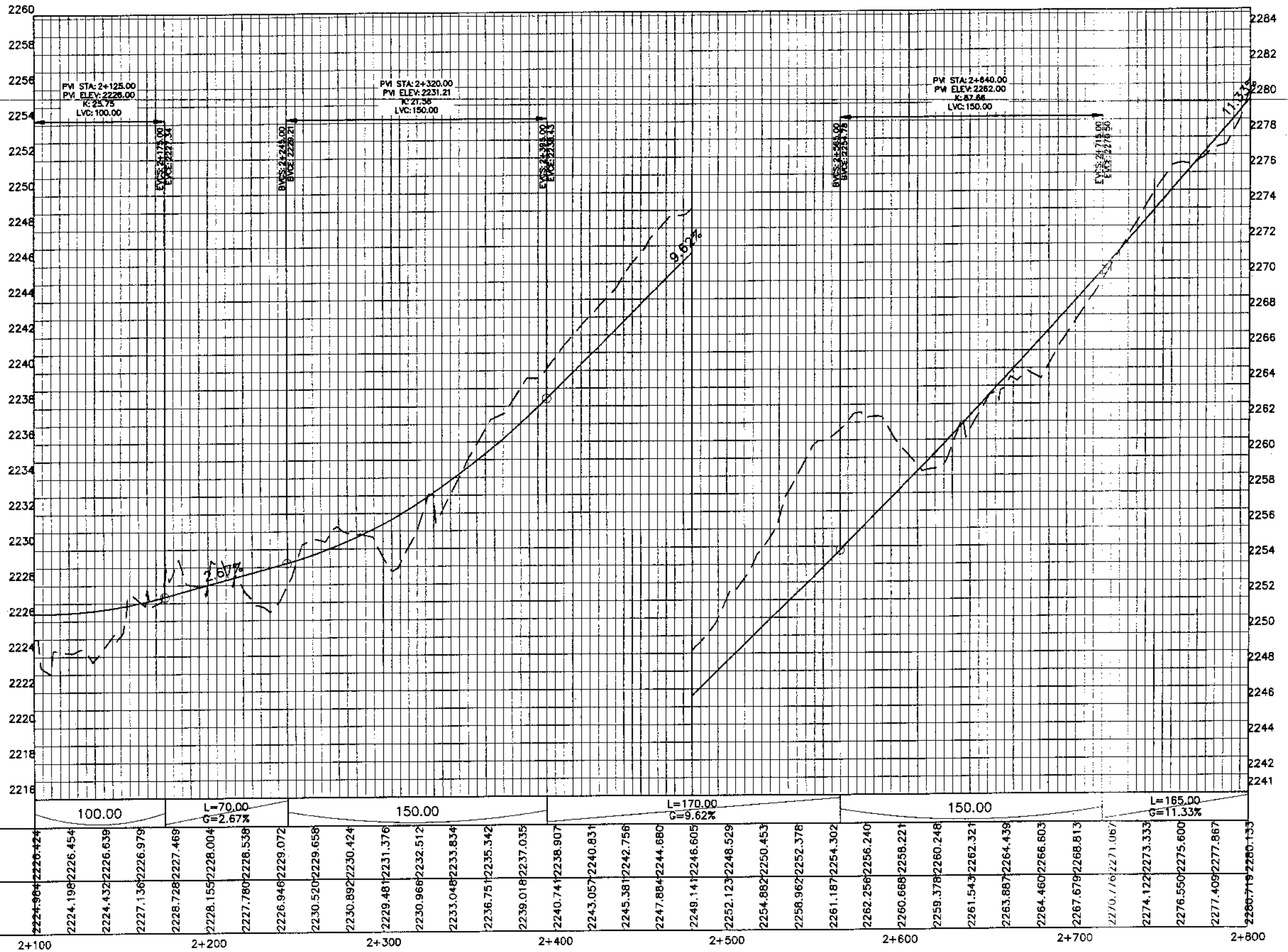
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	JUNAID KHAN
				SUBMITTED	NOSHERWAN NAEEM
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 2+100 ~ KM: 2+800		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 18	

MANKIAL TO JABBAI ROAD SWAT - RZ - practice izwan sb.dwg



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

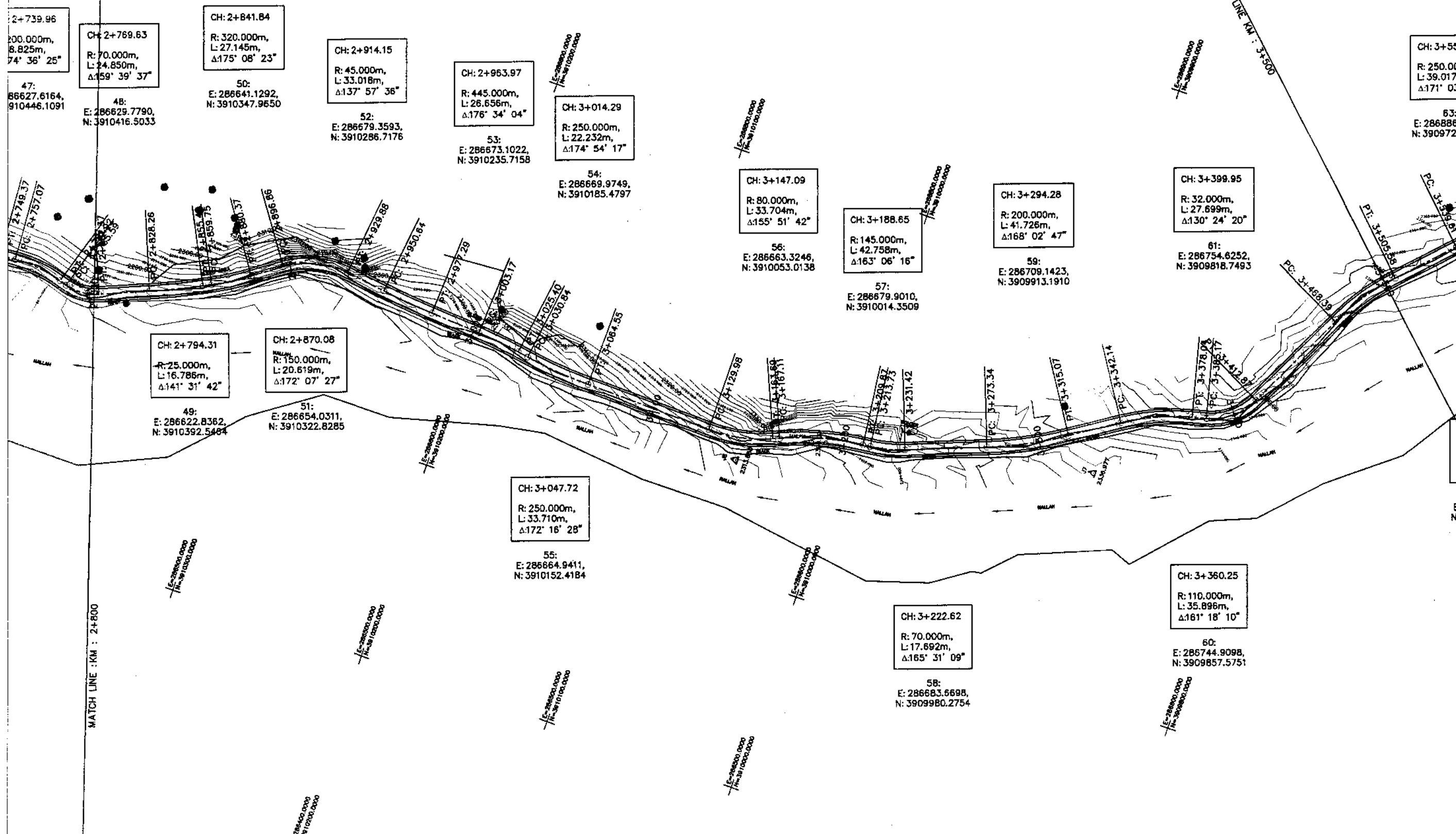


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	JUNAID KHAN
				SUBMITTED	NOSHERWAN NAEEM
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE	
KM: 2+100 ~ KM: 2+800	
DATE	DWG NO.
October 2020	4169/(iii)/TD/P 018



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

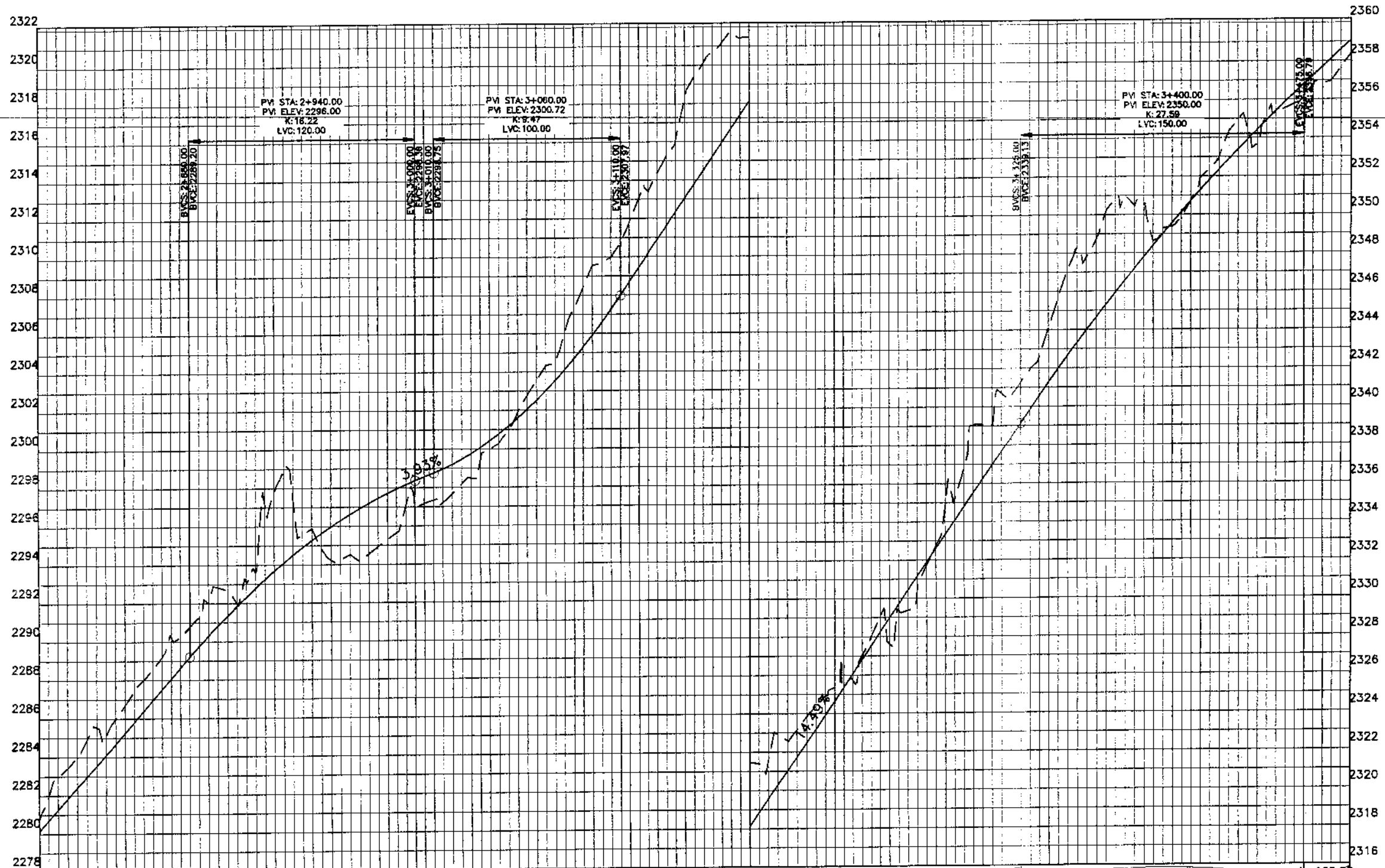
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 2+800 ~ KM: 3+500		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 19	

MANKIAL TO JABBAH ROAD SWAT-R2-practice.nizwan sb.dwg



Station	Design Levels	Ground Levels
2+800	2280.155	2280.719
2+850	2287.400	2284.009
2+900	2284.667	2285.982
2+950	2286.933	2288.565
3+000	2289.200	2290.755
3+050	2291.343	2292.602
3+100	2293.240	2297.193
3+150	2294.890	2295.567
3+200	2296.294	2294.246
3+250	2297.450	2294.918
3+300	2298.361	2296.964
3+350	2299.200	2297.661
3+400	2300.410	2299.992
3+450	2302.041	2302.764
3+500	2304.095	2306.006
3+550	2306.572	2309.685
3+600	2309.418	2313.069
3+650	2312.316	2316.075
3+700	2315.215	2320.668
3+750	2318.114	2321.455
3+800	2321.013	2322.589
3+850	2323.911	2324.887
3+900	2326.810	2327.011
3+950	2329.709	2329.341
4+000	2332.608	2332.740
4+050	2335.506	2339.052
4+100	2338.405	2340.568
4+150	2341.263	2344.100
4+200	2343.980	2347.766
4+250	2346.553	2350.987
4+300	2348.981	2349.316
4+350	2351.263	2351.871
4+400	2353.401	2354.958
4+450	2355.393	2355.309
4+500	2357.246	2356.734
4+550	2359.057	2358.363

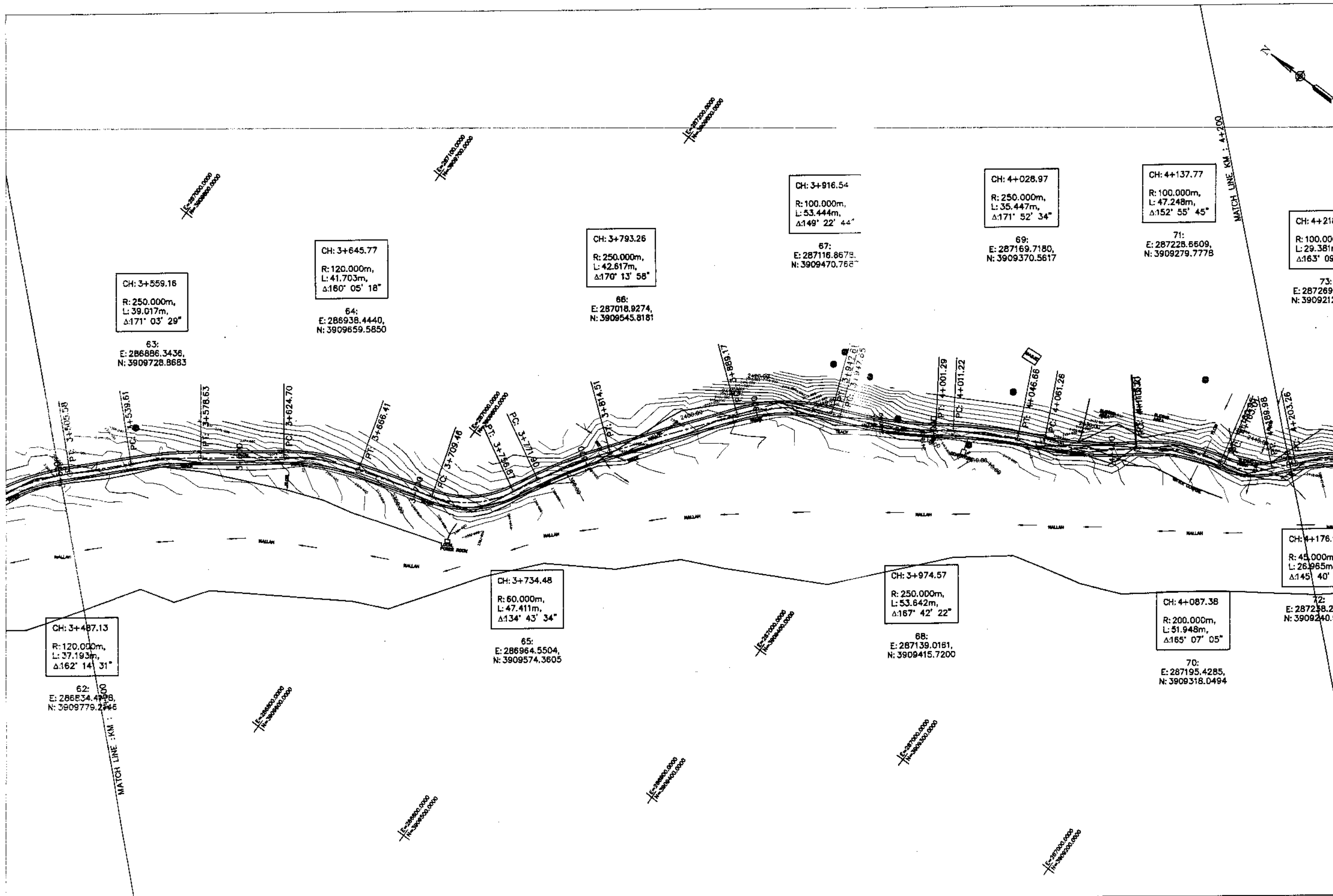
KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED MOSHERWAN HAEEM  
RECOMMENDED  
CHD./VER.  
UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE  
KM: 2+800 ~ KM: 3+500  
DATE October 2020  
DWG NO. 4169/(III)/TD/P 019



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

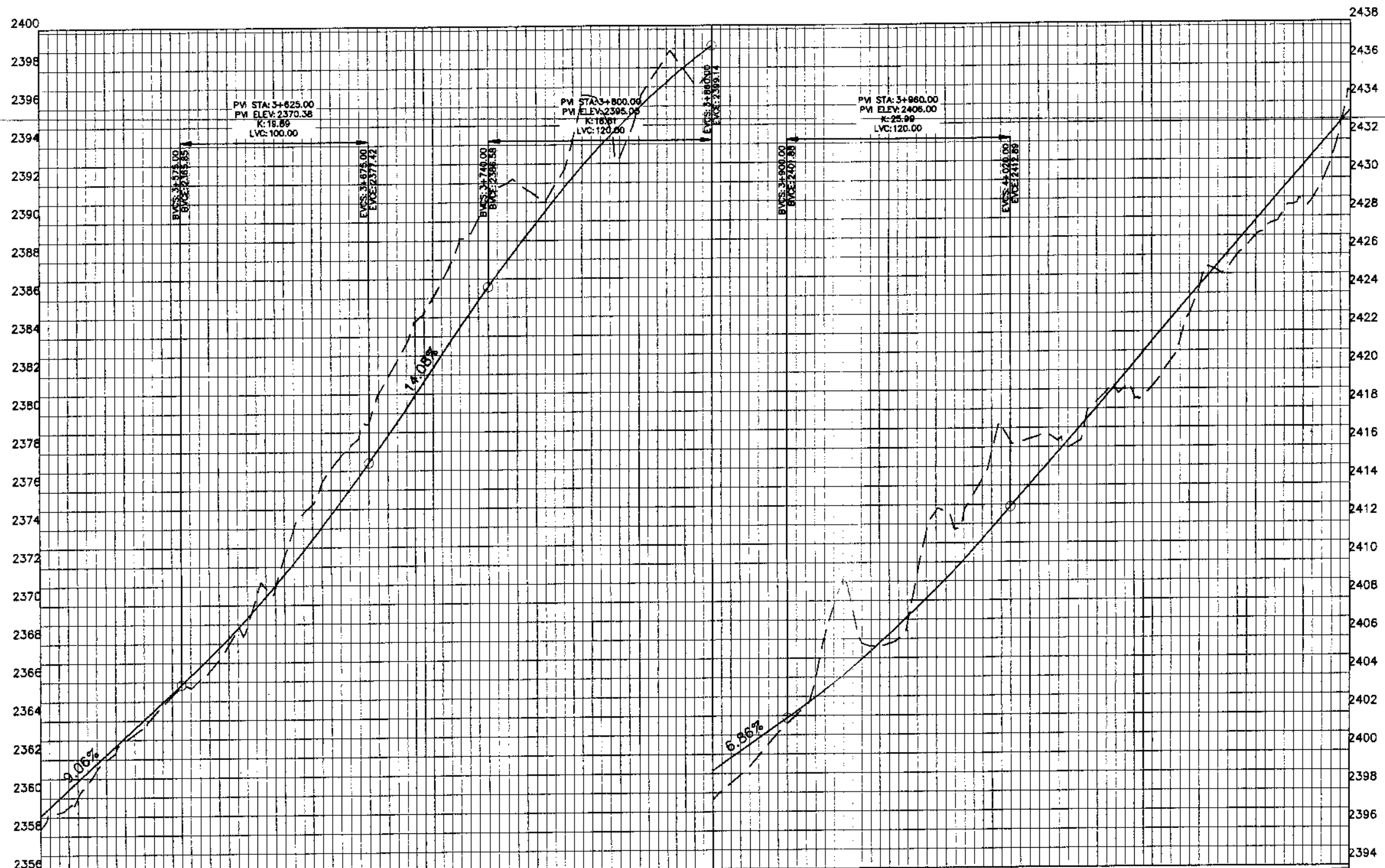
**NES  
PAK**  
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAD KHAN  
SUBMITTED NOSHERWAN MAE A  
RECOMMENDED  
CHD./VER.  
APPROVED

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 3+500 ~ KM: 4+200		1:2000
DATE	DWG NO.	
November 2020	4159/(iii)/TD/P 2D	



Vertical Geometry	L=100.00 G=9.06%		100.00		L=65.00 G=14.08%		120.00		L=40.00 G=6.86%		120.00		L=475.00 G=11.48%																																																											
Design Levels	2358.365	2359.057	2360.001	2360.868	2362.355	2362.680	2364.234	2364.491	2365.686	2366.309	2367.915	2368.271	2370.888	2370.434	2374.791	2372.799	2377.742	2375.364	2381.000	2378.125	2384.778	2380.942	2387.795	2383.759	2391.193	2386.575	2391.668	2389.272	2392.630	2391.728	2395.959	2393.942	2396.112	2395.916	2398.508	2397.849	2397.652	2399.141	2399.364	2400.513	2401.588	2401.885	2406.213	2403.334	2405.756	2404.936	2406.008	2406.693	2412.686	2408.603	2413.528	2410.667	2416.305	2412.885	2416.646	2415.180	2417.853	2417.475	2419.075	2419.770	2419.776	2422.066	2424.185	2424.361	2425.960	2426.656	2427.710	2428.951	2428.919	2431.246	2434.525	2433.541
Ground Levels	2358.365	2359.057	2360.001	2360.868	2362.355	2362.680	2364.234	2364.491	2365.686	2366.309	2367.915	2368.271	2370.888	2370.434	2374.791	2372.799	2377.742	2375.364	2381.000	2378.125	2384.778	2380.942	2387.795	2383.759	2391.193	2386.575	2391.668	2389.272	2392.630	2391.728	2395.959	2393.942	2396.112	2395.916	2398.508	2397.849	2397.652	2399.141	2399.364	2400.513	2401.588	2401.885	2406.213	2403.334	2405.756	2404.936	2406.008	2406.693	2412.686	2408.603	2413.528	2410.667	2416.305	2412.885	2416.646	2415.180	2417.853	2417.475	2419.075	2419.770	2419.776	2422.066	2424.185	2424.361	2425.960	2426.656	2427.710	2428.951	2428.919	2431.246	2434.525	2433.541



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	CHD./VER.	APPROVED

DRAWN: JUNAJD KHAN  
SUBMITTED: NOSHERWAN NAEEM  
RECOMMENDED:    
CHD./VER.:    
APPROVED:  

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE	
KM: 3+500 ~ KM: 4+200	
DATE	DWG NO.
October 2020	4169/(III)/TD/P 020

57.77  
100m,  
55' 45"

72:  
E: 287238.2785,  
N: 3909240.9086

CH: 4+218.05  
R: 100.000m,  
L: 29.381m,  
 $\Delta 163^\circ 09' 57''$

73:  
E: 287269.5856,  
N: 3909212.9475

CH: 4+382.24  
R: 370.000m,  
L: 39.420m,  
 $\Delta 173^\circ 53' 44''$

75:  
E: 287362.7950,  
N: 3909077.7113

CH: 4+530.77  
R: 120.000m,  
L: 51.281m,  
 $\Delta 155^\circ 30' 55''$

76:  
E: 287464.0322,  
N: 3908968.9809

CH: 4+647.01  
R: 75.000m,  
L: 39.132m,  
 $\Delta 150^\circ 06' 18''$

77:  
E: 287572.1169,  
N: 3908924.0802

CH: 4+698.33  
R: 85.000m,  
L: 41.380m,  
 $\Delta 152^\circ 06' 25''$

78:  
E: 287603.9450,  
N: 3908882.6700

CH: 4+986.60  
R: 16.000m,  
L: 14.575m,  
 $\Delta 127^\circ 48' 23''$

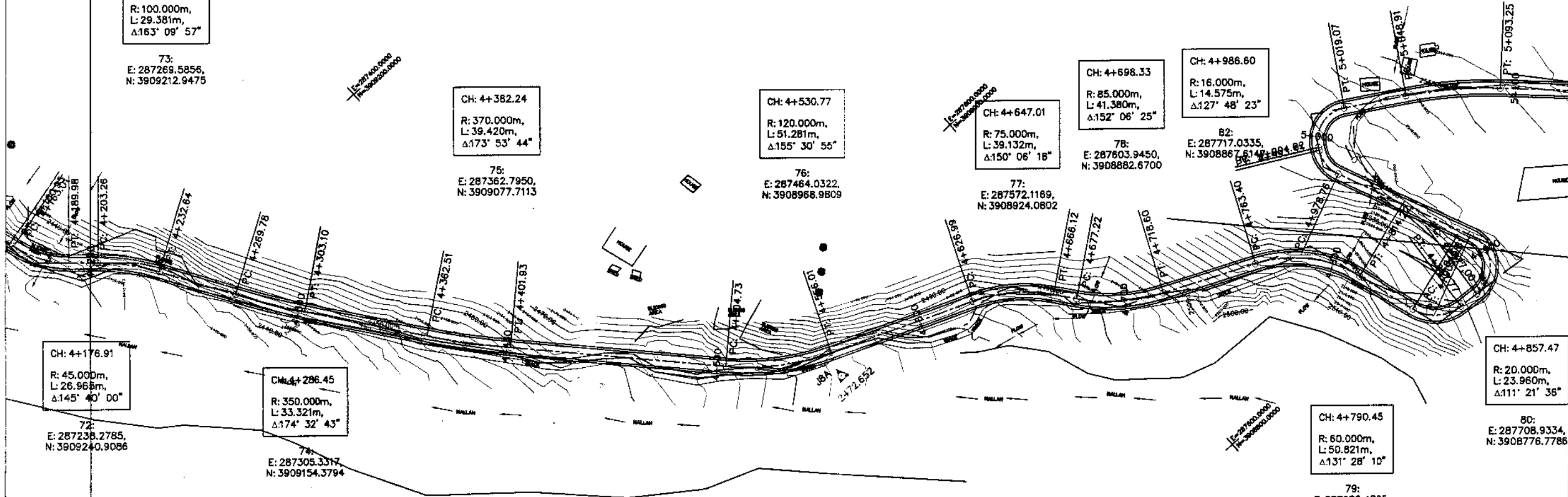
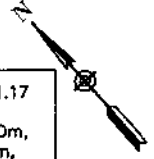
82:  
E: 287717.0335,  
N: 3908867.6147

CH: 5+010.53  
R: 15.000m,  
L: 24.250m,  
 $\Delta 87^\circ 22' 13''$

83:  
E: 287729.0358,  
N: 3908889.5827

CH: 5+071.17  
R: 200.000m,  
L: 44.343m,  
 $\Delta 167^\circ 17' 48''$

84:  
E: 287786.9804,  
N: 3908854.3796



CH: 4+176.91  
R: 45.000m,  
L: 26.968m,  
 $\Delta 145^\circ 40' 00''$

72:  
E: 287238.2785,  
N: 3909240.9086

CH: 4+286.45  
R: 350.000m,  
L: 33.321m,  
 $\Delta 174^\circ 32' 43''$

74:  
E: 287305.3317,  
N: 3909154.3794

CH: 4+857.47  
R: 20.000m,  
L: 23.960m,  
 $\Delta 111^\circ 21' 36''$

80:  
E: 287708.9334,  
N: 3908776.7786

CH: 4+790.45  
R: 60.000m,  
L: 50.821m,  
 $\Delta 131^\circ 28' 10''$

79:  
E: 287688.4895,  
N: 3908844.0320

MATCH LINE : KM : 4+200



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

RE.	DATE	DESCRIPTION	APPROVED	APPROVED

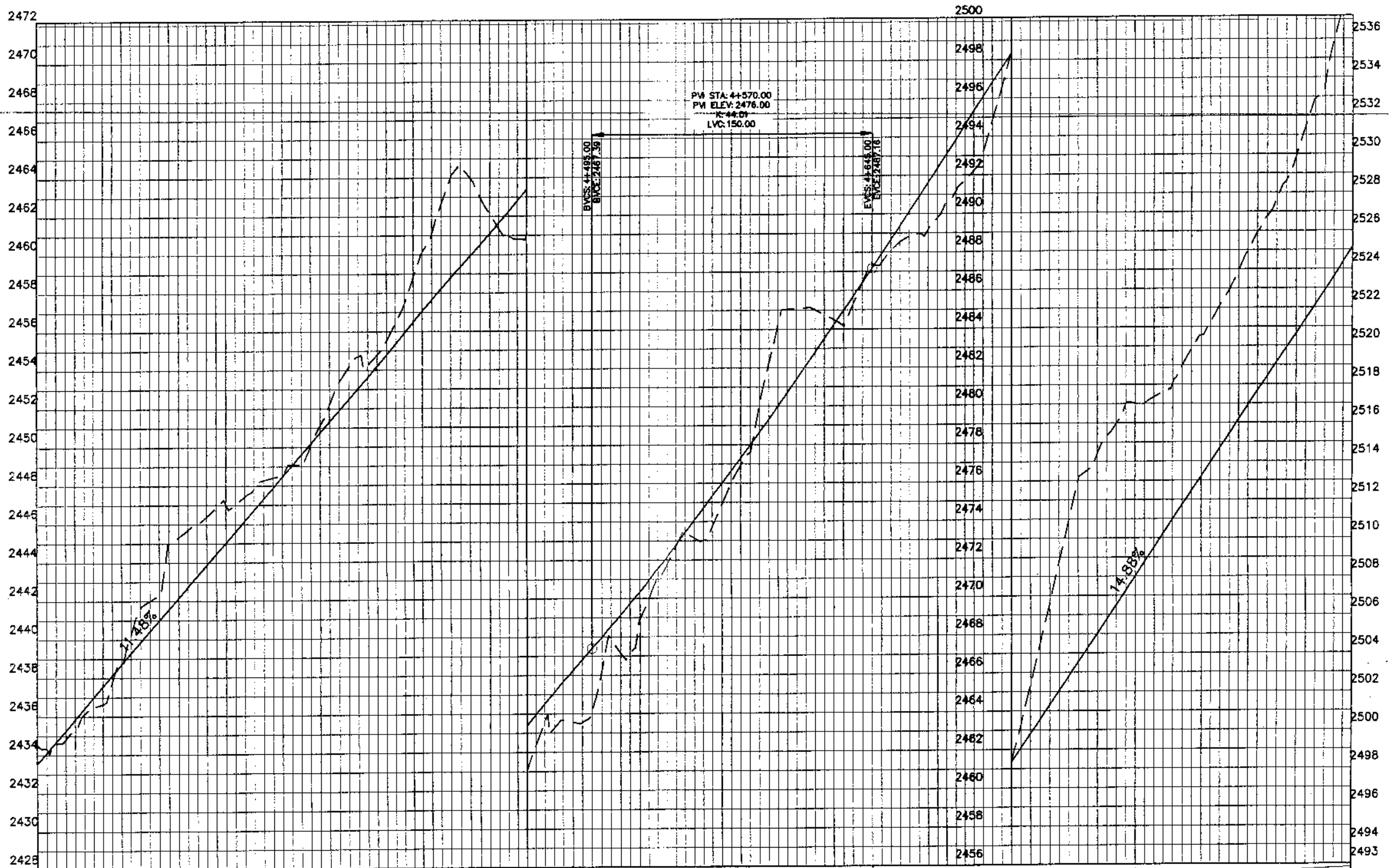
UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 4+200 ~ KM: 4+900		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 21	

MANKIAL TO JARDHAI ROAD SWAT-22-provisional.dwg



MANKIAL TO JABBAH ROAD SWAT - R2 - practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
4+200	2433.525	2433.541
4+250	2435.362	2435.836
4+300	2437.769	2438.131
4+350	2442.000	2440.426
4+400	2445.694	2442.721
4+450	2447.023	2445.016
4+500	2448.273	2447.311
4+550	2448.993	2449.607
4+600	2453.391	2451.902
4+650	2454.776	2454.197
4+700	2458.827	2456.492
4+750	2464.054	2458.787
4+800	2462.110	2461.082
4+850	2461.003	2463.377
4+900	2463.653	2465.672



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

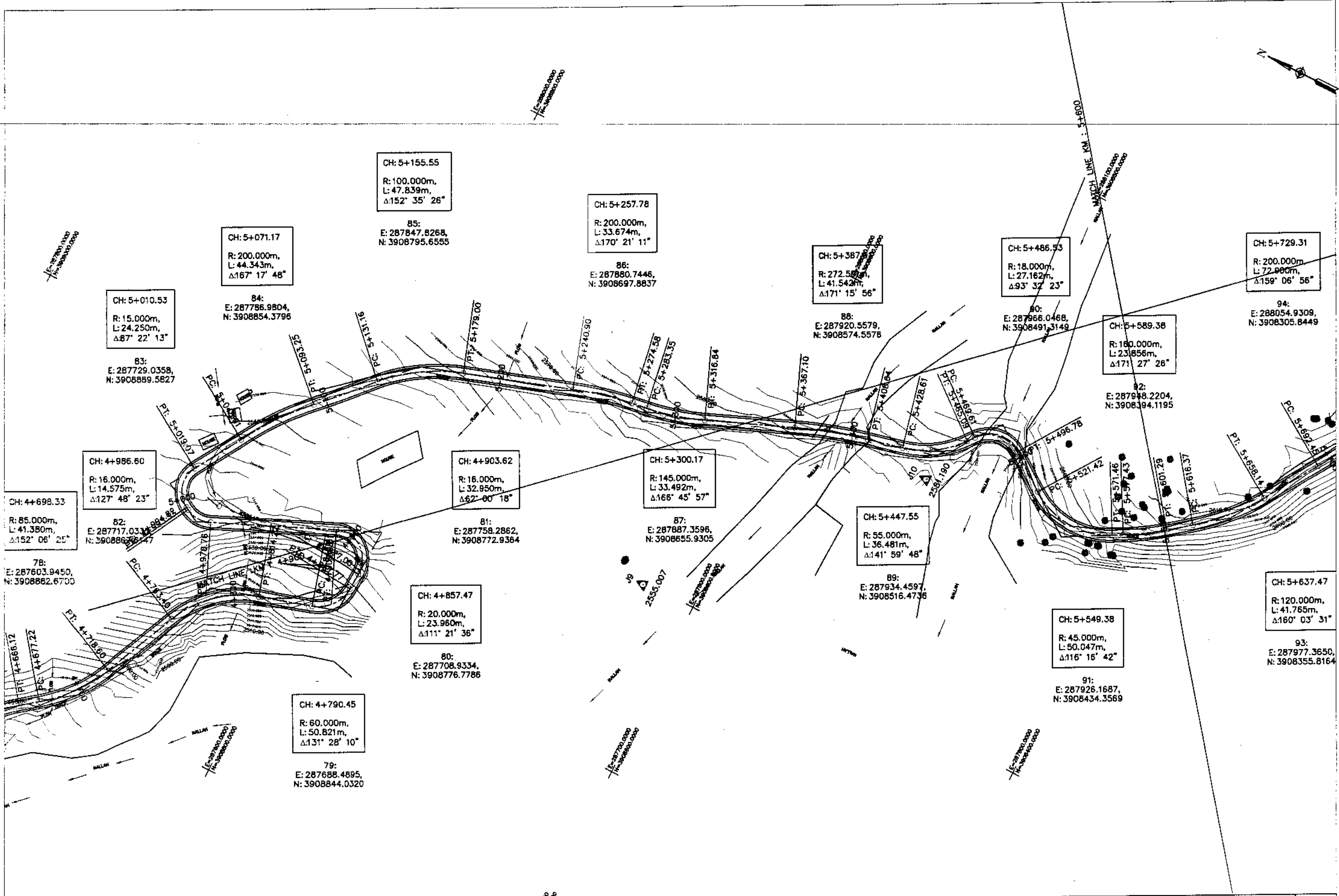
REV.	DATE	DESCRIPTION	APPROVED	APPROVED


DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED


UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE  
KM: 4+200 ~ KM: 4+900

DATE October 2020  
DWG NO. 4169/(iii)/TD/P 021




**KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK**

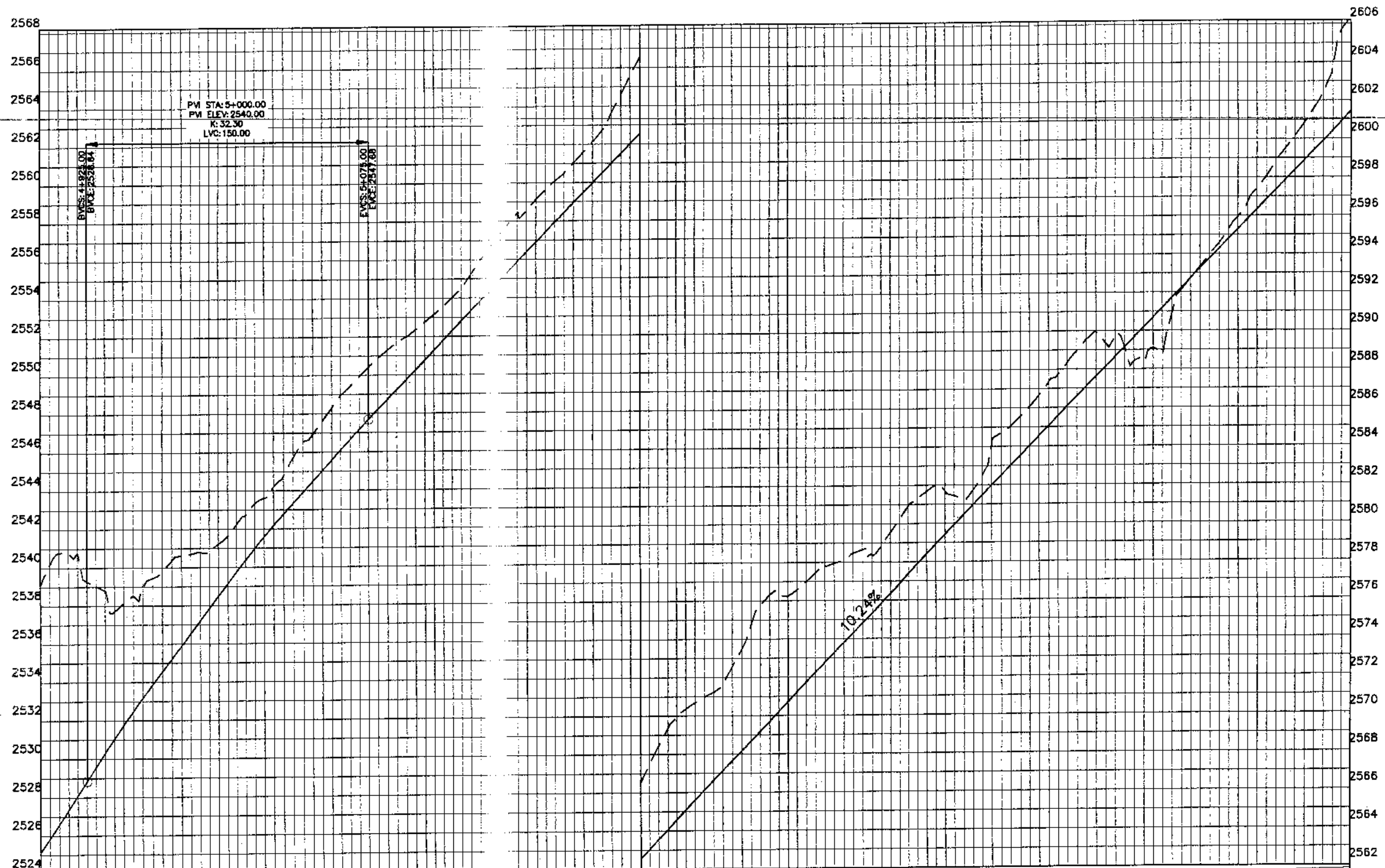

**NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.**

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	JUNAD KHAN
				SUBMITTED	NOSHERWAN NAEEM
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

**UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD -2**

PLAN		SCALE
KM: 4+900 ~ KM: 5+600		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 22	

MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
4+900	2525.110	2539.043
4+950	2528.093	2540.764
5+000	2531.035	2537.699
5+050	2533.857	2539.432
5+100	2536.555	2540.684
5+150	2539.129	2541.633
5+200	2541.580	2543.595
5+250	2543.906	2546.539
5+300	2546.109	2548.955
5+350	2548.192	2550.863
5+400	2550.239	2552.340
5+450	2552.287	2554.016
5+500	2554.334	2555.963
5+550	2556.383	2558.558
5+600	2558.431	2560.499
5+650	2560.479	2562.719
5+700	2562.527	2566.518
5+750	2564.575	2569.949
5+800	2566.623	2571.218
5+850	2568.670	2574.777
5+900	2570.718	2576.235
5+950	2572.766	2577.761
6+000	2574.814	2578.643
6+050	2576.862	2580.222
6+100	2578.910	2582.008
6+150	2580.958	2581.728
6+200	2583.006	2585.057
6+250	2585.054	2587.323
6+300	2587.101	2589.547
6+350	2589.149	2589.069
6+400	2591.197	2588.783
6+450	2593.245	2593.336
6+500	2595.293	2595.938
6+550	2597.341	2598.868
6+600	2599.389	2601.580
6+650	2601.437	2606.350



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



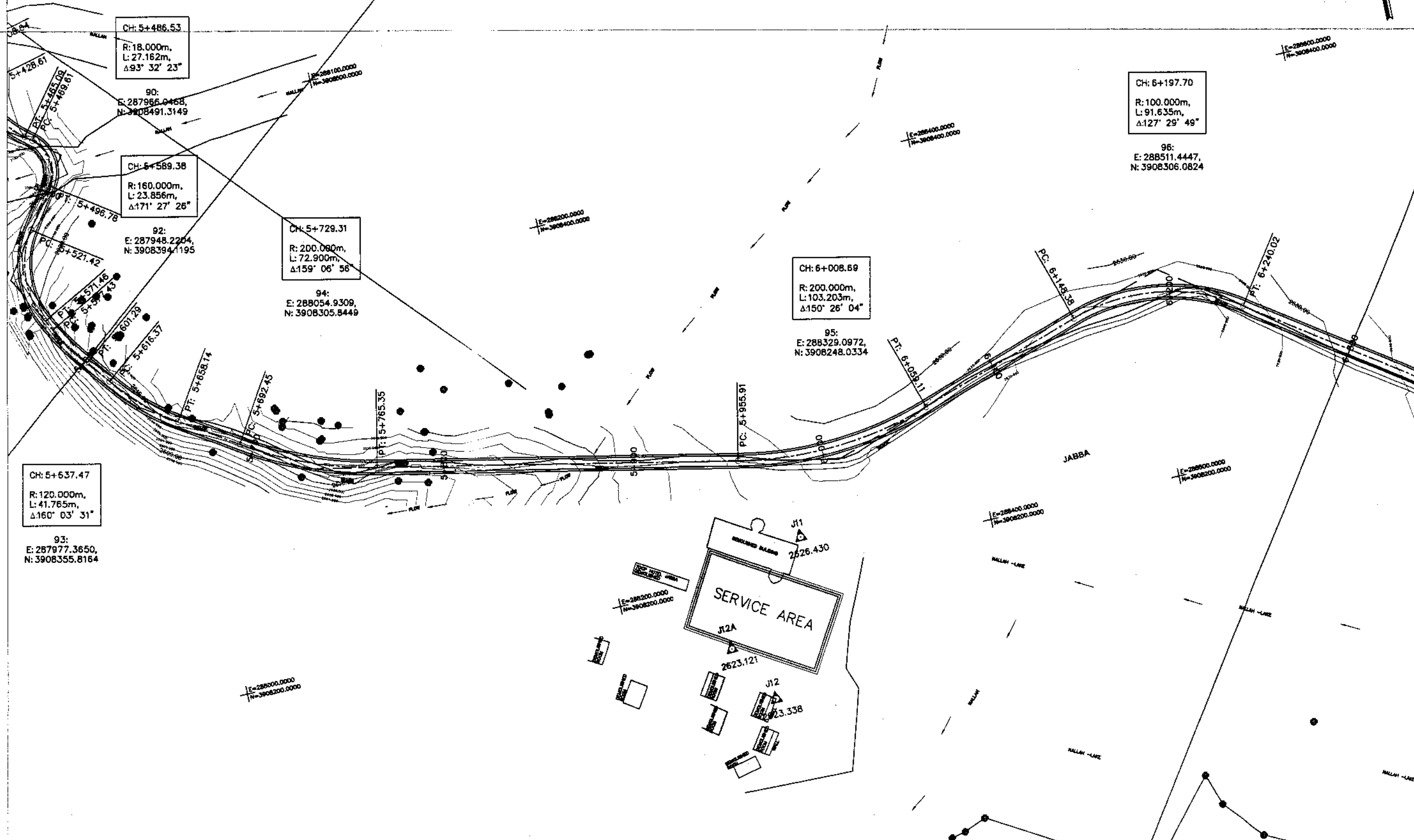
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV	DATE	DESCRIPTION	APPROVED	DRAWN	JUNAID KHAN
				SUBMITTED	NOSHERWAN NAEEM
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE	
KM: 4+900 ~ KM: 5+600	
DATE	DWG NO.
October 2020	4169/(iii)/TD/P 022

1° 15' 56"  
 68:  
 7920.5579,  
 8574.5578



KHYBER PAKHTUNKHWA  
 INTEGRATED TOURISM AND  
 ENTERPRISE DEVELOPMENT  
 PROJECT  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
 PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

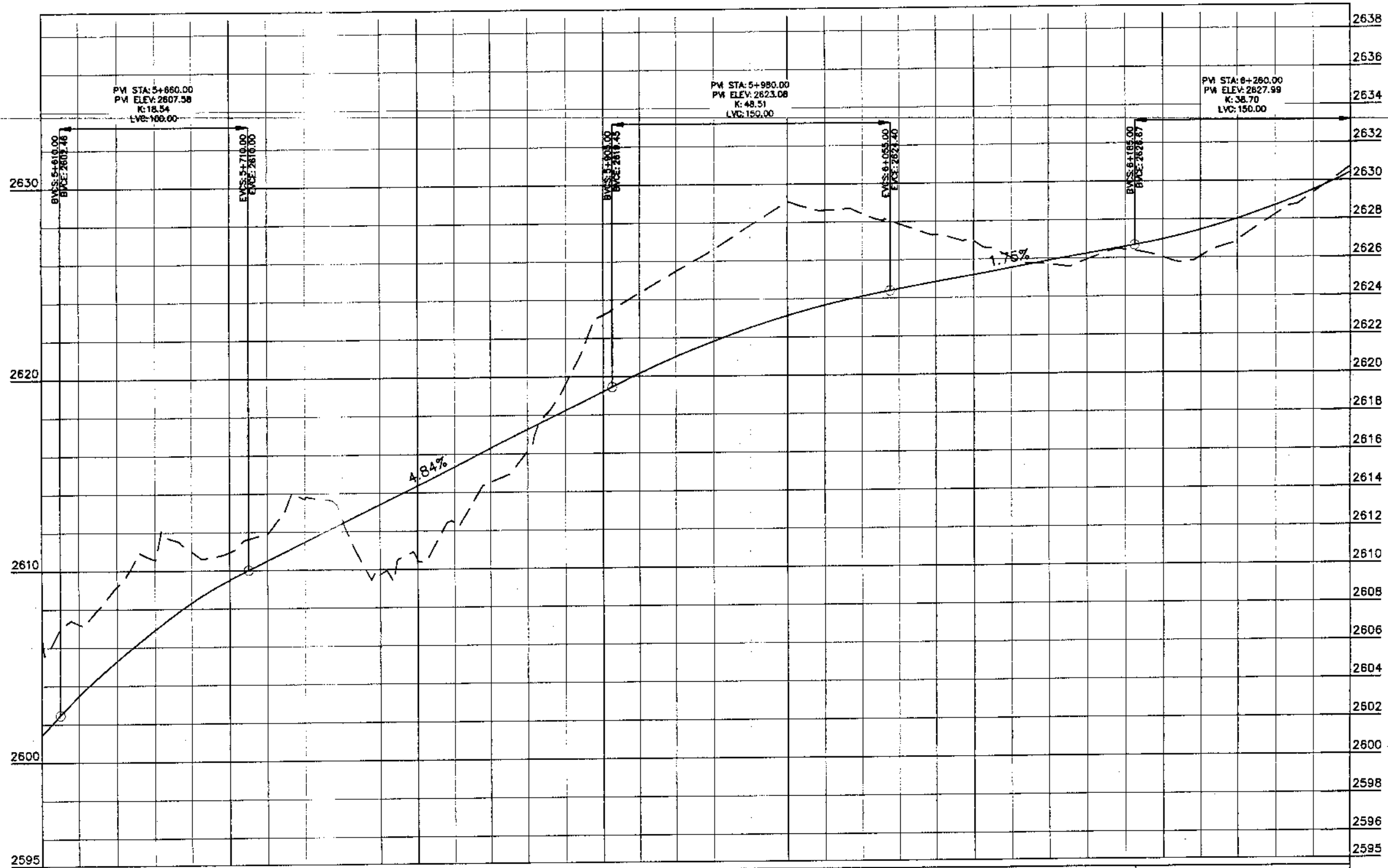
DRAWN JUNAID KHAN  
 SUBMITTED NOSHERWAN MAEEM  
 RECOMMENDED  
 CHD./VER.  
 APPROVED APPROVED

UPGRADING OF MANKIAL BADA SERI ROAD  
 IN DISTRICT SWAT -23.00 KM  
 ROAD - 2

PLAN KM: 5+600 ~ KM: 6+300		SCALE 1:2000
DATE November 2020	DWG NO. 4169/(iii)/TD/P 23	

MAPKWA TO JABBA ROAD SWAT-23.00 KM

MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
5+600	2600.350	2601.437
5+650	2607.209	2603.458
5+700	2609.184	2605.290
5+750	2610.583	2606.906
5+800	2610.998	2608.306
5+850	2610.930	2609.491
5+900	2611.875	2610.487
5+950	2613.695	2611.456
6+000	2612.646	2612.425
6+050	2609.718	2613.393
6+100	2610.484	2614.362
6+150	2612.397	2615.331
6+200	2614.522	2616.300
6+250	2616.122	2617.269
6+300	2619.609	2618.236
6+350	2623.212	2619.207
6+400	2624.352	2620.152
6+450	2625.477	2621.018
6+500	2626.607	2621.802
6+550	2627.858	2622.502
6+600	2629.060	2623.121
6+650	2628.621	2623.657
6+700	2628.426	2624.110
6+750	2627.880	2624.484
6+800	2627.285	2624.835
6+850	2626.962	2625.185
6+900	2626.068	2625.536
6+950	2625.704	2625.886
7+000	2625.926	2626.236
7+050	2626.436	2626.587
7+100	2626.033	2626.967
7+150	2626.051	2627.446
7+200	2626.922	2628.029
7+250	2628.242	2628.716
7+300	2629.364	2629.505
7+350	2630.722	2630.399



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

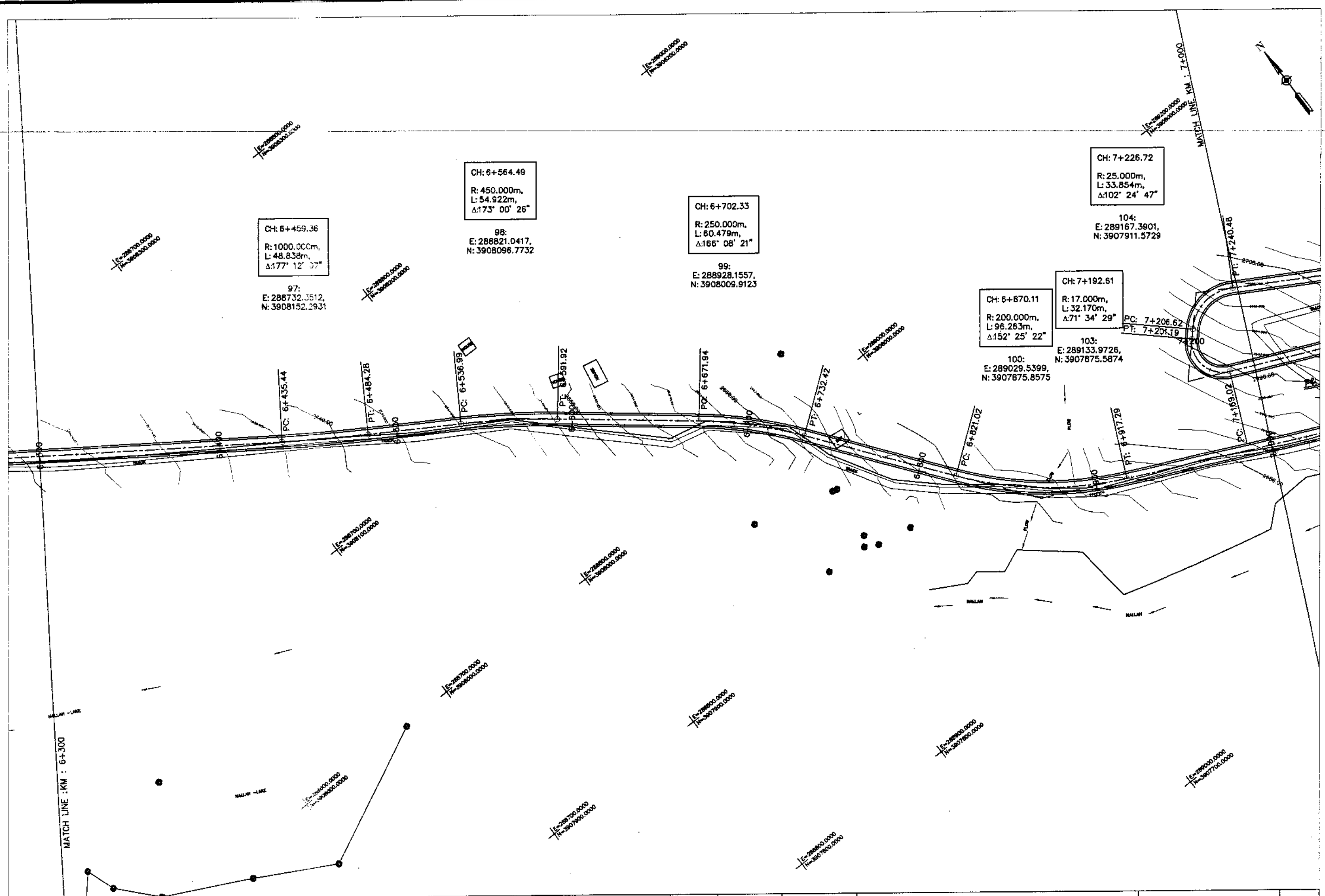
DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN MAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE  
KM: 5+600 ~ KM: 6+300

DATE October 2020  
DWG NO. 4169/(iii)/TD/P 023

1: MANKIAL TO JAMSHAH ROAD SWMT -23- practice drawing sheet no. 07



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



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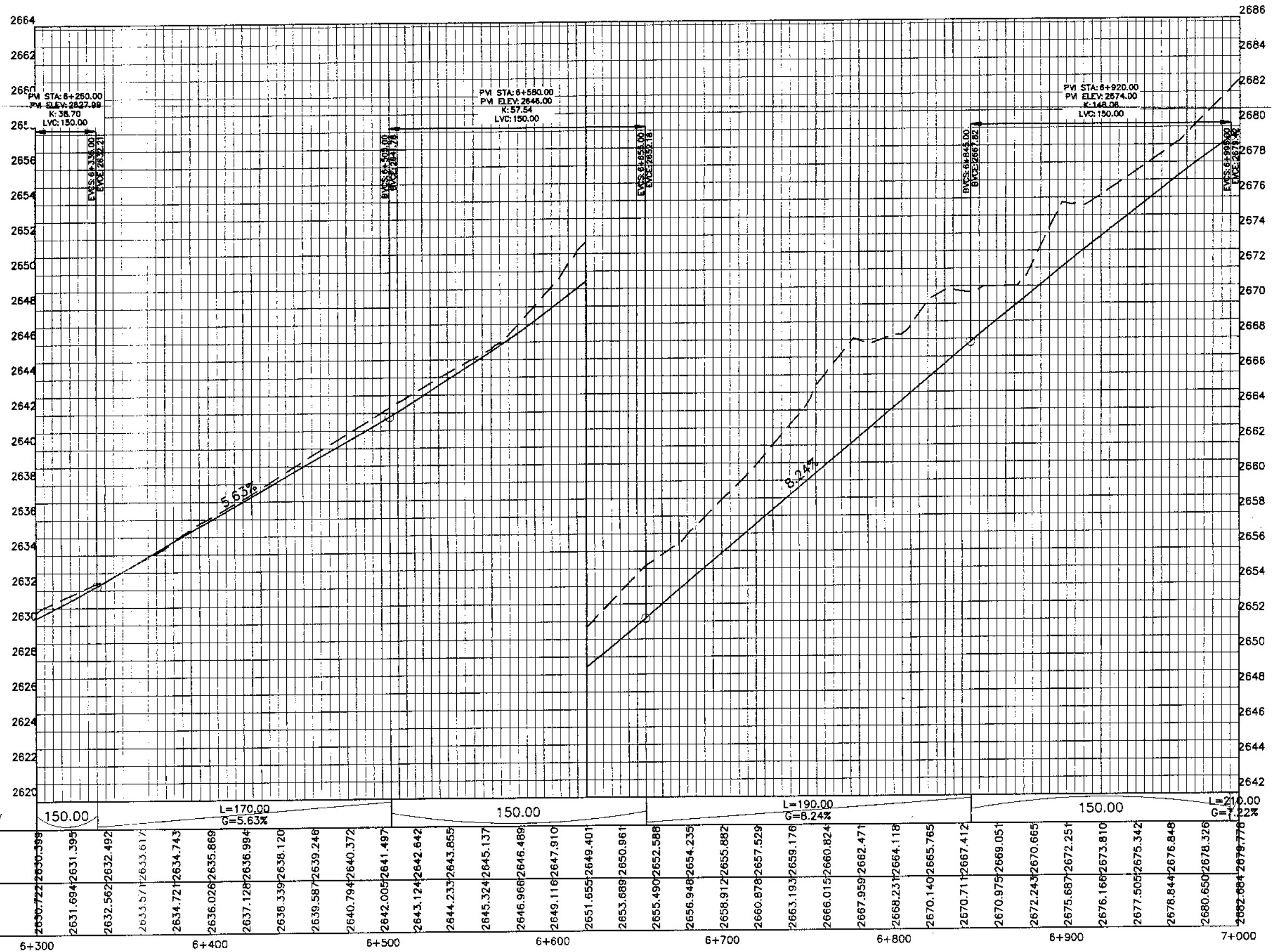
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN MAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISRTICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 6+300 ~ KM: 7+000		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 24	

MANKIAL TO JABBAH ROAD SWAT - R2 - practice.rizwan sb.dwg



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



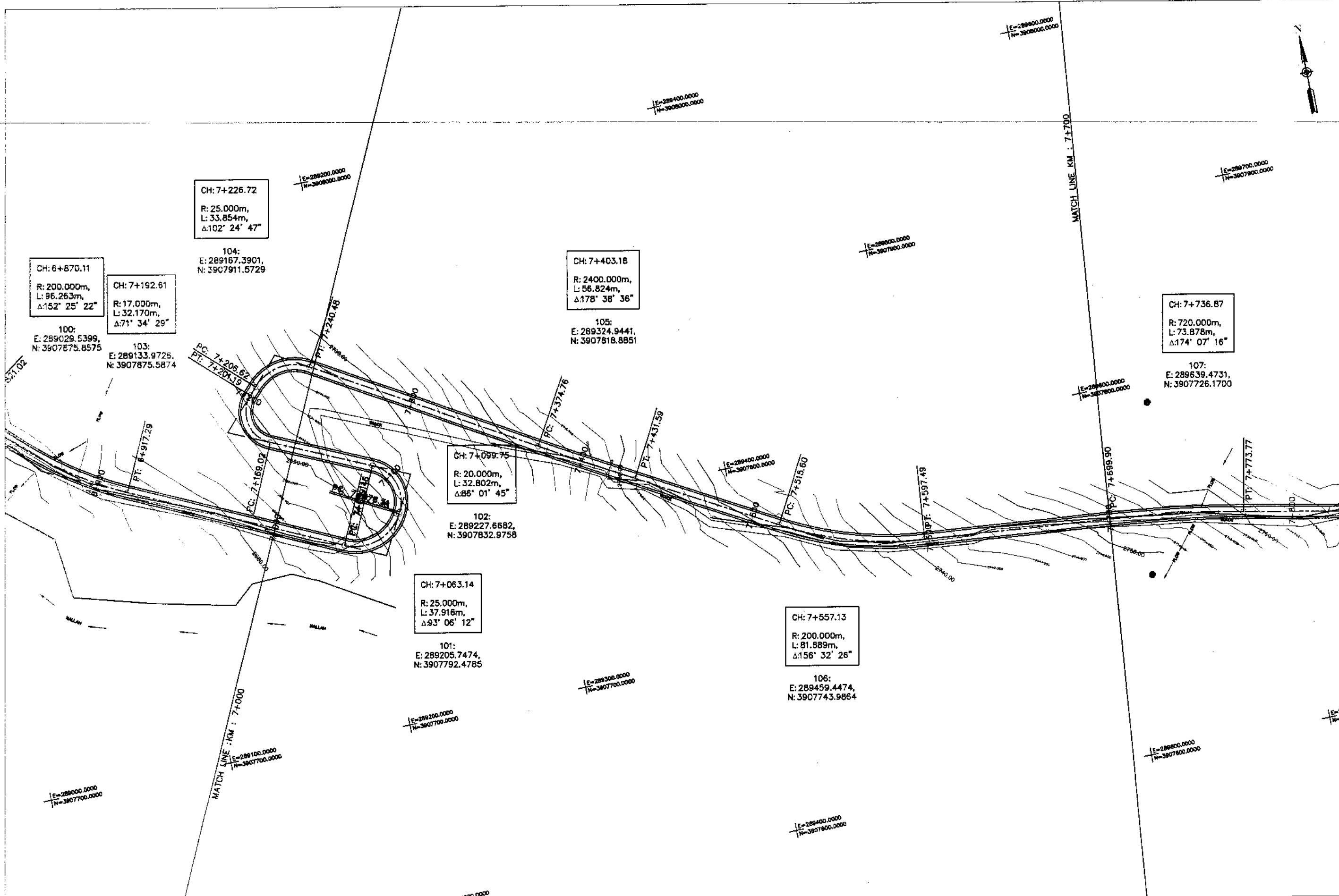
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE KM: 6+300 ~ KM: 7+000	
DATE	DWG NO.
October 2020	4159/(iii)/TD/P 024



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

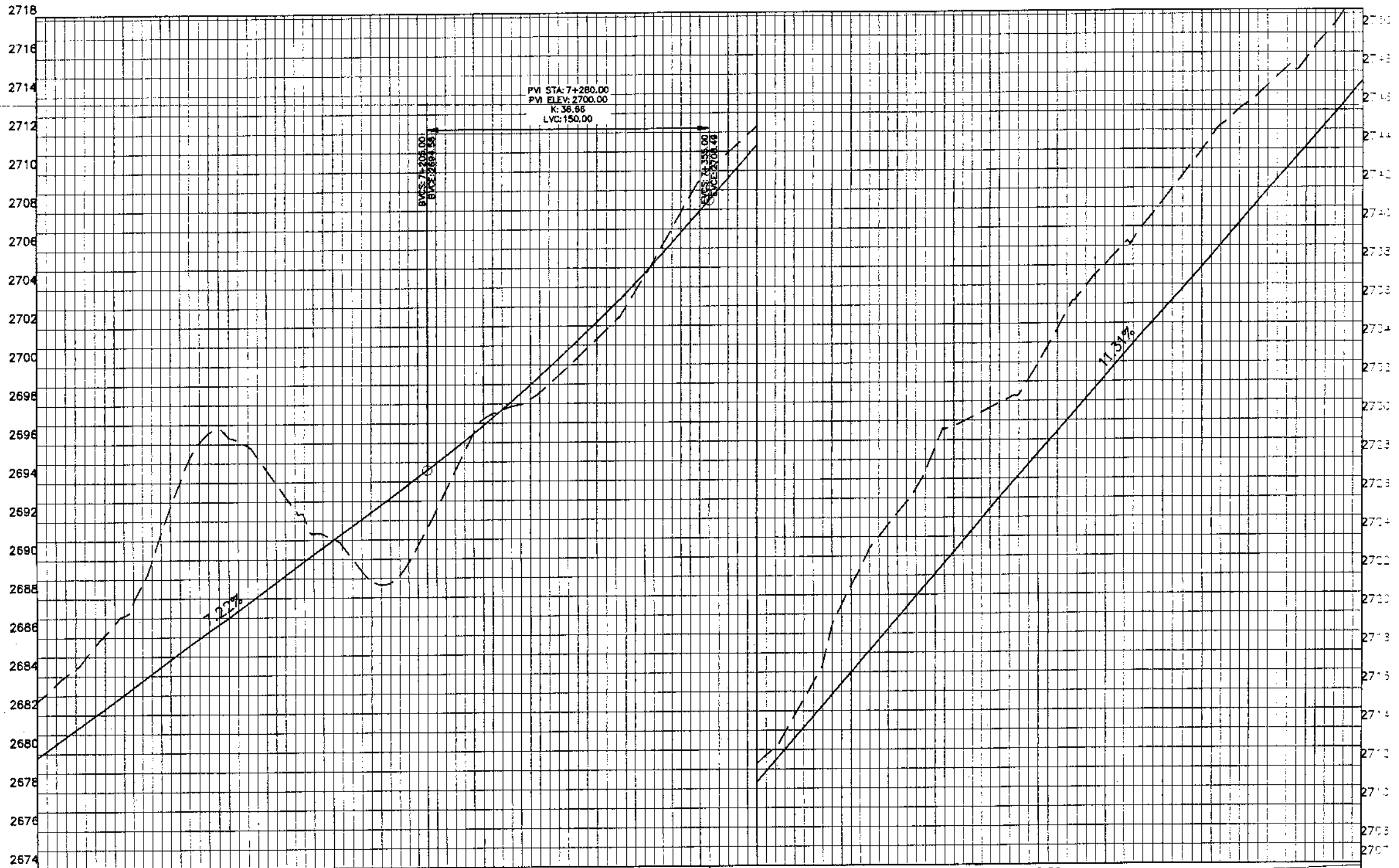
REV.	DATE	DESCRIPTION	APPROVED	DRAWN	JUNAID KHAN
				SUBMITTED	NOSHERWAN NAEEM
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 7+000 ~ KM: 7+700		1:2000
DATE	DWG NO.	
November 2020	4189/(iii)/TD/P 25	



MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



Station	Design Level (m)	Ground Level (m)
7+000	2682.66	2679.776
7+010	2684.397	2681.222
7+020	2686.686	2682.667
7+030	2689.938	2684.111
7+040	2695.218	2685.556
7+050	2696.320	2687.000
7+060	2694.622	2688.444
7+070	2692.192	2689.889
7+080	2690.693	2691.333
7+090	2688.660	2692.778
7+100	2690.659	2694.222
7+110	2694.539	2695.697
7+120	2697.478	2697.278
7+130	2698.230	2698.968
7+140	2699.875	2700.767
7+150	2701.801	2702.675
7+160	2704.548	2704.692
7+170	2707.875	2706.819
7+180	2710.501	2709.051
7+190	2712.280	2711.313
7+200	2714.745	2713.576
7+210	2719.457	2715.839
7+220	2723.404	2718.102
7+230	2725.802	2720.364
7+240	2729.560	2722.627
7+250	2730.424	2724.890
7+260	2731.330	2727.152
7+270	2734.717	2729.415
7+280	2737.533	2731.678
7+290	2739.308	2733.940
7+300	2741.977	2736.203
7+310	2744.648	2738.466
7+320	2746.434	2740.728
7+330	2748.211	2742.991
7+340	2749.911	2745.254
7+350	2752.554	2747.517



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

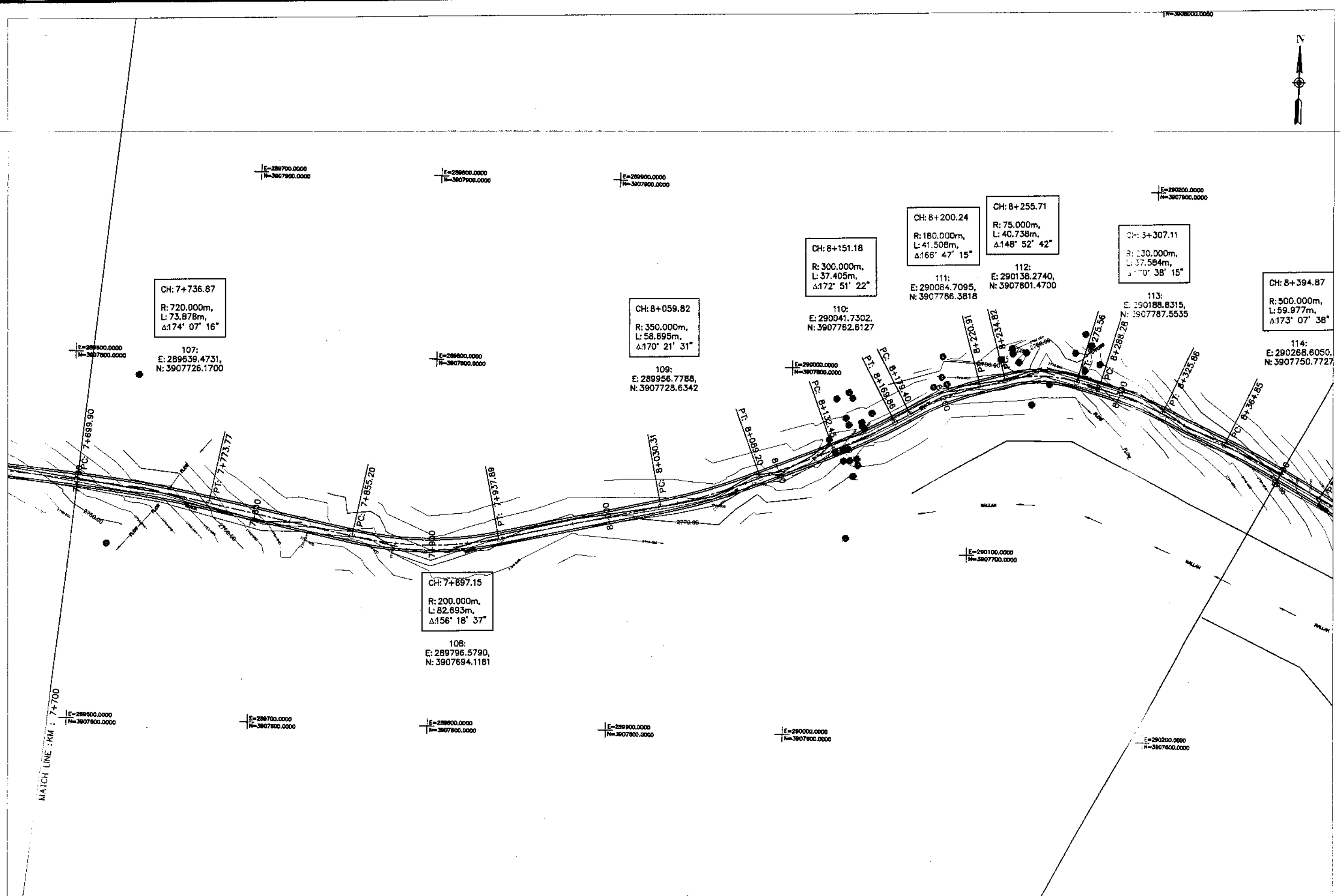
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE  
KM: 7+000 ~ KM: 7+700

DATE October 2022  
DWG NO. 4189/(iii)/TD/P 025



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KP&C



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

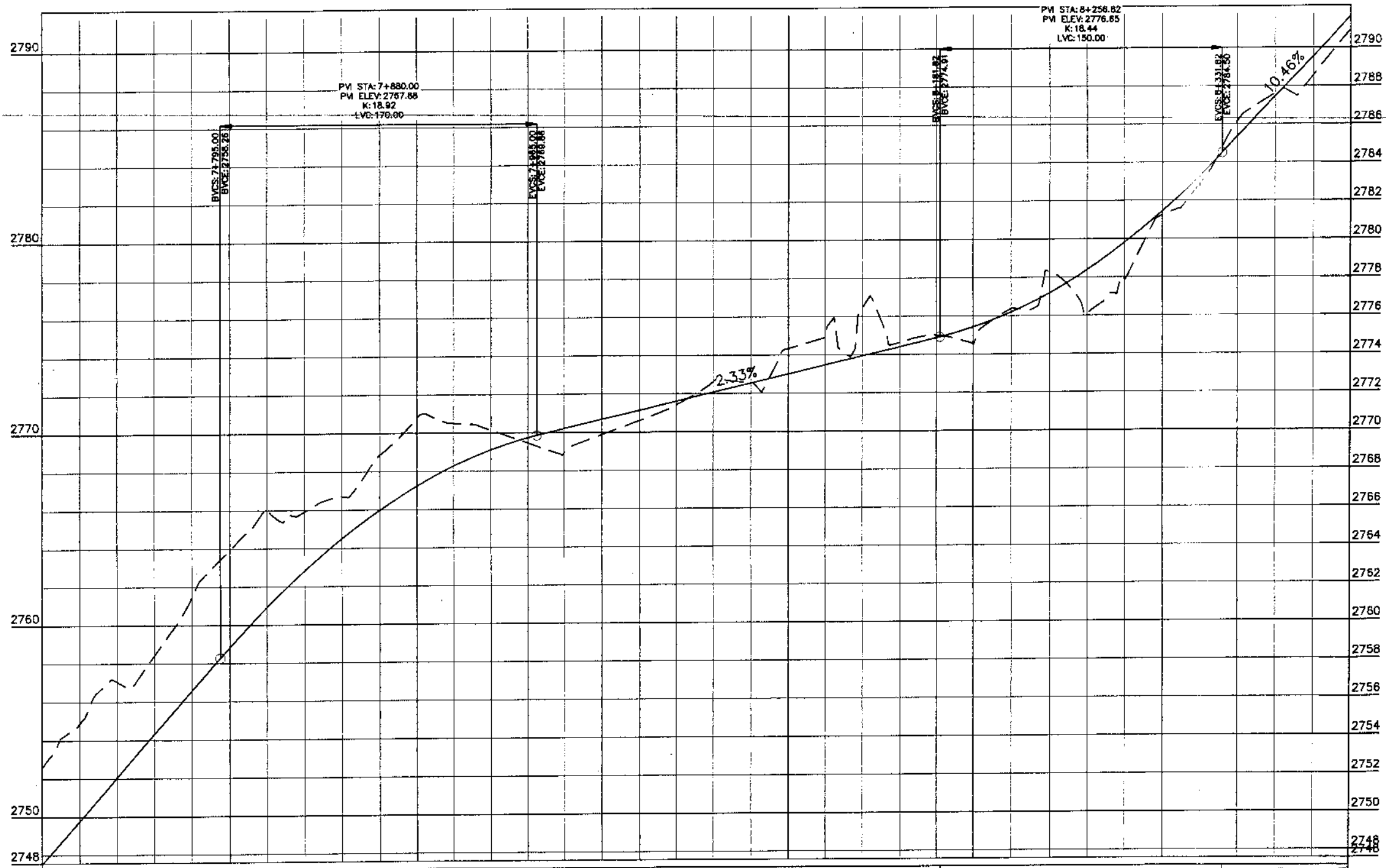
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED APPROVED

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 7+700 ~ KM: 8+400		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 26	

MANKIAL TO JABBAH ROAD SWAT - R2 - practice rizwan\_sb.dwg



Station	Design Levels	Ground Levels
7+700	2752.594	2747.917
	2754.881	2749.779
	2757.047	2752.042
	2758.414	2754.305
	2761.467	2756.567
7+800	2763.905	2758.823
	2766.039	2760.928
	2765.911	2762.820
	2766.716	2764.501
	2768.856	2765.971
	2770.781	2767.230
7+900	2770.501	2768.277
	2770.140	2769.112
	2769.465	2769.736
8+000	2768.925	2770.208
	2769.872	2770.674
	2770.606	2771.139
	2771.404	2771.605
	2772.619	2772.070
	2772.561	2772.536
8+100	2774.331	2773.001
	2774.951	2773.467
	2776.422	2773.932
	2774.630	2774.398
8+200	2774.997	2774.863
	2774.547	2775.418
	2776.365	2776.189
	2778.294	2777.177
	2776.104	2778.382
	2777.904	2779.804
8+300	2781.232	2781.443
	2782.916	2783.293
	2786.152	2785.353
	2787.611	2787.446
	2788.567	2789.538
8+400	2790.915	2791.030



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

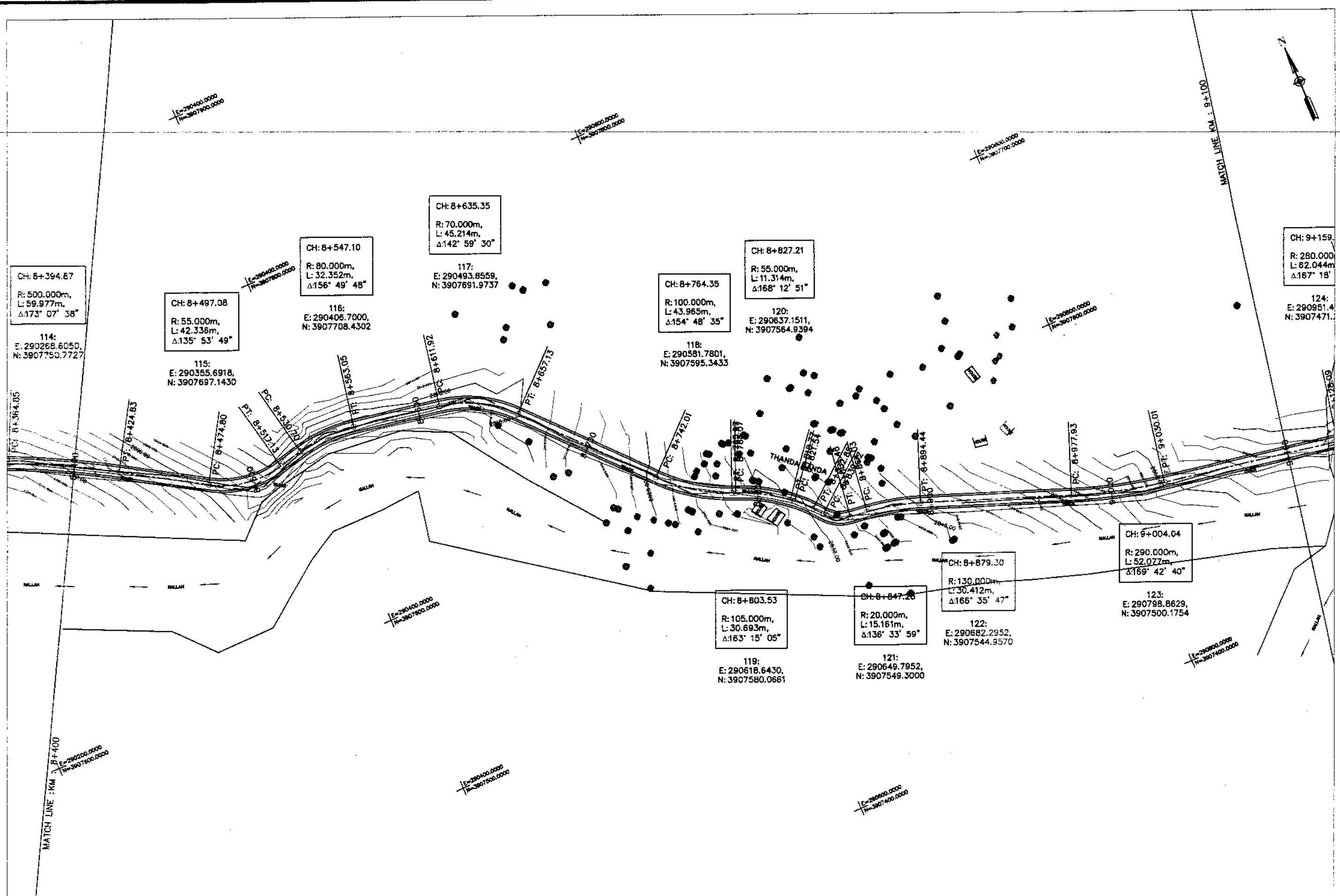
REV.	DATE	DESCRIPTION	APPROVED


DRAWN: JUNAID KHAN  
SUBMITTED: NOSHERWAN NAEEM  
RECOMMENDED:                        
CHD./VER:                                
APPROVED:                             


UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE  
KM: 7+700 ~ KM: 8+400

DATE: October 2020  
DWG NO.: 4169/(iii)/TD/P 026




**KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK**


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

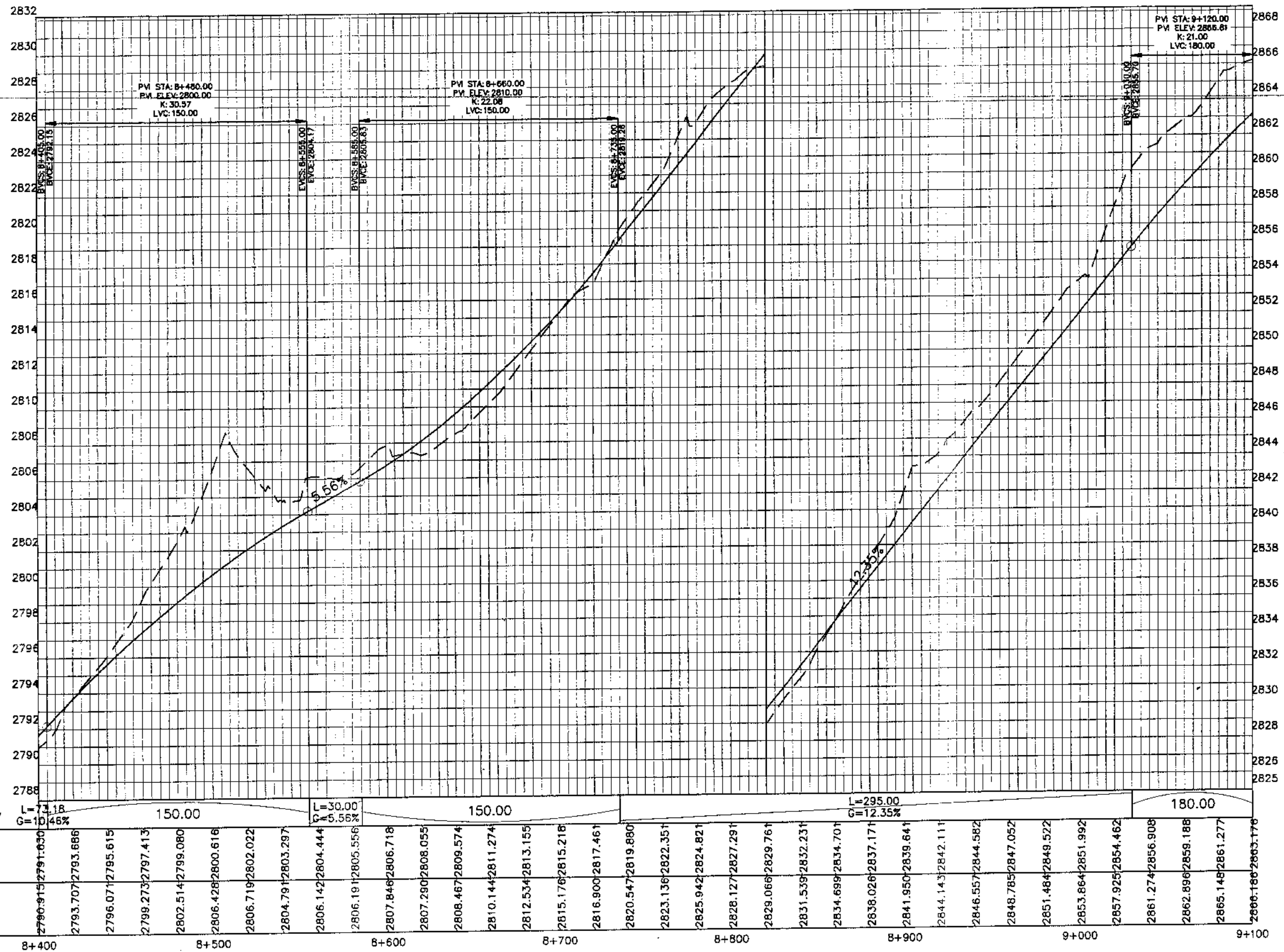
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
 SUBMITTED NOSHERWAN NAEEM  
 RECOMMENDED  
 CHD./VER.  
 APPROVED APPROVED

**UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 2**

**PLAN**  
 KM: 8+400 ~ KM: 9+100  
 SCALE 1:2000

DATE November 2020  
 DWG NO. 4169/(iii)/TD/P 27



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



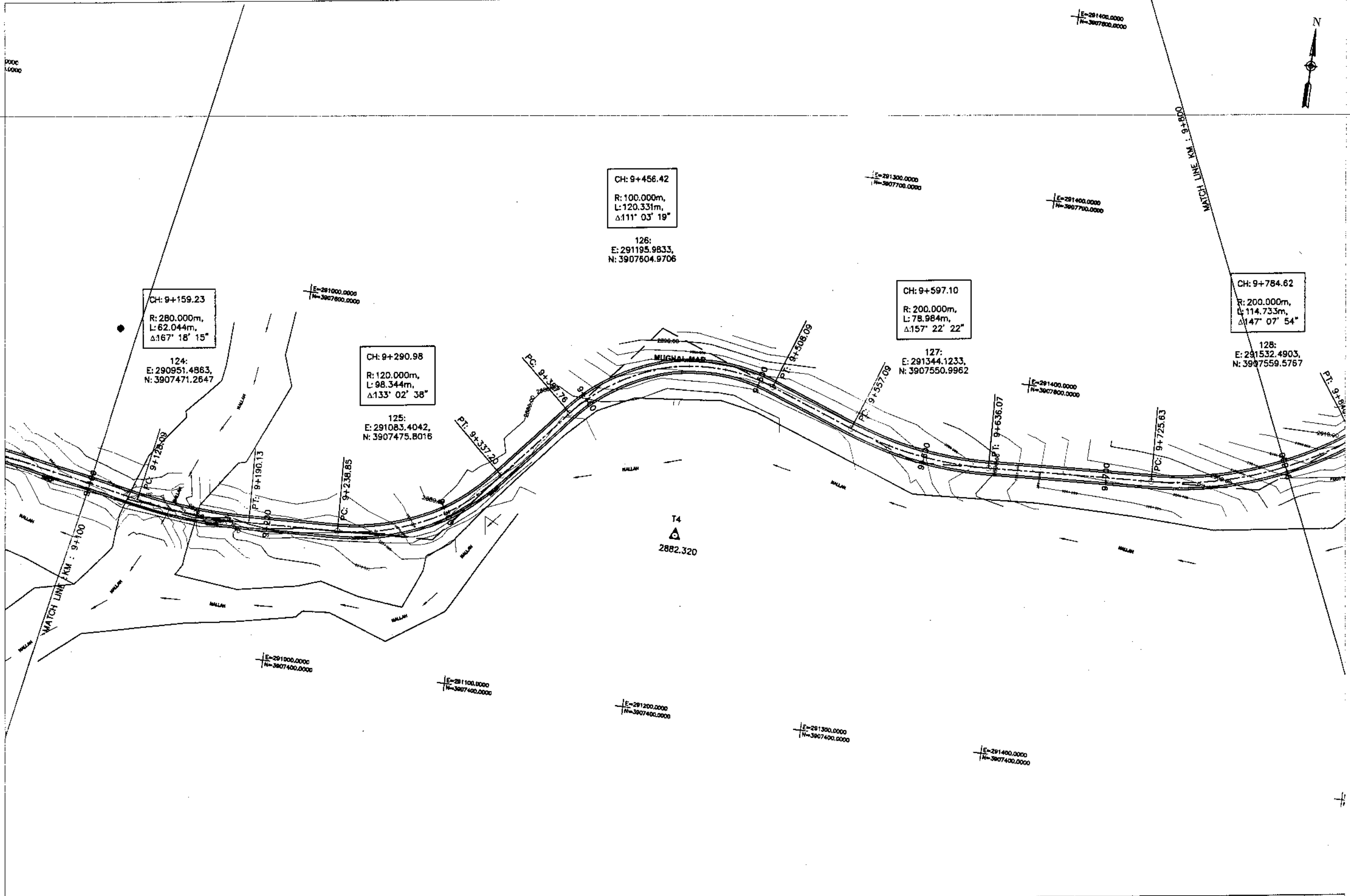
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	JUNAD KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE	
KM: 8+400 ~ KM: 9+100	
DATE	DWG NO.
October 2020	4169/(III)/TD/P 027



ANNUAL TO URBAN ROAD SW-02-02-03-04-05-06-07-08-09-10-11-12



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

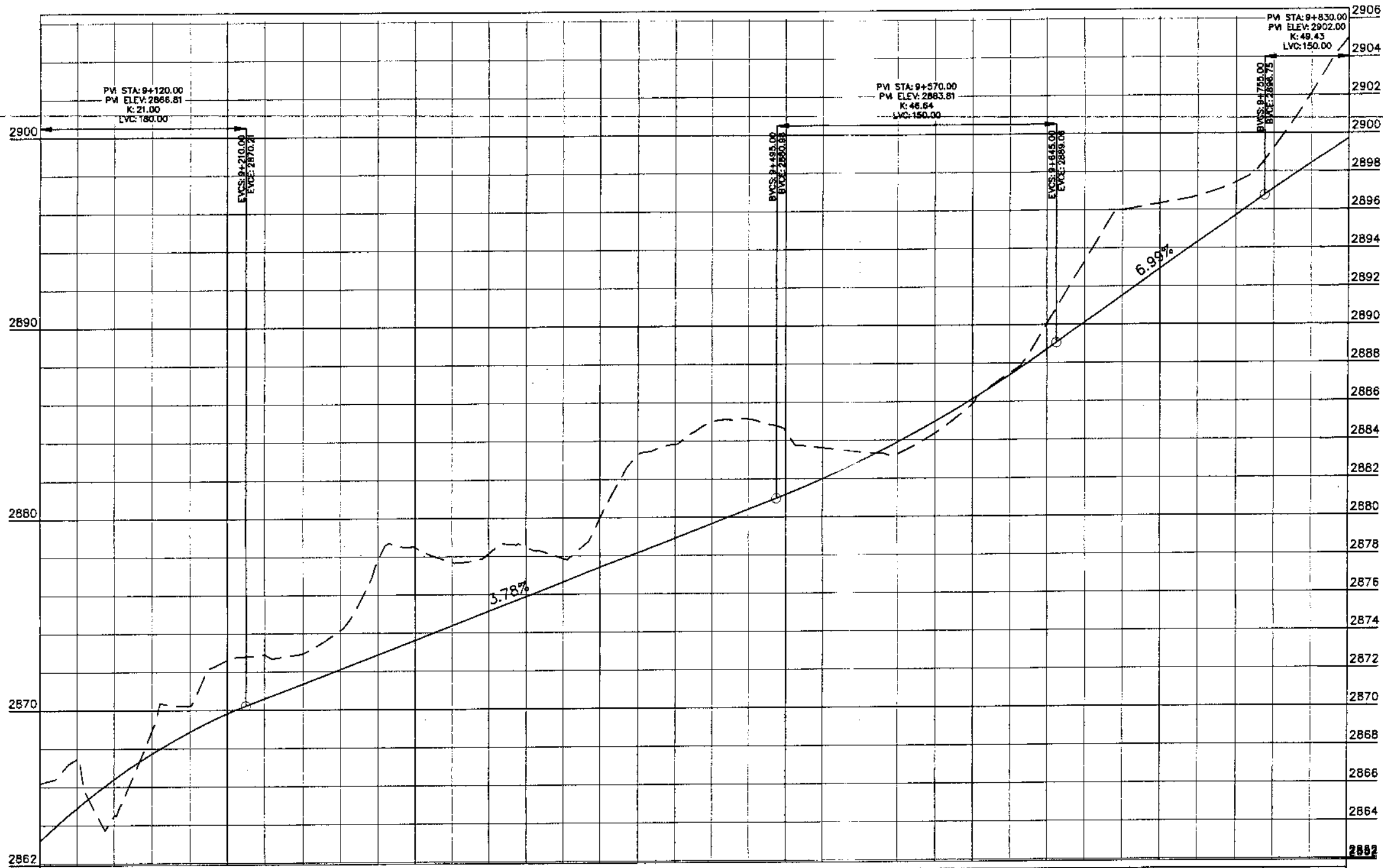
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISRTICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 9+100 ~ KM: 9+800		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 28	

MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan sb.dwg



Station	Ground Level	Design Level
9+100	2866.186	2863.176
	2867.459	2864.884
	2864.482	2866.401
	2868.922	2867.729
	2870.225	2868.865
9+200	2872.620	2869.811
	2872.896	2870.591
	2872.940	2871.346
	2874.152	2872.102
9+300	2877.800	2872.858
	2878.473	2873.613
	2877.695	2874.369
	2878.130	2875.125
	2878.476	2875.880
9+400	2877.873	2876.636
	2879.949	2877.392
	2883.275	2878.147
	2883.827	2878.903
	2884.985	2879.658
	2885.141	2880.414
9+500	2884.512	2881.172
	2883.612	2881.992
	2883.586	2882.848
	2883.270	2883.890
	2884.353	2884.967
9+600	2885.865	2886.130
	2887.487	2887.379
	2890.052	2888.713
	2893.306	2890.109
9+700	2895.993	2891.508
	2896.338	2892.907
	2896.722	2894.306
	2897.437	2895.705
	2899.239	2897.101
9+800	2902.111	2898.440
	2904.966	2899.687



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



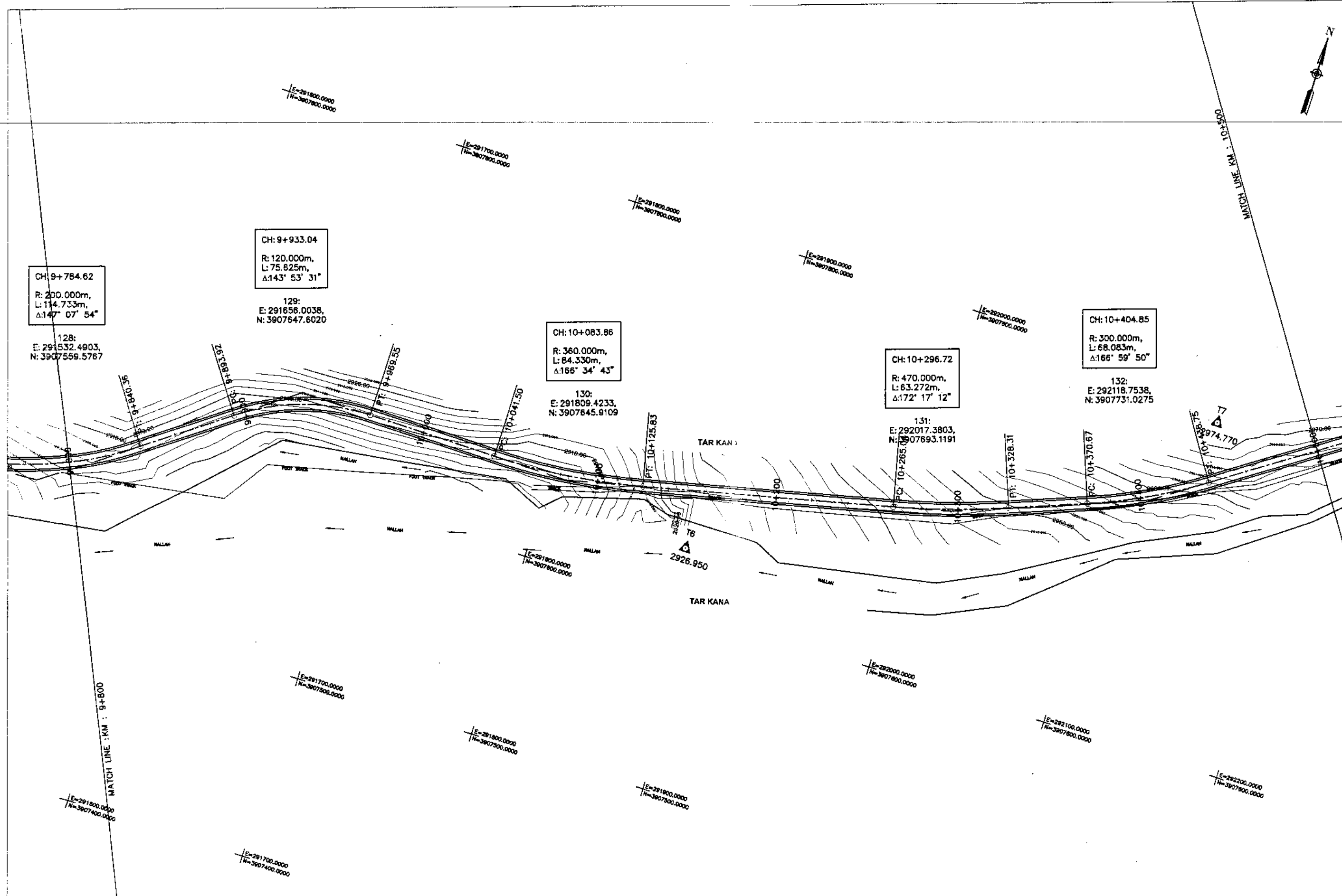
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	MOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE	
KM: 9+100 ~ KM: 9+800	
DATE	DWG NO.
October 2020	4169/(iii)/TD/P 028



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

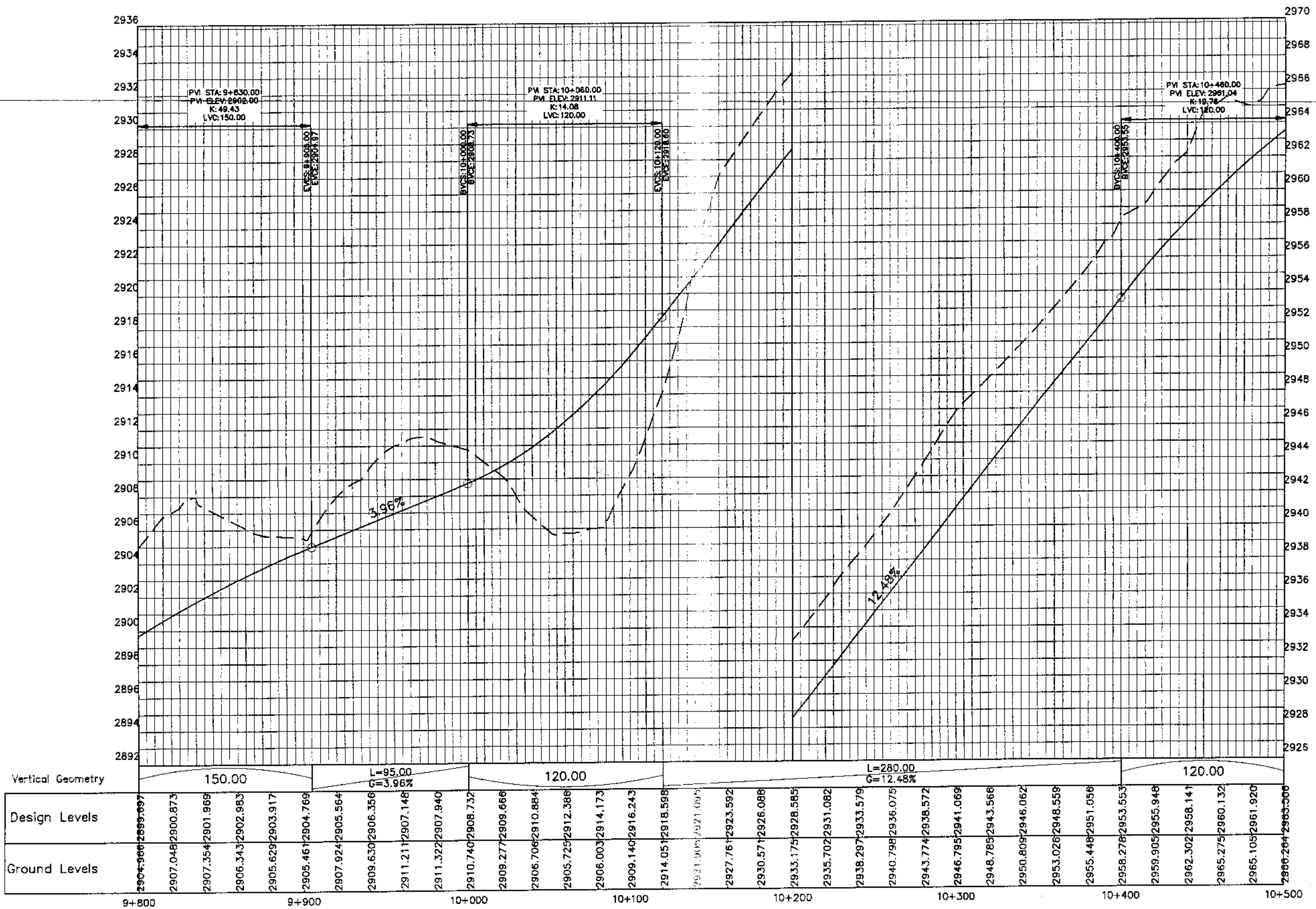
REV.	DATE	DESCRIPTION	APPROVED	DRAWN	JUNAIK KHAN
				SUBMITTED	NOSHERWAN NAEEM
				RECOMMENDED	
				END./VER.	
				APPROVED	

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISRTICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 9+800 ~ KM: 10+500		1:2000
DATE	DWG NO.	
November 2020	4169/(III)/TD/P 29	



MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

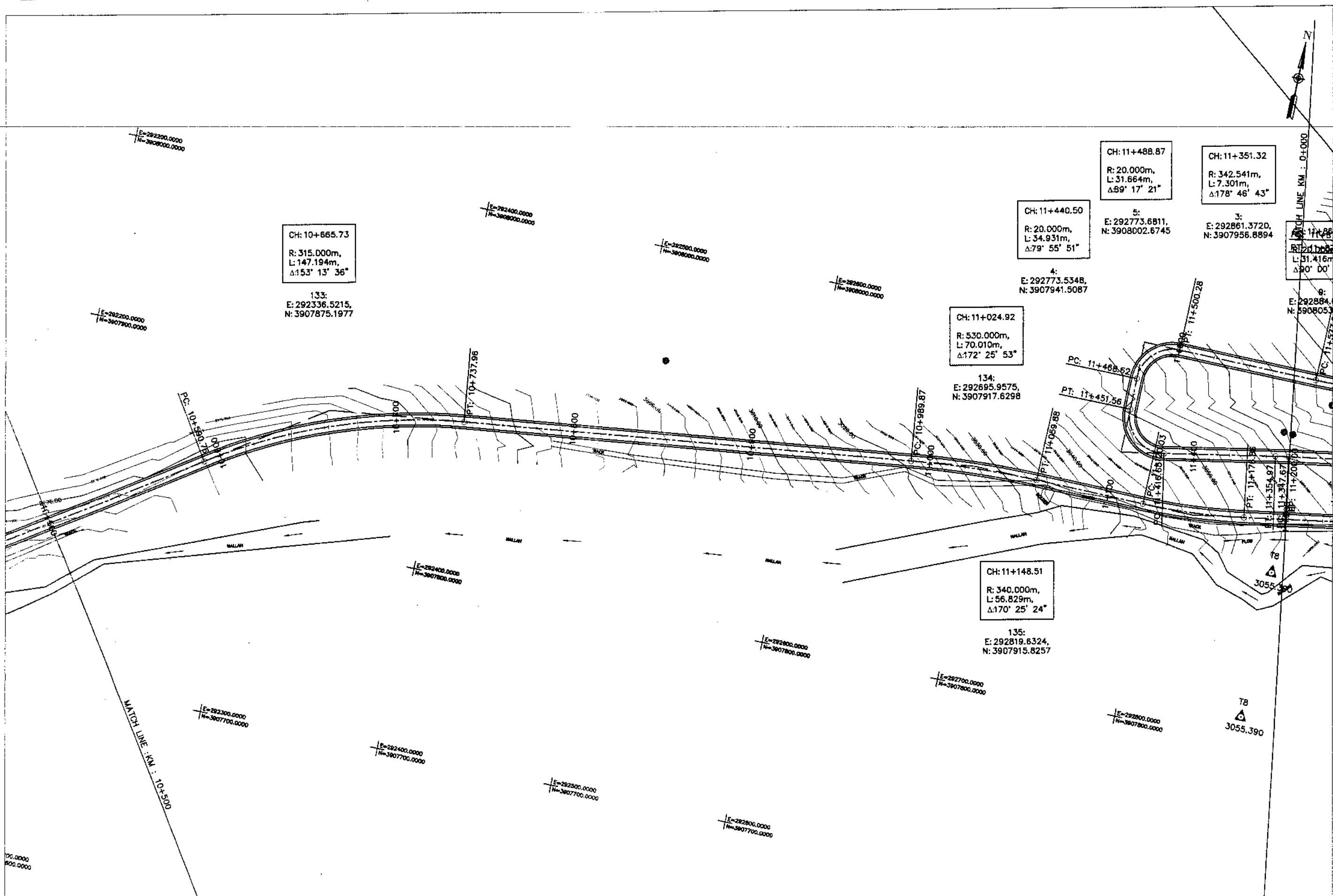
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAID KHAN  
SUBMITTED NDSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE  
KM: 9+800 ~ KM: 10+500

DATE October 2020  
DWG NO. 4169/(iii)/TD/P 029



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



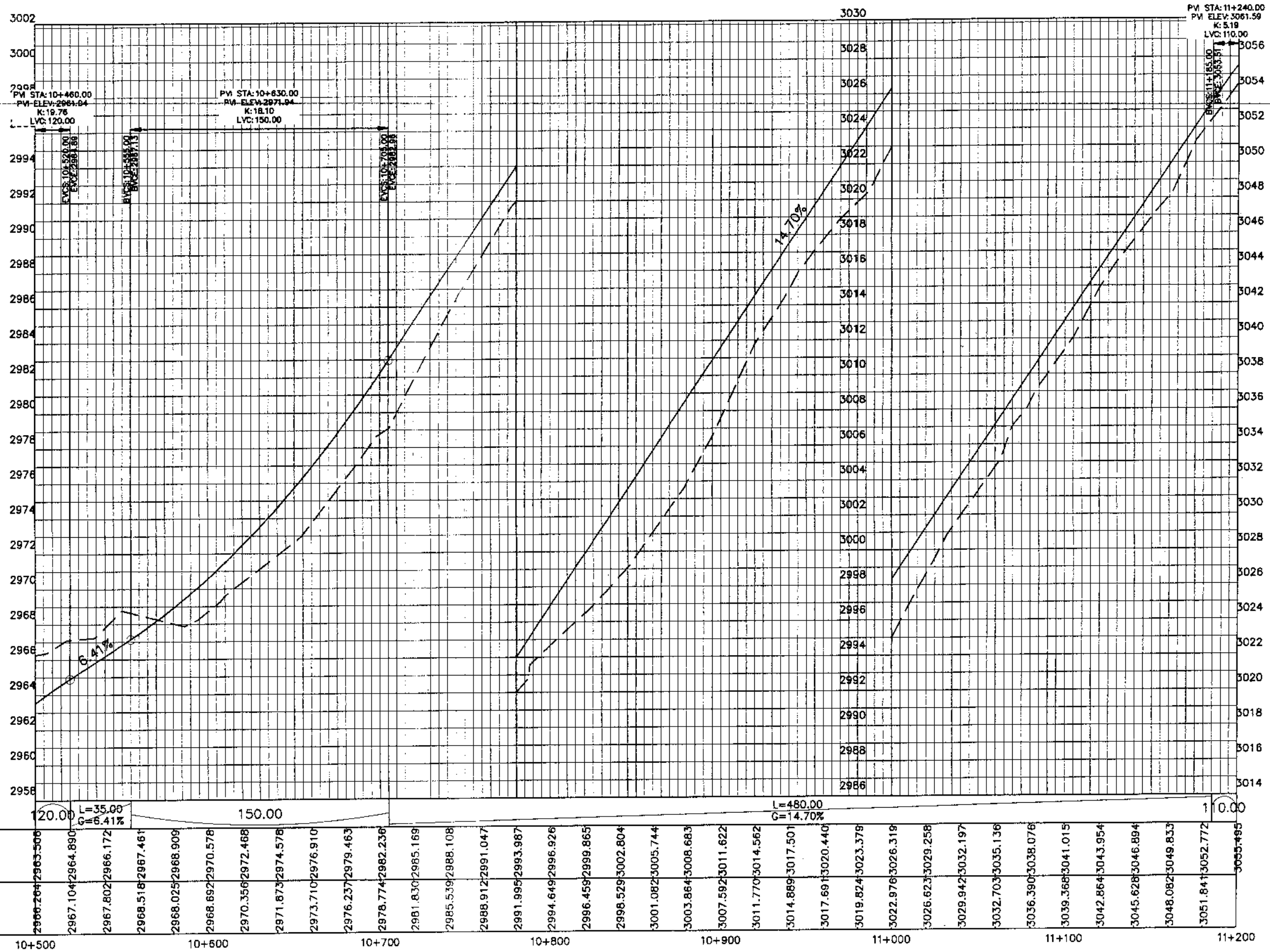
NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT - 23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 10+500 ~ KM: 11+200		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 30	

MANKIAL TO JARSHI ROAD SWAT-23.00 KM



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

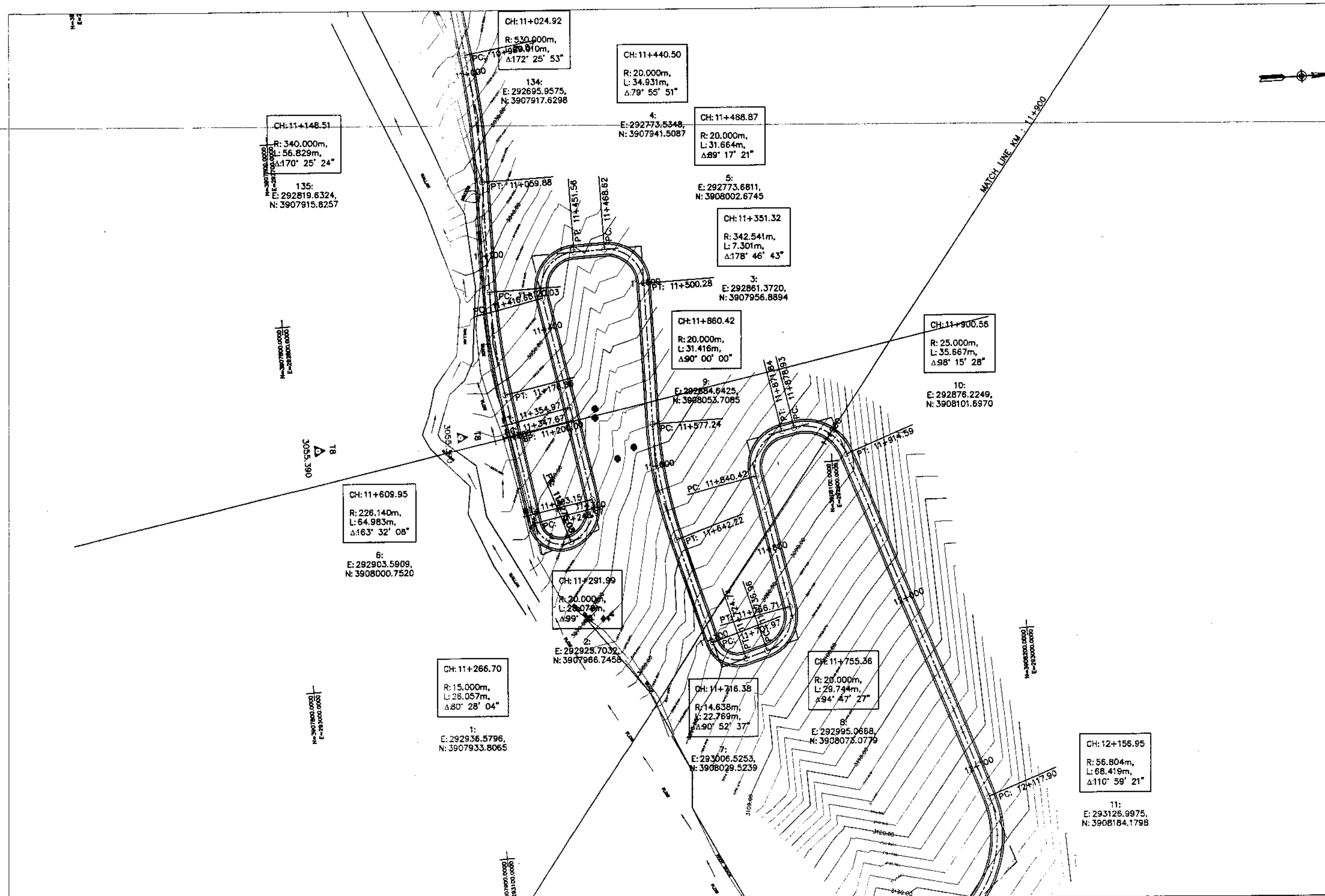


NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	DRAWN	JUNAID KHAN
				SUBMITTED	NOSHERWAN NAEEM
				RECOMMENDED	
				CHD./VER.	
				APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE	
KM: 10+500 ~ KM: 11+200	
DATE	DWG NO.
October 2020	4169/(iii)/TD/P 030



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

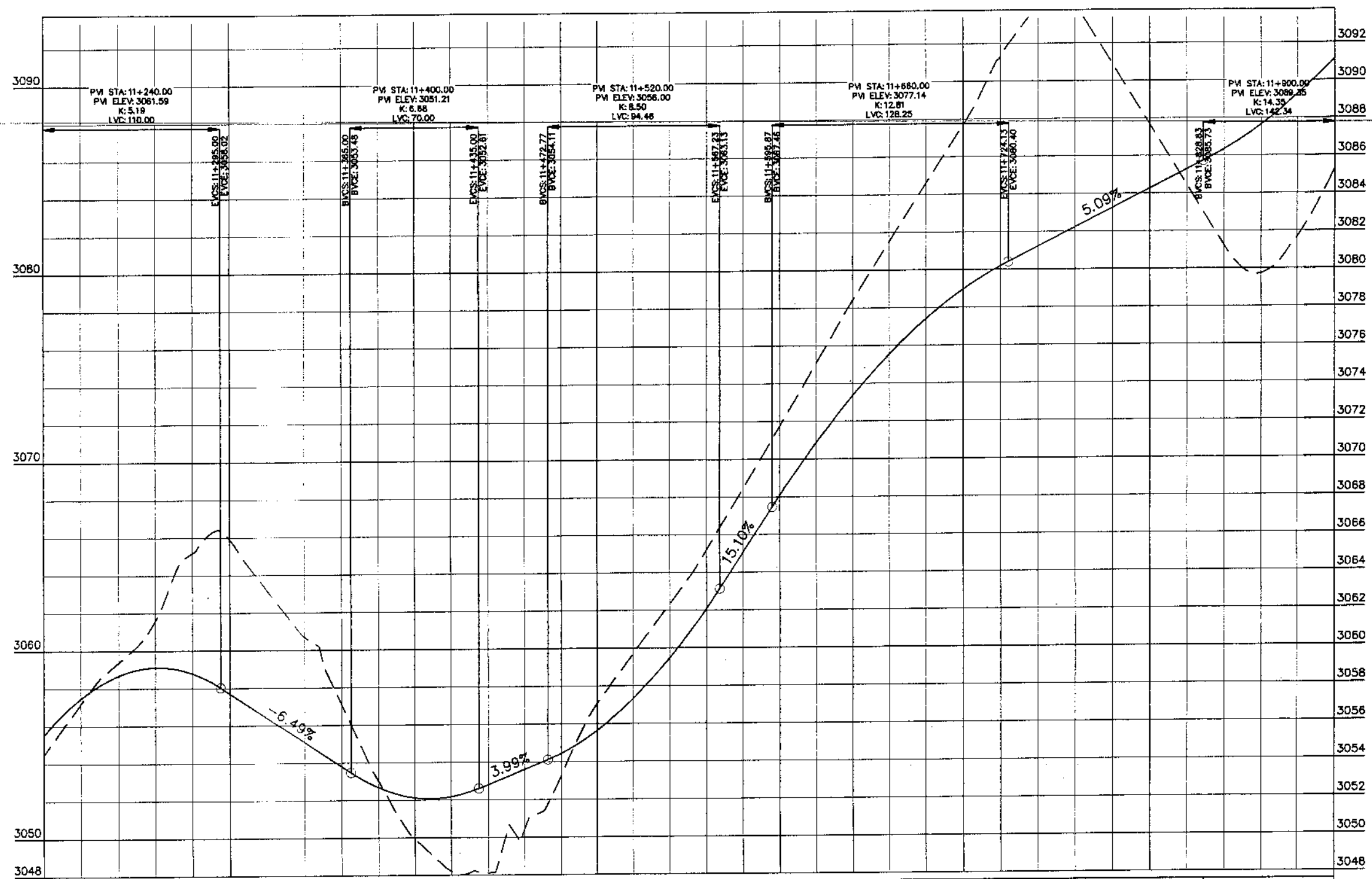
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN: JUNAD KHAN  
SUBMITTED: NOSHERWAN NAEEM  
RECOMMENDED:  
CHD./VER.:  
APPROVED:

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISRTICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 11+200 ~ KM: 11+900		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 31	

MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
11+200	3054.460	3055.495
11+250	3057.182	3057.471
11+300	3059.375	3058.677
11+350	3061.605	3059.113
11+400	3065.173	3058.778
11+450	3065.926	3057.697
11+500	3063.187	3056.399
11+550	3060.695	3055.101
11+600	3057.098	3053.803
11+650	3053.000	3052.674
11+700	3049.930	3052.125
11+750	3048.203	3052.175
11+800	3048.114	3052.805
11+850	3050.434	3053.604
11+900	3053.254	3054.433
11+950	3057.059	3055.637
11+000	3059.693	3057.312
11+050	3062.326	3059.456
11+100	3065.187	3062.071
11+150	3068.445	3065.081
11+200	3071.746	3068.074
11+250	3075.096	3070.874
11+300	3078.421	3073.361
11+350	3081.506	3075.536
11+400	3084.594	3077.388
11+450	3087.682	3078.949
11+500	3091.319	3080.186
11+550	3093.977	3081.210
11+600	3093.934	3082.228
11+650	3090.890	3083.245
11+700	3087.665	3084.262
11+750	3084.440	3085.279
11+800	3081.215	3086.340
11+850	3079.736	3087.652
11+900	3081.665	3089.243
11+950	3085.274	3091.113



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

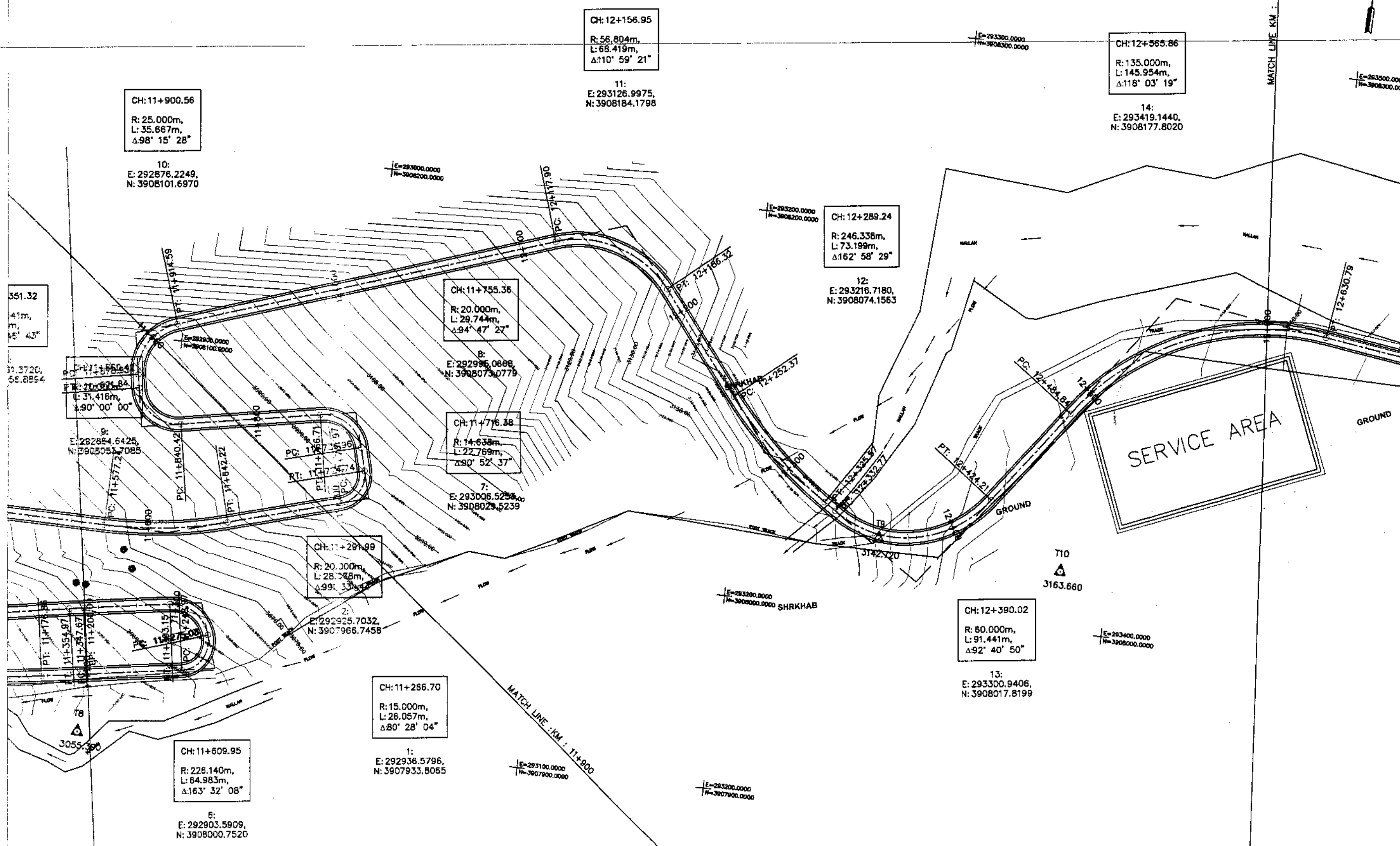
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NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED

DRAWN	JUNAD KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE	
KM: 11+200 ~ KM: 11+900	
DATE	DWG NO.
November 2020	4169/(iii)/TD/P 031



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

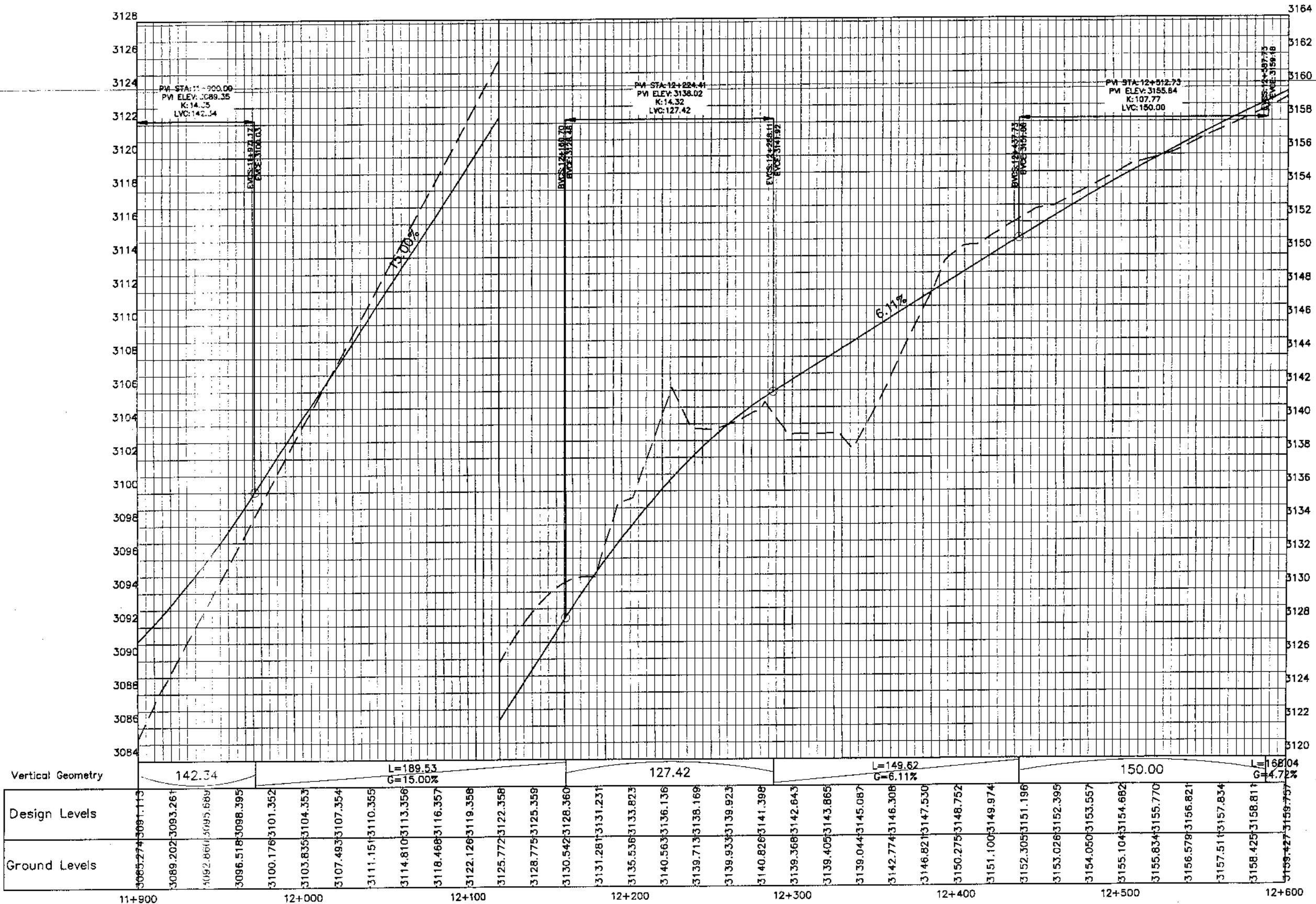
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAD KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED APPROVED

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISRTICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 11+900 ~ KM: 12+600		1:2000
DATE	DWG NO.	
November 2020	4169/(iii)/TD/P 32	

MANKIAL TO JABBAH ROAD SWAT-R2-practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
11+900	3085.27	3081.13
11+950	3089.20	3093.26
12+000	3092.86	3095.68
12+050	3098.51	3098.39
12+100	3100.17	3101.35
12+150	3103.83	3104.35
12+200	3107.49	3107.35
12+250	3111.15	3110.35
12+300	3114.81	3113.35
12+350	3118.48	3116.35
12+400	3122.12	3119.35
12+450	3125.77	3122.35
12+500	3128.77	3125.35
12+550	3130.54	3128.36
12+600	3131.28	3131.23
12+650	3135.53	3133.82
12+700	3140.56	3136.13
12+750	3139.71	3138.16
12+800	3139.93	3139.92
12+850	3140.82	3141.39
12+900	3139.36	3142.84
12+950	3139.40	3143.86
13+000	3139.04	3145.08
13+050	3142.77	3146.30
13+100	3146.82	3147.53
13+150	3150.27	3148.75
13+200	3151.10	3149.97
13+250	3152.30	3151.19
13+300	3153.02	3152.39
13+350	3154.05	3153.55
13+400	3155.10	3154.68
13+450	3155.83	3155.77
13+500	3156.57	3156.82
13+550	3157.51	3157.83
13+600	3158.42	3158.81
13+650	3159.42	3159.75



KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK

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

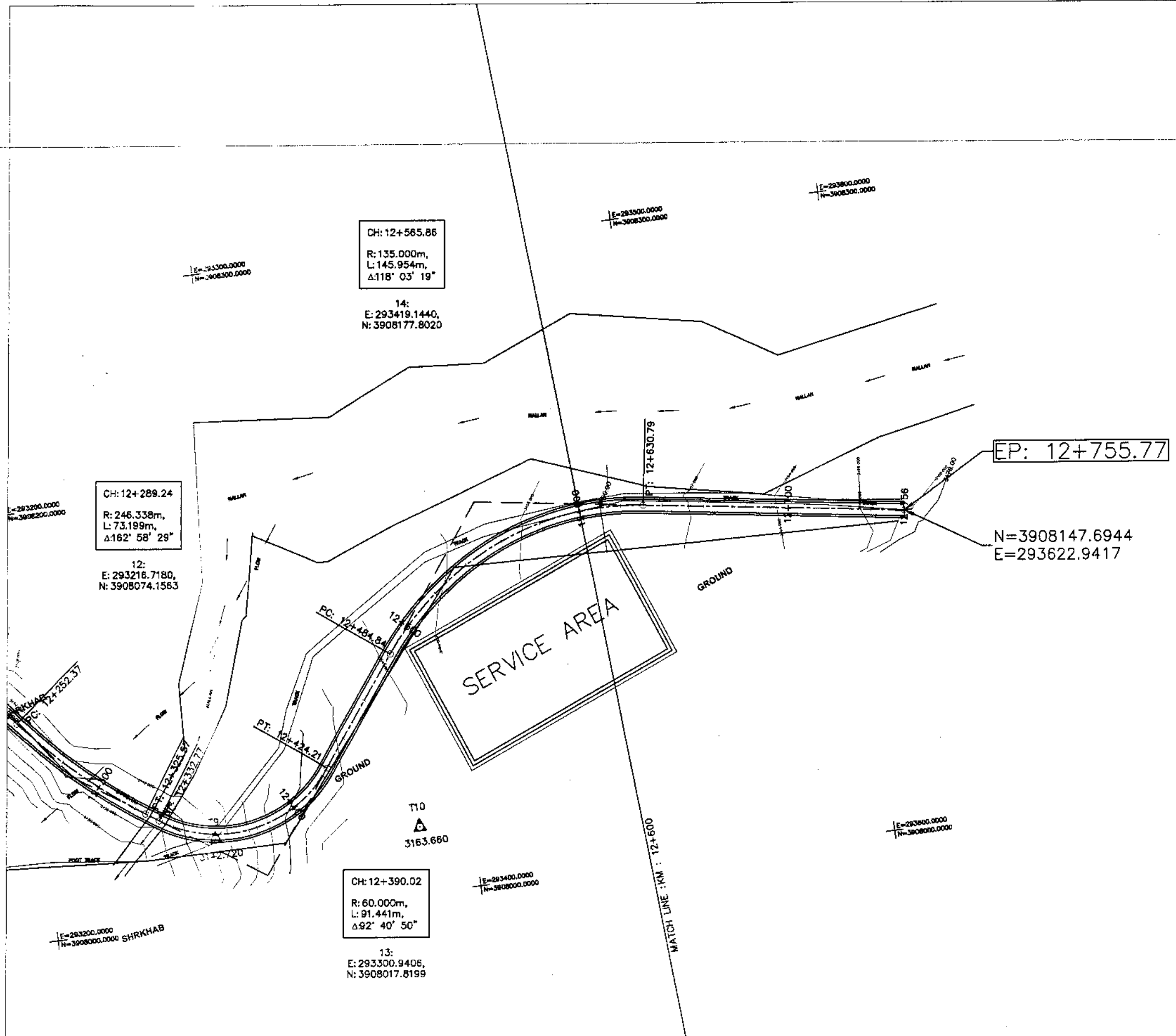
REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN JUNAD KHAN  
SUBMITTED NOSHERWAN NAEEM  
RECOMMENDED  
CHD./VER.  
APPROVED

UPGRADING OF MANKIAL BADA SERI  
ROAD IN DISTRICT SWAT - 23 KM  
ROAD - 2

PROFILE  
KM: 11+900 ~ KM: 12+600

DATE November 2020	DWG NO. 4169/(iii)/TD/P 032
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KHYBER PAKHTUNKHWA  
INTEGRATED TOURISM AND  
ENTERPRISE DEVELOPMENT  
PROJECT  
COMMUNICATION & WORKS (C&W)  
DEPARTMENT, KPK



NATIONAL ENGINEERING SERVICES  
PAKISTAN (PVT.) LTD.

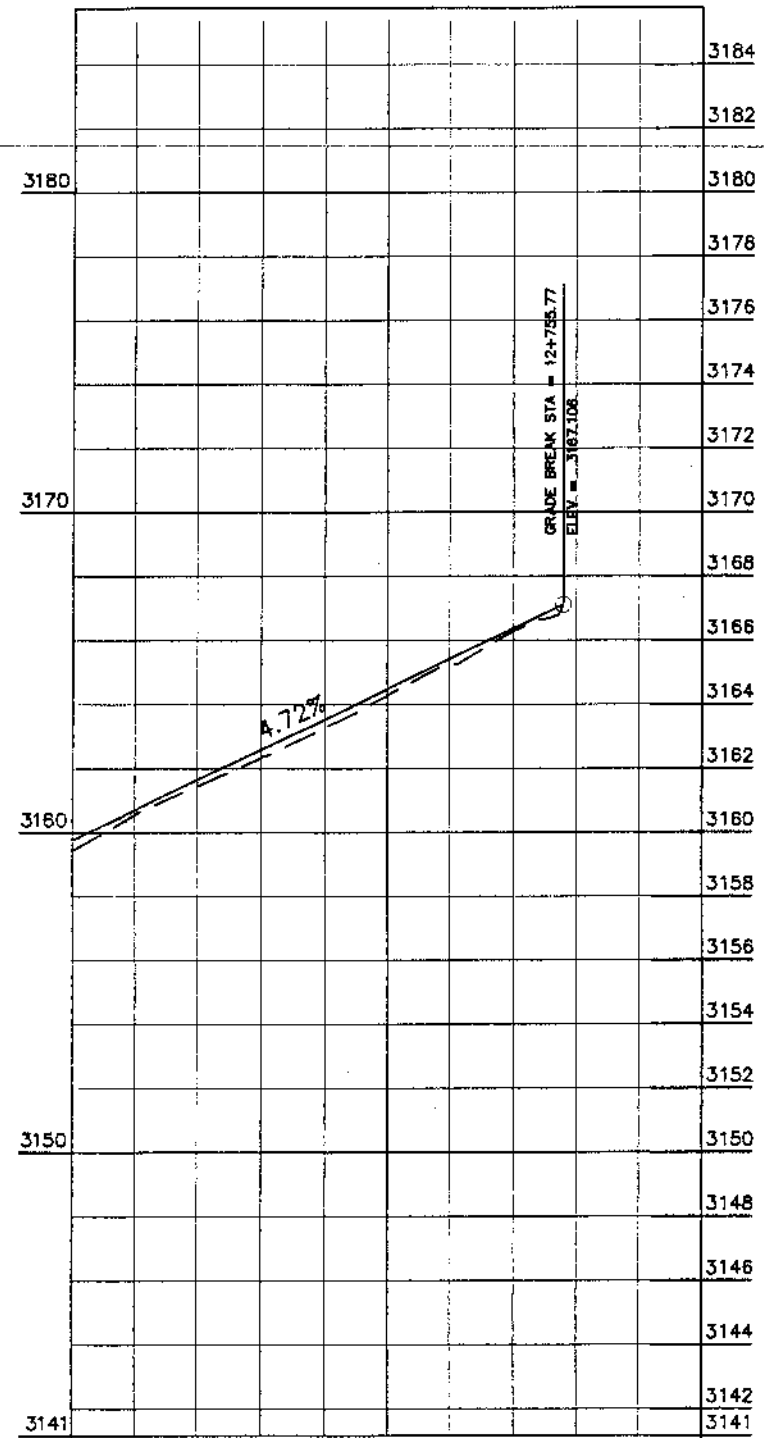
REV.	DATE	DESCRIPTION	APPROVED	APPROVED	DRAWN SUBMITTED RECOMMENDED CHD./VER.	JUNAD KHAN NOSHERWAN NAEEM

UPGRADING OF MANKIAL BADA SERI ROAD  
IN DISTRICT SWAT -23.00 KM  
ROAD - 2

PLAN		SCALE
KM: 12+600 ~ End		1:2000
DATE	DWG NO.	
November 2020	4169/III TD/P 33	



MANKIAL TO JABBAH ROAD SWAT - R2 - practice.rizwan\_sb.dwg



Station	Design Levels	Ground Levels
12+600	3159.427	3159.757
12+650	3160.543	3160.701
12+700	3161.444	3161.644
12+750	3162.348	3162.588
12+755.77	3163.276	3163.531
12+800	3164.273	3164.475
12+850	3165.247	3165.419
12+900	3166.264	3166.362

Vertical Geometry  
 $L = 168.04$   
 $G = 4.72\%$



KHYBER PAKHTUNKHWA  
 INTEGRATED TOURISM AND  
 ENTERPRISE DEVELOPMENT  
 PROJECT  
 COMMUNICATION & WORKS (C&W)  
 DEPARTMENT, KPK



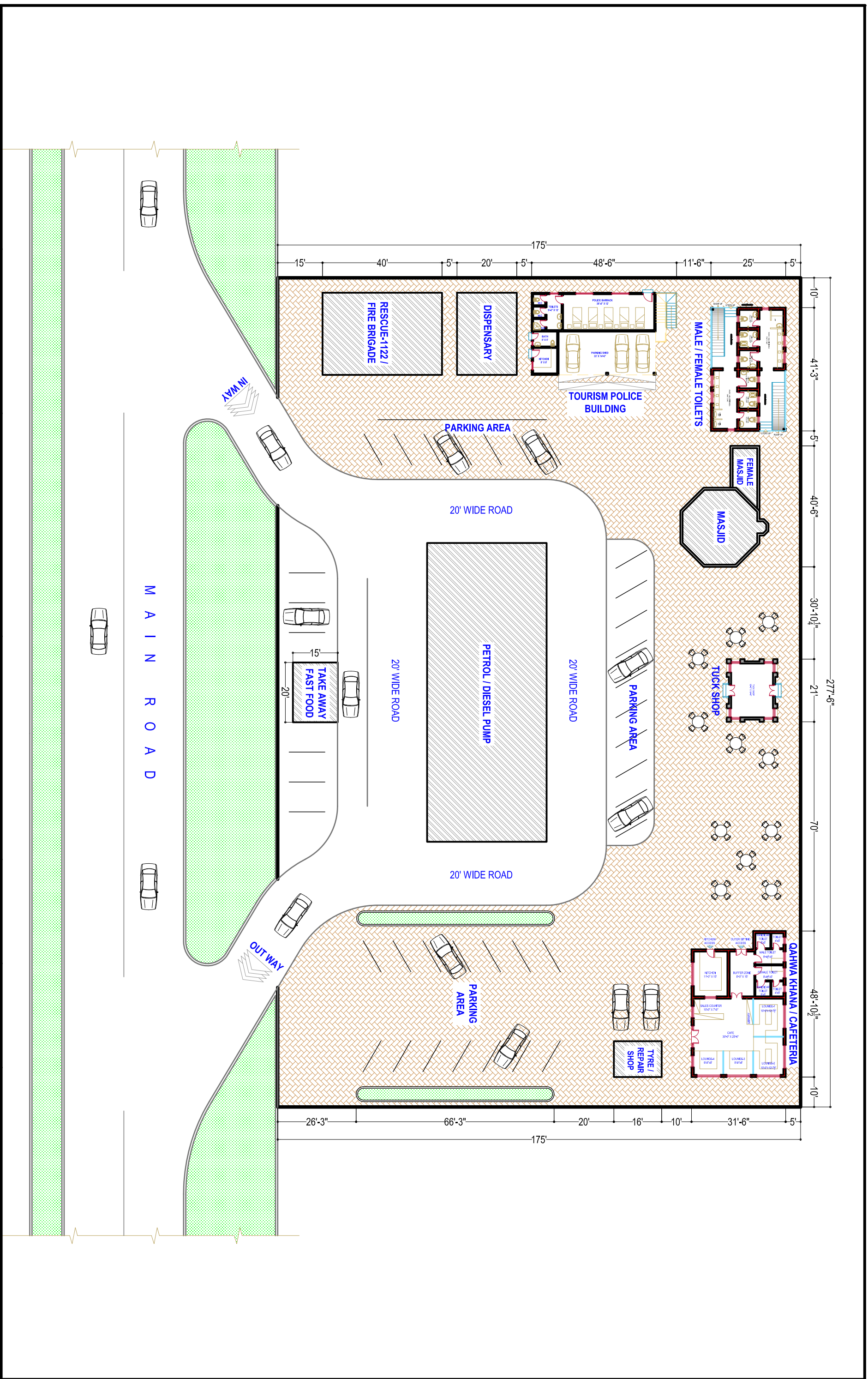
NATIONAL ENGINEERING SERVICES  
 PAKISTAN (PVT.) LTD.

REV.	DATE	DESCRIPTION	APPROVED	APPROVED

DRAWN	JUNAID KHAN
SUBMITTED	NOSHERWAN NAEEM
RECOMMENDED	
CHD./VER.	
APPROVED	

UPGRADING OF MANKIAL BADA SERI  
 ROAD IN DISTRICT SWAT - 23 KM  
 ROAD - 2

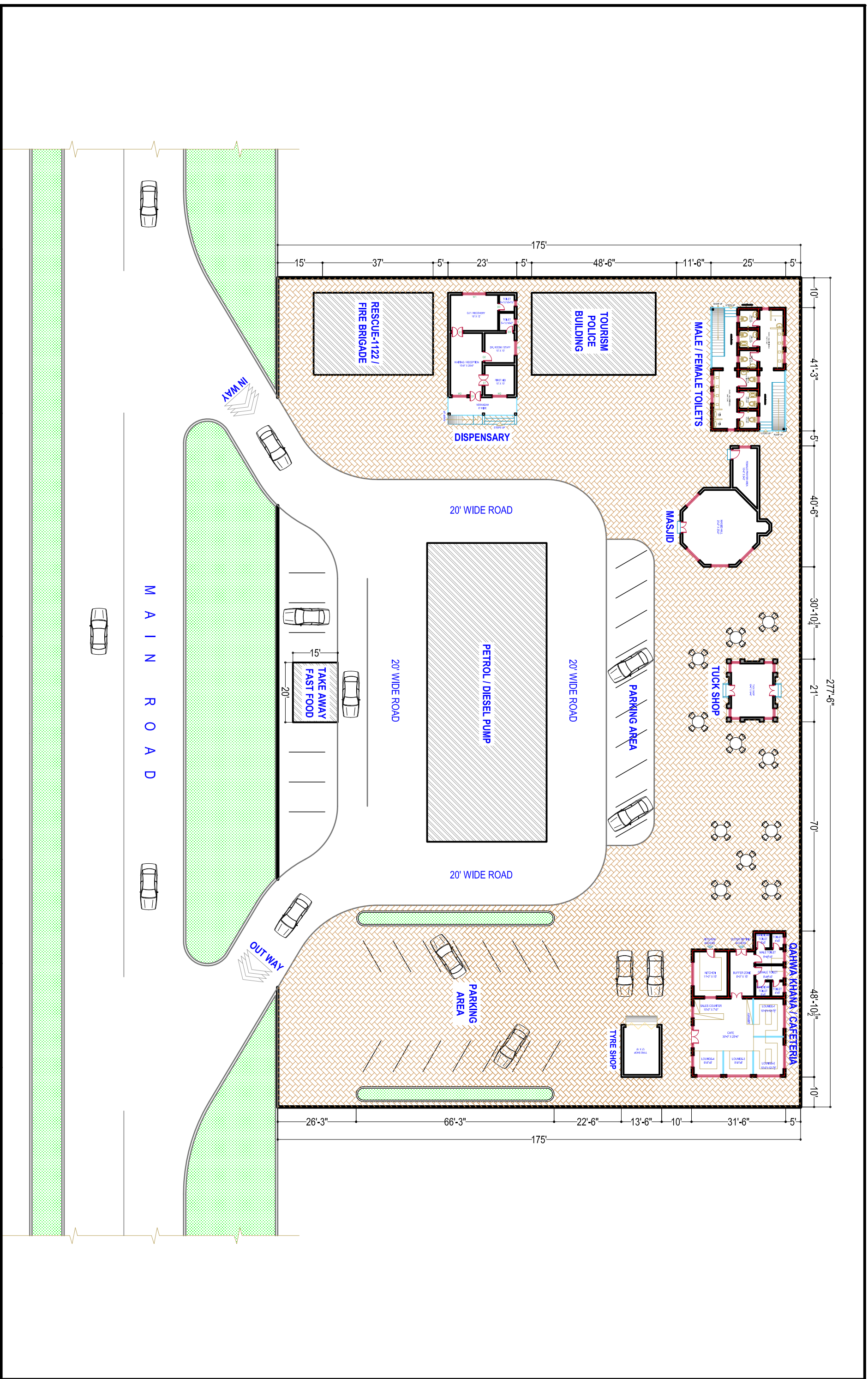
PROFILE	
KM: 12+800 ~ End	
DATE	DWG NO.
November 2020	4169/(iii)/TD/P 033



PROJECT:-		CONTENTS:-		DRG. NO:-		SHEET NO:-	
DESIGN OF REST AREA		LAYOUT PLAN		DATE:-		SCALE:-	
DIRECTOR GENERAL (CULTURE & TOURISM AUTHORITY)		PROJECT DIRECTOR PMU KITTE		MARCH-2021		READ AS SHOWN	
				PROJECT MANAGEMENT UNIT (PMU) KITTE COMMUNICATION & WORKS DEPARTMENT			







PROJECT:-

CONTENTS:-

DESIGN OF REST AREA

LAYOUT PLAN

M/S NESPAK PVT. LTD.

PROJECT DIRECTOR PMU KITTE

DRG. NO:-

SHEET NO:-

DATE:-

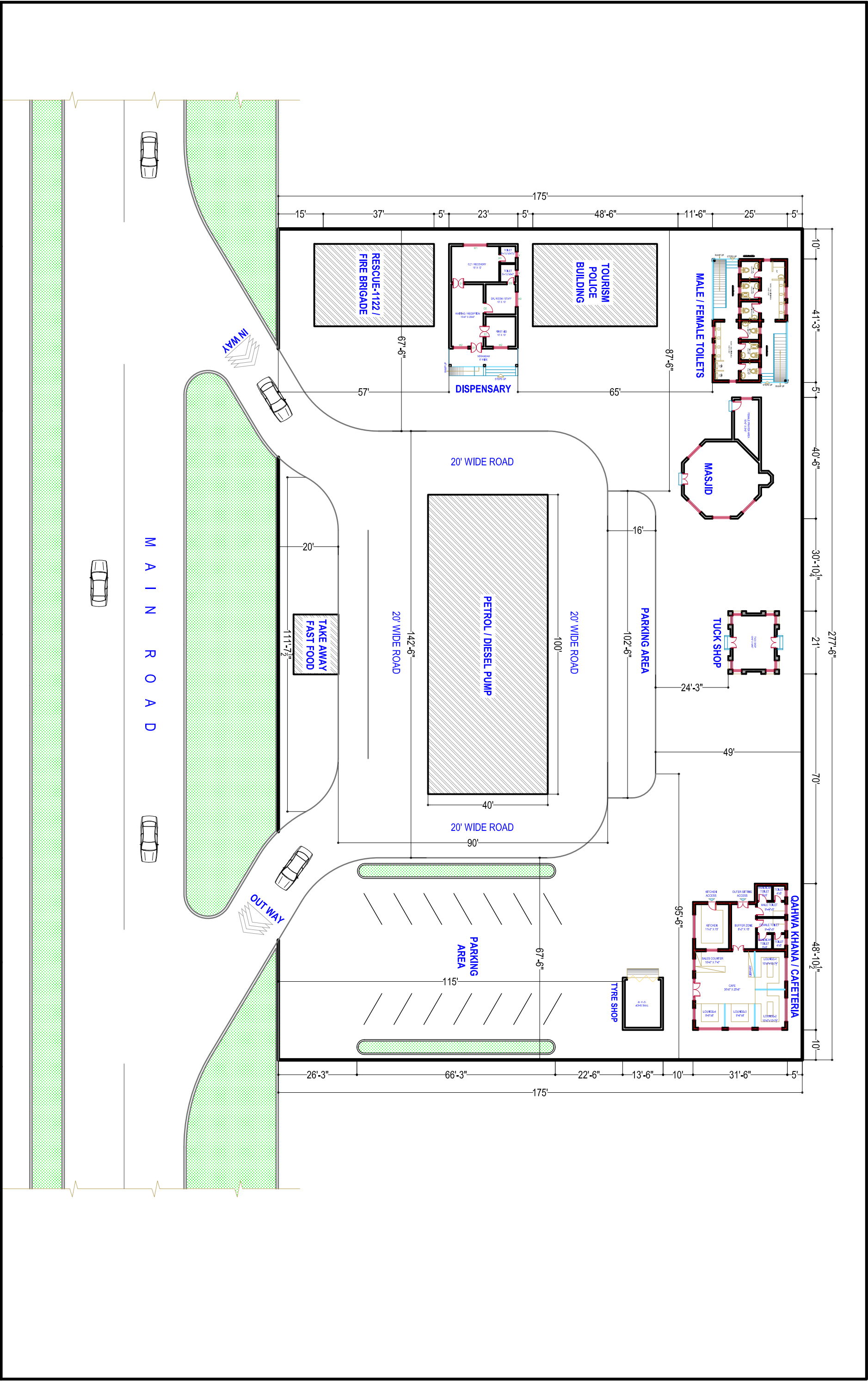
APRIL-2021

SCALE:-

READ AS SHOWN

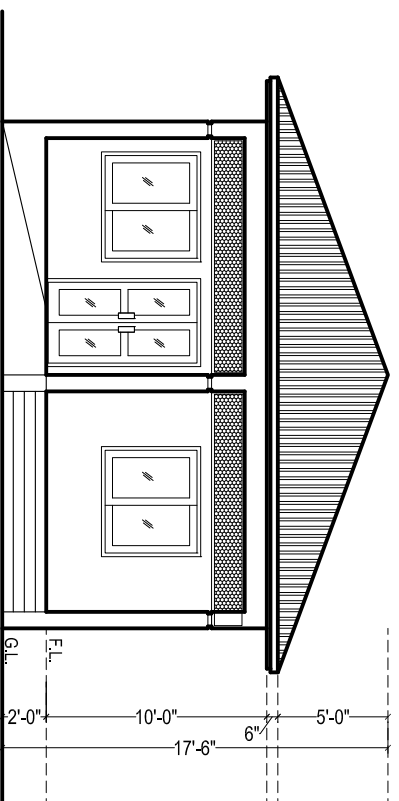


PROJECT MANAGEMENT UNIT (PMU) KITE  
COMMUNICATION & WORKS DEPARTMENT

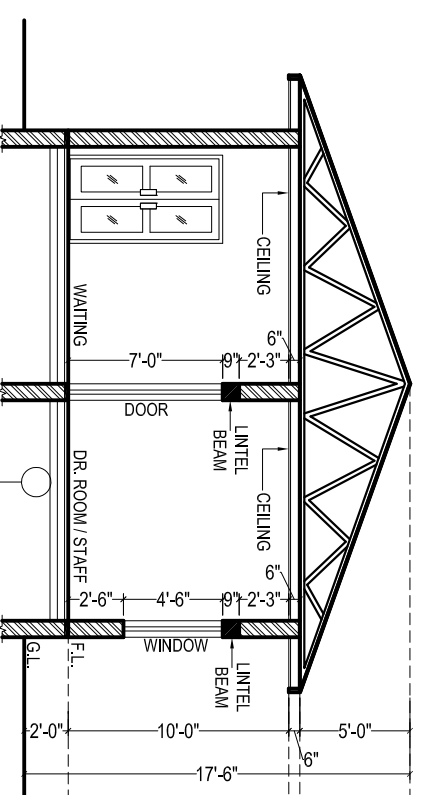


PROJECT:-		CONTENTS:-		DRG. NO:-		SHEET NO:-	
DESIGN OF REST AREA		LAYOUT PLAN		M/S NESPAK PVT. LTD.		PROJECT DIRECTOR PMU KITE	
				DATE:-		SCALE:-	
				APRIL-2021		READ AS SHOWN	
				PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT			

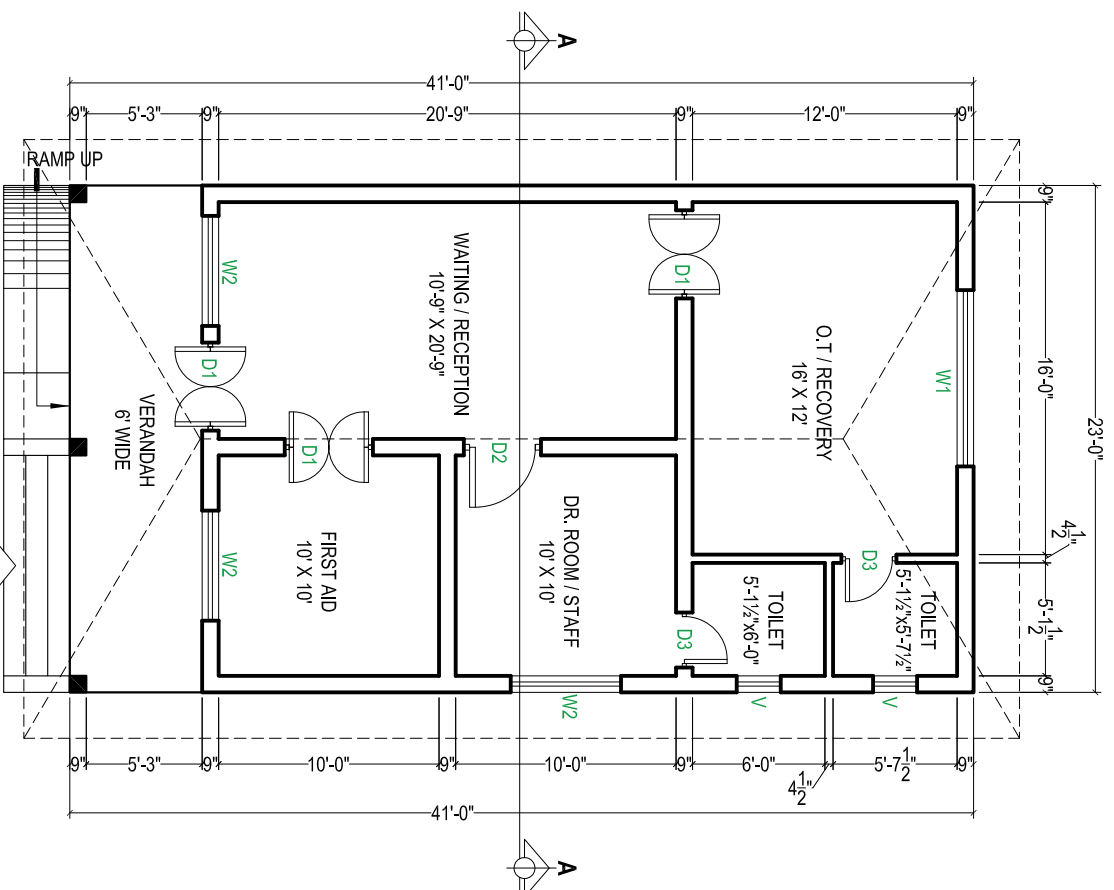




FRONT ELEVATION



- 1/2" thick marble flooring
- 1 1/2" thick cement screed (1:2:4)
- 3" thick p.c.c. (1:3:6)
- 3" thick compacted sand
- hard core



**DISPENSARY BLOCK**  
COVERED AREA = 943.00 SFT

S.NO.	TYPE	SIZE	SILEVEL
01	D1	4'-0" X 7'-0"	±0'-0"
02	D2	3'-6" X 7'-0"	±0'-0"
03	D3	2'-6" X 7'-0"	±0'-0"
04	W1	8'-0" X 4'-6"	+2'-6"
05	W2	5'-0" X 4'-6"	+2'-6"
06	V	2'-0" X 2'-0"	+5'-0"

**BUILDING SPECIFICATION**

- \* PCC (1:4:8) IN FOUNDATIONS
- \* 2" THICK DPC (DAMP PROOF COURSE) IN 1:2:4 PCC WITH 2 COATS OF HOT BITUMEN WITH POLYTHENE SHEET.
- \* BURNT BRICK MASONRY IN 1:6 CEMENT SAND RATIO MORTAR.
- \* 1/2" THICK PLASTER ON WALLS IN 1:6 CEMENT SAND RATIO.
- \* ALL LINTELS & BEAMS IN 1:2:4 CEMENT:SAND:AGGREGATE RATIO WITH 14 DAYS CURING.
- \* ALL ELECTRICAL WIRING TO BE CONCEALED.
- \* ALL LOAD BEARING WALLS SHALL BE MINIMUM 9" THICK.
- \* ALL PARTION WALLS SHALL BE 4 1/2" THICK.
- \* THEN 1 1/2" BRICK TILES SET IN 1:3 CEMENT SAND RATIO.
- \* ALL INTER FLOOR SLABS SHALL BE COVERED WITH 2" OF PCC (1:4:8) IN SLOP THEN 3/4" TERRAZZO FINISH WITH GLASS STRIPS.
- \* ALL GROUND FLOORS SHALL BE LAID ON COMPACTED EARTH THEN 6" OF WATERED AND RAMMED SAND THEN 4" OF (1:4:8) IN SLOPE THEN 2"(1:4:8) THEN 3/4" TERRAZZO WITH GLASS STRIPS.

PROJECT:-

(REST AREA)  
DISPENSARY BLOCK

CONTENTS:-

PLAN, ELEVATION, SECTION  
& SPECIFICATIONS

M/S NESPAK PVT. LTD.

PROJECT DIRECTOR PMU KITE

DRG. NO:-

SHEET NO:-

DATE:-

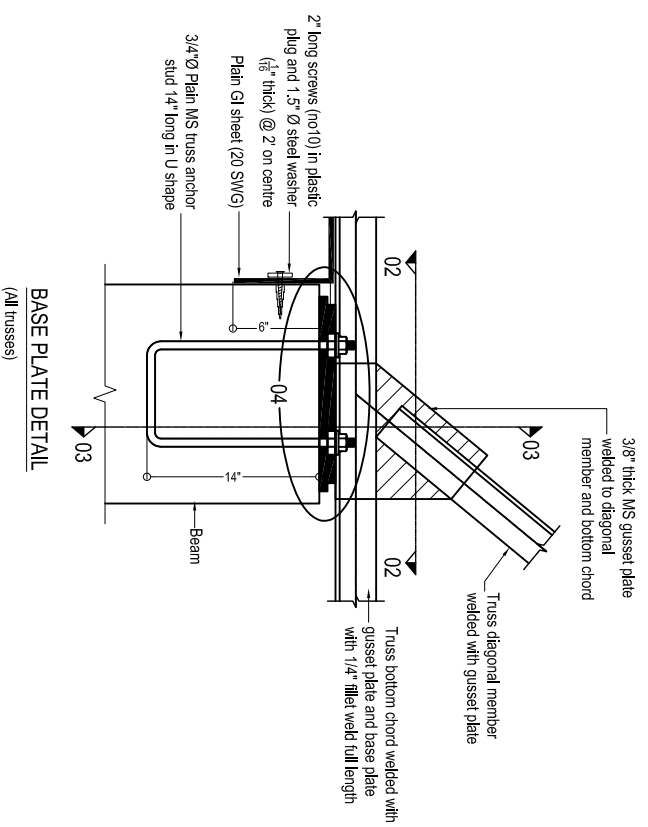
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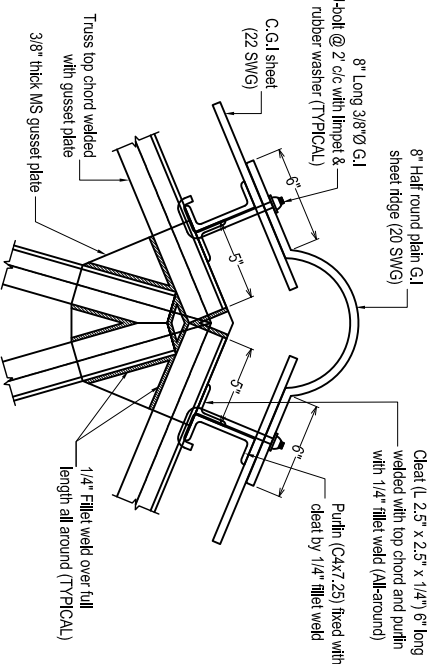
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PROJECT MANAGEMENT UNIT (PMU) KITE  
COMMUNICATION & WORKS DEPARTMENT

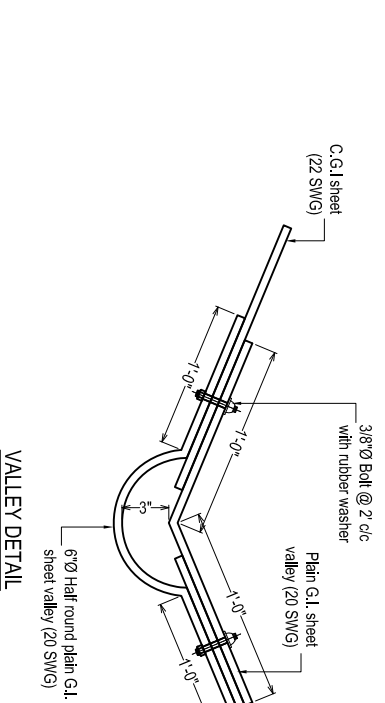




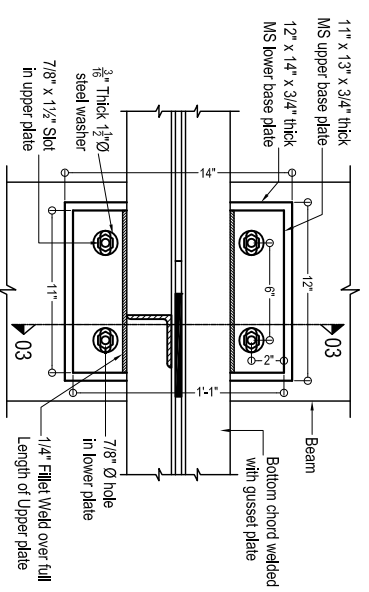
BASE PLATE DETAIL  
(All trusses)



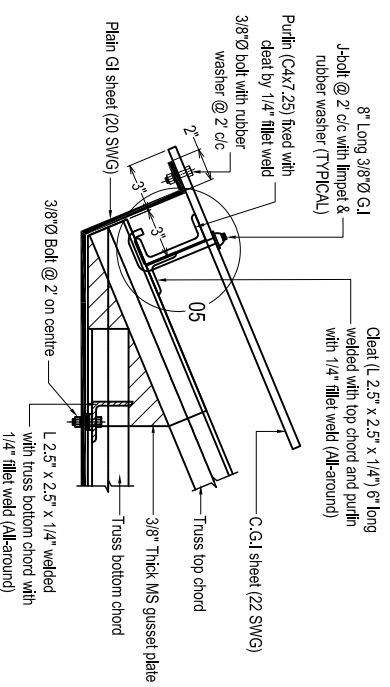
TYPICAL TOP CHORD CONNECTION DETAIL



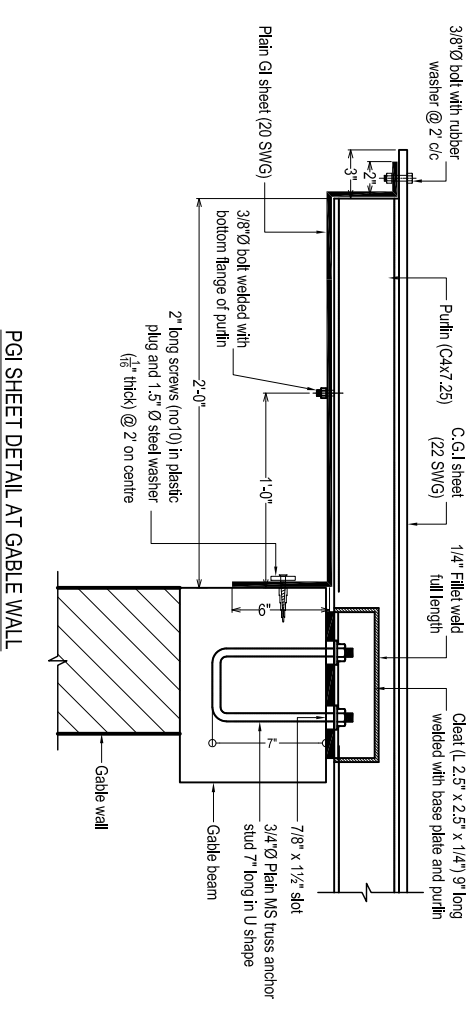
VALLEY DETAIL



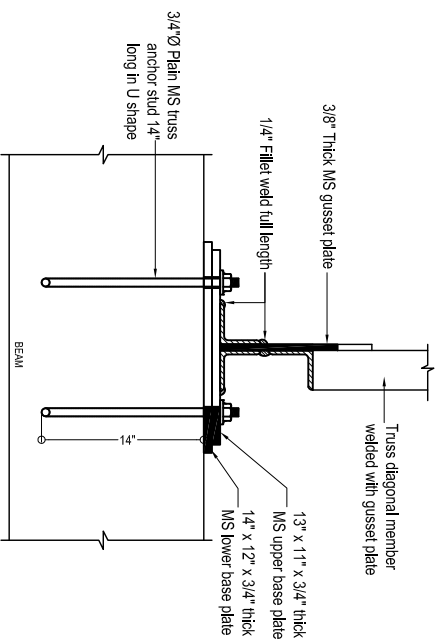
SECTION 02-02



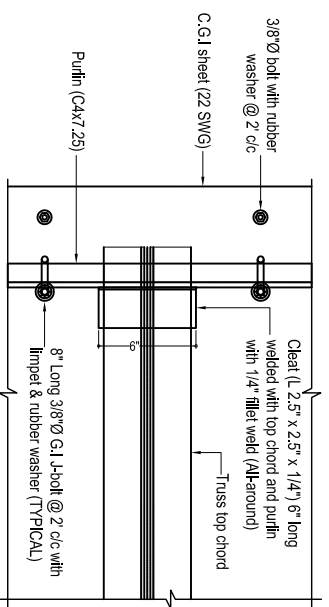
END OF TRUSS PORTION (Elevation)  
(All trusses)



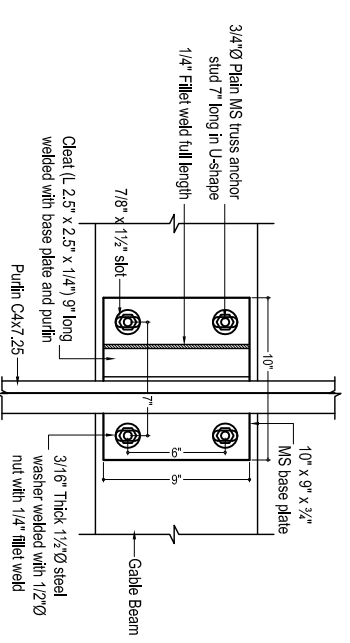
PGI SHEET DETAIL AT GABLE WALL



SECTION 03-03



END OF TRUSS PORTION (Plan)



CONNECTION DETAIL  
FOR PURLIN ON GABLE WALL

PROJECT:-

(REST AREA)  
DISPENSARY BLOCK

CONTENTS:-

TRUSS DETAIL

M/S NESPAK PVT. LTD.

PROJECT DIRECTOR PMU KITE

DRG. NO:-

DATE:-

APRIL-2021

SHEET NO:-

SCALE:-

READ AS  
SHOWN

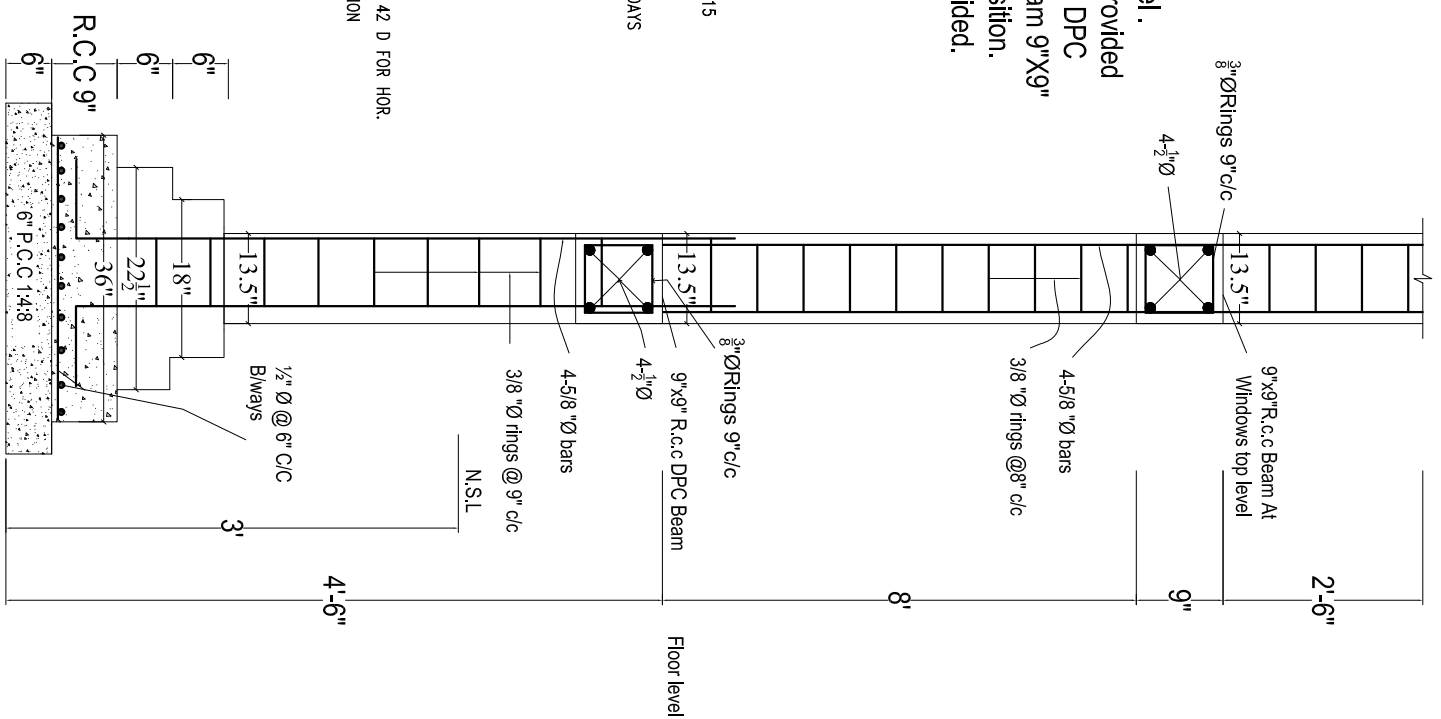
PROJECT MANAGEMENT UNIT (PMU) KITE  
COMMUNICATION & WORKS DEPARTMENT



R.c.c columns upto DPC level.  
At DPC 9" thick the beam will be provided over 9" thick brick walls, no extra DPC then required. After Providing The beam 9"x9" on walls & columns at shown position. Normal 9" thick brick wall is provided.

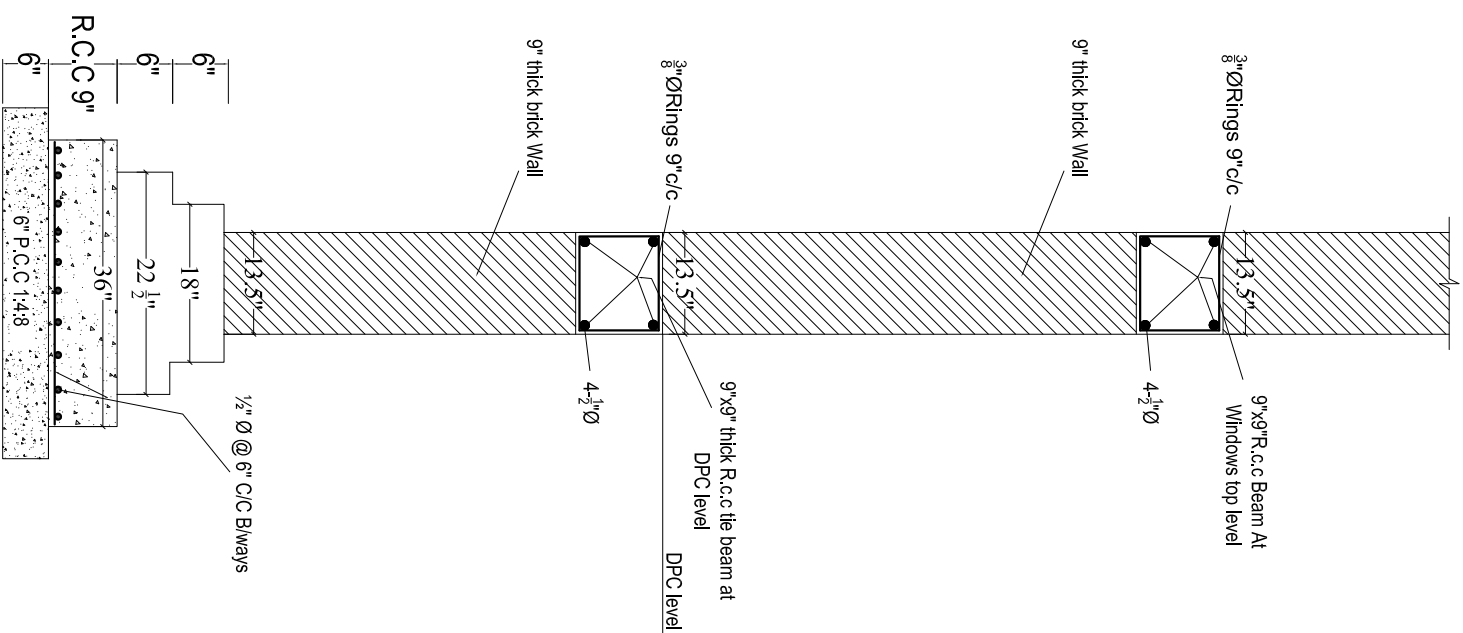
**NOTES:-**

- (1) ALL REINFORCING STEEL IS DEFORMED AS PER ASTM A-615 40000 PSI MIN. YIELD STRENGTH. AND MIN. ULTIMATE STRENGTH OF 65000 PSI .
- (2) ALL CONCRETE IS 3000 PSI CYLINDER STRENGTH AT 28 DAYS WITH MIN. CEMENT CONTENT 400 KG/m<sup>3</sup>
- (3) CLEAR CONCRETE COVER TO MAIN REINFORCING BARS IS AS BELOW.  
FOOTING ON 1:4:8 = 2"  
BEAMS = 3/4"  
COLUMNS = 1 1/2"
- (4) ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL AND SERVICES DRGS.
- (5) LEAN IS 1000 PSI CYLINDER STRENGTH AT 28 DAYS MIN MIX 1:4:8
- (6) ALL LAPS ARE 30 TIMES BAR DIAMETER FOR VERTICAL & 42 D FOR HOR.
- (7) EXCAVATION INCLUDING DEWATERING, BRACING OF EXCAVATION TO SAFEGUARD THE ADJOINING PROPERTY AND LIFE AND DEWATERING PITS IN CASE OF RAIN IS CONTRACTOR RESPONSIBILITY. FOR THAT MATTER, A QUALIFIED GEO-TECHNICAL ENGINEER SHOULD BE APPOINTED ON HIS ROLE.
- (8) (a) 1ST THE BEAM AT FOUNDATION LEVEL.  
(b) 2ND THE BEAM AT D.P.C. LEVEL.  
(c) 3RD THE BEAM AT WINDOW LINTE LEVEL.  
(d) R.C.C COLUMN 9"x 9" AT CORNER OF BUILDING SHOULD BE PROVIDED.



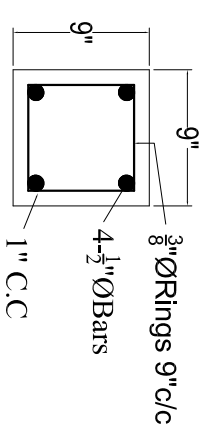
**R.c.c Foundation Detail**

For R.c.c Column Portion

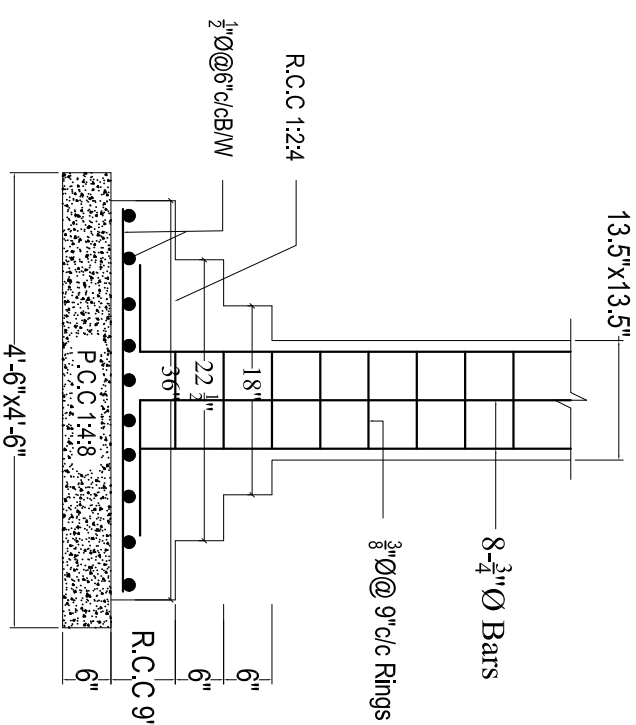


**R.C.C. STRIP FOUNDATION**

FOR GROUND FLOOR

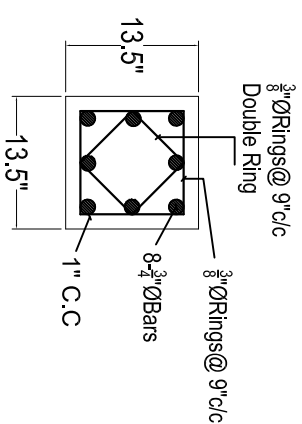


**TIE BEAM**



**VERANDAH COLUMNS FOUNDATION DETAIL**

C-1



**VERANDAH COLUMN DETAIL**

C-2

PROJECT:-

(REST AREA)  
DISPENSARY BLOCK

CONTENTS:-

COLUMNS, FOUNDATION  
& WALLS DETAIL

M/S NESPAK PVT. LTD.

PROJECT DIRECTOR PMU KITE

DRG. NO:-

DATE:-

APRIL-2021

SHEET NO:-

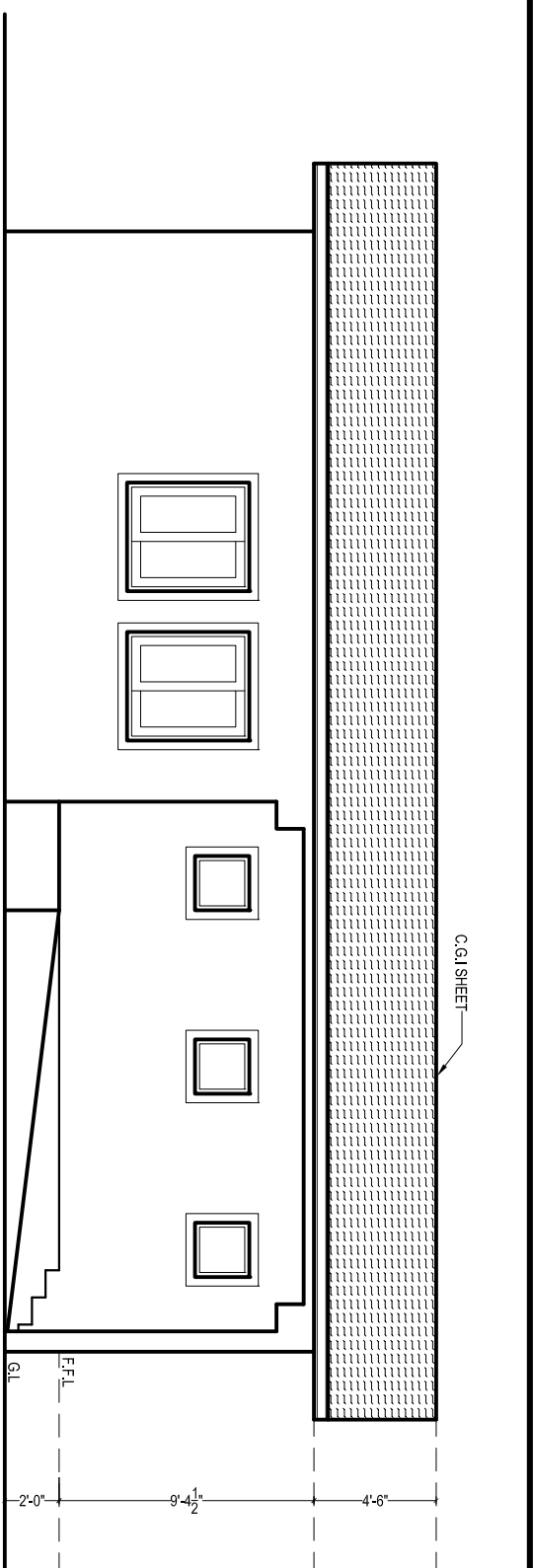
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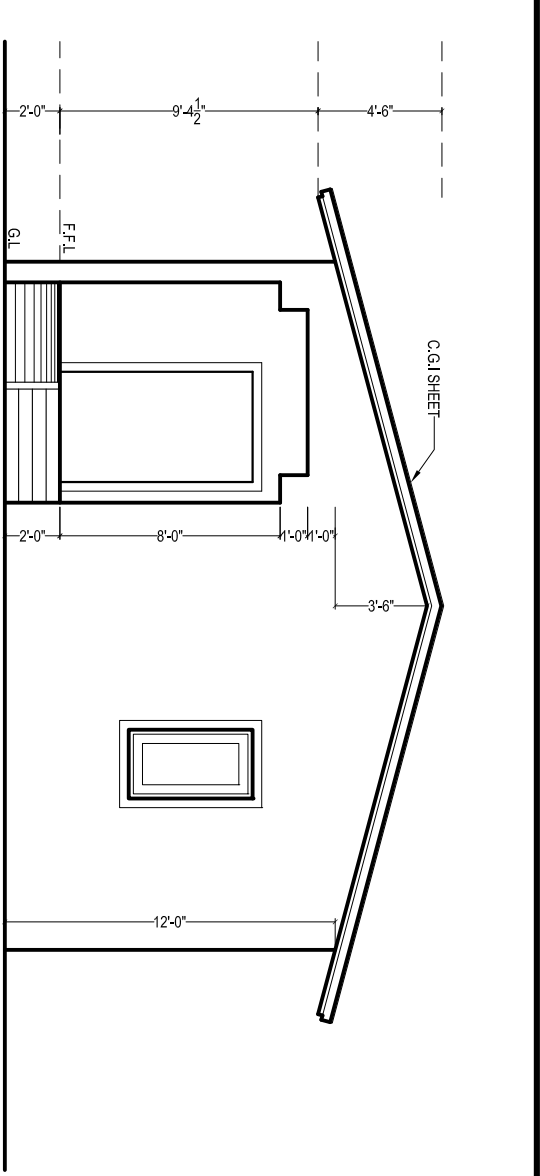
PROJECT MANAGEMENT UNIT (PMU) KITE  
COMMUNICATION & WORKS DEPARTMENT



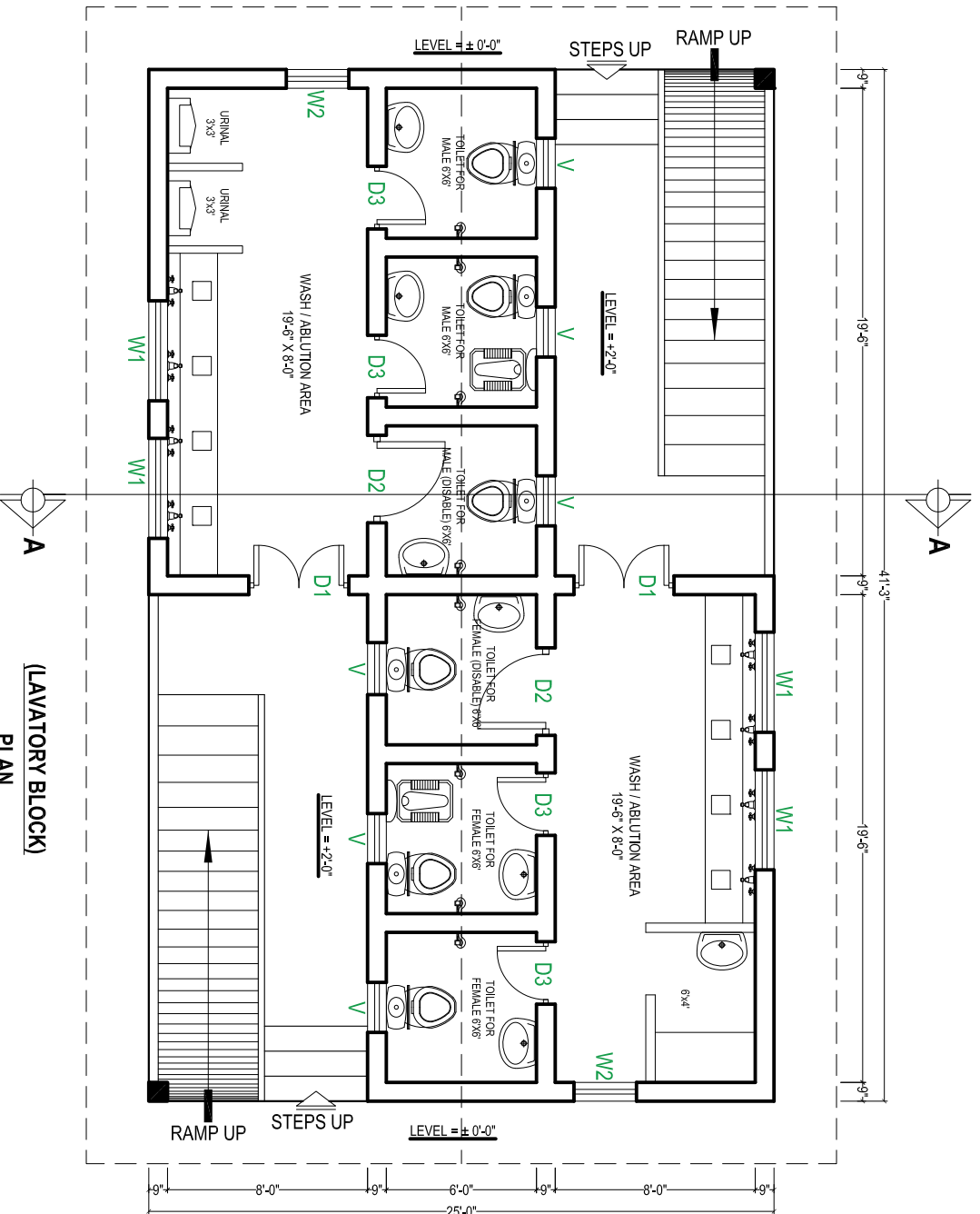




FRONT ELEVATION



RIGHT SIDE ELEVATION



(LAVATORY BLOCK)  
PLAN

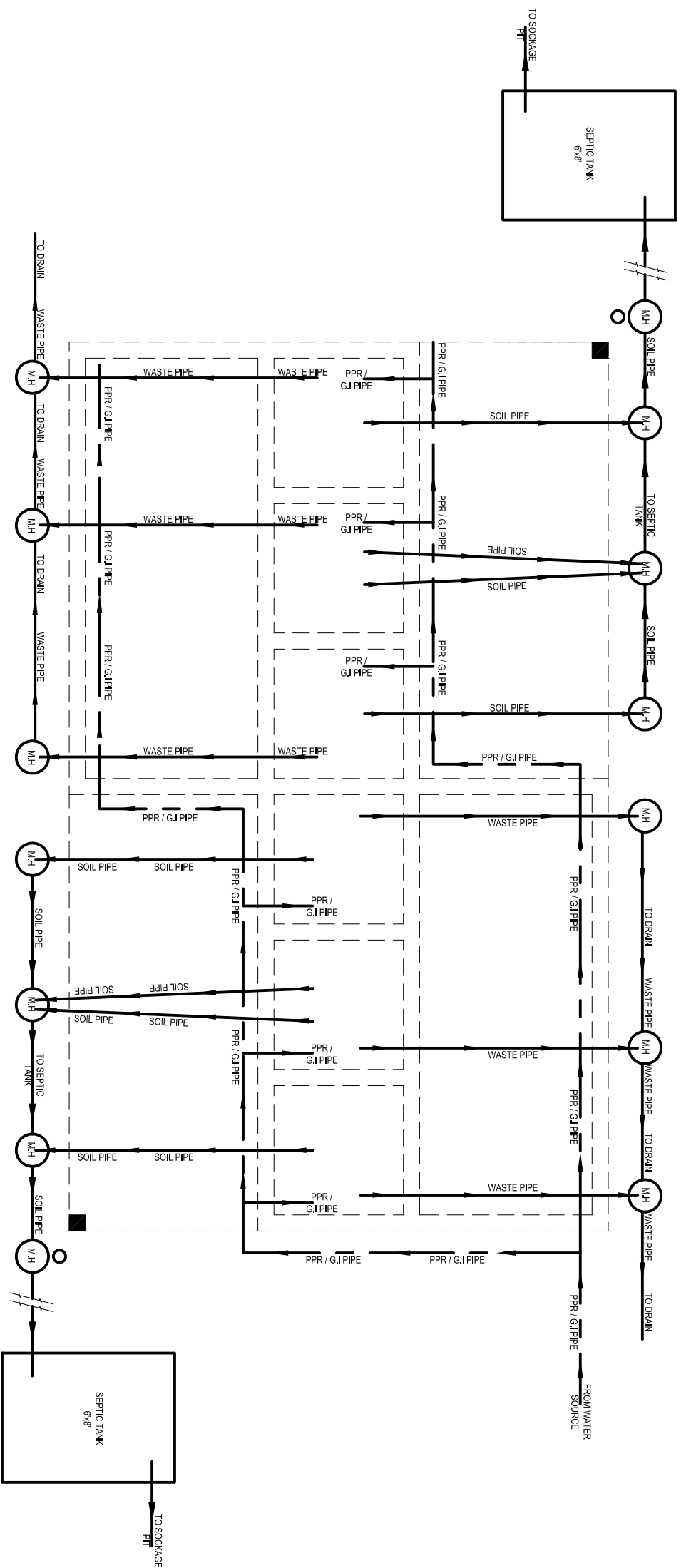
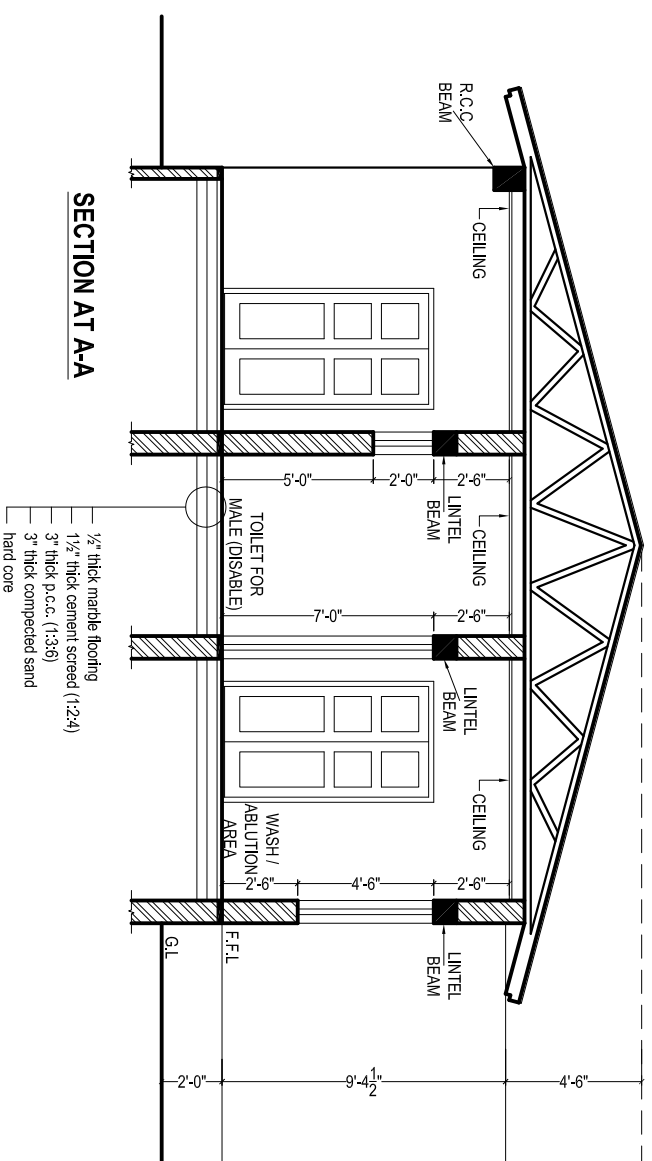
SCHEDULE OF OPENING		
S.NO.	TYPE SIZE	SLEVEL
01	D1 4'-0" X 7'-0"	±0'-0"
02	D2 3'-6" X 7'-0"	±0'-0"
03	D3 2'-6" X 7'-0"	±0'-0"
04	W1 4'-0" X 4'-6"	+2'-6"
05	W2 2'-6" X 4'-6"	+2'-6"
06	V 2'-0" X 2'-0"	+5'-0"

**BUILDING SPECIFICATION**

- \* PCC (1:4:8) IN FOUNDATIONS
- \* 2" THICK DPC (DAMP PROOF COURSE) IN 1:2:4 PCC WITH 2 COATS OF HOT BITUMEN WITH POLYTHENE SHEET.
- \* BURNT BRICK MASONRY IN 1:6 CEMENT SAND RATIO MORTAR.
- \* 1/2" THICK PLASTER ON WALLS IN 1:6 CEMENT SAND RATIO.
- \* ALL LINTELS & BEAMS IN 1:2:4 CEMENT:SAND:AGGREGATE RATIO WITH 14 DAYS CURING.
- \* ALL ELECTRICAL WIRING TO BE CONCEALED.
- \* ALL LOAD BEARING WALLS SHALL BE MINIMUM 9" THICK.
- \* ALL PARTION WALLS SHALL BE 4 1/2" THICK.
- \* THEN 1 1/2" BRICK TILES SET IN 1:3 CEMENT SAND RATIO.
- \* ALL INTER FLOOR SLABS SHALL BE COVERED WITH 2" OF PCC (1:4:8) IN SLOP THEN 3/4" TERRAZZO FINISH WITH GLASS STRIPS.
- \* ALL GROUND FLOORS SHALL BE LAID ON COMPACTED EARTH THEN 6" OF WATERED AND RAMMED SAND THEN 4" OF (1:4:8) IN SLOPE THEN 2" (1:4:8) THEN 3/4" TERRAZZO WITH GLASS STRIPS.

PROJECT:- <b>LAVATORY / PUBLIC TOILETS (REST AREA) BLOCK</b>	CONTENTS:- <b>PLAN, ELEVATION, SPECIFICATION</b>	PLINTH AREA:- <b>M/S NESPAK PVT. LTD.</b>	APPROVED BY:-  	DRG. NO:-  	SHEET NO:-  	DATE:- <b>APRIL-2021</b>	SCALE:- <b>READ AS SHOWN</b>	PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT
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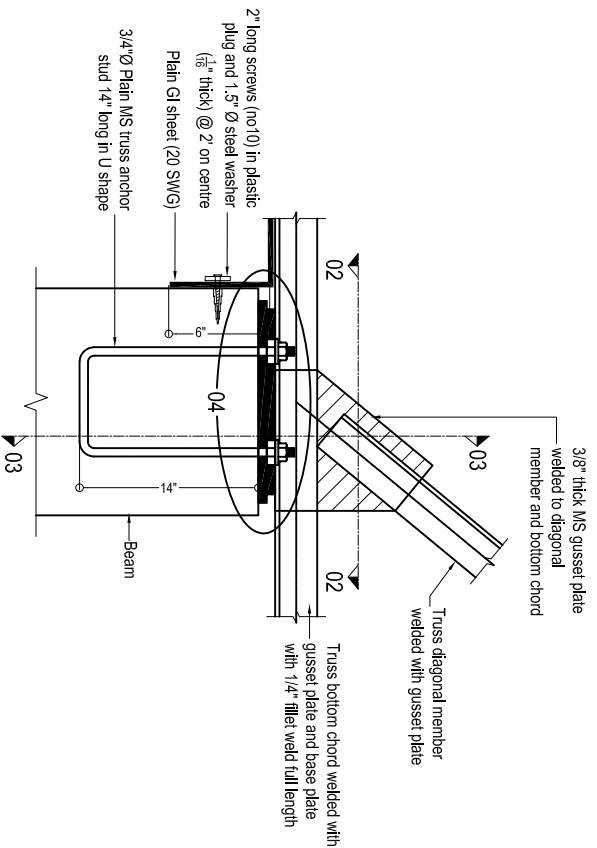




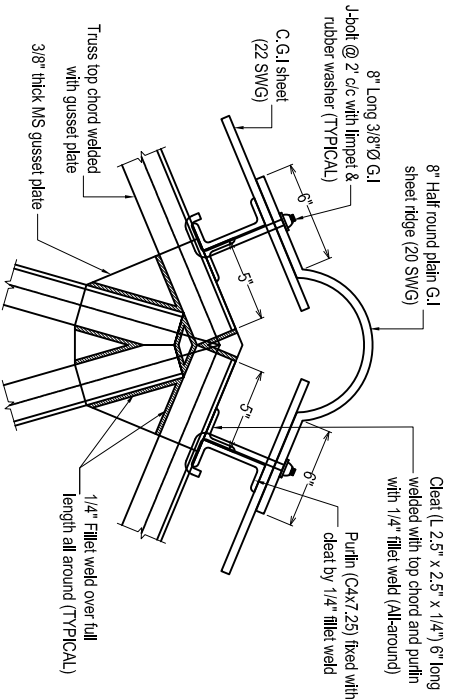
SEWER & WATER SUPPLY PLAN

PROJECT:- <b>LAVATORY / PUBLIC TOILETS (REST AREA) BLOCK</b>	CONTENTS:- <b>SEWER &amp; WATER SUPPLY PLAN &amp; SECTION</b>	PLINTH AREA:-	APPROVED BY:-	DRG. NO:-	SHEET NO:-
<b>M/S NESPAK PVT. LTD.</b>					
<b>PROJECT DIRECTOR PMU KITE</b>					
DATE:- <b>APRIL-2021</b>	SCALE:- <b>READ AS SHOWN</b>				
<b>PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION &amp; WORKS DEPARTMENT</b>					

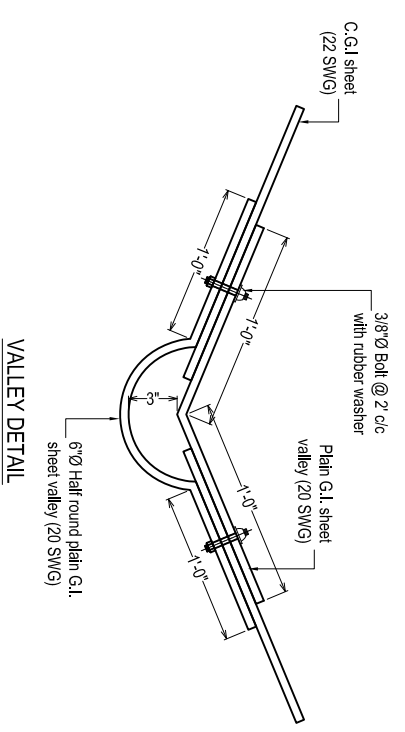




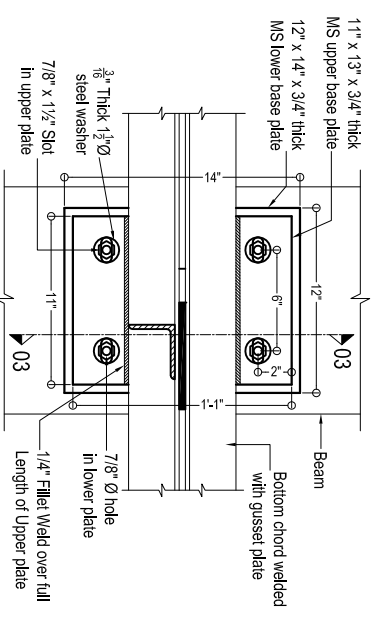
**BASE PLATE DETAIL**  
(All trusses)



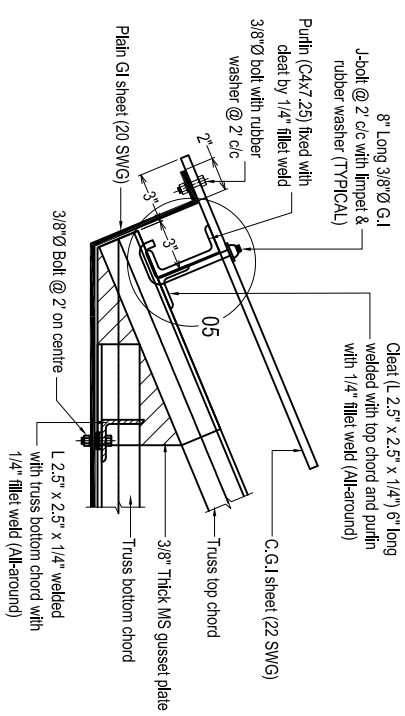
**TYPICAL TOP CHORD CONNECTION DETAIL**



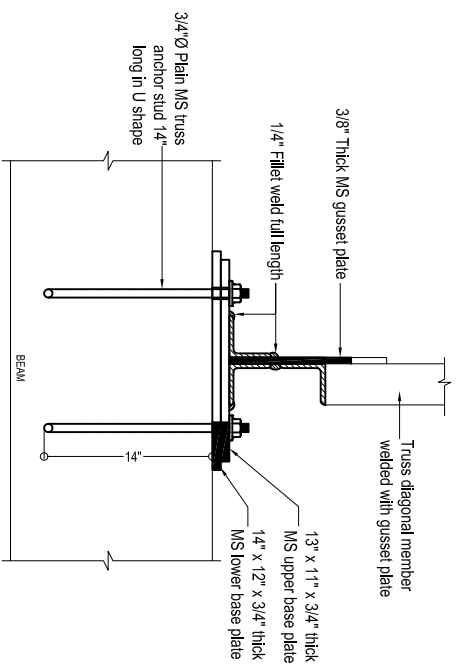
**VALLEY DETAIL**



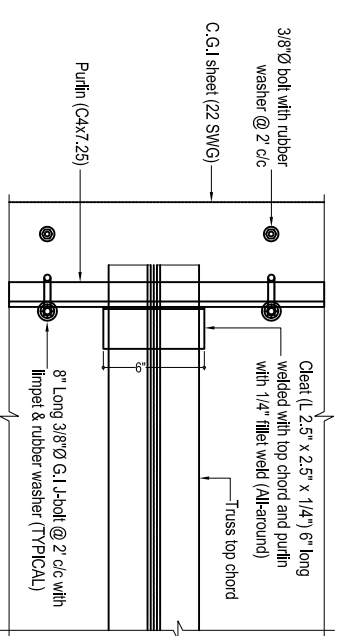
**SECTION 02-02**



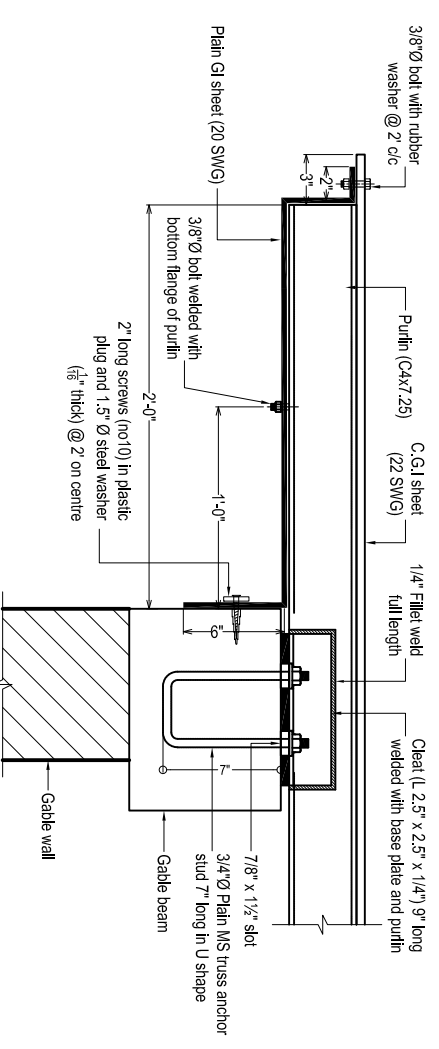
**END OF TRUSS PORTION (Elevation)**  
(All trusses)



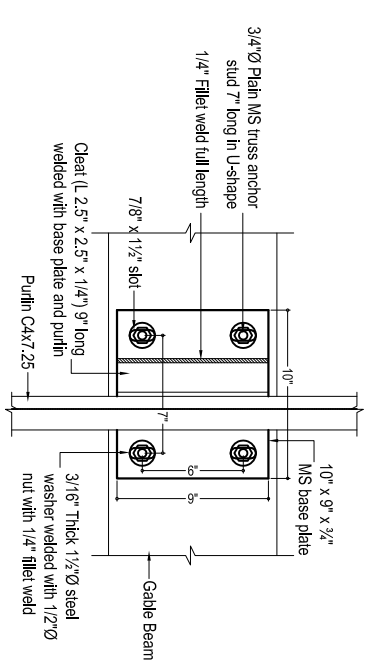
**SECTION 03-03**



**END OF TRUSS PORTION (Plan)**



**PGI SHEET DETAIL AT GABLE WALL**



**CONNECTION DETAIL FOR PURLIN ON GABLE WALL**

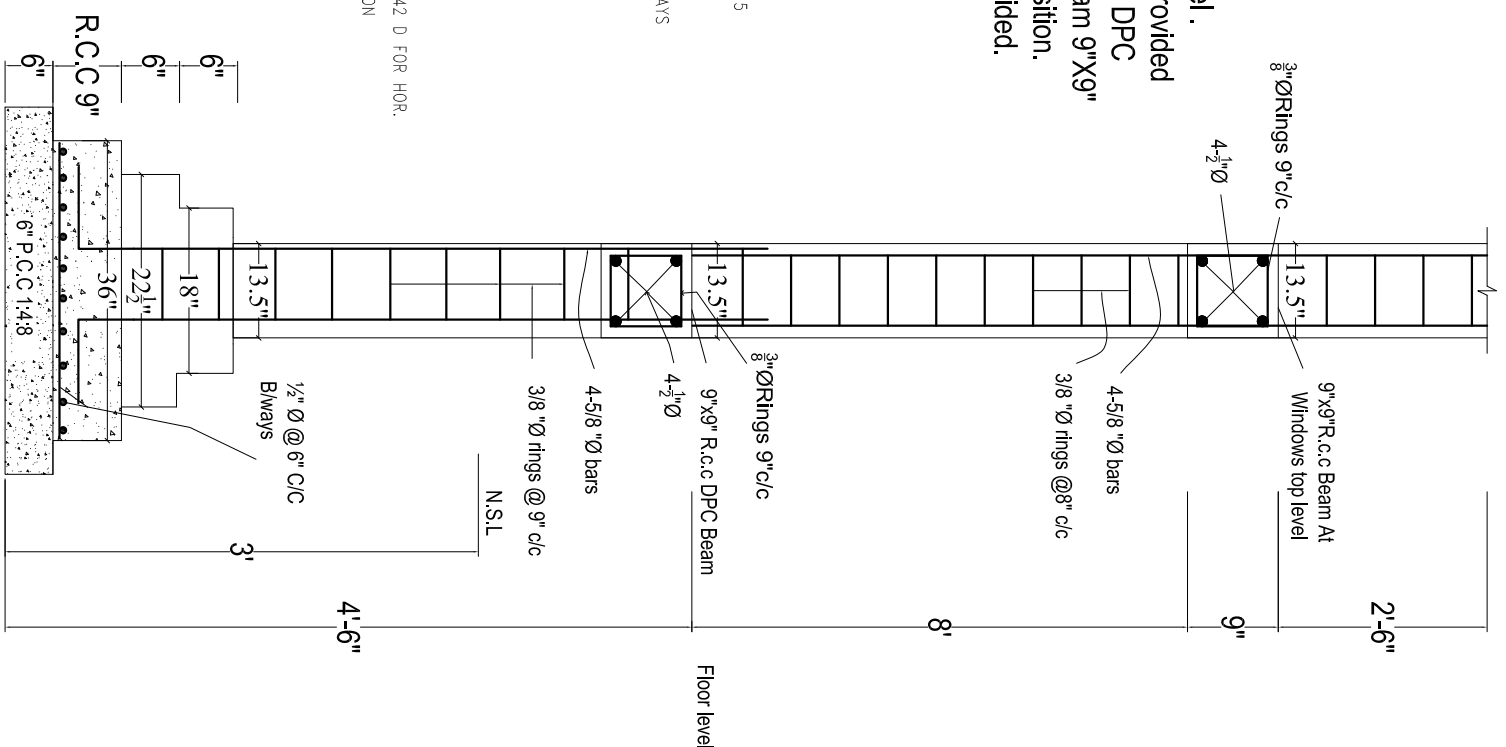
PROJECT:- <b>LAVATORY / PUBLIC TOILETS BLOCK</b>	CONTENTS:- <b>TRUSS DETAIL</b>	M/S NESPAK PVT. LTD.	PROJECT DIRECTOR PMU KITE	DRG. NO:-	DATE:- <b>APRIL-2021</b>	SHEET NO:-	SCALE:- <b>READ AS SHOWN</b>	PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT
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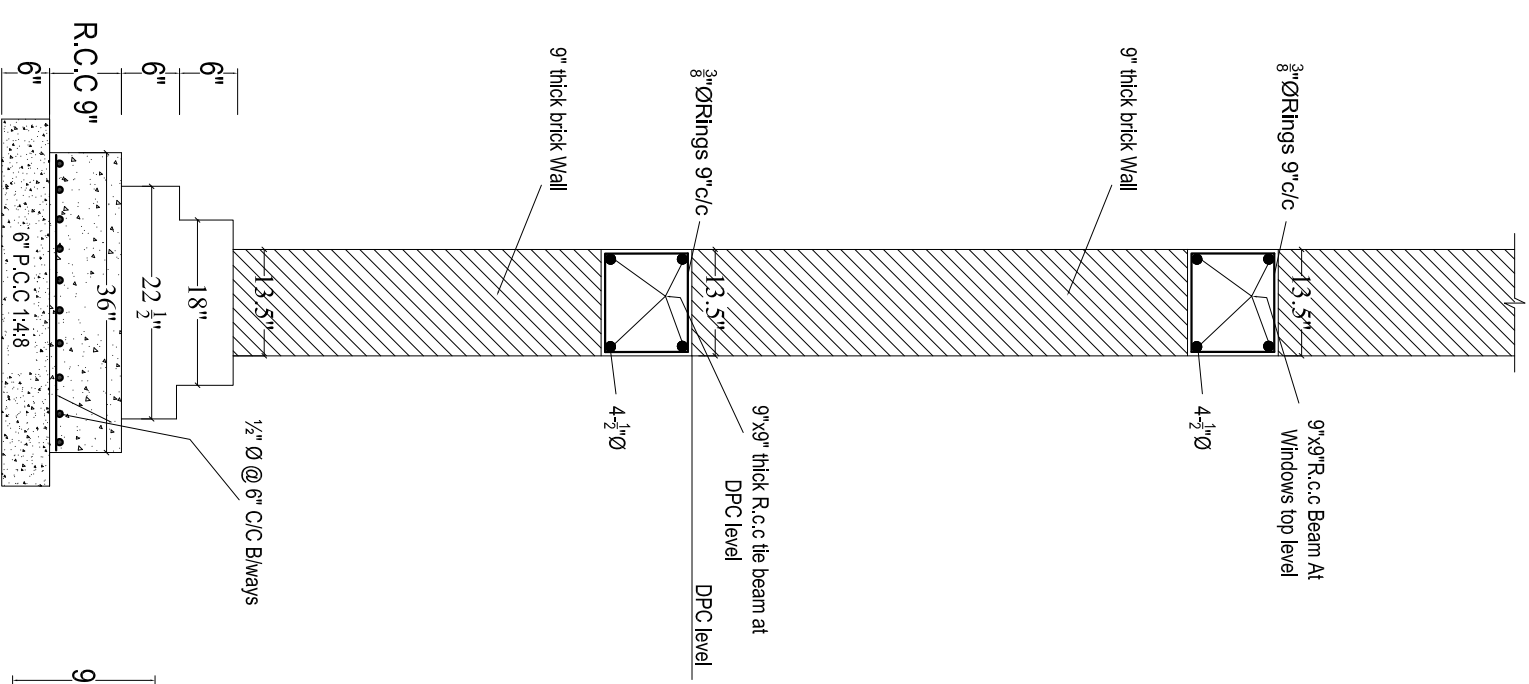
R.c.c columns upto DPC level .  
At DPC 9" thick the beam will be provided over 9" thick brick walls, no extra DPC then required. After Providing The beam 9"X9" on walls & columns at shown position. Normal 9" thick brick wall is provided.

**NOTES:-**

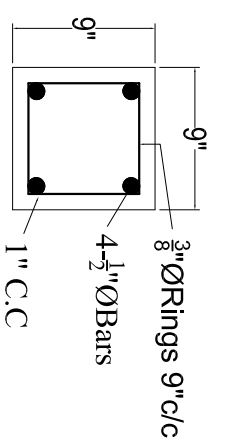
- (1) ALL REINFORCING STEEL IS DEFORMED AS PER ASTM A-615 40000 PSI MIN. YIELD STRENGTH. AND MIN. ULTIMATE STRENGTH OF 65000 PSI .
- (2) ALL CONCRETE IS 3000 PSI CYLINDER STRENGTH AT 28 DAYS WITH MIN. CEMENT CONTENT 400 KG/m<sup>3</sup>
- (3) CLEAR CONCRETE COVER TO MAIN REINFORCING BARS IS AS BELOW.  
SLABS = 3/4" FOOTING ON 1:4:8 = 2"  
BEAMS = 1 1/2" COLUMNS = 1 1/2"
- (4) ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL AND SERVICES DRGS.
- (5) LEAN IS 1000 PSI CYLINDER STRENGTH AT 28 DAYS MIN MIX 1:4:8
- (6) ALL LAPS ARE 30 TIMES BAR DIAMETER FOR VERTICAL & 42 D FOR HOR.
- (7) EXCAVATION INCLUDING DEWATERING, BRACING OF EXCAVATION TO SAFEGUARD THE ADJOINING PROPERTY AND LIFE AND DEWATERING PITS IN CASE OF RAIN IS CONTRACTOR RESPONSIBILITY. FOR THAT MATTER, A QUALIFIED GEO-TECHNICAL ENGINEER SHOULD BE APPOINTED ON HIS ROLE.
- (8) (a) 1ST THE BEAM AT FOUNDATION LEVEL.  
(b) 2ND THE BEAM AT D.P.C. LEVEL.  
(c) 3RD THE BEAM AT WINDOW UNLITE LEVEL.  
(d) R.C.C COLUMN 9" x 9" AT CORNER OF BUILDING SHALUD BE PROVIDED.



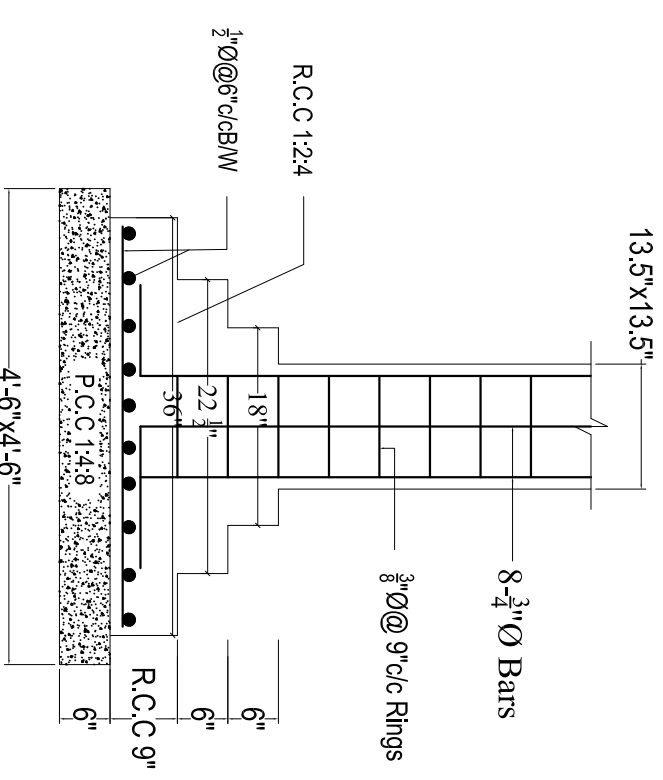
**R.c.c Foundation Detail**  
**For R.c.c Column Portion**



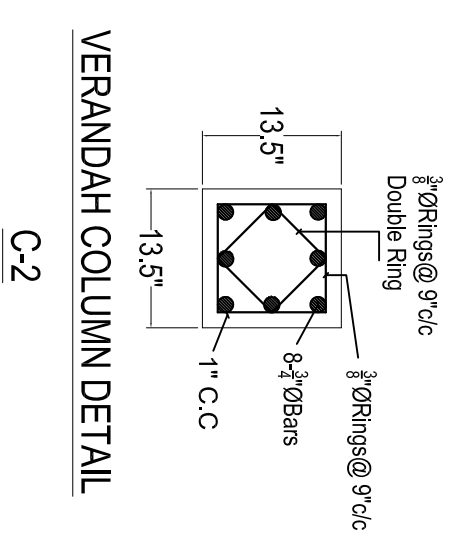
**R.C.C STRIP FOUNDATION**  
**FOR GROUND FLOOR**



**TIE BEAM**



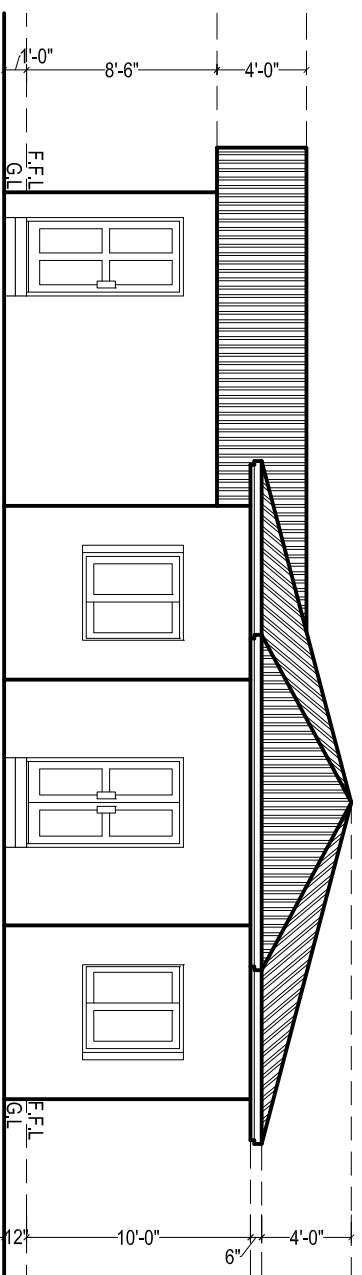
**VERANDAH COLUMNS FOUNDATION DETAIL**  
**C-1**



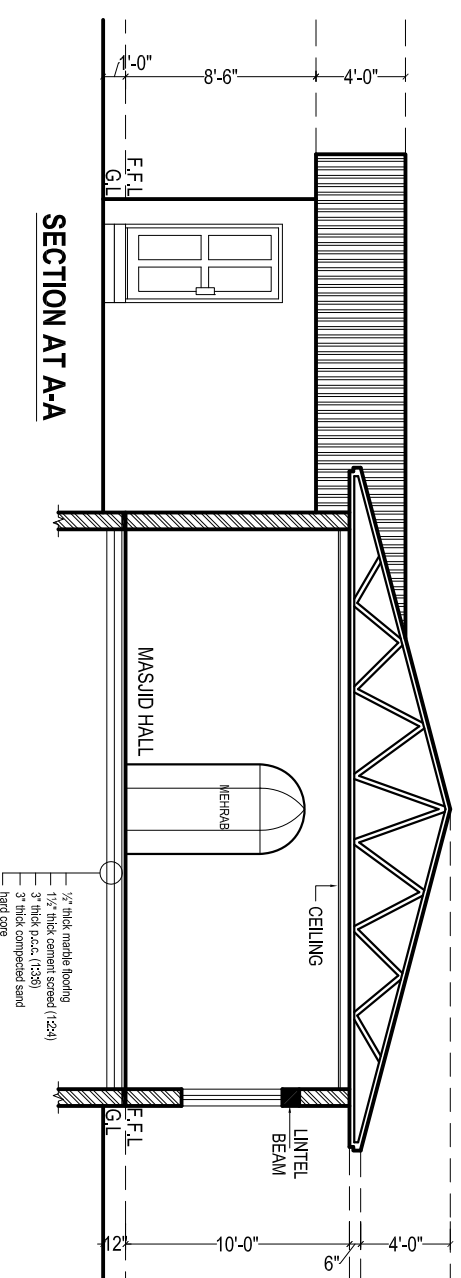
**VERANDAH COLUMN DETAIL**  
**C-2**

PROJECT:- <b>(REST AREA)</b> <b>LAVATORY / PUBLIC TOILETS</b> <b>BLOCK</b>		CONTENTS:- <b>COLUMNS, FOUNDATION</b> <b>&amp; WALLS DETAIL</b>		M/S NESPAK PVT. LTD.		PROJECT DIRECTOR PMU KITE		DATE:- <b>APRIL-2021</b>		SCALE:- <b>READ AS SHOWN</b>		PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT	
DRG. NO:-		SHEET NO:-		VERANDAH COLUMNS FOUNDATION DETAIL		VERANDAH COLUMN DETAIL		VERANDAH COLUMNS FOUNDATION DETAIL		VERANDAH COLUMN DETAIL		VERANDAH COLUMNS FOUNDATION DETAIL	

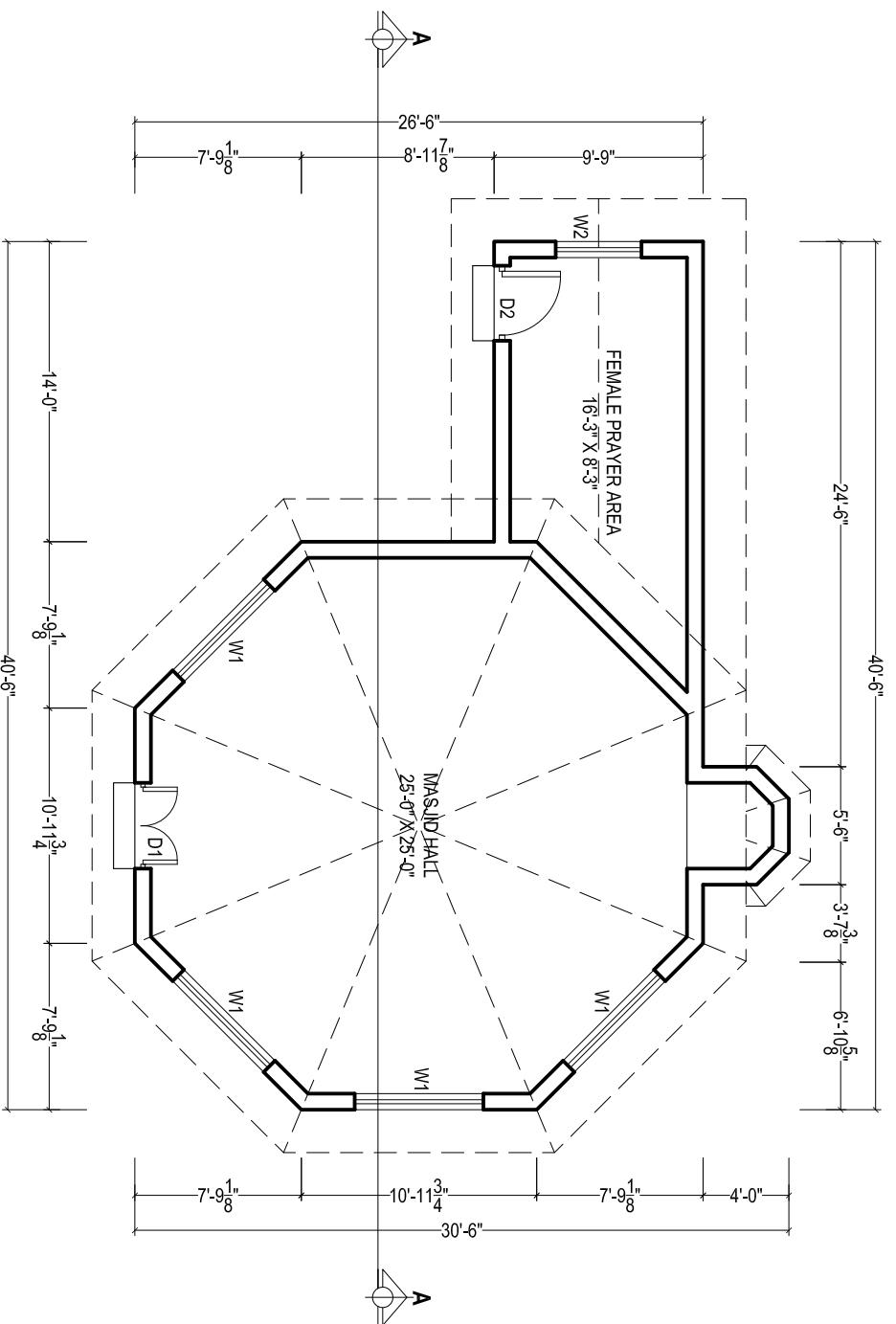




**FRONT ELEVATION**



**SECTION AT A-A**



**MASJID PLAN**  
COVERED AREA = 768 SFT

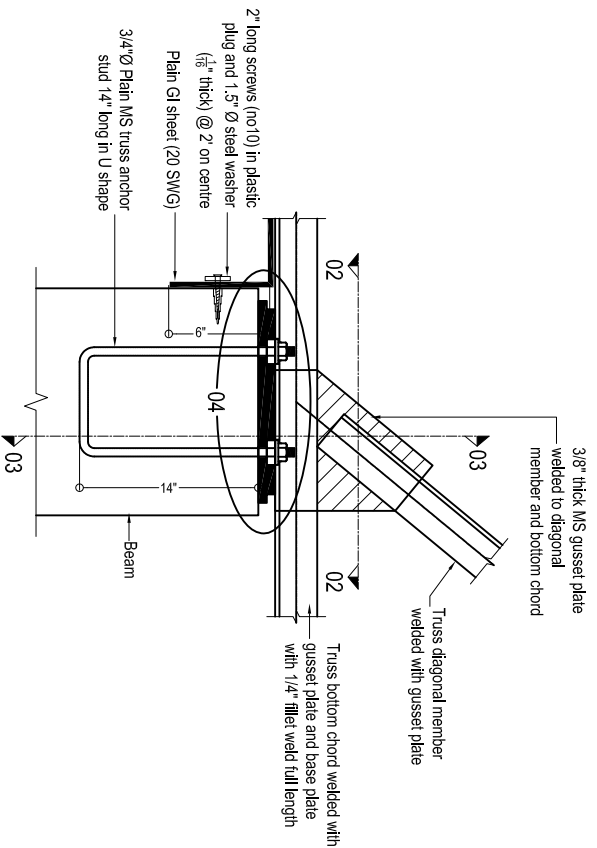
SCHEDULE OF OPENING			
S.NO.	TYPE	SIZE	S/LEVEL
01	D1	4'-0" X 7'-0"	±0'-0"
02	D2	3'-6" X 7'-0"	±0'-0"
04	W1	6'-0" X 4'-6"	+2'-6"
05	W2	4'-0" X 4'-6"	+2'-6"

**BUILDING SPECIFICATION**

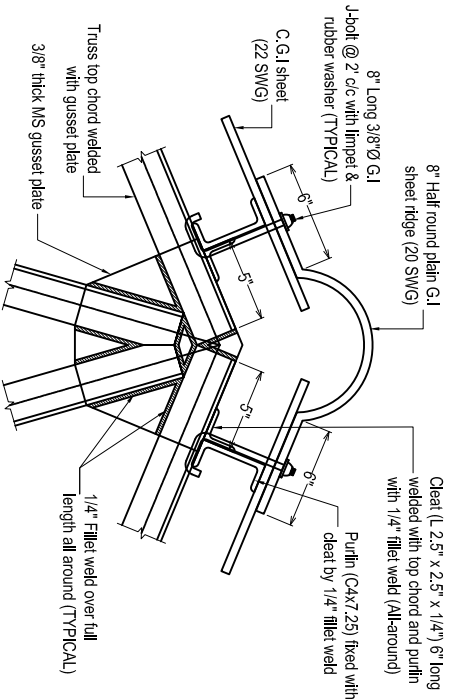
- \* PCC (1:4:8) IN FOUNDATIONS
- \* 2" THICK DPC (DAMP PROOF COURSE) IN 1:2:4 PCC WITH 2 COATS OF HOT BITUMEN WITH POLYTHENE SHEET.
- \* BURNT BRICK MASONRY IN 1:6 CEMENT SAND RATIO MORTAR.
- \* 1/2" THICK PLASTER ON WALLS IN 1:6 CEMENT SAND RATIO.
- \* ALL LINTELS & BEAMS IN 1:2:4 CEMENT:SAND:AGGREGATE RATIO WITH 14 DAYS CURING.
- \* ALL ELECTRICAL WIRING TO BE CONCEALED.
- \* ALL LOAD BEARING WALLS SHALL BE MINIMUM 9" THICK.
- \* ALL PARTION WALLS SHALL BE 4 1/2" THICK.
- \* THEN 1 1/2" BRICK TILES SET IN 1:3 CEMENT SAND RATIO.
- \* ALL INTER FLOOR SLABS SHALL BE COVERED WITH 2" OF PCC (1:4:8) IN SLOP THEN 3/4" TERRAZZO FINISH WITH GLASS STRIPS.
- \* ALL GROUND FLOORS SHALL BE LAID ON COMPACTED EARTH THEN 6" OF WATERED AND RAMMED SAND THEN 4" OF (1:4:8) IN SLOPE THEN 2"(1:4:8) THEN 3/4" TERRAZZO WITH GLASS STRIPS.

PROJECT:- <b>(REST AREA) MASJID</b>	CONTENTS:- <b>PLAN, ELEVATION, SECTION, SPECIFICATION</b>	PLINTH AREA:-	APPROVED BY:-	DRG. NO:-	DATE:- <b>APRIL-2021</b>	SHEET NO:-	SCALE:- <b>READ AS SHOWN</b>	PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT
		M/S NESPAK PVT. LTD.	PROJECT DIRECTOR PMU KITE					

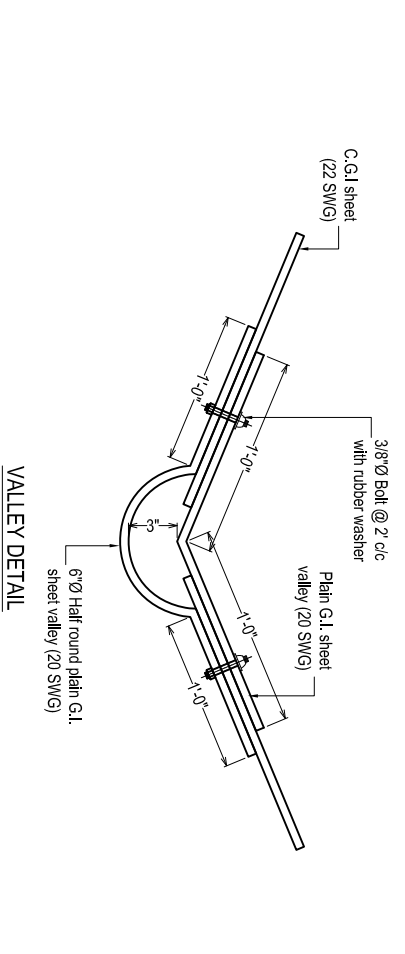




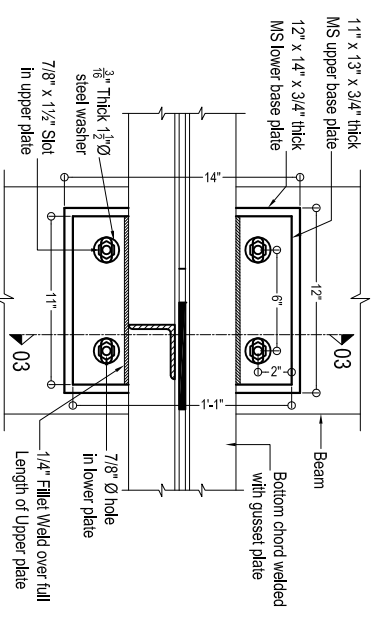
**BASE PLATE DETAIL**  
(All trusses)



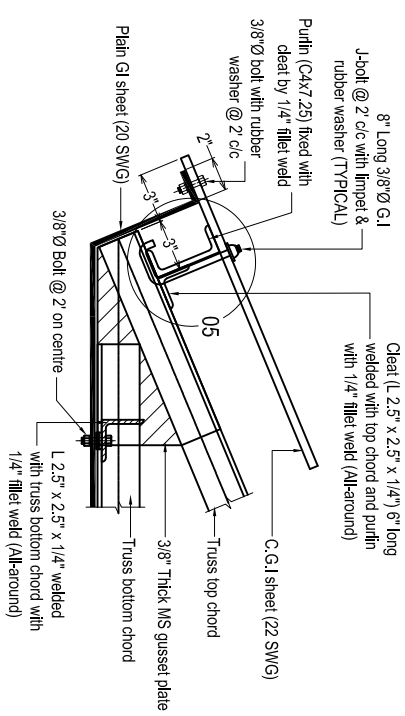
**TYPICAL TOP CHORD CONNECTION DETAIL**



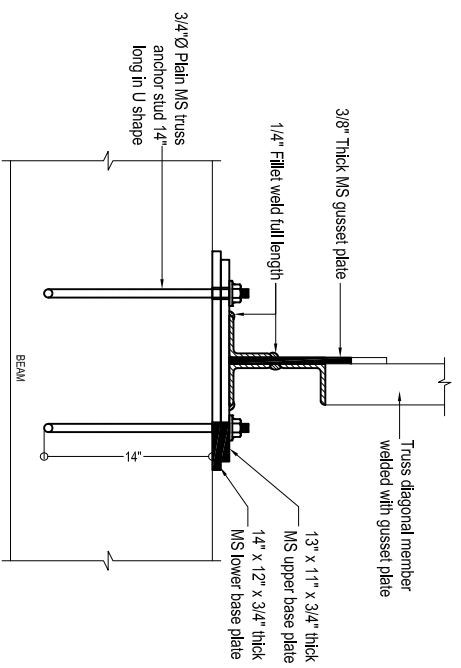
**VALLEY DETAIL**



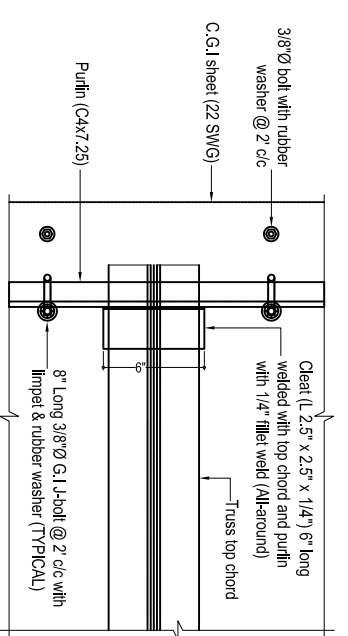
**SECTION 02-02**



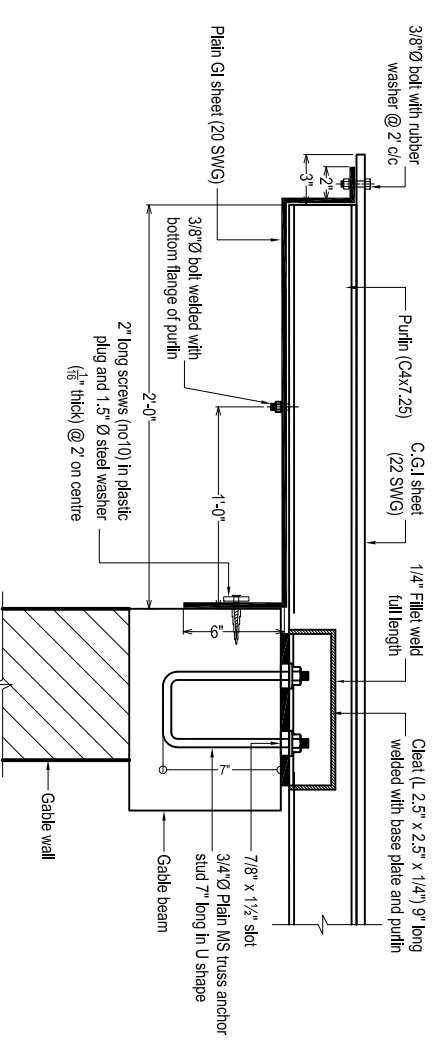
**END OF TRUSS PORTION (Elevation)**  
(All trusses)



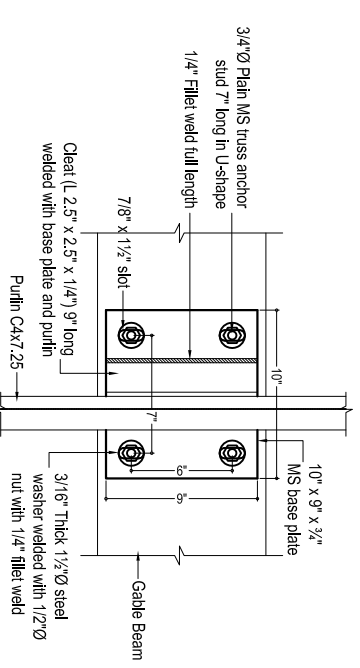
**SECTION 03-03**



**END OF TRUSS PORTION (Plan)**



**PGI SHEET DETAIL AT GABLE WALL**



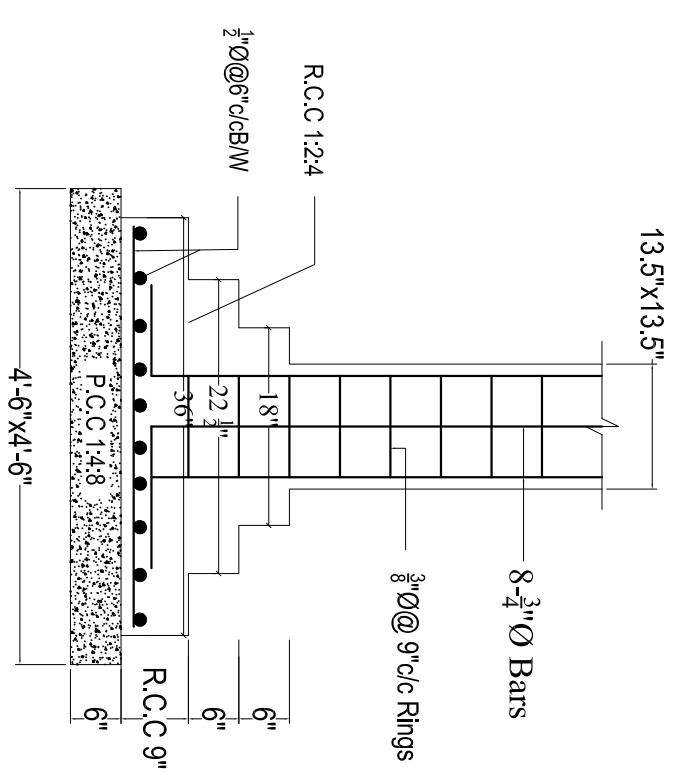
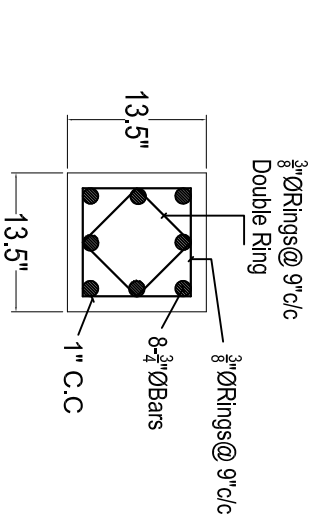
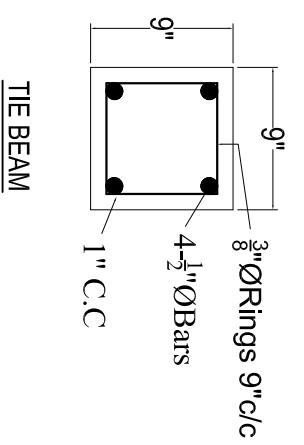
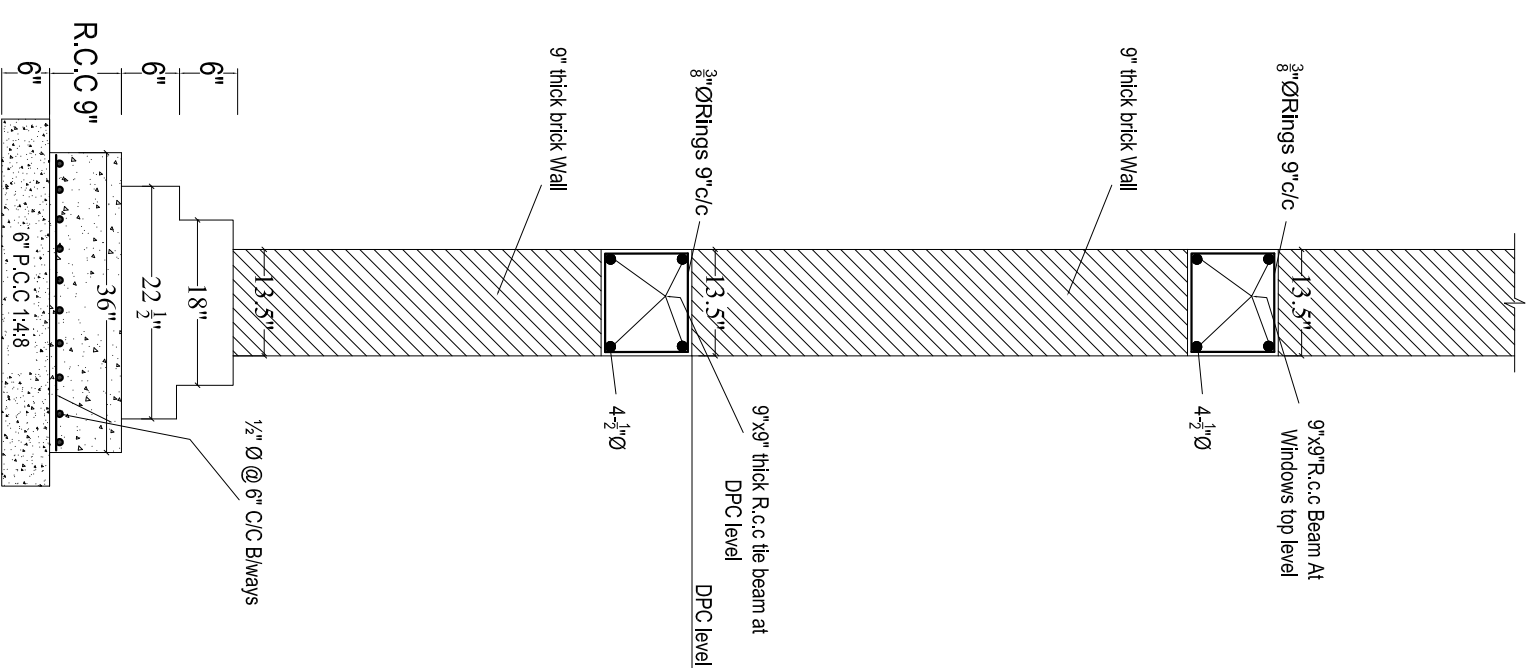
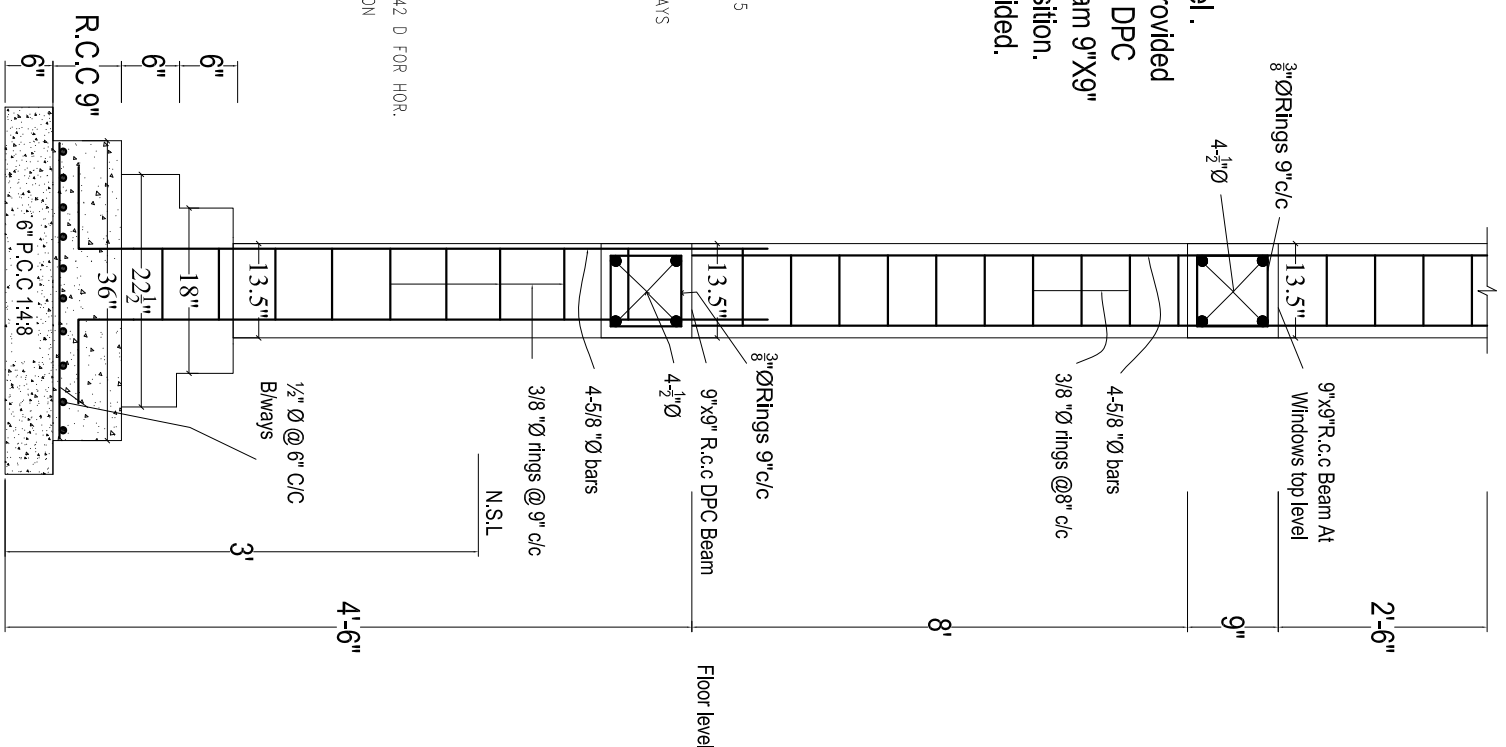
**CONNECTION DETAIL FOR PURLIN ON GABLE WALL**

PROJECT:-	<b>(REST AREA) MASJID</b>			CONTENTS:-	<b>TRUSS DETAIL</b>		M/S NESPAK PVT. LTD.	PROJECT DIRECTOR PMU KITE	DRG. NO:-	DATE:-	SHEET NO:-	
				TRUSS DETAIL			PROJECT DIRECTOR PMU KITE	APRIL-2021	READ AS SHOWN	PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT		

R.c.c columns upto DPC level.  
 At DPC 9" thick the beam will be provided  
 over 9" thick brick walls, no extra DPC  
 then required. After Providing The beam 9"X9"  
 on walls & columns at shown position.  
 Normal 9" thick brick wall is provided.

**NOTES:-**

- (1) ALL REINFORCING STEEL IS DEFORMED AS PER ASTM A-615 40000 PSI MIN. YIELD STRENGTH. AND MIN. ULTIMATE STRENGTH OF 65000 PSI .
- (2) ALL CONCRETE IS 3000 PSI CYLINDER STRENGTH AT 28 DAYS WITH MIN. CEMENT CONTENT 400 KG/m<sup>3</sup>
- (3) CLEAR CONCRETE COVER TO MAIN REINFORCING BARS IS AS BELOW.  
 SLABS = 3/4" FOOTING ON 1:4:8 = 2"  
 BEAMS = 1 1/2" COLUMNS = 1 1/2"
- (4) ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL AND SERVICES DRGS.
- (5) LEAN IS 1000 PSI CYLINDER STRENGTH AT 28 DAYS MIN MIX 1:4:8
- (6) ALL LAPS ARE 30 TIMES BAR DIAMETER FOR VERTICAL & 42 D FOR HOR.
- (7) EXCAVATION INCLUDING DEWATERING, BRACING OF EXCAVATION TO SAFEGUARD THE ADJOINING PROPERTY AND LIFE AND DEWATERING PITS IN CASE OF RAIN IS CONTRACTOR RESPONSIBILITY. FOR THAT MATTER, A QUALIFIED GEO-TECHNICAL ENGINEER SHOULD BE APPOINTED ON HIS ROLE.
- (8) (a) 1ST THE BEAM AT FOUNDATION LEVEL.  
 (b) 2ND THE BEAM AT D.P.C. LEVEL.  
 (c) 3RD THE BEAM AT WINDOW LITTLE LEVEL.  
 (d) R.C.C COLUMN 9" x 9" AT CORNER OF BUILDING SHALUD BE PROVIDED.



**R.c.c Foundation Detail**  
**For R.c.c Column Portion**

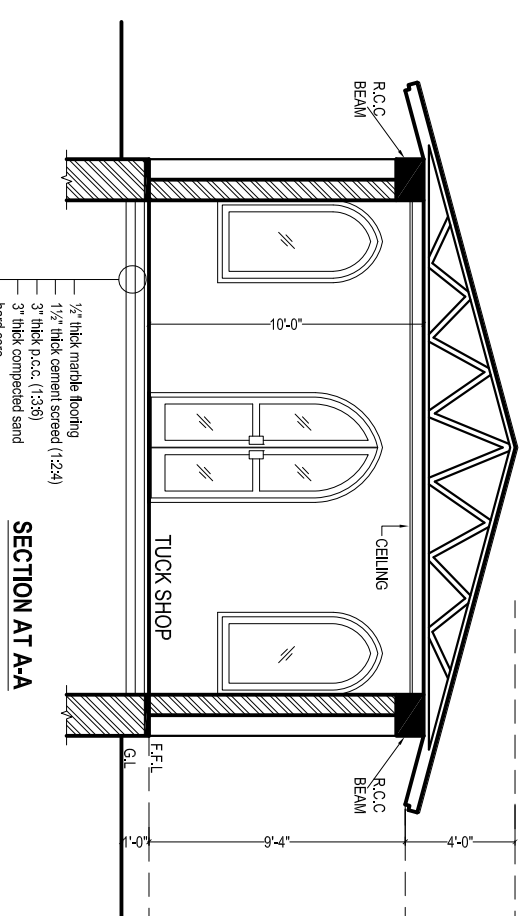
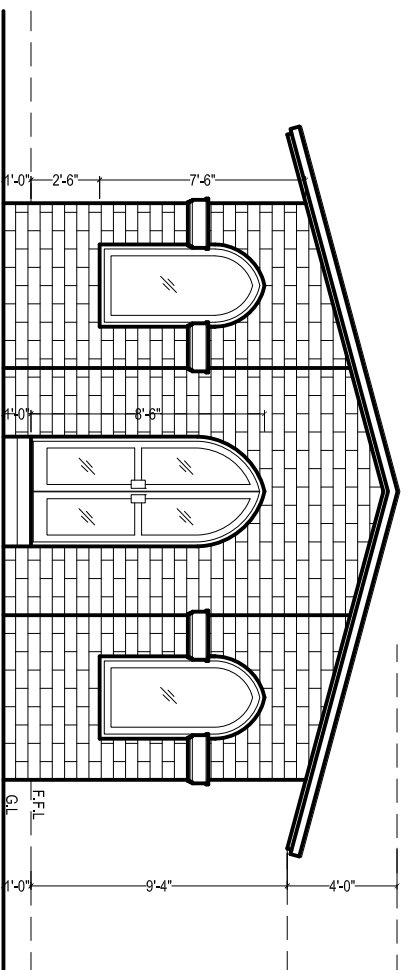
**R.C.C STRIP FOUNDATION**  
**FOR GROUND FLOOR**

**VERANDAH COLUMNS FOUNDATION DETAIL**  
**C-1**

**VERANDAH COLUMN DETAIL**  
**C-2**

PROJECT:- <b>(REST AREA)</b> <b>MASJID</b>	CONTENTS:- <b>COLUMNS, FOUNDATION &amp; WALLS DETAIL</b>	M/S NESPAK PVT. LTD.	PROJECT DIRECTOR PMU KITE	DATE:- <b>APRIL-2021</b>	SCALE:- <b>READ AS SHOWN</b>	PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT
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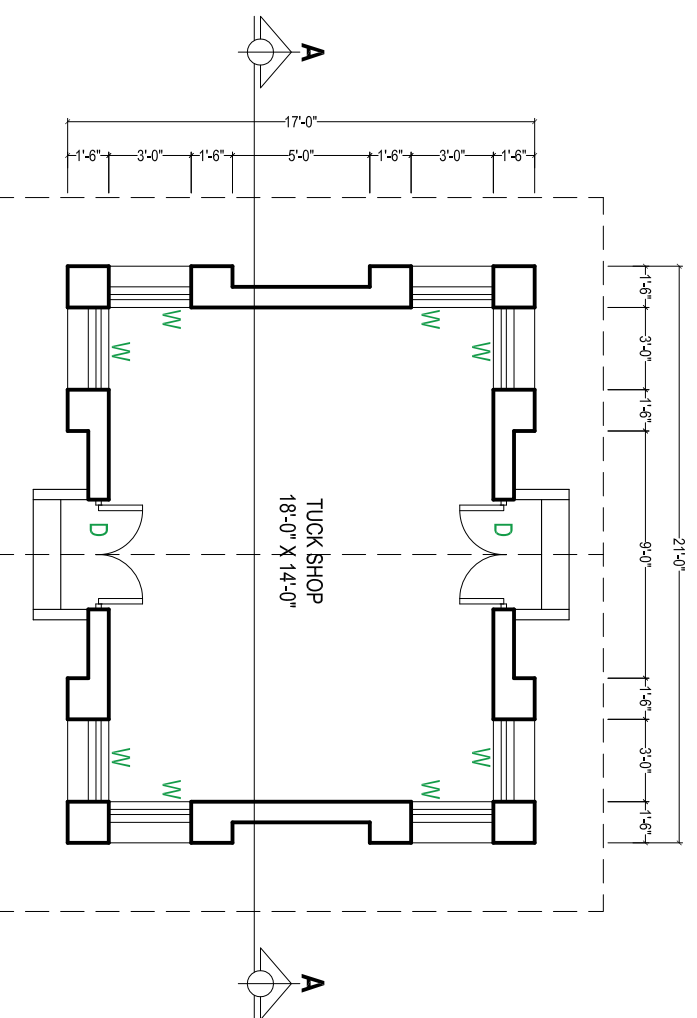




SCHEDULE OF OPENING			
S.NO.	TYPE	SIZE	S/LEVEL
01	D	4-0" X 8-6"	±0-0"
04	W	3-0" X 6-0"	+2-6"

**BUILDING SPECIFICATION**

- \* PCC (1:4:8) IN FOUNDATIONS
- \* 2" THICK DPC (DAMP PROOF COURSE) IN 1:2:4 PCC WITH 2 COATS OF HOT BITUMEN WITH POLYTHENE SHEET.
- \* BURNT BRICK MASONRY IN 1:6 CEMENT SAND RATIO MORTAR.
- \* 1/2" THICK PLASTER ON WALLS IN 1:6 CEMENT SAND RATIO.
- \* ALL LINTELS & BEAMS IN 1:2:4 CEMENT:SAND:AGGREGATE RATIO WITH 14 DAYS CURING.
- \* ALL ELECTRICAL WIRING TO BE CONCEALED.
- \* ALL LOAD BEARING WALLS SHALL BE MINIMUM 9" THICK.
- \* ALL PARTION WALLS SHALL BE 4 1/2" THICK.
- \* THEN 1 1/2" BRICK TILES SET IN 1:3 CEMENT SAND RATIO.
- \* ALL INTER FLOOR SLABS SHALL BE COVERED WITH 2" OF PCC (1:4:8) IN SLOP THEN 3/4" TERRAZZO FINISH WITH GLASS STRIPS.
- \* ALL GROUND FLOORS SHALL BE LAID ON COMPACTED EARTH THEN 6" OF WATERED AND RAMMED SAND THEN 4" OF (1:4:8) IN SLOPE THEN 2"(1:4:8) THEN 3/4" TERRAZZO WITH GLASS STRIPS.

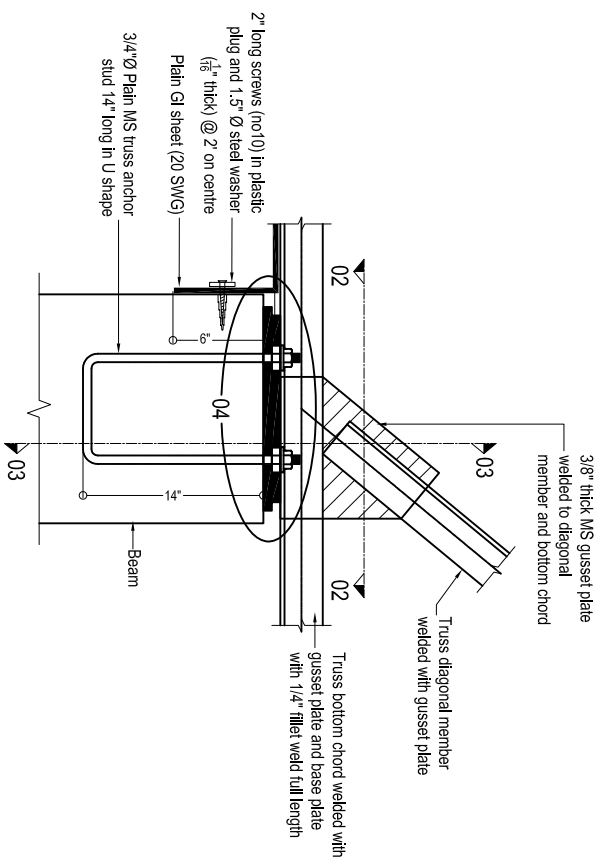


COVERED AREA = 357.00 SFT.

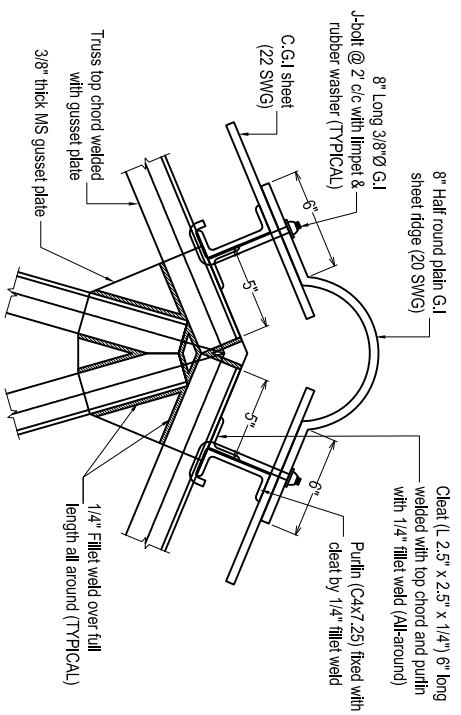
PROJECT:- <b>(REST AREA) TUCK SHOP</b>	CONTENTS:- <b>PLAN, ELEVATION, SECTION, SPECIFICATION.</b>	M/S NESPAK PVT. LTD.	PROJECT DIRECTOR PMU KITTE	DRG. NO:-	SHEET NO:-	PROJECT MANAGEMENT UNIT (PMU) KITTE COMMUNICATION & WORKS DEPARTMENT
				DATE:- APRIL-2021	SCALE:- READ AS SHOWN	



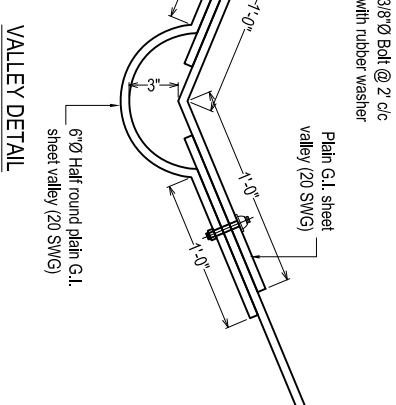




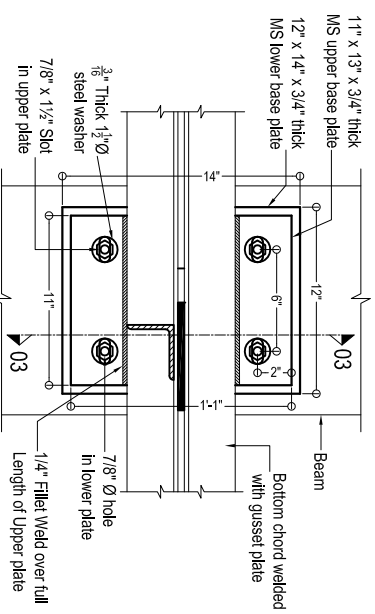
**BASE PLATE DETAIL**  
(All trusses)



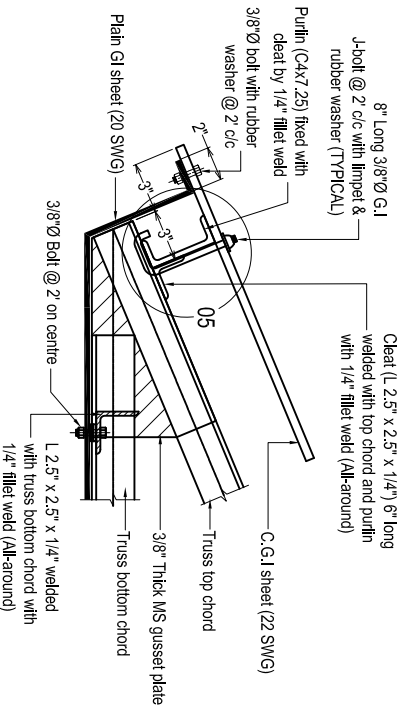
**TYPICAL TOP CHORD CONNECTION DETAIL**



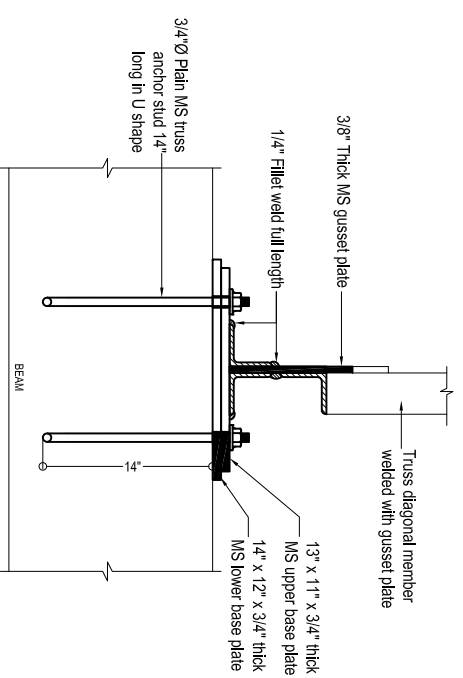
**VALLEY DETAIL**



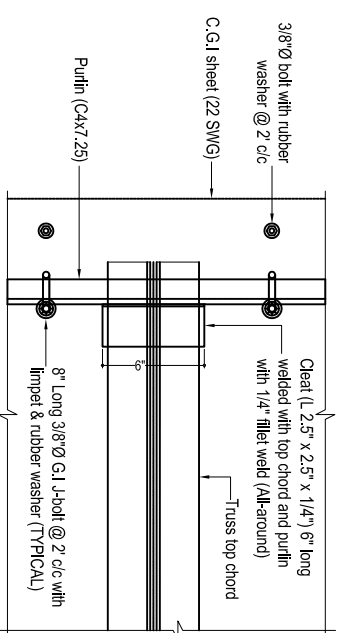
**SECTION 02-02**



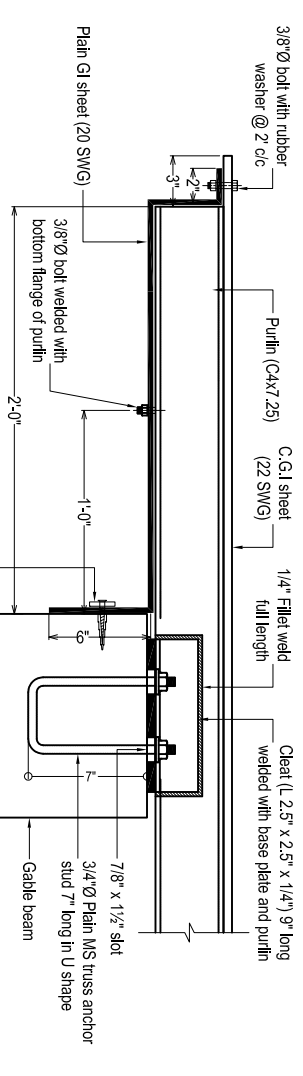
**END OF TRUSS PORTION (Elevation)**  
(All trusses)



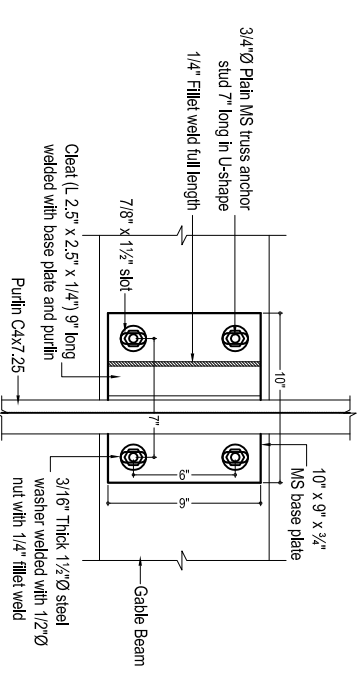
**SECTION 03-03**



**END OF TRUSS PORTION (Plan)**



**PGI SHEET DETAIL AT GABLE WALL**



**CONNECTION DETAIL  
FOR PURLIN ON GABLE WALL**

PROJECT:-

CONTENTS:-

DRG. NO:-

SHEET NO:-

(REST AREA)  
TUCK SHOP

TRUSS DETAIL

M/S NESPAK PVT. LTD.

PROJECT DIRECTOR PMU KITE

DATE:-

APRIL-2021

SCALE:-

READ AS  
SHOWN

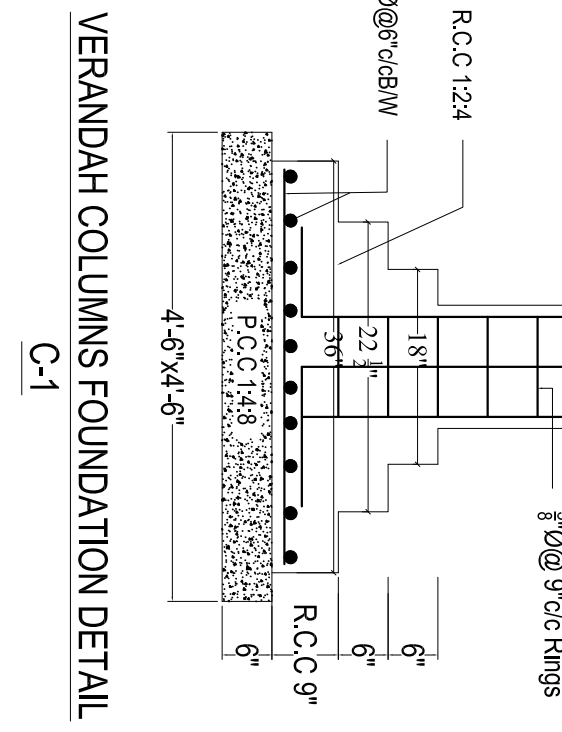
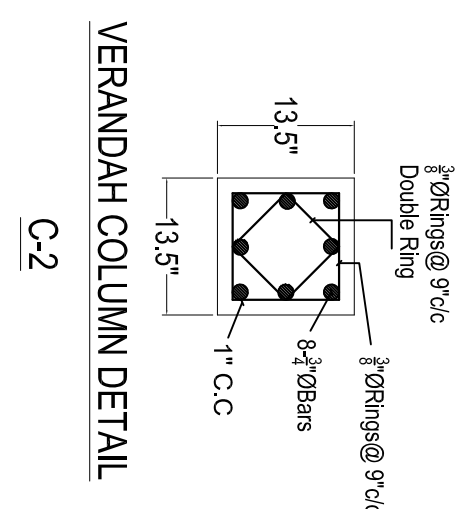
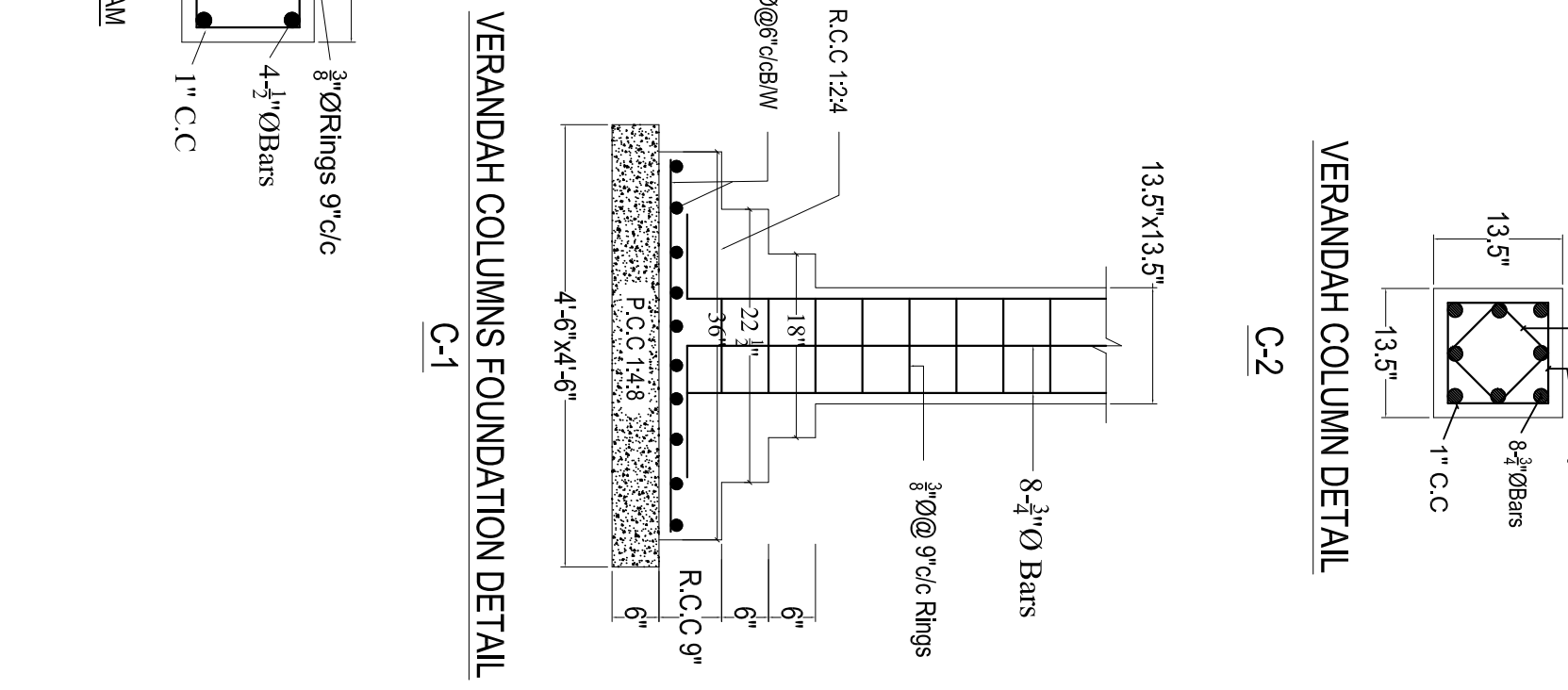
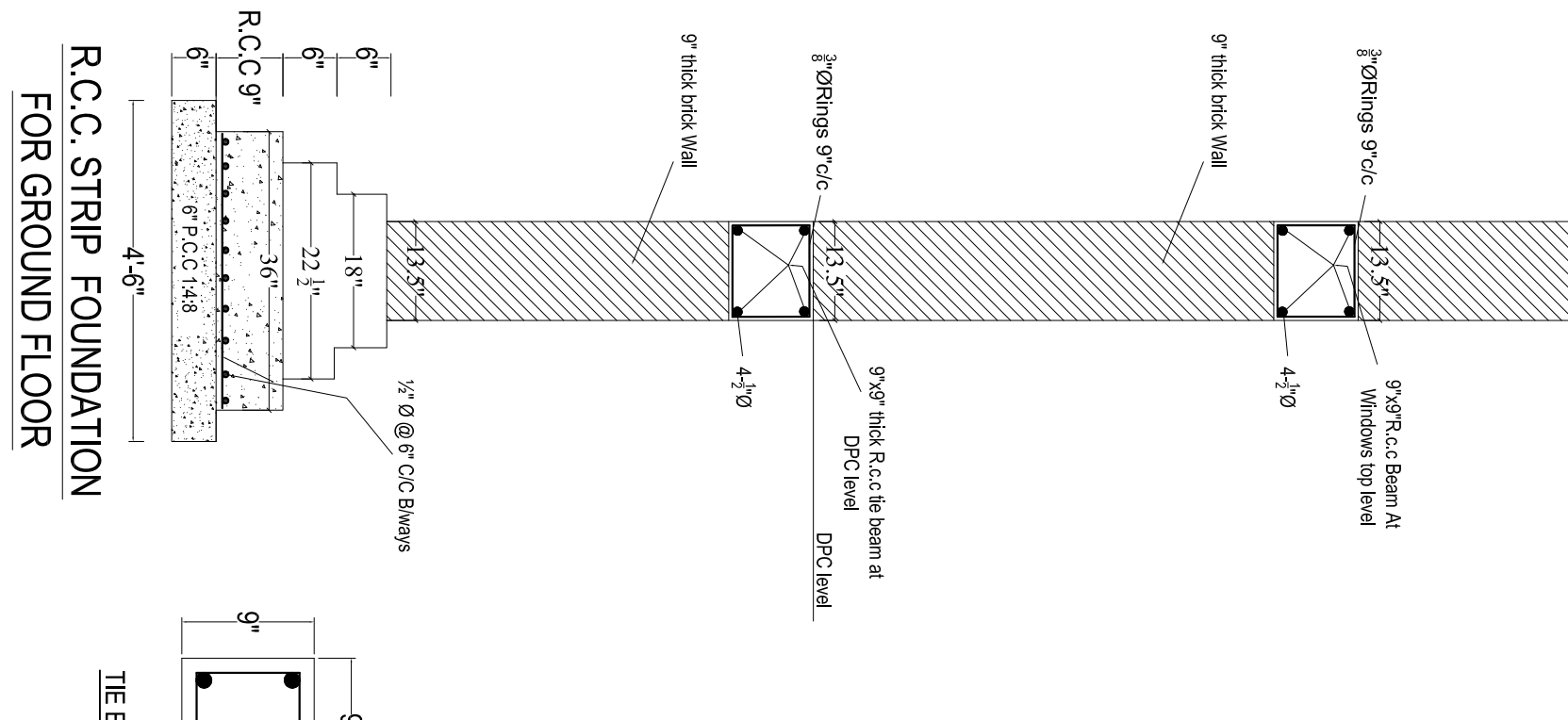
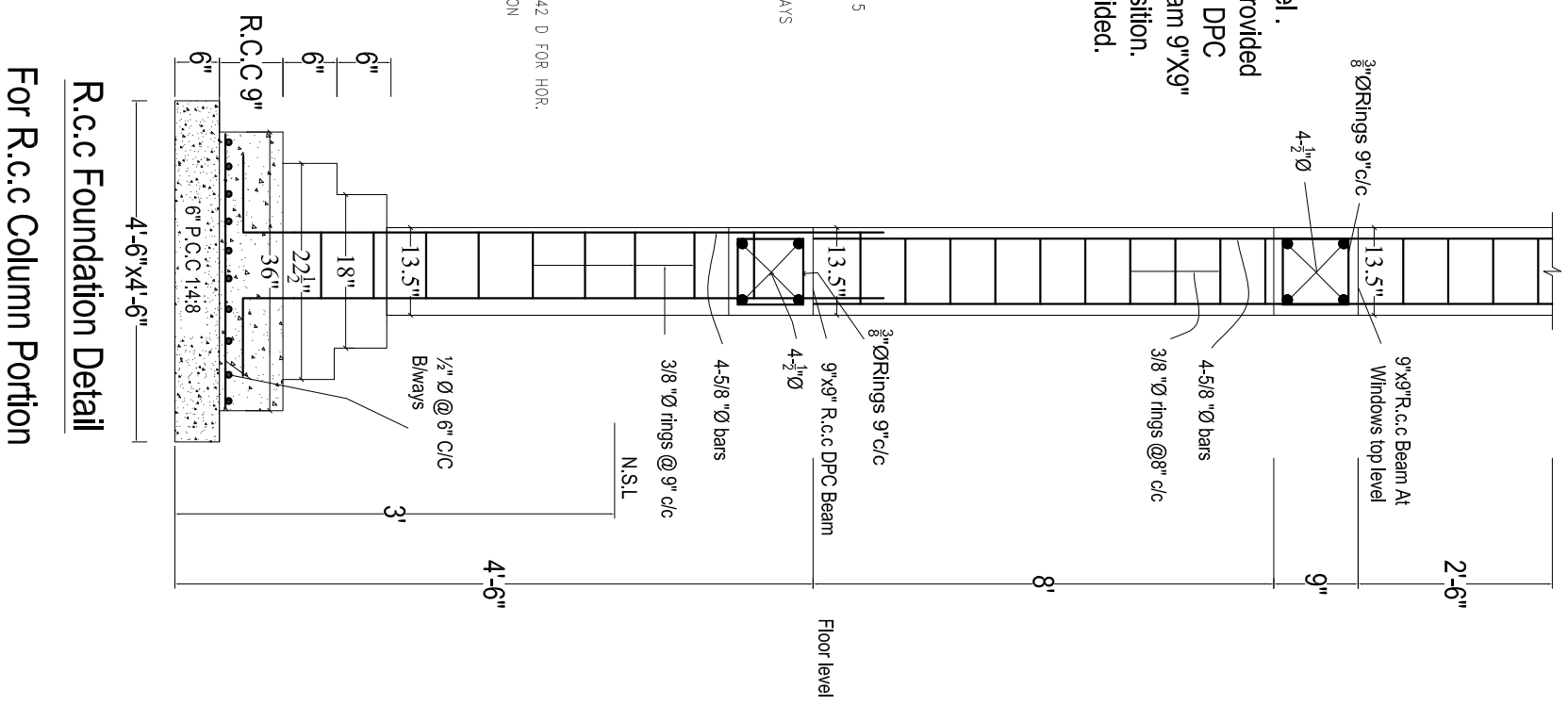
PROJECT MANAGEMENT UNIT (PMU) KITE  
COMMUNICATION & WORKS DEPARTMENT



R.c.c columns upto DPC level.  
At DPC 9" thick tie beam will be provided  
over 9" thick brick walls. no extra DPC  
then required. After Providing Tie beam 9"x9"  
on walls & columns at shown position.  
Normal 9" thick brick wall is provided.

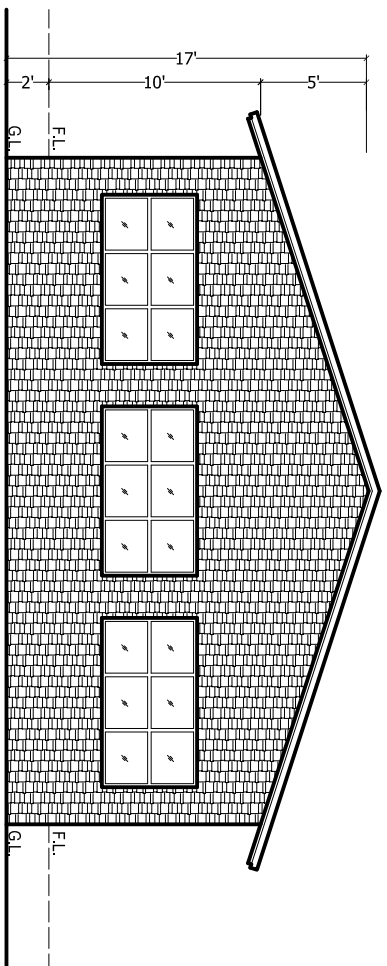
**NOTES:-**

- (1) ALL REINFORCING STEEL IS DEFORMED AS PER ASTM A-615 40000 PSI MIN. YIELD STRENGTH, AND MIN. ULTIMATE STRENGTH OF 65000 PSI.
- (2) ALL CONCRETE IS 3000 PSI CYLINDER STRENGTH AT 28 DAYS WITH MIN. CEMENT CONTENT 400 KG/m<sup>3</sup>
- (3) CLEAR CONCRETE COVER TO MAIN REINFORCING BARS IS AS BELOW.  
SLABS = 3/4" FOOTING ON 1:4:8 = 2"  
BEAMS = 1 1/2" COLUMNS = 1 1/2"  
(4) ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL AND SERVICES DRGS.
- (5) LEAN IS 1000 PSI CYLINDER STRENGTH AT 28 DAYS MIN. MIX 1:4:8
- (6) ALL LAPS ARE 30 TIMES BAR DIAMETER FOR VERTICAL & 42 D FOR HOR.
- (7) EXCAVATION INCLUDING DEWATERING, BRACING OF EXCAVATION TO SAFEGUARD THE ADJOINING PROPERTY AND LIFE AND DEWATERING PITS IN CASE OF RAIN IS CONTRACTOR RESPONSIBILITY. FOR THAT MATTER, A QUALIFIED GEO-TECHNICAL ENGINEER SHOULD BE APPOINTED ON HIS ROLE.
- (8) (a) 1ST TIE BEAM AT FOUNDATION LEVEL.  
(b) 2ND TIE BEAM AT D.P.C. LEVEL.  
(c) 3RD TIE BEAM AT WINDOW LINTLE LEVEL.  
(d) R.C.C COLUMN 9" x 9" AT CORNER OF BUILDING SHAUD BE PROVIDED.

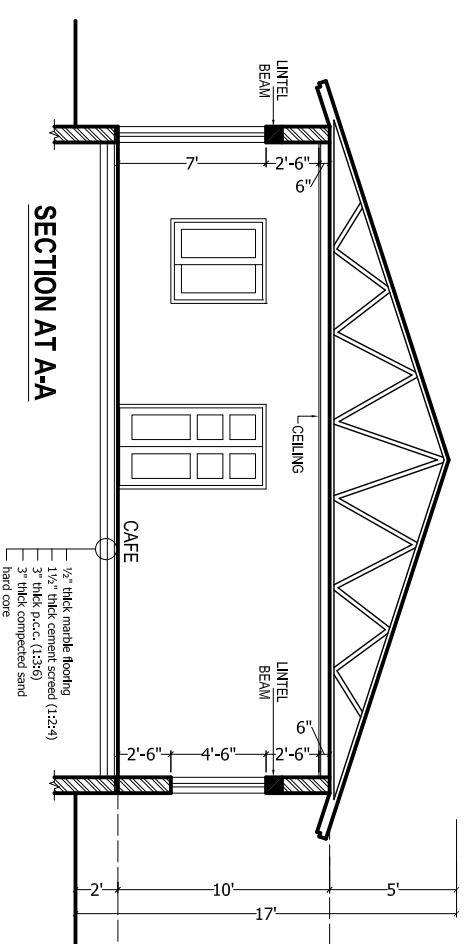


PROJECT:-	CONTENTS:-	DRG. NO:-	SHEET NO:-	
(REST AREA) TUCK SHOP	COLUMNS, FOUNDATION & WALLS DETAIL			
	M/S NESPAK PVT. LTD.			
	PROJECT DIRECTOR PMU KITE	DATE:-	SCALE:-	
		APRIL-2021	READ AS SHOWN	
				PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT

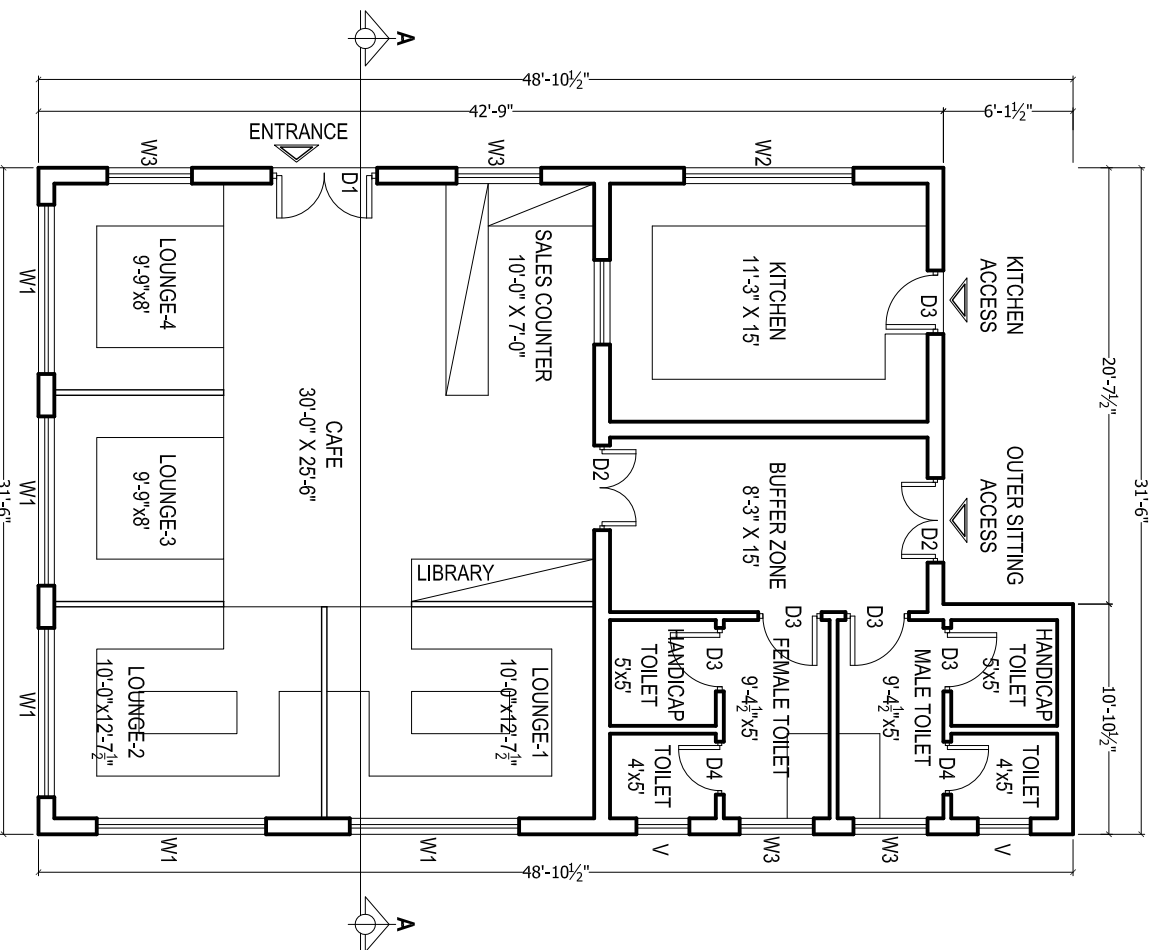




FRONT ELEVATION



SECTION AT A-A



CAFE / KHAWA KHANA  
COVERED AREA = 1415 SFT.

S.NO.	TYPE	SIZE	S/LEVEL
01	D1	5'-0" X 7'-0"	±0'-0"
02	D1	4'-0" X 7'-0"	±0'-0"
03	D2	3'-0" X 7'-0"	±0'-0"
04	D3	2'-6" X 7'-0"	±0'-0"
05	W1	8'-0" X 4'-6"	+2'-6"
06	W2	8'-0" X 4'-0"	+3'-0"
07	W3	3'-6" X 4'-6"	+2'-6"
08	V	2'-0" X 2'-0"	+5'-0"

**BUILDING SPECIFICATION**

- \* PCC (1:4:8) IN FOUNDATIONS
- \* 2" THICK DPC (DAMP PROOF COURSE) IN 1:2:4 PCC WITH 2 COATS OF HOT BITUMEN WITH POLYTHENE SHEET.
- \* BURNT BRICK MASONRY IN 1:6 CEMENT SAND RATIO MORTAR.
- \* 1/2" THICK PLASTER ON WALLS IN 1:6 CEMENT SAND RATIO.
- \* ALL LINTELS & BEAMS IN 1:2:4 CEMENT SAND: AGGREGATE RATIO WITH 14 DAYS CURING.
- \* ALL ELECTRICAL WIRING TO BE CONCEALED.
- \* ALL LOAD BEARING WALLS SHALL BE MINIMUM 9" THICK.
- \* ALL PARTION WALLS SHALL BE 4 1/2" THICK.
- \* THEN 1 1/2" BRICK TILES SET IN 1:3 CEMENT SAND RATIO.
- \* ALL INTER FLOOR SLABS SHALL BE COVERED WITH 2" OF PCC (1:4:8) IN SLOP THEN 3/4" TERRAZZO FINISH WITH GLASS STRIPS.
- \* ALL GROUND FLOORS SHALL BE LAID ON COMPACTED EARTH THEN 6" OF WATERED AND RAMMED SAND THEN 4" OF (1:4:8) IN SLOPE THEN 2"(1:4:8) THEN 3/4" TERRAZZO WITH GLASS STRIPS.

PROJECT:-

(REST AREA)  
CAFE / KHAWA KHANA

CONTENTS:-

PLAN, ELEVATION, SECTION,  
SPECIFICATION

DRG. NO:-

SHEET NO:-

DATE:-

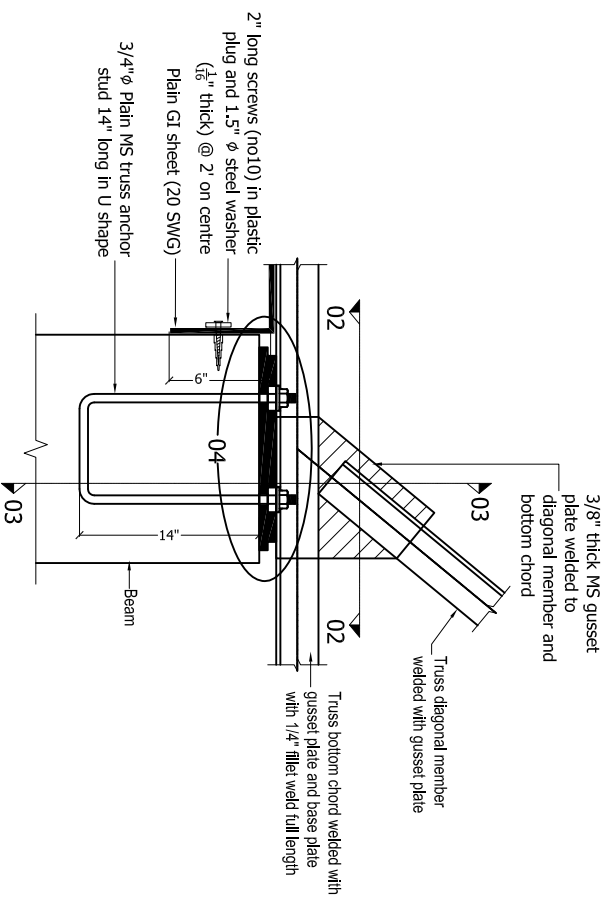
APRIL-2021

SCALE:-

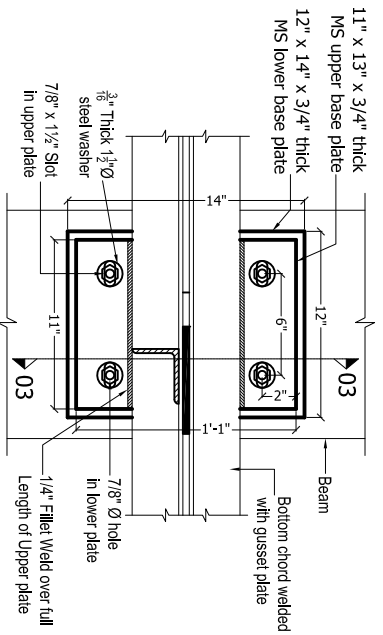
READ AS  
SHOWN

PROJECT MANAGEMENT UNIT (PMU) KITE  
COMMUNICATION & WORKS DEPARTMENT

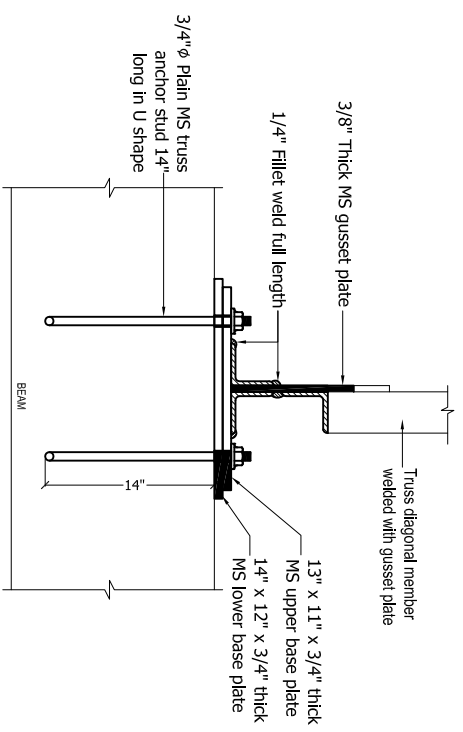




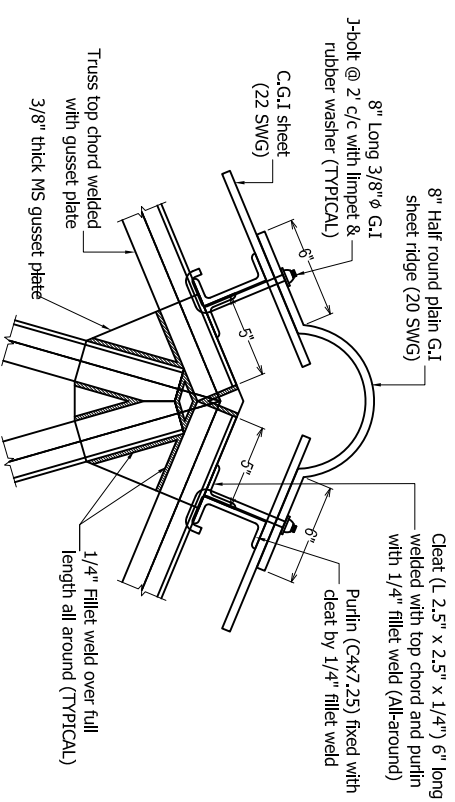
**BASE PLATE DETAIL**  
(All trusses)



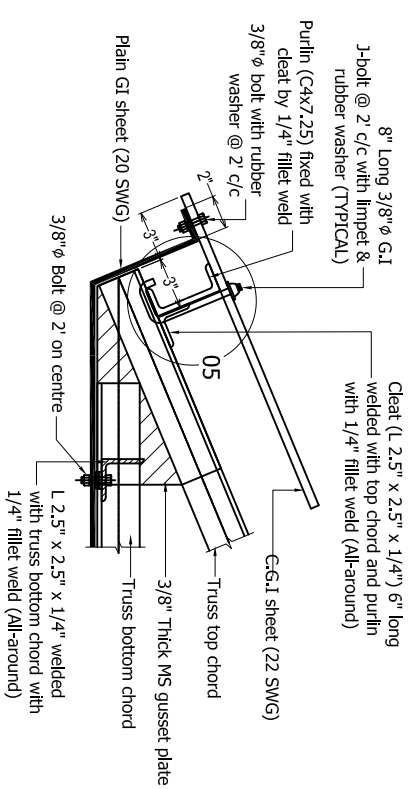
**SECTION 02-02**



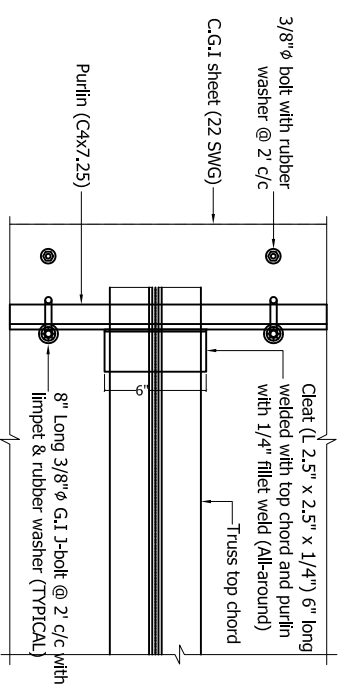
**SECTION 03-03**



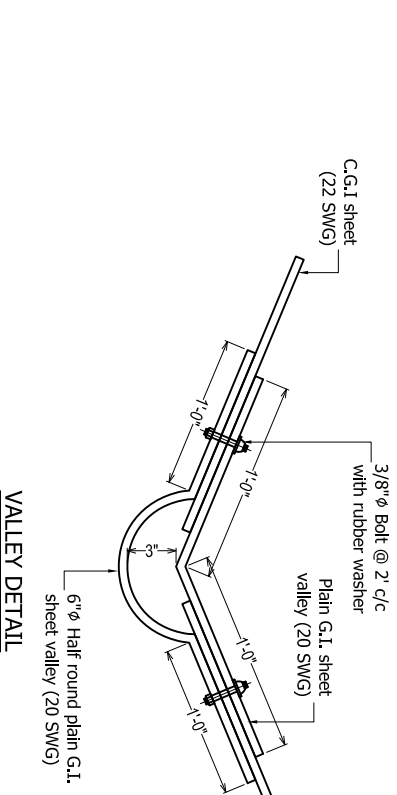
**TYPICAL TOP CHORD CONNECTION DETAIL**



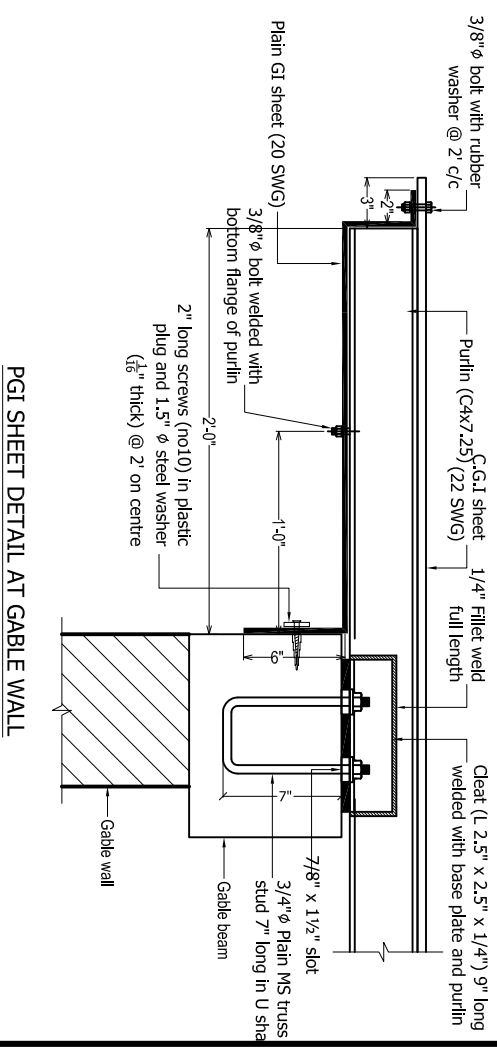
**END OF TRUSS PORTION (Elevation)**  
(All trusses)



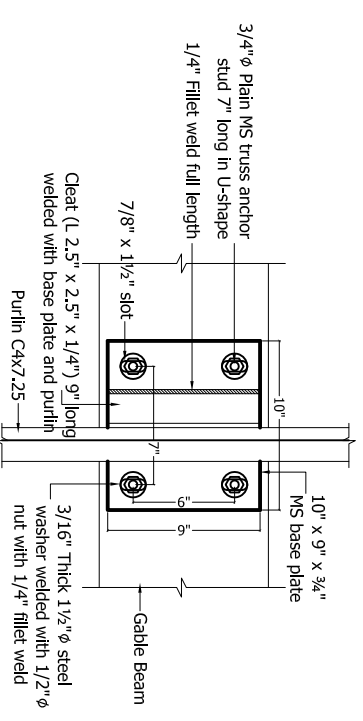
**END OF TRUSS PORTION (Plan)**



**VALLEY DETAIL**



**PGI SHEET DETAIL AT GABLE WALL**



**CONNECTION DETAIL**  
**FOR PURLIN ON GABLE WALL**

PROJECT:-

(REST AREA)  
CAFE / KHAWA KHANA

CONTENTS:-

TRUSS DETAIL

M/S NESPAK PVT. LTD.

PROJECT DIRECTOR PMU KITE

DRG: NO:-

DATE:-

APRIL-2021

SHEET NO:-

SCALE:-

READ AS  
SHOWN

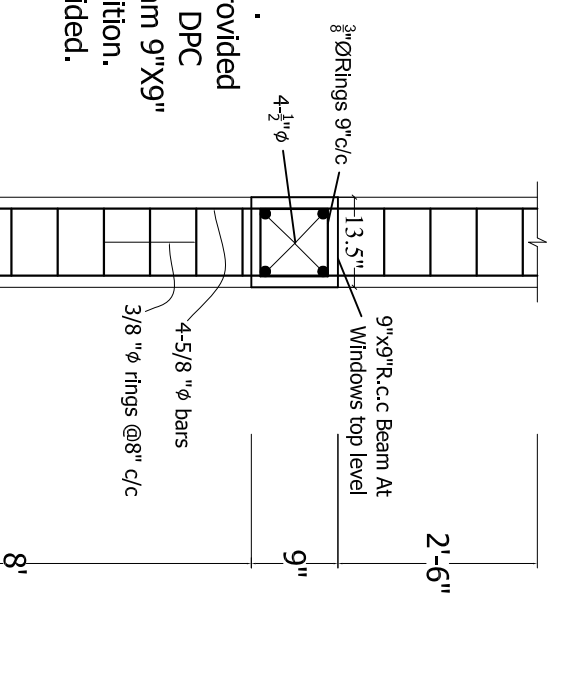
PROJECT MANAGEMENT UNIT (PMU) KITE  
COMMUNICATION & WORKS DEPARTMENT



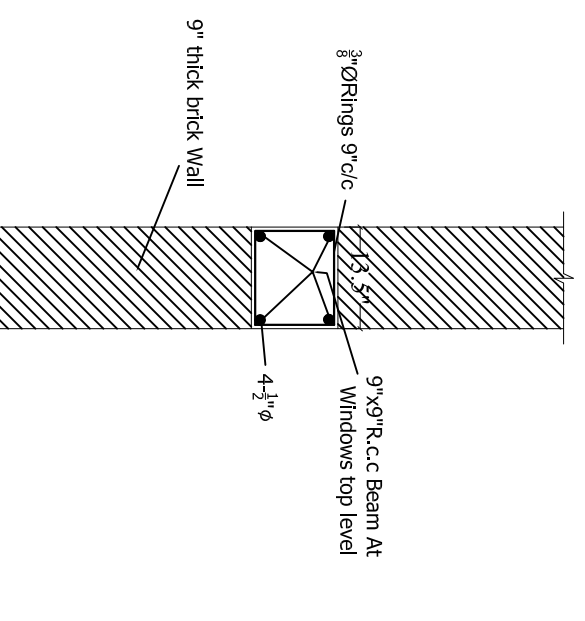
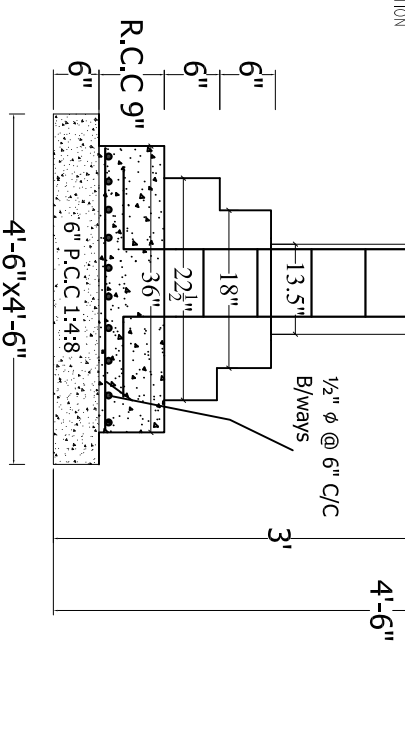
R.c.c columns upto DPC level .  
 At DPC 9" thick the beam will be provided  
 over 9" thick brick walls, no extra DPC  
 then required. After Providing Tie beam 9"x9"  
 on walls & columns at shown position.  
 Normal 9" thick brick wall is provided.

**NOTES:-**

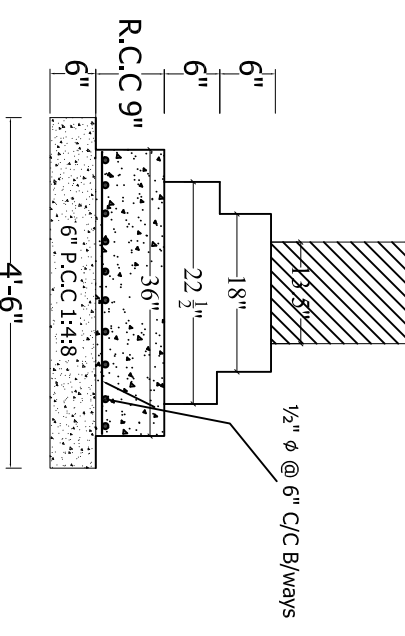
- (1) ALL REINFORCING STEEL IS DEFORMED AS PER ASTM A-615 40000 PSI MIN. YIELD STRENGTH. AND MIN. ULTIMATE STRENGTH OF 69000 PSI .
- (2) ALL CONCRETE IS 3000 PSI CYLINDER STRENGTH AT 28 DAYS WITH MIN. CEMENT CONTENT 400 KG/m<sup>3</sup>
- (3) CLEAR CONCRETE COVER TO MAIN REINFORCING BARS IS AS BELOW.  
 SLABS = 3/4" FOOTING ON 1:4:8 = 2"  
 BEAMS = 1 1/2" COLUMNS = 1 1/2"
- (4) ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL AND SERVICES DRGS.
- (5) LEAN IS 1000 PSI CYLINDER STRENGTH AT 28 DAYS MIN MIX 1:4:8
- (6) ALL LAPS ARE 30 TIMES BAR DIAMETER FOR VERTICAL & 42 D FOR HOR.
- (7) EXCAVATION INCLUDING DEWATERING, BRACING OF EXCAVATION TO SAFEGUARD THE ADJOINING PROPERTY AND LIFE AND DEWATERING PITS IN CASE OF RAIN IS CONTRACTOR RESPONSIBILITY. FOR THAT MATTER, A QUALIFIED GEO-TECHNICAL ENGINEER SHOULD BE APPOINTED ON HIS ROLE.
- (8) (a) 1ST TIE BEAM AT FOUNDATION LEVEL.  
 (b) 2ND TIE BEAM AT D.P.C. LEVEL.  
 (c) 3RD TIE BEAM AT WINDOW UNITLE LEVEL.  
 (d) R.C.C COLUMN 9" x 9" AT CORNER OF BUILDING SHOULD BE PROVIDED.



**R.c.c Foundation Detail  
 For R.c.c Column Portion**

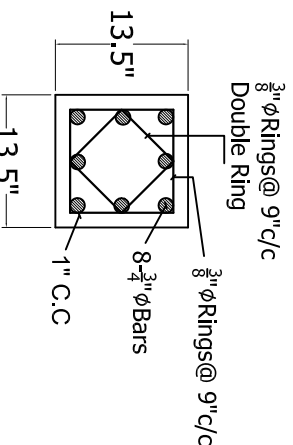


**R.C.C. STRIP FOUNDATION  
 FOR GROUND FLOOR**



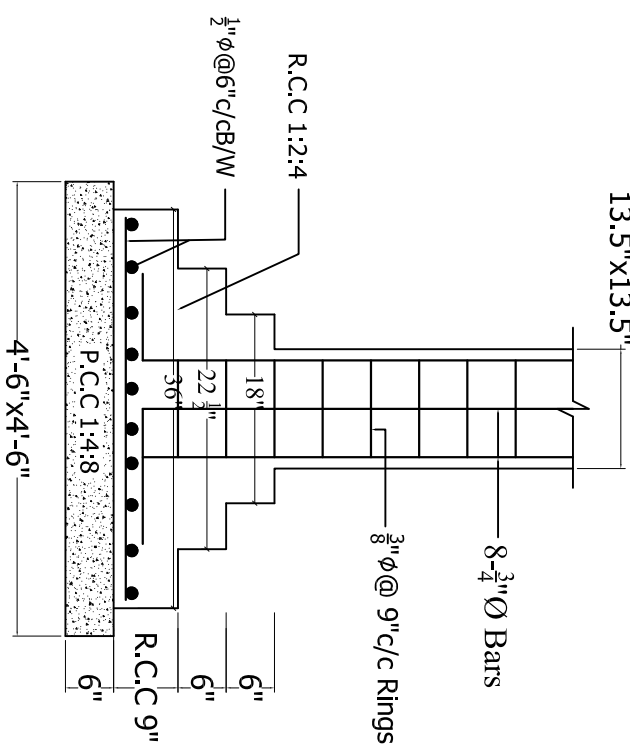
**VERANDAH COLUMN DETAIL**

C-2

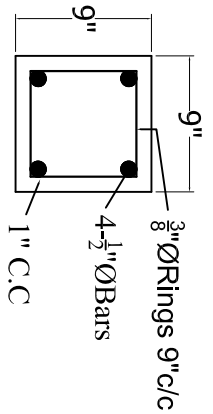


**VERANDAH COLUMNS FOUNDATION DETAIL**

C-1

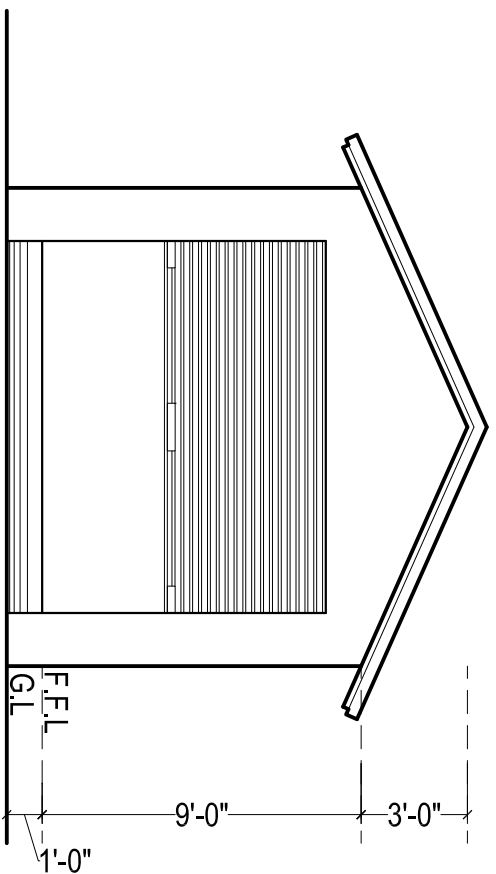


**TIE BEAM**

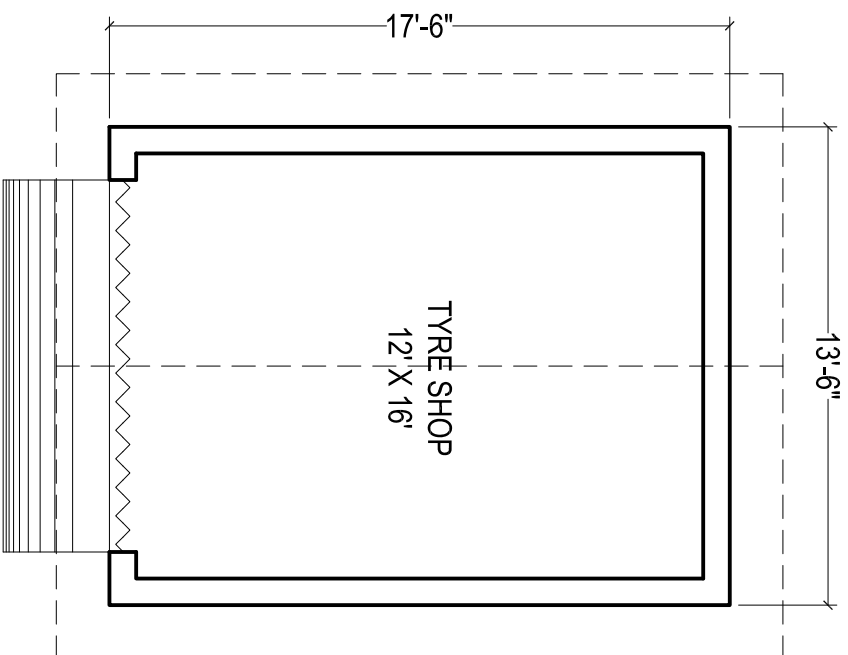


PROJECT:- <b>(REST AREA) CAFE / KHAWA KHANA</b>	CONTENTS:- <b>COLUMNS, FOUNDATION &amp; WALLS DETAIL</b>	M/S NESPAK PVT. LTD.	PROJECT DIRECTOR PMU KITE	DRG. NO:-	SHEET NO:-	PROJECT MANAGEMENT UNIT (PMU) KITE COMMUNICATION & WORKS DEPARTMENT
				DATE:- APRIL-2021	SCALE:- READ AS SHOWN	





**FRONT ELEVATION**



**TYRE SHOP**  
COVERED AREA = 236 SFT

**BUILDING SPECIFICATION**

- \* PCC (1:4:8) IN FOUNDATIONS
- \* 2" THICK DPC (DAMP PROOF COURSE) IN 1:2:4 PCC WITH 2 COATS OF HOT BITUMEN WITH POLYTHENE SHEET.
- \* BURNT BRICK MASONRY IN 1:6 CEMENT SAND RATIO MORTAR.
- \* 1/2" THICK PLASTER ON WALLS IN 1:6 CEMENT SAND RATIO.
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- \* ALL INTER FLOOR SLABS SHALL BE COVERED WITH 2" OF PCC (1:4:8) IN SLOP THEN 3/4" TERRAZZO FINISH WITH GLASS STRIPS.
- \* ALL GROUND FLOORS SHALL BE LAID ON COMPACTED EARTH THEN 6" OF WATERED AND RAMMED SAND THEN 4" OF (1:4:8) IN SLOPE THEN 2"(1:4:8) THEN 3/4" TERRAZZO WITH GLASS STRIPS.

PROJECT:-

(REST AREA)  
TYRE SHOP

CONTENTS:-

PLAN, ELEVATION,  
SPECIFICATION

PLINTH AREA:-

M/S NESPAK PVT. LTD.

APPROVED BY:-

PROJECT DIRECTOR PMU KITE

DRG. NO:-

DATE:-

APRIL-2021

SHEET NO:-

SCALE:-

READ AS  
SHOWN



PROJECT MANAGEMENT UNIT (PMU) KITE  
COMMUNICATION & WORKS DEPARTMENT