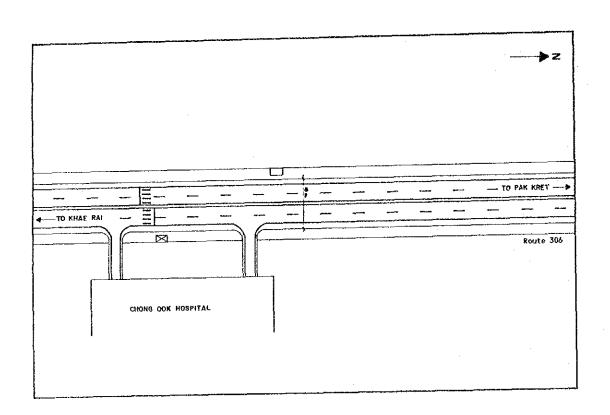
(Form - 1)

LOCATION NO.	37		LOC.	ATION NAME		Soung Og Ho	spital	
ROUTE NO	306	CONTROL SECTION NO	103	K.P OF PROBLEM	K.P 8,000 -	KP 9.000	ROAD CONDITION	Roadway Section
K.P QF CONTROL SECT.	K.P. 6.000	кР	26.674	LOCATION			DISTRICT CODE	416
DIVISION NAME		BANGKOK		DISTRICT NAME	PATRUMT	HANI	0.0111101 0000	. 10
TRAFFIC VOLUME	(WHOLE DAY) MAJOR R	OAD 4	9,189	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	31.3	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	425
( VEHICLES ) ( P.C.U. )	MINOR R (PEAK HOUR) MAJOR R MINOR R	040	3,356	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD	32.8	ACCIDENT RATE (PERSONS/100 MIL.VEH KM.)	22.5
NO. OF ACCIDENTS(CASES)		1		CASUALITIES (PERSONS)	(FATALITIES)	0 2	WHOLE CONTROL SECTION	44.6

EXISTING ROAD CONDITION DIAGRAM

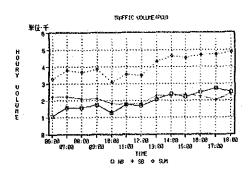


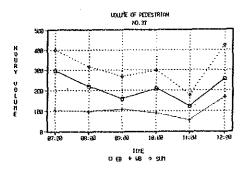
## COMMENTS ON EXISTING ROAD CONDITION

This is the intersection of R306 and a feeder road leading to a hospital. The R306 section is an undivided four-lane road section.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

## <u> Traffic Data Analysis</u>





## Accident Data Analysis

Number of Accident and Casualties

NURS	Jer (	DI NU	TOWNS ON C	gara,	rrea	·							<del></del>				
		CONTROL	T			C VOLUME	MUMBER		CASUALT	iES		A	CCIDENT RA	řĒ			REMARKS
LION	₩0.	SECTION	K.PK.P.	(KH)	(POJ/DAY)	VENICLE	OF	DEATH (CASES)	INJURY (CASES)		ACCIDENT DENSITY	ALL ACCIDENTS	DEATH		DEATH AUP [HAURY	SECTION	
¥0.					(POJ/OXI)	ALLONG 164	DENTS (CASES)	i` .			(CASES/	(CASES/ 100 HIL.	TIES/100		(CASUL- TIES/100	TIES/100	
-	١	· .		ļ				<u> </u>		,		VEH.XM.)	HIL.VEH.	HIL.VEH.	MIL'AEA'	MJL.YEN.	
	Í	L		1	ــــــــــــــــــــــــــــــــــــــ				!						22.5	44.6	1
37	306	103	8+000 - 9+000	1,000			1	0	2	2	1.0	11.2	0.0	22.5	22,5		

**Kumber of Accident by cause** 

LI CHARLE	er 01	MAC S CICA		CATALO C							
NO.	ROUTE NO.	CONTROL SECTION NO.	OVER	NUMBER OF ALLURE TO YIELD TO ROW	INPROPER	VERICLE	DRUNKEN	SLEEPY		SUN	REMARKS
37	306	103	1	0	0	0	Ó	0	0.		Í

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R306 is a primary highway with a high traffic volume (RHV is 31%).

The accident frequency is low (only 1 case recorded).

## PROBLEMS

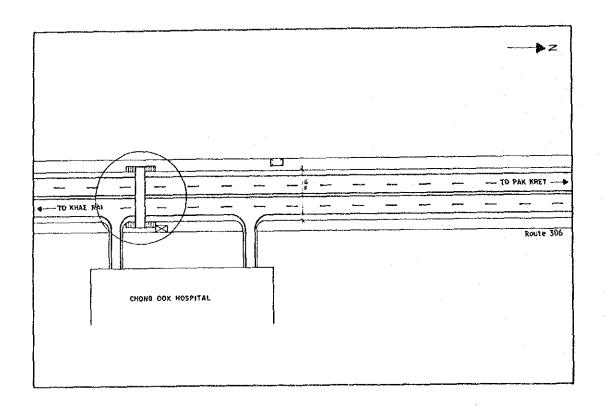
The pedestrian crossing is in a dangerous condition.

### MEASURES

The installation of a pedestrian overpass is suggested.

## EVALUATION

Installation of pedestrian overpass: Satisfies criteria for improvement.

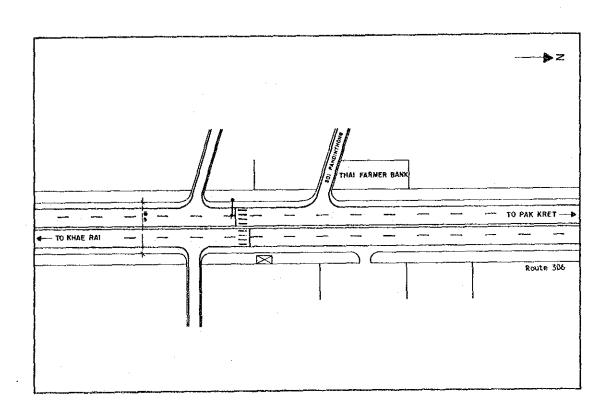


DIAGNOSTIC SHEET OF PROBLEM LOCATIONS

(Form - 1)

LOCATION NO.	ATION NO. 38 LO				Thai Farmer Bank							
ROUTE NO.	306	CONTROL SECTION NO.	103	K.P. OF PROBLEM	K.P. 8.500	KP 9.500	ROAD CONDITION	Roadway Section				
K.P. OF CONTROL SECT.	к.р. 6.000	) — K.P.	26.674	LOCATION	K-1 8.300 ·		- Continue	Section				
DIVISION NAME		BANGKOK		DISTRICT NAME	MUHTAS	THANI	DISTRICT CODE	416				
TRAFFIC VOLUME	(WHOLE DAY MAJOR I	ROAD 4	9,189	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	31.3	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	294				
( VEHICLES ) ( P.C.U.)	( PEAK HOUR MAJOR I MINOR	) ROAD 3	3,356	HEAVY VEHICLES (%)	( PEAK HOUR ) MAJOR ROAD MINOR ROAD	32.8	ACCIDENT RATE (PERSONS/100 MIL. VEH KM)	101.2				
NO. OF				CASUALITIES	(FATALITIES)	6						
ACCIDENTS (CASES)		7		(PERSONS)	(INJURIES)	3	WHOLE CONTROL SECTION	44.6				

EXISTING ROAD CONDITION DIAGRAM



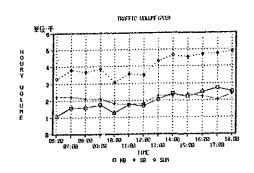
## COMMENTS ON EXISTING ROAD CONDITION

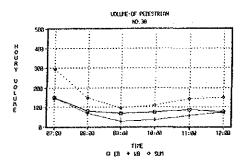
TRAFFIC SAFETY/CONTROL DEVICES INSTALLED

This is the intersection of R306 and a soi. The R306 section is a four-lane section with no median.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

Traffic Data Analysis





## Accident Data Analysis

Number of Accident and Casualties

HUMB	Der (	ЭТ АСС	CERT BRU L		1162											···	
		CONTROL				C VOLUME	HUMBER		CASUALT	168		. A	CCIDENT'RA	TE		ACCIDENT RATE OF	REMARKS
SEC	kO.	SECTION	K.PK.P.	LENGTH (XM)	ADI	VEHICLE	OF		INJURY (CASES)		ACCIDENT DENSITY	ALL ACCIDENTS	DEATH	INNEX	DEATH AND INJURY	CONTROL SECTION	
₩0.	İ	1			(PW/DAT)	KILONETER	ACCI- DENTS (CASES)		(CASES)		(CASES/	(CASES/	(CASUAL: TIES/100	(CASUAL- TIES/100	CASUL- TIES/100	(CASUL-	
												VEH.IXI.)	MIL.VEH.	MIL.VEH.	MIL.VEH.	MIL.VEN.	
38	306	103	8+500 - 9+500	1.000	24,370	24,370	7	6	3	9	7.0	78.7	67.5	33.7	101.2	44.6	

NUMBER OF ACCIDENT by type

| NO. | SCITION | NO. | SCITION | NIT 
Number of Accident by cause

						CONTRACTOR OF THE PARTY OF THE					
	ROUTE	CONTROL		NUMBER O	FACCIDE	NTS BY C	AUSE OF	ACCIDENT			
NO.	NO.	SECTION NO.	SPEED	to Aterd		VERICLE DEFECTS		SLEEPY	OTHERS	KUZ	REMARKS
38	306	103	LINIT 4	TO ROW	1		0	0	1	7	

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R306 is a primary highway with a high traffic volume (RHV is 31%).

The accident frequency is low (only 7 cases recorded), of which 4 were caused by speeding.

# PROBLEMS

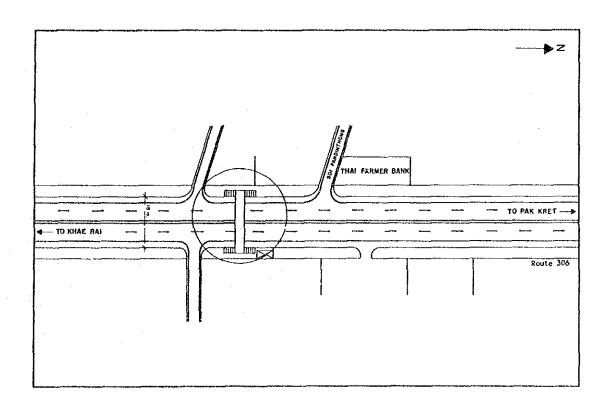
The pedestrian crossing is in a dangerous condition.

### MEASURES

The installation of a pedestrian overpass is suggested.

## **EVALUATION**

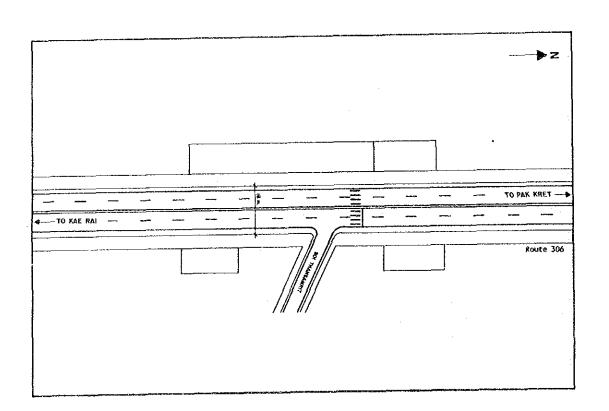
Installation of pedestrian overpass: Satisfies criteria for improvement.



(Form - 1)

LOCATION NO.	3	9	LO	CATION NAME		Tansamrit P	attena		
ROUTE NO.	306	CONTROL SECTION NO.	103	K.P. OF PROBLEM	кр 9.000 —	KP 10.000	ROAD CONDITION	Roadway Section	
K.P. OF CONTROL SECT.	K.P 6.000	— К.Р	26.674	LOCATION			DISTRICT CODE	/14	
DIVISION NAME		BANGKOK		DISTRICT NAME	PATHU	THAN!	DISTRICT CODE	416	
TOASSE VOLUME	(WHOLE DAY MAJOR F	ROAD 49	, 189	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	31.3	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	331	
TRAFFIC VOLUME ( VEHICLES ) ( P.C.U.)	MINOR I (PEAK HOUR MAJOR I MINOR I	) ROAD 3,	356	HEAVY VEHICLES	(PEAK HOUR) MAJOR ROAD MINOR ROAD	32.8	ACCIDENT RATE (PERSONS/IOO MIL. VEH. KM.)	179.9	
NO. OF ACCIDENTS(CASES)		10		CASUALITIES (PERSONS)	(FATALITIES)	13 3	WHOLE CONTROL SECTION	44.6	

EXISTING ROAD CONDITION DIAGRAM

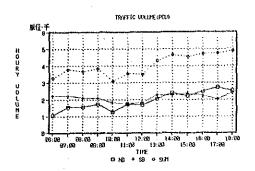


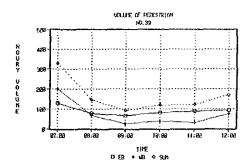
## COMMENTS ON EXISTING ROAD CONDITION

This is the intersection of R306 and a soi. The R306 section is a four-lane section with no median. R306 has an extra lane serving the soi.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

Traffic Data Analysis





## Accident Data Analysis

Number of Accident and Casualties

-	<b>UNE</b>	er (	OT ACC	CIQENLERE C	92138	LIES												7
			CONTROL			TRAFFI	C YOLUNE	MUNRER		CASUALT	IES		A.	CCIDENT RA	TE		RATE OF	REMARKS
	SEC- TION NO.	BQ-	NO.	K.PK.P.	LENGTH (XH)	ADT (POU/DAY)	KILOMETER KEHICLE	OF ACCI	OEATH (CASES)	(CASES)	AND	ACCIDENT DENSITY (CASES/	ALL ACCIDENTS (CASES/	DEATH (CASSAL-	SWARY CASUAL-	DEATH AND INJUNY (CASIN -	CONTROL SECTION (CASUL	
-								(CASES)			(CASES)	(CV2E2)	100 HIL. VEH.KH.)	TIES/100 MIL.VEH.	TIES/100 MIL.VEH.		TIES/100 NJL.VEN. C.NE	
1		l	l	<u></u>	<b></b> -						<b> </b> :		<u></u>					·
1	39	306	103	9+000 - 10+000	1.000	24,370	24,370	10	13	3	16	10.0	112.4	146.1	33.7	179.9	44.6	

•	Numb	er of	Accide	nt by o	euse							
	NO.	ROUTE NO.	CONTROL SECTION NO.	OVER	FAILURE	F ACCIDE IMPROPER PASSING	VEHICLE	DRUNKEN			SUM	REMARKS
	39	306	103	4	3	1	0	0	. 0	2	10	

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R306 is a primary highway with a high traffic volume (RHV is 31%).

There were four accidents due to speeding, and three due to traffic running off the road.

### PROBLEMS

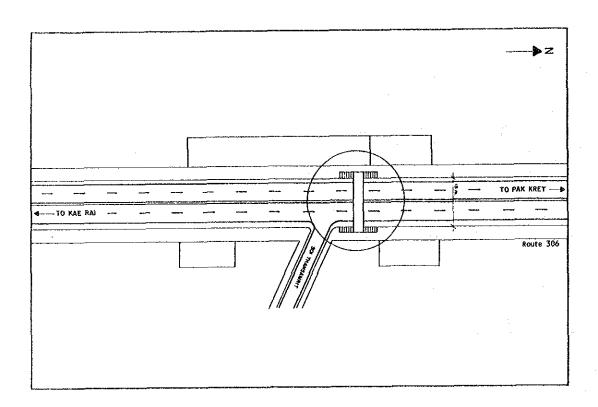
The pedestrian crossing is in a dangerous condition.

## MEASURES

The installation of a pedestrian overpass is suggested.

## **EVALUATION**

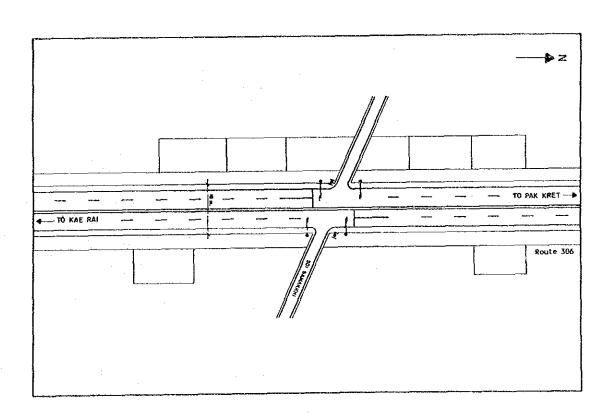
Installation of pedestrian overpass: Satisfies criteria for improvement.



(Form - 1)

LOCATION NO.	40	)	LOCA	ATION NAME		Samak	Ki	
ROUTE NO.	306	CONTROL SECTION NO.	103	K.P. OF PROBLEM	кр 11.000 —	к.г. 12.000	ROAD CONDITION	Roadway Section
K.P OF CONTROL SECT	K.P 6.000	— К.Р.	26.674	LOCATION	K.1 11.000			·····
DIVISION NAME		BANGKOK		DISTRICT NAME	PATHUM	THANI	DISTRICT CODE	416
TRAFFIC VOLUME ( VEHICLES ) ( P.C.U.)	(WHOLE DAY) MAJOR R	OAD 49	, 189	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	31.3	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	845
	( PEAK HOUR ) MAJOR F	ROAO 3	,356	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD	32.8	ACCIDENT RATE (PERSONS/100 MIL. VEH KM.)	101.2
NO. OF ACCIDENTS(CASES)		5	·	CASUALITIES (PERSONS)	(FAYALITIES) (INJURIES)	2 7	WHOLE CONTROL SECTION	44.6

EXISTING ROAD CONDITION DIAGRAM

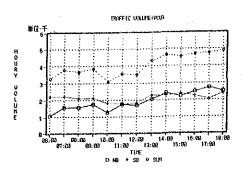


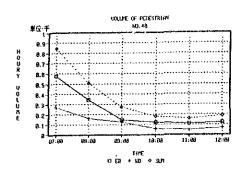
## COMMENTS ON EXISTING ROAD CONDITION

This is the intersection of R306 and a soi. The R306 section is a four-lane section with no median. Traffic signals have been installed but are not operational.

TRAFFIC SIGNAL	0
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

# Traffic Data Analysis





## Accident Data Analysis

Number of Accident and Casualties

MUMB		CONTROL		0300	TRAFFI	C YOLUKE	Γ	Γ	CASUALI	IES		A	CCIDENT RA	i E		ACCIDENT PATE OF	REMARKS
SEC- 110N NO.	NO.	SECTION NO.	K.PK.P.	LENGTK (104)	ADT	VEHICLE KILOMETER	MUMBER OF ACCI GENTS (CASES)		(CASES)	AND	(CASES/	ALL ACCIDENTS (CASES/ 100 MIL. VEN.KH.)	DEATM (CASUAL- TIES/100 NIL.VEN.	(CASUAL		CONTROL SECTION (CASUL- TIES/100 NIL.VEH- KM.)	
40	306	103	11+000 - 12+000	1.000	24,370	24,370	5	2	7	9	5.0	56.2	22.5	78.7	101.2	44.6	

					t by 1									 		
	NO.		CONTROL				M	LIMBER OF	ACCIDENT	S BY TYPE	OF ACCIO	ENT (CASI		 	[arusas]	SUM
		NO.	SECTION NO.	MIT	HIT		OFFOSED		COLLI	INTER-		IMPROPER TURNING	CONTROL	TRAIN	OTHERS	***
			l	TRIANS		PASSING	VEHICLE	SION	SION	SECT ION	SIGN			 		
ľ	46	306	103	0	0	0	0	3	1	0	1 1			 		

Numb	er of	Acciden	t by c	ause	
	ROUTE	CONTROL		NUMBER OF ACCIDENTS BY CAUSE OF ACCIDENT	
NO.	NO.	SECTION	OVER	FAILURE EMPROPERNEHICLE DRUNKEN	REKARKS
		NO.	SPEED	TO VIELDPASSING DEFECTS DRIVER SLEEPY OTHERS SUN	1
			LIMIT	TO ROW	
40	306	103			\$

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R306 is a primary highway with a high traffic volume (RHV is 31%).

The accident frequency is low (only 5 cases recorded), of which three involved vehicles running off the road.

## PROBLEMS

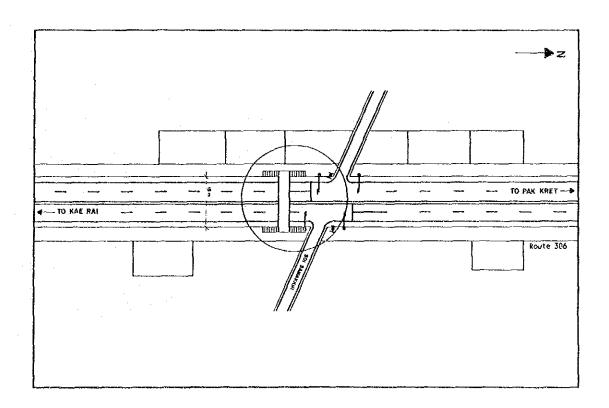
The pedestrian crossing is in a dangerous condition.

## **HEASURES**

The installation of a pedestrian overpass is suggested.

## **EVALUATION**

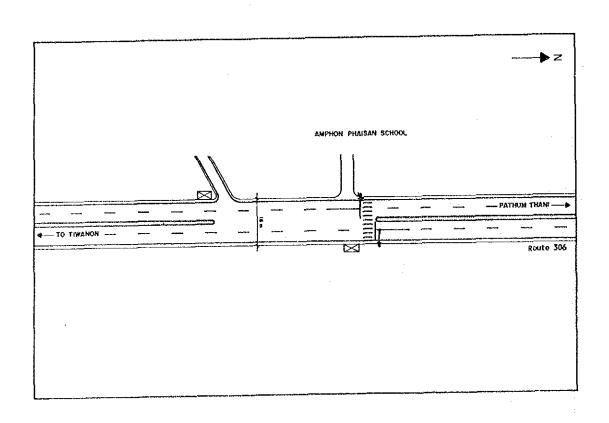
Installation of pedestrian overpass: Satisfies criteria for improvement.



(Form - 1)

LOCATION NO.	41		LOC	ATION NAME		Amphon Paisa	n School	
ROUTE NO.	306	CONTROL. SECTION NO.	103	K.P. OF PROBLEM	K.P 16.000 -	KP 17.000	ROAD CONDITION	Roadway Section
K.P OF CONTROL SECT	к.р. 6.000	— К.Р.	26.674	LOCATION			DISTRICT CODE	416
DIVISION NAME		BANGKOK		DISTRICT NAME	PATHUM	THANI	0.01(0. 0002	
TRAFFIC VOLUME ( VEHICLES ) ( P.C.U.)	( WHOLE DAY ) MAJOR R	OAD 49	7,189	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	31.3	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR )	205
	MINOR R (PEAK HOUR) MAJOR R MINOR R	KOAD 3	3,356	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD	32.8	ACCIDENT RATE (PERSONS/100 MIL, VEH KM.)	33.7
NO. OF ACCIDENTS(CASES)		2		CASUALITIES (PERSONS)	(FATALITIES) (INJÚRIES)	2	WHOLE CONTROL SECTION	44.6

EXISTING ROAD CONDITION DIAGRAM

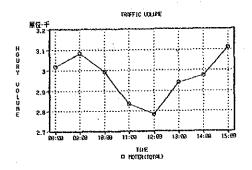


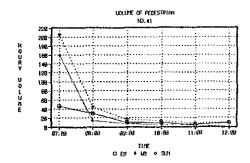
## COMMENTS ON EXISTING ROAD CONDITION

This is the uninterrupted flow section of R306, with a school facing its roadway. It has a narrow median and a median opening. Pedestrian push-button signals have been installed.

TRAFFIC SIGNAL	0
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

## Traffic Data Analysis





## Accident Data Analysis

H LEW		UI AU	CIOCHIC OILC				·									ACCIDENT	
STUD		E CONTROL				C VOLUME			CASUALT	IES		A	CCIDENT RAT	E		RATE OF	REMARKS
SEC	₩0.	SECTION	K.PK.P.	LENGTH (KM)	ADT	VENICLE	Oř.	DEATH	INJURY		ACCIDENT	ALL	DEATH	INJURY	DEATH AND INJURY	CONTROL SECTION	
10	1	, To	Į.	\-"		KILOMETER		(CASES)	(CASES)		DENSITY (CASES/	ACCIDENTS (CASES)	(CASUAL	(CASUAL-	(CASIA -	(CASAR-	1
1	1	1	1			i '	(CASES)		l	(CASES)		100 NIL	TIES/100	TIES/100	TIES/100	TIES/100 HIL.VEH.	
1		1	1	1		<b>!</b> .		ŀ				VEH.KM.)	MIL.VEH.	MIL.VER.	KM.)	ix.)	
L	_i	_				<del></del> -				— <u> </u>		77.5	22.5	11.2	33.7	44.6	
61	306		16+000 - 17+000	1.000	24,370	24,370	. 5	2	11	5	2.0	22.5	22.3		l		l
	1		1	1		+ + +											

Nu	aber	of Ac	ciden	t by (	type			·								
ko.		CONTROL SECTION								·····	DENT (CASI				OTHERS	SLEK
		NO.	HIT PEDES- TRIANS	BICACLE HIL	HET DURING PASSING	OPPOSED	REAR END COLLI- SIOH	COLLI	NIT AT INTER- SECTION	SIDE COLLI- SION	IMPROPER TURKING	CONTROL	FIXED OSJECT	TRAIN	UINCKS	
41	306	103	0	0	0	0	<u>_</u>	0	0	1	0	0	0	0	0	2
Nu	mber	of Ac	ciden	t by	cause											

-		1100100-			
	ROUTE	CONTROL		NUMBER OF ACCIDENTS BY CAUSE OF ACCIDENT	
NO.	NO.	SECTION NO.		FAILURE IMPROPERVEHICLE DRUNKEN TO YIELDPASSING DEFECTS DRIVEN SLEEPY OTHERS SUR	REMARKS
			LINIT	TO 80W	2
41	306	103	<u> </u>		5.1

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R306 is a primary highway with a high traffic volume (RHV is 31%).

The accident frequency is low (2 cases).

## PROBLEMS

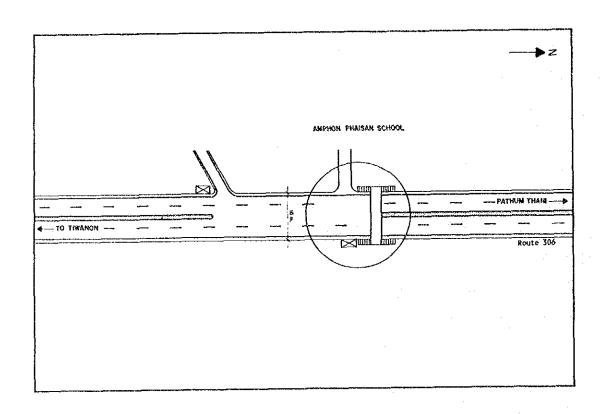
The pedestrian crossing is in a dangerous condition.

### MEASURES

The installation of a pedestrian overpass is suggested.

## **EVALUATION**

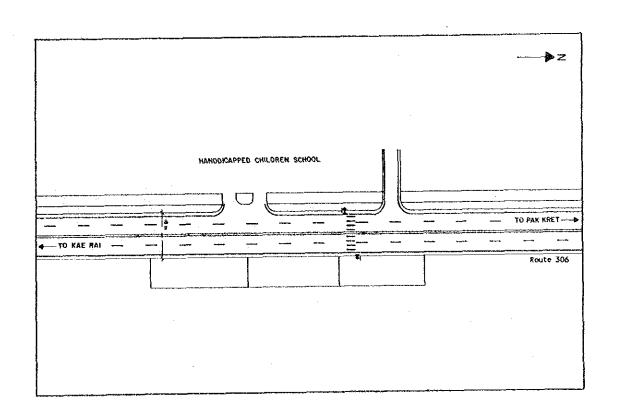
Installation of pedestrian overpass: Satisfies criteria for improvement.



(Form - 1)

LOCATION NO.	4	2	LOC	ATION NAME	Ha Y	aek Pakket	
ROUTE NO	306	CONTROL SECTION NO.	103	K.P. OF PROBLEM	K.P 13.000 - K.F 14.00	ROAD CONDITION	Roadway Section
K.P. OF CONTROL SECT.	K.P. 6.000	→ K.P	26.674	LOCATION			
DIVISION NAME		BANGKOK		DISTRICT NAME	PATHUMTHAN1	DISTRICT CODE	416
TRAFFIC VOLUME	(WHOLE DAY MAJOR (	ROAD 49,1	89	PERCENT OF	(WHOLE DAY) MAJOR ROAD 31.3 MINOR ROAD	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR )	339
( VEHICLES ) ( P.C.U.)	MINOR ROAD (PEAK HOUR) MAJOR ROAD 3,356 MINOR ROAD			HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD	ACCIDENT RATE { PERSONS / 100 MIL, VEH, KM. }	0.0
NO. OF ACCIDENTS(CASES)		0		CASUALITIES (PERSONS)	(FATALITIES) 0 (INJURIES) 0	WHOLE CONTROL SECTION	44.6

EXISTING ROAD CONDITION DIAGRAM

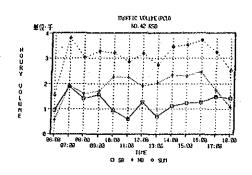


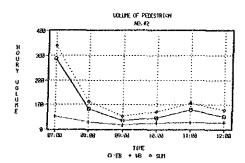
## COMMENTS ON EXISTING ROAD CONDITION

This is the intersection of R306 and a feeder road to a school. The R306 section is a four-lane section with a median. Pedestrian push-button signals have been installed.

TRAFFIC SIGNAL	0
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

Traffic Data Analysis





## Accident Data Analysis

Number of Accident and Casualties

	ROUTE	CONTROL			TRAFFIC VOLUME CASUALTIES ACCIDENT RATE						E.		ACCIDENT RATE OF	REMARKS			
SEC- TION NO.	kű.	NO.	K.P.·K.P.	(KA)	TGA.	VEHICLE KILONETER	QF	DEATH (CASES)	INJURY (EASES)		ACCIDENT DENSITY	ACCIDENTS	DEATH		GIA HTA30 YEUNNI	CONTROL SECTION	
							DENIS (CASES)	i ·		(CASES)	(CASES/	(CASES/ 100 RIL, VEH.KH.)	CASUAL- TLES/100 MTL.VEH.	TIES/100 HIL.VEH.	TIES/100	(CASUL- TIES/100 Mil.7EM.	
ĺl												¥£#	th.)	(34.)	131.)	(01.)	
42	306	103	13+000 - 14+000	1.000			0	0	0	0	0.0	0.0	0.0	0.0	0.0	44.6	l

Number of Accident by type NUMBER OF ACCIDENTS BY TYPE OF ACCIDENT (CASES) HIT HIT KIT REAR END MEAD ON HIT AT SIDE
SICYCLE DURING DPPOSED COLLIPASSING YENICLE SIGN SIGN SECTION SIGN IMPROPER LOST OF TURNING CONTROL 42 306 103 0 0 0 Number of Accident by cause

	ROUTE	CONTROL		NUMBER O	F ACCIDE	NTS BY C	AUSE OF	ACCIDENT			
NO.	NO.	SECTION NO.		FAILURE 10 YIELD			DRUNKEN Driver	SLEEPY	OTHERS	SUN	RENARKS
42	306	103	0 FIAIL	TO ROW	0	0	0	0	0	0	

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R306 is a primary highway with a high traffic volume (RHV is 31%).

No accidents have been recorded.

## PROBLEMS

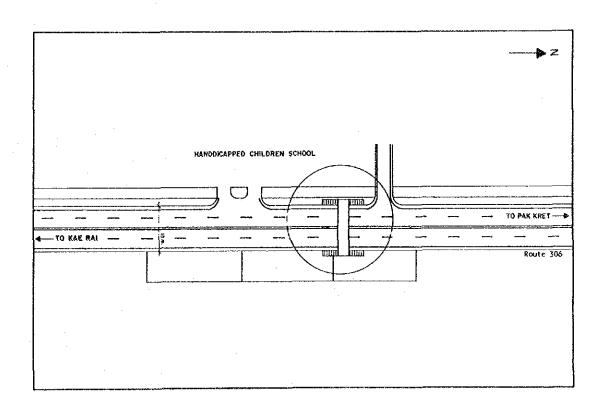
The pedestrian crossing is in a dangerous condition.

## MEASURES

The installation of a pedestrian overpass is suggested.

## .EVALUATION

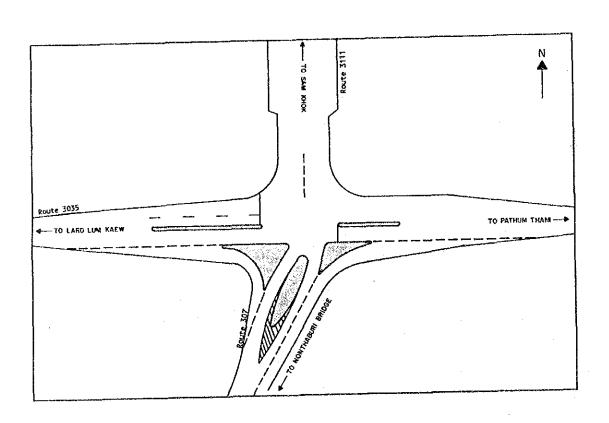
Installation of pedestrian overpass: Satisfies criteria for improvement.



(Form -1)

LOCATION NO.	43	FOCA	TION NAME		Pathum Wila	i School	
ROUTE NO.	307/3035 CONTROL SECTION NO.	100 / 100	K.P. OF PROBLEM	10.000 K.P 0.500	11.500 KP 2.000	ROAD CONDITION	Inter- section
K.P.QF CONTROL SECT	K.P. 0.000 — K.P. 0.000 — K.P.	10.863 3.196 5.869	LOCATION	0.500	0.500	DISTRICT CODE	416
DIVISION NAME	BANGKOK		DISTRICT NAME	PATH	INAHTMU	gipatiioi cooc	410
(RAFFIC VOLUME VEHICLES) P.C.U.)		,046	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	34.1 33.4/38.6	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	
	( PEAK HOUR )	54/15,000 .586 ,211	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD	31.0 40.0/45.1	ACCIDENT RATE (PERSONS/IDO NIL.VEH.KM.)	110.2/57.3 /59.0
NO OF ACCIDENTS(CASES)	0/2/2		CASUALITIES (PERSONS)	(FATALITIES)	8/0/1 5/2/0	WHOLE CONTROL SECTION	20.2/25.1 /236.2

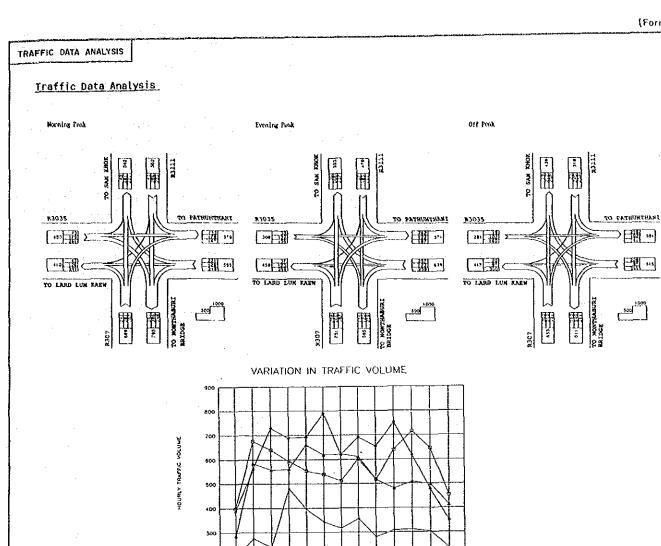
EXISTING ROAD CONDITION DIAGRAM



### COMMENTS ON EXISTING ROAD CONDITION

This is a stop-controlled intersection between two twolane roads in a built-up area in Pathum Thani. Both roads have left-turn lanes, except R3111. R3111, which is connected to R307 at this intersection, has a bridge section on the approach to the intersection.

TRAFFIC SIGNAL	0
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	0
أواري ترجه فالمستحد فللمستخدمة فالمسترق والوصية بياس التاب بربة يسبد فالمستد الأناس والرب	THE RESIDENCE OF THE PARTY OF T



## Accident Data Analysis

		CONTROL			Casus!	1 TRAFF	IS NOT	€	$T^{-}$	CA3	17.EKG	£\$	ł		, AC	CIDENT RA	E	,		REMARKS
TUOT EC- JOH WO.	10.	SECTION	¥.*	K.P.	(CI)	ADI (POD/DA	YEXIC	it of	- (CAS	(TE EE)	SES)	NO.	ACCIDENT OENSITY (CASES) EN)	ALL ACCIDE ICASE 100 N YEN.E	6/ IL.	CARILLA TIES/100 RIL.VER.	(CARIAL- TIES/100	DEATH AND   HEALT   CLASUL-   ELES/100   MSL.YER.   ER.)	CONTROL SECTION (CASIA - TIES/100 MIL.VEH. 101.)	
<u></u>		.	<u> </u>		_	.		321	~ <del> </del> ~		٦-۱	13	6.0	<b> </b>	8.3	67.8	42.5	110.2	20.0	
43	307	100	13+000	- 14+50	1.50							•	1.3	·[·····	7.3	0.0	57.3	57.3	25.1	Į.
43	3035	100		0 - 5-00				.566	ι,	9	- 41	1 1	6.0		B.0	59.0	0.0	59.0	235.2	.]
43	3111	100		- 6-34		1		( <u>**</u> ``)				1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. 1		*****				
ij.	er (	of Acc	ident	by t	ype												<del></del> -			
		LOSTINOS				14,14	SER CF A	Elesars:	BY TYPE	OF ACC	EDENT	(CASES	)			<u></u>				
	<b>#0.</b>	EECH (ON	HIT PEDES- TRIARS	SICICIE RII	NIT DIA 182 PASSING	OPPOSED :	COLLI: I	MEAD CH R COLLI- I SION S	ECITON PLEK- TLY	SIDE COFFE	(RM)	ECPER LO	mitecul fi	I XED T	MIT	OTFERS	9.34			
أد	307	100					2	•		0	1	• )	• ]	0	0		9			
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Numb	er or	ACCION	, .				7+5				ſ
1	DOUTE	CONTROL			1						
XO.			OVER							SUR	RETURKS
43	307	100	9	0	0	9	9	0	9	9	
13	3035	100	0	ð		1	0.	0	ļ <u>.</u>		ļ,
43	3111	100	2	0	0	<u>                                     </u>		ļ	ļ <u>v</u>	L	

## COMMENTS ON TRAFFIC CONDITION

R307 carries slightly more traffic than the other routes. Left- and right-turns occupy a higher percentage of the traffic volume on each approach without there being a left-turn toward R3111 and right-turn from R3111. There is little hourly variation of traffic volume entering the intersection. A high heavy-vehicle composition is observed especially in the south-west and north-south directions.

#### COMMENTS ON ACCIDENT CONDITION

Rear-end collisions and collisions with opposed vehicles occurred most frequently. Accidents involving motorcycles were also common.

### **PROBLEMS**

Traffic volume exceeds the capacity of the stop-controlled intersection. There is no clear prioritization of traffic flow because of the similarity in traffic volumes and in the configurations of the roads.

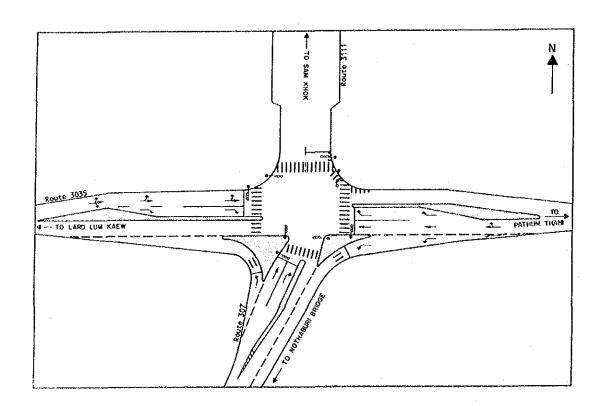
### MEASURES

Signalization of the intersection and the provision of right-turn lanes, except on R3111, are suggested.

### **EVALUATION**

Signalization of intersection: Satisfies criteria for improvement.

Provision of right-turn lanes, except on R3111: Satisfies criteria for improvement.



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-								
65.	.6	34.	4					
Cycle Length	90	Saturate Degree	0.486					

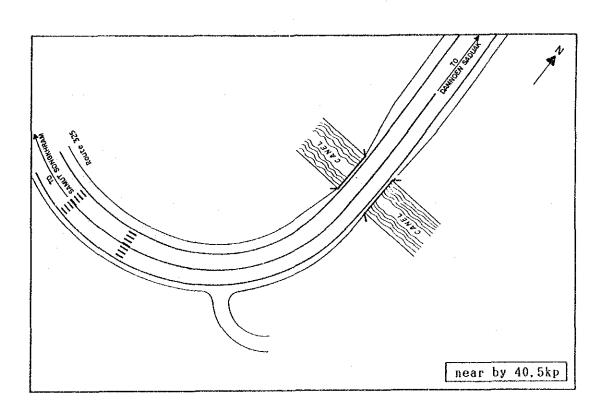
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	4	< -	-	-
	61.	.3	38.	.7
	Cycle Length	80	Saturate Dagree	0.439

1	Ø	2Ø						
-	•							
66.	7	33.3						
Cycle Length	90	Saturate Degree	0.427					

(Form - 1)

LOCATION NO.	44	,	LOC	ATION NAME		Bang Phae-Damr	oen Saduak		
ROUTE NO	325	CONTROL SECTION NO.	200	K.P. OF PROBLEM	K.P. 40.500 -	K.P. 42.725	ROAD CONDITION	Roadway Section	
K.P. OF CONTROL SECT.	к.е. 20.124	— кр	42.725	LOCATION	X.1. 401300	N. 701123			
DIVISION NAME	PRACH	HUAPKHIRIKHAN DISTRICT NAME RATCHABURI					DISTRICT CODE	335	
TRAFFIC VOLUME	(WHOLE DAY) MAJOR R	DAD 5	,304	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	25.0	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)		
( VEHICLES ) ( P.C.U. )	( PEAK HOUR ) MAJOR R MINOR R	OAD	442	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD	25.6	ACCIDENT RATE { PERSONS / 100 MIL. VEH KN. }	119.4	
NO. OF				CASUALITIES	(FATALITIES) 2				
CCIDENTS(CASES)		7			(INJURIES)	6	WHOLE CONTROL SECTION	41.1	

EXISTING ROAD CONDITION DIAGRAM

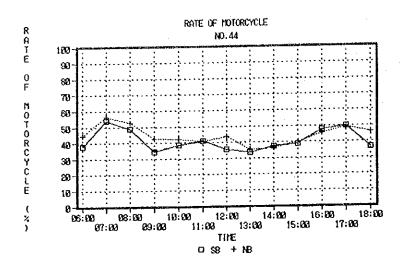


### COMMENTS ON EXISTING ROAD CONDITION

R325 is a two-lane road with a 2.5 m width of soft shoulders. A sharp curvature section is included in the Study Section. The shoulder is reduced to 0.5 m on the bridge and the carriageway width has been narrowed by soil from the shoulder.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	
STREET LIGHTING	
GUARD FENCE	
CHANELIZATION	

Traffic Data Analysis



## Accident Data Analysis

Number of Accident and Casualties

N LESS	er (	of Acc	CIDENT AND L	BSISH	1169		·	r					CCIDENT RAT			ACCIDENT		
STUDY	ROUTE	CONTROL			TRAFFII	C VOLUME	NUMBER		CASUALT	iES						RATE OF	REMARKS	
SEC	₩O.	SECTION	K.PK.P.	LENGTH (NO)	ADT	VEHICLE	OF		YEULWI		ACCIDENT	ALL ACCIDENTS	DEATH	I N JURY	DEATH AND	CONTROL SECTION		
10	1			1	(POJ/DAY)	KILOMETER	DENTS	(CASES)	(CASES)		DEWSITY (CASES/	(CASES/	(CASIAL-	(CASUAL	(CASUL-	(EASUL- TIES/100		
	1				ŀ	İ	(CASES)	Į	l	(CASES)	(UI)	(00 MIL.	TIES/100	TIES/100	TIES/100	MIL.VEN.	1 1	
	1		ļ	ĺ	1		İ	ł	1			468, NS. J	(01.)	(34.)	KH.)	134.3		
	<u> </u>	<b> </b>				I	<u> </u>				31	104.5	29.8	69.5	119.4	41.1		
1 44	325	200	40+500 - 42+725	2.225	8,251	18,358	l	1	I	1	l		I	i	1	1		

Nu	zber	of Ac	c i den	t by 1	type											
₩O.		CONTROL				10	MSER OF	ACCIDENT:	S DY TYPE							SIM
1	160.	SECTION NO.	HIT	718	HIT		REAR END	HEAD ON	HIT AT	SIDE COLLI-	IMPROPER TURNING	LOST OF	FIXED	TRAÍN	OTHERS	SUR
	1	,	PEDES- IRIANS	BICYCLE	PASSING	CPPOSED VEHICLE			SECTION	SION			CBJECT			
14		Z00 :	1	- 6	0	3	2	0	0	1	0	0	0	0	0	7

Huster of Accident by cause

												1
	NO.	ROUTE NO.	CONTROL SECTION NO.	OVER	FAHURE	IMPROPER	VERICLE	AUSE OF DRUNKEN DRIVER		!	SUN	RENARKS
i	44	325	200	2	2	2	0	0	0	1	7	

### COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

Traffic volume is not heavy in any one direction but flows evenly. The percentage of motorcycles is very high and it makes up more than 50% of the traffic volume during the peak-hours for both directions.

Almost all accidents involved motorcycles which resulted in fatalities. The types of accidents causing fatalities are: collisions with opposed vehicles and rear-end collisions.

### PROBLEMS

The mixture of motorcycle and ordinary vehicular traffic is dangerous and interrupts the smooth flow of the traffic. All motorcycles run on the carriageway and avoid the soft shoulder and they also operate at lower speeds than ordinary vehicles.

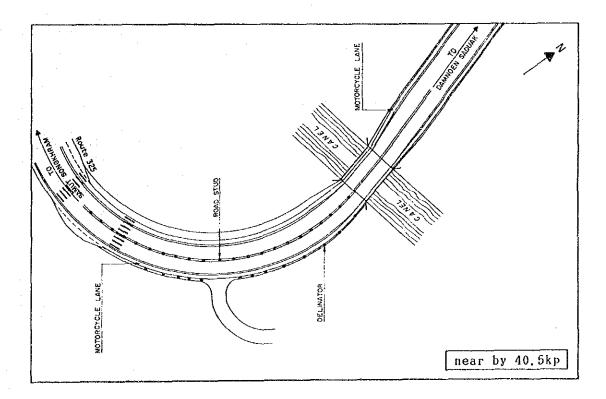
#### MEASIRES

The installation of a motorcycle lane and the improvement of the curvature section are suggested.

### **EVALUATION**

Installation of motorcycle lane: Satisfies criteria for improvement.

Improvement of curvature section: Satisfies criteria for improvement.

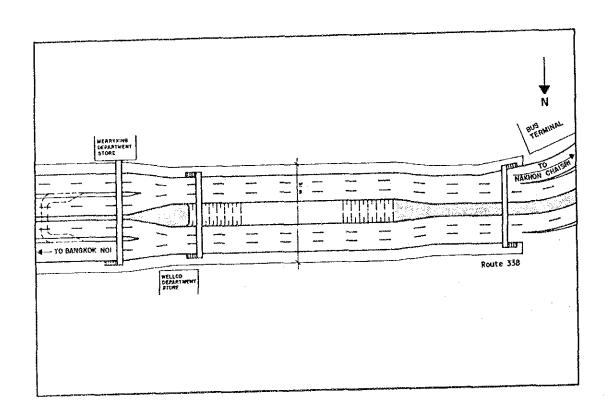


DIAGNOSTIC SHEET OF PROBLEM LOCATIONS

(Form - 1)

LOCATION NO.	4	5	LOCA	TION NAME	Pra Pin Vi	llage	-
ROUTE NO.	338	CONTROL SECTION NO.	100	K.P. OF PROBLEM	к.р. 2,000 — к.р. 3,000	ROAD CONDITION	Roadway Section
K P OF CONTROL SECT.	K.P. 1.144	— Қ.Р	3.283	LOCATION		DISTRICT CODE	415
DIVISION NAME		BANGKOK		DISTRICT NAME	THONBURT	DISTRICT CODE	717
TO A SSID. LOVE HINE	(WHOLE DAY MAJOR F	ROAD 5	6,936	PERCENT OF	(WHOLE DAY) MAJOR ROAD 35.3 MINOR ROAD	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	
TRAFFIC VOLUME (VEHICLES)	MINOR I ( PEAK HOUR MAJOR MINOR	) ROAD	4,115	HEAVY VEHICLES (%)	(PEAK HOUR)  MAJOR ROAD  MINOR ROAD	ACCIDENT RATE ( PERSONS / 100 MIL. VEH. KM. )	63.5
NO. OF ACCIDENTS(CASES)		16		CASUALITIES (PERSONS)	(FATALITIES) 1 (INJURIES) 6	WHOLE CONTROL SECTION	38.1

EXISTING ROAD CONDITION DIAGRAM



## COMMENTS ON EXISTING ROAD CONDITION

This is an uninterrupted flow section of R338, with department stores, bus terminals and other service facilities on both sides. Pedestrians cannot cross the street at present because the median is fenced.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	0
STREET LIGHTING	0
GUARD FENCE	0
CHANELIZATION	

### Accident Data Analysis

n		701	/I AU	TOUT WILL C	استوع	FICE												
	TÚDY EC-		CONTROL SECTION		LENGTH		C VOLUME	HUMBER		CASUALT	IES .		A	CCIDENT RAI	E		ACCIDENT RATE OF	REMARKS
- 11	ĬŌN NO.	""	NO.		(131)	ADT	VEHICLE	OF	DEATH (CASES)	(CASES)		ACCIDENT DENSITY	ACCIDENTS	DEATH		DEATH AND	CONTROL	
	٠.				1			DENTS (CASES)			(CASES)	(CASES/ XH)	(CASES/ 100 MIL. VEH.KH.)	(CASUAL TIES/100 NIL.VEN.		(CASUL- TIES/100 HIL.VEH.	(CASUL- TIES/100 HIL.VEH.	
L					· .	İ							TCH,XH,,	Ю(.)	101.)	XX.)	ii.)"	
Г	45	338	100	2+000 - 3+000	1.000	30,225	30,225	16	1	6	7	15.0	145.0	9.1	54.4	63.5	38.1	•

11.13	SALC!	UI AL	CIUCIS	CDY	type											
ĦО.		CONTROL				H	MRER OF	ACCIDENT:	S BY TYPE	OF ACCH	DENT (CASI	ts)				
1	NO.	SECTION NO.	HIT	att	HIT	TIK	REAR END	HEAD ON	RIT AT	SIDE	INPROPER	LOST OF			OTKERS	SUM
1		ļ	PEDES-	BICYCLE	OUR THE PASSING	OPPOSED			INTER-	COLLI-	TURNING	CONTROL	FIXED OBJECT	FRAIN		
<u> </u>			IRIAAS		PASSIRG	AENIOLE	SICE	31UH	26C11ON	2104			DOJEC:			
45	338	100	1	1	4	0	6	0	0	Û	٥	2	١ ١	0	1	16

Number of Accident by cause

									<del></del>		
	ROUTE	CONTROL		NUMBER O	F ACCIDE	NTS BY C	AUSE OF	ACCIDENT			]
NO.	NO.	SECTION	OVER	FAILURE	IMPROPER	VEHICLE	DRUNKEN				RENARKS
1 .		NO.	SPEED	TO YIELD	PASSING	DEFECTS	DRIVER	SLEEPY	OTHERS	SUX	
			LINIT	TO ROW							
45	338	100	11	0	0	0	0	0	5	16	

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

 $8338\,$  is a primary highway which runs from east to west. It has a high traffic volume and a RHV of 35%.

Speeding is the cause of many accidents (11 cases, 69% of all accidents). However, none of the accidents involved pedestrians, since they are prevented from crossing the

### **PROBLEMS**

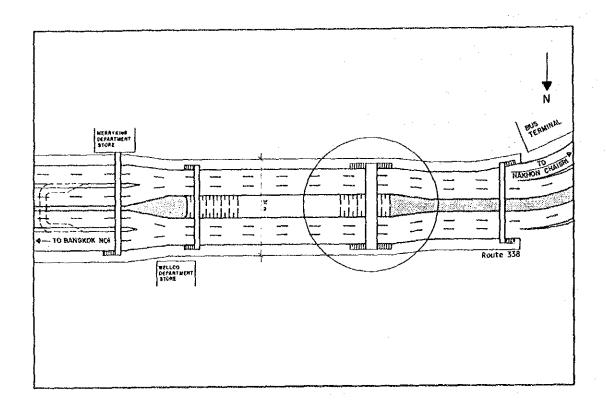
There is no pedestrian crossing facility between 1.1 kp and 3.3 kp on Route 338.

### MEASURES

The installation of a pedestrian overpass is suggested.

### **EVALUATION**

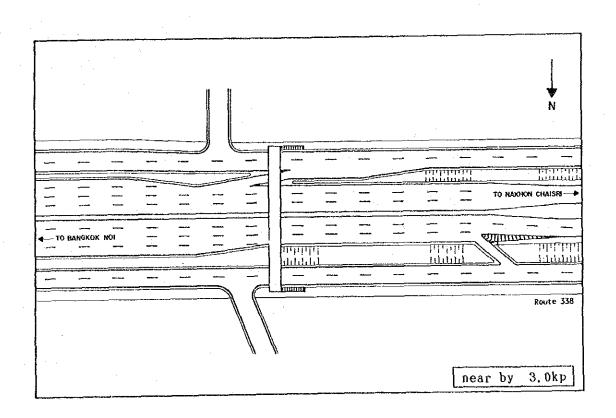
Installation of pedestrian overpass: Pedestrian crossing is prevented by cable fence at median, so nobody can crosses the road. The road-side of this section is like an urban street, so facilities for pedestrian crossing should be installed. In urban areas, pedestrian overpasses are installed at intervals of about 500 m.



(Form - 1)

LOCATION NO.	40	5	roc	CATION NAME		Suan (	ak	
ROUTE NO.	338	CONTROL SECTION NO.	200	K.P. OF	K.P 2.500 -	K.P 6.000	ROAD CONDITION	Roadway Section
K.P OF CONTROL SECT.	K.P. 2.952	К.Р.	33.984	LOCATION	1 2.300			<u> </u>
DIVISION NAME		BANGKOK		DISTRICT NAME	HOHT	IBURT	DISTRICT CODE	415
TRAFFIC VOLUME	YAG BLOHW J A ROLAM 1 RONIM	XOAD 5,	,936	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	35.3	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	
( VEHICLES ) ( P.C.U.)	( PEAK HOUR MAJOR I	ROAD 4,	115	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD	42.2	ACCIDENT RATE (PERSONS/100 MIL.VEH KM.)	108.8
NO. OF ACCIDENTS(CASES)		81		CASUALITIES (PERSONS)	(FATALITIES)	2 40	WHOLE CONTROL SECTION	48.5

EXISTING ROAD CONDITION DIAGRAM



## COMMENTS ON EXISTING ROAD CONDITION

This is an uninterrupted flow section of R338. It has a two-lane frontage road divided by a separator on both sides. Ramps connect the main carriageway and the frontage roads.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	0
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	
A DESCRIPTION OF THE PROPERTY	

## Accident Data Analysis

Number of Accident and Casualties

STUD		CONTROL	K.PK.P.	LENGTH	TRAFFL	C VOLUME	NUMBER		CASUALT	IES		A	CCIDENT RA	E		ACCIDENT	REMARKS
TION NO.	"	¥0.	1.17. 1.17.	(L)()	ADT (PCU/DAY)	VEHICLE KILOMETER	OF ACCI-	CEATH (CASES)	(CASES)	AND		ALL ACCIDENIS	DEATH		DEATH AND INJUNY	CONTROL SECTION	LES SALES
		<u> </u>		•			(CASES)		·	(CASES)	(CASES/	(CASES/ 100 HIL. VEN.XN.)	(CASUAL TIES/100 NIL.VEN.	TIES/100 HIL.VEH.	(CASUL- TIES/100 NIL.VEN.	(CASUL- TIES/100 NIL.VEH.	
	ļ	l									has rosered .		ØI.)	(34.)	KH,)	(1.5	
46	338	200	2+500 - 6+000	3.500	30,225	105,788	81	5	40	42	23.1	207.8	5.2	103.6	108.8	48.5	

Number of Accident by type

| No. | ROUTE | CONTROL | NO. | SECTION | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO

1	1	CONTROL		susses o	F_ACCIPE	SIS FY C	asi qi	actrest			
30.	NO.	SECTION NO.	SPEED	FAILURE TO YIELD TO ROW			DRUAKEN DRIVER	SLEEPY	OTBERS	SUN	RENARKS
46	338	200	59	4	3	2	0	0	13	81	**************************************

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R338 is a primary highway which runs from east to west, and merges with R4 in the west. It has a high traffic volume and a RHV of 35%.

The accident frequency is high (81 cases). Speeding is the cause of most of the accidents. Rear-end collisions are the most frequent (27 cases, 33% of all accident types), followed by accidents caused by overtaking cars (16 cases, 20% of the total types).

### **PROBLEMS**

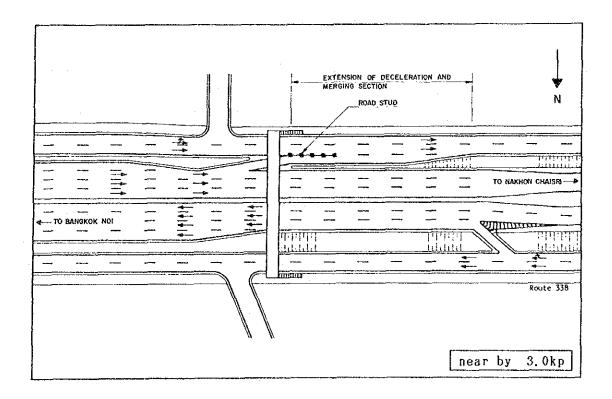
There is much conflict in the merging section between the ramps and the frontage road.

## MEASURES

Extension of the merging section is suggested.

### **EVALUATION**

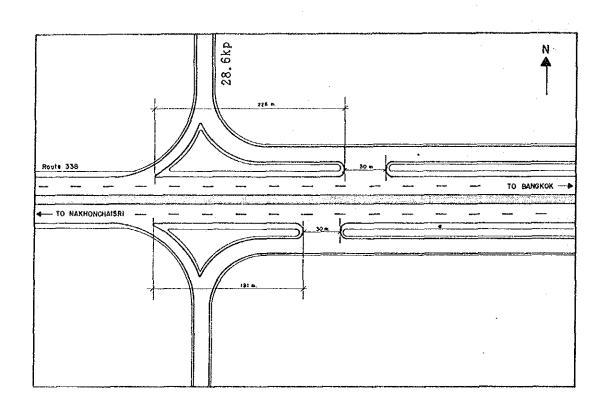
Extending merging section: Satisfies criteria for improvement.



(Form - 1)

LOCATION NO.	4	7	1.00	ATION NAME	·	Buddha Montho	n Sai 7	
ROUTE NO	338	CONTROL SECTION NO.	200	K.P. OF PROBLEM	KP 28,000 -	K.P. 29.000	ROAD CONDITION	Roadway Section
K.P. OF CONTROL SECT.	K.P. 2.952	к.Р	33.984	LOCATION	20,010		DISTRICT CODE	415
DIVISION NAME		BANGKOK		DISTRICT NAME	HOHT	BURI	District cone	415
TRAFFIC VOLUME	(WHOLE DAY MAJOR F	ROAD 56,	936	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	35.3	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	
( VEHICLES ) ( P.C.U. )	( PEAK HOUR MAJOR I MINOR I	) ROAD 4,	115	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD	42.2	ACCIDENT RATE (PERSONS/IOO MIL.VEH.KM.)	45.3
NO. OF ACCIDENTS(CASES)		7		CASUALITIES (PERSONS)	(FATALITIES)	0 5	WHOLE CONTROL SECTION	48.5

EXISTING ROAD CONDITION DIAGRAM



### COMMENTS ON EXISTING ROAD CONDITION

This is an interchange of R338. The R338 section is a straight four-lane section. R338 has two-way two-lane frontage roads on both sides, the minor road is connected through these frontage roads.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	0
CHANELIZATION	

# Accident Data Analysis

Number of Accident and Casualties

STUD		CONTROL		LENGTH	TRAFFI	C NOTTHE	NUMBER		<b>EASUAL I</b>	182		٨	CCIDENT RA	1E		ACCIDENT RATE OF	REMARKS
1100	"	NO.		(101)	ADT (PCU/DAY)	VENTOLE	DF ·	DEATH (CASES)	INJURY (CASES)		ACCIDENT DENSITY	ALL . ACCIDENTS	DEATH	INJURY	DEATH AND INJURY	CONTROL	
		1	}	1			DENTS (CASES)		1		(CASES/	(CASES/ 100 HIL.	(CASUAL- TIES/100	(CÁSUAL- TIES/100	(CASUL- TIES/100	(CASUL- TIES/100	] ]
												VER.KN.)	MIL.VEN.		MIL, VEH.	MILTAEN.	
47	338	200	28+000 - 29+600	1.000	30,225	30, 225	7	0	5	5	7.0	63.5	0.0	45.3	45.3	48.5	

N.	ø	ber ·	of Ac	<u>ciden</u>	t by i	type											
₩o	٦.	ROUTE NO.	CONTROL				M	UMBER OF	ACCIDENT:	S BY TYPE	OF ACCU	DENT (CAS	E5)				
1	1	w.	¥0.	HIT	HIT	118		REAR END				IMPROPER				OTHERS	SLM
1	[			PEDES- IRIANS	BICACTE		VEHICLE		SION	ENTER- SECTION	SION	TURNING	CONTROL	OBJECT	TRAIN		
14	7	338	200	. 0	0	0	0	0	. 0	0	0	0	0	7	0	0	7

Number of Accident by cause

- 1						-					
		ROUTE	CONTROL		NUNBER O			ACCIDENT			
į	NO.	Ю.	SECTION NO.	SPEED	FAILURE TO VIELD			SLEEPY	OTHERS	SUM	REMARKS
	42	338	200	LINIT	TO ROW	 	<del> </del>			<b></b>	
Į	. 41	200	200	4	J	 ,	l	J <sup>v</sup> .l	L	L	l

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R338 is a primary highway which runs from east to West. It has a high traffic volume and a RHV of 35%, and it merges with R4 in the west. The interchange is in a suburban areas and it meets high-level design standards, and consequently cars are able to travel at speed.

The accident frequency is low (7 cases). Most accidents are caused by speeding (4 cases). Vehicles hitting fixed objects is the next most common all types of accidents.

## PROBLEMS

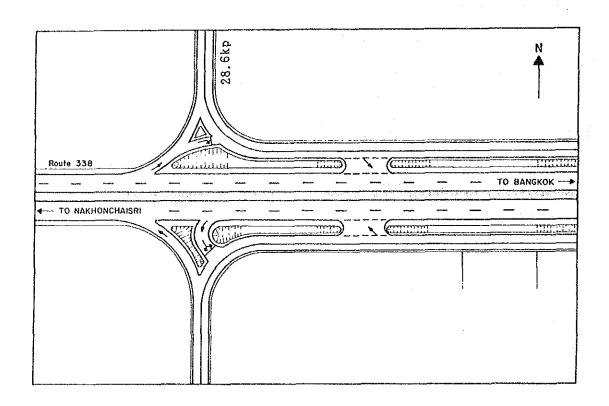
There is much conflict at the entrances and exits of the frontage road.

## NEASURES

Channelization is suggested.

## **EVALUATION**

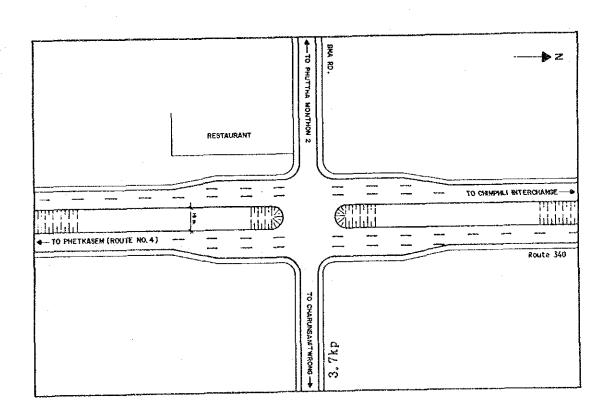
Channelization: Satisfies criteria for improvement.



 $\{Form-1\}$ 

LOCATION NO.	48	LOC	ATION NAME	Bang	Waek	
ROUTE NO.	340/BHA CONTROL SECTION N	100	K.P. OF PROBLEM	K.P. 3.000 - K.P. 4.000	ROAD CONDITION	Inter-
K.P. OF CONTROL. SECT.	КР <b>31.672</b> — К	P 23.941	LOCATION	K. 3.000	_	section
DIVISION NAME	BANGKOK		DISTRICT NAME	THONBUR1	DISTRICT CODE	415
TRAFFIC VOLUME	(WHOLE DAY) MAJOR ROAD MINOR ROAD	29.950	PERCENT OF	(WHOLE DAY) MAJOR ROAD 24.8 MINOR ROAD	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	
(VEHICLES) (P.C.U.)	( PEAK HOUR ) MAJOR ROAD MINOR ROAD	2,406	HEAVY VEHICLES	(PEAK HOUR) MAJOR ROAD 30.1 MINOR ROAD	ACCIDENT RATE (PERSONS/100 MIL. VEH. KM.)	0.0
NO. OF ACCIDENTS(CASES)	0		CASUALITIES (PERSONS)	(FATALITIES) 0 (INJURIES) 0	WHOLE CONTROL SECTION	2.1

EXISTING ROAD CONDITION DIAGRAM



### COMMENTS ON EXISTING ROAD CONDITION

This is an at-grade intersection in the suburbs. R340 is a road made up of part of the Outer Ring Road, and only its western section is presently in service. It is designed to high design standards. All arterial highway intersections are grade separated, with the exception of this one.

1	TRAFFIC SIGNAL	
	PEDESTRIAN CROSSING	
	PEDESTRIAN OVERPASS	
	STREET LIGHTING	0
•	GUARD FENCE	··
	CHANELIZATION	

### Traffic Data Analysis

Horning Peak

Evening Peak

TO CHIMPHLI
INTERCHANGE

TO PHETKASEH
(ROUTE NO. 4)

TO PHETKASEH
(ROUTE NO. 4)

TO PHETKASEN
(ROUTE NO. 4)

TO PHETKASEN
(ROUTE NO. 4)

TO PHETKASEN
(ROUTE NO. 4)

TO PHETKASEN
(ROUTE NO. 4)

TO PHETKASEN
(ROUTE NO. 4)

### Accident Data Analysis

<del></del>	ROUTE	CONTROL	ident and C	1		. VOLUKE			CASUALI	IES		A	CCIDENT RAT	E		ACCIDENT RATE OF	REMARKS
SEC- TION NO.	ю.	SECTION NO.	K.PK.P.	LEXGTH (KH)	ADT (POU/DAY)	YEHICLE	MARER OF ACCI- DENIS (CASES)	OEATH (CASES)	(CASES)	AND	(CASES/	ALL ACCIDENTS (CASES/ 100 HIL. VEH.KH.)	TIES/106 HIL.VEH.	(CASUAL- TIES/100	GEATH AND INJURY (CASUL- TIES/100 HIL.VEN. KH.)	CONTROL SECTION (CASUL* TIES/100 MIL.VEH. KH.)	
48	340	100	3+000 - 4+000	1.000	61,408	41,408	0	0	0	0	0,0	0.0	0.0	0.0	0.0	2.1	•

NUMBER OF ACCIDENT BY TYPE  NO. ROUTE (CONTROL REPRER OF ACCIDENTS BY TYPE OF-ACCIDENT (CASES)																
٠L		CONTROL	ľ			H	#BER OF .	accideni	S BY TYPE	ON VCC1	DENI (CASI	:5}				
1	NO.	SECTION			,						T			#1T	OTHERS	SUR
1		80.	BIT	HIT	XIT	HET	REAR END		HIT AT		THEROPER		HIT		O MCK3	5.41
			PEDES-	BICYCLE	DURING	OFPOSED	COLLI-				TURNING	CONTROL	LIXED	TRAIN	!!	
1			TRIANS			VENICLE		SION	SECTION	SICH	1		OB JECT	i .	!!	
.1.				<u> </u>		7241622			1					·		
Π	7.0	100					6	0	lo	1 0	10	. 0	0	, ,	1 0	
3	340	100			, ,	, ,									1	
:1,	ner (				ause		1	1			1			,	,	

	ROUTE	CONTROL		NUMBER O	F ACCIDE	NTS BY C	AUSE OF	ACCIDENT			
NO.	NO.	SECTION NO.	OYER SPEED		INPROPER PASSING		DRUNKEN Driver	SLEEPY	OTHERS	SUN	RENARKS
48	340	100	1 I VIT	TO RO₩ Q	0	Ö	Ô	0	0	0	

#### COMMENTS ON TRAFFIC CONDITION

Since R340 is partly in service, its traffic volume is smaller than those of other arterial highways (2400 PCU/peak hour). The BMA road has a peak-hour traffic volume of approximately 600 cars, and also has a considerably large amount of traffic turning right. Traffic speed is high on R340.

## COMMENTS ON ACCIDENT CONDITION

No traffic accident statistics were available.

#### PROBLEMS

Traffic volume at the intersection, especially traffic turning right, is too large to regulate by stop-control measures. Right-turning traffic is not channelized on the highway or on the crossroad. Consequently, all traffic, excluding through-traffic and left-turning vehicles on R340 and left-turning vehicles from the crossroad, is accommodated in the center of the intersection. This causes confusion and hinders the smooth flow of turning traffic and through-traffic. The intersection traffic in other sections of R340 is regulated by grade separation. Consequently, drivers tend to underestimate the danger involved in crossing this intersection.

#### MEASURES

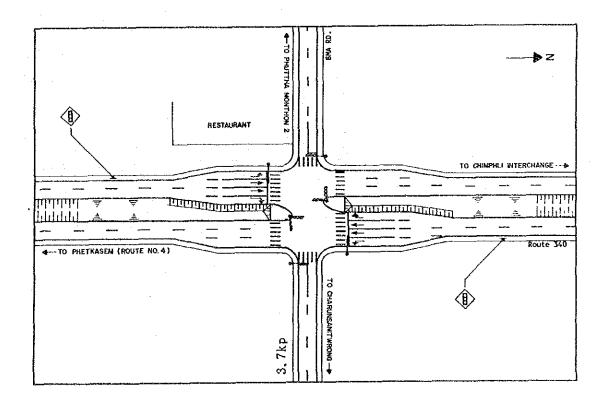
The installation of pre-timed signals and advance warning signs is suggested for the short-term and the creation of a grade separation for the long-term.

#### EVALUATION

Creation of grade separation for the long-term: Satisfies criteria for improvement. The speed on this road is very high and there is no signal on this road/section.

Installation of pre-timed signal, and installation of forewarning guide signs for short-term: Satisfies criteria for improvement. The speed on this road is very high and there is no signal on this road/section.

ILLUSTRATION OF TRAFFIC SAFETY / CPERATION PLAN



# Morning Peak

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50	.0	50.	.0
Cycle Length	44	Saturate Degree	0.397

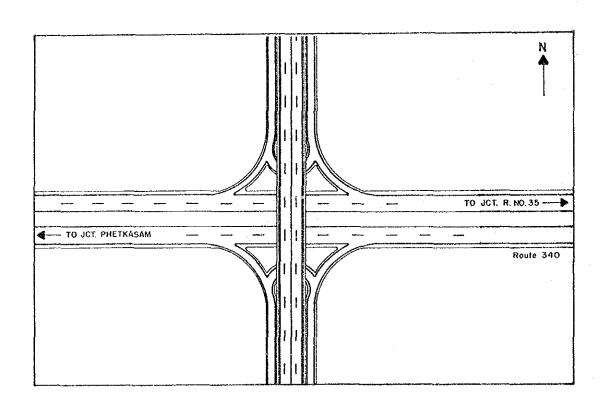
Evening Peak

!ø		2	g		3	ø
+			<b>.</b>	4	-	22
36.9	36.9		.2		33.	9
Cycle Length			Satur: Degre		0	. 603

(Form = 1)

LOCATION NO.	49	LOCA	TION NAME		Eakka Cha	9 i	
ROUTE NO	340/3242 CONTROL SECTION NO K.P. 31.672 — K.I	23.941	K P. OF PROBLEM LOCATION	к.Р 29.000 18.500	30.000 K.P. 20.000	ROAD CONDITION	Roadway Section
CONTROL SECT.  DIVISION NAME	BANGKOK	24.156	DISTRICT NAME	THON	BURI	DISTRICT CODE	415
TRAFFIC VOLUME ( VEHICLES ) ( P.C.U )		29,950 22,097 2,406 1,436	PERCENT OF HEAVY VEHICLES (%)	(WHOLE DAY)  MAJOR ROAD  MINOR ROAD  (PEAK HOUR)  MAJOR ROAD  MINOR ROAD	24.8 22.7 30.1 21.7	PEDESTRIAN VOLUME (PERSONS/ PEAK HOUR)  ACCIDENT RATE (PERSONS/100 MIL. VEH. KM.)	0.0/254.4
NO OF ACCIDENTS(CASES)	0/25		CASUALITIES (PERSONS)	(FATALITIES)	0/1 0/17	WHOLE CONTROL SECTION	2.1/64.1

EXISTING ROAD CONDITION DIAGRAM



COMMENTS ON EXISTING ROAD CONDITION

This is the interchange of R340 and R3242. R340 is a straight four-lane section. R3242 is a straight two-way two-lane section which overpasses R340 and is connected to it by diamond-shaped ramps. Right-turn vehicles have to make a detour through the U-turn way under R340.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	,

TRAFFIC DATA ANALYSIS

#### Accident Data Analysis

Number of Accident and Casualties

N LLDE	JC1 :	ul neu	INCHE CHAIN OF														
		CONTROL			TRAFFI	C WOLLINE	W W D F D		CASUALT	IES		A	CCIDENT RA	E			REMARKS
SEC-	NO.	SECTION NO.	K.PK.P.	(KM)	ADT	VEHICLE	NUMBER OF ACC1-		1HJGRY (CASES)		ACCIDENT DENSITY	ALL ACCIDENTS	DEATH	INJURY	DEATH AND INJURY	CONTROL SECTION	
NO.	}				(PCU/DAY)	XILUPE IEE	DENTS		COLSES	INJURY (CASES)	(CASES/	(CASES/	(CASUAL- TIES/100	(CASUAL- TIES/100	(CASUL- TIES/100	(CASUL TIES/100	
	1	ļ					(CASES)			(LAGE 4)		(.KX.K3V	HIL.VER.		MIL.VEH.	MIL.YEH. KA.)	
	1	1							1	1							ļ{
49	340	100	29+000 - 30+000	1.000	- 41,463	41,408	0	0	. 0	0	9.0	0.0	0.0	0.0	0.0	2.1	*
	3242	100	18+500 - 20+000	1.500	12,923	19.385	25	1	17	18	16.7	353.3	14.1	240.3	254.4	64.1	
1			1		*******			1	1	1	1	1		1		,	

HO.	ROUTE	OF ACC				N.	MSER OF	ACCIDENT	S BY TYPE	OF ACCU	DENT (CAS	ES)				
	HQ.	SECTION NO.	HIT PEDES- TRIANS	HIT HIT HIT REAR EMD HEAD ON HIT AT SIDE IMPROPER LOST OF HIT HIT OTHERS SUB- BICYCLE OURTHOL OPPOSED COLLI- LOLLI- INNER COLLI- TURKING COMTROL FIXED TRAIN TRAIN SIDM SECTION SIDM												
49	340	100	0	0	0	. 0	0	٥	0	0	0	. 0	0	0	0	0
49	324	100	1	1	4	1	5	0	10	0	1	, <b>1</b>	0	0	1 1	25

ı		er or	ACCIDAL	L D7 C4								<del>,</del>
	ΝО.	ROUTE NO.	CONTROL SECTION NO.	OVER	NUMBER OF ALLURE TO YIELD TO ROW	INPROPER	VERICLE	DRUNKEN			SUM	REMARKS
Ì	49	340	100	0	0	0	0	0	0	0	0	
1	49	3242	100	21	2	0	0	0	0.	2	25	

COMMENTS ON TRAFFIC CONDITION

Traffic volume is not very large at present (ADT is 24,000 vehicles, RHV is 25%), but it is expected to increase after the completion of the entire ring road. The roads satisfy high-level design standards and allow cars to travel at speed. R3242 runs south-east from Bangkok and serves it, to a certain extent, as a bypass. Although it is a two-lane road, it has a large traffic volume, partly as a result of the ongoing widening work on R35. as a result of the ongoing widening work on R35.

COMMENTS ON ACCIDENT CONDITION

#### PROBLEMS

Drivers make illegal U-turns at the nose of the ramp on R3242.

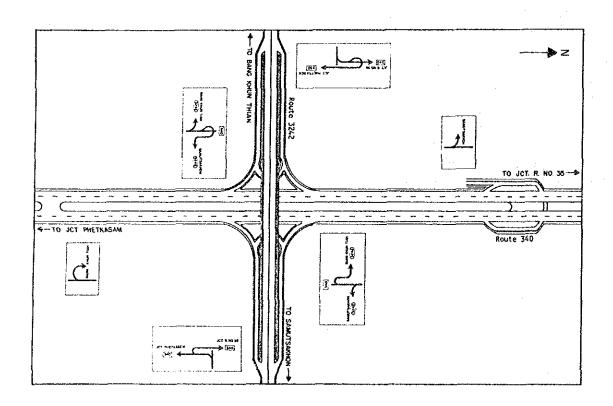
#### MEASURES

The installation of guide signs (diagrammatic-type) is suggested.

#### EVALUATION

Installation of guide signs (figure type): Satisfies criteria for improvement.

ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN

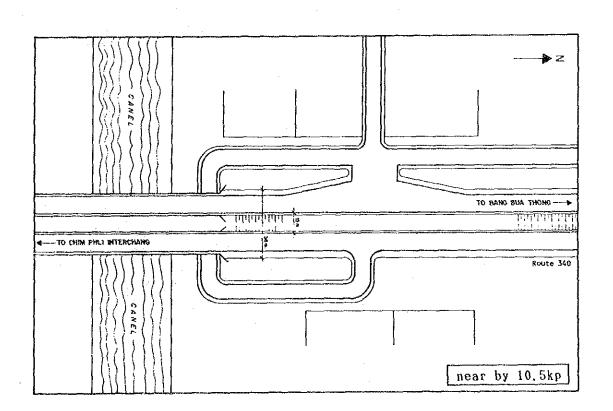


DIAGNOSTIC SHEET OF PROBLEM LOCATIONS

(Form ~ 1)

LOCATION NO.		50	LOCA	TION NAME		Wat Si Boo	on Rueng	
ROUTE NO.	340	CONTROL SECTION NO.	201	K.P. OF PROBLEM	KP 10,000 -	K.P. 11.000	ROAD CONDITION	Roadway
K.P OF CONTROL SECT.	K.P. 8.02	7 — K.P.	17.000	LOCATION	10,000		CONDITION	Section
DIVISION NAME		BANGKOK		DISTRICT NAME	тноивс	JR I	DISTRICT CODE	415
TRAFFIC VOLUME	(WHOLE DAY MAJOR ! MINOR	road 26	,299	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	24.8	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	226
( VEHICLES ) ( P.C.U.)	( PEAK HOUR MAJOR MINOR	) ROAD 2	, 199	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD MINOR ROAD		ACCIDENT RATE (PERSONS/100 NIL. VEH KM)	0.0
NO. OF ACCIDENTS(CASES)		0		CASUALITIES (PERSONS)	(FATALITIES)	0	WHOLE CONTROL SECTION	4.4

EXISTING ROAD CONDITION DIAGRAM



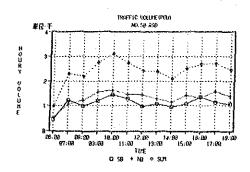
COMMENTS ON EXISTING ROAD CONDITION

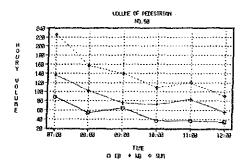
This is the intersection of R340 and a soi. A school, a Sunday market, etc. are found beyond the soi.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	0
CHANELIZATION	

TRAFFIC DATA ANALYSIS

#### Traffic Data Analysis





#### Accident Data Analysis

Number of Accident and Casualties

STLOY		CONTROL	K.PK.P.	LENGTH		C WOLLINE	NUMBER		CASUALT	IES		A	CCIDENT RAT	ΙE		ACCIDENT .	REMARKS
HON NO.	-0.	NO.	Nor Aver	(KH)	ADT	VEHICLE KILOKÉTER	OF	DEATH (CASES)	INJURY (CASES)		ACCIDENT DENSITY	ALL ACCIDENTS	DEATH	ENJURY :	DEATH AND	CONTROL	REPARKS
1 .				}		* 1	DENTS (CASES)				(CASES/	(CASES/	CASUAL -	(CASUAL- TIES/100	CASUL-	(CASUL-	}
												VEH.IOT.)	MIL.VEN.	HIL YEN.	HIL.VEH.	NIL VEN.	
	!!	!		!	ļ <u> </u>	[			اا	I	ļl		!I				السسوا
50	340	501	10+000 - 11+000	1,000	41,408	41,408	0	0	0	0	0.0	0.0	0.0	0.0	0.0	4.4	ł l

		1100100	, .	wese			_				
NO.	ROUTE #0.	CONTROL SECTION NO.	OVER	FAILURE	MPROPER	VEHICLE	DRUNKEN	ACC ! DENT		SUN .	REHARKS
50	340	201	Ø	0	0	0	0	0	Ó	0	

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

 $\ensuremath{\mathsf{R340}}$  satisfies high-level design standards and allows cars to travel at speed.

No accidents have been recorded.

#### PROBLEMS

The pedestrian crossing is in a dangerous condition.

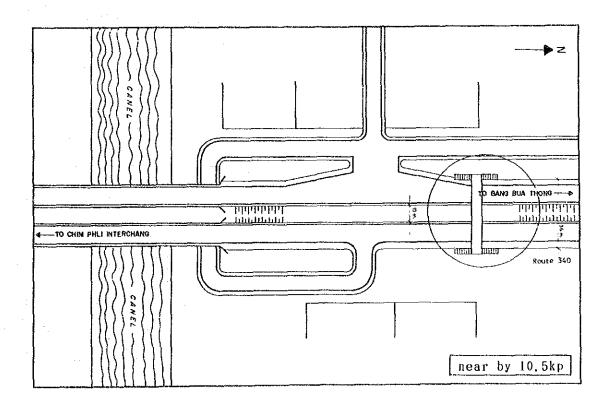
#### **HEASURES**

The installation of a pedestrian overpass is suggested.

#### **EVALUATION**

Installation of pedestrian overpass: Satisfies criteria for improvement.

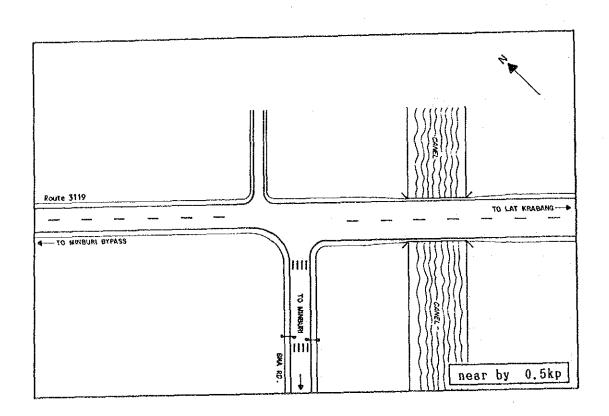
ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



(Form ~ 1)

LOCATION NO.	5		LOC	ATION NAME		Minbur	· j		
ROUTE NO.	3119/BMA	CONTROL SECTION NO.	100	K.P. OF PROBLEM	K.P 0.000 -	кр. 1.000	ROAD	inter- section	
K.P OF CONTROL SECT.	KP 0.000	— к.Р	11.003	LOCATION			DISTRICT CODE	/44	
DIVISION NAME		BANGKOK		DISTRICT NAME	BANG	(OK	DISTRICT CODE	411	
TRAFFIC VOLUME ( VEHICLES ) ( P.C.U. )	(WHOLE DAY) MAJOR R MINOR F (PEAK HOUR) MAJOR F	OAD 3: ROAD KOAD 2	3,555 2,808	PERCENT OF HEAVY VEHICLES (%)	(WHOLE DAY) MAJOR ROAD MINOR ROAD (PEAK HOUR) MAJOR ROAD MINOR ROAD	36.4 37.1	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)  ACCIDENT RATE ( PERSONS / 100 MIL. VEH KM. )	197.6	
NO. OF ACCIDENTS(CASES)		7		CASUALITIES (PERSONS)	(FATALITIES)	1 7	WHOLE CONTROL SECTION	60.6	

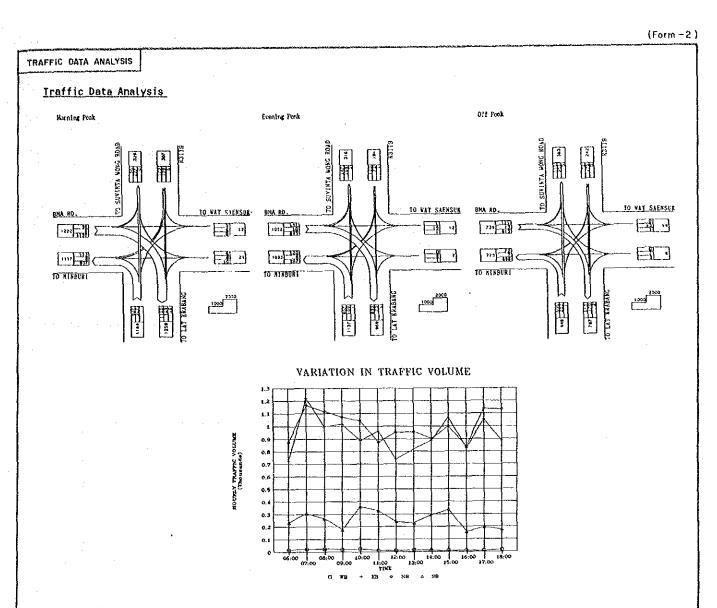
EXISTING ROAD CONDITION DIAGRAM



COMMENTS ON EXISTING ROAD CONDITION

This is the intersection of R3119 and the BMA road. R3119 is a suburban two-lane road that narrows north of this intersection.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	
GUARD FENCE	0
CHANELIZATION	



#### Accident Data Analysis

| STOPT | ROUTE | CONTROL | R.P. - K.P. | LENGTH | ADT | CASCASES | CASES •              |     | of Ac   |        |         |                   |         |          |      |         | <u> </u> |          | <u></u>  |       |             |        | <del></del> 1 |
|----------------|-----|---|--------|---------|-------------------|---------|----------|------|---------|----------|----------|----------|-------|-------------|--------|---------------|
| KO.            |     | ROUTE CONTROL NUMBER OF ACCIDENTS BY TYPE OF ACCIDENT (CASES) |        |         |                   |         |          |      |         |          |          |          |       |             |        |               |
| ļ              | ¥O. | SECTION   | 417    | HIT     | MIT               | 911     | REAR END |      |         |          | INPROPER |          |       | HIT         | OTKERS | SUM           |
| 1              | l   |   | PEDES- | BICACFE | DURING<br>PASSING | OPPOSED |          | SION | INTER-  | COLL I - | TURMING  | CONTROL  | FIXED | TRAIN       |        |               |
| <u>لــــ</u> , | J   | <u> </u>  | IKINAS | <u></u> | NY22190           | ASSICTE | 3104     | 3100 | 3141100 |          |          | <u> </u> |       | <del></del> |        | 7             |
| 51             | 311 | . 100   | 1      | 0       | . 1               | 0       | 2        | 0    | 3       | 0        |          |          | l     | l           | l      |               |

Numb	er of	Acciden	t by c	euse	-				 	
NO.	ROUTE NO.	CONTROL SECTION NO.	OVER	NUMBER OF ALLURE TO YIELD TO ROW	INPROPER	VEHICLE	DRUNKEN	T	SUM	REMARKS
	2110	166				1		0	 7	

### COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

Although it is a two-lane road, it has a relatively high traffic volume (ADT is 24,140 vehicles, RHV is 36%). Most of the traffic flows on the BMA road and the southern-end of R3119.

The accident frequency is low (7 cases). Speeding is the main cause of accidents (5 cases).

#### **PROBLEMS**

Traffic volume is beyond the capacity of the stop-controlled intersection.

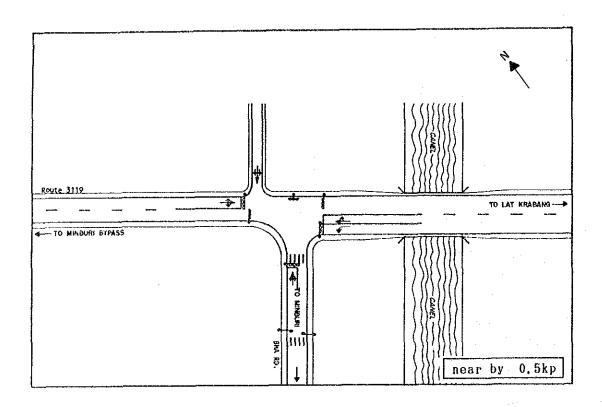
#### REASURES

The installation of a pre-timed signal is suggested.

#### **EVALUATION**

Installation of pre-timed signal: Satisfies criteria for improvement.

ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



Morning Peak

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	de . +			<b>-</b>			
Ī	8.3		6	6.1	25.6		
	Cycle Length		180	Satur. Degre	- 1	0.775	

Evening Peak

	ΙØ		2	ø		3Ø	
	++				+		
			9	•			
	8.3		73	.9	17.8		
	ole ngth		180	Satur. Døgre		0.614	

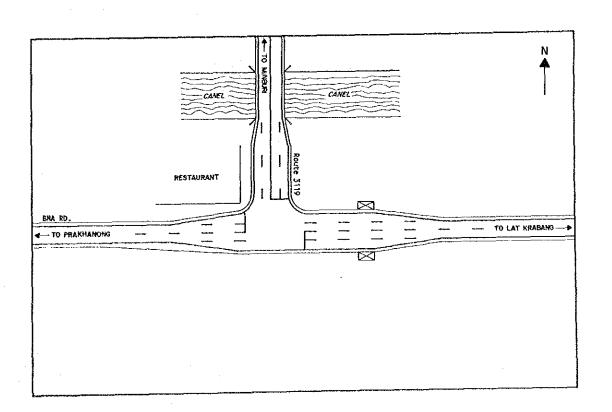
Off Peak

ΙØ	10		Ø	3 Ø		
=f∞ · =	<b>9</b> -	+-	<b>F</b>		+	
8.3	8.3		.6.		26.1	
Cycle Length		180	Satura Degra		0.481	

(Form - 1)

LOCATION NO.	5	2 .	LOC	ATION NAME		Onn Nuch-3	119		
ROUTE NO.	3119/BMA	CONTROL SECTION NO.	100	K.P. OF PROBLEM	K.P. 10.500	KP 11.500	ROAD CONDITION	Inter- section	
K.P. OF CONTROL SECT.	N. SECT. K.P. 0.000 - K.P. 11.00		11.003	LOCATION	K.P. 10,500	W. 11.300	CONTROL		
DIVISION NAME	SION NAME - BANGKOK				BANG	KOK	DISTRICT CODE	411	
TRAFFIC VOLUME	(WHOLE DAY MAJOR I	ROAD 33	,555	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	36.4	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)		
( VEHICLES ) ( P.C.U.)	(PEAK HOUR MAJOR	MINOR ROAD  MINOR ROAD  PEAK HOUR)  MAJOR ROAD  2,808  PERCENT OF MINOR ROAD  (PEAK HOUR)  MAJOR ROAD  37.1  ACC  (PEAK HOUR)	ACCIDENT RATE ( PERSONS / 100 MIL. VEH. KM.)	123.5					
NO. OF ACCIDENTS(CASES)	7			CASUALITIES (PERSONS)	(FATALITIES)	3	WHOLE CONTROL SECTION	60.6	

EXISTING ROAD CONDITION DIAGRAM



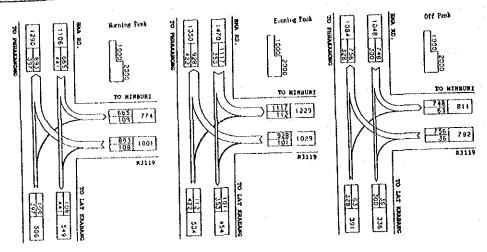
COMMENTS ON EXISTING ROAD CONDITION

R3119 and R3256 are connected indirectly via the BMA road. This connection forms a T-intersection. R3119 and the BMA road are two-lane roads with wide shoulders.

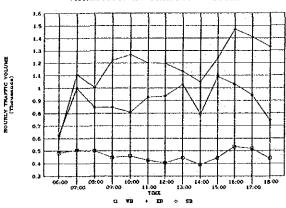
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0

TRAFFIC DATA ANALYSIS

# Traffic Data Analysis



#### VARIATION IN TRAFFIC VOLUME



#### Accident Data Analysis

Number of Accident and Casualties

	+	CONTROL	Herr and	0300		C VOLUKE		[	CASUALT	ES .	Ι	A	CCIDENT RA	TΕ		ACCIDENT RATE OF	REMARKS
SEC- TION NO.		SECTION NO.		LENGTH (KH)	ADT	KILOMETER	OF ACCI- OENIS (CASES)	DEATH (CASES)		AVD	(CASES/	ALL ACCIDENTS (CASES/ 100 HIL. VEN.KM.)	DEATH (CASUAL- TIES/100 MIL.VEH. IOL.)	(CASUAL- TIES/100	DEATH AND INJURY (CASUL- TIES/100 HIL.VEN, KNL)	CONTROL SECTION (CASUL- TIES/100 MIL.VER. KM.)	
L	<u> </u> ;	<u> </u>		l	ļ			<u></u> _				172.9	74.1	49.4	123.5	60.6	
52	3119	100	10+500 - 11+500	1.000	11,093	11,093	7	3			7.0	1/2.7	1	I			

Number of Accident by type

No. ROUTE COSTROL NO. SCUTTON NO. SCUTTON NO. SCUTTON NO. SCUTTON STORE SCUTTON STORE

Righer of Assident by cause

OF LABOR	£1 ()	ACC LOCA	. 57 5	9000							
	ROUTE	CONTROL		NUMBER O							
NO.	NO.	SECTION NO,	OVER Speed	FAILURE TO YIELD	IMPROPER Passing	VEHICLE DEFECTS	DRUNKEN Driver	SLEEPY	OTHERS	SUM	REMARKS
	~~~	100	LINIT	TO ROW	6			0	0	7	
1 52	3119	100		٥		l		d.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

The traffic flows predominantly between R3119 and R3256. The entering traffic is subject to tittle hourly variation and shows a steady flow in the daytime. The proportion of heavy vehicles is high in the daytime, exceeding 35% of the total volume.

Failure to yield to right-of-way by heavy vehicles is a main cause of traffic accidents.

#### PROBLEMS

Traffic volume is beyond the limits of the stop-control intersection. Traffic confusion is aggravated by the improper channelization of the traffic on the BMA road.

#### MEASURES

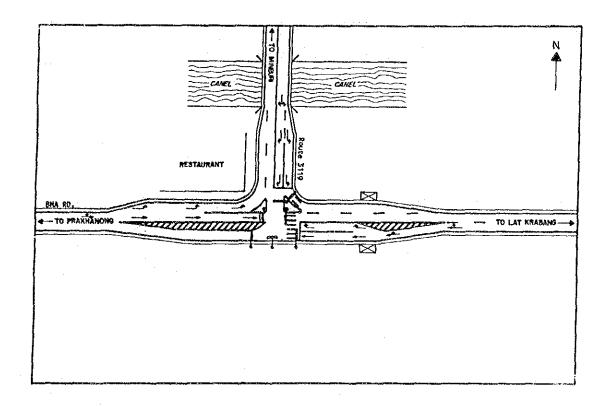
Signalization and channelization to provide left-turn and right-turn lanes are suggested.

#### **EVALUATION**

Signalization: Satisfies criteria for improvement.

Channelization to provide left-turn and right-turn lane: Satisfies criteria for improvement.

ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



#### Morning Peak

- 1	Ø	2	Ø
		-	
32.	3	65.	7
Cycle Length	70	Saturate Degree	0.717

Evening Peak

	Ø	2	Ø
	-	-	J
32.	9	67	. 1
Cycle Length	73	Satur <b>at</b> e Degr <b>ee</b>	0.720

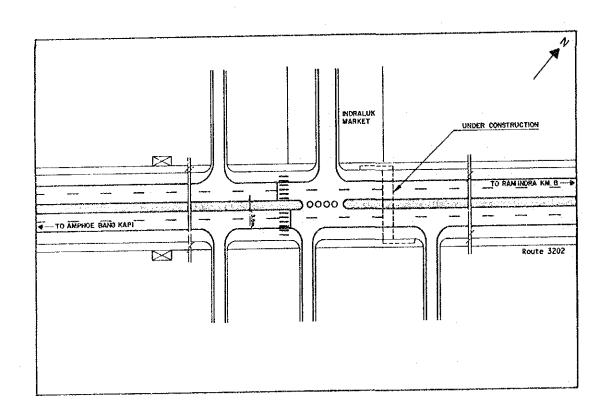
Off Peak

1	ø	2	Ø		
28.	.8	71.2			
Cycle Length	125	Saturate Degree	0.570		

(Form - 1)

LOCATION NO.	5	3	LOC	ATION NAME		Indralak	Market	
ROUTE NO.	3202	CONTROL SECTION NO.	100	K.P. OF PROBLEM	K.P 3.000	к.р. 4.000	ROAD CONDITION	Inter- section
K.P. OF CONTROL SECT	K.P. 0.000	К.Р	8.785	LOCATION			DISTRICT CODE	411
DIVISION NAME		BANGKOK		DISTRICT NAME	DISTRICT NAME BANGKOK			+11
TRAFFIC VOLUME	( WHOLE DAY MAJOR F	ROAD 49	,177	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	14.5	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	
( VEHICLES ) ( P.C.U )	( PEAK HOUR MAJOR I MINOR I	) ROAD 3	,322	HEAVY VEHICLES	(PEAK HOUR) MAJOR ROAD MINOR ROAD	16.1	ACCIDENT RATE (PERSONS / 100 WIL. VEH. KM.)	0.0
NO. OF ACCIDENTS(CASES)		0		CASUALITIES (PERSONS)	(FATALITIES)	0	WHOLE CONTROL SECTION	23.8

EXISTING ROAD CONDITION DIAGRAM



#### COMMENTS ON EXISTING ROAD CONDITION

This is the intersection of R3202 and a soi. R3202 is a straight four-lane section with a wide median (3.5 m). The median opening at this intersection is closed.

	· · · · · · · · · · · · · · · · · · ·
TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

TRAFFIC DATA ANALYSIS Traffic Data Analysis LOCATION HO.5J Evening Peak Horning Paak Ex1st1ng 164-67--124 TO SUL INTHRAFAK TO SOL INTERARAL TO SOL INTHRARAE plan 164~ TO SOI INTERNAL TO SOI INTERNALL TO SOI INTERARIE ..... Prohibited disaction VARIATION IN TRAFFIC VOLUME Accident Data Analysis Musber of Accident and Casualtie SERVED OF ACCIDENTS BY CHESE OF UCCIDENT
OTHER PRIMER PRIMER PRIMERS CHEMPA
STREED OF MERCHANDASSING PRIMERS CHEMPA SCREEN OITHERS SCR.
LILLIE 10 Reg. 6 6 6 6 COMMENTS ON ACCIDENT CONDITION COMMENTS ON TRAFFIC CONDITION R3202 has a high traffic volume (ADT is 41,727 vehicles, RHV is 14.5%). No accidents have been recorded.

#### PROBLEMS

Users from the soi are inconvenienced by the closed median which prevents them from crossing the intersection or turning right. Difficulties also exist in U-turning at the nearest median opening because of the heavy traffic volume.

There are many sois intersecting R3202 in the area between the intersection and the median opening. Right-turns from these sois are prevented by the continuous median. As a result, this traffic concentrates in the median opening to turn right.

#### MEASURES

The installation of signals, or channelization for U-turns and the installation of U-turn signals, are suggested.

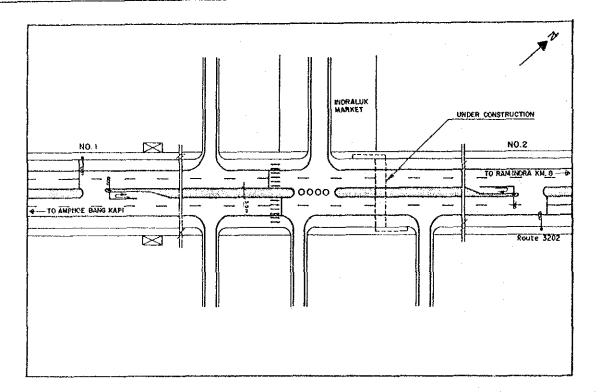
#### **EVALUATION**

Installation of signal: Not warranted enough. No clear need established.

Channelization to handle U-turns: Provides U-turn facility.

Installation of U-turn signal: Cannot treat U-turn volume without signal.

#### ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



-4 <b>5</b>	<b>t</b> r-	<u>.</u>					
67.	5	32.5					
Cycle Length	40	Saturate Degrée	0.693				
NO.2							
19	ð	. 2Ø					
		J.					
5	0	50					
Cycle	40	Saturate Degree	0.716				

20

10.1

10

67.	5	32.5						
Cycle Length	40	Saturate Degree 0.544						
15	ø	2 Ø						
-	<del></del>	7						
5	5	45						
Cycle Lenght	40	Saturate Degree	0.559					

20

1 Ø

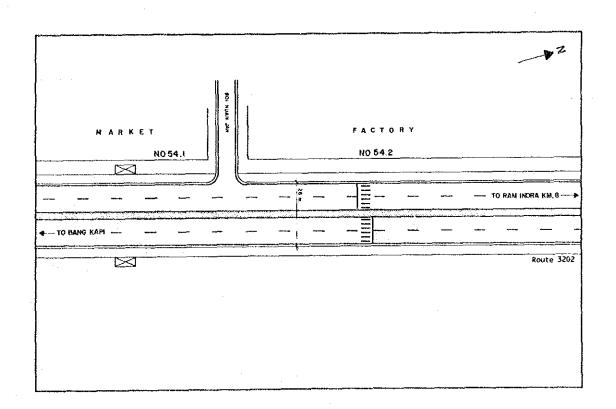
1 (	ð	29						
_	<del></del>							
67	.5	32.	5					
Cycle Length	40	Saturate Dagrae	0.420					

1	Ø	20						
4		<b>¬</b>						
4	5	55	5					
Cycle Lenght	40	Saturate Degree	0.446					

(Form - 1)

LOCATION NO.	5	4	LOC	CATION NAME	Nuan Chan							
ROUTE NO.	3202 CONTROL SECTION NO.		. 100 K.P. OF		KP 5.000 - KP 6.000	ROAD CONDITION	Roadway Section					
K.P. OF CONTROL SECT.	K.P. 0.000	К.Р	8.785 PROBLEM LOCATION		K. 5.700							
DIVISION NAME		BANGKOK	•	DISTRICT NAME	BANGKOK	DISTRICT CODE	411					
TRAFFIC VOLUME	( WHOLE DAY MAJOR F	ROAD 49	7,177 5,322	PERCENT OF	(WHOLE DAY) MAJOR ROAD 14.5 MINOR ROAD	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	567					
( VEHICLES ) ( P.C.U. )	( PEAK HOUR MAJOR I MINOR	) ROAD	,,3.2.2	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD 16.1 MINOR ROAD	ACCIDENT RATE {PERSONS/IOO NIL.VEH KN.}	10.7					
NO. OF ACCIDENTS(CASES)		9		CASUALITIES (PERSONS)	(FATALITIES) 0 (INJURIES) 2	WHOLE CONTROL SECTION	23.8					

EXISTING ROAD CONDITION DIAGRAM



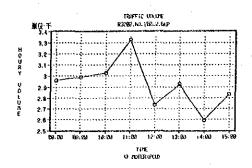
#### COMMENTS ON EXISTING ROAD CONDITION

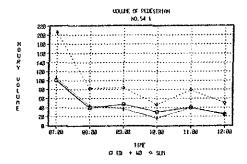
This is an uninterrupted flow section of R320, with supermarkets, factories, etc. lined up on both sides. It is a straight four-lane section with a wide median  $(3.5\ m)$ .

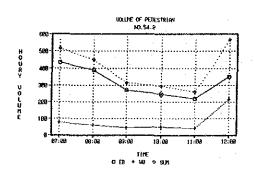
TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

TRAFFIC DATA ANALYSIS

Traffic Data Analysis







#### Accident Data Analysis

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Ţ	TON		CONTROL				C VOLUME			CASUALT	LES		4	CCIDENT RAI	E			REMARKS
- li	SEC+ (108) (80)	<b>№</b> 0.	SECTION NO.	K.P.·K.P.	LEXGTH (KM)	ADT .	KITOWEJEK	NUMBER OF ACCI- DENTS (CASES)	(CASES)	INJURT (CASES)	AND	(CASES/	ALL ACCIDENTS (CASES/ 100 HIL. VEH.KM.)	TIES/100	(CASUAL -	MIL'AEM'	CONTROL SECTION (CASUL- TIES/100 HIL.VEH. KM.)	
- L		·		·	<u>!</u> —		!		ļ			<u>'</u>		,	40.7	40.7	23.8	1 ľ
1	54	3202	100	5+000 - 6+000	1.000	51,112	51,112	9	0	. 2	5	9.0	48.2	0.0	10.7	10.7		1

Number of Accident by type NUMBER OF ACCIDENTS BY TYPE OF ACCIDENT (CASES) ROUTE CONTROL NO. SECTION NO. IMPROPER LOST OF HIT FIXED CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CONTROL CON HIT REAR END HEAD ON HIT AT SIDE OPPOSED COLLI- COLLI- INTER- COLLI- VENICLE SION SION SECTION SION SUM 54 320 100 2 0 2 Number of Accident by cause

	<del>,</del>	<del>,</del>		·····						<del></del>				
1.	ROUTE	CONTROL		NUMBER OF ACCIDENTS BY CAUSE OF ACCIDENT										
NO.	NO.	SECTION NO.					DRUNKEN Driver		OTHERS	SUN .	REMARKS			
			LIXIT	TO ROW					1	<u> </u>				
54	3202	100	8	Į	U	1	1							

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R3202 has a high traffic volume (ADT is 41,727 vehicles).

Speeding is the cause of most accidents (8 cases).

#### PROBLEMS

The pedestrian crossing is in a dangerous condition.

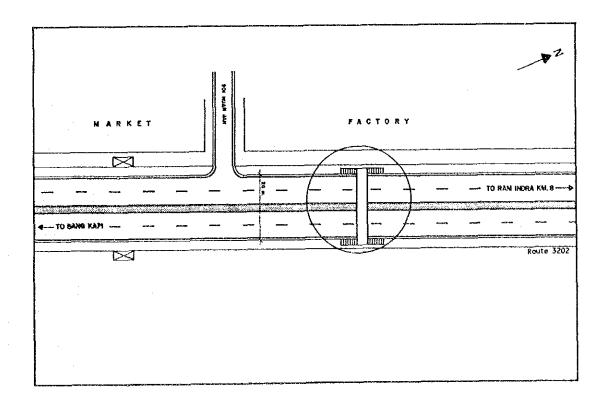
#### **MEASURES**

The installation of a pedestrian overpass is suggested.

#### **EVALUATION**

Installation of pedestrian overpass: Satisfies criteria for improvement.

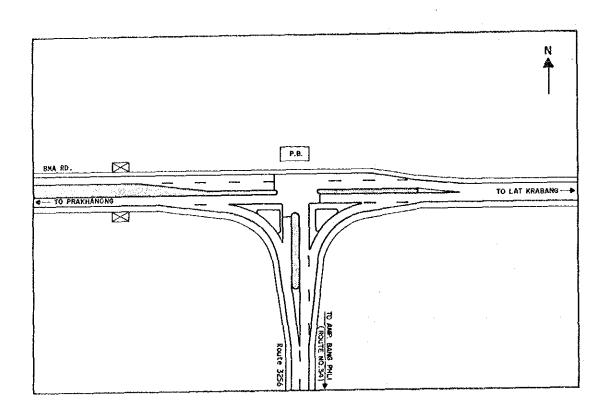
ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



(form - 1)

LOCATION NO.	5	5	Loc	CATION NAME	Onn Nuch-3256							
ROUTE NO.	3256/BMA CONTROL 100		K.P. OF	K.P. 11.000 -	K.P. 12.000	ROAD	Inter- section					
K P OF CONTROL SECT	к.р 11.719	— к.Р	25.629	LOCATION			DISTRICT CODE					
DIVISION NAME		BANGKOK		DISTRICT NAME	BAN	GKOK	DISTRICT CODE	411				
RAFFIC VOLUME	( WHOLE DAY ) MAJOR R	OAD		PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD		PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)					
(VEHICLES) (P.C.U.)	( PEAK HOUR )  MAJOR F	ROAD		HEAVY VEHICLES	(PEAK HOUR) MAJOR ROAD MINOR ROAD		ACCIDENT RATE (PERSONS/100 MIL. VEH. KM.)	23.2				
NO. OF ACCIDENTS(CASES)		2		CASUALITIES (PERSONS)	( FATALITIES )	0	WHOLE CONTROL SECTION	20.0				

EXISTING ROAD CONDITION DIAGRAM



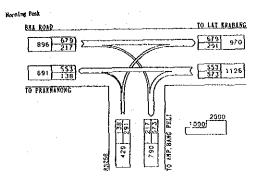
#### COMMENTS ON EXISTING ROAD CONDITION

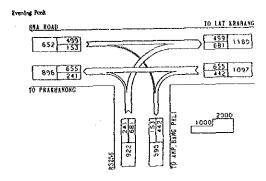
This is the intersection of R3256 and the BMA road. Both R3256 and the BMAroad sections are straight two-lane sections. Traffic at the intersection is channelized.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	
STREET LIGHTING	Û
GUARD FENCE	
CHANELIZATION	0

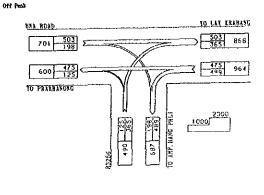
TRAFFIC DATA ANALYSIS

#### Traffic Data Analysis





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#### Accident Data Analysis

Number of Accident and Casualties

21 ( SHEET	~ .	JI MCL	, , ,															
		CONTROL	l				C POLUME	MASKS ER	ŀ	CASUAL F	IES		A	CIDENT RAT	E			REMARKS
SEC-	NO.	SECTION	K.P.	-K.P.	LENGTH (KH)	ADT	VERICLE	OF	DEATH	INJURY		ACCIDENT	ALL ACCIDENTS	DEATH	[KJERY	DEATH AND INJURY	CONTROL SECTION	
NQ.	1	1	<b>,</b>		•	(PCU/DAY)	KILOMETER ]	ACCI-	(CASES)	(CASES)		(CASES)	(CASES/	- JAURAS)	(CYZIAT	(CYSTI-	(CASUL-	
		l	ĺ				i .	(CASES)			(CASES)	LH)	100 MIL. VEN.KM.)	TIES/100	TIES/100	MIL.YEW.	TIES/100 MIL.VEH.	
	ļ ·				ľ			[						kN.)	(N.)	104.)	DH.)	
	3256	100	11+900	- 12+000	1,000		11,831	2	0	1	1	2.0	46.3	0.0	23.2	23.2	20.0	
32		1	1			1		2276	1	1		1		·			,	

| NO. | ROUTE CONTROL | NO. | SECTION | NO. | SECTION | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO.

Nu	gΟ	er of	Acciden	tbyc	ause			<del></del>				
		ROUTE	CONTROL		NUMBER O	F ACCIDE	NTS BY C	AUSE OF	ACCIDENT	·		
N		NO.	SECTION NO.	OVER	FAILURE TO VIELD				SLEEPY	OTHERS	SUN	REMARKS
L		0000	160	LINIT	TO ROW		~~~~~			0	2	-

COMMENTS ON TRAFFIC CONDITION

R3256 is a north-south road running in a suburban area by a connection to the southern end of R3119 (traffic flow data is not available).

COMMENTS ON ACCIDENT CONDITION

The accident frequency is low (2 cases).

#### PROBLEMS

Traffic volume is beyond the capacity of the stop-controlled intersection.

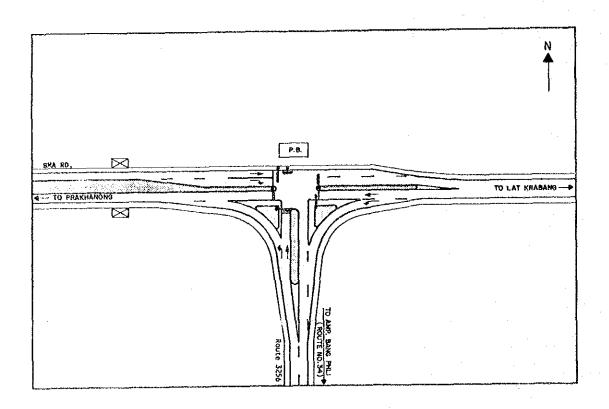
#### MEASURES

The installation of a pre-timed signal is suggested.

#### **EVALUATION**

Installation of pre-timed signal: Satisfies criteria for improvement.

ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



#### Morning Peak

ı	Ø	2	Ø
		Γ	
60	.3	39.	.7
Cycle Length	63	Saturate pegres	0.438

Evening Peak

1	Ø	2ø					
	• •	٢					
47	.8	52.	.2				
Cycle Length	67	Saturate Degree	0.705				

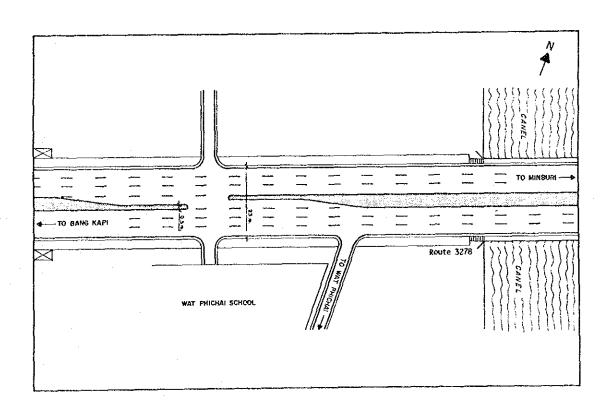
Off Peak

I	Ø	2.Ø					
1	•	٢					
53	.7	46	3				
Cycle Length	54	Saturate Degree	0.455				

(Form ~ 1)

LOCATION NO.	. 56	·	LOCA	ATION NAME		Wat P	hichai	· · · · · · · · · · · · · · · · · · ·
ROUTE NO.	3278	CONTROL SECTION NO.	100	K.P. OF	KP 0.500 -	KP 1,500	ROAD CONDITION	Roadway Section
K.P. OF CONTROL SECT.	K.P. 0.283	К,Р.	9.350	PROBLEM LOCATION	K.P 0,300	K.F 11500	CONDITION	30001011
DIVISION NAME		BANGKOK		DISTRICT NAME	BANGKO	DISTRICT CODE	411	
TRAFFIC VOLUME	(WHOLE DAY) MAJOR R	OAD 1	,445	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	23.0	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	288
( VEHICLES ) ( P.C.U.)	(PEAK HOUR) MAJOR ROAD 1,190 MINOR ROAD			HEAVY VEHICLES	(PEAK HOUR) MAJOR ROAD MINOR ROAO	35.1	ACCIDENT RATE ( PERSONS / 100 MIL. VEIL KM.)	0.0
NO. OF ACCIDENTS(CASES)		3		CASUALITIES (PERSONS)	(FATALITIES)	0	WHOLE CONTROL SECTION	58.6

EXISTING ROAD CONDITION DIAGRAM



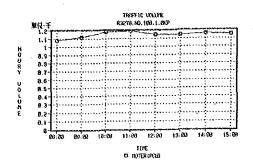
#### COMMENTS ON EXISTING ROAD CONDITION

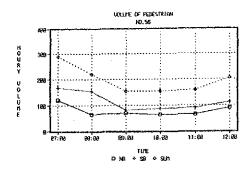
This is the intersection of R3278, a soi and a feeder road leading to a school. R3278 is a straight six-lane section with a wide median (4 m). A right-turn lane is provided on both sides of R3278.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

TRAFFIC DATA ANALYSIS

Traffic Data Analysis





#### Accident Data Analysis

Number of Accident and Casualties

A CHE	oer (	ni wer	HOOK AND L	03130	LICO							<del></del>					1
	ROJIE	CONTROL				VOLUME			CASUALT	IES		A	CCIDENT RAT	E		ACCIDENT RATE OF	REHARKS
SEC- TION NO.	NO.	SECTION NO.	K.PK.P.	LENGTH (ACM)	ADT (PCU/DAY)	KTI CHELEE AERICTE	RUMBER OF ACC!- OENIS (CASES)		(CASES)	AND	ACCIDENT DENSITY (CASES/ KM)	ALL ACCIDENTS (CASES/ 100 MIL. VEH.CH.)	DEATH (CASUAL- TIES/100 HIL.VEH. EM.)	(CASUAL-	DEATH AND INJURY (CASIR- TIES/100 HIL.VEH. EM.)	CONTROL SECTION (CASIL- TIES/100 NIL.VEN. (OR.)	
	ļ	ļ		!	!!	<del></del>										58.6	la l
56	3278	100	0+500 · 1+500	1.000	14,445	14,445	3	0	0	0	3.6	56.9	0.0	0.0	0.0		

MUSE CONTROL NO. SECTION HIT STAIN STORE COLLIFICATION STON SCOTT TRAIN STORES SUPPLIES STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE STORE ST

Kueb	er of	Accider	it by c	ause							
NO.	ROUTE NO.	CONTROL SECTION NO.	OVER	NUMBER OF ALLURE TO YIELD TO ROW	IMPROPER	YEHICLE	DRUNKEN			SUN	REMARKS
56	3278	100	2	1	0	0	0	0	0	3	

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

 $\tt R3278$  has high traffic volume (ADT is 11,400 vehicles, RHV is 23%).

The accident frequency is low (3 cases).

#### **PROBLEMS**

The pedestrian crossing is in a dangerous condition.

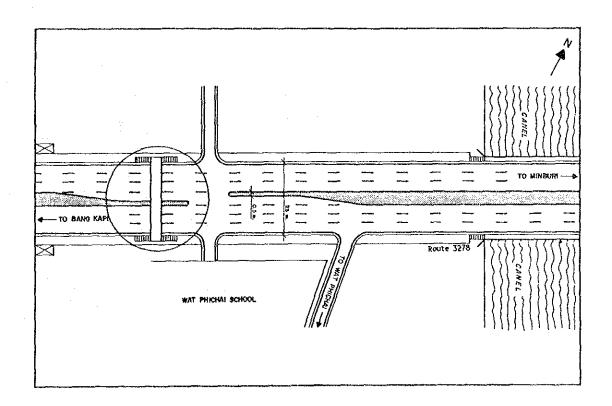
#### MEASURES

The installation of a pedestrian overpass is suggested.

#### **EVALUATION**

Installation of pedestrian overpass: Satisfies criteria for improvement.

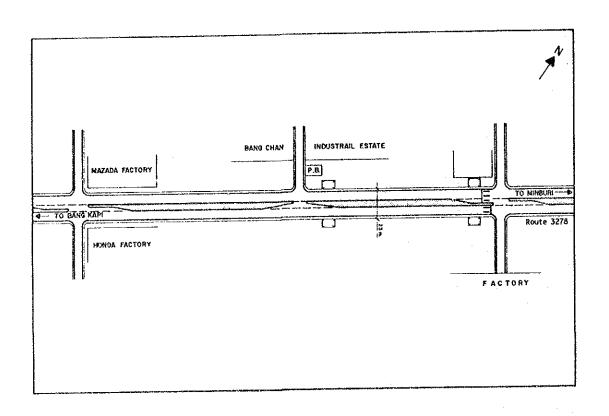
ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



(Form - 1)

57 LG			CATION NAME	rial Estate				
3278 CONTROL SECTION NO.		100	K.P. OF	к.р. 6.500	к.р. 8,500	ROAD CONDITION	Roadway Section	
K-P 0.283	— К.Р.	9.350	LOCATION					
	BANGKOK		DISTRICT NAME	BANG	DISTRICT CODE			
MAJOR F	ROAD 14	,445	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	23.0	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	1,516	
( PEAK HOUR ) MAJOR F	) ROAD 1	, 190	HEAVY VEHICLES	(PEAK HOUR) MAJOR ROAD MINOR ROAD	35.1	ACCIDENT RATE ( PERSONS / 100 MIL. VEH KM )	19.0	
6			CASUALITIES (PERSONS)	(FATALITIES)	1	WHOLE CONTROL SECTION	58.6	
	3278  K.P. 0.283  (WHOLE DAY MAJOR F MINOR F MINOR F MINOR F MINOR F MINOR F MINOR F MINOR F MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MINOR MIN	3278 CONTROL SECTION NO.  K.P. 0.283 - K.P.  BANGKOK  (WHOLE DAY) MAJOR ROAD MINOR ROAD (PEAK HOUR) MAJOR ROAD MINOR ROAD  MINOR ROAD  1 MINOR ROAD	3278 CONTROL 100  K.P. 0.283 — K.P. 9.350  BANGKOK  (WHOLE DAY) MAJOR ROAD 14,445 MINOR ROAD (PEAK HOUR) MAJOR ROAD 1,190 MINOR ROAD	3278 CONTROL SECTION NO. 100 K.P. OF PROBLEM LOCATION  BANGKOK DISTRICT NAME  (WHOLE DAY) MAJOR ROAD (PEAK HOUR) MAJOR ROAD (PEAK HOUR) MAJOR ROAD MINOR ROAD  (%)  CASIJALITIES	3278 CONTROL SECTION NO. 100 K.P. OF PROBLEM LOCATION K.P. 0.283 — K.P. 9.350 LOCATION K.P. 6.500 —  BANGKOK DISTRICT NAME BANG  (WHOLE DAY) MAJOR ROAD 14,445 MINOR ROAD (PEAK HOUR) MAJOR ROAD (%) MINOR ROAD MINOR ROAD MINOR ROAD  CASUALITIES (FATALITIES)	3278 CONTROL SECTION NO. 100 K.P. OF PROBLEM LOCATION  K.P. 0.283 — K.P. 9,350 LOCATION  BANGKOK DISTRICT NAME BANGKOK  (WHOLE DAY) MAJOR ROAD 14,445 MINOR ROAD  (PEAK HOUR) MAJOR ROAD 1,190 PERCENT OF HEAVY VEHICLES (%)  MINOR ROAD  (PEAK HOUR) MAJOR ROAD 35.1 MINOR ROAD  CASUALITIES (FATALITIES) 1	SECTION NO.   100   K.P. OF PROBLEM LOCATION   K.P. 6.500	

EXISTING ROAD CONDITION DIAGRAM



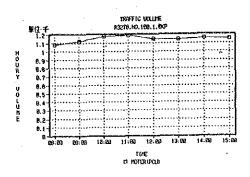
#### COMMENTS ON EXISTING ROAD CONDITION

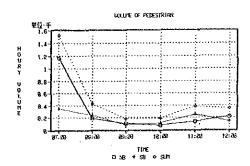
This is the intersection of R3278 and a feeder road leading to a factory. R3278 is a straight six-lane section with a wide median (4 m).

TRAFFIC SIGNAL	[ ·
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

TRAFFIC DATA ANALYSIS

#### Traffic Data Analysis





#### Accident Data Analysis

Number of Accident and Casualties

STUDY		CONTROL	1	1	TRAFF!	C YOLUHE			CASUALT	ĘS	}	AS	CLIDENT RAI				REMARKS
SEC- TION NO.	NO.	SECTION NO.	K.PK.P.	LENGTH (KM)	ADI (PCU/DAY)	KITOWETEK	OF: ACCI- DENTS (CASES)	(CASES)	(CYZEZ) IN YOSA	AVO	ACCIDENT DEHSITY (CASES/ KM)	ALL ACCIDENTS (CASES/ 100 HIL. VEH.RM.)	OEATH (CASUAL- TIES/100 RIL.VEK. UK.)	(CASUAL-	DEATH AND INJURY (CASEA- TIES/100 HIL.VEN. EN.)	CONTROL SECTION (CASUL- TIES/100 HIL.VEN. (CASUL- LIES/100	
57	3278	100	6+500 - 8+500	2.000	14,445	28,890	6	1	1	2	3.0	56.9	9.5	9.5	19.0	58.6	9

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NO.		CONTROL			- 1	NI.	MBER OF	ACCIDENTS	BY TYPE		DENT (CASI				Atuspe	SIM
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) '	1	}	TRIANS	PILITE		VENICLE			SECTION	\$104	<b></b>		OBJECT		<u>  </u>	
57	327	100	1	0	2	0	1	0	0	0	0	0	11	l	ł	

COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R3278 has high traffic volumes (ADT is 11,400 vehicles, RHV is 23%).

The accident frequency is low (only 6 cases recorded). Most of the accidents (83% of the total) were caused by speeding.

#### **PROBLEMS**

The pedestrian crossing is in a dangerous condition.

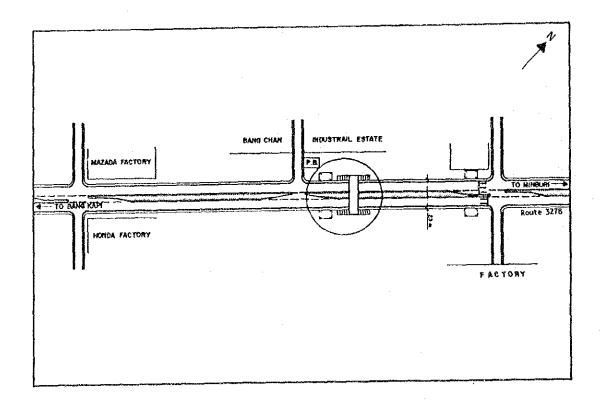
#### MEASURES

The installation of a pedestrian overpass is suggested.

#### **EVALUATION**

Installation of pedestrian overpass: Satisfies criteria for improvement.

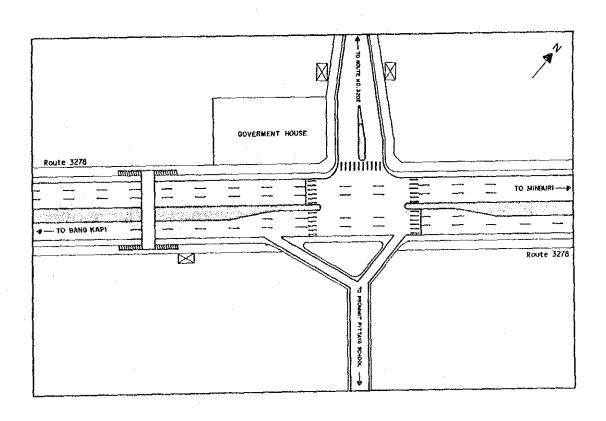
ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



(Form ~ 1)

LOCATION NO.	5	8	LOCA	ATION NAME		Government	House	
ROUTE NO.	3278	CONTROL SECTION NO.	100	K.P. OF	KP 0 500 -	KP 1.500	ROAD CONDITION	Inter- section
K.P. OF CONTROL SECT.	K.P 0.283	— К.Р.	9,350	PROBLEM LOCATION	KP 0.500 - KP 1.500		CONDITION	
DIVISION NAME		BANGKOK		DISTRICT NAME	BANGK	OX	DISTRICT CODE	411
TRAFFIC VOLUME	( WHOLE DAY MAJOR F MINOR I ( PEAK HOUR	ROAD 14	,445	PERCENT OF HEAVY VEHICLES	(WHOLE DAY)  MAJOR ROAD  MINOR ROAD  (PEAK HOUR)	23.0	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	······································
( P.C.U. )	MAJOR	ROAD 1	, 190	(%)	MAJOR ROAD MINOR ROAD	35.1	ACCIDENT RATE (PERSONS / 100 MIL. VEH. XN.)	0.0
NO. OF ACCIDENTS(CASES)		3		CASUALITIES (PERSONS)	(FATALITIES)	0	WHOLE CONTROL SECTION	58.6

EXISTING ROAD CONDITION DIAGRAM



COMMENTS ON EXISTING ROAD CONDITION

This is the intersection of R3278 and a road leading to R3202. R3278 is a straight six-lane section.

TRAFFIC SIGNAL	
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	
GUARD FENCE	
CHANELIZATION	

# (Form ~2) TRAFFIC DATA ANALYSIS Traffic Data Analysis Off Feek Evening Peak Norning Penk TO MINBURI 13278 1272 1718 TO BANG BAPS VARIATION IN TRAFFIC VOLUME 17 • 178 g 173 • 178 g Accident Data Analysis

1001	ROUTE	CONTROL	ident and		TRAFFI	C VOLUME		I	CASUALT	125			CCIDENY RAT	ie .		ACCIDENT RATE OF	REMARK
C-	₩D.	SECTION NO.	<b>Κ.Ρ</b> Κ.Ρ.	LENGTH (KM)	ADT	VENICLE	MAMBER OF	DEATH	19JURY		ACCIDENT ACCIDENT	ALL	DEATH	INAMI	DEATH AND	SECTION	
iO.					(PCU/DAY)	KILOTIER	DENTS	(CASES)	(CASES)		(CASES/	(CASES/	(EASUAL- TIES/100	(CASUAL- TIES/100	(CASUL-	(CASUL- TIES/100	
		] [			ļ	ļ	(CASES)		]	LCASES?	L.,	VEH.KH.)	MIL.VER.	MIL.YEH.	MIL.VEH.	MIL.VEN.	J
		İ		_		I		ļ <u>.</u>	!	ļ	!	! <u></u>		0.0	6.0	58.6	<u> </u>

Hus		of Ac	ciden	t by	type											
NO.		CONTROL				R.	MOER OF	ACCIDENT	S BY TYPE	OF ACCIO	DENT (CAS	ES)				
il	₩Q.	SECTION RO.	HST	ніт	NIT	нат	REAR END		IA EIN		INPROPER			HII TRAIN	OTHERS	SUR
1			PEDES- TRIAKS	BICYCLE	DURING	OPPOSED VEHICLE			INTER-	COLLI-	TURNING	LUSTINGE	PIXED	HOLLY	1 1	
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COMMENTS ON TRAFFIC CONDITION

COMMENTS ON ACCIDENT CONDITION

R3278 has high traffic volumes (ADT is 11,400 vehicles, RHV is 23%).

The accident frequency is low (3 cases only).

#### **PROBLEMS**

Traffic volume is beyond the capacity of the stop-controlled intersection.

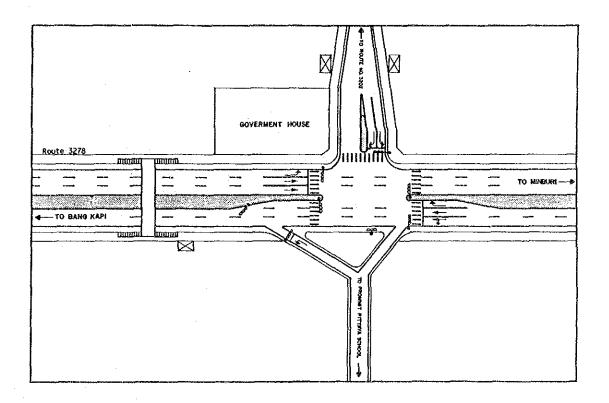
#### MEASURES

The installation of a pre-timed signal is suggested.

#### **EVALUATION**

Installation of pre-timed signal: Satisfies criteria for improvement.

ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN





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	41.8	39	.1		19.1
	Cycle Length	110	Satura Degre		0.751

Evening Peak

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+					-	
56.9		26	.0		17.1	
Cycle Length			Satur Degre		0.617	

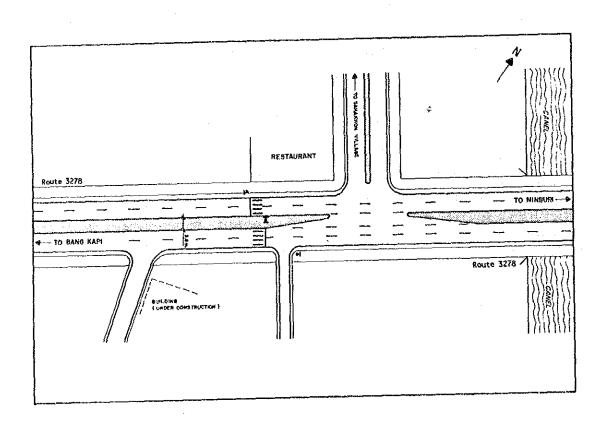
Off Peak

	ΙØ	-	2	ø		3Ø
	+		*		_	
۱	52.4		30	.7		16.9
	Cycle Length		124	Satur. Degre		0.508

(Form - 1)

LOCATION NO.	5	9	Loc	ATION NAME	5	aha Khon Kan	Keha	
ROUTE NO.	3278	CONTROL SECTION NO.	100	K,P. OF PROBLEM	K.P. 3,000 -	K.P 4.000	ROAD CONDITION	Inter- section
K P OF CONTROL SECT.	к.в. 0,283	K.P.	9.350	LOCATION	3.000		DIOVENOT CODE	
DIVISION NAME		BANGKOK		DISTRICT NAME	BANGKO	K	DISTRICT CODE	411
TRAFFIC VOLUME	(WHOLE DAY MAJOR F	ROAD 1	4,445	PERCENT OF	(WHOLE DAY) MAJOR ROAD MINOR ROAD	23.0	PEDESTRIAN VOLUME ( PERSONS / PEAK HOUR)	
( VEHICLES ) ( P.C.U.)	( PEAK HOUR ) MAJOR 1	) ROAD	1,190	HEAVY VEHICLES (%)	(PEAK HOUR) MAJOR ROAD 35.1 MINOR ROAD		ACCIDENT RATE (PERSONS/100 MIL. VEH. KN.)	56.9
NO. OF ACCIDENTS(CASES)		6		CASUALITIES (PERSONS)	(FATALITIES)	0 3	WHOLE CONTROL SECTION	58.6

EXISTING ROAD CONDITION DIAGRAM



COMMENTS ON EXISTING ROAD CONDITION

This is the intersection of R3278 and a feeder road leading to Sahakhon Village. R3278 is a straight four-lane section with a wide median  $(3.6\ m)$ .

TRAFFIC SIGNAL	· ·
PEDESTRIAN CROSSING	0
PEDESTRIAN OVERPASS	
STREET LIGHTING	0
GUARD FENCE	
CHANELIZATION	

# TRAFFIC DATA ANALYSIS Traffic Data Analysis Morning Peak Evening Peak 1000 3000 1900 2000 TO RENOURL TO MINBURY R3278 1337 - 116 $\frac{307}{1221}$ 1528 37 1304 1217 1304 1342 1217 1305 87 3 18 1213 1416 251 1165 TO BANG KAPI to RANG EAP! Off Penk VARIATION IN TRAFFIC VOLUME 1000 2000 TO MINBURI R3278 HOURLY TRAFFIC VOLUME (Thousques) 1001 1088 1076 75 2 9.6 987 <del>93</del> TO BING LAPI Q.5 0.4 10:00 12:00 19:00 13:00 PME 0 W9 4 EB 6 SØ Accident Data Analysis CEATE INARY Number of Accident by type MARKER OF ACCIDENTS BY TIPE OF ACCIDENT CEASES) wher of Accident by cause ROUTE CONTROL NUMBER OF ACCIDENTS BY CAUSE OF ACCIDENT NO. SECTION OVER FAILURE REPROPERSEMENCE DRUMAEN NO. SPEED TO YIELDPASSING DEFECTS DRIVER SLEEPY OTHERS SUM LUNIT TO ROW REMARKS

COMMENTS ON TRAFFIC CONDITION

RHV is 23%).

R3278 has high traffic volumes (ADT is 11,400 vehicles,

COMMENTS ON ACCIDENT CONDITION

The accident frequency is low (6 cases only).

#### **PROBLEMS**

Traffic volume is beyond the capacity of the stop-controlled intersection.

#### MEASURES

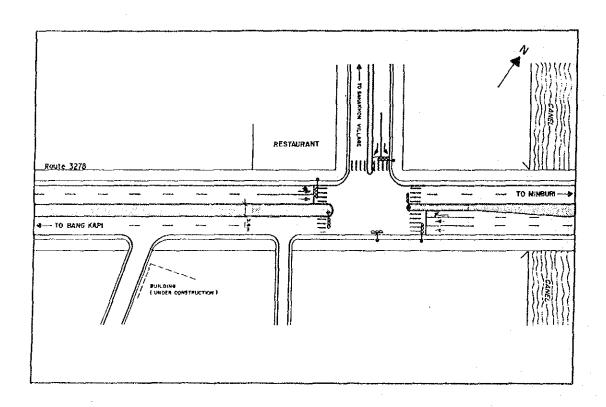
The installation of a pre-timed signal is suggested.

The possible countermeasures described above are classified into ten categories, with the relevant Study Section number indicated for each measure.

#### **EVALUATION**

Installation of pre-timed signal: Satisfies criteria for improvement.

ILLUSTRATION OF TRAFFIC SAFETY / OPERATION PLAN



#### Morning Peak

10		2	ø	3 Ø
<u>.</u>			_	
62.5	62,5		8.3	 29.2
Cycle Length		96	Satura Degra	 0.510

Evening Peak

10		2	Ø		3Ø	
		_		] .]		
	◄					
60.3	60,3		.1		25.6	
Cycle Length			Satura Degre	1	0.512	

Off Peak

ΙØ		2	ø		3Ø	
				1		
71.4	71.4		.7	<u> </u>	17.9	
Cycle Length		112	Satura Degre		0.359	

# CALCULATION METHOD OF THE MAXIMUM NUMBER OF VEHICLES MAKING A U-TURN

U-turn vehicles have to find time gaps in the opposite throughtraffic flow during which they can safely complete their turning movement. The maximum number of vehicles which can make a U-turn can be calculated by the following equation, based on the gap acceptance theory.

$$v_{\text{max}} = \frac{v_{\text{max}}}{1 - e^{-rt_2}}$$

Where;

Umax: Maximum number of vehicles making a U-turn (vehicles/hr.)

N: Vehicles per hour on opposite through lane (one lane effected by U-turn only, vehicles/hr.)

r: N/3600 (vehicles/sec.)

e : Base of the natural logarithm

 $t_1$ : Headway of vehicles in the U-turn zone from opposite through-flow (sec.)

t2: Headway of U-turn vehicles (sec.)

The value of  $t_1$  in the equation is the critical acceptable gap (headway) on the opposite through-lane for a U-turn vehicle. In this Study, a traffic behaviour survey, carried out using a video camera, was conducted in front of AIT in order to collect acceptable gap data. The value of  $t_1$  was defined in Table 1 according to the results of the video data analysis, and the value of  $t_2$  was defined as 3 sec.

Table 1 The Volume of  $t_1$ 

Running Speed (km/hr)	Less	than	30	30-40	40-50	50-80	more	than	80
t <sub>1</sub> (sec)		3		4	5	6		7	

The maximum number of vehicles making a U-turn  $(U_{max})$  can be calculated by the above equation and the values of parameters can be determined from Table 1, as shown in Table 2.

Table 2. The Maximum Number of Vehicles Making a U-turn

Unit: veh./hr.

(veh./h Running Speed (km/hr)	N r.) 500	1000	1500	2000	2500	3000
Less than 30	967	769	602	466	356	268
30 - 40	842	582	397	267	178	117
40 - 50	733	441	262	153	89	51
50 - 80	638	334	173	88	44	22
More than 80	555	253	118	50	22	10

N : Vehicles per hour on opposite through-lane (one lane effected by U-turn only)

#### ANALYSIS ON THE EFFECTIVENESS OF SIGNAL COORDINATION

The delay caused by the signal installation and the effectiveness of signal coordination were estimated by the following analysis, based on the traffic stream simulation.

#### (1) Existing Conditions

The existing road and traffic conditions are shown in Figure 1.

#### (2) Proposed Signal Indications

Figure 2 shows the proposed signal phasing plans for each intersection.

1 8	2 Ø	3 ø		
4	7	+		
6 78 Y 4	G 32 AR 2	6 19 Y 3 AR 3		
B2 SEC.	34 SEC.	25 SEC.		
CYCLE LENGTH	14	SEC.		

1.6	5 8	3 Ø				
* 7	~_	*				
G 78	6 5	6 46				
Y 4	AR Z	Y 3				
)	ì	AR 3				
B2 SEC.	7 SEC.	52 SEC				
CYCLE LENGTH	141 SEC.					

ıg	2 Ø	3 Ø		
1.	7	1		
7	_ \_	<u> </u>		
G 55	6 37	G 37		
Y 4	AR 2	Y 3		
1	. ]	AR 3		
59 SEC.	39 SEC.	43 SEC.		
CYCLE LENGTH	141 S	EC.		

Figure 2 PROPOSED SIGNAL PHASING PLANS

The offset parameters on the basis of coordinated speed, are set as follows:

- The offset between intersection A and B is 35 sec.;
- The offset between intersection B and C is 108 sec.

#### (3) Evaluation of Delay

Table 1 shows the delays which were calculated by the traffic stream simulation.

This table indicates the following:

 A through-traffic delay of approximately 12 seconds occurs when signals are installed. This delay does not

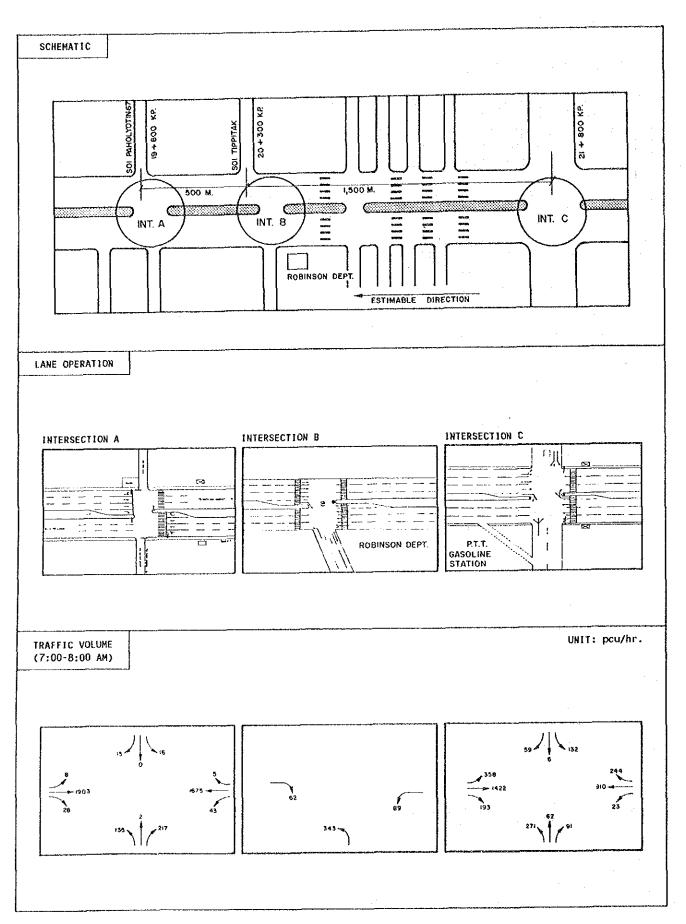


Figure 1 EXISTING TRAFFIC CONDITION

exist in the absence of signals.

 Coordinated signals reduce the through-traffic delay by 25%, as compared with uncoordinated signals.

Table 1 Calculated Delay by Simulation

		Average through traffi flow delay (sec./veh.)				
Actual condition (no signed control)	142	0				
Signal control (without coordinated control)	154	12				
Signal control (with coordinated control)	151	9				

# Unit Construction Cost

CENERAL and EARTHWORKS	<u> </u>	T-Unit	Tunit Cost
Excavation (Soil) m3 200  Removal of Curb and Gutter m 200  Removal of Pavement (As) m2 30	Item	OUIC	LTBaht?
Excavation (Soil) m3 200  Removal of Curb and Gutter m 200  Removal of Pavement (As) m2 300  PAVEMENT	GENERAL and EARTHWORKS	1000 mag upon tree loan tree dans amen delle	
Removal of Curb and Gutter			*** *** *** *** *** *** *** *** ***
Removal of Pavement (As)	Embankment (Soil)	m3	
Removal of Pavement (SC)	Removal of Curb and Gutter		
PAVEMENT	Removal of Pavement (As)		
Carriageway		m2	200_
Carriageway	400 800 800 800 800 600 E20 E20 E20 E20 E20 E20 E20 E20 E20 E		
- Asphaltic Concrete (5cm.)	PAVEMENT	ON NO 465 465 466 466 165 655 536 536	
- Asphaltic Concrete (5cm.)	Carriageway		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
- Reinforced Concrete (23cm.)	- Asphaltic Concrete (5cm.)	with the first and and with the sale day.	
- Base Course	- Reinforced Concrete (23cm.)	Mar desp and they they they they they they	
Subbase Course			
Subbase Course		m3	
Surface Treatment (Single)   m2   60		m3	380
Traffic Signal   Set   3,600	Shoulder		
Sidewalk		m2	
FACILITY for TRAFFIC CONTROL	(Double)	m2	
FACILITY for TRAFFIC CONTROL   Traffic Signal   Set   3,600	Sidewalk	m2	100
Traffic Signal	man trai man upon man apro tum onno beo quin pais tinh dan etat una una que una una una que una una vaça des dipo men darà una una dels dels dels dels		
Traffic Signal	FACILITY for TRAFFIC CONTROL		
- Post with Arm set 25,000 - Lighting Set set 20,000 - Control Board set 2,500 - Controller set 250,000 - Traffic Sign - Post m 180 - Warning Sign Board m2 2,600 - Regulatory Sign Board m2 2,600 - Reflectrized Thermoplastic m2 350 - Reflectrized Road Paint m2 250 - Guard Fence - Guard Rail (Veh.) m 1,200 - Guard Fence (Ped.) m 1,200 - Double set 38,500 - Delineator set 800 - Road Stud set 350 - Filling m2 200 - Sodding m2 200 - STRUCTURE			
- Post with Arm		set	3,600
- Lighting Set	\(	set	25,000
- Control Board		set	
Traffic Sign			~ = = = = = = = = = = = = = = = = = =
Traffic Sign	[	App. (64) (64) (64) (64) (64) (64)	
The standard			
- Warning Sign Board		m	180
Regulatory Sign Board   m2   2,600			2,600
Pavement Marking			
- Reflectrized Thermoplastic			
- Reflectrized Road Paint		m2	350
Guard Fence       m       1,200         - Guard Fence (Ped.)       m       1,200         Lighting       set       27,000         - Single       set       38,500         Delineator       set       350         Road Stud       set       350         Island       m       200         - Filling       m3       90         - Sodding       m2       20			
- Guard Rail (Veh.) - Guard Fence (Ped.) Lighting - Single - Double - Double Delineator Road Stud - Concrete Curb - Filling - Sodding - Sodding  STRUCTURE			
- Guard Fence (Ped.) m 1,200 Lighting set 27,000 - Single set 38,500 Delineator set 800 Road Stud set 350 Island m 2000 - Filling m3 90 - Sodding m2 20			1 200
Lighting       set       27,000         Double       set       38,500         Delineator       set       800         Road Stud       set       350         Island       m       200         Filling       m3       90         Sodding       m2       20			] +++ +++ +++ +++ +++ +++ +++ +++ +++ +
- Single       set       27,000         - Double       set       38,500         Delineator       set       800         Road Stud       set       350         Island       m       200         - Filling       m3       90         - Sodding       m2       20         STRUCTURE       STRUCTURE       38,500			
- Double         set         38,500           Delineator         set         800           Road Stud         set         350           Island         m         200           - Filling         m3         90           - Sodding         m2         20		COF	27 000
Delineator         set         800           Road Stud         set         350           Island         m         200           - Filling         m3         90           - Sodding         m2         20   STRUCTURE			
Road Stud Island Concrete Curb Filling Structure			
Island - Concrete Curb - Filling - Sodding  STRUCTURE  Island - M 200 M3 90 20			2 May 400 May 647 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May 400 May
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- Sodding m2 20 STRUCTURE			
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#### Appendix 4.2 (1)

#### Construction Quantity

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ENERAL and EARTHWORKS									ĺ	Ī	]	
Excavation (Soil)	Em									}		
Embankment (Soil)	m3	*****	47		5,503		378	165	44	53,740	508	194
Removal of Curb and Gutter			::-	365		168	60	320				
******	<u>-</u>							320	<b></b>			
Removal of Pavement (As)	m2				14,818							
(Co)	S		]	]					156	<b>-</b>		
AVENENT												
Carriageway			1							}	ĺ	
- Asphaltic Concrete (5cm.)	m3	5	25		1,537			22	215	622		
- Reinforced Concrete (23cm.)	m2			423		715	458					9(
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- Sand	m3	]::-	===	]				:			}	
- Base Course	m3	23	946		5,355		43	110	594	3,971		544
- Subbase Course	m3	33	173	25	7,012	65	45	154	831	4,350		14
Shoulder		{							ļ			
- Surface Treatment (Single)	m2								[	[	[	[
(Double)	m2		3,288		1,388		173			3,456		2,17
			127222				:::	138				1277
Sidewalk	m2				6,375							
ACILITY for TRAFFIC CONTROL												
Traffic Signal												
- Post	set		<b>-</b> -									
				} <del>-</del> -	;-				}			
- Post with Arm	set		8	10	4	3	6	8		8	6	
- Lighting Set	set		8	10	8	4	8	8		12	8	
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- Controller	set		1				1	1		1	1	
- Wiring	set	}	1	1	1	1	1	1		1	1	
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- Warning Sign Board	m2		5								2	
			\ <del>-</del> -			3			8			
- Regulatory Sign Board	m2	[ <u>-1</u> -										
Pavement Marking					[				<b> </b>		[ <u></u> -	[ <u>-</u> -
- Reflectrized Thermoplastic	m2	1,788	281	360	581	324	231	268	34	219	243	18
- Reflectrized Road Paint	m2	143	287	162	1,034	176	241	124	487	504	73	11!
Guard Fence			1									
- Guard Rail (Veh.)	m									310		
- Guard Fence (Ped.)	m	1	1		ł		\ <u>.</u>		l <b>.</b>			Ì
Lighting												
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Island			}			<b>\</b>	1	1	<b>\</b>		}	1
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- Filling			<b>-</b>			52		769			54	3
- Sodding	m2	<b></b>	<u> </u>	386	8,496							
TALEATION												
TRUCTURE							:::-					
- Bridge	m2	<b> </b>			7,755		173			1		
- Retaining Wall	m	l			620	<b></b>					1	<b> </b>
- Culvert Box	m					ļ <i></i>				36		
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	<u>-</u>	[ <i>-</i>								75		
AND ACQUISITION	m2	Ι.	i	1	1	i	•	Į.	1	1 (3	1	ι