

LANE CLOSURE WORKSHEET

DATE: January 12, 2015

FINANCIAL PROJECT ID: NA

FEDERAL AID PROJECT NO: NA

COUNTY: Lake

DESIGNER: FB

NO. OF EXISTING LANES: 3

LOCATION: US 27 - WB

SCOPE OF WORK: Widening of CR 466A with improvement to US 27 intersection.

Calculate the peak hour traffic volume (V):

$$V = \text{ATC } \underline{21932} \times \text{P/D } \underline{0.080} \times \text{D } \underline{1.00} \times \text{PSCF } \underline{1.14} \times \text{RTF } \underline{1.00} = \underline{1989}$$

LANE CLOSURE CAPACITY TABLE

Capacity (C) of an Existing 2-Lane – Converted to 2-Way, 1-Lane = 1400 VPH
 Capacity (C) of an Existing 4-Lane – Converted to 1-Way, 1-Lane = 1800 VPH
 Capacity (C) of an Existing 6-Lane – Converted to 1-Way, 2-Lane = 3600 VPH
 Capacity (C) of an Existing 8-Lane – Converted to 1-Way, 3-Lane = 5400 VPH
 User Defined Capacity (C) of Existing 2-Lane - Converted to 2-Way, 1-Lane =
 User Defined Capacity (C) of an Existing Multi-Lane - Converted to 1-Way, 0-Lane =

Factors restricting Capacity:

$$\text{TLW } \underline{12} \quad \text{LC } \underline{0} \quad \text{WZL } \underline{400} \quad \text{G/C } \underline{0.65}$$

Calculate the Restricted Capacity (RC) at the Lane Closure Site by multiplying the appropriate 2L, 4L, or 6L Capacity (C) from the Table above by the Obstruction Factor (OF) and the Work Zone Factor (WZF). If the Lane Closure is through or within 600 ft. of a signalized intersection, multiply the RC by the G/C Ratio.

$$\text{RC (Open Road)} = C \underline{3600} \times \text{OF } \underline{0.86} \times \text{WZF } \underline{1.00} = \underline{3096}$$

$$\text{RC (Signalized)} = \text{RC (Open Road)} \underline{3096} \times \text{G/C } \underline{0.65} = \underline{2012}$$

If $V \leq RC$, there is no restriction on Lane Closure

If $V > RC$, calculate the hourly percentage of ADT at which Lane Closure will be permitted

$$\text{Open Road \%} = \frac{\text{RC (Open Road)} \underline{3096}}{(\text{ATC } \underline{21932} \times \text{D } \underline{1.00} \times \text{PSCF } \underline{1.14} \times \text{RTF } \underline{1})} = \underline{12.38 \%}$$

$$\text{Signalized \%} = \text{Open Road \% } \underline{12.38} \times \text{G/C } \underline{0.65} = \underline{8.05 \%}$$

Plot 24 hour traffic to determine when Lane Closure permitted.

NOTE: For Existing 2-Lane Roadways, D = 1.00.

Work Zone Factor (WZF) applies only to 2-Lane Roadways.

For $\text{RTF} < 1.00$, briefly describe alternate route:

LANE CLOSURES

24 HOUR COUNTS

	AM		PM	
	Hourly Volume	ATC %	Hourly Volume	ATC %
12 - 1	135	0.6	1617	7.4
1 - 2	99	0.5	1524	6.9
2 - 3	63	0.3	1499	6.8
3 - 4	79	0.4	1553	7.1
4 - 5	109	0.5	1580	7.2
5 - 6	259	1.2	1745	8.0
6 - 7	636	2.9	1223	5.6
7 - 8	1223	5.6	1052	4.8
8 - 9	1345	6.1	758	3.5
9 - 10	1351	6.2	539	2.5
10 - 11	1487	6.8	363	1.7
11 - 12	1469	6.7	224	1.0
TOTAL			21,932	100

COUNT DATE:

July 10, 2013

Designer:

FB

Financial Project ID No.:

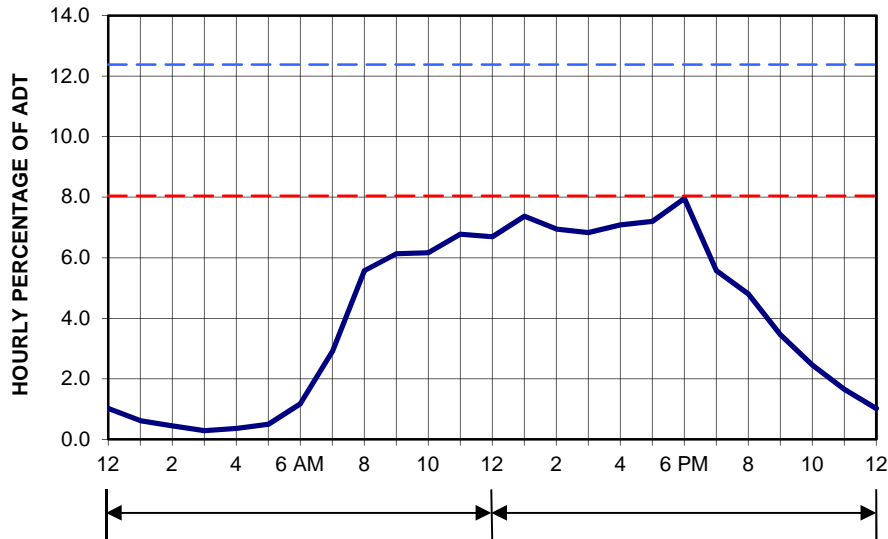
NA

Location:

US 27 - WB

P/D = 0.080

HOURLY VARIATION OF DAILY TRAFFIC



- CONCLUSION -

ROUND TO THE NEAREST
1/2 HOUR
CONSERVATIVELY

OPEN ROAD LANE CLOSURE
12:00 PM to 12:00 PM

SIGNALIZED LANE CLOSURE
12:00 PM to 12:00 PM