Ministry of Communications
The Islamic Republic of Pakistan

PAKISTAN TRANSPORT PLAN STUDY IN THE ISLAMIC REPUBLIC OF PAKISTAN (Phase II)

Final Report (Volume II: Preliminarily Design Drawing)

January 2007

JAPAN INTERNATIONAL COOPERATION AGENCY

NIPPON KOEI CO., LTD. & ALMEC CORPORATION

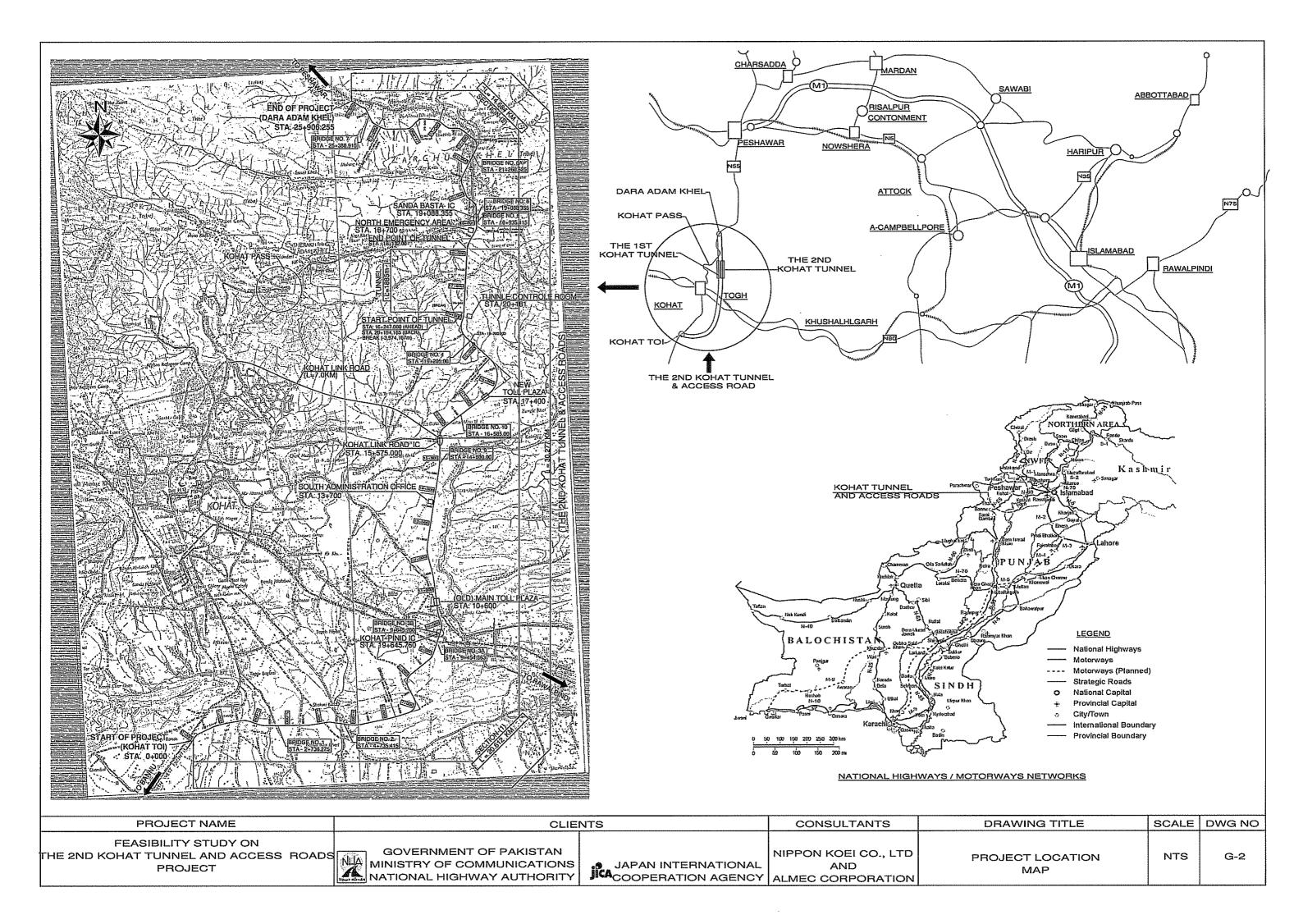
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RG.NO.	TITLE	DRG.NO.	TITLE	DRG.NO.	TITLE
ENERAL					
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	PLAN (STA. 10+500 - STA. 12+000)	BR3B-2	ELEVATION OF BRIDGE NO.3B R		
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1	PROFILE (STA. 13+500 - STA. 15+000)	BR06A-1a	GENERAL ARRANGEMENT OF BRIDGE NO.6A R (1)		
	PLAN (STA. 15+000 - STA. 16+500)	BR06A-1b	GENERAL ARRANGEMENT OF BRIDGE NO.6A R (2)	F-1	GENERAL VIEW OF TUNNEL FACILITIES INSTALLATION
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	PLAN (STA. 16+500 - STA. 18+000)	BR06A-3	DETAILED SECTIONS OF BRIDGE NO.6A R		
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	PROFILE (STA. 19+500 - STA. 20+186.738)	BR08-2	ELEVATION OF BRIDGE NO.8 R	MATERIAL	SOURCES
	PLAN (STA. 16+247 - STA. 17+300)	BR09-1	GENERAL ARRANGEMENT OF BRIDGE NO.9 R	MS-1	INFORMATION ON MATERIAL SOURCES
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,	PLAN & PROFILE (STA. 18+132 - STA. 19+700)				

PROJECT NAME	CLIE	NTS	CONSULTANTS	DRAWING TITLE	SCALE	DWG NO
FEASIBILITY STUDY ON THE 2ND KOHAT TUNNEL AND ACCESS ROADS PROJECT	GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	JAPAN INTERNATIONAL	,		NTS	G-1



	ABBREV	IATIONS		LEGEN	NDS
Α	AREA	m.	METER	PROPOSED CARRIAGE WAY	
ABUT.	ABUTMENT	MAX.	MAXIMUM	PROPERTY LINE	<u> </u>
AVE.	AVERAGE BEGINNING OR BEGIN	MIN.	MINIMUM	FENCE/ R.O.W. LIMIT	
BEG.	BEGINNING OF BEGIN	M.O.	MIDDLE ORDINATE CURVE)		quammana
BIT.	BITUMINOUS	MON.	MONUMENT	HOUSE	
€/CL.	CENTER LINE	N.C	NORMAL CROWN		guduumuu g
COMB. CONC.	COMBINATION CONCRETE	NO. P.C.	NUMBER POINT CURVATURE	MOSQUE	
CONSTR.	CONSTRUCTION	P.C.C.	POINT OF COMPOUND CURVE	ТОМВ	
CORR.	CORRECTION	P.G.L	PROPOSED GRADE LINE		llaunilla.
CULV.	CULVERT	P.G.E.	PROPOSED GRADE ELEVATION		Sorting Sorting
DIA PRØ	DIAMETER	P.I.	POINT OF INTERSECTION	TREES	a land a land
DIST.	DISTANCE	P.O.C.	POINT OF CURVE		
DWG.	DRAWING	P.O.T.	POINT OF TANGENT		
\triangle	DELTA OR DEFLECTION ANGLE	P/R	POINT OF ROTATION	GRAVE YARD	
VAR.	VARIES OR VARIABLE	P.R.C.	POINT OF REVERSE CURVATURE		
V.C.	VERTICAL CURVE	P.R.V.C.	POINT OF REVERSE VERTICAL CURVE	NATIONAL GRIDS COORDINATES	——— N
E.G.E.	EXISTING GROUND ELEVATION	R.T.	POINT OF TANGENCY		EA/EA-B
ELE.	ELEVATION	Lc.	LENGTH OF CIRCULAR CURVE	TRAVERSE STATIONS	
EXIST. E	EXISTING EXTERNAL DISTANCE (CURVE DATA)	TS.	BEGENNING OF TRANSTITION CURVE	POINT OF INTERSECTION	
F.R.E.	FINISHED ROAD ELEVATION	SC.	BEGINNING OF CIRCULAR CURVE	TUBE WELL	
Υ	VERTICAL OFFSET	CS.	END OF CIRCULAR CURVE	DRAINAGE / WATER COURSE	
GR.	GRAVEL	ST.	END OF TRANSITION CURVE		bhhhhhhhh
H.W.L.	HIGH WATER LEVEL	P.V.C.	POINT OF VERTICAL CURVE	CANAL	TATATA TATA
H.F.L.	HIGH FLOOD LEVEL	P.V.I.	POINT OF VENIAL INTERSECTION		444
Н	HEIGHT	P.V.T.	POINT VERTICAL TANGENCY	NALLAH (RIVER)	
H.P	HIGH POINT	R	RADIUS		
HORIZ.	HORIZONTAL INTERSECTION	R.C.	REMOVE ADVERSE CROWN, SUPPER ELEVATION AT NORMAL CROWN SLOPE	SLAB / BOX CULVERT	
I.L	INVERT LEVEL	R.C.C.P.	REINFORCED CEMENT CONCRETE PIPE	PIPE CULVERT	
L	LENGTH OF SUPPER ELEVATION	RD.	ROAD	THE COLVERN	ļl
LC.	RUNOFF LENGTH OF HORIZONTAL CURVE	REF.	REFERENCE	BRIDGE	
LM	LINER METERS	REQ,D.	REQUIRED		
LT	LEFT	RET.	RETAINING	KILN	
L.V.C.	LENGTH OF VERTICAL	R.M.T	REFERENCE MARK POINT	POWER LINE (L.T)	
Т.	CURVE TANGENT	R.O.W.	RIGHT OF WAY	POWER LINE (H.T)	-000-
D.S.T.	DOUBLE SURFACE TREATMENT	RT.	RIGHT	TELEPHONE LINE	
TRAV.	TRAVERSE	SE.	SUPPER ELEVATION	EXISTING R.O.W. BOUNDARY	
TYP.	TYPICAL	SECT.	SECTION	SURVEY OF PAKISTAN BENCH MARK	S O P BM. ⊠
		S.D.	SIGHT DISTANCE		
		SHT.	SHEET	ROAD SIDE DITCH	
		S.S.D.	STOPPING SIGHT DISTANCE	PROPOSED TUNNEL	<u> </u>
		STA.	STATION	STADT / END OF CUDVE	
		STD.	STANDARD	START / END OF CURVE	
				GROUTED RIP RAP	
				TRACK (KUTCHA)	=======================================
P	PROJECT NAME		CI	LIENTS	CONSULTANTS
FEA	ASIBILITY STUDY ON		COVERNMENT OF BAKISTAN		

GENERAL NOTES

- FIELD SURVEY WAS CARRIED OUT FROM MAY TO
 JUNE 2006. ALL STRUCTURES WITHIN 10m FROM
 RIGHT OF WAY WIDTH ON THE EAST SIDE. AT THE
 TIME SURVEY HAVE BEEN IDENTIFIED AND
 SHOWN ON DRAWINGS.
- 2. SURVEY OF PAKISTAN TRIANGULATION STATION

 LOCATED IN THE COMPOUND OF KOHAT RAILWAY

 STATION HAVING COORDINATES N=1038112.190

 METERS, E=3063023.120 METERS AND REDUCED

 LEVEL = 491.925 METERS AS OBTAINED FROM

 S.O.P WAS REFERENCED AS DATUM FOR FIELD

 WORK AND OFFICE COMPUTATIONS RELATING

 TO DESIGN OF ROAD.
- 3. ALL DIMENSIONS AND DISTANCES SHOWN ON DRAWINGS PERTAINING TO TYPICAL DETAILS AND ROAD PLANS AND PROFILES ARE IN METERS UNLESS OTHERWISE NOTED.
- 4. THE ROAD HAS BEEN PLANNED AS A PART OF
 THE FOUR LANE ROAD. (DUAL ROAD SYSTEM).
 THE FIRST STAGE OF WORK WAS COMPLETE IN
 JUNE 2003. AS TWO-LANE ROAD (SINGLE
 CARRIAGEWAY) INCLUDING A MAJOR AT-GRADE
 INTERSECTIONS BY 4-LANE.
- 5. THE CONSTRUCTION UNDER THE 2ND KOHAT

 TUNNEL AND ACCESS ROADS PROJECT IS THE

 2ND STAGE BY CONSTRUCTION OF A NEW TWO

 LANE CARRIAGEWAY.
- 6. WHERE R.O.W. LINES SHOWN ON THE DRAWINGS

 ARE THOSE ALREADY PURCHASED AND FENCED

 BY NHA.

PROJECT NAME	CLIE	NTS	CONSULTANTS	DRAWING TITLE	SCALE	DWG NO
FEASIBILITY STUDY ON THE 2ND KOHAT TUNNEL AND ACCESS ROADS PROJECT	GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	JAPAN INTERNATIONAL COOPERATION AGENCY	NIPPON KOEI CO., LTD AND AI MEC CORPORATION	ABBREVIATIONS, LEGENDS & GENERAL NOTES-(1)	NST	G-3

GENERAL NOTES

⁷ 7. Background of the Study

The scope of the 2nd Kohat Tunnel and Access Roads construction is to provide two additional lanes to the existing road to create a dual carriageway road. NHA already acquired the Right-of-Way (ROW) on the east side (right hand side) for the 2nd Kohat Access Road during the 1st Kohat Tunnel and Access Road construction. As there are no advantageous alternative routes, the preliminary design was carried out based the road and tunnel alignments recommended in Chapters 9 and 10 and in accordance with the design standards established in Chapter 8. The design results are reflected in Volume II (Preliminary Design Drawings) of the Feasibility Study Report.

8. Applied Design Standard

The Project aims at providing a dual carriageway by construction of two additional lanes on the east side (right-hand side towards Peshawar) of land in parallel to the existing road. The design standards applied for the Project road are as follows:

• Roadway and Structures: AASHTO and NHA

• Tunnel: Japanese Standard for Tunnel and Tunnel Facility Design

• Materials: Standard Construction Specifications, NHA.

⁷ 9. Road Geometry

The geometric design standards applied for the Project road are as shown in the following table.

Item	Unit		Design S	Standards	
		1st Kohat A	Access Road	2nd Kohat	Access Road
Section		South	North	South	North
Design Section	Km/h	90	80	90	80
Cross Section Elements:					
- Lane width	m	3.65	3.65	3.65	3.65
- Outer Shoulder Width	m	3.00	3.00	3.00	3.00
- Inner Shoulder Width	m	1.00	1.00	1.00	1.00
		(future	4-lanes)		
- Median Width	m	6.00	3.00	6.00	3.50
		(future	4-lanes)		
- Climbing Lane Width	m	3.00	-	-	-
- Crossfall of Traveled Way	%	2	2	2	2
- Crossfall of Shoulder	%	4	4	4	4
- Vertical Clearance	m	5.03	5.03	5.03	5.03
Horizontal & Vertical Alignment:					
Circular Curve:					
- Min. Radius	m	270	220	275	210
- Max. Superelevation Rate	%	10	10	10	10
Transition Curve:					
- Type of transition curve		-	-	Spiral Curve	-
- Min. Transition Curve Length	m	-	-	50	-
- Max. Radius for Use of	m	-	-	480	-
a Spiral Curve Transition *				(1200)	-
- Max. Grade	%	7	7	4	5

Note: * recommended max, radius for use of a transition curve if site condition allows.

¹ 10. Road Length and Breaks

The total Project length is 30.271 km from Sta.0+000 to Sta.25+906.255. Several breaks were inserted in the road alignment of the 1st Kohat Tunnel Access and Roads. These breaks are retained in principle as is necessary to ensure consistency between the two roads for cross drainages, bridges, tunnel and other structures.

Section	From	То	Break	Distance
	Sta.	Sta.	Length (m)	(m)
Section 1 Access	Start Point	Kohat Link IC		
Road	0+000.000	15+000.000		15,000.000
Section 2 Access	Kohat Link IC	South Portal		
Road	15+000.000	20+186.738		5,606.650
		16+247.000	-4,359.650	
Tunnel	South Portal	North Portal		
	16+247.000	18+132.000		1,885.000
Access	North Portal	End Point		
Road	18+132.000	25+906.255	-5.502	7,779.757
	Sub-Total for Sec	tion 2	-4,365.153	15,271.408
7	Total Length			30,271.408

Notes: * Break at Sta. 20+186.738 /Sta.16+247.000 (-3,939.738)

¹11. Road Length and Breaks

The "Standardization of Bridge Superstructures, NHA, 2005", "West Pakistan Code of Practice for Highway Bridges (WPCHB)" and the bridge design for the 1st Kohat Tunnel and Access Road are referred for bridge design. The live load of "Class A loading" specified in WPCHB, Article 2.4 is used for the design. WPCHB specifies the highway live loads on roadway bridges and incidental structures.

The design of the bridges for the 1st Kohat Tunnel Access Road was conducted in 1990 and the applied seismic force was 0.05g - 0.07g (see Figure 8.1) in Zone III. NHA has reviewed the Peak Ground Acceleration (seismic force) and seismic zone after the earthquake at Muzaffarabad on October 8, 2005. The new PGA (0.26g for the Project area) was used for the design of bridges under the 2nd Kohat Tunnel and Access Roads Project.

⁷12. Tunnel

The following table shows the standard support patters used for the tunnel design.

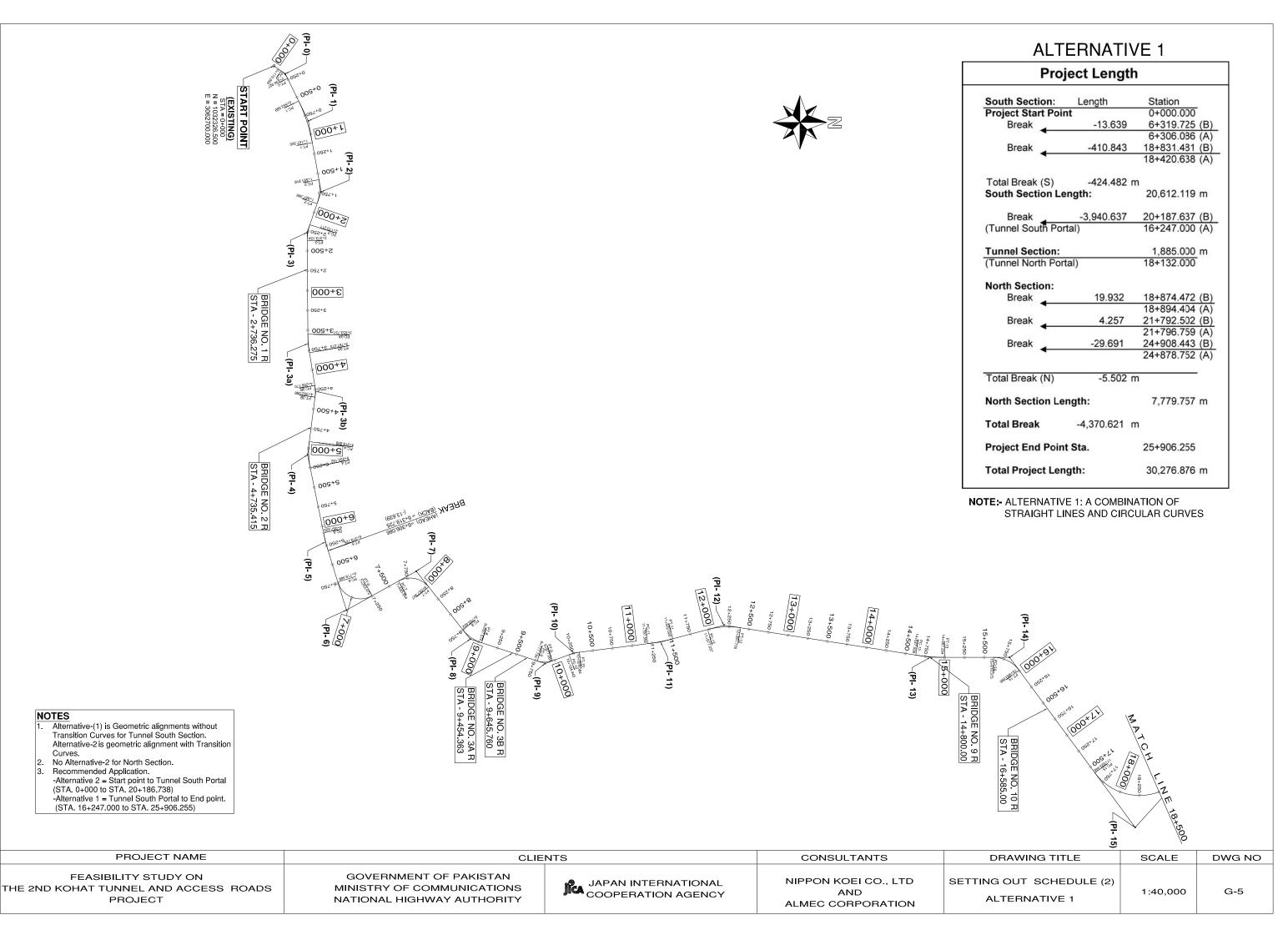
		Standard round		Rock bolt		Steel arch supporting			Shotcret		hickness m)	Over cut designed to allow ground deformation (cm)			
Grade of Ground	Excavation method	length (Upper	Length	Installation pitch			Lower	Standard	e thickness	Arch and		Upper	Lower		
		half) (m)		Circumferen tial (m)	Longitudina l (m)	Upper half		pitch (m)		side wall	Invert	half	half	Invert	
В	Full face method with auxiliary bench and upper half method	2.0	3.0	1.5 (upper half only)	2.0	None	None	-	5	30	0	0	0	0	
CI	Full face method with auxiliary bench and upper half method	1.5	3.0	1.5	1.5	None	None	-	10	30	0	0	0	0	
CII	Full face method with auxiliary bench	1.2	3.0	1.5	1.2	H-125 or	None in Principle	1.2	10	30	0	0	0	0	
	Upper half method	1.2		1.5	1.2	U-21	None	1.2	10	50	Ŭ		Ů		
DI	Full face method with auxiliary bench and upper half method	1.0	4.0	1.2	1.0	H-125 or U-21	H-125 or U-21	1.0	15	30	45	0	0	0	
DII	Full face method with auxiliary bench	1.0 or	4.0	1.2	1.0 or	H-125 or	H-125 or	1.0 or	20	30	50	10	10	0	
	Upper half method	less	7.0	1.2	less	U-29	U-21	less	20	50	30	10	0	0	

LIST OF CURVE DATA

					Al	ternative 1	l (withou	ıt a Tran	sition C	urve)												Altern	ative 2	with a T	ransition	Curve)						
	Coordi	nates	Distance			Bearing	,				(Curve Data															urve Data					
PI No.	F	N	(m)	(Radia	n) (Grade)	(Degree)	(De	gree)	PI Angl	le (Degree)	R	Т	E	Lc	REMARKS	R	CL	Lc	Es	èc		A1	Ts1	Ls1	X1	Y1	Xm1	·c	R1 è _s 1		A2	Ts2 Ls2
	_	.,	(111)				Deg. N	/lin. Sec.	Deg. 1	Min. Sec.	(m)	(m)	(m)	(m)		(m)	(m)	(m)	(m) D	eg. Min.	Sec.		(m)	(m)	(m)	(m)	(m)	(m)	Deg. Min.	Sec.		(m) (m)
South Section Start Point	3,062,422.086	1,032,157.830																														
Start Point	3.062,700,000	1.032.326.500	325,093													1																
PI 0		1,032,326,500	174,906		86 38.7458	34,8713	34	52 17	29	4 6	250	64,813	8,265	126.834	1							No transit	on cun/o									
PI1		1,032,760.000	660.113					56 22	-	51 46	2,000	278.638	19.316	553.711								No transit										
PI2	3,064,288.000		909.366					48 8		10 5	600	156.110	19.976	305.448		590	406.289	194.424	20.462	18 52	51	250	206.666	105.932	2 105.847	3.168	52.952	0.792	5 8	3 37	250	206.666 105.932
PI3	3,064,800.000	1,032,745.000	541.406	1.90	19 121.0782	108.9704	108	58 13	19	22 47	600	102.450	8.684	202.943	3	580	303.938	88.421	9.240	8 44	5	250	153.042	107.759	9 107.666	3.335	53.864	0.834	5 19	9 21	250	153.042 107.759
PI 3a		1,032,755.000	1,400.036	1.56				35 27		55 13	1,500	117.003	4.556	233.533								No transit										
PI 3b		1,032,853.789	609.384	1.40				40 14	-	43 15	500	73.481	5.371	145.918		500		65.917		7 33			113.55	1	1			0.533	4 35			113.550 80.000
PI4 PI5	3,067,602.038	1,032,749.917	807.424 1,120.796	1.69				23 29 24 53		58 36 32 27	1,000 2,400	167.132 116.140	13.870 2.808	331.203 232.100		980	449.581	199.581	14.267	11 40	7	350 No transit	226.39	125.000	124.949	2.657	62.492	0.664	3 39	9 15	350	226.393 125.000
PI6		1,033,240.000	899.903					52 26		59 1	300	370.362	176.621	533.986		296	636.325	417.406	176,942	80 47	45	180		109.459	9 109.086	6.730	54,667	1,685	10 35	5 38	180	422.170 109.459
PI7		1,034,120.000	1,007.224					53 25	+	36 50	300	254.481	93.396	422.093		294		303.447		59 8			305.88					1.719	10 44			305.887 110.204
PI8	3,069,925,000	1,034,800,000	1,092.440	0.89	89 57.2267	51.5040	51	30 14	33	27 7	500	150.254	22,088	291,923	3	490	384.860	187,309	22.513	21 54	8	220	196.869	98.776	98.675	3,316	49,371	0.829	5 46	30	220	196.869 98.776
PI9	3,070,233.000	1,035,745,000	993,926	0.31	51 20.0579	18,0521	18	3 8	38	4 23	300	103,512	17.356	199,350)	290	260,291	125,119	17.471	24 43	12	140	134.06	67.586	67.494	2,623	33,778	0.656	6 40	36	140	134.066 67.586
PI 10		1,036,110.000	388,477		38 377.7545			58 45		51 25	600	67,603	3,797	134,639		560	197,090	54.233	3,925	5 32	56	200		71,429	9 71.400	1,518	35,709	0.380	3 39	9 15	200	98.848 71.429
PI 11	3,069,963.000	1,037,200.000	1,098.576		82 392.0402			50 10		44 43	2,400	162.465	5.493	324.434		+			00	40 -		No transit		45								070 000 :
PI 12		1,038,000.000	827.870 2.631.354		30 383.4343 45 9.8375			5 27 51 14		45 46 49 30	1,000 2.400	210.395 185.199	21.893	414.741 369.666		990	534.329	286.854	22.333	16 36	6	350 No transit	270.28	123.737	7 123.689	2.577	61.861	0.644	3 34	4 50	350	270.286 123.737
PI 13 PI 14		1,040,600,000	1,000.000					1 43		30 10	2,400	185.199 201.629	7.135 47.945	369,666		390	466.746	261,618	48.004	38 26	5		on curve 248.40	102.56/	4 102,387	4.490	51.253	1.123	7 32	2 2	200	248.407 102.564
PI 15		1,043,184.270	2,665.416	0.93				31 54	-	20 4	700	854.237	404.409	1,238.035		699		1,146.852		94 0		250						0.476	3 39	-		898.297 89.413
Sta.19+200	3,071,088.752	1,044,281.529	1,633.598	5.44	89 346.8856	312.1970	312	11 49)																							
(4-lane CL)																																
Right Lane Center	-		at Sta.19+20	00												_																
PI A1	3,071,507.614			-				_		0 39	10,000	53.621	0.144	107.241		-					-+	_										
PI A2	3,071,295.005	1,044,099.390	284.238	5.43	81 346.2029	311.5826	311	34 57	0	0 39	10,000	53.621	0.144	107.241	1																	
South and Nor			ns of Exi	isting R	oad (Left L	.anes)																									_	
Sta.19+200 (L)	3,071,084.285														2-lane L Start	4																
PI 23L PI 24L	3,070,733.579	1,044,594.570	473.390		89 346.8856 24 21.7965			11 49 37 1		25 11 26 9	450 450	300.225 64.990	90.957 4.669	529.514		-																
S.Portal (L)		1,045,013.593	444.842 147.762					10 51		0 1	450	64,990	4.669	129.088		1							-+									
PI 25L	3,071,001.871		1,995,969				-	10 51	+	56 12	1,000	230,285	26,173	452.679		1																
LFP	3,071,160.602		326.205					7 2	2						2-lane L End																	
South and Nor	h Bortal Ann	roach Soctio	ne of Nov	w Boad	(Pight La	nac)											1				1		Ι	1		Τ	1					
Sta.19+200 (R)	3.071.091.170		nis oi nev	w Roau	(Rigiil Lai	les)									2-lane R Start																	
PI 23R	3,070,748.219		462,921	5.44	89 346,8855	312,1969	312	11 49	69	27 2	400	277.235	86.682	484.857	Z-ane K Start	400	560.583	409.129	87.408	58 36	12	175	315.89	9 76.56	3 76.492	2 2,44	1 38.270	0.610	5 2	9 0	173.08	315,102 74,892
PI 24R	3,070,912.755		446.020		78 24.0529					28 0	600	97.538	7.876	193.384		600				12 6	2	200	130.91						3 1			130.918 66.667
S.Portal (R)	3,070,921.078	1,045,159.462	150.000	0.05	55 3.5340	3.1808	3	10 51	0	0 0																						
PI 25R	3,071,033.842		2,032.247					10 51		52 20	1,200	275.632	31.248	541.864								No trans	tion curve									
JP (R)	3,071,170.037	1,047,433.747	280.457		71 32.2810	29.0529	29	3 11							2-lane R End																	
			2,096.520	(UK)					T T							7																
North Section JP (4-lane CL)	3,071,165.101	1,047,436.496																														
PI 26		1,047,655.054	250.017	0.50	71 32.281	29.0529	29	3 1	33	41 6	260	78.709	11.653	152.858																		
PI 27	3,071,259.178	1,047,992.449	338.501	6.20	23 394.853	355.3680	355	22 6	6	17 50	2,400	132.022	3.628	263.778																		
PI 28		1,048,385.997	393.714					39 56		2 31	275		32.341	254.583		4																
PI 29		1,048,620.835	376.225		65 342.914			37 24		55 25	300		12.030	167.151		4																
PI 30		1,049,118.757	528.067		37 378.385			32 48		9 37	280		24.362	225.581		-		No Alterna	ative 2 for	North	Secti	on									1	
PI 31a PI 32		1,050,221.451	1,234.382 732.732					42 25 28 4°		13 44 3 44	260 280	211.405 102.084	75.100 18,029	354,991 195,781		1													$\overline{}$			
PI 32		1,050,667,746	348,089					24 57		5 34	280	99,409	17.123	195.781		1												OTES				
PI 34	3,070,089.711	1,050,932.023	434.036		70 341.676			30 3		0 21	300		13.712	178.054		1											1		ve-(1) is	Geometri	c alianm	ents without
PI 35a	3,069,539.653	1,050,965.694	551.088		35 303.892			30 10		20 18	300		32.849	268.807													["	Transitio	n Curves	s for Tunn	el South	Section.
PI 36a	3,069,261.000	1,050,658.000	415.118	3.87	75 246.849	222.1645	222	9 52	2 46	52 31	260	112.715	23.381	212,714		1						_						Alternati Curves.	ive-21s ge	eometric a	ulgnmen	t with Transition
PI 37		1,050,645,039	773.487					2 24		39 46	500		16.060	250.129		4											2.	No Alter	native 2 I	for North	Section.	
PI 38		1,050,837,362	413,704			-				13 47	420		23.185	272.908		-			_								3.			opplication		el South Portal
PI 39	3,067,906.909	1,051,295.794 1,051,323.022	506.103 118.010		57 372.1469 52 314.8220			55 56 20 23		35 33 13 21	150 200		16.602 2.556	135.069 63.608		-												(STA. 0	+000 to S	STA. 20+1	86.738)	
End Point	3,067,792.083		137.926		33 335.069			33 44		13 21	200	32.075	2.556	63.608	1	1														unnel So 00 to STA		al to End point. 6.255)
_no rout	0,007,077,000	.,001,000.210	107.020	, 5.20	20 000.000	- 001.0020	001	I							1	سالت.	1	-														,

CLIENTS CONSULTANTS DRAWING TITLE SCALE DWG NO FEASIBILITY STUDY ON GOVERNMENT OF PAKISTAN NIPPON KOEI CO., LTD MINISTRY OF COMMUNICATIONS
NATIONAL HIGHWAY AUTHORITY THE 2ND KOHAT TUNNEL AND ACCESS ROADS SETTING OUT SCHEDULE (1) 1:8,000 JAPAN INTERNATIONAL AND COOPERATION AGENCY ALMEC CORPORATION G-5 PROJECT

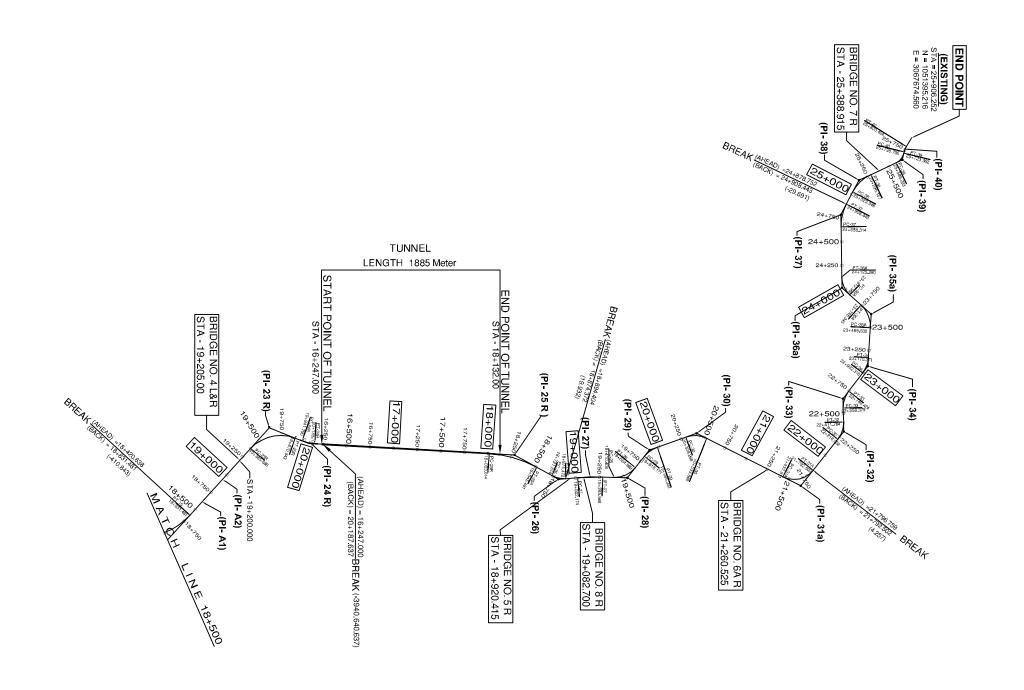
PROJECT NAME



NOTES

Curves.





PROJECT NAME	CLIE	NTS	CONSULTANTS	DRAWING TITLE	SCALE	DWG NO
FEASIBILITY STUDY ON THE 2ND KOHAT TUNNEL AND ACCESS ROADS PROJECT	GOVERNMENT OF PAKISTAN MINISTRY OF COMMUNICATIONS NATIONAL HIGHWAY AUTHORITY	JAPAN INTERNATIONAL COOPERATION AGENCY	NIPPON KOEI CO., LTD AND ALMEC CORPORATION	SETTING OUT SCHEDULE (3) ALTERNATIVE 1	1:40,000	G-5