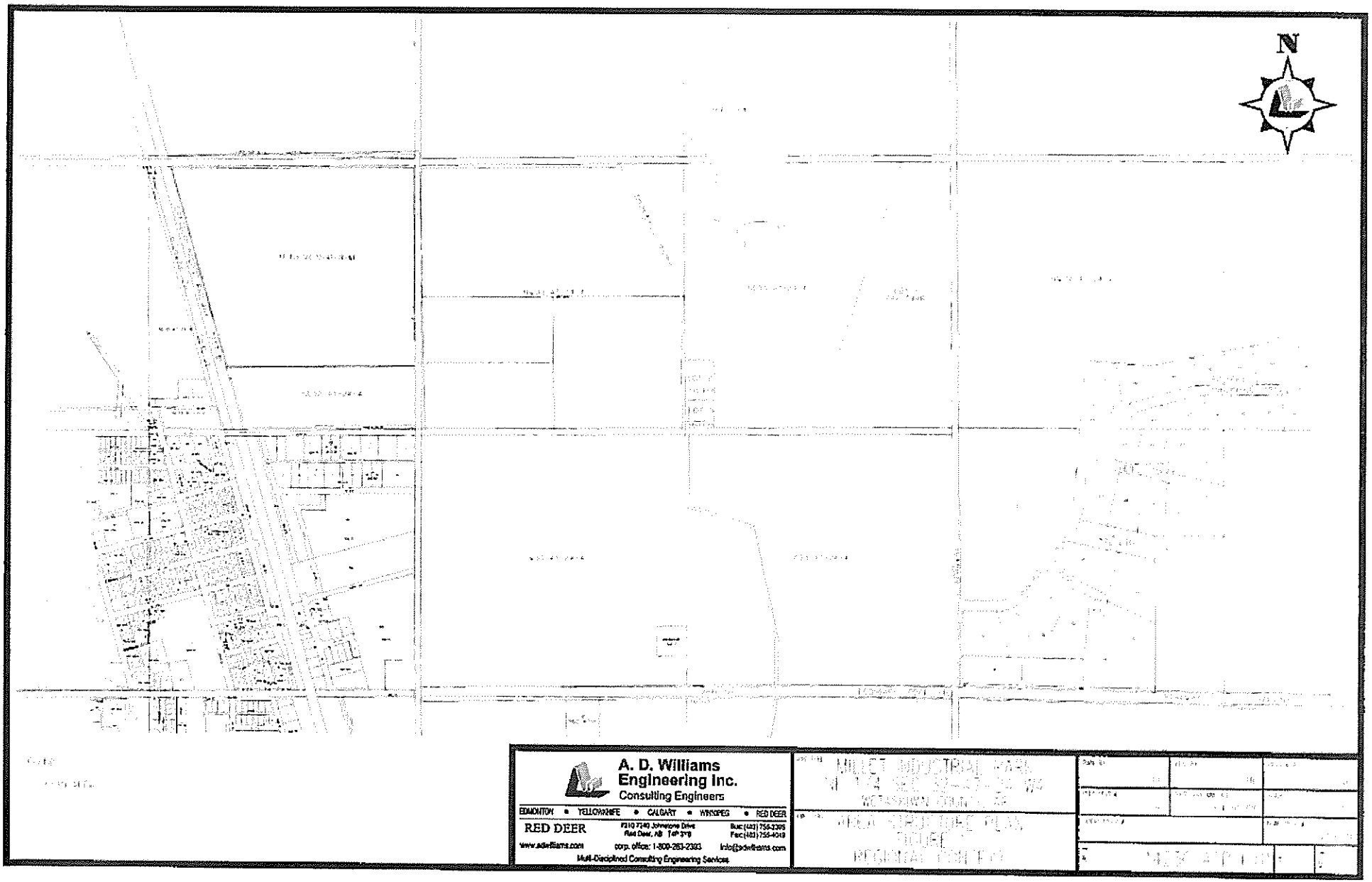
APPENDIX A

SITE MAPS



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Engineering Inc.
Consulting Engineers
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www.adwilliams.com
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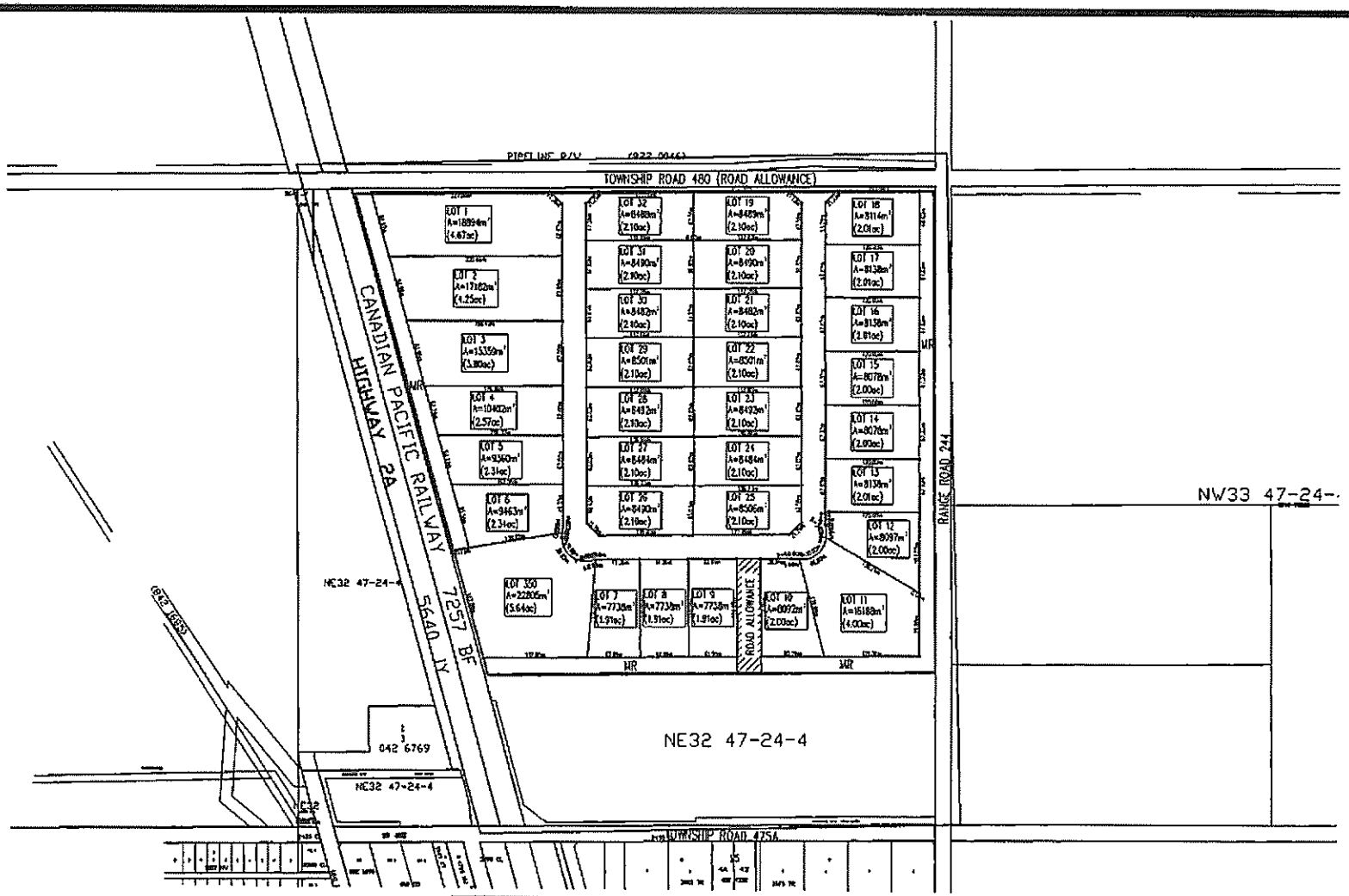
Multi-Disciplined Consulting Engineering Services



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Multi-Disciplined Consulting Engineering Services

JOB TITLE: MILLET INDUSTRIAL PARK
NE 1/4 SEC 32-47-24 W4
WETASKIWIN COUNTY, AB

DWG TITLE: AREA STRUCTURE PLAN
FIGURE 5
PROPOSED LOT LAYOUT

DWN BY:	DES. BY:	PROJ MGR:
AC	JK	WC
PCP REVIEW:	DATE (YY-MM-DD):	SCALE:
JK	2009.06.11	1:5000
CLIENT PROJ #:		ADW PROJ #:
		14236.00
DWG #: 14236.00 ASP FIG5	SHT # 7	REV # 1

APPENDIX B

TRAFFIC COUNT DATA & AADT'S

Intersection of:	Highway 2A & Township Road 480
Date:	2009 (Background)
Time	AADT

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

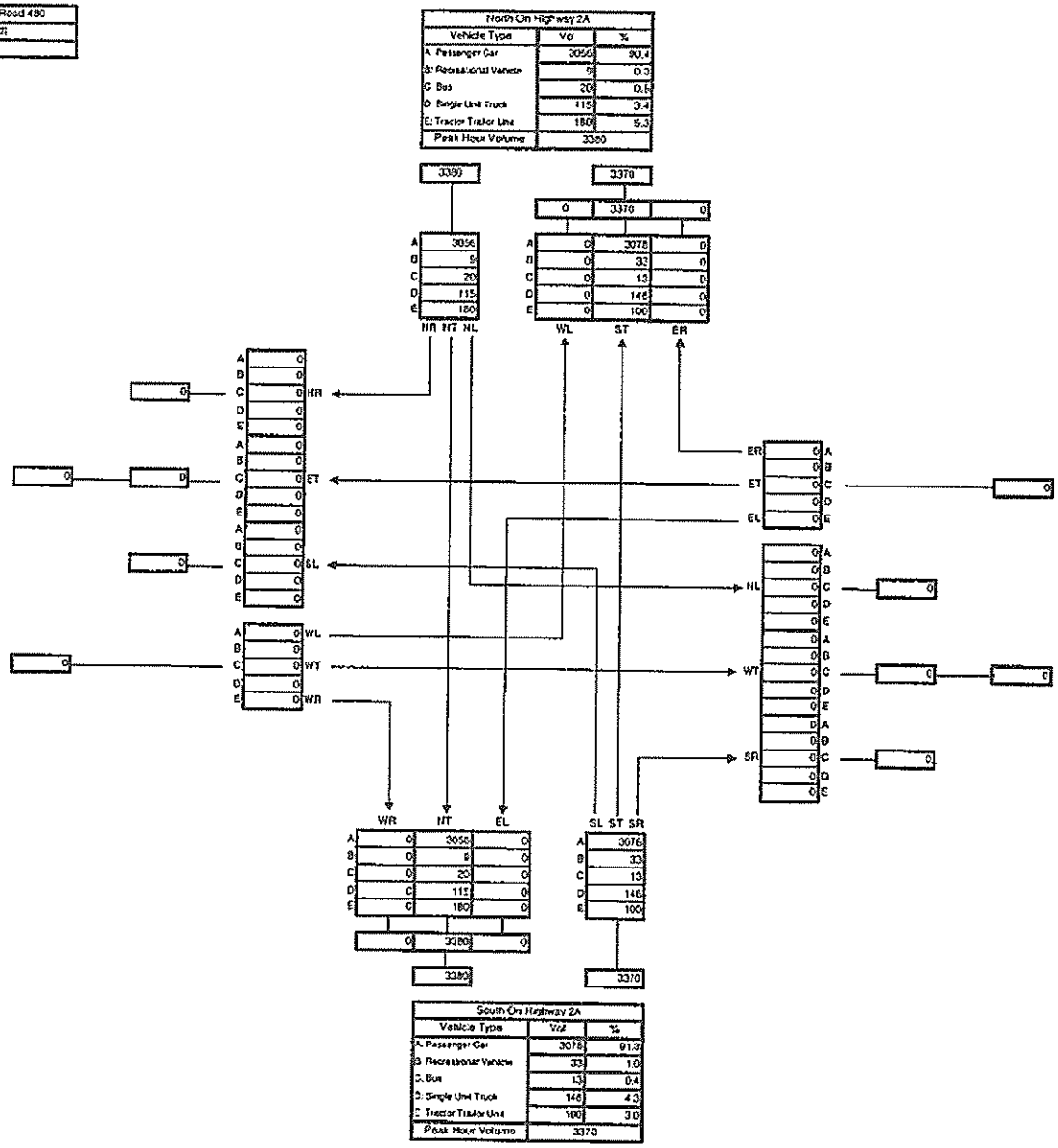
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Highway 2A		
Vehicle Type	Vol	%
A: Passenger Car	3056	90.4
B: Recreational Vehicle	9	0.3
C: Bus	20	0.6
D: Single Unit Truck	115	3.4
E: Tractor Trailor Unit	180	5.3
Peak Hour Volume	3380	

West On n/a		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailor Unit	0	0.0
Peak Hour Volume	0	

East On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailor Unit	0	0.0
Peak Hour Volume	0	

South On Highway 2A		
Vehicle Type	Vol	%
A: Passenger Car	3078	91.1
B: Recreational Vehicle	33	1.0
C: Bus	13	0.4
D: Single Unit Truck	146	4.3
E: Tractor Trailor Unit	100	3.0
Peak Hour Volume	3370	



Intersection of:	Highway 2A & Township Road 460
Date:	2009 (Background)
Time:	AM Peak

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

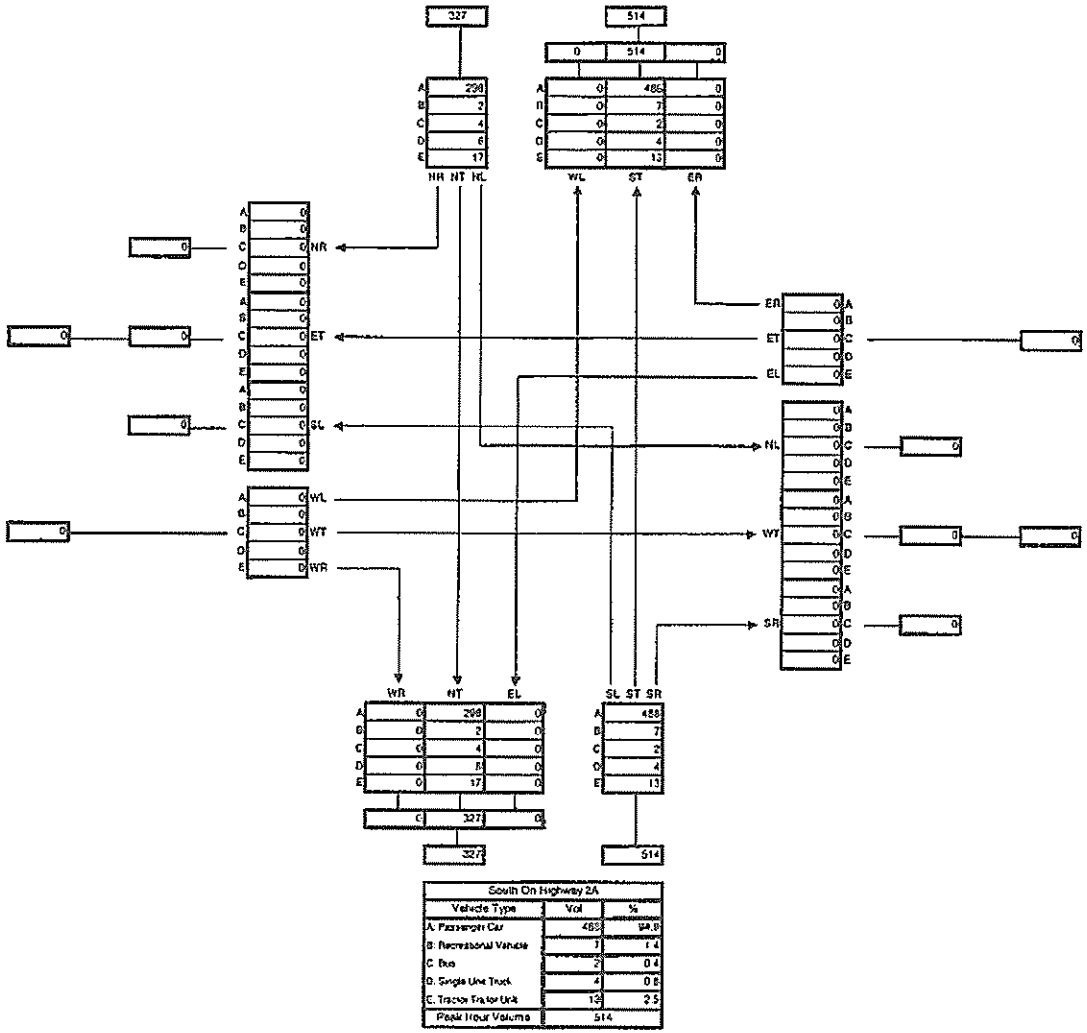
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Highway 2A		
Vehicle Type	Vol	%
A: Passenger Car	298	91.1
B: Recreational Vehicle	2	0.6
C: Bus	4	1.2
D: Single Unit Truck	6	1.8
E: Tractor Trailer Unit	17	5.2
Peak Hour Volume	327	

West On n/a		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	0	

East On Township Road 460		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	0	

South On Highway 2A		
Vehicle Type	Vol	%
A: Passenger Car	488	94.9
B: Recreational Vehicle	7	1.4
C: Bus	2	0.4
D: Single Unit Truck	4	0.8
E: Tractor Trailer Unit	13	2.5
Peak Hour Volume	514	



Intersection of:	Highway 2A & Township Road 480
Date:	2009 (Background)
Time	PM Peak

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

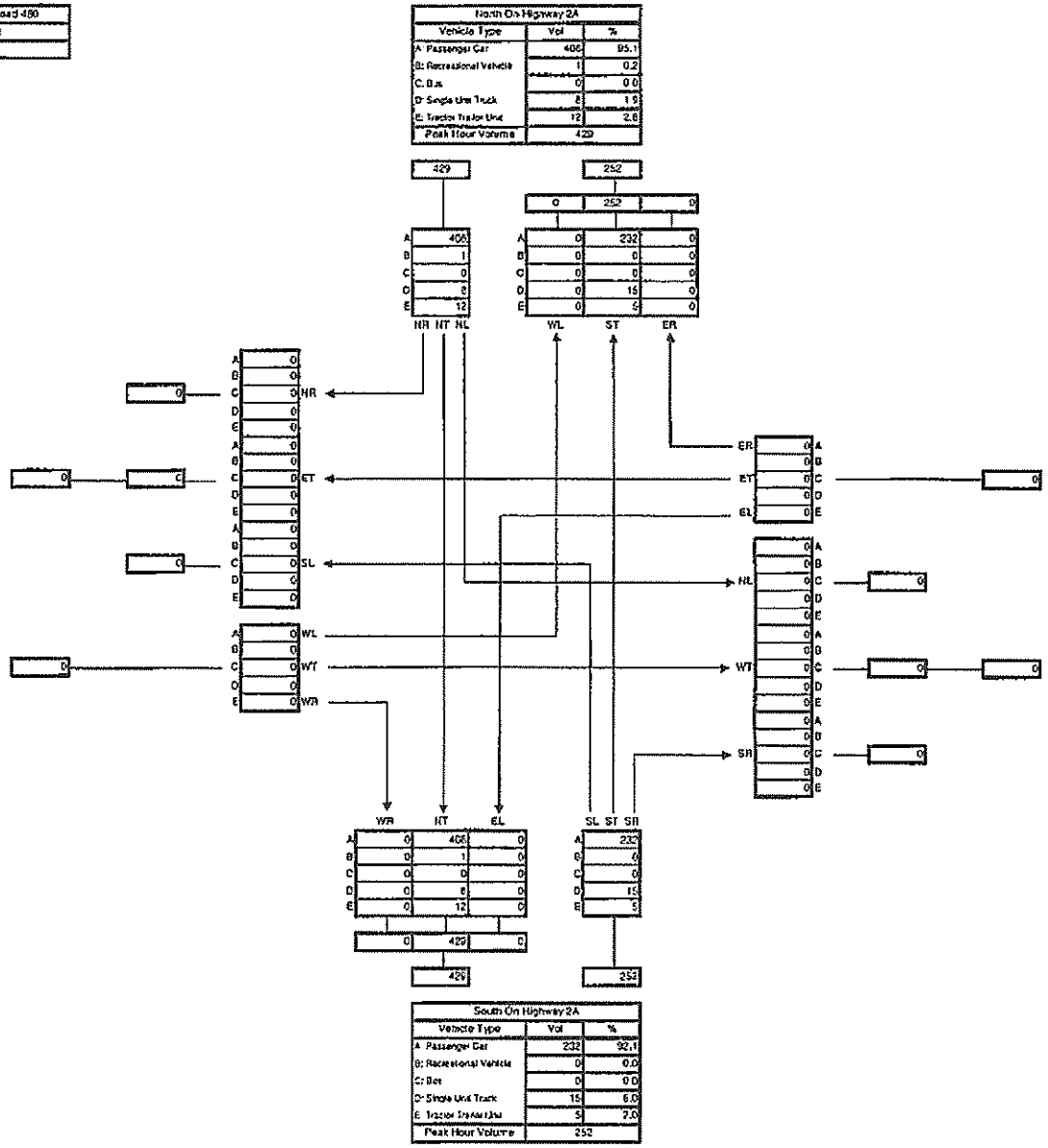
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Highway 2A		
Vehicle Type	Vol	%
A: Passenger Car	406	95.1
B: Recreational Vehicle	1	0.2
C: Bus	0	0.0
D: Single Unit Truck	8	1.9
E: Tractor Trailer Unit	12	2.8
Peak Hour Volume	429	

West On n/a		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	0	

East On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	0	

South On Highway 2A		
Vehicle Type	Vol	%
A: Passenger Car	232	92.1
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	15	6.0
E: Tractor Trailer Unit	5	2.0
Peak Hour Volume	252	



Intersection of:	Township Road 480 & East Site Access Road
Date:	2004 (Projected)
Time:	PM Peak

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On n/a		
Vehicle Type	Vol	%
A: Passenger Car	14	77.8
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	4	22.2
Peak Hour Volume	18	

West On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	31	79.5
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	8	20.5
Peak Hour Volume	39	

East On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	62	80.5
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	15	19.5
Peak Hour Volume	77	

South On East Subdivision Access Road		
Vehicle Type	Vol	%
A: Passenger Car	62	80.5
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	15	19.5
Peak Hour Volume	77	

Intersection of:	Township Road 480 & West Sce Access Road
Date:	2034 (Projected)
Time:	PM Peak

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On n/a		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	0	

West On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	17	81.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	4	19.0
Peak Hour Volume	21	

East On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	0	

South On West Subdivision Access Road		
Vehicle Type	Vol	%
A: Passenger Car	62	80.5
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	15	19.5
Peak Hour Volume	77	

Intersection of:	Township Road 480 & West Site Access Road
Date:	2024 (Projected)
Time:	AM Peak

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Rill		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	0	

West On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	68	80.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	17	20.0
Peak Hour Volume	85	

East On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	0	0.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	0	

South On West Subdivision Access Road		
Vehicle Type	Vol	%
A: Passenger Car	15	83.3
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	3	16.7
Peak Hour Volume	18	

Intersection of	Township Road 480 & East Site Access Road
Date	2034 (Projected)
Time	AM Peak

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

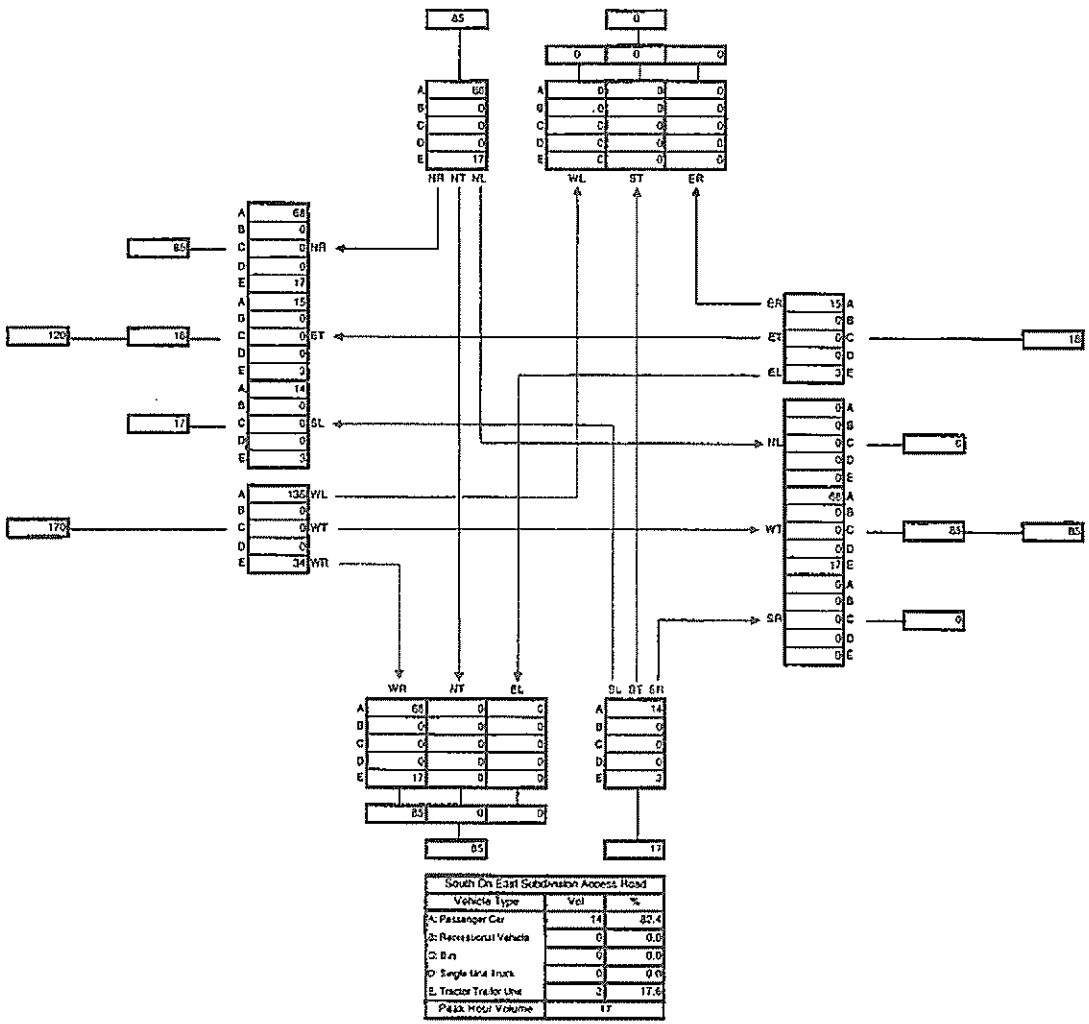
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On n/a		
Vehicle Type	Vol	%
A: Passenger Car	68	80.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	17	20.0
Peak Hour Volume	85	

West On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	136	80.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	34	20.0
Peak Hour Volume	170	

East On Township Road 480		
Vehicle Type	Vol	%
A: Passenger Car	15	83.3
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	3	16.7
Peak Hour Volume	18	

South On East Subdivision Access Road		
Vehicle Type	Vol	%
A: Passenger Car	14	82.4
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	3	17.6
Peak Hour Volume	17	



Hours	Approaching Intersection																													Totals
	From The East On Township Road 475A (West Bound)															From The West On Township Road 475A (East Bound)														
	Left					Through					Right					Left					Through					Right					
6:00 - 7:00 am	9	0	0	1	0	9	0	0	0	0	5	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	28
7:00 - 8:00	18	0	0	0	0	18	0	0	0	0	9	0	0	0	0	4	0	0	0	0	6	1	0	0	0	6	0	0	0	0	62
8:00 - 9:00	17	2	0	1	0	17	0	0	0	0	9	0	0	0	0	3	0	0	0	0	4	0	0	0	0	4	0	0	0	0	57
9:00 - 10:00	10	0	0	0	0	10	0	0	1	0	4	0	0	0	0	3	0	0	0	0	4	0	0	0	0	4	0	0	0	0	36
10:00 - 11:00																															0
11:00 - 12:00																															0
12:00 - 1:00 pm																															0
1:00 - 2:00																															0
2:00 - 3:00																															0
3:00 - 4:00	13	0	0	0	0	13	1	0	1	3	6	0	0	0	0	4	0	0	0	0	10	1	0	0	0	10	1	0	0	0	63
4:00 - 5:00	6	0	0	0	0	6	0	0	0	0	3	0	0	0	0	8	0	0	0	0	18	0	0	0	0	18	0	0	0	0	59
5:00 - 6:00	10	0	0	0	0	10	0	0	0	0	5	0	0	0	0	11	0	0	0	0	23	0	0	1	0	23	0	0	0	0	83
Vehicle Class	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
Totals	83	2	0	2	0	83	1	0	2	3	41	0	0	0	0	33	0	0	0	0	67	2	0	1	0	67	1	0	0	0	388
	EL					ET					ER					WL					WT					WR					

Date:	2008 (Estimated)
Intersection:	Township Road 475A & Range Road 244
Performed By:	Kevin Paul, E.I.T.

A	Passenger Vehicle
B	Recreational Vehicle
C	Bus
D	Single Unit Truck
E	Tractor Trailor

Hours	Approaching Intersection																												Totals	Grand Totals
	From The North On Range Road 244 (South Bound)															From The South On Range Road 244 (North Bound)															
	Left					Through					Right					Left					Through					Right					
6:00 - 7:00 am	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	4	32
7:00 - 8:00	1	0	0	0	0	2	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8	70
8:00 - 9:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	6	63
9:00 - 10:00	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	8	44
10:00 - 11:00																													0	0
11:00 - 12:00																													0	0
12:00 - 1:00 pm																													0	0
1:00 - 2:00																													0	0
2:00 - 3:00																													0	0
3:00 - 4:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	4	67
4:00 - 5:00	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	1	0	9	68
5:00 - 6:00	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	4	0	0	0	0	2	0	0	0	0	0	1	0	10	93
Vehicle Class	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		
Totals	1	0	0	0	0	13	0	0	0	0	10	1	0	0	0	13	0	2	2	0	5	0	0	0	0	2	0	0	0	0	49	437
	NL					NT					NR					SL					ST					SR					

Date:	2008 AM Peak Hour (Estimated)
Intersection:	Township Road 475A & Range Road 244
Performed By:	Kevin Paul, E.I.T.

A	Passenger Vehicle
B	Recreational Vehicle
C	Bus
D	Single Unit Truck
E	Tractor Trailor

Intersection of:	Township Road 475A & Range Road 244
Date:	2008 (Estimated)
Time:	6 am - 7 am

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Range Road 244		
Vehicle Type	Vol	%
A: Passenger Car	2	100.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	2	

West On Township Road 475A		
Vehicle Type	Vol	%
A: Passenger Car	4	100.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	4	

East On Township Road 475A		
Vehicle Type	Vol	%
A: Passenger Car	23	95.8
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	1	4.2
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	24	

South On Range Road 244		
Vehicle Type	Vol	%
A: Passenger Car	1	50.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	1	50.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	2	

Intersection of:	Township Road 475A & Range Road 244
Date:	2008 (Estimated)
Time:	7 am - 8 am

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

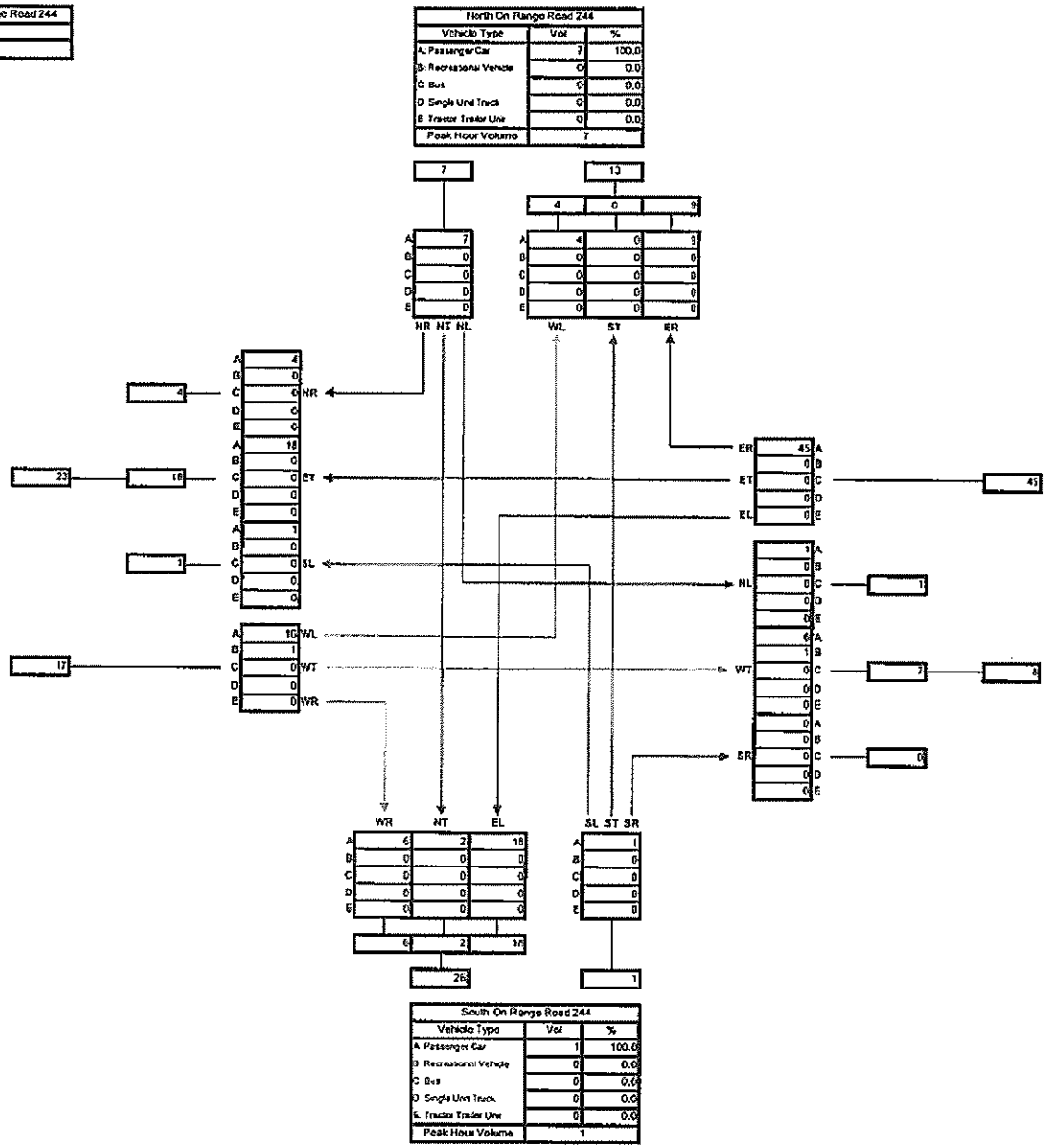
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Range Road 244		
Vehicle Type	Vol	%
A: Passenger Car	7	100.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	7	

West On Township Road 475A		
Vehicle Type	Vol	%
A: Passenger Car	16	94.1
B: Recreational Vehicle	1	5.9
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	17	

East On Township Road 475A		
Vehicle Type	Vol	%
A: Passenger Car	45	100.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	45	

South On Range Road 244		
Vehicle Type	Vol	%
A: Passenger Car	1	100.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	1	



Intersection of:	Township Road 475A & Range Road 244
Date:	2008 (Estimated)
Time:	8 am - 9 am

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

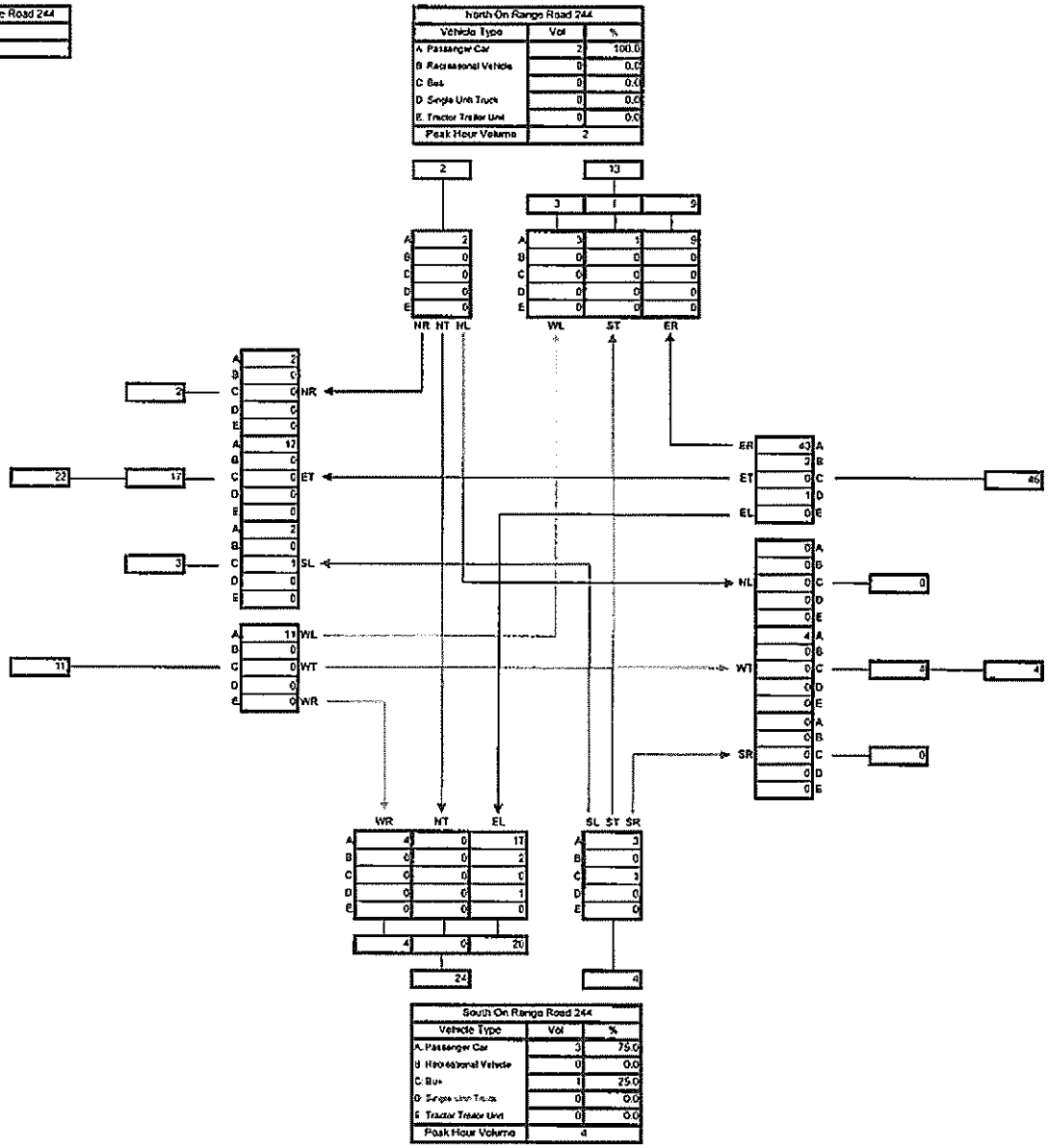
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Range Road 244		
Vehicle Type	Vol	%
A. Passenger Car	2	100.0
B. Recreational Vehicle	0	0.0
C. Bus	0	0.0
D. Single Unit Truck	0	0.0
E. Tractor Trailer Unit	0	0.0
Peak Hour Volume	2	

West On Township Road 475A		
Vehicle Type	Vol	%
A. Passenger Car	11	100.0
B. Recreational Vehicle	0	0.0
C. Bus	0	0.0
D. Single Unit Truck	0	0.0
E. Tractor Trailer Unit	0	0.0
Peak Hour Volume	11	

East On Township Road 475A		
Vehicle Type	Vol	%
A. Passenger Car	43	93.5
B. Recreational Vehicle	2	4.3
C. Bus	0	0.0
D. Single Unit Truck	1	2.2
E. Tractor Trailer Unit	0	0.0
Peak Hour Volume	46	

South On Range Road 244		
Vehicle Type	Vol	%
A. Passenger Car	3	75.0
B. Recreational Vehicle	0	0.0
C. Bus	1	25.0
D. Single Unit Trucks	0	0.0
E. Tractor Trailer Unit	0	0.0
Peak Hour Volume	4	



Intersection of:	Township Road 475A & Range Road 244
Date:	2008 (Estimated)
Time:	9 am - 10 am

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Range Road 244		
Vehicle Type	Vol	%
A: Passenger Car	3	75.0
B: Recreational Vehicle	1	25.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	4	

West On Township Road 475A		
Vehicle Type	Vol	%
A: Passenger Car	11	100.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	11	

East On Township Road 475A		
Vehicle Type	Vol	%
A: Passenger Car	24	96.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	1	4.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	25	

South On Range Road 244		
Vehicle Type	Vol	%
A: Passenger Car	3	75.0
B: Recreational Vehicle	0	0.0
C: Bus	1	25.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Peak Hour Volume	4	

Intersection at:	Township Road 475A & Range Road 244
Date:	2008 (Estimated)
Time:	3 pm - 4 pm

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

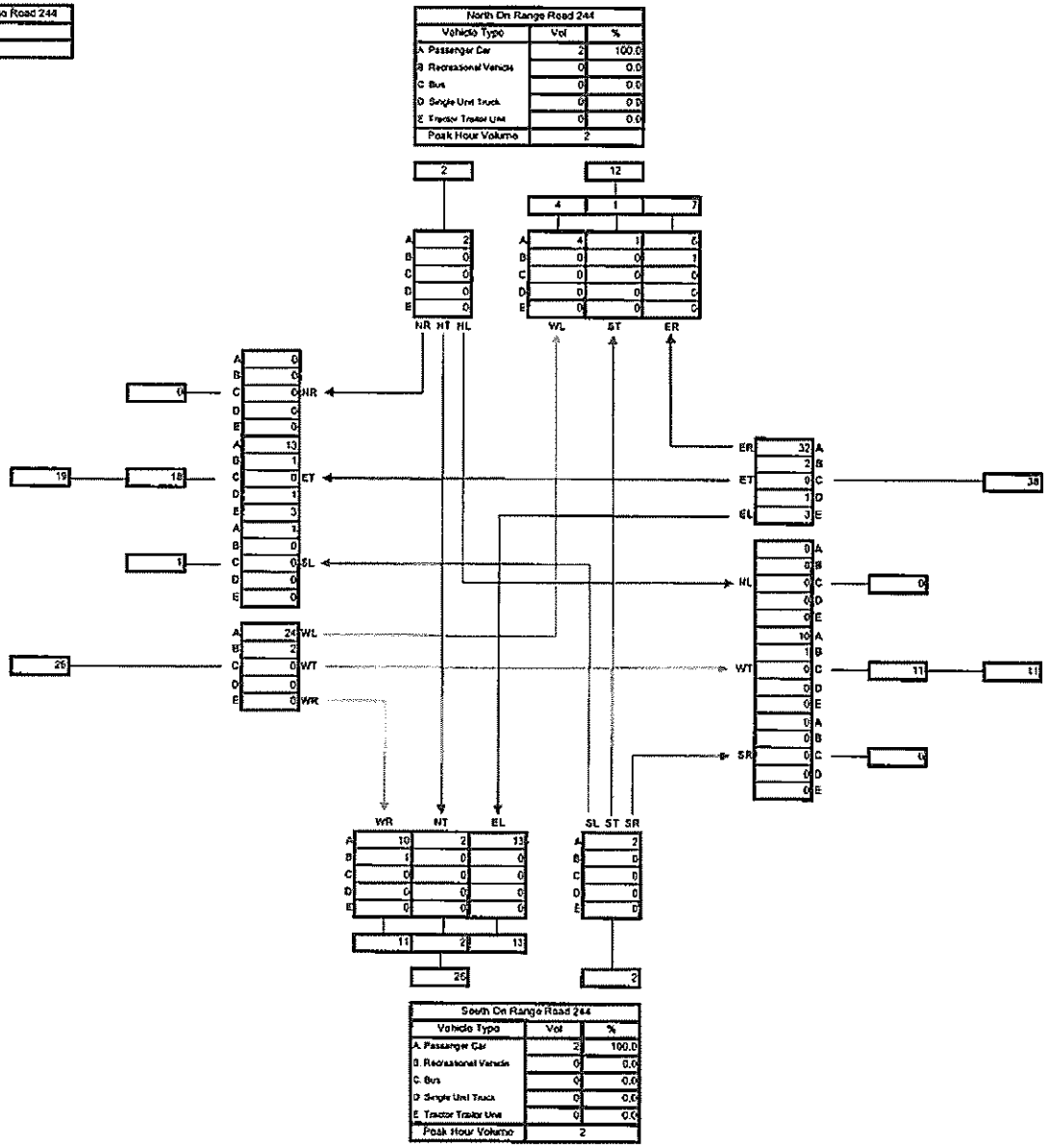
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Range Road 244		
Vehicle Type	Vol	%
A Passenger Car	2	100.0
B Recreational Vehicle	0	0.0
C Bus	0	0.0
D Single Unit Truck	0	0.0
E Tractor Trailer Unit	0	0.0
Peak Hour Volume	2	

West On Township Road 475A		
Vehicle Type	Vol	%
A Passenger Car	24	92.3
B Recreational Vehicle	2	7.7
C Bus	0	0.0
D Single Unit Truck	0	0.0
E Tractor Trailer Unit	0	0.0
Peak Hour Volume	26	

East On Township Road 475A		
Vehicle Type	Vol	%
A Passenger Car	32	84.2
B Recreational Vehicle	2	5.3
C Bus	0	0.0
D Single Unit Truck	1	2.6
E Tractor Trailer Unit	3	7.9
Peak Hour Volume	38	

South On Range Road 244		
Vehicle Type	Vol	%
A Passenger Car	2	100.0
B Recreational Vehicle	0	0.0
C Bus	0	0.0
D Single Unit Truck	0	0.0
E Tractor Trailer Unit	0	0.0
Peak Hour Volume	2	



Intersection of:	Township Road 475A & Range Road 244
Date:	2008 (Estimated)
Time:	4 pm - 5 pm

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Range Road 244

Vehicle Type	Vol	%
A. Passenger Car	5	100.0
B. Recreational Vehicle	0	0.0
C. Bus	0	0.0
D. Single Unit Truck	0	0.0
E. Tractor Trailer Unit	0	0.0
Peak Hour Volume	5	

West On Township Road 475A

Vehicle Type	Vol	%
A. Passenger Car	44	100.0
B. Recreational Vehicle	0	0.0
C. Bus	0	0.0
D. Single Unit Truck	0	0.0
E. Tractor Trailer Unit	0	0.0
Peak Hour Volume	44	

East On Township Road 475A

Vehicle Type	Vol	%
A. Passenger Car	15	100.0
B. Recreational Vehicle	0	0.0
C. Bus	0	0.0
D. Single Unit Truck	0	0.0
E. Tractor Trailer Unit	0	0.0
Peak Hour Volume	15	

South On Range Road 244

Vehicle Type	Vol	%
A. Passenger Car	3	75.0
B. Recreational Vehicle	0	0.0
C. Bus	0	0.0
D. Single Unit Truck	1	25.0
E. Tractor Trailer Unit	0	0.0
Peak Hour Volume	4	

Intersection of:	Township Road 475A & Range Road 244
Date:	2008 (Estimated)
Time:	5 pm - 6 pm

Turning Movement Abbreviations

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

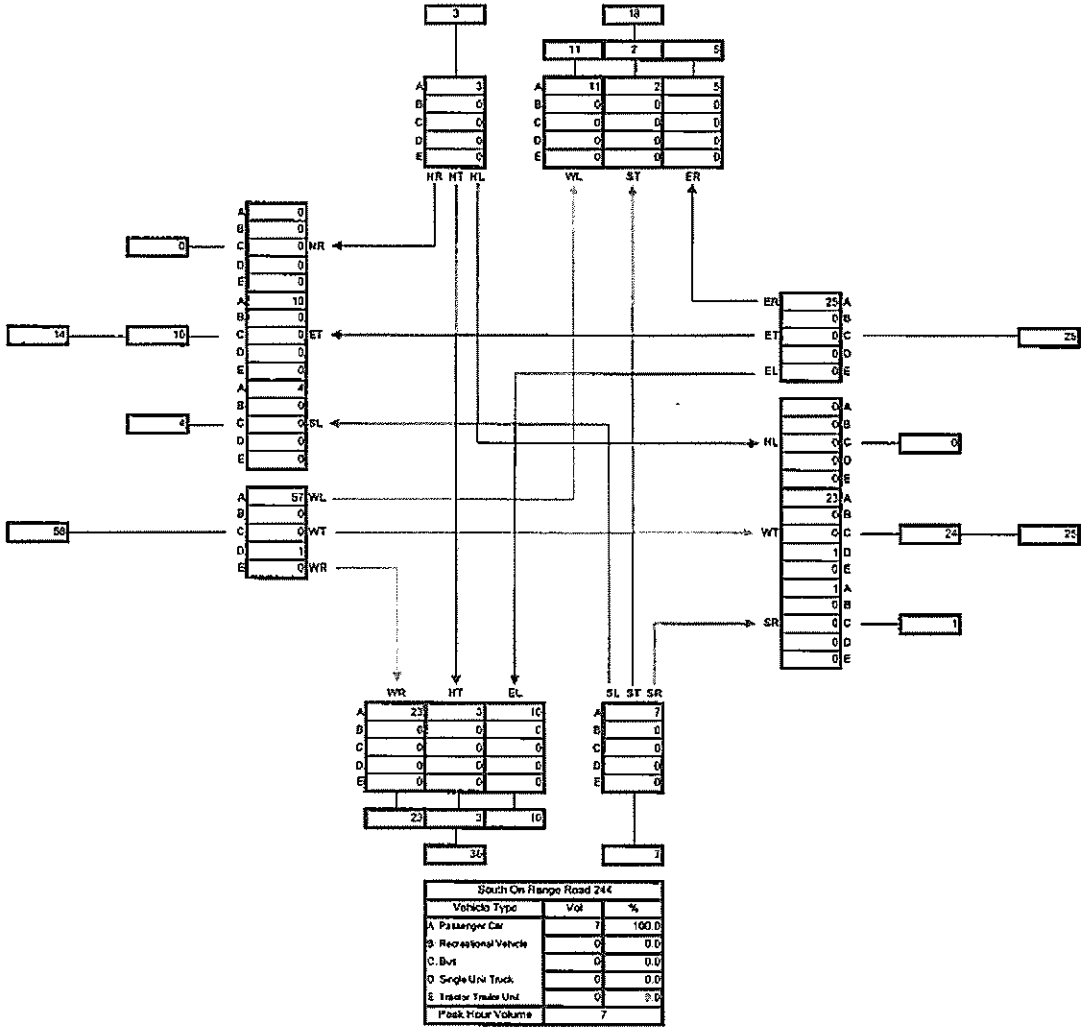
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

North On Range Road 244		
Vehicle Type	Vol	%
A Passenger Car	3	100.0
B Recreational Vehicle	0	0.0
C Bus	0	0.0
D Single Unit Truck	0	0.0
E Tractor Trailer Unit	0	0.0
Peak Hour Volume	3	

West On Township Road 475A		
Vehicle Type	Vol	%
A Passenger Car	57	98.3
B Recreational Vehicle	0	0.0
C Bus	0	0.0
D Single Unit Truck	1	1.7
E Tractor Trailer Unit	0	0.0
Peak Hour Volume	58	

East On Township Road 475A		
Vehicle Type	Vol	%
A Passenger Car	25	100.0
B Recreational Vehicle	0	0.0
C Bus	0	0.0
D Single Unit Truck	0	0.0
E Tractor Trailer Unit	0	0.0
Peak Hour Volume	25	

South On Range Road 244		
Vehicle Type	Vol	%
A Passenger Car	7	100.0
B Recreational Vehicle	0	0.0
C Bus	0	0.0
D Single Unit Truck	0	0.0
E Tractor Trailer Unit	0	0.0
Peak Hour Volume	7	

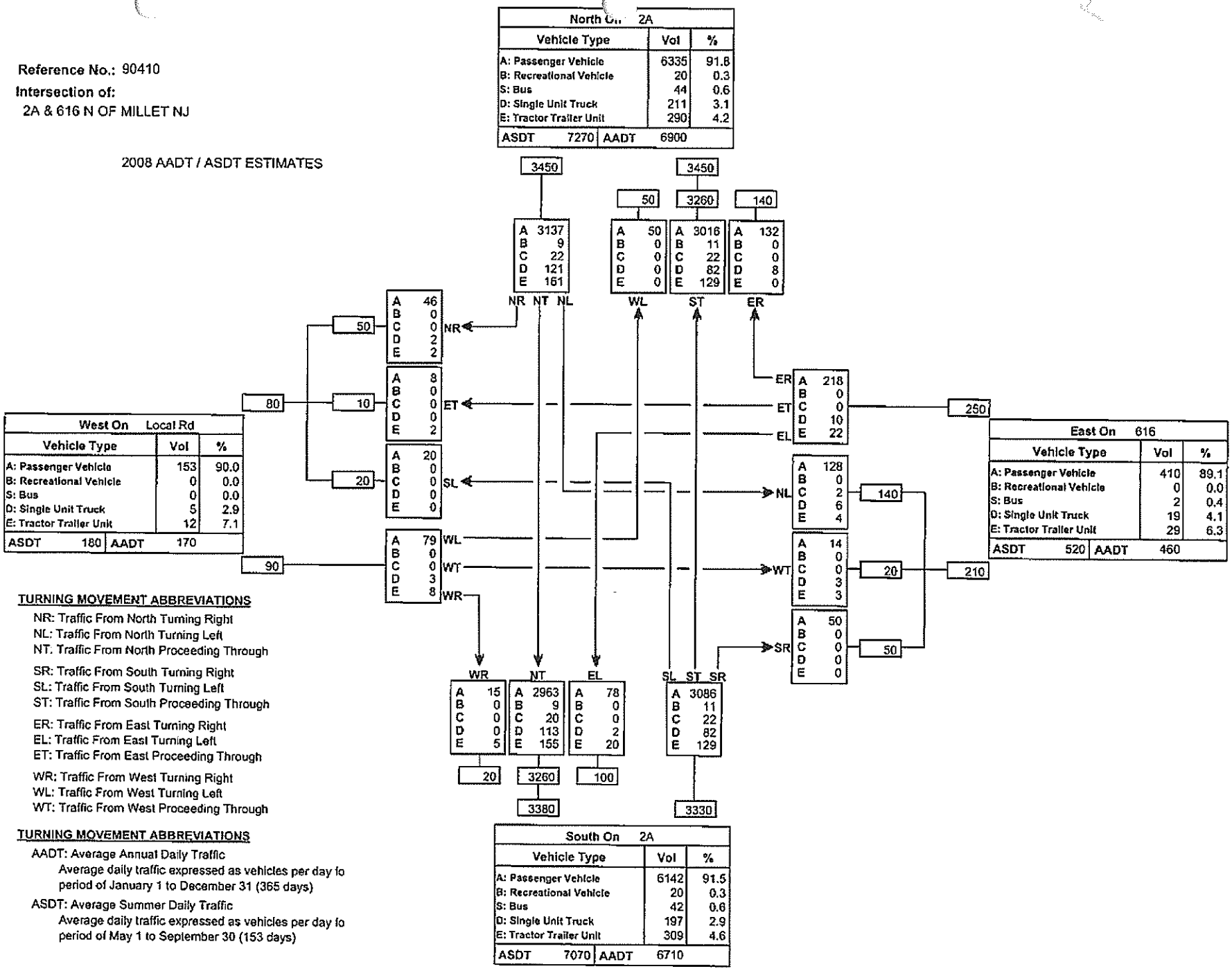


Reference No.: 90410

Intersection of:
2A & 616 N OF MILLET NJ

2008 AADT / ASDT ESTIMATES

Turning Movement Summary Diagram



TURNING MOVEMENT ABBREVIATIONS

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EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

TURNING MOVEMENT ABBREVIATIONS

AADT: Average Annual Daily Traffic
Average daily traffic expressed as vehicles per day fo period of January 1 to December 31 (365 days)

ASDT: Average Summer Daily Traffic
Average daily traffic expressed as vehicles per day fo period of May 1 to September 30 (153 days)

Reference No.: 90410

Intersection of:
2A & 616 N OF MILLET NJ

2008 a.m. 100th Highest Hour ESTIMATES

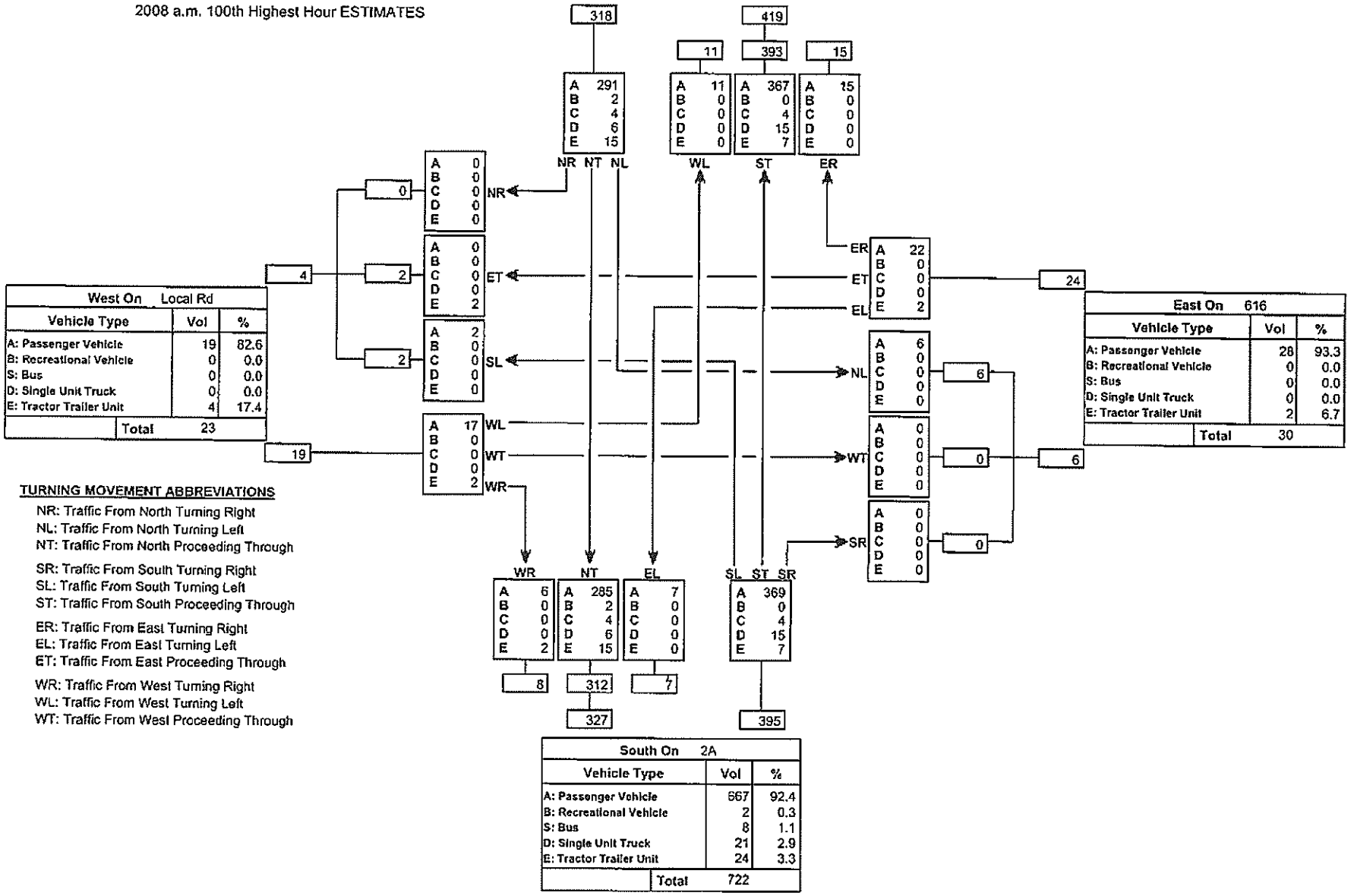
Turning Movement Summary Diagram

North On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	684	92.8
B: Recreational Vehicle	2	0.3
S: Bus	8	1.1
D: Single Unit Truck	21	2.8
E: Tractor Trailer Unit	22	3.0
Total	737	

West On Local Rd		
Vehicle Type	Vol	%
A: Passenger Vehicle	19	82.6
B: Recreational Vehicle	0	0.0
S: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	4	17.4
Total	23	

East On 616		
Vehicle Type	Vol	%
A: Passenger Vehicle	28	93.3
B: Recreational Vehicle	0	0.0
S: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	2	6.7
Total	30	

South On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	667	92.4
B: Recreational Vehicle	2	0.3
S: Bus	8	1.1
D: Single Unit Truck	21	2.9
E: Tractor Trailer Unit	24	3.3
Total	722	



TURNING MOVEMENT ABBREVIATIONS

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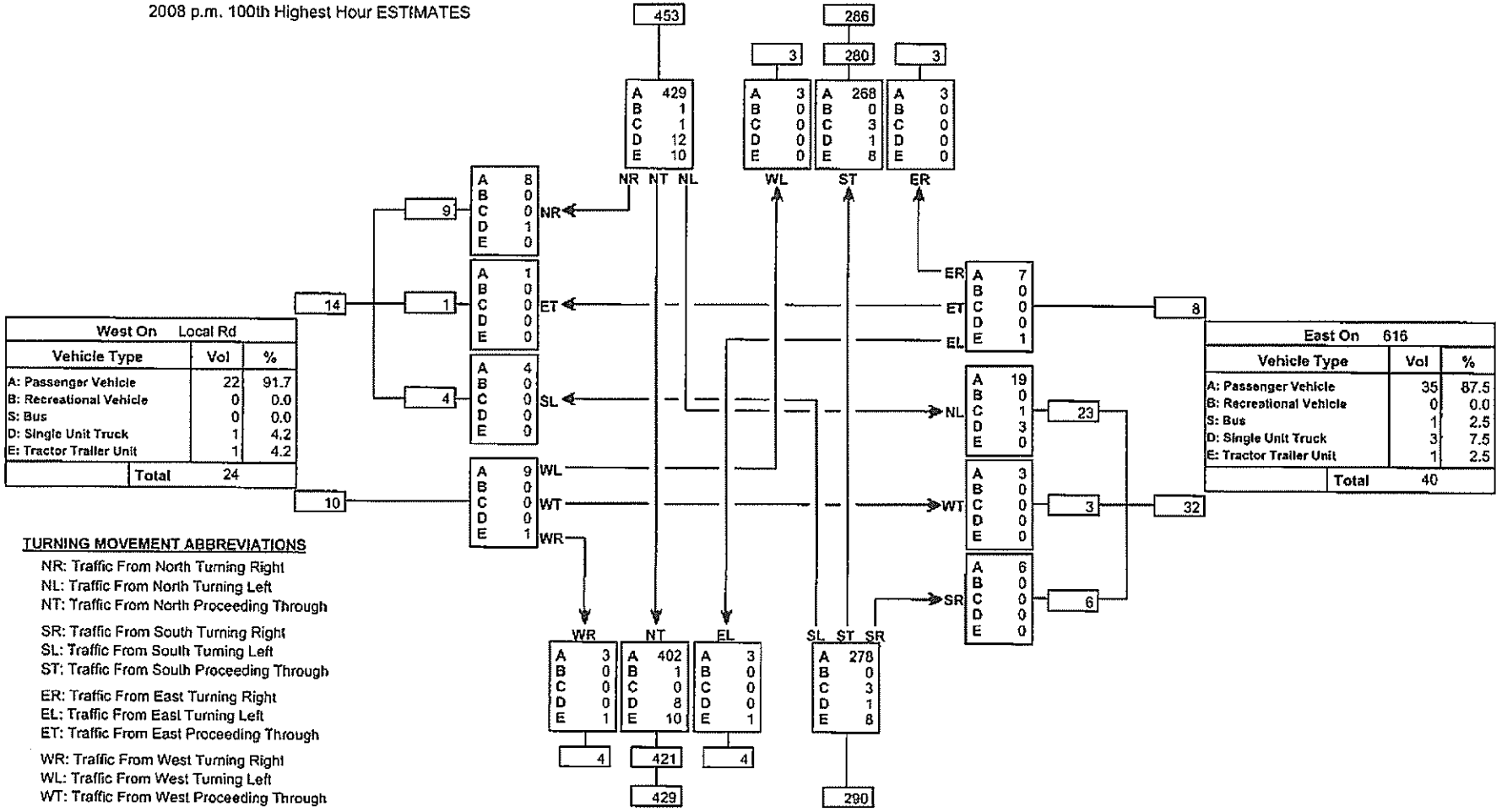
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

Reference No.: 90410
Intersection of:
2A & 616 N OF MILLET NJ

2008 p.m. 100th Highest Hour ESTIMATES

Turning Movement Summary Diagram



TURNING MOVEMENT ABBREVIATIONS

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EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

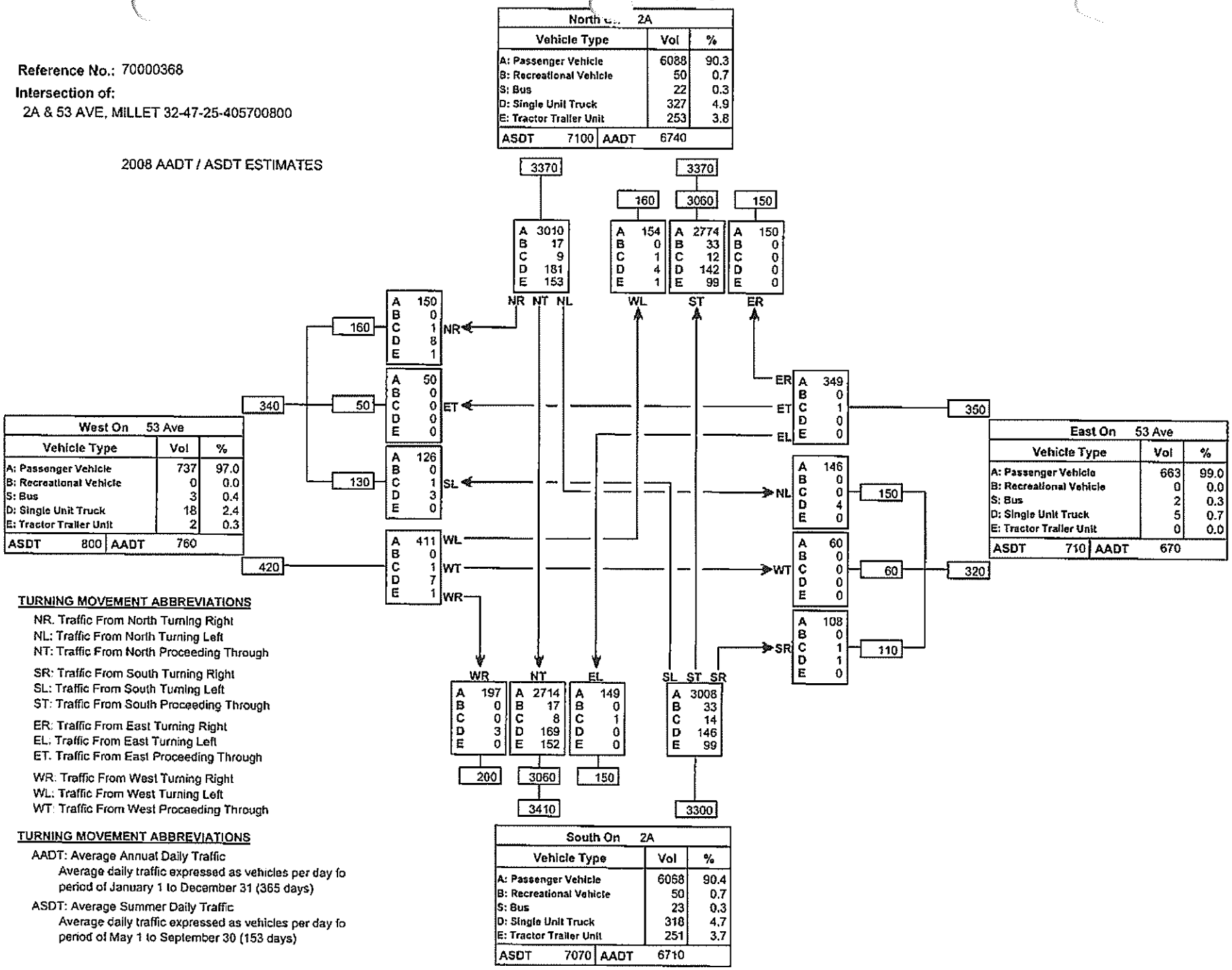
WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

Reference No.: 70000368

Intersection of:
2A & 53 AVE, MILLET 32-47-25-405700800

2008 AADT / ASDT ESTIMATES

Turning Movement Summary Diagram



TURNING MOVEMENT ABBREVIATIONS

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WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

TURNING MOVEMENT ABBREVIATIONS

AADT: Average Annual Daily Traffic
Average daily traffic expressed as vehicles per day fo period of January 1 to December 31 (365 days)

ASDT: Average Summer Daily Traffic
Average daily traffic expressed as vehicles per day fo period of May 1 to September 30 (153 days)

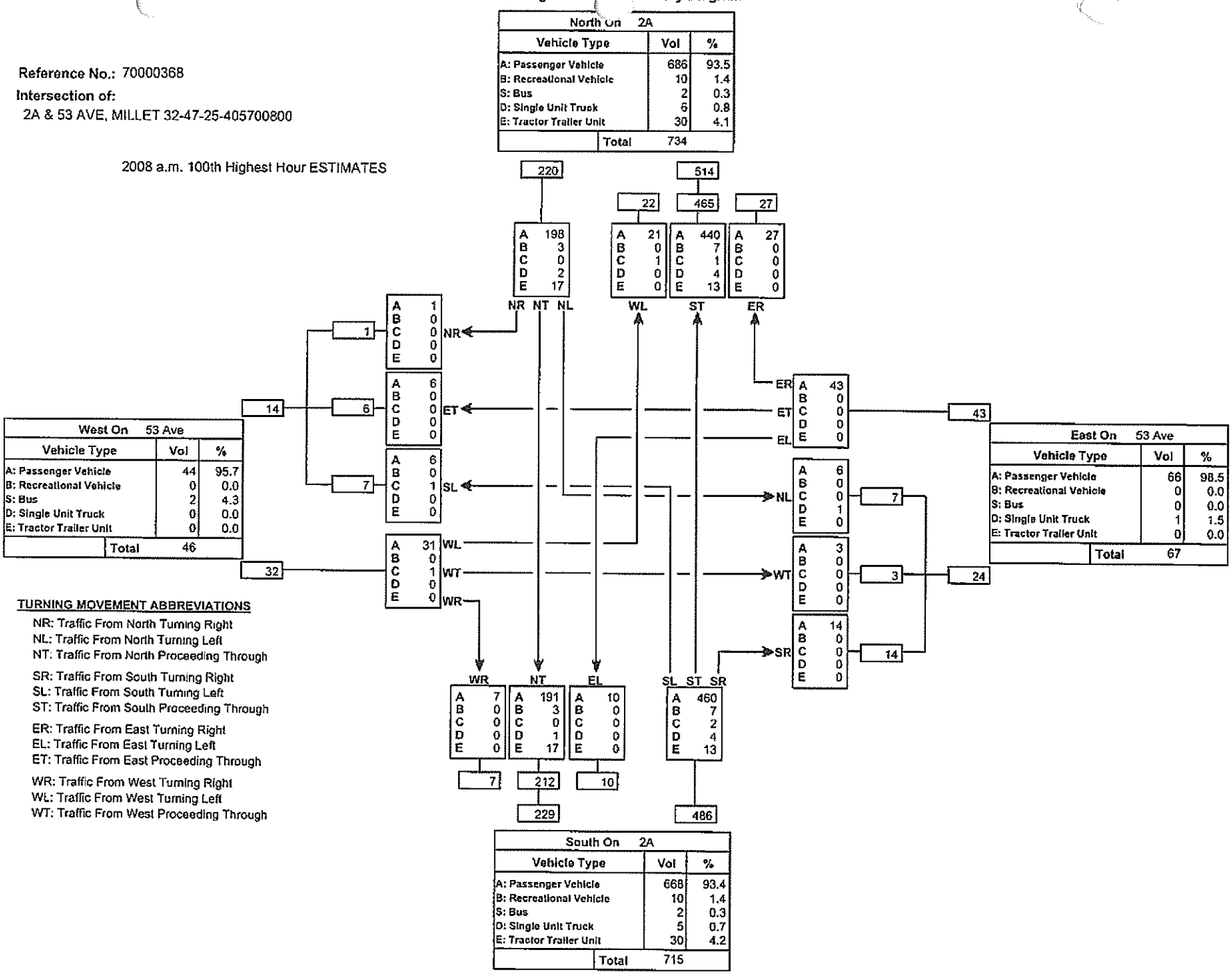
Reference No.: 70000368

Intersection of:

2A & 53 AVE, MILLET 32-47-25-405700800

2008 a.m. 100th Highest Hour ESTIMATES

Turning Movement Summary Diagram



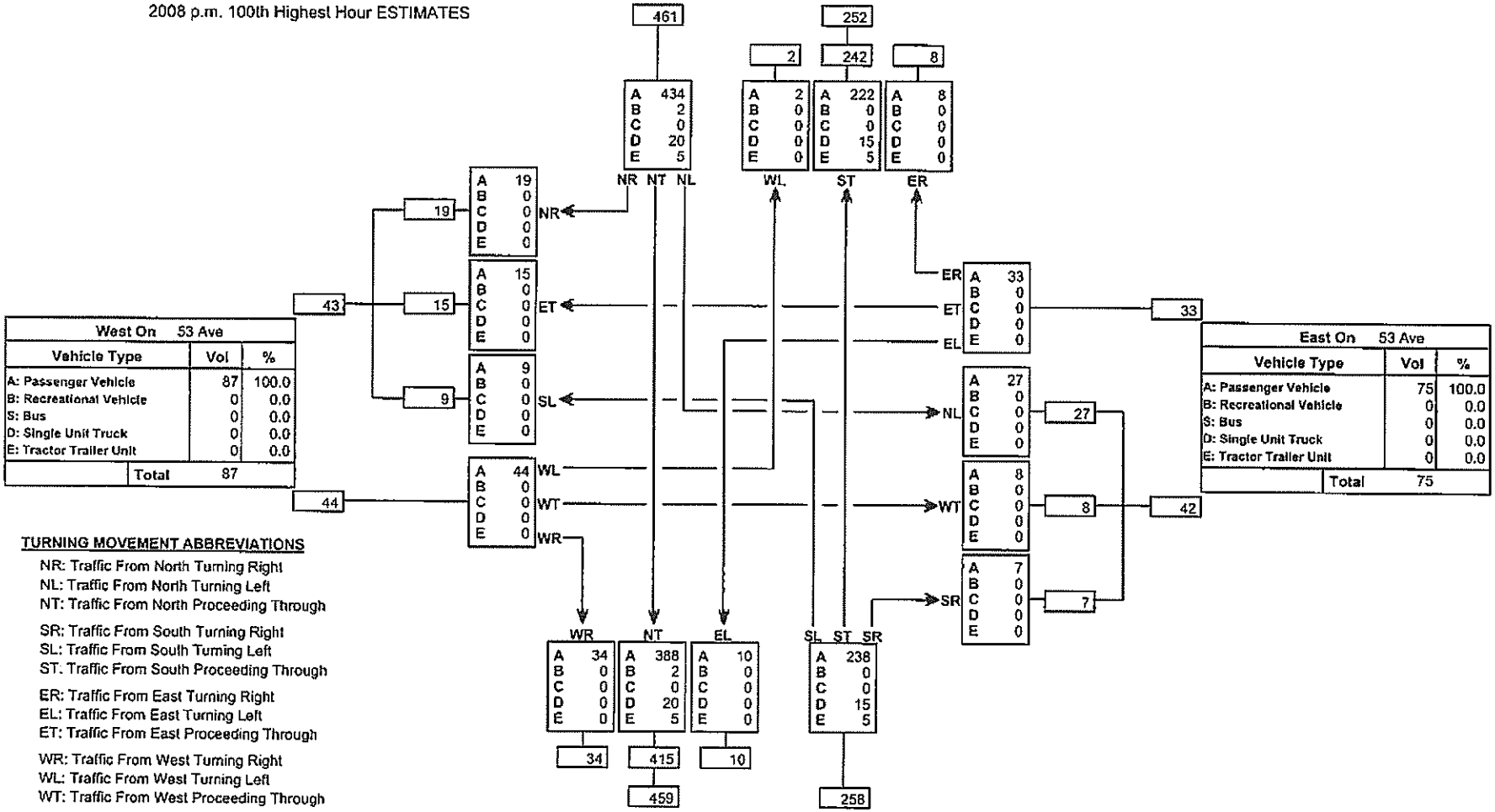
Turning Movement Summary Diagram

Reference No.: 70000368

Intersection of:

2A & 53 AVE, MILLET 32-47-25-405700800

2008 p.m. 100th Highest Hour ESTIMATES



West On 53 Ave		
Vehicle Type	Vol	%
A: Passenger Vehicle	87	100.0
B: Recreational Vehicle	0	0.0
S: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Total	87	

East On 53 Ave		
Vehicle Type	Vol	%
A: Passenger Vehicle	75	100.0
B: Recreational Vehicle	0	0.0
S: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Total	75	

South On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	670	93.4
B: Recreational Vehicle	2	0.3
S: Bus	0	0.0
D: Single Unit Truck	35	4.9
E: Tractor Trailer Unit	10	1.4
Total	717	

North On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	666	93.4
B: Recreational Vehicle	2	0.3
S: Bus	0	0.0
D: Single Unit Truck	35	4.9
E: Tractor Trailer Unit	10	1.4
Total	713	

TURNING MOVEMENT ABBREVIATIONS

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WR: Traffic From West Turning Right
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WT: Traffic From West Proceeding Through

Illumination of Isolated Rural Intersections

This spreadsheet is to be used in conjunction with *Illumination of Isolated Rural Intersections*, Transportation Association of Canada, February 2001.

Please enter information in the cells with yellow background

INTERSECTION CHARACTERISTICS

Township Road 480	Main Road	Date	June 14, 2009
West Subdivision Access Road	Minor Road	Other	Projected year (2034)
Millet, Alberta	City/Town		

GEOMETRIC FACTORS

	Value	Rating	Weight	Comments	Check	Score
Channelization Rating	Descriptive	0		Refer to Table 1(A) to determine rating value	OK	
Presence of raised channelization? (Y / N)	n				OK	
Highest operating speed on raised, channelized approach (km/h)	0		5		OK	
Channelization Factor					OK	0
Approach Sight Distance on most constrained approach (%)	100	0	10	Relative to the recommended minimum sight distance	OK	0
Posted Speed limit (in 10's of km/h)	80				OK	
Radius of Horizontal Curve (m)	T			Enter "T" for tangent (no horizontal curve at the intersection)	OK	
Posted Speed Category =		0				
Posted Speed Category =		0				
Posted Speed Category =	C	0				
Posted Speed Category =		0				
Horizontal Curvature Factor		0	5		OK	0
Angle of Intersection (10's of Degrees)	90	0	5		OK	0
Downhill Approach Grade (x.x%)	0.0	0	3	Rounded to nearest tenth of a percent	OK	0
Number of Intersection Legs	3	1	3	Number of legs = 3 or more	OK	3
					Geometric Factors Subtotal	3

OPERATIONAL FACTORS

Is the intersection signalized ? (Y/ N)	n			Calculate the Signalization Warrant Factor		
AADT on Major Road (2-way)	480	0	10	Either Use the two AADT inputs OR the Descriptive Signalization	OK	0
AADT on Minor Road (2-way)	365	0	20	Warrant (Unused values should be set to Zero) Refer to Table	OK	0
Signalization Warrant	Descriptive	0	30	1(B) for description and rating values for signalization warrant.	OK	0
					OK	
Night-Time Hourly Pedestrian Volume	0	0	10	Refer to Table 1(B), note #2, to account for children and seniors	OK	0
Intersecting Roadway Classification	Descriptive	1	5	Refer to Table 1(B) for ratings.	OK	5
Operating Speed or Posted Speed on Major Road (km/h)	80	3	5	Refer to Table 1(B), note #3	OK	15
Operating Speed on Minor Road (km/h)	60	1	5	Refer to Table 1(B), note #3	OK	5
					Operational Factors Subtotal	25

ENVIRONMENTAL FACTOR

Lighted Developments within 150 m radius of intersection	1	1	5	Maximum of 4 quadrants	OK	5
					Environmental Factor Subtotal	5

COLLISION HISTORY

Average Annual night-time collision frequency due to inadequate lighting (collisions/yr, rounded to nearest whole #)	0.0	0	0	Enter either the annual frequency (See Table 1(C), note #4)	OK	0
OR				OR the number of collisions / MEV		
Collision Rate over last 3 years, due to inadequate lighting (/MEV)	0	0	0	(Unused values should be set to Zero)	OK	0
Is the average ratio of all night to day collisions >= 1.5 (Y/N)	n	0			OK	
					OK	
					Collision History Subtotal	0

Check Intersection Signalization:
Intersection is not Signalized

LIGHTING IS NOT WARRANTED

SUMMARY	
Geometric Factors Subtotal	3
Operational Factor Subtotal	25
Environmental Factor Subtotal	5
Collision History Subtotal	0
TOTAL POINTS	**33**

Illumination of Isolated Rural Intersections

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Please enter information in the cells with yellow background

INTERSECTION CHARACTERISTICS

Township Road 480	Main Road	Date	June 14, 2009
East Subdivision Access Road	Minor Road	Other	Projected year (2034)
Millet, Alberta	City/Town		

GEOMETRIC FACTORS

	Value	Rating	Weight	Comments	Check	Score
Channelization Rating	Descriptive	0		Refer to Table 1(A) to determine rating value	OK	
Presence of raised channelization? (Y / N)	n				OK	
Highest operating speed on raised, channelized approach (km/h)	0		5		OK	
Channelization Factor					OK	0
Approach Sight Distance on most constrained approach (%)	100	0	10	Relative to the recommended minimum sight distance	OK	0
Posted Speed limit (in 10's of km/h)	80				OK	
Radius of Horizontal Curve (m)	T			Enter "T" for tangent (no horizontal curve at the intersection)	OK	
Posted Speed Category =		0				
Posted Speed Category =		0				
Posted Speed Category =	C	0				
Posted Speed Category =		0				
Horizontal Curvature Factor		0	5		OK	0
Angle of Intersection (10's of Degrees)	90	0	5		OK	0
Downhill Approach Grade (x.x%)	0.0	0	3	Rounded to nearest tenth of a percent	OK	0
Number of Intersection Legs	3	1	3	Number of legs = 3 or more	OK	3
					Geometric Factors Subtotal	3

OPERATIONAL FACTORS

Is the intersection signalized ? (Y/ N)	n			Calculate the Signalization Warrant Factor		
AADT on Major Road (2-way)	680	0	10	Either Use the two AADT inputs OR the Descriptive Signalization Warrant (Unused values should be set to Zero) Refer to Table 1(B) for description and rating values for signalization warrant.	OK	0
AADT on Minor Road (2-way)	365	0	20		OK	0
Signalization Warrant	Descriptive	0	30		OK	0
					OK	
Night-Time Hourly Pedestrian Volume	0	0	10	Refer to Table 1(B), note #2, to account for children and seniors	OK	0
Intersecting Roadway Classification	Descriptive	1	5	Refer to Table 1(B) for ratings.	OK	5
Operating Speed or Posted Speed on Major Road (km/h)	80	3	5	Refer to Table 1(B), note #3	OK	15
Operating Speed on Minor Road (km/h)	60	1	5	Refer to Table 1(B), note #3	OK	5
					Operational Factors Subtotal	25

ENVIRONMENTAL FACTOR

Lighted Developments within 150 m radius of intersection	1	1	5	Maximum of 4 quadrants	OK	5
					Environmental Factor Subtotal	5

COLLISION HISTORY

Average Annual night-time collision frequency due to inadequate lighting (collisions/yr, rounded to nearest whole #)	0.0	0	0	Enter either the annual frequency (See Table 1(C), note #4) OR the number of collisions / MEV	OK	0
OR						
Collision Rate over last 3 years, due to inadequate lighting (/MEV)	0	0	0	(Unused values should be set to Zero)	OK	0
Is the average ratio of all night to day collisions >= 1.5 (Y/N)	n	0			OK	
					OK	
					Collision History Subtotal	0

Check Intersection Signalization:
Intersection is not Signalized

LIGHTING IS NOT WARRANTED

SUMMARY	
Geometric Factors Subtotal	3
Operational Factor Subtotal	25
Environmental Factor Subtotal	5
Collision History Subtotal	0
TOTAL POINTS	33

Illumination of Isolated Rural Intersections

This spreadsheet is to be used in conjunction with *Illumination of Isolated Rural Intersections*, Transportation Association of Canada, February 2001.

Please enter information in the cells with yellow background

INTERSECTION CHARACTERISTICS

Highway 2A	Main Road
Township Road 480	Minor Road
Millet, Alberta	City/Town

Date: May 24, 2009
Other: Projected year (2034)

GEOMETRIC FACTORS

	Value	Rating	Weight	Comments	Check	Score
Channelization Rating	Descriptive	3		Refer to Table 1(A) to determine rating value	OK	
Presence of raised channelization? (Y / N)	n				OK	
Highest operating speed on raised, channelized approach (km/h)	0		5		OK	
Channelization Factor					OK	15
Approach Sight Distance on most constrained approach (%)	100	0	10	Relative to the recommended minimum sight distance	OK	0
Posted Speed limit (in 10's of km/h)	100				OK	
Radius of Horizontal Curve (m)	T			Enter "T" for tangent (no horizontal curve at the intersection)	OK	
Posted Speed Category =		0				
Posted Speed Category =	B	0				
Posted Speed Category =		0				
Posted Speed Category =		0				
Horizontal Curvature Factor		0	5		OK	0
Angle of Intersection (10's of Degrees)	90	0	5		OK	0
Downhill Approach Grade (x.x%)	0.0	0	3	Rounded to nearest tenth of a percent	OK	0
Number of Intersection Legs	3	1	3	Number of legs = 3 or more	OK	3
					Geometric Factors Subtotal	18

OPERATIONAL FACTORS

Is the intersection signalized ? (Y/ N)	n			Calculate the Signalization Warrant Factor		
AADT on Major Road (2-way)	11070	4	10	Either Use the two AADT inputs OR the Descriptive Signalization	OK	40
AADT on Minor Road (2-way)	730	1	20	Warrant (Unused values should be set to Zero) Refer to Table	OK	20
Signalization Warrant	Descriptive	0	30	1(B) for description and rating values for signalization warrant.	OK	0
					OK	
Night-Time Hourly Pedestrian Volume	0	0	10	Refer to Table 1(B), note #2, to account for children and seniors	OK	0
Intersecting Roadway Classification	Descriptive	1	5	Refer to Table 1(B) for ratings.	OK	5
Operating Speed or Posted Speed on Major Road (km/h)	100	4	5	Refer to Table 1(B), note #3	OK	20
Operating Speed on Minor Road (km/h)	80	3	5	Refer to Table 1(B), note #3	OK	15
					Operational Factors Subtotal	100

ENVIRONMENTAL FACTOR

Lighted Developments within 150 m radius of intersection	0	0	5	Maximum of 4 quadrants	OK	0
					Environmental Factor Subtotal	0

COLLISION HISTORY

Average Annual night-time collision frequency due to inadequate lighting (collisions/yr, rounded to nearest whole #)	0.0	0	0	Enter either the annual frequency (See Table 1(C), note #4)	OK	0
OR				OR the number of collisions / MEV		
Collision Rate over last 3 years, due to inadequate lighting (/MEV)	0	0	0	(Unused values should be set to Zero)	OK	0
Is the average ratio of all night to day collisions >= 1.5 (Y/N)	n	0			OK	
					OK	
					Collision History Subtotal	0

Check Intersection Signalization:
Intersection is not Signalized

LIGHTING IS NOT WARRANTED

SUMMARY	
Geometric Factors Subtotal	18
Operational Factor Subtotal	100
Environmental Factor Subtotal	0
Collision History Subtotal	0
TOTAL POINTS	118

Land Use: 110
General Light Industrial

Description

Light industrial facilities usually employ fewer than 500 persons, they have an emphasis on activities other than manufacturing and typically have minimal office space. Typical light industrial activities include printing, material testing and assembly of data processing equipment. These are free-standing facilities devoted to a single use. General heavy industrial (Land Use 120), industrial park (Land Use 130) and manufacturing (Land Use 140) are related uses.

Additional Data

No vehicle occupancy data were available specifically for general light industrial, but the average was approximately 1.3 persons per automobile for all industrial uses.

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

Facilities with employees on shift work may peak at other hours.

The sites were surveyed in the early 1970s and the mid- to late 1980s throughout the United States.

Source Numbers

7, 9, 10, 11, 15, 17, 88, 174, 179, 184, 191, 192, 251, 253, 286, 300

General Light Industrial
(110)

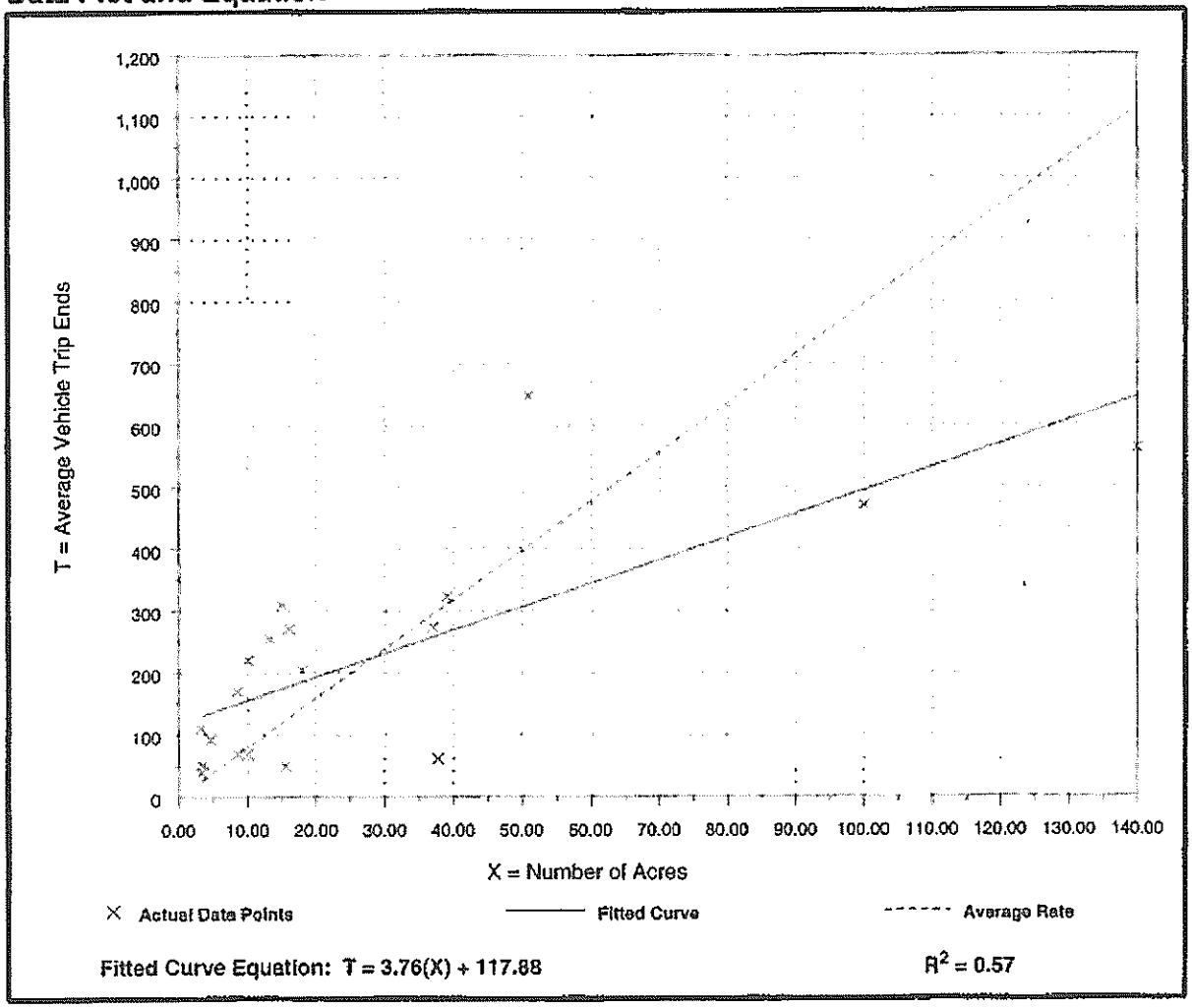
Average Vehicle Trip Ends vs: Acres
On a: Weekday,
A.M. Peak Hour of Generator

Number of Studies: 19
Average Number of Acres: 28
Directional Distribution: 85% entering, 15% exiting

Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
7.96	1.61 - 34.38	6.46

Data Plot and Equation



Fitted Curve Equation: T = 3.76(X) + 117.88

R^2 = 0.57

APPENDIX E

INTERSECTION ANALYSIS CHARTS & TYPES

APPENDIX C

TRIP GENERATION SHEETS

General Light Industrial
(110)

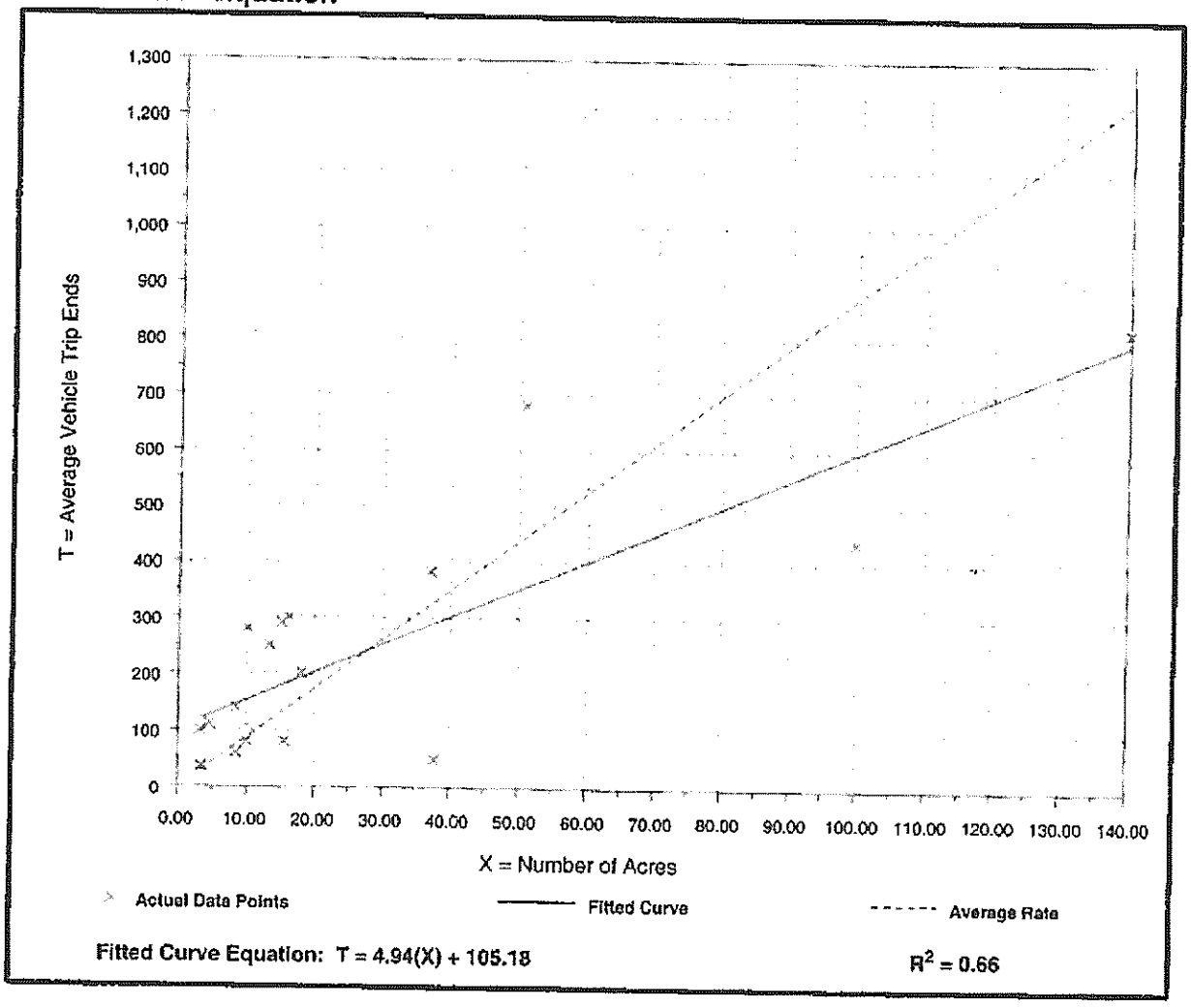
Average Vehicle Trip Ends vs: Acres
On a: Weekday,
P.M. Peak Hour of Generator

Number of Studies: 18
Average Number of Acres: 27
Directional Distribution: 30% entering, 70% exiting

Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
8.77	1.32 - 31.25	6.74

Data Plot and Equation

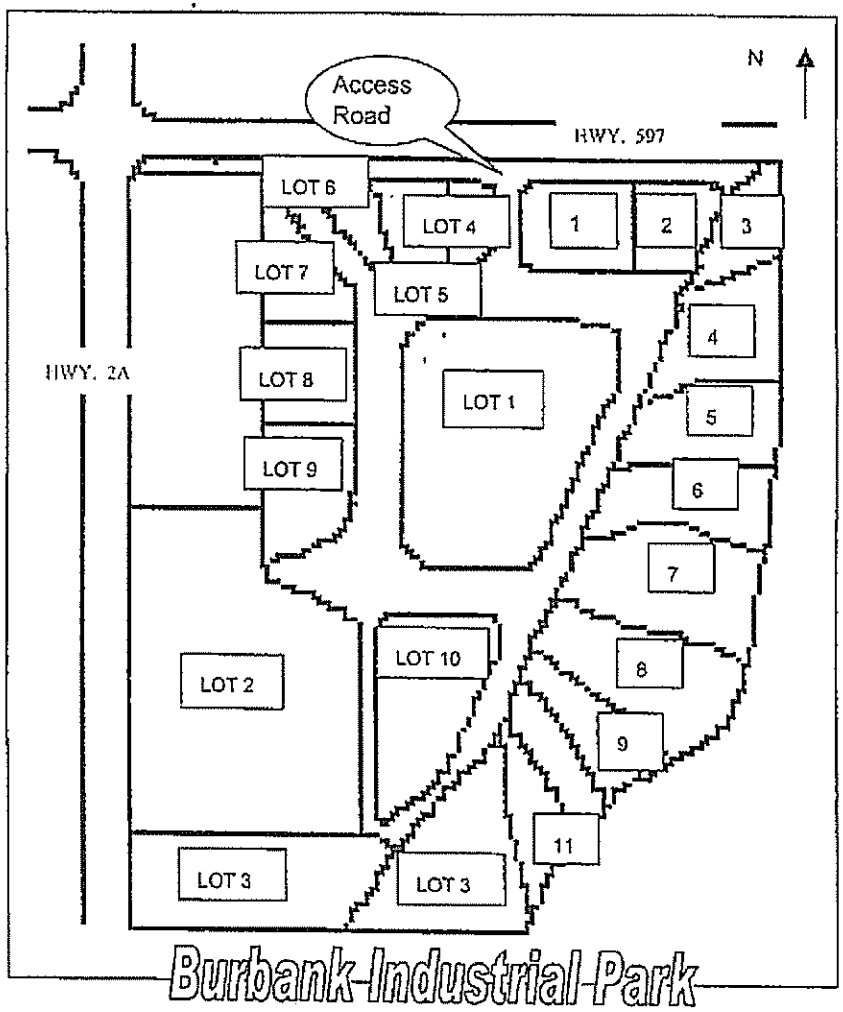


Fitted Curve Equation: T = 4.94(X) + 105.18

R^2 = 0.66

BUSINESS PROFILE

LOT No.		BUSINESS NAME	AREA (ACRES)
BLOCK 1	1	A.DERI-TEK SYSTEM B.WISE WOOD PIPELINE C.VERTEC MECHNICAL D.RLC REALITY E.ARTIE KOS TRUCKING/BOBCO OIL	13.442
	2	UNOCCUPIED	
	3	SEPARATE ACCESS	
	4	HUSKY CARDLOCK P.S.	1.322
	5	QA STRUCTURE INC.	1.48
	6	DIXON NETWORK CO.	1.905
	7	ASSOCIATED VANLINE	2.578
	8	PRO-LINE MANUFACTURING	2.429
	9	HALL INDUSTRIAL CONTRACTING	2.431
	10	CONCORD OILFIELD SUPPLIER	6.55
BLOCK 2	1	QUINN CONTRACTING LTD.	3.65
	2	QUINN CONTRACTING LTD.	5.34
	3	UNOCCUPIED	
	4	CANADIAN SUBSURFACE	2.021
	5	EDGE BUILDING SYSTEM	2.006
	6	QA ???	2.024
	7	R&R STRESS RELIEVING SERVICE	2.004
	8	QA STRUCTURE INC.	5.93
	9		
	10		
	11	UNOCCUPIED	
TOTAL			55.11



INTERSECTION (IN / OUT) SUMMARY

TIME / DATE	14 / 04/ 2004			15 / 04 / 2004			16 / 04 2004			3-DAY TOTAL	AVERAGE
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL		
7:00am -9:00am	133	28	161	135	30	165	129	42	171	497	166
11:00am -2:00pm	117	141	258	112	142	254	119	137	256	768	256
4:00 pm - 6:00pm	45	140	185	50	141	191	31	115	146	522	174
6:00pm - 6:30pm				4	16	20	7	24	31	51	17
DAILY TOTAL	295	309	604	301	329	630	286	318	604		
										1838	613

SUMMARY OF ALL DIRECTIONS

TOTAL DAILY AVERAGE	DAILY PEAK HOURS AVERAGE		
1968	259 (7:00-8:00am)	212 (12:00-1:00pm)	155 (5:00-6:00pm)

Note: all the above total numbers are approximately 80% of a full day's traffic volume

TRAFFIC (IN / OUT) SUMMARY

TIME SPAN	TOTAL TRIPS	ACRES	TRIP RATE	IN	OUT	% IN	% OUT
AVERAGE DAILY	766	55.1	13.9	383	383	50	50
AM PEAK	96	55.1	1.8	76	20	79	21
PM PEAK	98	55.1	1.8	24	74	24	76
NOON PEAK	109	55.1	2	49	60	45	55

DIRECTIONAL TRAFFIC COUNT SUMMARY

INTERSECTION NO.:
HIGHWAY:
REFERENCE NO.:
DAY & DATE OBSERVED: THURSDAY, 04/15/2004

INTERSECTION OF: HIGHWAY 597 & BURBANK INDUSTRIAL PARK
LEGAL DESCRIPTION:
COUNT TYPE: HOURS

HOURS	APPROACHING INTERSECTION: FROM THE EAST ON – LEFT					THROUGH					RIGHT					FROM THE WEST ON – LEFT					THROUGH					RIGHT					TOTALS
7:00-8:00am	6	0	0	0		67	2	5	0												111	1	12	4		60	0	8	0		276
8:00-8:30	1	0	0	0		33	0	0	2												16	0	8	1		38	0	3	0		102
8:30-9:00	2	0	0	0		22	0	3	2												22	0	7	2		13	0	2	2		77
9:00-10:00																														0
10:00-11:00																														0
11:00-12:00	1	0	2	0		48	0	10	7												46	0	6	4		9	0	4	1		138
12:00-1:00pm	1	0	1	0		42	0	9	3												36	0	5	11		48	0	6	2		164
1:00-2:00	0	0	0	0		38	0	9	8												39	0	5	7		23	0	7	7		143
2:00-3:00																														0
3:00-4:00																														0
4:00-4:30	0	0	1	0		62	1	6	4												18	1	1	4		8	0	4	3		113
4:30-5:00	1	0	1	0		43	1	3	1												25	0	1	3		6	0	0	0		85
5:00-5:30	1	0	0	0		61	0	0	3												34	0	5	1		10	0	0	5		120
5:30-6:00	3	0	0	0		37	0	2	3												43	1	0	0		7	0	0	0		96
6:00-6:30pm	0	0	1	0		26	0	1	0												20	0	1	2		2	0	0	1		54
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
TOTALS	16	0	0	6	0	479	0	4	48	33	0	0	0	0	0	0	0	0	0	0	410	0	3	51	39	224	0	0	34	21	1368
	EL					ET					ER					WL					WT					WR					

LOCATION DIAGRAM ATTACHED:
RECORDER:

VEHICLE CLASSES
A: PASSENGER VEHICL B: RECREATION VEHICLES C: BUSES
D: SINGLE UNIT TRUCK E: TRACTOR TRAILER COMBINATIONS

DIRECTIONAL TRAFFIC COUNT SUMMARY

INTERSECTION NO.:
HIGHWAY:
REFERENCE NO.:
WEATHER CONDITIONS: CLOUDY & WINDY
COMMENTS:

INTERSECTION OF: HIGHWAY 597 & BURBANK INDUSTRIAL PARK
LEGAL DESCRIPTION:
COUNT TYPE: HOURS
DATE: WEDNESDAY, 04/14/2004

HOURS	APPROACHING INTERSECTION: FROM THE NORTH ON – LEFT					FROM THE NORTH ON – THROUGH					FROM THE NORTH ON – RIGHT					FROM THE SOUTH ON – LEFT					FROM THE SOUTH ON – THROUGH					FROM THE SOUTH ON – RIGHT					TOTALS	GRAND TOTALS
7:00-8:00am																10	0	5	5						1	0	1	0	22	198
8:00-8:30																0	0	1	0						0	0	0	0	1	93
8:30-9:00																2	0	0	2						0	0	1	0	5	44
9:00-10:00																													0	0
10:00-11:00																													0	0
11:00-12:00																35	0	3	1						0	0	1	0	40	158
2:00-1:00pm																53	0	8	0						2	0	1	0	64	200
1:00-2:00																18	0	11	3						2	0	1	2	37	179
2:00-3:00																													0	0
3:00-4:00																													0	0
4:00-4:30																20	0	2	1						2	0	0	0	25	95
4:30-5:00																24	0	2	0						1	0	0	1	28	141
5:00-5:30																49	0	2	0						1	0	0	1	53	177
5:30-6:00																25	0	3	4						2	0	0	0	34	103
6:00-7:00pm																													0	0
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	236	0	0	37	16	0	0	0	0	0	11	0	0	5	4	309	1388
	NL					NT					NR					SL					ST					SR						

VEHICLE CLASSES
A: PASSENGER VEHI B: RECREATION VEHICLES C: BUSES
D: SINGLE UNIT TRU E: TRACTOR TRAILER COMBINATIONS

DIRECTIONAL TRAFFIC COUNT SUMMARY

INTERSECTION NO.:
HIGHWAY:
REFERENCE NO.:
DAY & DATE OBSERVED: WEDNESDAY, 04/14/2004

INTERSECTION OF: HIGHWAY 597 & BURBANK INDUSTRIAL PARK
LEGAL DESCRIPTION:
COUNT TYPE: HOURS

HOURS	APPROACHING INTERSECTION: FROM THE EAST ON – LEFT					THROUGH					RIGHT					FROM THE WEST ON – LEFT					THROUGH					RIGHT					TOTALS
7:00-8:00am	2		0	0	2	28		0	6	4											49		0	10	6	55		0	10	4	176
8:00-8:30	2		0	0	0	10		1	3	2											30		2	5	3	29		0	5	0	92
8:30-9:00	0		0	0	0	6		0	1	0											2		0	6	0	23		0	1	0	39
9:00-10:00																														0
10:00-11:00																														0
11:00-12:00	3		0	2	0	33		0	9	5											26		0	5	5	23		0	6	1	118
12:00-1:00pm	2		0	1	0	41		0	7	5											33		0	5	5	23		0	11	3	136
1:00-2:00	1		0	1	0	32		0	4	6											34		0	18	6	28		0	9	3	142
2:00-3:00																														0
3:00-4:00																														0
4:00-4:30	0		0	1	0	30		1	5	3											15		2	5	2	5		0	0	1	70
4:30-5:00	0		0	0	0	67		0	4	3											19		0	3	3	10		0	2	2	113
5:00-5:30	1		0	0	0	60		0	5	0											41		0	0	1	15		0	1	0	124
5:30-6:00	2		0	1	0	28		0	1	1											24		0	5	3	1		0	0	3	69
6:00-7:00pm																														0
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
TOTALS	13	0	0	6	2	335	0	2	45	29	0	0	0	0	0	0	0	0	0	0	273	0	4	62	34	212	0	0	45	17	1079
	EL					ET					ER					WL					WT					WR					

LOCATION DIAGRAM ATTACHED:
RECORDER:

VEHICLE CLASSES
A: PASSENGER VEHI B: RECREATION VEHICLES C: BUSES
D: SINGLE UNIT TRU· E: TRACTOR TRAILER COMBINATIONS

DIRECTIONAL TRAFFIC COUNT SUMMARY

INTERSECTION NO.:
HIGHWAY:
REFERENCE NO.:
DAY & DATE OBSERVED: FRIDAY, 04/16/2004

INTERSECTION OF: HIGHWAY 597 & BURBANK INDUSTRIAL PARK
LEGAL DESCRIPTION:
COUNT TYPE: HOURS

HOURS	APPROACHING INTERSECTION: 4 FROM THE EAST ON — LEFT					THROUGH					RIGHT					FROM THE WEST ON — LEFT					THROUGH					RIGHT					TOTALS
7:00-8:00am	2		0	1	1	62		2	6	2											103		1	15	3	68		0	7	2	275
8:00-8:30	1		0	0	0	29		0	2	2											25		0	4	3	25		0	5	0	96
8:30-9:00	1		0	0	0	24		0	6	2											20		0	2	4	11		0	5	0	75
9:00-10:00																															0
10:00-11:00																															0
11:00-12:00	4		0	2	0	46		0	9	9											40		0	7	4	24		0	15	0	160
12:00-1:00pm	0		0	0	1	53		0	7	5											34		0	6	7	30		0	8	1	152
1:00-2:00	1		0	1	0	33		0	7	9											51		0	6	9	24		0	4	4	149
2:00-3:00																															0
3:00-4:00																															0
4:00-4:30	2		0	0	0	44		1	2	6											21		1	1	3	6		0	0	1	88
4:30-5:00	1		0	0	0	44		0	2	3											28		1	4	1	4		0	2	2	92
5:00-5:30	1		0	0	0	32		0	2	1											26		0	4	2	3		0	0	2	73
5:30-6:00	0		0	0	1	36		0	2	3											51		0	1	1	5		0	1	0	101
6:00-6:30pm	0		0	0	1	19		0	1	2											34		0	3	0	4		0	1	1	66
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
TOTALS	13	0	0	4	3	403	0	3	45	0	0	0	0	0	0	0	0	0	0	0	399	0	3	50	37	200	0	0	47	12	1327
	EL					ET					ER					WL					WT					WR					

LOCATION DIAGRAM ATTACHED:
RECORDER:

VEHICLE CLASSES
A: PASSENGER VEHI B: RECREATION VEHICLES C: BUSES
D: SINGLE UNIT TRU(E: TRACTOR TRAILER COMBINATIONS

DIRECTIONAL TRAFFIC COUNT SUMMARY

INTERSECTION NO.:
HIGHWAY:
REFERENCE NO.:
WEATHER CONDITIONS: LIGHT SNOW & WINDY
COMMENTS:

INTERSECTION OF: HIGHWAY 597 & BURBANK INDUSTRIAL PARK
LEGAL DESCRIPTION:
COUNT TYPE: HOURS
DATE: THURSDAY, 04/15/2004

HOURS	APPROACHING INTERSECTION: FROM THE NORTH ON – LEFT					FROM THE NORTH ON – THROUGH					FROM THE NORTH ON – RIGHT					FROM THE SOUTH ON – LEFT					FROM THE SOUTH ON – THROUGH					FROM THE SOUTH ON – RIGHT					TOTALS	GRAND TOTALS
7:00-8:00am																10	0	2	0								2	0	0	0	14	290
8:00-8:30																4	0	2	1								0	0	0	0	7	109
8:30-9:00																6	0	2	1								0	0	0	0	9	86
9:00-10:00																															0	0
10:00-11:00																															0	0
11:00-12:00																43	0	10	3								0	0	0	1	57	195
12:00-1:00pm																49	0	5	1								4	0	1	0	60	224
1:00-2:00																17	0	3	1								3	0	0	1	25	168
2:00-3:00																															0	0
3:00-4:00																															0	0
4:00-4:30																22	0	7	0								1	0	1	0	31	144
4:30-5:00																37	0	5	1								1	0	0	0	44	129
5:00-5:30																24	0	2	1								1	0	1	2	31	151
5:30-6:00																31	0	1	2								1	0	0	0	35	131
6:00-6:30pm																9	0	3	2								0	0	1	1	16	70
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252	0	0	42	13	0	0	0	0	0	13	0	0	4	5	329	1697
	NL					NT					NR					SL					ST					SR						

VEHICLE CLASSES

A: PASSENGER VEHICL B: RECREATION VEHICLES C: BUSES
D: SINGLE UNIT TRUCK E: TRACTOR TRAILER COMBINATIONS

DIRECTIONAL TRAFFIC COUNT SUMMARY

INTERSECTION NO.:
HIGHWAY:
REFERENCE NO.:
WEATHER CONDITIONS: SNOW
COMMENTS:

INTERSECTION OF: HIGHWAY 597 & BURBANK INDUSTRIAL PARK
LEGAL DESCRIPTION:
COUNT TYPE: HOURS
DATE: FRIDAY, 04/16/2004

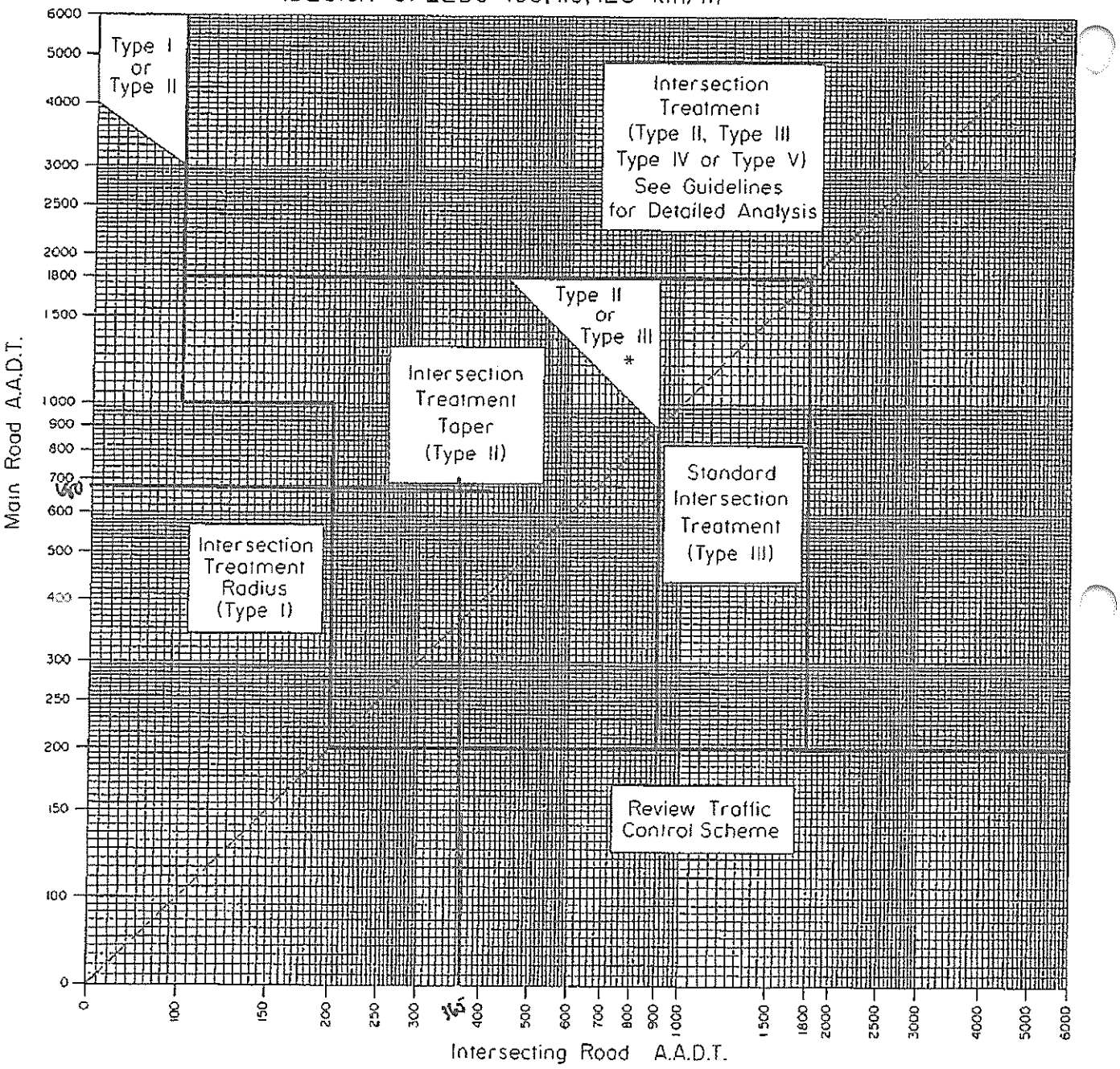
HOURS	APPROACHING INTERSECTION: FROM THE NORTH ON – LEFT					THROUGH					RIGHT					FROM THE SOUTH ON 10 – LEFT					THROUGH					RIGHT					TOTALS	GRAND TOTALS
7:00-8:00am																7	0	3	1							2	0	0	0	13	288
8:00-8:30																7	0	1	2							0	0	0	0	10	106
8:30-9:00																9	0	4	0							0	0	0	0	13	88
9:00-10:00																														0	0
10:00-11:00																														0	0
11:00-12:00																34	0	10	1							4	0	4	0	53	213
12:00-1:00pm																41	0	11	1							1	0	1	0	55	207
1:00-2:00																17	0	7	4							0	0	1	0	29	178
2:00-3:00																														0	0
3:00-4:00																														0	0
4:00-4:30																20	0	2	0							1	0	0	0	23	111
4:30-5:00																30	0	2	0							0	0	0	2	34	126
5:00-5:30																21	0	1	0							1	0	0	0	23	96
5:30-6:00																28	0	3	3							1	0	0	0	35	136
6:00-6:30pm																19	0	1	2							0	0	1	1	24	90
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233	0	0	45	14	0	0	0	0	0	10	0	0	7	3	312	1639
	NL					NT					NR					SL					ST					SR						

VEHICLE CLASSES
A: PASSENGER VEHI B: RECREATION VEHICLES C: BUSES
D: SINGLE UNIT TRU(E: TRACTOR TRAILER COMBINATIONS

APPENDIX D

ILLUMINATION WARRANT WORKSHEET

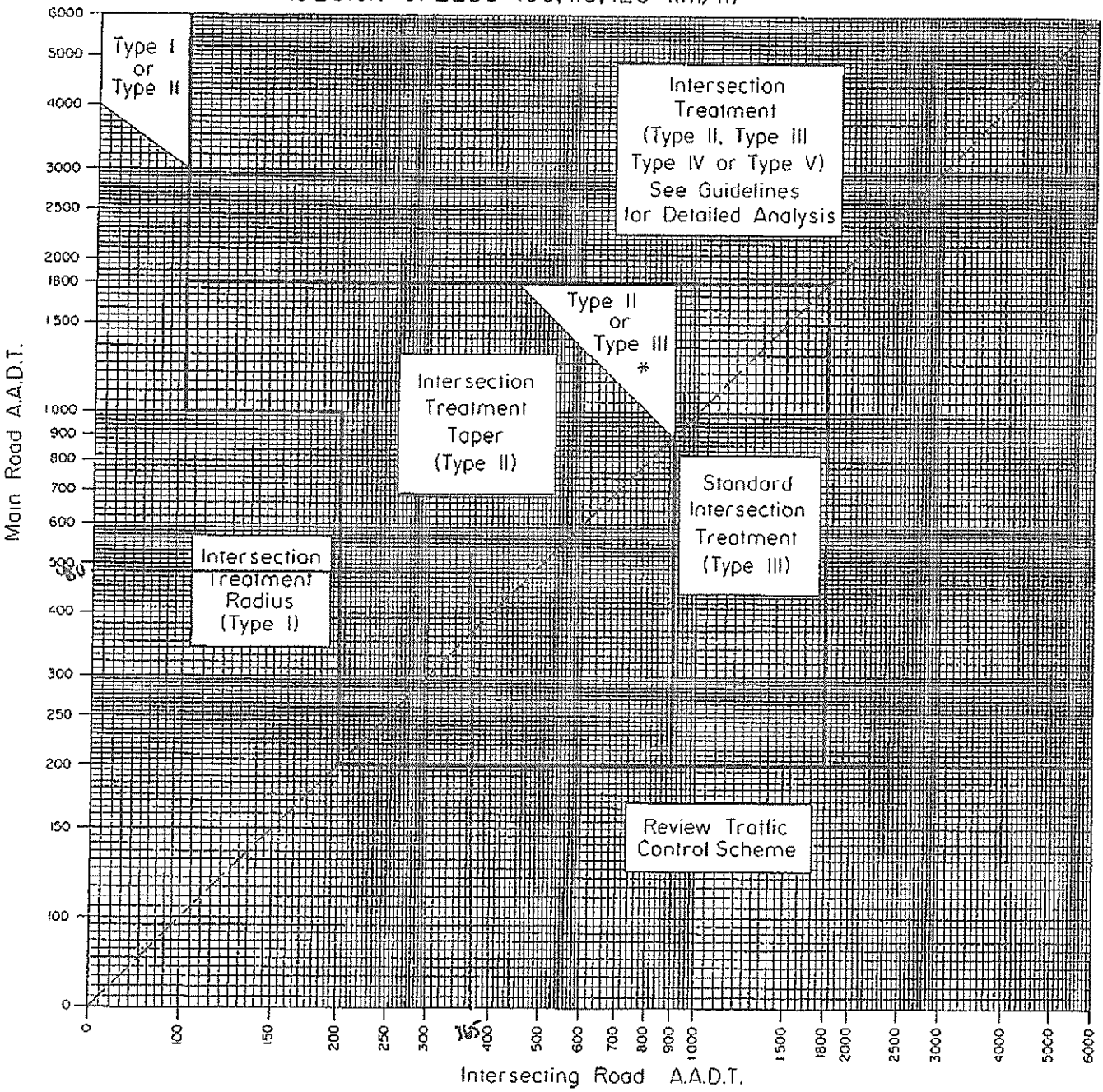
FIGURE D-7.4 TRAFFIC VOLUME WARRANT CHART FOR AT-GRADE INTERSECTION TREATMENT ON TWO-LANE RURAL HIGHWAYS (DESIGN SPEEDS 100, 110, 120 km/h)



Notes:

1. If main road, or intersecting road, is <100 AADT provide Type I Intersection Treatment (15m radius), except as shown for the higher volume main roads on this chart (Type I or II zone) where engineering judgement may be used to select the appropriate treatment.
2. If main road is >4000 AADT Review Access Management
   - — — If Intersecting Road AADT is > Main Road AADT: Review Traffic Control Scheme
3. Use projected traffic volumes for design
   Sloping line is defined by Main Road AADT x Intersecting Road AADT = 800,000

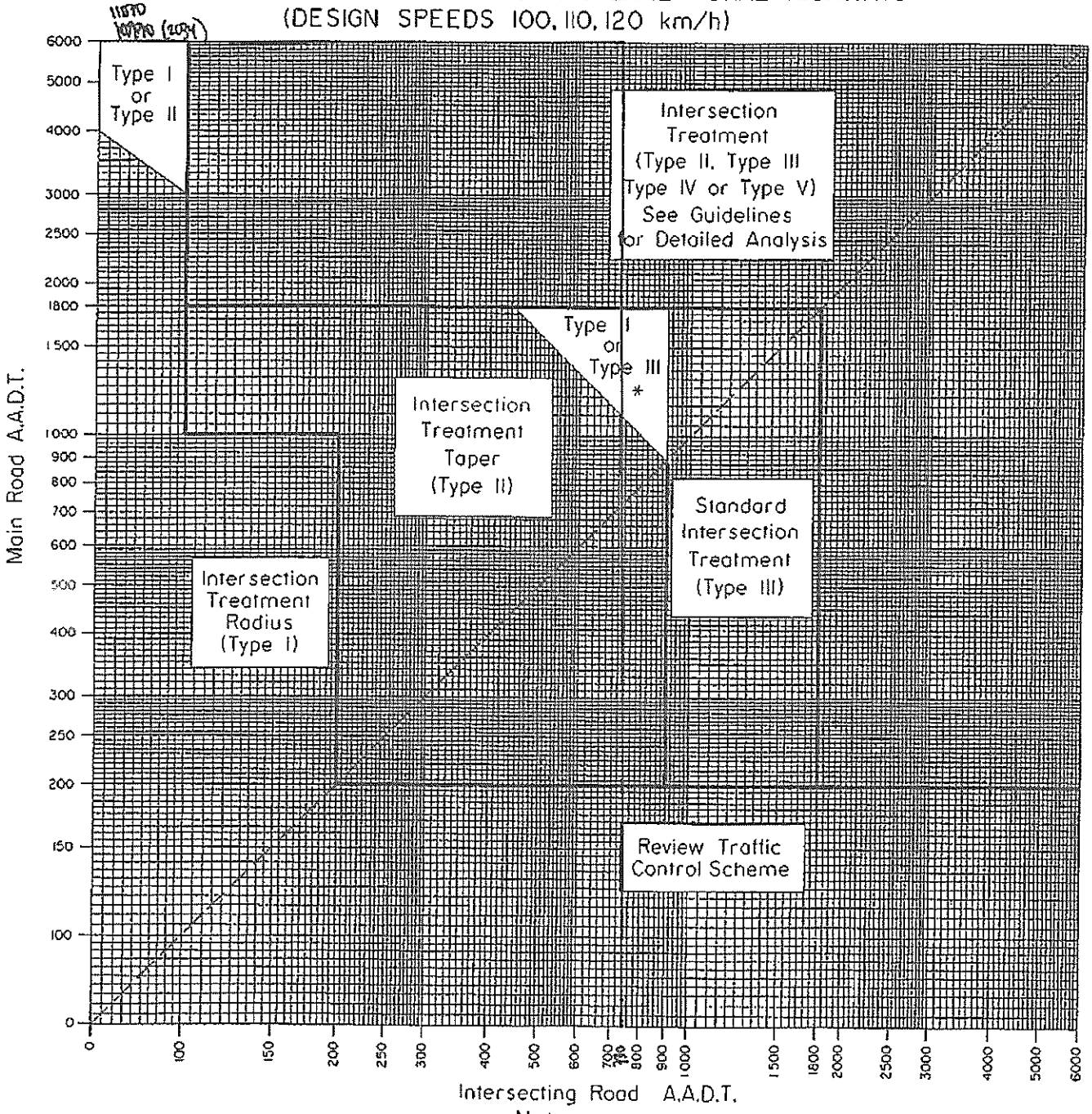
FIGURE D-7.4 TRAFFIC VOLUME WARRANT CHART FOR AT-GRADE INTERSECTION TREATMENT ON TWO-LANE RURAL HIGHWAYS (DESIGN SPEEDS 100, 110, 120 km/h)



Notes:

1. If main road, or intersecting road, is <100 AADT provide Type I Intersection Treatment (15m radius), except as shown for the higher volume main roads on this chart (Type I or II zone) where engineering judgement may be used to select the appropriate treatment.
2. If main road is >4000 AADT Review Access Management
   - — — If Intersecting Road AADT is > Main Road AADT: Review Traffic Control Scheme
3. Use projected traffic volumes for design
   Sloping line is defined by Main Road AADT x Intersecting Road AADT = 800,000

FIGURE D-7.4 TRAFFIC VOLUME WARRANT CHART FOR AT-GRADE INTERSECTION TREATMENT ON TWO-LANE RURAL HIGHWAYS (DESIGN SPEEDS 100, 110, 120 km/h)

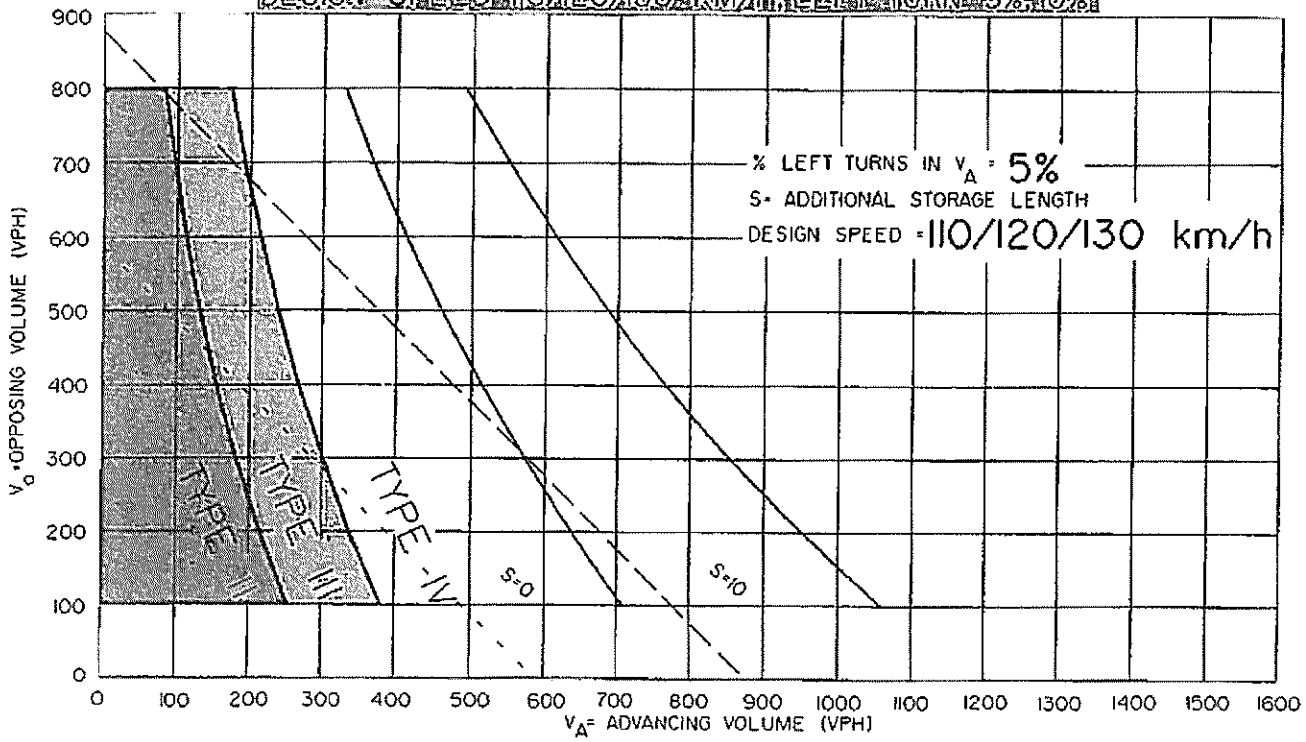


Notes:

1. If main road, or intersecting road, is <100 AADT provide Type I Intersection Treatment (15m radius), except as shown for the higher volume main roads on this chart (Type I or II zone) where engineering judgement may be used to select the appropriate treatment.
2. If main road is >4000 AADT Review Access Management
   - — — If Intersecting Road AADT is > Main Road AADT: Review Traffic Control Scheme
3. Use projected traffic volumes for design
   Sloping line is defined by Main Road AADT x Intersecting Road AADT = 800,000

FIGURE D-7.6a WARRANTS FOR LEFT-TURN LANES AND STORAGE REQUIREMENTS FOR TWO-LANE HIGHWAYS

DESIGN SPEED 110/120/130 KM/H LEFT-TURN 5%



S = Additional storage length required, that is, in addition to what is shown on the appropriate Type IV standard drawing. Designers should check additional storage requirements for trucks, also see Table D.7.6a.

- - - - Traffic signals may be warranted in rural areas, or urban areas, with restricted flow.

—— —— —— Traffic signals may be warranted in "free flow" urban areas.

Notes:

1. The traffic signal warrant lines are provided for reference only. For detailed analysis of the requirements for signals, contact Roadway Engineering Branch.
2. Warrant for Type I treatment is shown in Figure D-7.4.

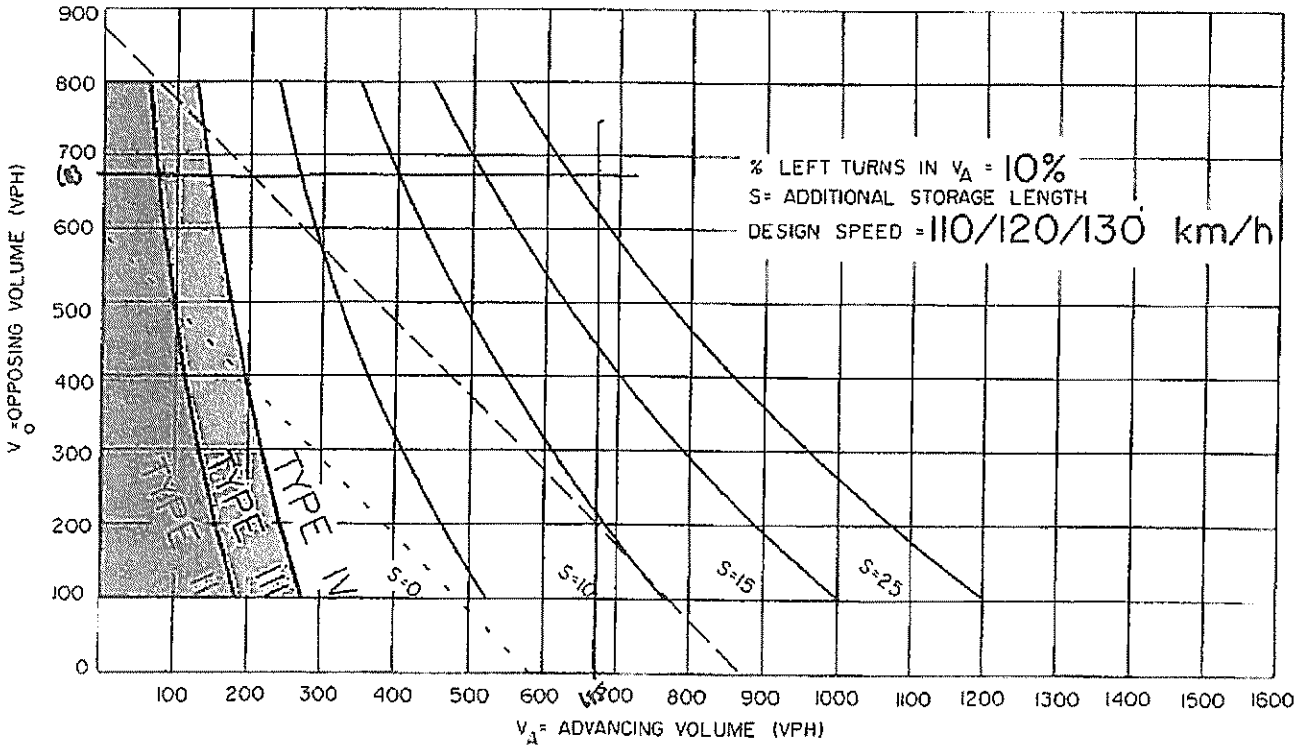
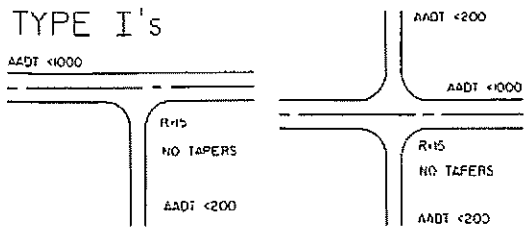


Table D.6.3.2 Design Widths for Turning Roadways at Rural Intersections

Minimum Pavement Width (m)										
R radius on inner edge of pavement (m)	Case I one-lane, one-way operation no provision for passing				Case II one-lane, one-way operation with provision for passing a stalled vehicle			Case III two-lane operation either one-way or two-way		
design traffic condition vehicle accommodation type	A (P)	B (SU)	C (WB-12)	D (WB-21)	A (P-P)	B (P-SU)	C (SU-SU)	A (P-SU)	B (SU-SU)	C (WB-12-WB-12)
15	5.4	5.4	7.0	9.1	7.0	7.6	8.8	9.4	11.0	13.1
25	4.8	5.2	5.8	7.8	6.4	6.8	8.1	8.7	9.8	11.4
35	4.5	5.0	5.4	7.1	6.0	6.6	7.5	8.4	9.4	10.4
45	4.2	4.8	5.2	6.6	5.8	6.4	7.3	8.2	9.0	10.0
60	4.2	4.8	5.0	6.0	5.8	6.4	7.2	8.2	8.8	9.4
80	4.0	4.8	5.0	5.7	5.8	6.2	7.0	8.0	8.6	9.4
100	4.0	4.8	5.0	5.4	5.5	6.2	6.8	8.0	8.5	9.0
125	4.0	4.6	4.8	5.2	5.5	6.0	6.8	8.0	8.4	8.8
150	3.7	4.6	4.6	5.1	5.5	6.0	6.7	7.8	8.4	8.8
tangent	3.7	4.6	4.6	5.1	5.2	5.8	6.4	7.6	8.2	8.2
	Width Adjustment for Edge of Pavement Treatment									
mountable curb	none				none			none		
barrier curb one side two sides	add 0.25m add 0.5m				none add 0.25m			add 0.25m add 0.5m		

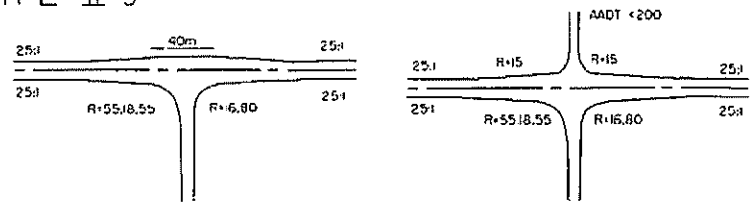
Note:
1. The combination of vehicle accommodation type letters, such as P-SU for Case II, means the pavement width allows a P design vehicle to slowly pass by a stalled SU design truck or vice versa.
2. Case II C is generally used in Alberta.

TYPE I's



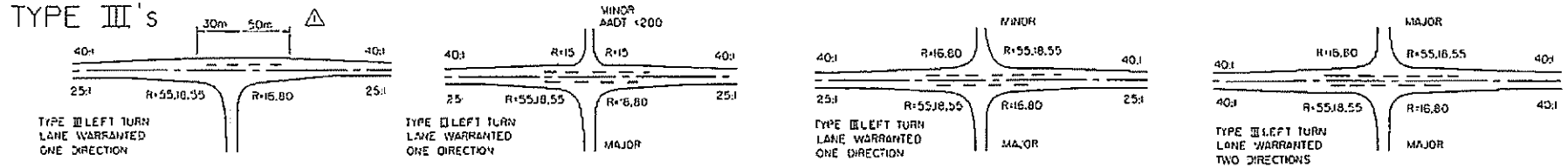
TYPE Ia TYPE Ib

TYPE II's



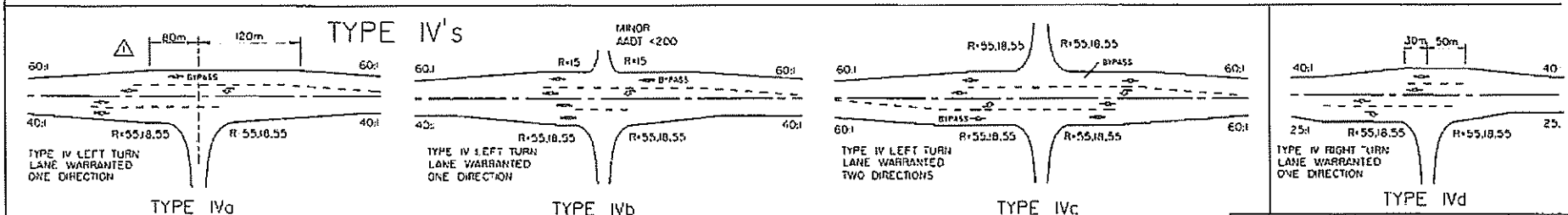
TYPE IIa TYPE IIb TYPE IIc

TYPE III's



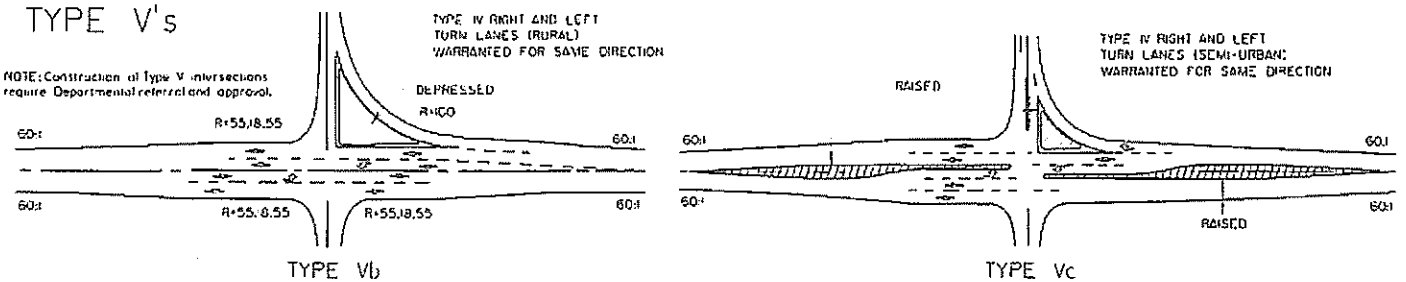
TYPE IIIa TYPE IIIb TYPE IIIc TYPE IIId

TYPE IV's



TYPE IVa TYPE IVb TYPE IVc TYPE IVd

TYPE V's



TYPE Vb TYPE Vc

NOTES:
1. This is not a pavement marking drawing.
2. This figure depicts the typical layouts used for at-grade intersections. Detailed design considerations may dictate some minor alterations for particular intersections. The tapers shown here are typical for a 80 km/h design speed on the main highway.

No.	REVISIONS	BY	DATE
⚠	RE-SET LANE DIMENSIONS		

Alberta INFRASTRUCTURE

FIGURE D-7.5

Date: APRIL 1995

STANDARD AT-GRADE INTERSECTION LAYOUTS FOR TWO-LANE HIGHWAYS

Prepared By: LT	Checked By: B.K.	Scale: N.T.S.	PAGE D-III

APPENDIX F

SIGNALIZATION WARRANT WORKSHEET

County of Wetaskiwin/Alberta Transportation - Traffic Signal Warrant Analysis

Main Street (name)	Township Road 480
Side Street (name)	East Access Road
Quadrant / Int #	n/a
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET

Direction (EW or NS)	EW
Direction (EW or NS)	NS
Comments	Enter Comments about the analysis here.

Road Authority:	County of Wetaskiwin/Alberta Transportation
City:	Millet, Alberta
Analysis Date:	2009 Jun 14, Sun
Count Date:	2009 Jun 14, Sun
Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	UpStream Signal (m)	# of Thru Lanes
Township Road 480	WB	0	1	0	0	0	1	9,999	1
Township Road 480	EB	0	0	0	0	1	0	9,999	1
East Access Road	NB	0	0	0	1	0	0		
East Access Road	SB	0	0	0	0	0	0		
Are the East Access Road NB right turns significantly impeded by through movements? (y/n)							y		

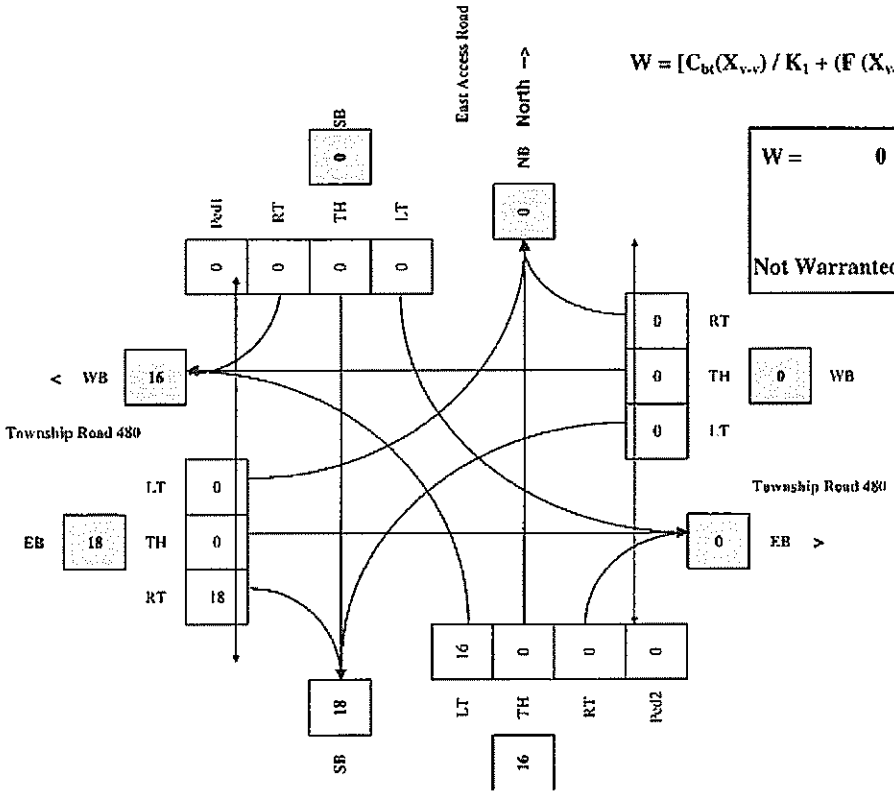
Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	5,000
Central Business District	(y/n)	n

Other Input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
Township Road 480	EW	80	10.0%	n	0.0
East Access Road	NS		10.0%	n	

Set Peak Hours

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
8:00 - 9:00	18	0	0	0	0	0	0	0	0	0	0	85	0	0	0	0
9:00 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 17:00	77	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0
Total (6-hour peak)	95	0	0	0	0	0	0	0	0	0	0	106	0	0	0	0
Average (6-hour peak)	16	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0

Average 6-hour Peak Turning Movements



$$W = [C_{bt}(X_{v,v}) / K_1 + (F (X_{v,p}) L) / K_2] \times C_i$$

W =	0	0	0
		Veh	*Ped*

Not Warranted - Vs<75

RESET SHEET

County of Wetaskiwin/Alberta Transportation - Traffic Signal Warrant Analysis

Main Street (name)	Township Road 480
Side Street (name)	West Access Road
Quadrant / Int #	n/a
for Warrant Calculation Results, please hit 'Page Down'	CHECK SHEET

Direction (EW or NS)	EW
Direction (EW or NS)	NS
Comments	Enter Comments about the analysis here.

Road Authority:	County of Wetaskiwin/Alberta Transportation
City:	Millet, Alberta
Analysis Date:	2009 Jun 14, Sun
Count Date:	2009 Jun 14, Sun
Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Excl LT	Th & LT	Through	Th+RT+LT	Th & RT	Excl RT	Upstream Signal (m)	# of Thru Lanes
Township Road 480	WB	0	1	0	0	0	1	9,999	1
Township Road 480	EB	0	0	0	0	1	0	9,999	1
West Access Road	NB	0	0	0	1	0	0		
West Access Road	SB	0	0	0	0	0	0		

Are the West Access Road NB right turns significantly impeded by through movements? (y/n) y

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	5,000
Central Business District	(y/n)	n

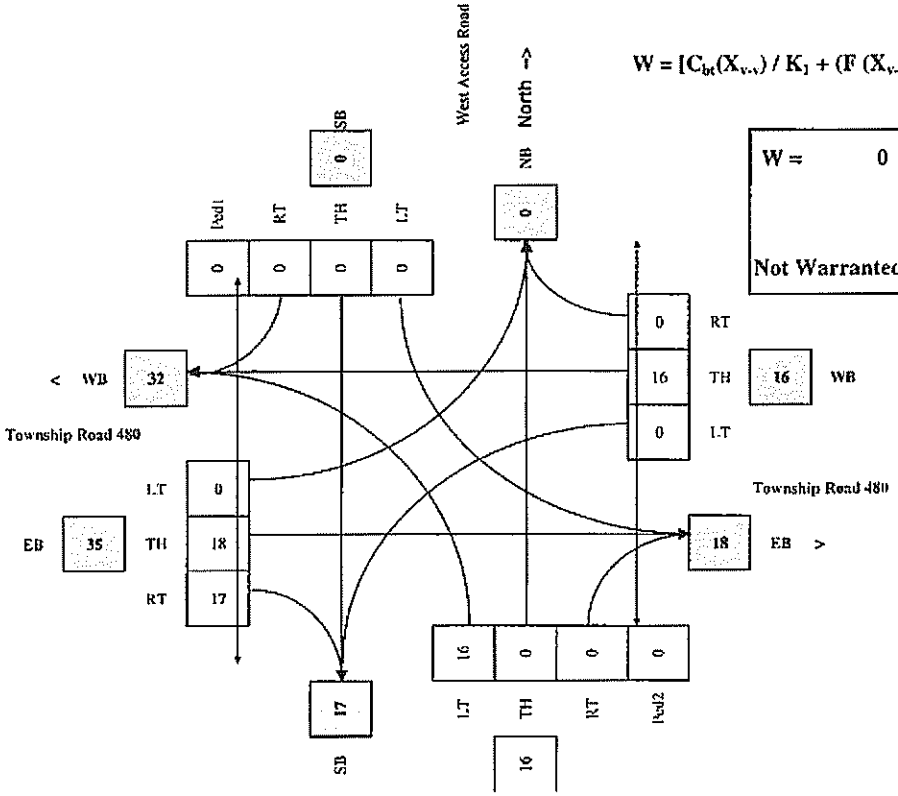
Other Input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
Township Road 480	EW	80	10.0%	n	0.0
West Access Road	NS		10.0%	n	

Set Peak Hours

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
8:00 - 9:00	17	0	0	0	0	0	0	18	0	0	85	85	0	0	0	0
9:00 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 17:00	77	0	0	0	0	0	0	77	0	0	21	18	0	0	0	0
Total (6-hour peak)	94	0	0	0	0	0	0	95	0	0	106	103	0	0	0	0
Average (6-hour peak)	16	0	0	0	0	0	0	16	0	0	18	17	0	0	0	0

Average 6-hour Peak Turning Movements

$$W = [C_{bt}(X_{v-v}) / K_1 + (F\,(X_{v-p})\,L) / K_2] \times C_i$$



W =	0	0	0
		Veh	*Ped*

Not Warranted - Vs<75

RESET SHEET

County of Wetaskiwin/Alberta Transportation - Traffic Signal Warrant Analysis

Main Street (name)	Highway 2A	Direction (EW or NS)	NS
Side Street (name)	Township Road 480	Direction (EW or NS)	EW
Quadrant / Int #	n/a	Comments	Enter Comments about the analysis here.

for Warrant Calculation Results, please hit 'Page Down'

CHECK SHEET

Road Authority:	County of Wetaskiwin/Alberta Transportation
City:	Millet, Alberta
Analysis Date:	2009 Jun 14, Sun
Count Date:	2009 Jun 14, Sun
Date Entry Format:	(yyyy-mm-dd)

Lane Configuration		Exel LT	Th & LT	Through	Th+RT+LT	Th & RT	Exel RT	UpStream Signal (m)	# of Thru Lanes
Highway 2A	NB	0	0	1	0	0	1	9,999	1
Highway 2A	SB	1	0	1	0	0	0	9,999	1
Township Road 480	WB	0	0	0	1	0	0		
Township Road 480	EB	0	0	0	0	0	0		

Are the Township Road 480 WB right turns significantly impeded by through movements? (y/n) Y

Demographics		
Elem. School/Mobility Challenged	(y/n)	n
Senior's Complex	(y/n)	n
Pathway to School	(y/n)	n
Metro Area Population	(#)	5,000
Central Business District	(y/n)	n

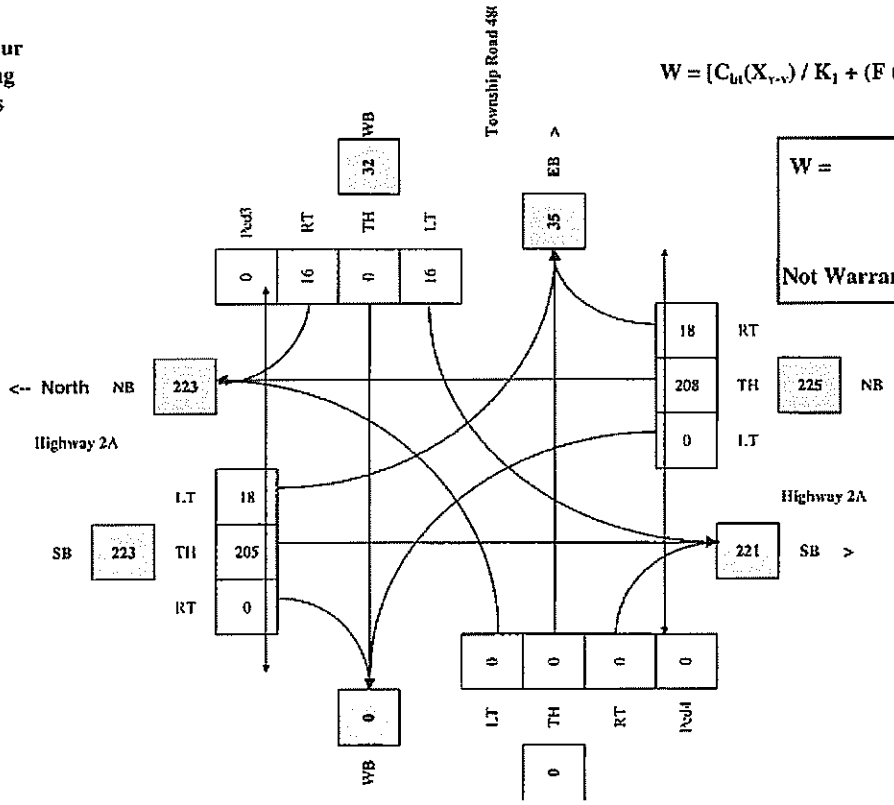
Other input		Speed (Km/h)	Truck %	Bus Rt (y/n)	Median (m)
Highway 2A	NS	100	10.0%	n	0.0
Township Road 480	EW		10.0%	n	

Set Peak Hours

Traffic Input	NB			SB			WB			EB			Ped1 NS	Ped2 NS	Ped3 EW	Ped4 EW
	LT	Th	RT	LT	Th	RT	LT	Th	RT	LT	Th	RT	W Side	E Side	N Side	S Side
8:00 - 9:00	0	836	85	85	532	0	18	0	17	0	0	0	0	0	0	0
9:00 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 17:00	0	409	21	21	698	0	77	0	77	0	0	0	0	0	0	0
Total (6-hour peak)	0	1,245	106	106	1,230	0	95	0	94	0	0	0	0	0	0	0
Average (6-hour peak)	0	208	18	18	205	0	16	0	16	0	0	0	0	0	0	0

Average 6-hour Peak Turning Movements

$$W = [C_{bt}(X_{v-v}) / K_1 + (F\ (X_{v-p})\ L) / K_2] \times C_i$$



W =	11	11	0
		Veh	*Ped*

Not Warranted - Vs<75

RESET SHEET

APPENDIX G

CAPACITY ANALYSIS

HCS+: Unsignalized Intersections Release 5.3

TWO-WAY STOP CONTROL SUMMARY

Analyst: Kevin Paul, E.I.T.
Agency/Co.: Williams Engineering Canad Inc
Date Performed: May 24, 2009
Analysis Time Period: Peak Hour
Intersection: Town Road 480 & East Access
Jurisdiction: County of Wetaskiwin No. 10
Units: U. S. Customary
Analysis Year: 2034
Project ID: i14236.00
East/West Street: Township Road 480
North/South Street: East Access Road
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		0	0	0	0	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR		0	0	0	0	
Percent Heavy Vehicles		--	--	10	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0		0			
Peak Hour Factor, PHF	1.00		1.00			
Hourly Flow Rate, HFR	0		0			
Percent Heavy Vehicles	10		10			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		0		0				
C(m) (vph)		1572						
v/c		0.00						
95% queue length		0.00						
Control Delay		7.3						
LOS		A						
Approach Delay								
Approach LOS								

Phone: Fax:
E-Mail:

TWO-WAY STOP CONTROL(TWSC) ANALYSIS

Analyst: Kevin Paul, E.I.T.
Agency/Co.: Williams Engineering Canad Inc
Date Performed: May 24, 2009
Analysis Time Period: Peak Hour
Intersection: Town Road 480 & East Access
Jurisdiction: County of Wetaskiwin No. 10
Units: U. S. Customary
Analysis Year: 2034
Project ID: i14236.00
East/West Street: Township Road 480
North/South Street: East Access Road
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street Movements	1 L	2 T	3 R	4 L	5 T	6 R
Volume		0	0	0	0	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Peak-15 Minute Volume		0	0	0	0	
Hourly Flow Rate, HFR		0	0	0	0	
Percent Heavy Vehicles		--	--	10	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street Movements	7 L	8 T	9 R	10 L	11 T	12 R
Volume	0		0			
Peak Hour Factor, PHF	1.00		1.00			
Peak-15 Minute Volume	0		0			
Hourly Flow Rate, HFR	0		0			
Percent Heavy Vehicles	10		10			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
RT Channelized?						
Lanes	0		0			
Configuration		LR				

Pedestrian Volumes and Adjustments

Movements	13	14	15	16
Flow (ped/hr)	0	0	0	0
Lane Width (ft)	12.0	12.0	12.0	12.0
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0
Percent Blockage	0	0	0	0

Upstream Signal Data

	Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2 Left-Turn							
Through							
S5 Left-Turn							
Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:		0
Shared ln volume, major rt vehicles:		0
Sat flow rate, major th vehicles:		1700
Sat flow rate, major rt vehicles:		1700
Number of major street through lanes:		1

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Calculation

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c,base)		4.1	7.1		6.2			
t(c,hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)		10	10		10			
t(c,g)			0.20	0.20	0.10	0.20	0.20	0.10
Percent Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)		0.00	0.70		0.00			
t(c,T): 1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c) 1-stage		4.2	6.5		6.3			
2-stage								

Follow-Up Time Calculations

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(f,base)		2.20	3.50		3.30			
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)		10	10		10			
t(f)		2.3	3.6		3.4			

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal

	Movement 2 V(t)	Movement 2 V(l,prot)	Movement 5 V(t)	Movement 5 V(l,prot)
V prog				
Total Saturation Flow Rate, s (vph)				
Arrival Type				
Effective Green, g (sec)				
Cycle Length, C (sec)				
Rp (from Exhibit 16-11)				
Proportion vehicles arriving on green P				

g(q1)
g(q2)
g(q)

Computation 2-Proportion of TWSC Intersection Time blocked	Movement 2		Movement 5	
	V(t)	V(l,prot)	V(t)	V(l,prot)
alpha				
beta				
Travel time, t(a) (sec)				
Smoothing Factor, F				
Proportion of conflicting flow, f				
Max platooned flow, V(c,max)				
Min platooned flow, V(c,min)				
Duration of blocked period, t(p)				
Proportion time blocked, p		0.000		0.000

Computation 3-Platoon Event Periods	Result
p(2)	0.000
p(5)	0.000
p(dom)	
p(subo)	
Constrained or unconstrained?	

Proportion unblocked for minor movements, p(x)	(1) Single-stage Process	(2) Two-Stage Process Stage I	(3) Two-Stage Process Stage II
p(1)			
p(4)			
p(7)			
p(8)			
p(9)			
p(10)			
p(11)			
p(12)			

Computation 4 and 5 Single-Stage Process Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
V c,x		0	0		0			
s								
Px								
V c,u,x								

C r,x	
C plat,x	

Two-Stage Process	7		8		10		11	
	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2
V(c,x)								
s		1500						
P(x)								
V(c,u,x)								

C(r,x)	

C(plat,x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	0	
Potential Capacity	1062	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	1062	
Probability of Queue free St.	1.00	1.00
Step 2: LT from Major St.	**4**	**1**
Conflicting Flows	0	
Potential Capacity	1572	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	1572	
Probability of Queue free St.	1.00	1.00
Maj L-Shared Prob Q free St.	1.00	
Step 3: TH from Minor St.	**8**	**11**
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	**7**	**10**
Conflicting Flows	0	
Potential Capacity	1003	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		1.00
Maj. L, Min T Adj. Imp Factor.		1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	1003	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Probability of Queue free St.		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows		

Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity		
Result for 2 stage process:		
a		
y		
C t		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows	0	
Potential Capacity	1003	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		1.00
Maj. L, Min T Adj. Imp Factor.		1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	1003	
Results for Two-stage process:		
a		
y		
C t	1003	

Worksheet 8-Shared Lane Calculations

Movement	7 L	8 T	9 R	10 L	11 T	12 R
Volume (vph)	0		0			
Movement Capacity (vph)	1003		1062			
Shared Lane Capacity (vph)						

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7 L	8 T	9 R	10 L	11 T	12 R
C sep	1003		1062			
Volume	0		0			
Delay						
Q sep						
Q sep +1						
round (Qsep +1)						

n max	
C sh	
SUM C sep	
n	
C act	

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		0		0				
C(m) (vph)		1572						
v/c		0.00						
95% queue length		0.00						
Control Delay		7.3						
LOS		A						
Approach Delay								
Approach LOS								

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(i1), Volume for stream 2 or 5		0
v(i2), Volume for stream 3 or 6		0
s(i1), Saturation flow rate for stream 2 or 5		1700
s(i2), Saturation flow rate for stream 3 or 6		1700
P*(oj)		1.00
d(M,LT), Delay for stream 1 or 4		7.3
N, Number of major street through lanes		1
d(rank,1) Delay for stream 2 or 5		0.0

HCS+: Unsignalized Intersections Release 5.3

TWO-WAY STOP CONTROL SUMMARY

Analyst: Kevin Paul, E.I.T.
Agency/Co.: Williams Engineering Canad Inc
Date Performed: June 14, 2009
Analysis Time Period: Peak Hour
Intersection: Town Road 480 & West Access
Jurisdiction: County of Wetaskiwin No. 10
Units: U. S. Customary
Analysis Year: 2034
Project ID: i14236.00
East/West Street: Township Road 480
North/South Street: West Access Road
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		85	21	0	85	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR		85	21	0	85	
Percent Heavy Vehicles		--	--	10	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	77	0	0			
Peak Hour Factor, PHF	1.00	1.00	1.00			
Hourly Flow Rate, HFR	77	0	0			
Percent Heavy Vehicles	10	10	10			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0	1	0			
Configuration		LTR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LTR				
v (vph)		0		77				
C(m) (vph)		1437		790				
v/c		0.00		0.10				
95% queue length		0.00		0.32				
Control Delay		7.5		10.0+				
LOS		A		B				
Approach Delay				10.0+				
Approach LOS				B				

Phone: Fax:
E-Mail:

TWO-WAY STOP CONTROL(TWSC) ANALYSIS

Analyst: Kevin Paul, E.I.T.
Agency/Co.: Williams Engineering Canad Inc
Date Performed: June 14, 2009
Analysis Time Period: Peak Hour
Intersection: Town Road 480 & West Access
Jurisdiction: County of Wetaskiwin No. 10
Units: U. S. Customary
Analysis Year: 2034
Project ID: i14236.00
East/West Street: Township Road 480
North/South Street: West Access Road
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street Movements	1 L	2 T	3 R	4 L	5 T	6 R
Volume		85	21	0	85	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Peak-15 Minute Volume		21	5	0	21	
Hourly Flow Rate, HFR		85	21	0	85	
Percent Heavy Vehicles		--	--	10	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street Movements	7 L	8 T	9 R	10 L	11 T	12 R
Volume	77	0	0			
Peak Hour Factor, PHF	1.00	1.00	1.00			
Peak-15 Minute Volume	19	0	0			
Hourly Flow Rate, HFR	77	0	0			
Percent Heavy Vehicles	10	10	10			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
RT Channelized?						
Lanes	0	1	0			
Configuration		LTR				

Pedestrian Volumes and Adjustments

Movements	13	14	15	16
Flow (ped/hr)	0	0	0	0
Lane Width (ft)	12.0	12.0	12.0	12.0
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0
Percent Blockage	0	0	0	0

Upstream Signal Data

	Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2 Left-Turn							
Through							
S5 Left-Turn							
Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:		85
Shared ln volume, major rt vehicles:		0
Sat flow rate, major th vehicles:		1700
Sat flow rate, major rt vehicles:		1700
Number of major street through lanes:		1

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Calculation

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c,base)		4.1	7.1	6.5	6.2			
t(c,hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)		10	10	10	10			
t(c,g)			0.20	0.20	0.10	0.20	0.20	0.10
Percent Grade			0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)		0.00	0.70	0.00	0.00			
t(c,T): 1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c) 1-stage		4.2	6.5	6.6	6.3			
2-stage								

Follow-Up Time Calculations

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(f,base)		2.20	3.50	4.00	3.30			
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)		10	10	10	10			
t(f)		2.3	3.6	4.1	3.4			

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal

	Movement 2 V(t)	Movement 2 V(l,prot)	Movement 5 V(t)	Movement 5 V(l,prot)
V prog				
Total Saturation Flow Rate, s (vph)				
Arrival Type				
Effective Green, g (sec)				
Cycle Length, C (sec)				
Rp (from Exhibit 16-11)				
Proportion vehicles arriving on green P				

g(q1)
g(q2)
g(q)

Computation 2-Proportion of TWSC Intersection Time blocked	Movement 2		Movement 5	
	V(t)	V(l,prot)	V(t)	V(l,prot)
alpha				
beta				
Travel time, t(a) (sec)				
Smoothing Factor, F				
Proportion of conflicting flow, f				
Max platooned flow, V(c,max)				
Min platooned flow, V(c,min)				
Duration of blocked period, t(p)				
Proportion time blocked, p		0.000		0.000

Computation 3-Platoon Event Periods	Result
p(2)	0.000
p(5)	0.000
p(dom)	
p(subo)	
Constrained or unconstrained?	

Proportion unblocked for minor movements, p(x)	(1) Single-stage Process	(2) Two-Stage Process Stage I	(3) Stage II
p(1)			
p(4)			
p(7)			
p(8)			
p(9)			
p(10)			
p(11)			
p(12)			

Computation 4 and 5 Single-Stage Process Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
V c,x		106	181	181	96			
s								
Px								
V c,u,x								

C r,x	
C plat,x	

Two-Stage Process	7		8		10		11	
	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2
V(c,x)								
s		1500		1500				
P(x)								
V(c,u,x)								

C(r,x)

C(plat,x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	96	
Potential Capacity	939	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	939	
Probability of Queue free St.	1.00	1.00

Step 2: LT from Major St.	4	1
Conflicting Flows	106	
Potential Capacity	1437	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	1437	
Probability of Queue free St.	1.00	1.00
Maj L-Shared Prob Q free St.	1.00	

Step 3: TH from Minor St.	8	11
Conflicting Flows	181	
Potential Capacity	699	
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	699	
Probability of Queue free St.	1.00	1.00

Step 4: LT from Minor St.	7	10
Conflicting Flows	181	
Potential Capacity	790	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		1.00
Maj. L, Min T Adj. Imp Factor.		1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	790	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Probability of Queue free St.		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows	181	

Potential Capacity	699	
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	699	

Result for 2 stage process:		
a		
y		
C t	699	
Probability of Queue free St.	1.00	1.00

Step 4: LT from Minor St.	7	10

Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		

Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		

Part 3 - Single Stage		
Conflicting Flows	181	
Potential Capacity	790	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		1.00
Maj. L, Min T Adj. Imp Factor.		1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	790	

Results for Two-stage process:	
a	
y	
C t	790

Worksheet 8-Shared Lane Calculations

Movement	7 L	8 T	9 R	10 L	11 T	12 R
Volume (vph)	77	0	0			
Movement Capacity (vph)	790	699	939			
Shared Lane Capacity (vph)		790				

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7 L	8 T	9 R	10 L	11 T	12 R
C sep	790	699	939			
Volume	77	0	0			
Delay						
Q sep						
Q sep +1						
round (Qsep +1)						

n max	
C sh	790
SUM C sep	
n	
C act	

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LTR				
v (vph)		0		77				
C(m) (vph)		1437		790				
v/c		0.00		0.10				
95% queue length		0.00		0.32				
Control Delay		7.5		10.0+				
LOS		A		B				
Approach Delay				10.0+				
Approach LOS				B				

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(il), Volume for stream 2 or 5		85
v(i2), Volume for stream 3 or 6		0
s(il), Saturation flow rate for stream 2 or 5		1700
s(i2), Saturation flow rate for stream 3 or 6		1700
P*(oj)		1.00
d(M,LT), Delay for stream 1 or 4		7.5
N, Number of major street through lanes		1
d(rank,1) Delay for stream 2 or 5		0.0

HCS+: Unsignalized Intersections Release 5.3

TWO-WAY STOP CONTROL SUMMARY

Analyst: Kevin Paul, E.I.T.
Agency/Co.: Williams Engineering Canad Inc
Date Performed: May 24, 2009
Analysis Time Period: Peak Hour
Intersection: Highway 2A & Township 480
Jurisdiction: County of Wetaskiwin No. 10
Units: U. S. Customary
Analysis Year: 2034
Project ID: i14236.00
East/West Street: Township Road 480
North/South Street: Highway 2A
Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		836	85	85	532	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR		836	85	85	532	
Percent Heavy Vehicles		--	--	10	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1 0		1 1		
Configuration		TR		L T		
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	77		77			
Peak Hour Factor, PHF	1.00		1.00			
Hourly Flow Rate, HFR	77		77			
Percent Heavy Vehicles	10		10			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		L		LR				
v (vph)		85		154				
C(m) (vph)		709		155				
v/c		0.12		0.99				
95% queue length		0.41		14.95				
Control Delay		10.8		226.3				
LOS		B		F				
Approach Delay				226.3				
Approach LOS				F				

Phone: Fax:
E-Mail:

TWO-WAY STOP CONTROL(TWSC) ANALYSIS

Analyst: Kevin Paul, E.I.T.
Agency/Co.: Williams Engineering Canad Inc
Date Performed: May 24, 2009
Analysis Time Period: Peak Hour
Intersection: Highway 2A & Township 480
Jurisdiction: County of Wetaskiwin No. 10
Units: U. S. Customary
Analysis Year: 2034
Project ID: i14236.00
East/West Street: Township Road 480
North/South Street: Highway 2A
Intersection Orientation: NS Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street Movements	1 L	2 T	3 R	4 L	5 T	6 R
Volume		836	85	85	532	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Peak-15 Minute Volume		209	21	21	133	
Hourly Flow Rate, HFR		836	85	85	532	
Percent Heavy Vehicles		--	--	10	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	1	1	
Configuration		TR		L	T	
Upstream Signal?		No			No	

Minor Street Movements	7 L	8 T	9 R	10 L	11 T	12 R
Volume	77		77			
Peak Hour Factor, PHF	1.00		1.00			
Peak-15 Minute Volume	19		19			
Hourly Flow Rate, HFR	77		77			
Percent Heavy Vehicles	10		10			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
RT Channelized?						
Lanes	0		0			
Configuration		LR				

Pedestrian Volumes and Adjustments

Movements	13	14	15	16
Flow (ped/hr)	0	0	0	0
Lane Width (ft)	12.0	12.0	12.0	12.0
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0
Percent Blockage	0	0	0	0

Upstream Signal Data

		Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2	Left-Turn							
	Through							
S5	Left-Turn							
	Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:		
Shared ln volume, major rt vehicles:		
Sat flow rate, major th vehicles:		
Sat flow rate, major rt vehicles:		
Number of major street through lanes:		

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Calculation

Movement		1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c,base)			4.1	7.1		6.2			
t(c,hv)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)			10	10		10			
t(c,g)				0.20	0.20	0.10	0.20	0.20	0.10
Percent Grade				0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)			0.00	0.70		0.00			
t(c,T):	1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c)	1-stage		4.2	6.5		6.3			
	2-stage								

Follow-Up Time Calculations

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(f,base)		2.20	3.50		3.30			
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)		10	10		10			
t(f)		2.3	3.6		3.4			

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal

	Movement 2		Movement 5	
	V(t)	V(l,prot)	V(t)	V(l,prot)
V prog				
Total Saturation Flow Rate, s (vph)				
Arrival Type				
Effective Green, g (sec)				
Cycle Length, C (sec)				
Rp (from Exhibit 16-11)				
Proportion vehicles arriving on green P				

g(q1)
g(q2)
g(q)

Computation 2-Proportion of TWSC Intersection Time blocked	Movement 2		Movement 5	
	V(t)	V(l,prot)	V(t)	V(l,prot)
alpha				
beta				
Travel time, t(a) (sec)				
Smoothing Factor, F				
Proportion of conflicting flow, f				
Max platooned flow, V(c,max)				
Min platooned flow, V(c,min)				
Duration of blocked period, t(p)				
Proportion time blocked, p		0.000		0.000

Computation 3-Platoon Event Periods	Result
p(2)	0.000
p(5)	0.000
p(dom)	
p(subo)	
Constrained or unconstrained?	

Proportion unblocked for minor movements, p(x)	(1) Single-stage Process	(2) Two-Stage Process Stage I	(3) Two-Stage Process Stage II
p(1)			
p(4)			
p(7)			
p(8)			
p(9)			
p(10)			
p(11)			
p(12)			

Computation 4 and 5 Single-Stage Process Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
V c,x		921	1580		878			
s								
Px								
V c,u,x								
C r,x								
C plat,x								

Two-Stage Process	7		8		10		11	
	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2
V(c,x)								
s		1500						
P(x)								
V(c,u,x)								
C(r,x)								

C(plat,x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	878	
Potential Capacity	336	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	336	
Probability of Queue free St.	0.77	1.00
Step 2: LT from Major St.	**4**	**1**
Conflicting Flows	921	
Potential Capacity	709	
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	709	
Probability of Queue free St.	0.88	1.00
Maj L-Shared Prob Q free St.		
Step 3: TH from Minor St.	**8**	**11**
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.88	0.88
Movement Capacity		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	**7**	**10**
Conflicting Flows	1580	
Potential Capacity	115	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.88
Maj. L, Min T Adj. Imp Factor.		0.91
Cap. Adj. factor due to Impeding mvmnt	0.88	0.70
Movement Capacity	101	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Probability of Queue free St.		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows		

Potential Capacity		
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.88	0.88
Movement Capacity		
Result for 2 stage process:		
a		
y		
C t		
Probability of Queue free St.	1.00	1.00
Step 4: LT from Minor St.	7	10
Part 1 - First Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 2 - Second Stage		
Conflicting Flows		
Potential Capacity		
Pedestrian Impedance Factor		
Cap. Adj. factor due to Impeding mvmnt		
Movement Capacity		
Part 3 - Single Stage		
Conflicting Flows	1580	
Potential Capacity	115	
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor		0.88
Maj. L, Min T Adj. Imp Factor.		0.91
Cap. Adj. factor due to Impeding mvmnt	0.88	0.70
Movement Capacity	101	
Results for Two-stage process:		
a		
y		
C t	101	

Worksheet 8-Shared Lane Calculations

Movement	7 L	8 T	9 R	10 L	11 T	12 R
Volume (vph)	77		77			
Movement Capacity (vph)	101		336			
Shared Lane Capacity (vph)		155				

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7 L	8 T	9 R	10 L	11 T	12 R
C sep	101		336			
Volume	77		77			
Delay						
Q sep						
Q sep +1						
round (Qsep +1)						

n max	
C sh	155
SUM C sep	
n	
C act	

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config		L		LR				
v (vph)		85		154				
C(m) (vph)		709		155				
v/c		0.12		0.99				
95% queue length		0.41		14.95				
Control Delay		10.8		226.3				
LOS		B		F				
Approach Delay				226.3				
Approach LOS				F				

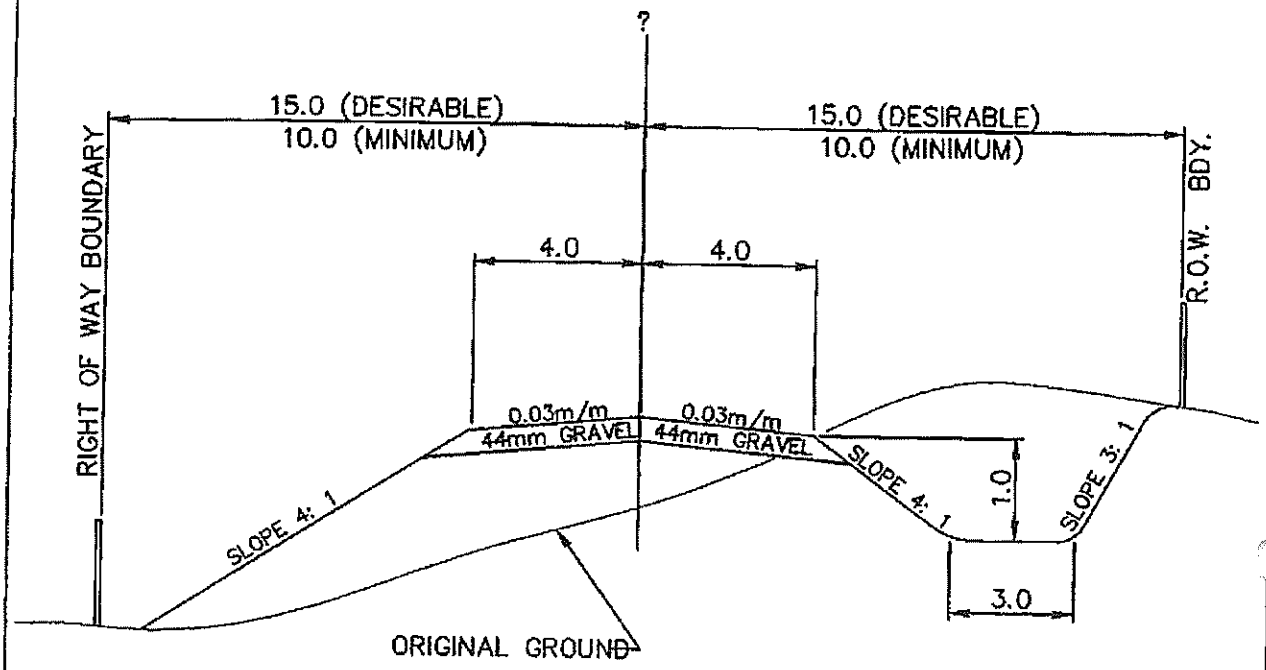
Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	0.88
v(i1), Volume for stream 2 or 5		
v(i2), Volume for stream 3 or 6		
s(i1), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P*(oj)		
d(M,LT), Delay for stream 1 or 4		10.8
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5		

APPENDIX H

ROADWAY CROSS SECTIONS

County of Wetaskiwin
COLLECTOR ROAD



SURFACE WIDTH (m)	R.O.W. REQUIRED (m)	NORMAL SIDE SLOPE	MAXIMUM SIDE SLOPE	NORMAL BACK SLOPE	MAXIMUM BACK SLOPE	MAXIMUM CURVE RADIUS (m)	MAXIMUM SUPER ELEVATION (m/m)	MAXIMUM GRADIENT (%)
8.0	30.0	4:1	3:1	3:1	2:1	300	0.08	7.0

NOTE: ALL DIMENSIONS IN METERS UNLESS SHOWN OTHERWISE.

EXH Engineering Services Ltd.

PROJECT No.:	DATE:
1003214	04-10-19
DRAWN:	CHECKED:
MRM	ERH

FIGURE 2
COLLECTOR ROAD
STANDARD CROSS-SECTION