Engineering Assessment Report
US 231 at SR 62 and SR 62/SR68

Near Dale, Spencer County

February 2, 2015

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INDOT Vincennes District
Technical Services

VINCENNES DISTRICT
Vincennes, Indiana
February 2, 2015

MEMORANDUM

TO: Terry Bough, P.E.
District Traffic Engineer
INDOT Vincennes District

FROM: Damon Brown, E.I.T.
Traffic Planning Engineer
INDOT Vincennes District

SUBJECT: Engineering Assessment
Intersections of US 231 and SR 62 (Washington St) as well as US 231 and SR 62/68
RP 31.03 and RP 32.45, Respectively
Near Dale, Spencer County

I. PURPOSE OF REPORT:

This Engineering Assessment outlines the traffic analysis performed for the intersections of US 231 and SR 62 (Washington St) as well as US 231 and SR 62/68. All relevant background data are included. This assessment will provide recommendations for various alternatives that may be considered for this area. On January 22, 2015 INDOT held a special hearing to solicit comments and opinions on the two junctions of US 231 and SR 62. Those comments will be taken into consideration in this engineering assessment.

II. ASSESSMENT LOCATION:

The intersection of US 231 and SR 62 (S Jct) is located 0.4 miles southwest of the town limits of Dale in Spencer County. The S Jct is located at RP 31.03. The intersection of US 231 and SR 62/68 (N Jct) is just west of the town limits of Dale in Spencer County. The N Jct is located at RP 32.45. Aerial Diagrams and Photos can be found in the Appendix.

III. NEED AND PURPOSE:

The Vincennes District has prepared this Engineering Assessment to review the existing conditions of the intersections and to give an assessment for possible future safety improvements.

IV. EXISTING CONDITIONS:

A. INTERSECTION:

a. US 231 and SR 62 (S Jct)

US231 is functionally classified as a Rural Principal Arterial. The posted speed limit is 60 mph. US 231 is a 4-lane divided highway. Both north and south approaches have dedicated left-turn and right-turn lanes and two through lanes. All lanes are 11-12 ft wide. All travel lanes and shoulders are concrete. Inside shoulder widths are 4 ft. The outside shoulder widths are 10 ft. The median island at the intersection is 42 ft wide. The median island is 51 ft wide north and south of the turn lanes. US 231 has horizontal and vertical curvature through the intersection.

SR 62 is functionally classified as a Rural Major Collector. The posted speed limit for the east

approach is 45 mph. All travel lanes and shoulders are concrete. The posted speed limit for the west approach is 50 mph. The shoulders are 8-10 ft wide. SR 62 intersects US 231 at a skew. Both the east and west approaches have a shared left/through lane and a right-turn yield lane. The east and west approaches previously had dedicated left-turn lanes, but have been marked out by pavement markings. Traffic signs exceed standards in size and number. Some of the signs include: “TRAFFIC FROM RIGHT DOES NOT STOP,” “TRAFFIC FROM LEFT DOES NOT STOP,” 48” x 48” stop sign, “ONE WAY” signs, “STOP AHEAD” warning sign, separate guide signs for EB and WB SR 62. The intersection sight distances from the east and west approaches are more than 1500 ft.

b. **US 231 and SR 62/68 (N Jct)**

US231 is functionally classified as a Rural Principal Arterial. The posted speed limit is 60 mph. US 231 is a 4-lane divided highway. Both north and south approaches have dedicated left-turn and right-turn lanes and two through lanes. Lanes are 11-13 ft wide. All travel lanes and shoulders are concrete. The inside shoulder widths are 4 ft. The outside shoulder widths are 10 ft. The median island at the intersection is 50 ft wide. The median island is 59 ft wide north and south of the turn lanes. US 231 has horizontal and vertical curvature through the intersection. There are yield lines in the median for eastbound and westbound crossing vehicles.

SR 62 is functionally classified as a Rural Major Collector. The posted speed limit for the east approach is 45 mph. All travel lanes and shoulders are concrete. The posted speed limit for the west approach is 55 mph. Shoulder widths are 5 ft wide on the east approach and 10 ft wide on the west approach. SR 62 intersects US 231 at a skew. Both the east and west approaches have a shared left/through lane and a right-turn yield lane. The east and west approaches previously had dedicated left-turn lanes, but have been marked out by pavement markings. Traffic signs exceed standards in size and number. Some of the signs include: “TRAFFIC FROM RIGHT DOES NOT STOP,” “TRAFFIC FROM LEFT DOES NOT STOP,” 48” x 48” stop sign, “ONE WAY” signs, “STOP AHEAD” warning sign, guide signs for SR 62 and SR 68. The intersection sight distances from the east and west approaches are more than 1500 ft.

B. Land Use:

a. **US 231 and SR 62 (S Jct)**

All four quadrants of the intersection are agricultural in use.

b. **US 231 and SR 62/68 (N Jct)**

The northwest and southwest quadrants of the intersection are agricultural. The southeast quadrant is agricultural with a residence roughly 420 ft from the intersection. The northeast quadrant is residential with a residence roughly 420 ft from the intersection.

C. Drainage:

a. **US 231 and SR 62 (S Jct)**

Storm drainage along the intersection is served by open ditches.

b. **US 231 and SR 62/68 (N Jct)**

Storm drainage along the intersection is served by open ditches.

D. Existing Public Utilities:

a. US 231 and SR 62 (S Jct)

The utilities of AT&T, Dale Community Natural Gas, and Dale Water are in the vicinity of the intersection. There are aerial electric/communication lines that cross the south approach of US 231. There are light poles that line the intersection. Storm sewer drains are located in the grass median.

b. US 231 and SR 62/68 (N Jct)

There are several overhead and underground utilities present in the vicinity of this project, including AT&T, ATEC Cable Services, Dale Community Natural Gas, Dale Water, Smithville Telephone, Southern Indiana Power, and Vectren. Aerial power/communication lines cross US 231. There are UG gas lines and fire hydrants in the northern two quadrants. Storm sewer drains are located in the grass median.

V. TRAFFIC DATA:

A. Traffic Data

a. **US 231 and SR 62 (S Jct)**

A traffic count was conducted on January 14, 2015. The am peak hour was determined to be 7:00 – 8:00 am CST. The pm peak hour was determined to be 3:00 – 4:00 pm CST. The INDOT Traffic Count Database System showed US 231 with an AADT of 5675 and 29% commercial vehicles in 2013. SR 62 had an AADT of 1543 and 5% commercial vehicles.

b. **US 231 and SR 62/68 (N Jct)**

A traffic count was conducted on June 21, 2013. The am peak hour was determined to be 10:00 – 11:00 am CDT. The pm peak hour was determined to be 3:00 – 4:00 pm CDT. The INDOT Traffic Count Database System showed US 231 with an AADT of 6015 and 28% commercial vehicles in 2013. SR 62/68 had an AADT of 2106 and 6% commercial vehicles.

VI. CRASH DATA AND ANALYSIS:

a. US 231 and SR 62 (S Jct)

The crash history is from 10/1/2010-1/5/2015. The full crash history can be found in the Appendix.

Crash analysis for US 231 and SR 62							
SEVERITY	2010	2011	2012	2013	2014	2015	TOTALS
Property Damage	6	3	3	0	0	0	12
Non-Incapacitating Injury	3	2	3	1	3	0	12
Incapacitating Injury	1	0	0	0	0	0	1
Fatal	0	2	0	0	1	0	3
TOTALS	10	7	6	1	4	0	28

79% of the total crashes have been right angle types. 86% of the crashes were in dry conditions, and 86% occurred during daylight. There have been a total of five fatalities in the three fatal crashes. There is not one particular movement that has majority of the collisions. The right angle crashes occur from both the east and west approaches. It is evident that the primary cause of the collisions is due to failure to yield right of way. 75% of the collisions were a result of this contributing circumstance.

At the special hearing INDOT held at Heritage Hills High School on January 22, 2015, it was stated by multiple residents that the horizontal and vertical curves made it hard to see because the frame of their vehicle blocked their vision when stopped at the stop sign on the east and west side of the road. Their vision was mainly inhibited from the east approach looking north and west approach looking south. It was also stated that speed was an issue along US 231. It made it harder to judge an appropriate gap

when crossing US 231 from either east or west approaches. Another comment mentioned was multiple vehicles occasionally pull into the median coming from the same direction. This makes it very hard to see an oncoming vehicle.

There have been safety improvements done to the intersection and the number and severity of crashes has decreased since 2010. These are the improvements that have been done:

- 3/7/2011 (Done by District forces): installed 2 islands, extended both the double yellow center lines and white lane lines to the new stop bar locations, removed the old stop bars and installed new ones, refreshed guide skips
- 4/18/2011 (Done by District forces): installed crossroad ahead signs for NB and SB, installed guide signs in advance of turn lanes, installed separate guide signs for EB and WB SR 62 (instead of together), installed "TRAFFIC FROM RIGHT DOES NOT STOP" signs for EB and WB traffic, increased EB and WB "STOP AHEAD" signs to 48" x 48"
- 10/3/2011 (Done by District forces): changed pavement markings to remove the EB and WB left-turn lanes and make the approaches have combined left/through lanes, removed all guidance skips
- 5/22/2012 (Contract R-34517): changed slotted left-turn lanes to standard left-turn lanes along US 231 (Cost=$367,116)
- 11/1/2012 (Contract T-34248): installed advance overhead sign structures for both northbound and southbound (Cost=$169,117)
- 10/10/2013: modified the westbound SR 62 guide signs

A RoadHAT analysis was conducted to determine if the number and severity of accidents was an expected number compared to similar intersections. The Icf (Index of crash frequency- an Icf = 0 would mean that the intersection has an expected number of accidents) was 3.16 from 10/1/2010-1/5/2015. The Icf value would be 1.35 if just looking at 2012-2015, since that is when the most significant safety improvements have been made. In either case, there are many more crashes than what would be expected at this type of intersection.

The Icc (Index of crash cost- this takes into consideration the severity and cost of the crashes) was also checked at the intersection. The Icc was 2.36 including all the crashes from 10/1/2010-1/5/2015. If the last two years were only included, then the Icc would be 1.35. The RoadHAT Icc values also show that the crashes are more severe than expected.

The most recent fatal crash occurred on December 28, 2014 at 2:01 pm CST. The weather conditions were dry and cloudy. The police report states that the contributing circumstance was failure to yield right of way. The directions of the vehicles were westbound and southbound. The westbound driver was a resident of Dale and was familiar with the intersection.

b. US 231 and SR 62/68 (N Jct)

The crash history is from 10/1/2010-1/5/2015. The full crash history can be found in the Appendix.

Crash analysis for US 231 and SR 62/68						
SEVERITY	2010	2011	2012	2013	2014	TOTALS
Property Damage	1	2	3	3	3	12
Non-Incapacitating Injury	0	4	3	2	3	12
Incapacitating Injury	0	0	0	0	0	0
Fatal	0	1	0	0	0	1
TOTALS	1	7	6	5	6	25

Right angle crashes are the most common type of collision at 68%. Left-turning collisions are the second highest at 12%. 80% of the crashes occurred in dry conditions. 72% of the crashes occurred during daylight. The top two directional distributions of crashes were WB w/ SB (44%)

and NB w/ EB (20%). Both of these types of right angles are “far side”; a vehicle crossing the median colliding with a through US 231 vehicle. Failure to yield right of way is the highest contributing circumstance at 84%.

A RoadHAT analysis was conducted to determine if the number and severity of accidents was an expected number compared to similar intersections. The Icf (Index of crash frequency- an Icf = 0 would mean that the intersection has an expected number of accidents) was 2.68 from 1/1/2010-12/31/2014. This values shows that the intersection is experiencing many more crashes than expected.

The Icc (Index of crash cost- this takes into consideration the severity and cost of the crashes) was also checked at the intersection. The Icc = 1.65. This values means that the crashes at the intersection are more severe than expected.

VII. PROJECT ALTERNATIVES:

Fifteen alternatives were analyzed as a part of this engineering assessment. Refer to the Appendix for supporting documents and analysis.

Alternative #1 (No-Action Alternative)

a. US 231 and SR 62 (S Jct)- Not recommended

The No-Action Alternative does not involve any improvements to the existing facility. Since the RoadHAT analysis showed that the Icf=3.16 and Icc=2.36, there are many more crashes than expected at this intersection. There are improvements that can be justified to make the intersection safer. Therefore, this alternative is not recommended.

b. US 231 and SR 62/68 (N Jct)- Not recommended

The No-Action Alternative does not involve any improvements to the existing facility. Since the ROADHAT analysis showed that the Icf=2.68 and Icc=1.65, there are also many more crashes at the intersection than expected. Further improvements are justified to make the intersection safer. Therefore, this alternative is not recommended.

Alternative #2 (Lower Speed Limit Along US 231)- Not recommended

The speed limit along US 231 is currently 60 mph at both junctions of US 231 and SR 62. Speed limits are generally posted at the next 5 mph increment above the 85th percentile speed. This is because that is what a typical driver is comfortable driving and views appropriate for the environment around them. Lowering the posted speed limit much lower than the 85th percentile will create a driving behavior that develops into disregarding the posted speed limit. Local police enforcement has stated that majority of drivers travel above the speed limit currently. Since lowering the speed limit will not increase the safety of the intersections, this alternative is not recommended.

Alternative #3 (Install Intersection Control Beacon)- Not recommended

The Crash Modification Factors Clearinghouse states that the CRF=5 for an intersection control beacon at a stop controlled intersection. This means that statistically, installing an intersection control beacon would only reduce the total number of crashes by 5%. Installation of these beacons are typically when sight distance is minimal for the minor approach and overhead flashing beacons alert a driver that they have a stop ahead. It also alerts drivers on the mainline that they should be cautious when passing through the intersection. Majority of the crashes involve drivers that are familiar with the intersection and fail to yield right of way to the drivers on US 231. The sight distance is sufficient for a driver on the minor approach to come to a complete stop at the stop bar. Typically, intersection control beacons are not as effective on high-speed arterials, such as US 231. Therefore, this alternative is not recommended.

Alternative #4 (Install Traffic Signal)

a. US 231 and SR 62 (S Jct)- Not recommended

A traffic signal warrant analysis was completed using the traffic count data taken on January 14, 2015.

The warrant criteria for Warrant 1 were not met. 0 out of the necessary 8 hours were met for Condition A. Only 2 out of the necessary 8 hours were met for Condition B. Condition C requirements were also not met. The warrant criteria for Warrant 2 were not met. Zero out of the necessary 4 hours were met. The warrant criteria for Warrants 3 (Peak Hour), 4 (Minimum Pedestrian Volume), 5 (School Crossing), 6 (Progressive Movement), 8 (Systems Warrant), 9 (Intersection Near a Railroad Crossing) were also not met. Warrant 7 (Accident Experience) was not met because the volume/pedestrian component to the warrant was not met.

A new signal costs nearly $125,000. The CRF (crash reduction factor) for the installation of a new traffic signal in a rural area is 23. This value is derived from the Crash Modification Factors Clearinghouse. This means that for all crash types and crash severities, the percentage of crashes would statistically decrease by 23%. However, rear end crashes would increase by 58%.

US 231 is designed as a high-speed 4-lane divided arterial highway. It is part of the National Highway System that carries a large number of commercial vehicles. Unnecessarily stopping high speed trucks on an arterial highway will result in many more rear end crashes and could also result in high speed rear ends, which could cause further injuries. This alternative is not recommended.

b. US 231 and SR 62/68 (N Jct)- Not recommended

A traffic signal warrant analysis was completed using the traffic count data taken on June 12, 2013.
The warrant criteria for Warrant 1 were not met. Only 3 out of the necessary 8 hours were met for Condition A. Only 2 out of the necessary 8 hours were met for Condition B. Condition C requirements were also not met. The warrant criteria for Warrant 2 were not met. 2 out of the necessary 4 hours were met. The warrant criteria for Warrants 3 (Peak Hour), 4 (Minimum Pedestrian Volume), 5 (School Crossing), 6 (Progressive Movement), 8 (Systems Warrant), 9 (Intersection Near a Railroad Crossing) were also not met. Warrant 7 (Accident Experience) was not met because the volume/pedestrian component to the warrant was not met.

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US 231 is designed as a high-speed 4-lane divided arterial highway. It is part of the National Highway System that carries a large number of commercial vehicles. Unnecessarily stopping high speed trucks on an arterial highway will result in many more rear end crashes and could also result in high speed rear ends, which could cause further injuries. This alternative is not recommended.

Alternative #5 (Install Flashing Red Beacon on Stop Signs)- Recommended

Local law enforcement has stated that some vehicles do not slow down and run the stop signs at both junctions of SR 62 and US 231. This is not a permanent solution to the intersections, nor does it address the concerns on the horizontal or vertical curves along US 231. However, this is a low cost solution that could be implemented immediately to draw more attention to the intersections. Therefore, it is recommended to install red flashing beacons on top of the stop signs at both approaches at the intersection of US 231 and SR 62 (S Jct) as well as the approaches of SR 62 and SR 68 at US 231 (N Jct).

Alternative #6 (Construct J-turn at One of the Intersections)- Not Recommended

This alternative would restrict vehicles from the east and west approaches from traveling straight through or making a left-turn at the intersection. A vehicle from either the east or west approach would have to make a right-turn and then make a u-turn at a new crossover down the road. This would limit a driver's decisions to just having to decide if there is a sufficient gap from his or her left. A driver would not have to focus on the vehicles coming from his or her right. This would eliminate the problem of the vehicle frame blocking sight distance. Once a driver makes a right-turn, then he or she would change lanes into the new left-turn lane and travel to the u-turn location. Once at the u-turn location, he or she would yield to traffic and make the u-turn movement when a sufficient gap is available. At the u-turn location, the driver only has to focus on one direction of traffic. The u-turn lane can be designed to allow for commercial semi vehicles and farm equipment that will need to cross US 231. Vehicles on US 231 wanting to make a left-turn at the intersection will still be able to do so.

The construction cost of a j-turn at US 231 and SR 62 (S Jct) is$ 773,435. The construction cost of a j-turn at US 231 and SR 62/68 (N Jct) is $763,490.

The Crash Modification Factors Clearinghouse shows that installing a j-turn in a rural location should decrease the total number of crashes by 35%. Also, 54% of crashes that result in injury should be reduced. This is an excellent reduction in crashes. However, if a j-turn is installed at the south junction of US231 and SR 62 or US 231 and SR 62/68, then the intersection that does not have the j-turn may experience more crashes than before. This is because vehicles will travel where there is the least amount of delays. J-turns cause a vehicle to travel further than before, so some may choose to alter their path to the intersection without a j-turn. Therefore, I do not recommend constructing a j-turn at just one of the intersections.

Visuals of the j-turn diagrams are in the Appendix.

Alternative #7 (Construct a J-turn at Both Junctions of US 231 and SR 62)- Recommended

As previously stated in Alternative #6, the safety benefits of constructing a j-turn at these intersections are substantial. Constructing j-turns at both intersections will not only greatly improve the safety of both intersections, but it will provide consistency throughout the corridor. These types of intersections are new to this part of the state, so constructing both of them at the same time will help with driver expectancy as they get used to them.

Using the Indiana Design Manual's turning template of a WB-65 vehicle, no additional "bump out" or "bulb" will be required; All of the necessary turning radius is supplied by the existing lanes.

The cost of constructing a j-turn at both junctions of US 231 and SR 62 is $1,536,925.

This alternative is recommended because it provides a substantial safety benefit to the corridor while still providing acceptable traffic flows and has a reasonable cost/benefit ratio.

Alternative #8 (Construct Interchange)- Not recommended

This alternative would eliminate the conflict points of US 231 and the two junctions of SR 62. This alternative would not be proportional in cost to the benefit. If only one of the intersections had an interchange, then more vehicles would use the existing intersection, thus making it potentially more dangerous. Also, the cost would likely be more than $15,000,000. This alternative is not recommended.

Alternative #9 (Install "DANGEROUS INTERSECTION" Warning Sign)- Not Recommended

Alternative #9 would install "DANGEROUS INTERSECTION" warning signs along US 231 to warn drivers to be especially cautious as they enter the intersection. These signs are not approved the Indiana Manual of Uniform Traffic Control Devices (IMUTCD). There are already dual mounted "CROSSROAD AHEAD" warning signs at the south junction of US 231 and SR 62. Installing a "DANGEROUS INTERSECTION" warning sign would cause extra clutter to the heavily signed intersection. The primary cause of collisions at the two intersections is because of failure to yield from the east and west approaches. The alternative chosen should be

an improvement to those approaches, not adding warning signs along the north and south approaches. Also, they have not been thoroughly studied and proven beneficial to reducing crashes at intersections.

Alternative #10 (Realign Intersection)- Not Recommended

Alternative #10 is to realign the two junctions of US 231 and SR 62. One way to realign the intersections is to realign US 231 so that it does not intersect either intersection while on a horizontal curve. US 231 is on a horizontal curve from I-64 to SR 162, so realigning US 231 would be incredibly costly (if not impossible).

The other way to realign the intersection would be to realign SR 62. To get the best angle of approach at US 231 and SR 62 (S Jct), converting the intersection to an offset T would be most likely. The problem with that solution is the same problem of drivers misjudging the speed of vehicles along US 231 in a horizontal curve. Therefore, since realigning the minor approaches does not address the main concerns of the horizontal and vertical curves, this alternative is not recommended.

Alternative #11 (Refresh Pavement Markings)- Recommended

Alternative #11 is a low-cost improvement to refresh the pavement markings at both junctions of US 231 and SR 62. Many of the pavement markings are faded, especially the yellow crosshatching on the east and west approaches where left-turn lanes used to be. This alternative does not fully address the permanent solution to improving the safety of the intersections, but it does help maintain the existing safety features while a more permanent solution is installed or constructed. This alternative should be done as soon as it is warm enough for the marking to adhere to the concrete surface.

Alternative #12 (Traffic Signs Changes)- Recommended

Alternative #12 is a low-cost improvement to make some traffic sign changes. One recommendation is to install a 60 mph speed limit sign just south of the I-64 interchange. Currently, the first speed limit sign is 0.5 miles south of the eastbound I-64 off ramp. Installing a speed limit sign closer to the off ramp would help deter drivers from continuing to drive 70 mph on US 231, since that is what the posted speed limit is on I-64.

Another recommendation is to remove the westbound 45 mph speed limit sign that is 482 ft east of the intersection of US 231 and SR 62/68. A driver does not need a speed limit sign within the visual distance of a stop sign.

Alternative #13 (Construct Overpass)- Not Recommended

At the special hearing on January 22, 2015, an overpass was suggested as a potential solution to the intersection of US 231 and SR 62 (S Jct). This is not feasible since SR 62 connects with US 231 and then runs concurrent with it until reaching the next intersection. If US 231 intersected with a county road, then the overpass could be considered. But since SR 62 must be continuous, an overpass cannot be constructed here. Therefore, this alternative is not recommended.

Alternative #14 (Close median openings)- Not Recommended

Alternative #14 is to close one or both of the median openings at the two junctions of US 231 and SR 62. This would eliminate the possibility of right angle crashes at the intersections. However, a j-turn will accomplish the same goal of eliminating the possibility of minor approach right angles and it still allows mainline left-turns at the intersections. There has not been a single crash involving a mainline left and a mainline through at the intersection of US 231 and SR 62. There have only been two crashes of this type at US 231 and SR 62/68. Therefore, there has not been a problem at either intersection with mainline left-turns. Since there is not a crash problem related to mainline left-turns, it would benefit the intersections to still allow them to make that maneuver. Also, allowing the mainline left-turning vehicles to still make the turns would not negate the recent improvements to the left-turn lanes.

Alternative #15 (Construct Roundabouts)- Not Recommended

Alternative #15 would construct roundabouts at the north and south junctions of US 231 and SR 62. According to the Crash Modification Clearinghouse, the crash reduction factor for converting the intersection to a single lane roundabout is 39. That means the total number of crashes would likely be reduced by 39%. Also, the number of injuries would likely be reduced by 55%. The number of crashes and severity would be reduced by forcing all vehicles to slow down to roughly 20 mph as they travel through the roundabout. At much lower speeds, the severity of crashes would be greatly reduced. Also, the angle of impact would be much less since the approaches intersect the roundabout at a skew. Therefore, rear end and same direction sideswipes would be the main collision types. Since the sums of the entering and circulating volumes are less than 1,100 vehicles per hour per lane at both US 231 and SR 62 intersections, then a single lane roundabout would work. Constructing a dual lane roundabout when volumes are not high enough is unnecessary and costs more as well as causes more confusion and conflict points. Therefore, a single lane roundabout would be the preferred design over the two options.

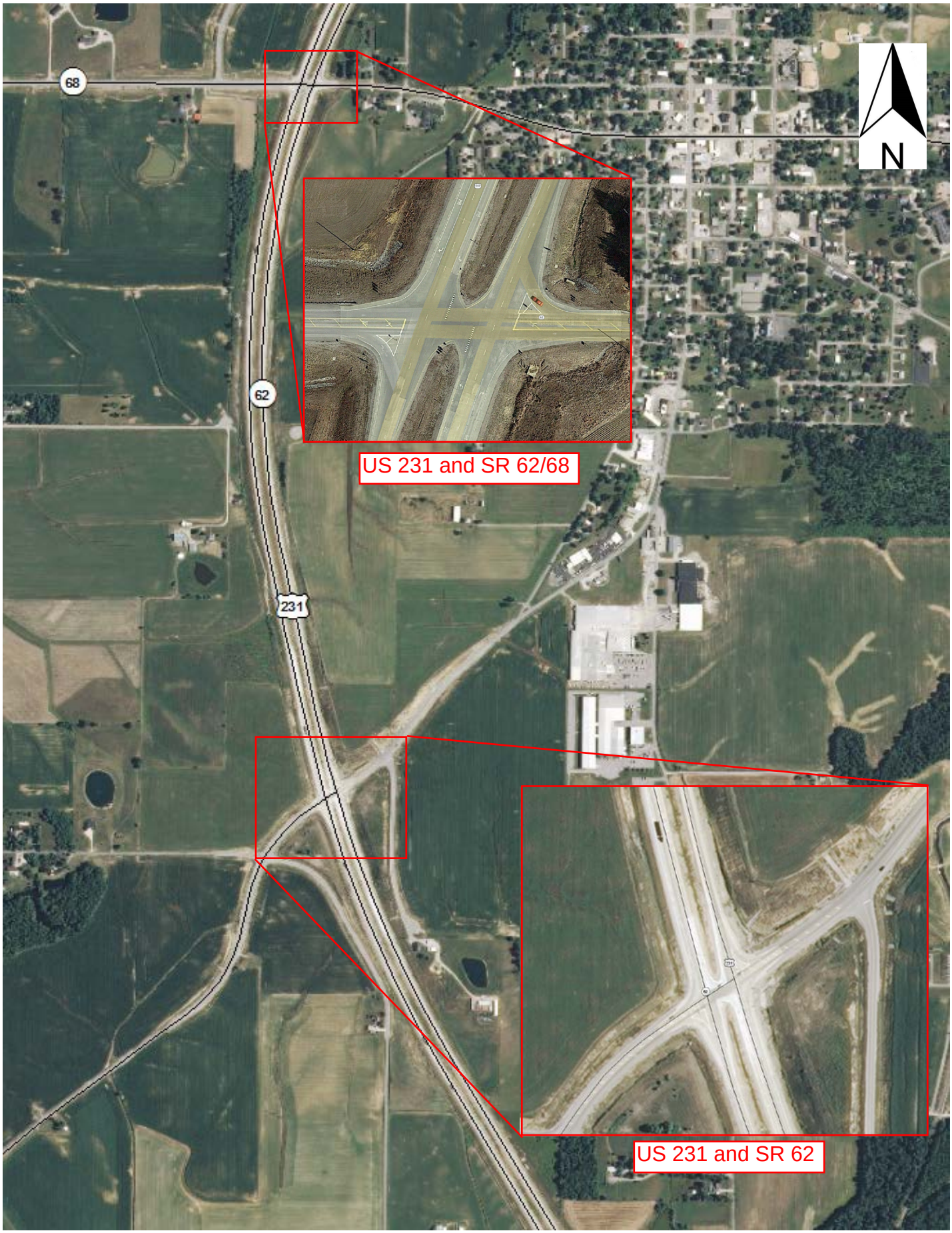
If a roundabout is constructed at the south junction of US 231 and SR 62, then a roundabout should also be constructed at the north junction. This would provide consistency in the corridor. Also, the crash history and RoadHAT analysis report shows that there are greater needs at the north junction of US 231 and SR 62. Constructing a roundabout at just one of the locations may shift more of the problems to the other intersection. Therefore, roundabouts should be considered at both of the intersections or neither of the intersections.

Roundabouts provide great safety benefits to intersections at both high speeds and low speeds. A negative aspect to installing a roundabout on a high-speed, rural, 4-lane, divided highway is that the mobility is inhibited on the mainline. US 231 has a posted speed limit of 60 mph with a large number of commercial vehicles. Constructing a roundabout on this road would cause every vehicle to apply its brakes and slow down to at least 20 mph (if no conflicting vehicles are circulating the roundabout) and then travel around the roundabout and then drive back up to speed. Currently, US 231 does not have any impediments at the intersection. There is currently three and a half times more AADT on US 231 than the side streets at the two junctions of US 231 and SR 62. If an intersection can be designed safely to allow for the least amount delays on the mainline, then that design should have the most consideration. (Page A-77 & 78)

The construction cost of a roundabout at either junction of US 231 and SR 62 would likely be in excess of $1,500,000. This cost is much higher than a j-turn intersection. Because of the high speed nature of US 231, there would need to be long splitter islands with curvilinear alignments. The curvilinear alignments would require a vehicle to slow down before reaching the roundabout. Since there are currently four lanes in either north or south approach, these lanes would need to be removed for the new curvilinear lane to be most effective. Otherwise, pavement markings could wear off and then the lane line edges would become very confusing. Also, roundabouts are typically constructed with street lights present because of their unconventional nature. This would also be more maintenance and electricity costs per year.

The purpose and need of the project at either intersection is to improve the safety and reduce the number and severity of crashes. The j-turn intersections described in Alternative #7 achieve that goal with much less cost and don’t decrease the mobility of US 231. Alternative #15 is not recommended.

APPENDIX


68
62
231
N
US 231 and SR 62/68
US 231 and SR 62

EB View SR 62 W
Huntingburg
Jasper
Dale
231
231
62
01/29/2015

EB View SR 62 W
01/29/2015

EB View SR 62 W
DIVIDED HIGHWAY
STOP
01/29/2015

EB View SR 62 W
STOP
TRAFFIC FROM THE LEFT DOES NOT STOP
ONE WAY
NORTH
EAST
231
62
01/29/2015

EB View SR 62 W
01/29/2015

EB View SR 68 W
JCT
JCT
62
231
01/29/2015

EB View SR 68 W
Huntingburg
Rockport
01/29/2015

EB View SR 68 W
STOP
END
68
SOUTH
231
01/29/2015

EB View SR 68 W
ONE WAY
STOP
231
62
01/29/2015

NB US 231 2475 ft S of SR 62 W
BUSINESS
DISTRICT
01/29/2015

NB US 231 1870 ft S of SR 62 W
Gentryville
Dale
231
62
01/29/2015

NB US 231 1690 ft S of SR 62 W
Gentryville
Dale
NORTH
WEST
231
INDIANA
62
01/29/2015

NB US 231 840 ft S of SR 62 W
JCT
INDIANA
62
01/29/2015

NB US 231 625 ft N of SR 62 W
01/29/2015

NB US 231 1250 ft N of SR 62 W
01/29/2015

NB US 231 895 ft S of SR 68W
JCT
INDIANA
68
62
Louisville
St. Louis
01/29/2015

NB US 231 595 ft S of SR 68 W

NB US 231 380 ft S of SR 68 W

NB US 231 335 ft N of SR 68 W

NB US 231 625 ft N of SR 68 W

NB US 231 1250 ft N of SR 68 W
01/29/2015

SB US 231 1680 ft N of SR 68
BUSINESS
DISTRICT
01/29/2015

SB US 231 835 ft N of SR 68
JCT
INDIANA
62
INDIANA
68
01/29/2015

SB US 231 435 ft N of SR 68
DALE
01/29/2015

SB US 231 650 ft S of SR 68
01/29/2015

SB US 231 1300 ft S of SR 68
01/29/2015

SB US 231 1700 ft S of SR 62 W
Dale
Gentryville
01/29/2015

SB US 231 1485 ft N of SR 62 W
Dale
Gentryville
SOUTH
231
WEST
62
01/29/2015

SB US 231 845 ft N of SR 62 W
231
62
01/29/2015

SB US231 600 ft N of SR 62 W
01/29/2015

SB US 231 1200 ft S of SR 62 W
01/29/2015

WB SR 62 E
PENSKE
Truck Rental
JCT
INDIANA
68
JCT
231
45
01/29/2015

WB SR 62 E
C.R. 305 E
EVANSVILLE
LOOGOOTEE
HUNTINGBURG
01/29/2015

WB SR 62 E
TO
64
STOP
62
01/29/2015

WB SR 62 E
ONE WAY
STOP
01/29/2015

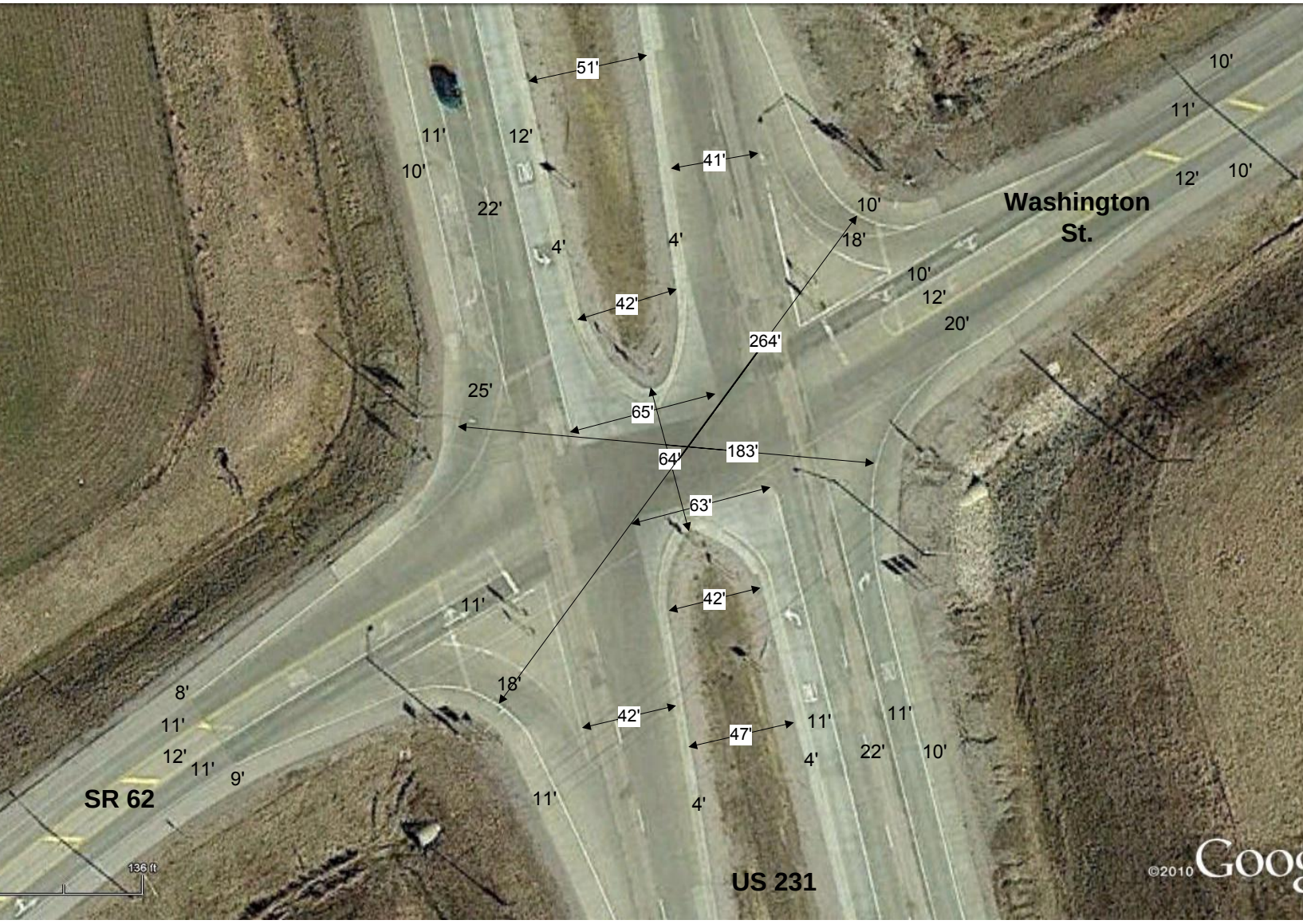
WB Washington St
01/29/2015

WB Washington St
JCT
231
INDIANA
62
01/29/2015

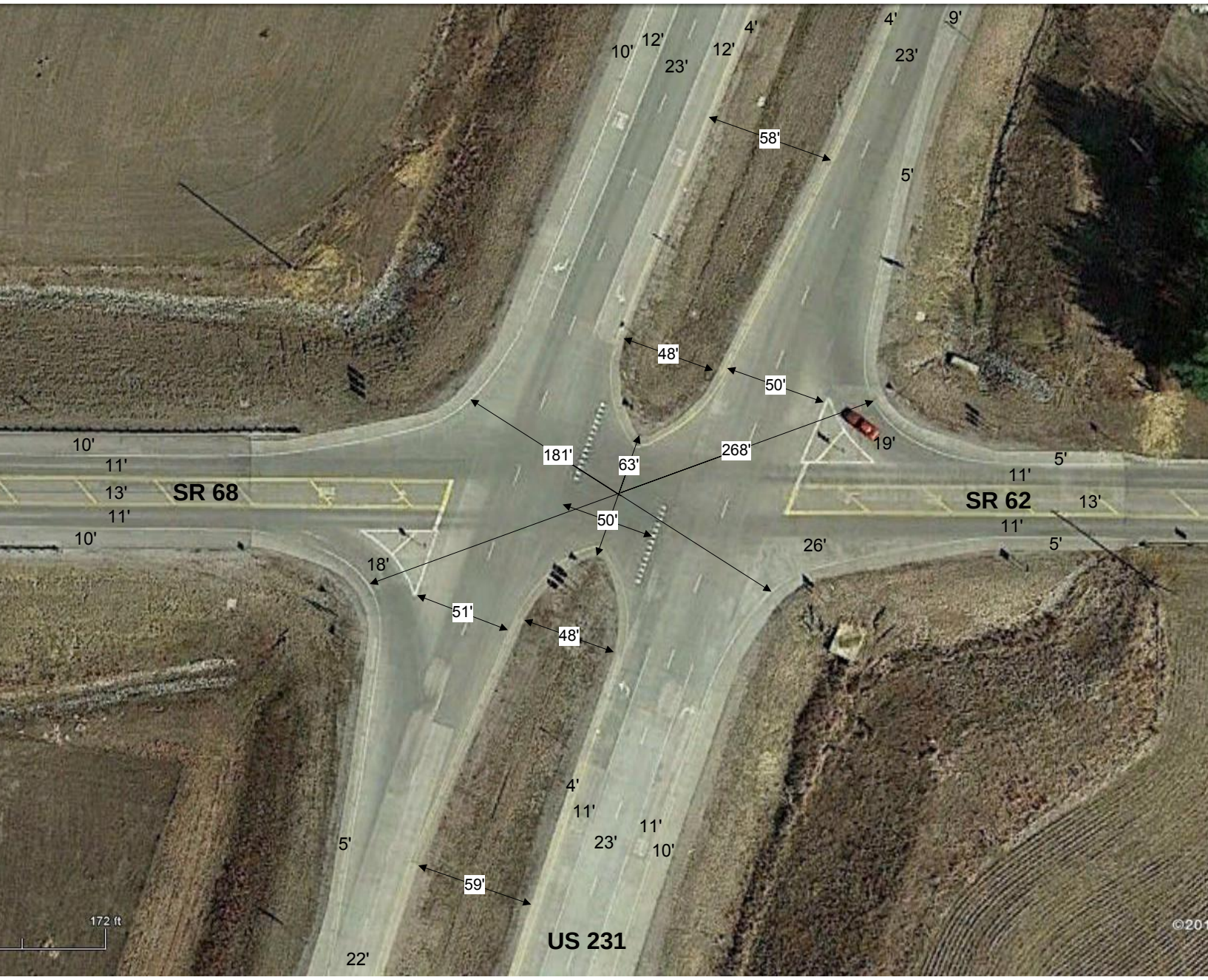
WB Washington St
STOP
01/29/2015

WB Washington St
STOP
TRAFFIC FROM THE
LEFT
DOES NOT STOP
01/29/2015

WB Washington St
01/29/2015



Lane Dimensions
US 231 @ SR 62/Washington St.
Dale, Spencer Co. #74



Dimensions
US 231 @ SR 68/62
Dale, Spencer Co. #74

JAMAR Technologies, Inc.
151 Keith Valley Road
Horsham, PA 19044

Default Comments
Change These in The Preferences Window

Change These In PREFERENCES

File Name : US231A~1
Site Code : 00000000
Start Date : 1/14/2015
Page No : 1

Groups Printed- CARS - TRUCKS - BUSES

	US 231 From North					SR 62 From East					US 231 From South					SR 62 From West					
Start Time	WEST	SOUTH	EAST	Peds	App. Total	NORTH	WEST	SOUTH	Peds	App. Total	EAST	NORTH	WEST	Peds	App. Total	SOUTH	EAST	NORTH	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:00 AM	4	36	1	0	41	2	3	2	0	7	11	49	0	0	60	0	13	5	0	18	126
06:15 AM	4	45	2	0	51	0	0	3	0	3	12	60	0	0	72	0	6	4	0	10	136
06:30 AM	2	52	2	0	56	3	2	5	0	10	11	54	0	0	65	0	9	9	0	18	149
06:45 AM	9	61	2	0	72	0	6	4	0	10	11	50	0	0	61	0	6	8	0	14	157
Total	19	194	7	0	220	5	11	14	0	30	45	213	0	0	258	0	34	26	0	60	568
07:00 AM	3	62	5	0	70	4	9	21	0	34	12	46	1	0	59	1	5	5	0	11	174
07:15 AM	0	47	2	0	49	2	4	13	0	19	9	22	1	0	32	2	6	0	0	8	108
07:30 AM	2	50	3	0	55	1	10	13	0	24	16	53	1	0	70	0	6	5	0	11	160
07:45 AM	3	39	0	0	42	0	8	10	0	18	16	38	1	0	55	2	12	7	0	21	136
Total	8	198	10	0	216	7	31	57	0	95	53	159	4	0	216	5	29	17	0	51	578
08:00 AM	2	37	0	0	39	1	1	8	0	10	11	35	0	0	46	1	5	3	0	9	104
08:15 AM	4	42	2	0	48	1	1	4	0	6	12	48	1	0	61	1	7	6	0	14	129
08:30 AM	5	45	1	0	51	2	3	7	0	12	4	40	1	0	45	1	3	8	0	12	120
08:45 AM	1	32	1	0	34	2	3	1	0	6	5	43	0	0	48	0	4	3	0	7	95
Total	12	156	4	0	172	6	8	20	0	34	32	166	2	0	200	3	19	20	0	42	448
09:00 AM	2	35	0	0	37	0	5	5	0	10	6	38	0	0	44	0	2	3	0	5	96
09:15 AM	6	50	1	0	57	1	5	9	0	15	3	39	0	0	42	0	7	3	0	10	124
09:30 AM	2	50	3	0	55	2	5	8	0	15	11	42	0	0	53	1	7	3	0	11	134
09:45 AM	3	47	2	0	52	1	2	6	0	9	8	36	1	0	45	0	7	3	0	10	116
Total	13	182	6	0	201	4	17	28	0	49	28	155	1	0	184	1	23	12	0	36	470
10:00 AM	3	35	2	0	40	4	5	6	0	15	5	49	1	0	55	0	7	5	0	12	122
10:15 AM	2	31	3	0	36	2	5	3	0	10	9	44	1	0	54	0	10	6	0	16	116
10:30 AM	6	44	1	0	51	5	8	10	0	23	7	41	0	0	48	0	7	7	0	14	136
10:45 AM	3	53	3	0	59	2	8	1	0	11	10	44	1	0	55	0	5	6	0	11	136
Total	14	163	9	0	186	13	26	20	0	59	31	178	3	0	212	0	29	24	0	53	510
11:00 AM	4	45	2	0	51	1	3	8	0	12	6	31	0	0	37	0	5	2	0	7	107
11:15 AM	3	41	5	0	49	1	5	9	0	15	4	39	0	0	43	0	3	12	0	15	122
11:30 AM	1	45	1	0	47	2	2	8	0	12	10	48	1	0	59	1	5	6	0	12	130
11:45 AM	6	48	1	0	55	4	7	7	0	18	11	36	0	0	47	1	5	4	0	10	130
Total	14	179	9	0	202	8	17	32	0	57	31	154	1	0	186	2	18	24	0	44	489
12:00 PM	2	65	2	0	69	0	2	6	0	8	8	53	0	0	61	0	10	8	0	18	156
12:15 PM	4	40	0	0	44	1	8	9	0	18	3	44	0	0	47	0	5	4	0	9	118
12:30 PM	4	38	1	0	43	3	7	7	0	17	7	38	1	0	46	1	4	0	0	5	111
12:45 PM	4	43	1	0	48	0	6	3	0	9	6	40	0	0	46	0	6	3	0	9	112
Total	14	186	4	0	204	4	23	25	0	52	24	175	1	0	200	1	25	15	0	41	497
01:00 PM	2	51	1	0	54	0	11	1	0	12	9	66	0	0	75	0	7	6	0	13	154
01:15 PM	5	53	1	0	59	1	6	4	0	11	9	39	0	0	48	1	8	4	0	13	131
01:30 PM	4	46	2	0	52	0	3	2	0	5	7	49	1	0	57	0	9	4	0	13	127
01:45 PM	6	44	2	0	52	1	10	2	0	13	11	36	1	0	48	0	3	7	0	10	123
Total	17	194	6	0	217	2	30	9	0	41	36	190	2	0	228	1	27	21	0	49	535
02:00 PM	6	61	3	0	70	2	8	9	0	19	10	53	2	0	65	1	5	9	0	15	169
02:15 PM	4	55	2	0	61	0	4	6	0	10	6	67	1	0	74	0	7	2	0	9	154
02:30 PM	19	70	0	0	89	3	6	15	0	24	20	53	0	0	73	1	6	3	0	10	196
02:45 PM	6	48	1	0	55	2	8	8	0	18	20	56	1	0	77	1	18	4	0	23	173
Total	35	234	6	0	275	7	26	38	0	71	56	229	4	0	289	3	36	18	0	57	692
03:00 PM	8	58	6	0	72	1	15	29	0	45	18	66	2	0	86	3	12	2	0	17	220
03:15 PM	9	74	1	0	84	1	14	18	0	33	10	73	0	0	83	1	12	2	0	15	215
03:30 PM	13	65	0	0	78	4	9	8	0	21	23	84	1	0	108	0	18	5	0	23	230
03:45 PM	13	77	3	0	93	0	14	6	0	20	7	68	0	0	75	0	9	2	0	11	199
Total	43	274	10	0	327	6	52	61	0	119	58	291	3	0	352	4	51	11	0	66	864

JAMAR Technologies, Inc.
151 Keith Valley Road
Horsham, PA 19044
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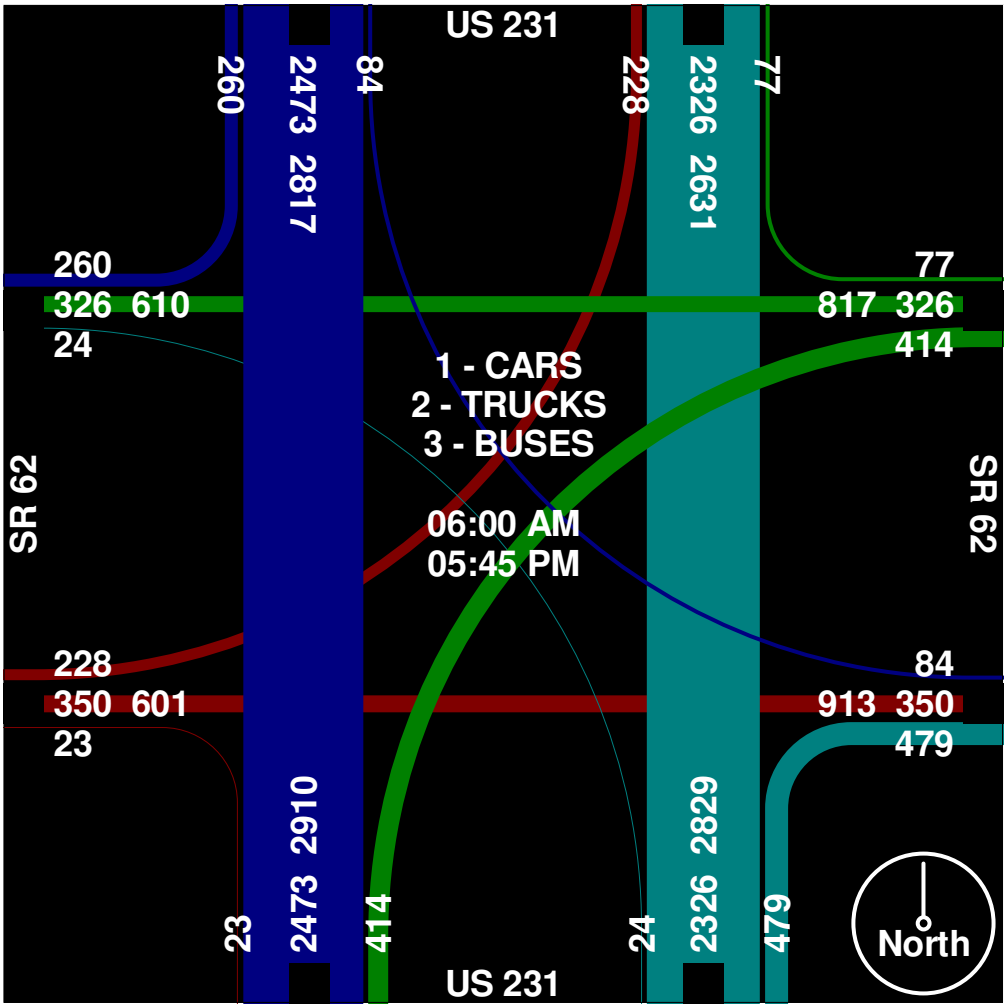
File Name : US231A~1
Site Code : 00000000
Start Date : 1/14/2015
Page No : 2

Groups Printed- CARS - TRUCKS - BUSES

	US 231 From North					SR 62 From East					US 231 From South					SR 62 From West					
Start Time	WEST	SOUTH	EAST	Peds	App. Total	NORTH	WEST	SOUTH	Peds	App. Total	EAST	NORTH	WEST	Peds	App. Total	SOUTH	EAST	NORTH	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
04:00 PM	16	62	0	0	78	8	18	15	1	42	7	47	0	0	54	0	9	2	0	11	185
04:15 PM	18	78	4	0	100	1	10	10	0	21	16	70	1	0	87	0	5	8	0	13	221
04:30 PM	7	70	1	0	78	2	24	23	0	49	19	78	1	0	98	1	10	6	0	17	242
04:45 PM	7	95	0	0	102	0	5	15	0	20	10	42	1	0	53	2	11	6	0	19	194
Total	48	305	5	0	358	11	57	63	1	132	52	237	3	0	292	3	35	22	0	60	842
05:00 PM	10	78	5	0	93	0	6	14	0	20	8	44	0	0	52	0	3	3	0	6	171
05:15 PM	4	58	0	0	62	0	11	9	0	20	11	66	0	0	77	0	9	6	0	15	174
05:30 PM	2	34	1	0	37	4	4	15	0	23	7	33	0	0	40	0	8	5	0	13	113
05:45 PM	7	38	2	0	47	0	7	9	0	16	7	36	0	0	43	0	4	4	0	8	114
Total	23	208	8	0	239	4	28	47	0	79	33	179	0	0	212	0	24	18	0	42	572
Grand Total	260	2473	84	0	2817	77	326	414	1	818	479	2326	24	0	2829	23	350	228	0	601	7065
Apprch %	9.2	87.8	3.0	0.0		9.4	39.9	50.6	0.1		16.9	82.2	0.8	0.0		3.8	58.2	37.9	0.0		
Total %	3.7	35.0	1.2	0.0	39.9	1.1	4.6	5.9	0.0	11.6	6.8	32.9	0.3	0.0	40.0	0.3	5.0	3.2	0.0	8.5	



US 231 and SR 62
DALE
SPENCER COUNTY

File Name : US 231 and SR 62
Site Code : 00000000
Start Date : 1/14/2015
Page No : 1

Groups Printed- CARS

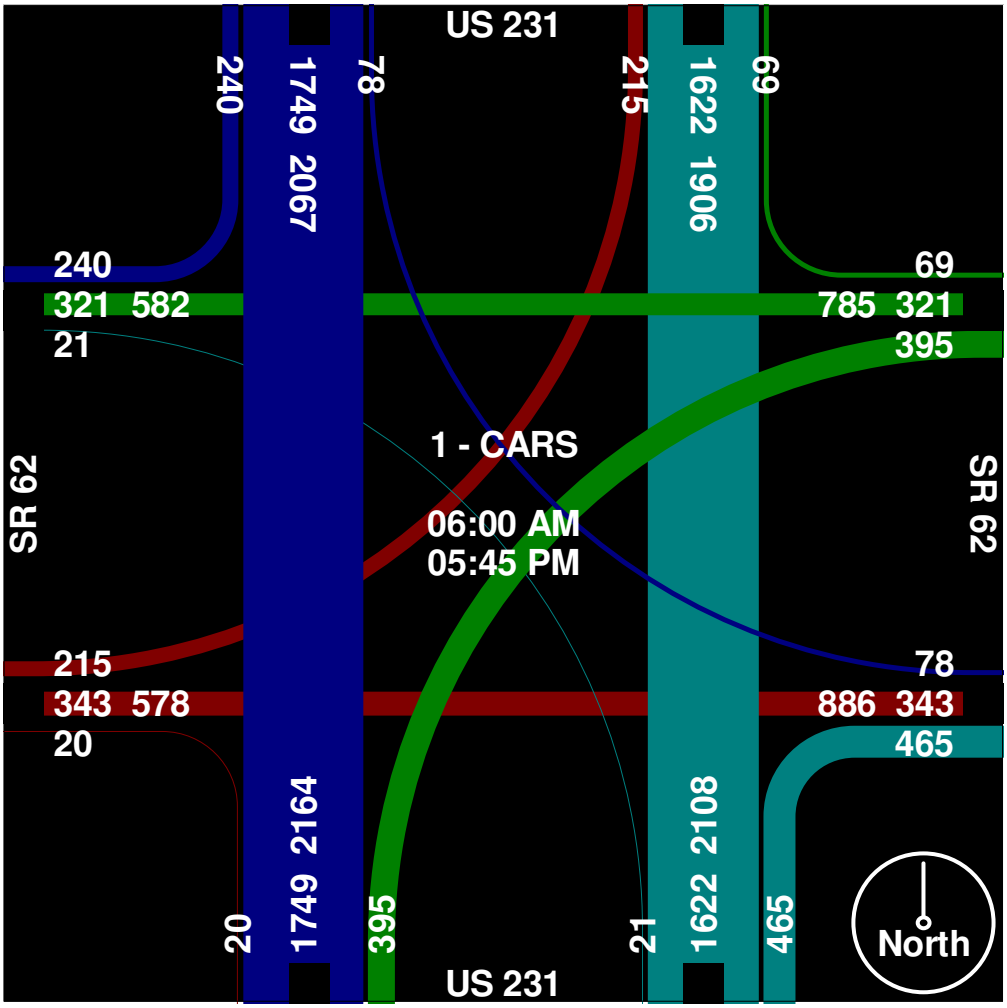
	US 231 From North					SR 62 From East					US 231 From South					SR 62 From West					
Start Time	WEST	SOUTH	EAST	Peds	App. Total	NORTH	WEST	SOUTH	Peds	App. Total	EAST	NORTH	WEST	Peds	App. Total	SOUTH	EAST	NORTH	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:00 AM	4	22	1	0	27	2	3	2	0	7	11	36	0	0	47	0	13	5	0	18	99
06:15 AM	4	39	2	0	45	0	0	2	0	2	12	55	0	0	67	0	6	4	0	10	124
06:30 AM	2	36	2	0	40	3	1	4	0	8	10	41	0	0	51	0	8	8	0	16	115
06:45 AM	8	51	2	0	61	0	6	3	0	9	11	43	0	0	54	0	6	8	0	14	138
Total	18	148	7	0	173	5	10	11	0	26	44	175	0	0	219	0	33	25	0	58	476
07:00 AM	2	44	5	0	51	4	9	21	0	34	12	38	1	0	51	1	4	5	0	10	146
07:15 AM	0	29	2	0	31	2	4	13	0	19	8	19	1	0	28	2	6	0	0	8	86
07:30 AM	2	31	3	0	36	0	10	9	0	19	16	39	1	0	56	0	6	4	0	10	121
07:45 AM	3	22	0	0	25	0	7	10	0	17	14	22	1	0	37	2	12	7	0	21	100
Total	7	126	10	0	143	6	30	53	0	89	50	118	4	0	172	5	28	16	0	49	453
08:00 AM	1	25	0	0	26	0	1	8	0	9	11	24	0	0	35	1	5	3	0	9	79
08:15 AM	4	27	2	0	33	1	1	4	0	6	10	35	1	0	46	0	7	5	0	12	97
08:30 AM	5	31	1	0	37	2	3	7	0	12	4	28	1	0	33	1	3	8	0	12	94
08:45 AM	1	21	1	0	23	2	3	1	0	6	5	32	0	0	37	0	4	3	0	7	73
Total	11	104	4	0	119	5	8	20	0	33	30	119	2	0	151	2	19	19	0	40	343
09:00 AM	1	18	0	0	19	0	5	4	0	9	6	24	0	0	30	0	2	3	0	5	63
09:15 AM	2	28	1	0	31	1	5	8	0	14	3	31	0	0	34	0	7	3	0	10	89
09:30 AM	2	31	3	0	36	2	5	8	0	15	11	24	0	0	35	1	6	3	0	10	96
09:45 AM	3	27	2	0	32	1	2	6	0	9	8	22	1	0	31	0	7	2	0	9	81
Total	8	104	6	0	118	4	17	26	0	47	28	101	1	0	130	1	22	11	0	34	329
10:00 AM	3	23	2	0	28	4	5	6	0	15	5	21	0	0	26	0	7	4	0	11	80
10:15 AM	1	18	3	0	22	2	5	3	0	10	9	25	1	0	35	0	10	6	0	16	83
10:30 AM	6	25	1	0	32	4	8	9	0	21	7	21	0	0	28	0	7	5	0	12	93
10:45 AM	2	30	2	0	34	2	8	1	0	11	10	28	1	0	39	0	5	6	0	11	95
Total	12	96	8	0	116	12	26	19	0	57	31	95	2	0	128	0	29	21	0	50	351
11:00 AM	3	27	2	0	32	1	3	8	0	12	6	19	0	0	25	0	4	2	0	6	75
11:15 AM	3	19	4	0	26	0	5	8	0	13	4	24	0	0	28	0	3	11	0	14	81
11:30 AM	1	29	1	0	31	2	2	8	0	12	10	24	1	0	35	0	5	4	0	9	87
11:45 AM	6	33	1	0	40	4	7	6	0	17	11	17	0	0	28	1	5	4	0	10	95
Total	13	108	8	0	129	7	17	30	0	54	31	84	1	0	116	1	17	21	0	39	338
12:00 PM	2	40	2	0	44	0	2	6	0	8	7	32	0	0	39	0	10	8	0	18	109
12:15 PM	4	21	0	0	25	1	8	9	0	18	3	29	0	0	32	0	5	4	0	9	84
12:30 PM	2	29	1	0	32	3	7	6	0	16	7	26	0	0	33	1	3	0	0	4	85
12:45 PM	4	23	1	0	28	0	6	3	0	9	6	27	0	0	33	0	5	3	0	8	78
Total	12	113	4	0	129	4	23	24	0	51	23	114	0	0	137	1	23	15	0	39	356
01:00 PM	0	33	1	0	34	0	11	1	0	12	9	45	0	0	54	0	7	6	0	13	113
01:15 PM	5	32	1	0	38	1	6	4	0	11	9	29	0	0	38	0	8	4	0	12	99
01:30 PM	3	28	1	0	32	0	3	2	0	5	7	30	1	0	38	0	9	4	0	13	88
01:45 PM	6	17	2	0	25	1	10	2	0	13	11	25	1	0	37	0	3	6	0	9	84
Total	14	110	5	0	129	2	30	9	0	41	36	129	2	0	167	0	27	20	0	47	384
02:00 PM	6	38	2	0	46	0	8	9	0	17	10	30	2	0	42	1	5	9	0	15	120
02:15 PM	4	33	2	0	39	0	3	6	0	9	6	51	1	0	58	0	7	2	0	9	115
02:30 PM	17	53	0	0	70	3	6	15	0	24	20	34	0	0	54	1	6	3	0	10	158
02:45 PM	6	39	1	0	46	1	8	7	0	16	16	35	0	0	51	1	18	4	0	23	136
Total	33	163	5	0	201	4	25	37	0	66	52	150	3	0	205	3	36	18	0	57	529
03:00 PM	8	43	5	0	56	1	15	29	0	45	17	46	2	0	65	3	12	2	0	17	183
03:15 PM	9	62	1	0	72	1	13	17	0	31	10	46	0	0	56	1	12	2	0	15	174
03:30 PM	12	59	0	0	71	4	9	8	0	21	22	61	1	0	84	0	18	5	0	23	199
03:45 PM	13	68	2	0	83	0	13	5	0	18	7	52	0	0	59	0	8	2	0	10	170
Total	42	232	8	0	282	6	50	59	0	115	56	205	3	0	264	4	50	11	0	65	726
04:00 PM	16	49	0	0	65	7	18	15	0	40	7	41	0	0	48	0	9	2	0	11	164
04:15 PM	18	70	4	0	92	1	10	10	0	21	15	52	1	0	68	0	5	8	0	13	194
04:30 PM	7	64	1	0	72	2	24	20	0	46	19	63	1	0	83	1	10	4	0	15	216
04:45 PM	6	83	0	0	89	0	5	15	0	20	10	34	1	0	45	2	11	6	0	19	173
Total	47	266	5	0	318	10	57	60	0	127	51	190	3	0	244	3	35	20	0	58	747

US 231 and SR 62
DALE
SPENCER COUNTY

File Name : US 231 and SR 62
Site Code : 00000000
Start Date : 1/14/2015
Page No : 2

Groups Printed- CARS

	US 231 From North					SR 62 From East					US 231 From South					SR 62 From West					
Start Time	WEST	SOUTH	EAST	Peds	App. Total	NORTH	WEST	SOUTH	Peds	App. Total	EAST	NORTH	WEST	Peds	App. Total	SOUTH	EAST	NORTH	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
05:00 PM	10	67	5	0	82	0	6	14	0	20	8	36	0	0	44	0	3	3	0	6	152
05:15 PM	4	46	0	0	50	0	11	9	0	20	11	56	0	0	67	0	9	6	0	15	152
05:30 PM	2	31	1	0	34	4	4	15	0	23	7	21	0	0	28	0	8	5	0	13	98
05:45 PM	7	35	2	0	44	0	7	9	0	16	7	29	0	0	36	0	4	4	0	8	104
Total	23	179	8	0	210	4	28	47	0	79	33	142	0	0	175	0	24	18	0	42	506
Grand Total	240	1749	78	0	2067	69	321	395	0	785	465	1622	21	0	2108	20	343	215	0	578	5538
Apprch %	11.6	84.6	3.8	0.0		8.8	40.9	50.3	0.0		22.1	76.9	1.0	0.0		3.5	59.3	37.2	0.0		
Total %	4.3	31.6	1.4	0.0	37.3	1.2	5.8	7.1	0.0	14.2	8.4	29.3	0.4	0.0	38.1	0.4	6.2	3.9	0.0	10.4	



US 231 and SR 62
DALE
SPENCER COUNTY

File Name : US 231 and SR 62
Site Code : 00000000
Start Date : 1/14/2015
Page No : 1

Groups Printed- TRUCKS

	US 231 From North					SR 62 From East					US 231 From South					SR 62 From West					
Start Time	WEST	SOUTH	EAST	Peds	App. Total	NORTH	WEST	SOUTH	Peds	App. Total	EAST	NORTH	WEST	Peds	App. Total	SOUTH	EAST	NORTH	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:00 AM	0	14	0	0	14	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	27
06:15 AM	0	6	0	0	6	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	12
06:30 AM	0	16	0	0	16	0	0	1	0	1	0	13	0	0	13	0	0	1	0	1	31
06:45 AM	1	10	0	0	11	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	18
Total	1	46	0	0	47	0	0	2	0	2	0	38	0	0	38	0	0	1	0	1	88
07:00 AM	1	18	0	0	19	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	27
07:15 AM	0	18	0	0	18	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	22
07:30 AM	0	19	0	0	19	0	0	0	0	0	0	13	0	0	13	0	0	1	0	1	33
07:45 AM	0	17	0	0	17	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	33
Total	1	72	0	0	73	0	0	0	0	0	1	40	0	0	41	0	0	1	0	1	115
08:00 AM	1	12	0	0	13	1	0	0	0	1	0	11	0	0	11	0	0	0	0	0	25
08:15 AM	0	15	0	0	15	0	0	0	0	0	2	13	0	0	15	1	0	1	0	2	32
08:30 AM	0	14	0	0	14	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	26
08:45 AM	0	11	0	0	11	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	22
Total	1	52	0	0	53	1	0	0	0	1	2	47	0	0	49	1	0	1	0	2	105
09:00 AM	1	17	0	0	18	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	32
09:15 AM	4	22	0	0	26	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	35
09:30 AM	0	19	0	0	19	0	0	0	0	0	0	18	0	0	18	0	1	0	0	1	38
09:45 AM	0	20	0	0	20	0	0	0	0	0	0	14	0	0	14	0	0	1	0	1	35
Total	5	78	0	0	83	0	0	1	0	1	0	54	0	0	54	0	1	1	0	2	140
10:00 AM	0	12	0	0	12	0	0	0	0	0	0	28	1	0	29	0	0	1	0	1	42
10:15 AM	1	13	0	0	14	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	33
10:30 AM	0	18	0	0	18	1	0	1	0	2	0	20	0	0	20	0	0	2	0	2	42
10:45 AM	1	23	1	0	25	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	41
Total	2	66	1	0	69	1	0	1	0	2	0	83	1	0	84	0	0	3	0	3	158
11:00 AM	1	18	0	0	19	0	0	0	0	0	0	12	0	0	12	0	1	0	0	1	32
11:15 AM	0	22	1	0	23	1	0	1	0	2	0	15	0	0	15	0	0	1	0	1	41
11:30 AM	0	16	0	0	16	0	0	0	0	0	0	24	0	0	24	1	0	2	0	3	43
11:45 AM	0	15	0	0	15	0	0	1	0	1	0	19	0	0	19	0	0	0	0	0	35
Total	1	71	1	0	73	1	0	2	0	3	0	70	0	0	70	1	1	3	0	5	151
12:00 PM	0	25	0	0	25	0	0	0	0	0	1	21	0	0	22	0	0	0	0	0	47
12:15 PM	0	19	0	0	19	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	34
12:30 PM	2	9	0	0	11	0	0	1	0	1	0	12	1	0	13	0	1	0	0	1	26
12:45 PM	0	20	0	0	20	0	0	0	0	0	0	13	0	0	13	0	1	0	0	1	34
Total	2	73	0	0	75	0	0	1	0	1	1	61	1	0	63	0	2	0	0	2	141
01:00 PM	2	18	0	0	20	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	41
01:15 PM	0	21	0	0	21	0	0	0	0	0	0	10	0	0	10	1	0	0	0	1	32
01:30 PM	1	18	1	0	20	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	39
01:45 PM	0	25	0	0	25	0	0	0	0	0	0	11	0	0	11	0	0	1	0	1	37
Total	3	82	1	0	86	0	0	0	0	0	0	61	0	0	61	1	0	1	0	2	149
02:00 PM	0	23	1	0	24	2	0	0	0	2	0	23	0	0	23	0	0	0	0	0	49
02:15 PM	0	22	0	0	22	0	1	0	0	1	0	16	0	0	16	0	0	0	0	0	39
02:30 PM	2	16	0	0	18	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	35
02:45 PM	0	9	0	0	9	1	0	1	0	2	0	20	1	0	21	0	0	0	0	0	32
Total	2	70	1	0	73	3	1	1	0	5	0	76	1	0	77	0	0	0	0	0	155
03:00 PM	0	15	1	0	16	0	0	0	0	0	1	20	0	0	21	0	0	0	0	0	37
03:15 PM	0	11	0	0	11	0	0	0	0	0	0	27	0	0	27	0	0	0	0	0	38
03:30 PM	1	6	0	0	7	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	30
03:45 PM	0	9	1	0	10	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	26
Total	1	41	2	0	44	0	0	0	0	0	1	86	0	0	87	0	0	0	0	0	131
04:00 PM	0	13	0	0	13	1	0	0	1	2	0	6	0	0	6	0	0	0	0	0	21
04:15 PM	0	8	0	0	8	0	0	0	0	0	1	17	0	0	18	0	0	0	0	0	26
04:30 PM	0	6	0	0	6	0	0	3	0	3	0	15	0	0	15	0	0	2	0	2	26
04:45 PM	1	12	0	0	13	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	21
Total	1	39	0	0	40	1	0	3	1	5	1	46	0	0	47	0	0	2	0	2	94

US 231 and SR 62
DALE
SPENCER COUNTY

File Name : US 231 and SR 62
Site Code : 00000000
Start Date : 1/14/2015
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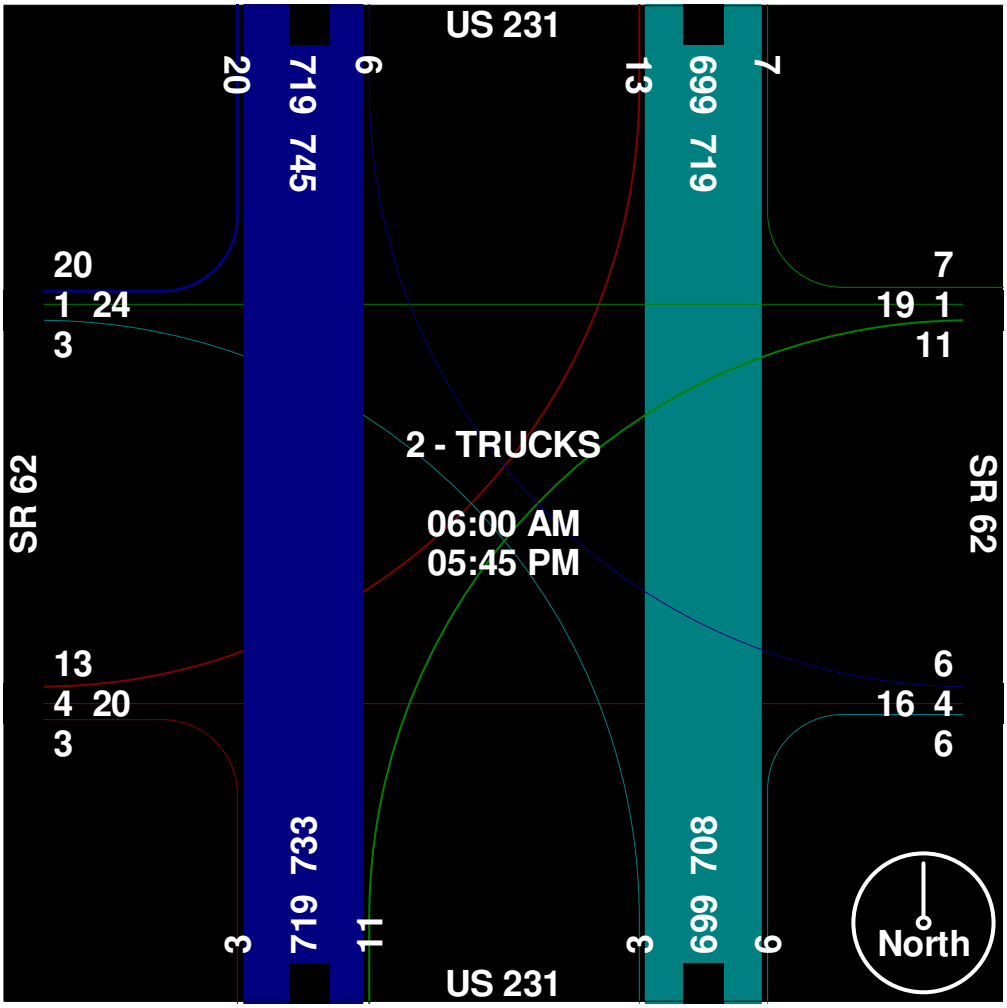
Groups Printed- TRUCKS

	US 231 From North					SR 62 From East					US 231 From South					SR 62 From West					
Start Time	WEST	SOUTH	EAST	Peds	App. Total	NORTH	WEST	SOUTH	Peds	App. Total	EAST	NORTH	WEST	Peds	App. Total	SOUTH	EAST	NORTH	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
05:00 PM	0	11	0	0	11	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	19
05:15 PM	0	12	0	0	12	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	22
05:30 PM	0	3	0	0	3	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	15
05:45 PM	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	10
Total	0	29	0	0	29	0	0	0	0	0	0	37	0	0	37	0	0	0	0	0	66
Grand Total	20	719	6	0	745	7	1	11	1	20	6	699	3	0	708	3	4	13	0	20	1493
Apprch %	2.7	96.5	0.8	0.0		35.0	5.0	55.0	5.0		0.8	98.7	0.4	0.0		15.0	20.0	65.0	0.0		
Total %	1.3	48.2	0.4	0.0	49.9	0.5	0.1	0.7	0.1	1.3	0.4	46.8	0.2	0.0	47.4	0.2	0.3	0.9	0.0	1.3	



US 231 and SR 62
DALE
SPENCER COUNTY

File Name : US 231 and SR 62
Site Code : 00000000
Start Date : 1/14/2015
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Groups Printed- BUSES

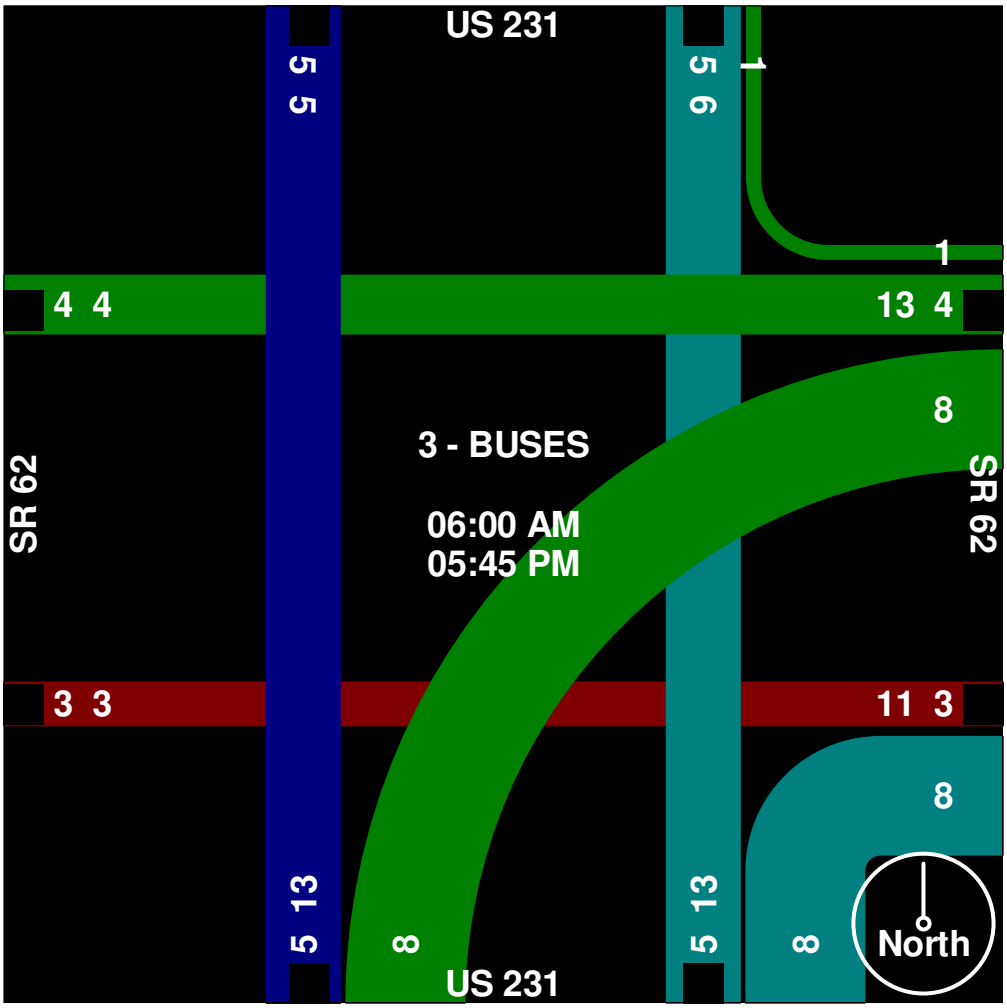
	US 231 From North					SR 62 From East					US 231 From South					SR 62 From West					
Start Time	WEST	SOUTH	EAST	Peds	App. Total	NORTH	WEST	SOUTH	Peds	App. Total	EAST	NORTH	WEST	Peds	App. Total	SOUTH	EAST	NORTH	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	3
06:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	0	1	0	0	1	4
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	1	0	4	0	5	0	1	0	0	1	0	0	0	0	0	6
07:45 AM	0	0	0	0	0	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	3
Total	0	0	0	0	0	1	1	4	0	6	2	1	0	0	3	0	1	0	0	1	10
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
02:45 PM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	0	0	0	0	0	5
Total	0	1	0	0	1	0	0	0	0	0	4	3	0	0	7	0	0	0	0	0	8
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	3
03:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
Total	0	1	0	0	1	0	2	2	0	4	1	0	0	0	1	0	1	0	0	1	7
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1

US 231 and SR 62
DALE
SPENCER COUNTY

File Name : US 231 and SR 62
Site Code : 00000000
Start Date : 1/14/2015
Page No : 2

Groups Printed- BUSES

	US 231 From North					SR 62 From East					US 231 From South					SR 62 From West					
Start Time	WEST	SOUTH	EAST	Peds	App. Total	NORTH	WEST	SOUTH	Peds	App. Total	EAST	NORTH	WEST	Peds	App. Total	SOUTH	EAST	NORTH	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	5	0	0	5	1	4	8	0	13	8	5	0	0	13	0	3	0	0	3	34
Apprch %	0.0	100.0	0.0	0.0		7.7	30.8	61.5	0.0		61.5	38.5	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	14.7	0.0	0.0	14.7	2.9	11.8	23.5	0.0	38.2	23.5	14.7	0.0	0.0	38.2	0.0	8.8	0.0	0.0	8.8	



JAMAR Technologies, Inc.
151 Keith Valley Road
Horsham, PA 19044
Change These In PREFERENCES

Counted By: INDOT
Field Investigator: CMP
Time Zone: Eastern

File Name : COUNTU~1
Site Code : 00000000
Start Date : 6/21/2013
Page No : 1

Groups Printed- Cars - Trucks

	US 231 From North					SR 62 From East					US 231 From South					SR 68 From West					
Start Time	West	South	East	Other	App. Total	North	West	South	Other	App. Total	East	North	West	Other	App. Total	South	East	North	Other	App. Total	Int. Total
06:00 AM	1	36	3	0	40	11	2	4	0	17	2	30	2	0	34	4	4	1	0	9	100
06:15 AM	4	45	9	0	58	10	7	2	0	19	2	52	2	0	56	9	5	0	0	14	147
06:30 AM	1	44	4	0	49	14	3	5	0	22	2	55	5	0	62	1	3	2	0	6	139
06:45 AM	1	37	5	0	43	15	2	6	0	23	2	39	3	0	44	3	7	2	0	12	122
Total	7	162	21	0	190	50	14	17	0	81	8	176	12	0	196	17	19	5	0	41	508
07:00 AM	3	38	2	0	43	10	5	3	0	18	4	43	4	0	51	5	3	1	0	9	121
07:15 AM	2	34	4	0	40	11	6	4	0	21	1	36	2	0	39	4	14	1	0	19	119
07:30 AM	0	46	9	0	55	8	9	6	0	23	1	35	4	0	40	5	7	0	0	12	130
07:45 AM	0	42	5	0	47	5	4	1	0	10	3	48	2	0	53	3	19	3	0	25	135
Total	5	160	20	0	185	34	24	14	0	72	9	162	12	0	183	17	43	5	0	65	505
08:00 AM	2	44	6	0	52	6	10	0	0	16	0	52	5	0	57	6	8	2	0	16	141
08:15 AM	0	45	9	0	54	7	10	4	0	21	2	46	5	0	53	3	11	1	0	15	143
08:30 AM	0	57	9	0	66	11	5	2	0	18	4	41	3	0	48	6	9	0	0	15	147
08:45 AM	0	49	9	0	58	8	11	4	0	23	4	44	1	0	49	3	17	0	0	20	150
Total	2	195	33	0	230	32	36	10	0	78	10	183	14	0	207	18	45	3	0	66	581
09:00 AM	2	57	9	0	68	4	9	6	0	19	6	45	1	0	52	3	10	2	0	15	154
09:15 AM	3	84	12	0	99	9	12	2	0	23	3	40	4	0	47	9	7	1	0	17	186
09:30 AM	3	62	10	0	75	10	5	2	0	17	2	42	2	0	46	7	11	1	0	19	157
09:45 AM	3	78	11	0	92	9	8	2	0	19	1	38	4	0	43	6	11	2	0	19	173
Total	11	281	42	0	334	32	34	12	0	78	12	165	11	0	188	25	39	6	0	70	670
10:00 AM	1	87	12	0	100	13	9	0	0	22	5	47	2	0	54	6	7	2	0	15	191
10:15 AM	2	61	7	0	70	8	7	1	0	16	1	65	9	0	75	3	6	0	0	9	170
10:30 AM	1	66	12	0	79	12	4	3	0	19	2	42	4	0	48	1	12	2	0	15	161
10:45 AM	1	68	12	0	81	15	3	4	0	22	1	63	2	0	66	2	8	4	0	14	183
Total	5	282	43	0	330	48	23	8	0	79	9	217	17	0	243	12	33	8	0	53	705
11:00 AM	2	65	7	0	74	10	7	4	0	21	2	51	6	0	59	6	10	1	0	17	171
11:15 AM	1	68	14	0	83	8	13	5	0	26	3	50	10	0	63	5	7	0	0	12	184
11:30 AM	0	50	4	0	54	5	15	4	0	24	2	45	3	0	50	3	12	1	0	16	144
11:45 AM	1	49	9	0	59	12	3	6	0	21	4	50	7	0	61	5	10	3	0	18	159
Total	4	232	34	0	270	35	38	19	0	92	11	196	26	0	233	19	39	5	0	63	658
12:00 PM	6	49	7	0	62	17	7	0	0	24	2	44	2	0	48	4	7	2	0	13	147
12:15 PM	5	59	8	0	72	15	4	3	0	22	1	51	6	0	58	2	11	1	0	14	166
12:30 PM	1	46	11	0	58	9	6	1	0	16	3	48	8	0	59	2	5	2	0	9	142
12:45 PM	2	53	9	0	64	13	7	2	0	22	3	56	1	0	60	0	5	0	0	5	151
Total	14	207	35	0	256	54	24	6	0	84	9	199	17	0	225	8	28	5	0	41	606
01:00 PM	2	52	8	0	62	12	7	4	0	23	3	48	2	0	53	2	3	2	0	7	145
01:15 PM	2	51	8	0	61	17	6	4	0	27	2	45	2	0	49	2	6	1	0	9	146
01:30 PM	1	52	10	0	63	9	7	4	0	20	2	36	3	0	41	3	9	5	0	17	141
01:45 PM	0	63	10	0	73	6	13	3	0	22	3	44	3	0	50	5	10	4	0	19	164
Total	5	218	36	0	259	44	33	15	0	92	10	173	10	0	193	12	28	12	0	52	596
02:00 PM	0	62	13	0	75	7	8	5	0	20	0	46	1	0	47	3	6	2	0	11	153
02:15 PM	1	45	10	0	56	8	8	3	0	19	1	53	3	0	57	4	9	2	0	15	147
02:30 PM	1	64	21	0	86	8	5	8	0	21	4	42	0	0	46	5	11	0	0	16	169
02:45 PM	0	65	18	0	83	11	7	6	0	24	4	56	3	0	63	6	7	1	0	14	184
Total	2	236	62	0	300	34	28	22	0	84	9	197	7	0	213	18	33	5	0	56	653
03:00 PM	3	68	13	0	84	16	13	5	0	34	5	70	1	0	76	2	14	1	0	17	211
03:15 PM	0	56	14	0	70	12	13	3	0	28	3	63	4	0	70	6	11	1	0	18	186
03:30 PM	0	78	16	0	94	8	7	8	0	23	2	66	11	0	79	2	10	0	0	12	208
03:45 PM	1	72	27	0	100	15	15	3	0	33	4	71	3	0	78	7	12	2	0	21	232
Total	4	274	70	0	348	51	48	19	0	118	14	270	19	0	303	17	47	4	0	68	837
04:00 PM	1	59	21	0	81	12	21	7	0	40	5	69	11	0	85	3	10	2	0	15	221
04:15 PM	2	66	29	0	97	10	18	6	0	34	3	77	8	0	88	2	9	1	0	12	231
04:30 PM	4	78	21	0	103	14	11	10	0	35	3	57	1	0	61	4	10	4	0	18	217
04:45 PM	1	69	24	0	94	9	17	5	0	31	5	56	7	0	68	3	12	0	0	15	208
Total	8	272	95	0	375	45	67	28	0	140	16	259	27	0	302	12	41	7	0	60	877
05:00 PM	2	75	20	0	97	12	9	5	0	26	4	55	5	0	64	3	9	1	0	13	200
05:15 PM	3	69	22	0	94	9	15	4	0	28	1	61	4	0	66	6	13	0	0	19	207
05:30 PM	1	53	19	0	73	14	10	7	0	31	2	59	6	0	67	1	10	2	0	13	184
05:45 PM	1	59	16	0	76	10	8	6	0	24	2	49	4	0	55	2	8	1	0	11	166
Total	7	256	77	0	340	45	42	22	0	109	9	224	19	0	252	12	40	4	0	56	757
Grand Total	74	2775	568	0	3417	504	411	192	0	1107	126	2421	191	0	2738	187	435	69	0	691	7953
Apprch %	2.2	81.2	16.6	0.0		45.5	37.1	17.3	0.0		4.6	88.4	7.0	0.0		27.1	63.0	10.0	0.0		
Total %	0.9	34.9	7.1	0.0	43.0	6.3	5.2	2.4	0.0	13.9	1.6	30.4	2.4	0.0	34.4	2.4	5.5	0.9	0.0	8.7	

JAMAR Technologies, Inc.
151 Keith Valley Road
Horsham, PA 19044
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File Name : COUNTU~1
Site Code : 00000000
Start Date : 6/21/2013
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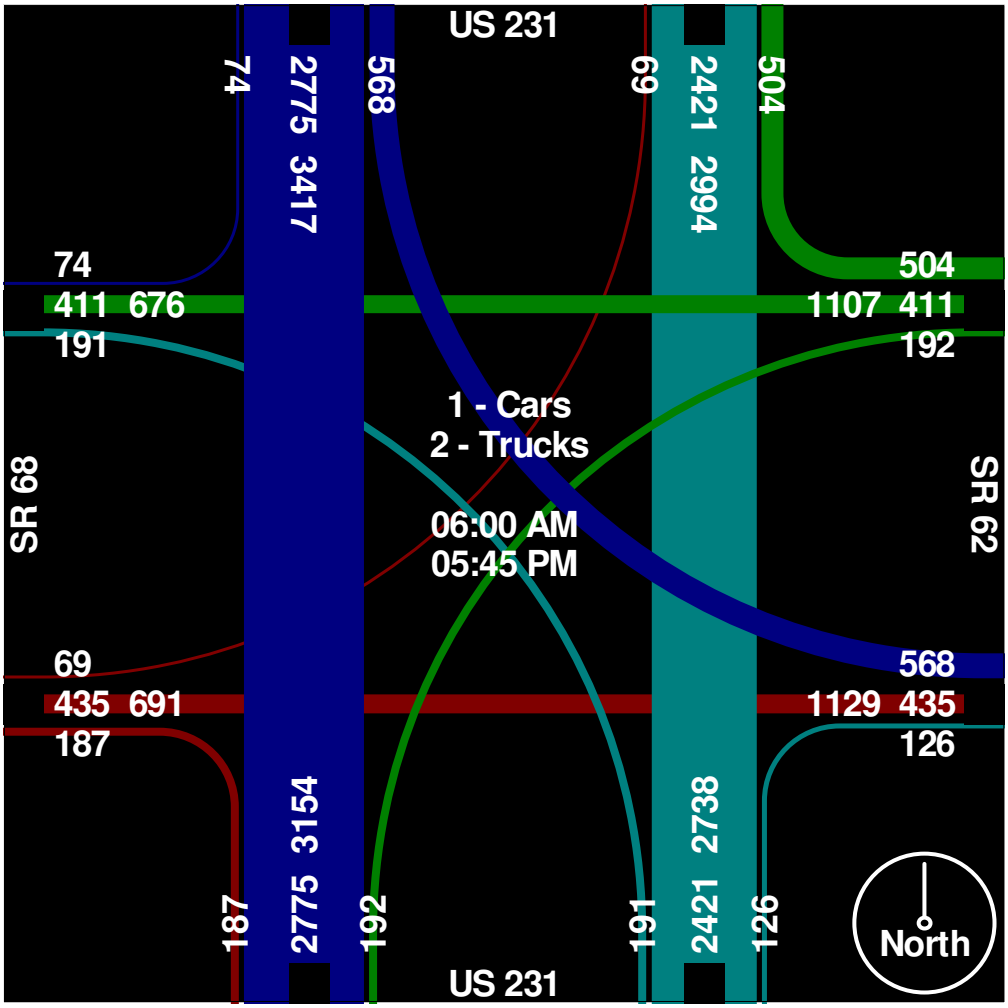

JAMAR Technologies, Inc.
151 Keith Valley Road
Horsham, PA 19044
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Counted By: INDOT
Field Investigator: CMP
Time Zone: Eastern

File Name : COUNTU~1
Site Code : 00000000
Start Date : 6/21/2013
Page No : 1

Groups Printed- Cars

	US 231 From North					SR 62 From East					US 231 From South					SR 68 From West					
Start Time	West	South	East	Other	App. Total	North	West	South	Other	App. Total	East	North	West	Other	App. Total	South	East	North	Other	App. Total	Int. Total
06:00 AM	1	25	3	0	29	11	2	4	0	17	2	26	2	0	30	4	4	1	0	9	85
06:15 AM	3	23	9	0	35	10	6	2	0	18	2	42	0	0	44	9	5	0	0	14	111
06:30 AM	1	25	4	0	30	14	3	5	0	22	2	48	4	0	54	1	3	2	0	6	112
06:45 AM	1	30	5	0	36	15	2	6	0	23	2	33	2	0	37	3	7	2	0	12	108
Total	6	103	21	0	130	50	13	17	0	80	8	149	8	0	165	17	19	5	0	41	416
07:00 AM	2	34	2	0	38	10	5	3	0	18	4	37	3	0	44	5	3	1	0	9	109
07:15 AM	2	24	4	0	30	11	5	4	0	20	1	32	2	0	35	3	14	0	0	17	102
07:30 AM	0	38	8	0	46	7	8	5	0	20	1	30	2	0	33	5	7	0	0	12	111
07:45 AM	0	24	5	0	29	5	3	0	0	8	3	38	2	0	43	3	18	3	0	24	104
Total	4	120	19	0	143	33	21	12	0	66	9	137	9	0	155	16	42	4	0	62	426
08:00 AM	2	28	5	0	35	6	10	0	0	16	0	38	0	0	38	5	8	2	0	15	104
08:15 AM	0	26	9	0	35	6	8	4	0	18	2	33	4	0	39	1	10	1	0	12	104
08:30 AM	0	42	8	0	50	10	5	2	0	17	4	31	3	0	38	5	7	0	0	12	117
08:45 AM	0	38	9	0	47	8	9	2	0	19	4	35	0	0	39	3	17	0	0	20	125
Total	2	134	31	0	167	30	32	8	0	70	10	137	7	0	154	14	42	3	0	59	450
09:00 AM	2	45	8	0	55	4	9	6	0	19	6	30	1	0	37	3	9	2	0	14	125
09:15 AM	2	66	11	0	79	9	12	2	0	23	3	33	2	0	38	7	7	1	0	15	155
09:30 AM	3	51	9	0	63	10	4	2	0	16	2	35	1	0	38	6	11	1	0	18	135
09:45 AM	2	60	10	0	72	9	8	2	0	19	1	30	1	0	32	4	9	1	0	14	137
Total	9	222	38	0	269	32	33	12	0	77	12	128	5	0	145	20	36	5	0	61	552
10:00 AM	1	66	12	0	79	13	6	0	0	19	5	29	1	0	35	5	7	2	0	14	147
10:15 AM	2	46	5	0	53	8	7	0	0	15	1	46	3	0	50	2	6	0	0	8	126
10:30 AM	1	59	11	0	71	12	3	3	0	18	2	34	2	0	38	1	11	2	0	14	141
10:45 AM	1	52	12	0	65	15	3	4	0	22	1	47	0	0	48	1	8	3	0	12	147
Total	5	223	40	0	268	48	19	7	0	74	9	156	6	0	171	9	32	7	0	48	561
11:00 AM	2	46	6	0	54	9	6	2	0	17	2	34	5	0	41	5	8	1	0	14	126
11:15 AM	1	41	14	0	56	7	13	5	0	25	3	28	7	0	38	4	7	0	0	11	130
11:30 AM	0	34	3	0	37	4	15	3	0	22	2	37	2	0	41	3	12	1	0	16	116
11:45 AM	1	33	9	0	43	12	3	5	0	20	4	35	3	0	42	4	10	2	0	16	121
Total	4	154	32	0	190	32	37	15	0	84	11	134	17	0	162	16	37	4	0	57	493
12:00 PM	5	38	6	0	49	14	7	0	0	21	2	30	1	0	33	2	7	2	0	11	114
12:15 PM	3	40	7	0	50	12	4	3	0	19	1	30	4	0	35	1	11	1	0	13	117
12:30 PM	1	33	10	0	44	7	5	1	0	13	3	35	1	0	39	2	4	2	0	8	104
12:45 PM	2	30	9	0	41	13	7	2	0	22	3	34	0	0	37	0	4	0	0	4	104
Total	11	141	32	0	184	46	23	6	0	75	9	129	6	0	144	5	26	5	0	36	439
01:00 PM	2	33	7	0	42	11	7	4	0	22	3	31	1	0	35	1	3	2	0	6	105
01:15 PM	1	29	7	0	37	16	5	3	0	24	2	33	1	0	36	1	5	0	0	6	103
01:30 PM	1	33	9	0	43	7	7	4	0	18	2	28	2	0	32	3	9	4	0	16	109
01:45 PM	0	48	10	0	58	6	13	3	0	22	3	30	2	0	35	2	9	4	0	15	130
Total	4	143	33	0	180	40	32	14	0	86	10	122	6	0	138	7	26	10	0	43	447
02:00 PM	0	43	13	0	56	7	8	5	0	20	0	29	1	0	30	1	6	2	0	9	115
02:15 PM	1	37	9	0	47	8	8	3	0	19	1	40	2	0	43	4	9	2	0	15	124
02:30 PM	1	49	21	0	71	7	5	8	0	20	3	29	0	0	32	5	10	0	0	15	138
02:45 PM	0	50	18	0	68	11	7	6	0	24	3	42	3	0	48	6	6	1	0	13	153
Total	2	179	61	0	242	33	28	22	0	83	7	140	6	0	153	16	31	5	0	52	530
03:00 PM	3	58	13	0	74	16	13	5	0	34	5	51	1	0	57	0	12	1	0	13	178
03:15 PM	0	51	14	0	65	12	12	3	0	27	3	52	4	0	59	5	10	1	0	16	167
03:30 PM	0	67	16	0	83	8	6	8	0	22	2	54	10	0	66	1	10	0	0	11	182
03:45 PM	1	62	26	0	89	15	14	3	0	32	4	55	3	0	62	6	11	2	0	19	202
Total	4	238	69	0	311	51	45	19	0	115	14	212	18	0	244	12	43	4	0	59	729
04:00 PM	1	53	21	0	75	11	21	7	0	39	5	60	11	0	76	3	10	2	0	15	205
04:15 PM	2	55	29	0	86	10	18	6	0	34	3	64	8	0	75	2	9	1	0	12	207
04:30 PM	3	73	20	0	96	14	11	10	0	35	3	50	1	0	54	4	8	4	0	16	201
04:45 PM	1	64	23	0	88	7	17	5	0	29	5	51	6	0	62	2	12	0	0	14	193
Total	7	245	93	0	345	42	67	28	0	137	16	225	26	0	267	11	39	7	0	57	806
05:00 PM	2	71	19	0	92	11	9	5	0	25	3	49	5	0	57	3	9	1	0	13	187
05:15 PM	2	66	21	0	89	8	15	4	0	27	1	52	3	0	56	4	11	0	0	15	187
05:30 PM	1	49	17	0	67	14	10	7	0	31	2	55	5	0	62	1	10	2	0	13	173
05:45 PM	1	52	16	0	69	10	7	6	0	23	2	44	4	0	50	1	8	1	0	10	152
Total	6	238	73	0	317	43	41	22	0	106	8	200	17	0	225	9	38	4	0	51	699
Grand Total	64	2140	542	0	2746	480	391	182	0	1053	123	1869	131	0	2123	152	411	63	0	626	6548
Apprch %	2.3	77.9	19.7	0.0		45.6	37.1	17.3	0.0		5.8	88.0	6.2	0.0		24.3	65.7	10.1	0.0		
Total %	1.0	32.7	8.3	0.0	41.9	7.3	6.0	2.8	0.0	16.1	1.9	28.5	2.0	0.0	32.4	2.3	6.3	1.0	0.0	9.6	

JAMAR Technologies, Inc.
151 Keith Valley Road
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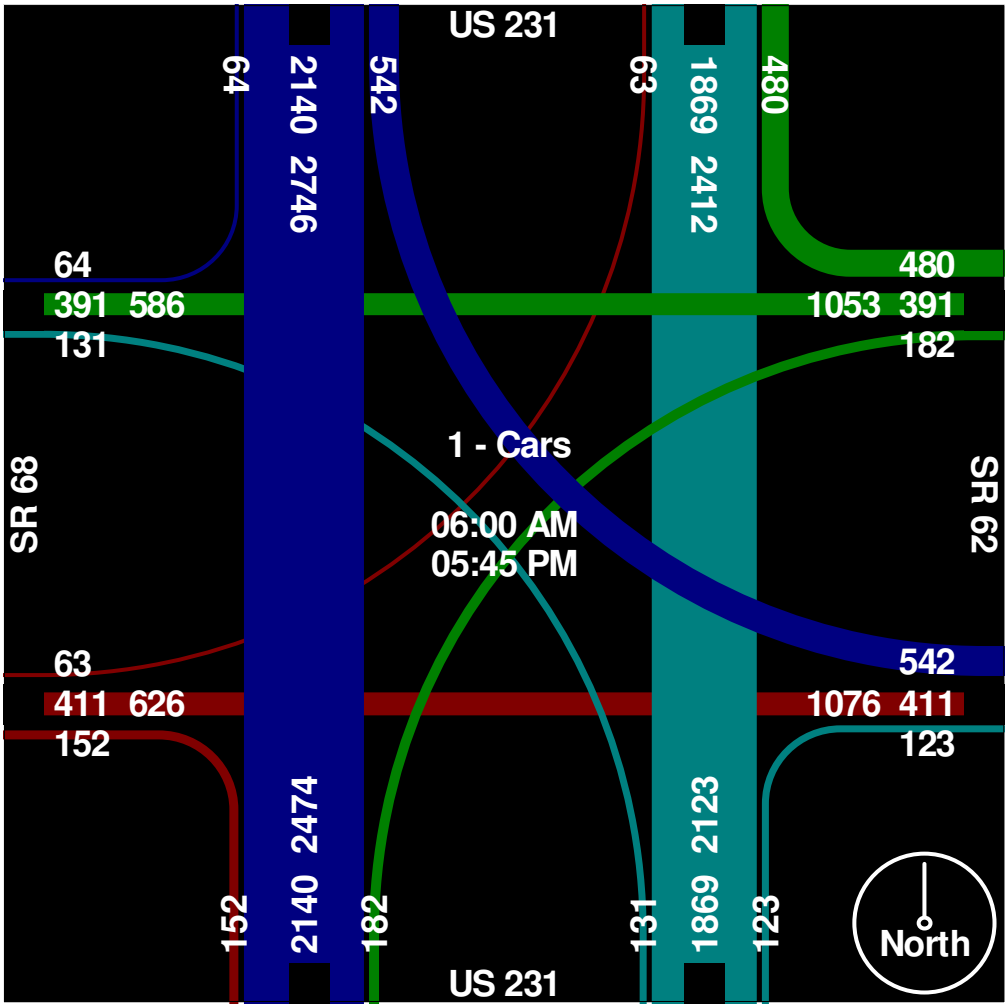
File Name : COUNTU~1
Site Code : 00000000
Start Date : 6/21/2013
Page No : 2



JAMAR Technologies, Inc.
151 Keith Valley Road
Horsham, PA 19044
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Counted By: INDOT
Field Investigator: CMP
Time Zone: Eastern

File Name : COUNTU~1
Site Code : 00000000
Start Date : 6/21/2013
Page No : 1

Groups Printed- Trucks

	US 231 From North					SR 62 From East					US 231 From South					SR 68 From West					
Start Time	West	South	East	Other	App. Total	North	West	South	Other	App. Total	East	North	West	Other	App. Total	South	East	North	Other	App. Total	Int. Total
06:00 AM	0	11	0	0	11	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	15
06:15 AM	1	22	0	0	23	0	1	0	0	1	0	10	2	0	12	0	0	0	0	0	36
06:30 AM	0	19	0	0	19	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	27
06:45 AM	0	7	0	0	7	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	14
Total	1	59	0	0	60	0	1	0	0	1	0	27	4	0	31	0	0	0	0	0	92
07:00 AM	1	4	0	0	5	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	12
07:15 AM	0	10	0	0	10	0	1	0	0	1	0	4	0	0	4	1	0	1	0	2	17
07:30 AM	0	8	1	0	9	1	1	1	0	3	0	5	2	0	7	0	0	0	0	0	19
07:45 AM	0	18	0	0	18	0	1	1	0	2	0	10	0	0	10	0	1	0	0	1	31
Total	1	40	1	0	42	1	3	2	0	6	0	25	3	0	28	1	1	1	0	3	79
08:00 AM	0	16	1	0	17	0	0	0	0	0	0	14	5	0	19	1	0	0	0	1	37
08:15 AM	0	19	0	0	19	1	2	0	0	3	0	13	1	0	14	2	1	0	0	3	39
08:30 AM	0	15	1	0	16	1	0	0	0	1	0	10	0	0	10	1	2	0	0	3	30
08:45 AM	0	11	0	0	11	0	2	2	0	4	0	9	1	0	10	0	0	0	0	0	25
Total	0	61	2	0	63	2	4	2	0	8	0	46	7	0	53	4	3	0	0	7	131
09:00 AM	0	12	1	0	13	0	0	0	0	0	0	15	0	0	15	0	1	0	0	1	29
09:15 AM	1	18	1	0	20	0	0	0	0	0	0	7	2	0	9	2	0	0	0	2	31
09:30 AM	0	11	1	0	12	0	1	0	0	1	0	7	1	0	8	1	0	0	0	1	22
09:45 AM	1	18	1	0	20	0	0	0	0	0	0	8	3	0	11	2	2	1	0	5	36
Total	2	59	4	0	65	0	1	0	0	1	0	37	6	0	43	5	3	1	0	9	118
10:00 AM	0	21	0	0	21	0	3	0	0	3	0	18	1	0	19	1	0	0	0	1	44
10:15 AM	0	15	2	0	17	0	0	1	0	1	0	19	6	0	25	1	0	0	0	1	44
10:30 AM	0	7	1	0	8	0	1	0	0	1	0	8	2	0	10	0	1	0	0	1	20
10:45 AM	0	16	0	0	16	0	0	0	0	0	0	16	2	0	18	1	0	1	0	2	36
Total	0	59	3	0	62	0	4	1	0	5	0	61	11	0	72	3	1	1	0	5	144
11:00 AM	0	19	1	0	20	1	1	2	0	4	0	17	1	0	18	1	2	0	0	3	45
11:15 AM	0	27	0	0	27	1	0	0	0	1	0	22	3	0	25	1	0	0	0	1	54
11:30 AM	0	16	1	0	17	1	0	1	0	2	0	8	1	0	9	0	0	0	0	0	28
11:45 AM	0	16	0	0	16	0	0	1	0	1	0	15	4	0	19	1	0	1	0	2	38
Total	0	78	2	0	80	3	1	4	0	8	0	62	9	0	71	3	2	1	0	6	165
12:00 PM	1	11	1	0	13	3	0	0	0	3	0	14	1	0	15	2	0	0	0	2	33
12:15 PM	2	19	1	0	22	3	0	0	0	3	0	21	2	0	23	1	0	0	0	1	49
12:30 PM	0	13	1	0	14	2	1	0	0	3	0	13	7	0	20	0	1	0	0	1	38
12:45 PM	0	23	0	0	23	0	0	0	0	0	0	22	1	0	23	0	1	0	0	1	47
Total	3	66	3	0	72	8	1	0	0	9	0	70	11	0	81	3	2	0	0	5	167
01:00 PM	0	19	1	0	20	1	0	0	0	1	0	17	1	0	18	1	0	0	0	1	40
01:15 PM	1	22	1	0	24	1	1	1	0	3	0	12	1	0	13	1	1	1	0	3	43
01:30 PM	0	19	1	0	20	2	0	0	0	2	0	8	1	0	9	0	0	1	0	1	32
01:45 PM	0	15	0	0	15	0	0	0	0	0	0	14	1	0	15	3	1	0	0	4	34
Total	1	75	3	0	79	4	1	1	0	6	0	51	4	0	55	5	2	2	0	9	149
02:00 PM	0	19	0	0	19	0	0	0	0	0	0	17	0	0	17	2	0	0	0	2	38
02:15 PM	0	8	1	0	9	0	0	0	0	0	0	13	1	0	14	0	0	0	0	0	23
02:30 PM	0	15	0	0	15	1	0	0	0	1	1	13	0	0	14	0	1	0	0	1	31
02:45 PM	0	15	0	0	15	0	0	0	0	0	1	14	0	0	15	0	1	0	0	1	31
Total	0	57	1	0	58	1	0	0	0	1	2	57	1	0	60	2	2	0	0	4	123
03:00 PM	0	10	0	0	10	0	0	0	0	0	0	19	0	0	19	2	2	0	0	4	33
03:15 PM	0	5	0	0	5	0	1	0	0	1	0	11	0	0	11	1	1	0	0	2	19
03:30 PM	0	11	0	0	11	0	1	0	0	1	0	12	1	0	13	1	0	0	0	1	26
03:45 PM	0	10	1	0	11	0	1	0	0	1	0	16	0	0	16	1	1	0	0	2	30
Total	0	36	1	0	37	0	3	0	0	3	0	58	1	0	59	5	4	0	0	9	108
04:00 PM	0	6	0	0	6	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	16
04:15 PM	0	11	0	0	11	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	24
04:30 PM	1	5	1	0	7	0	0	0	0	0	0	7	0	0	7	0	2	0	0	2	16
04:45 PM	0	5	1	0	6	2	0	0	0	2	0	5	1	0	6	1	0	0	0	1	15
Total	1	27	2	0	30	3	0	0	0	3	0	34	1	0	35	1	2	0	0	3	71
05:00 PM	0	4	1	0	5	1	0	0	0	1	1	6	0	0	7	0	0	0	0	0	13
05:15 PM	1	3	1	0	5	1	0	0	0	1	0	9	1	0	10	2	2	0	0	4	20
05:30 PM	0	4	2	0	6	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	11
05:45 PM	0	7	0	0	7	0	1	0	0	1	0	5	0	0	5	1	0	0	0	1	14
Total	1	18	4	0	23	2	1	0	0	3	1	24	2	0	27	3	2	0	0	5	58
Grand Total	10	635	26	0	671	24	20	10	0	54	3	552	60	0	615	35	24	6	0	65	1405
Apprch %	1.5	94.6	3.9	0.0		44.4	37.0	18.5	0.0		0.5	89.8	9.8	0.0		53.8	36.9	9.2	0.0		
Total %	0.7	45.2	1.9	0.0	47.8	1.7	1.4	0.7	0.0	3.8	0.2	39.3	4.3	0.0	43.8	2.5	1.7	0.4	0.0	4.6	

JAMAR Technologies, Inc.
151 Keith Valley Road
Horsham, PA 19044
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File Name : COUNTU~1
Site Code : 00000000
Start Date : 6/21/2013
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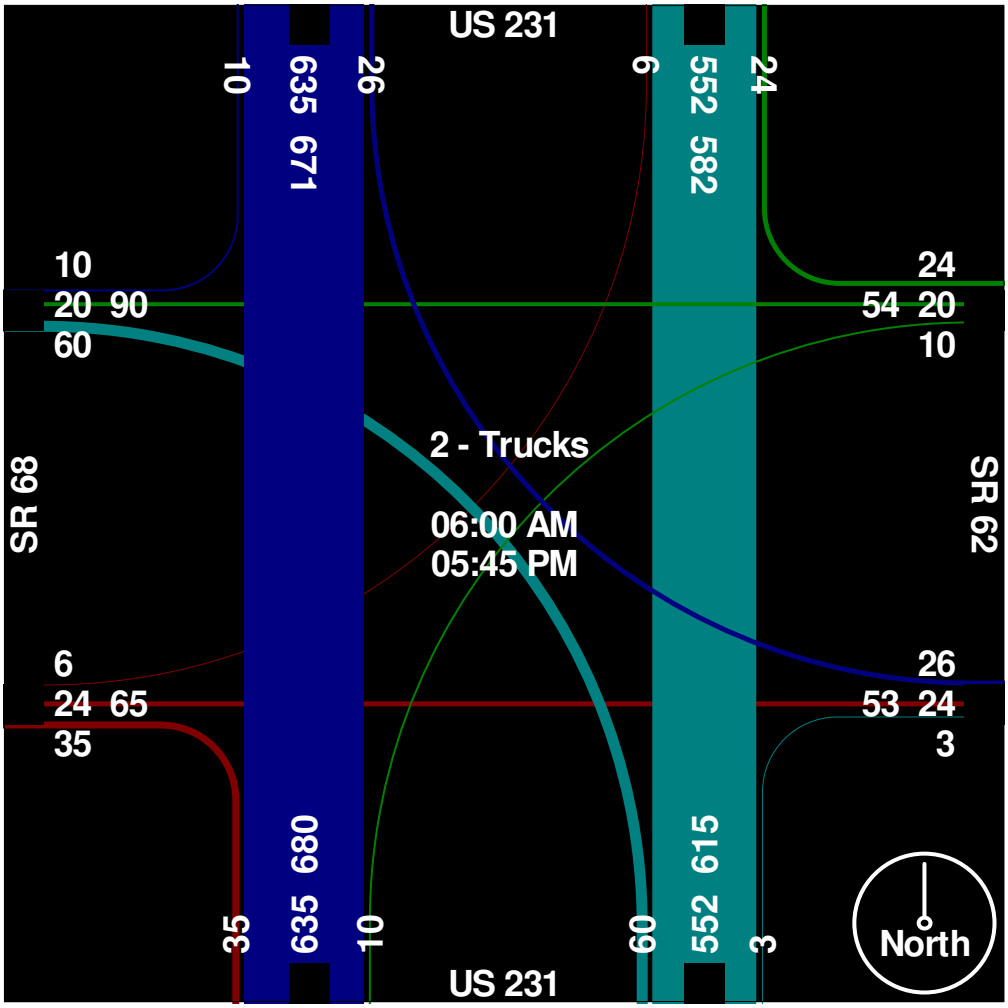


Crash Analysis for US 231 and SR 62/Old US 231/Washington St, Dale, Spencer Co
Date: 1/1/2010-1/5/2015

On 3/7/11: installed 2 islands, extended both the double yellow center lines and white lane lines to the new stop bar locations, removed the old stop bars and installed new ones, refreshed guide skips
On 4/18/11: installed crossroad ahead signs for NB and SB, installed guide signs in advance of turn lanes, installed separate guide signs for EB and WB SR 62 (instead of together), installed "Traffic From Right Does Not Stop" sign for EB and WB traffic, increase EB and WB "stop ahead" sign to 48x48
On 10/3/11: changed marking to remove the EB and WB left turn lanes and make the approaches have combined left/through lanes, removed all guidance skips
On 5/22/12: Changed slotted left turn lanes to standard left turn lanes along US 231
On 10/10/13: Modified the westbound SR 62 guide signs

1.) ***SEVERITY***	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
Property Damage	6	1	0	1	1	3	0	0	0	0	0	12	43%
Non-Incapacitating Injury	3	0	0	2	0	1	2	0	1	3	0	12	43%
Incapacitating Injury	1	0	0	0	0	0	0	0	0	0	0	1	4%
Fatality	0	1	0	1	0	0	0	0	0	1	0	3	11%
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0%

TOTALS	***10***	***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

2 fatalities

2 fatalities

1 fatality

2.) ***COLLISION DIAGRAM***	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
Rear End Collision (#1)	0	0	0	0	0	0	0	0	0	0	0	0	0%
Head-On Collision (#2)	0	0	0	0	0	0	0	0	0	0	0	0	0%
Same Direction Sideswipe (#3)	0	0	0	0	0	0	0	0	0	0	0	0	0%
Opposite Direction Sideswipe (#4)	0	0	0	0	0	0	0	0	0	0	0	0	0%
Off Road Collision (#5)	0	0	0	0	0	0	0	0	0	0	0	0	0%
Right Angle Collision (#6)	9	2	0	3	0	2	2	0	1	3	0	22	79%
Lt. Turn Collision (#7-13)	1	0	0	0	0	0	0	0	0	0	0	1	4%
Rt. Turn Collision (#14-18)	0	0	0	0	0	0	0	0	0	1	0	1	4%
Animal/Object in Roadway	0	0	0	1	1	2	0	0	0	0	0	4	14%
Backing Crash	0	0	0	0	0	0	0	0	0	0	0	0	0%
Rear to Rear	0	0	0	0	0	0	0	0	0	0	0	0	0%
Left/Right Turn	0	0	0	0	0	0	0	0	0	0	0	0	0%
Non-Collision	0	0	0	0	0	0	0	0	0	0	0	0	0%
Other	0	0	0	0	0	0	0	0	0	0	0	0	0%
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0%

TOTALS	***10***	***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

3.) *SURFACE CONDITION*	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
Dry (#1)……	9	2	0	4	1	2	2	0	1	3	0	24	86%
Wet (#2)……	1	0	0	0	0	2	0	0	0	0	0	3	11%
Snow/Ice/Slush (#3,4,5)……	0	0	0	0	0	0	0	0	0	1	0	1	4%
Loose Material ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Muddy ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Water (Standing or Moving) ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Other……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Unknown……	0	0	0	0	0	0	0	0	0	0	0	0	0%

TOTALS		***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

4.) *CONTRIBUTING CIRCUMSTANCE*	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
Unsafe Speed ……	0	0	0	0	0	0	0	0	0	2	0	2	7%
Disregard Signal ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Failure toYield R/W ……	10	2	0	3	0	1	2	0	1	2	0	21	75%
Brake Failure or Defective ……	0	0	0	0	0	1	0	0	0	0	0	1	4%
Following Too Closely ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Animal/Object in Roadway ……	0	0	0	1	1	2	0	0	0	0	0	4	14%
Road Condition ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Improper Lane Change ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Distracted ……..	0	0	0	0	0	0	0	0	0	0	0	0	0%
Driver Illness or Fatigue ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Overcorrected ……..……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Tire Failure or Defective ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
Unknown ……	0	0	0	0	0	0	0	0	0	0	0	0	0%

TOTALS	***10***	***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

5.) *MONTH*	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
January (01)……	0	1	0	0	0	3	0	0	0	0	0	4	14%
February (02) ……	0	1	0	0	0	0	0	0	0	1	0	2	7%
March (03) ……	0	0	0	0	0	0	0	0	0	0	0	0	0%
April (04)……	0	0	0	0	0	0	0	0	0	0	0	0	0%
May (05)……	0	0	0	0	0	1	1	0	0	0	0	2	7%
June (06)……	0	0	0	0	0	0	0	0	0	0	0	0	0%
July (07)……	0	0	0	3	0	0	0	0	1	0	0	4	14%
August (08)……	0	0	0	0	0	0	0	0	0	1	0	1	4%

September (09).....	0	0	0	0	0	0	1	0	0	0	0	1	4%
October (10).....	3	0	0	1	1	0	0	0	0	0	0	5	18%
November (11).....	2	0	0	0	0	0	0	0	0	1	0	3	11%
December (12).....	5	0	0	0	0	0	0	0	0	1	0	6	21%
Unknown.....	0	0	0	0	0	0	0	0	0	0	0	0	0%

TOTALS	***10***	***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

6.) ***DAY OF***

WEEK	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
Sunday.....	1	0	0	2	0	0	0	0	0	1	0	4	14%
Monday.....	3	2	0	0	0	1	0	0	1	0	0	7	25%
Tuesday.....	0	0	0	0	1	0	1	0	0	1	0	3	11%
Wednesday.....	0	0	0	0	0	0	1	0	0	0	0	1	4%
Thursday.....	1	0	0	1	0	2	0	0	0	0	0	4	14%
Friday.....	3	0	0	1	0	1	0	0	0	2	0	7	25%
Saturday.....	2	0	0	0	0	0	0	0	0	0	0	2	7%
Unknown.....	0	0	0	0	0	0	0	0	0	0	0	0	0%

TOTALS	***10***	***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

7.) ***HOUR OF***

DAY	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
6-7AM (0600).....	0	0	0	0	0	1	0	0	0	0	0	1	4%
7-8AM (0700).....	0	1	0	0	0	0	0	0	0	0	0	1	4%
8-9AM (0800).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
9-10AM (0900).....	1	0	0	1	0	0	0	0	0	0	0	2	7%
10-11AM (1000).....	2	0	0	0	0	0	0	0	0	0	0	2	7%
11A-12N (1100).....	1	0	0	0	0	0	0	0	1	0	0	2	7%
12N-1P (1200).....	0	0	0	1	0	0	0	0	0	1	0	2	7%
1-2PM (1300).....	1	0	0	1	0	1	1	0	0	1	0	5	18%
2-3PM (1400).....	0	0	0	1	0	0	0	0	0	2	0	3	11%
3-4PM (1500).....	1	0	0	0	0	0	0	0	0	0	0	1	4%
4-5PM (1600).....	2	1	0	0	0	0	0	0	0	0	0	3	11%
5-6PM (1700).....	2	0	0	0	0	0	0	0	0	0	0	2	7%

Daylight Sub-Totals	**10**	**2**	**0**	**4**	**0**	**2**	**1**	**0**	**1**	**4**	**0**	**24**	86%
6-7PM (1800).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
7-8PM (1900).....	0	0	0	0	0	0	0	0	0	0	0	0	0%

8-9PM (2000).....	0	0	0	0	1	0	0	0	0	0	0	1	4%
9-10PM (2100).....	0	0	0	0	1	0	0	0	0	0	0	1	4%
10-11PM (2200).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
11P-12M (2300).....	0	0	0	1	0	0	0	0	0	0	0	1	4%
12M-1A (2400).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
1-2AM (0100).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
2-3AM (0200).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
3-4AM (0300).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
4-5AM (0400).....	0	0	0	0	0	0	1	0	0	0	0	1	4%
5-6AM (0500).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
Unknown.....	0	0	0	0	0	0	0	0	0	0	0	0	0%

Nighttime Sub-Totals	**0**	**0**	**0**	**1**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	14%

GRAND TOTALS	***10***	***2***	***0***	***5***	***2***	***2***	***2***	***0***	***1***	***4***	***0***	***28***	100%

8.) ROAD CHARACTER	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
Straight/Level (#1).....	8	1	0	3	1	4	2	0	1	2	0	22	79%
Straight/Grade (#2).....	1	1	0	1	0	0	0	0	0	1	0	4	14%
Straight/Hillcrest (#3)	0	0	0	0	0	0	0	0	0	0	0	0	0%
Curve/Level (#4).....	1	0	0	0	0	0	0	0	0	0	0	1	4%
Curve/Grade (#5).....	0	0	0	0	0	0	0	0	0	1	0	1	4%
Curve/Hillcrest (#6).....	0	0	0	0	0	0	0	0	0	0	0	0	0%
Unknown.....	0	0	0	0	0	0	0	0	0	0	0	0	0%

TOTALS	***10***	***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

9.) DIRECTIONAL ANALYSIS / COLLISION INVOLVED	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	*TOTALS*	Percentage
NBlt w/ EB	1	0	0	0	0	0	0	0	0	0	0	1	4%
NB w/ EB	2	0	0	2	0	0	1	0	0	0	0	5	18%
NB w/ WB	0	0	0	0	0	0	1	0	0	1	0	2	7%
WB w/ SB	1	0	0	1	0	0	0	0	1	1	0	4	14%
SB w/ EB	6	2	0	0	0	2	0	0	0	1	0	11	39%
SBrt w/ EB	0	0	0	0	0	0	0	0	0	1	0	1	4%
SB w/ Animal	0	0	0	0	0	1	0	0	0	0	0	1	4%
NB w/ Animal	0	0	0	1	1	1	0	0	0	0	0	3	11%

TOTALS	***10***	***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

10.) REFERENCED LOCATIONS	10/1/10-12/31/10	1/1/11-3/7/11	3/7/11-4/18/11	4/18/11-10/3/11	10/3/11-12/31/11	1/1/12-5/22/12	5/22/12-10/1/12	10/2/2012-12/31/2012	2013	2014	2015	TOTALS	Percentage
At Intersection	10	2	0	3	0	2	2	0	1	4	0	24	86%
Zero to Hundred Feet East	0	0	0	0	0	0	0	0	0	0	0	0	0%
Zero to Hundred Feet North	0	0	0	0	0	0	0	0	0	0	0	0	0%
Zero to Hundred Feet South	0	0	0	0	0	0	0	0	0	0	0	0	0%
Zero to Hundred Feet West	0	0	0	0	0	0	0	0	0	0	0	0	0%
Hundred to Thousand Feet East	0	0	0	0	0	0	0	0	0	0	0	0	0%
Hundred to Thousand Feet North	0	0	0	0	0	0	0	0	0	0	0	0	0%
Hundred to Thousand Feet South	0	0	0	0	0	0	0	0	0	0	0	0	0%
Hundred to Thousand Feet West	0	0	0	0	0	0	0	0	0	0	0	0	0%
Thousand Feet to 1/2 Mile East	0	0	0	0	0	0	0	0	0	0	0	0	0%
Thousand Feet to 1/2 Mile North	0	0	0	0	0	1	0	0	0	0	0	1	4%
Thousand Feet to 1/2 Mile South	0	0	0	1	1	0	0	0	0	0	0	2	7%
Thousand Feet to 1/2 Mile West	0	0	0	0	0	0	0	0	0	0	0	0	0%
1/2 Mile to 1 Mile East	0	0	0	0	0	0	0	0	0	0	0	0	0%
1/2 Mile to 1 Mile North	0	0	0	0	0	0	0	0	0	0	0	0	0%
1/2 Mile to 1 Mile South	0	0	0	0	0	1	0	0	0	0	0	1	4%
1/2 Mile to 1 Mile West	0	0	0	0	0	0	0	0	0	0	0	0	0%
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0%

TOTALS	***10***	***2***	***0***	***4***	***1***	***4***	***2***	***0***	***1***	***4***	***0***	***28***	100%

Crash Analysis for US 231 and SR 68/Medcalf St/SR 62
Date: 1/1/2010-12/31/2014

1.) SEVERITY	**2010**	**2011**	**2012**	**2013**	**2014**	***TOTALS***	
Property Damage	1	2	3	3	3	12	48%
Non-Incapacitating Injury	0	4	3	2	3	12	48%
Incapacitating Injury	0	0	0	0	0	0	0%
Fatality	0	1	0	0	0	1	4%
Unknown	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

2.) COLLISION DIAGRAM	**2010**	**2011**	**2012**	**2013**	**2014**	***TOTALS***	
Rear End Collision (#1)	0	0	1	0	0	1	4%
Head-On Collision (#2)	0	0	0	0	0	0	0%
Same Direction Sideswipe (#3)	0	1	1	0	0	2	8%
Opposite Direction Sideswipe (#4)	0	0	0	0	0	0	0%
Off Road Collision (#5)	0	0	0	0	0	0	0%
Right Angle Collision (#6)	1	4	3	4	5	17	68%
Lt. Turn Collision (#7-13)	0	1	1	1	0	3	12%
Rt. Turn Collision (#14-18)	0	0	0	0	1	1	4%
Animal/Object in Roadway	0	0	0	0	0	0	0%
Backing Crash	0	0	0	0	0	0	0%
Rear to Rear	0	0	0	0	0	0	0%
Left/Right Turn	0	0	0	0	0	0	0%
Non-Collision	0	0	0	0	0	0	0%
Other	0	1	0	0	0	1	4%
Unknown	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

3.) SURFACE CONDITION	**2010**	**2011**	**2012**	**2013**	**2014**	***TOTALS***	
Dry (#1)	1	5	4	4	6	20	80%
Wet (#2)	0	1	2	1	0	4	16%
Snow/Ice/Slush (#3,4,5)	0	1	0	0	0	1	4%

Loose Material	0	0	0	0	0	0	0%
Muddy	0	0	0	0	0	0	0%
Water (Standing or Moving)	0	0	0	0	0	0	0%
Other	0	0	0	0	0	0	0%
Unknown	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

4.) CONTRIBUTING CIRCUMSTANCE

	2010	2011	2012	2013	2014	*TOTALS*	
Unsafe Speed	0	0	0	0	0	0	0%
Disregard Signal	0	0	0	0	0	0	0%
Failure toYield R/W	1	5	4	5	6	21	84%
Brake Failure or Defective	0	0	0	0	0	0	0%
Following Too Closely	0	0	1	0	0	1	4%
Animal/Object in Roadway	0	0	0	0	0	0	0%
Road Condition	0	0	0	0	0	0	0%
Unsafe Lane Movement	0	1	1	0	0	2	8%
Distracted	0	0	0	0	0	0	0%
Driver Illness or Fatigue	0	0	0	0	0	0	0%
Overcorrected	0	0	0	0	0	0	0%
Other	0	1	0	0	0	1	4%
Unknown	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

5.) MONTH

	2010	2011	2012	2013	2014	*TOTALS*	
January (01)	0	1	0	0	0	1	4%
February (02)	0	0	0	0	0	0	0%
March (03)	0	0	0	1	0	1	4%
April (04)	1	0	2	0	2	5	20%
May (05)	0	0	0	0	0	0	0%
June (06)	0	0	0	0	2	2	8%
July (07)	0	0	1	1	0	2	8%
August (08)	0	3	2	0	0	5	20%

September (09)……	0	0	0	1	0	1	4%
October (10)……	0	0	1	1	1	3	12%
November (11)……	0	1	0	1	1	3	12%
December (12)……	0	2	0	0	0	2	8%
Unknown……	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

6.) DAY OF WEEK

	2010	2011	2012	2013	2014	*TOTALS*	
Sunday……	0	0	1	0	1	2	8%
Monday……	0	0	1	0	1	2	8%
Tuesday……	0	0	1	1	2	4	16%
Wednesday……	0	1	1	1	1	4	16%
Thursday……	0	2	1	1	1	5	20%
Friday……	0	1	1	1	0	3	12%
Saturday……	1	3	0	1	0	5	20%
Unknown……	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

7.) HOUR OF DAY

	2010	2011	2012	2013	2014	*TOTALS*	
6-7AM (0600)……	0	0	0	0	0	0	0%
7-8AM (0700)……	0	0	0	0	1	1	4%
8-9AM (0800)……	0	1	0	0	1	2	8%
9-10AM (0900)……	0	1	1	2	0	4	16%
10-11AM (1000)……	0	0	1	0	0	1	4%
11A-12N (1100)……	0	1	1	0	1	3	12%
12N-1P (1200)……	0	1	0	0	0	1	4%
1-2PM (1300)……	0	0	1	1	0	2	8%
2-3PM (1400)……	0	0	0	0	1	1	4%
3-4PM (1500)……	0	0	0	1	0	1	4%
4-5PM (1600)……	0	0	0	1	1	2	8%
5-6PM (1700)……	0	0	0	0	0	0	0%

Daylight Sub-Totals	**0**	**4**	**4**	**5**	**5**	**18**	72%
6-7PM (1800)……	0	0	0	0	0	0	0%
7-8PM (1900)……	1	1	2	0	1	5	20%
8-9PM (2000)……	0	1	0	0	0	1	4%
9-10PM (2100)……	0	0	0	0	0	0	0%
10-11PM (2200)……	0	0	0	0	0	0	0%
11P-12M (2300)……	0	0	0	0	0	0	0%
12M-1A (2400)……	0	0	0	0	0	0	0%
1-2AM (0100)……	0	0	0	0	0	0	0%
2-3AM (0200)……	0	0	0	0	0	0	0%
3-4AM (0300)……	0	0	0	0	0	0	0%
4-5AM (0400)……	0	0	0	0	0	0	0%
5-6AM (0500)……	0	1	0	0	0	1	4%
Unknown……	0	0	0	0	0	0	0%

Nighttime Sub-Totals	**1**	**3**	**2**	**0**	**1**	**7**	28%

GRAND TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

8.) ROAD CHARACTER	**2010**	**2011**	**2012**	**2013**	**2014**	***TOTALS***	
Straight/Level (#1)……	1	4	5	4	5	19	76%
Straight/Grade (#2)……	0	2	0	1	0	3	12%
Straight/Hillcrest (#3) ……	0	0	0	0	0	0	0%
Curve/Level (#4)……	0	1	1	0	1	3	12%
Curve/Grade (#5)……	0	0	0	0	0	0	0%
Curve/Hillcrest (#6)……	0	0	0	0	0	0	0%
Unknown……	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

9.) DIRECTIONAL ANALYSIS / COLLISION INVOLVED	**2010**	**2011**	**2012**	**2013**	**2014**	***TOTALS***	
WBrt w/ WBrt ……	0	0	1	0	0	1	4%

SBlt w/ NB	0	1	1	0	0	2	8%
NB w/ EB	0	1	2	0	2	5	20%
EB w/ SB	0	0	0	0	1	1	4%
WB w/ SB	1	3	1	4	2	11	44%
EBrt w/ SB	0	0	0	0	1	1	4%
SB w/ SB	0	1	1	0	0	2	8%
SBrt w/ WB	0	0	0	0	0	0	0%
EB w/ Unk	0	0	0	0	0	0	0%
EB w/ Deer	0	0	0	0	0	0	0%
WB w/ Deer	0	0	0	0	0	0	0%
WBlt w/ EB	0	0	0	0	0	0	0%
NB w/ EBlt	0	0	0	1	0	1	4%
EB w/ Embankment, Ditch	0	0	0	0	0	0	0%
WBlt Overturn	0	1	0	0	0	1	4%
Unknown	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

10.) REFERENCED LOCATIONS	**2010**	**2011**	**2012**	**2013**	**2014**	***TOTALS***	
At Intersection	1	6	5	5	6	23	92%
Zero to Hundred Feet East	0	0	0	0	0	0	0%
Zero to Hundred Feet North	0	1	1	0	0	2	8%
Zero to Hundred Feet South	0	0	0	0	0	0	0%
Zero to Hundred Feet West	0	0	0	0	0	0	0%
Hundred to Thousand Feet East	0	0	0	0	0	0	0%
Hundred to Thousand Feet North	0	0	0	0	0	0	0%
Hundred to Thousand Feet South	0	0	0	0	0	0	0%
Hundred to Thousand Feet West	0	0	0	0	0	0	0%

TOTALS	***1***	***7***	***6***	***5***	***6***	***25***	100%

Index of Crash Frequency and Cost - Form F1

Page 1/2

Location	US 231 and SR 62-Washinton St	
Dale, Spencer Co		
GIS		
Post		
Analyst	Damon Brown	
Date	1/6/2015	

INPUT	
Road Facility Type	Unsignalized rural state-state intersection
Major Road Annual Average Daily Traffic (veh/year)	5675
Minor Road Annual Average Daily Traffic (veh/year)	1543
T-intersection indicator (1 if present, 0 otherwise)	0
First Year with Crash Data (yyyy)	2010
Last Year with Crash Data (yyyy)	2014
Number of Crashes (crash/period)	
Fatal and Incapacitating Injury Crashes	4
Non-Incapacitating and Possible Injury Crashes	12
Property Damage Only Crashes	12
Route or Road Type	Rural state-state intersection
Average Crash Costs ($)	
Fatal and Incapacitating Injury Crashes	445900
Non-Incapacitating and Possible Injury Crashes	38600
Property Damage Only Crashes	6800
Crash Cost Year (yyyy)	2009
OUTPUT	
Expected Crash Frequency (crash/year)	
Fatal and Incapacitating Injury Crashes	0.045
Non-Incapacitating and Possible Injury Crashes	0.28
Property Damage Only Crashes	0.92
All Crashes	1.25
Index of Crash Frequency	**3.16**
Index of Crash Cost	**2.36**

Index of Crash Frequency and Cost - Form F1

Page 2/2

Location	US 231 and SR 62-Washinton St	
Dale, Spencer Co		
GIS		
Post		

Index of Crash Frequency and Cost - Form F1

Page 1/2

Location	US 231 and SR 62-Washinton St	
Dale, Spencer Co		
GIS		
Post		
Analyst	Damon Brown	
Date	1/5/2015	

INPUT	
Road Facility Type	Unsignalized rural state-state intersection
Major Road Annual Average Daily Traffic (veh/year)	5675
Minor Road Annual Average Daily Traffic (veh/year)	1543
T-intersection indicator (1 if present, 0 otherwise)	0
First Year with Crash Data (yyyy)	2012
Last Year with Crash Data (yyyy)	2014
Number of Crashes (crash/period)	
Fatal and Incapacitating Injury Crashes	1
Non-Incapacitating and Possible Injury Crashes	7
Property Damage Only Crashes	3
Route or Road Type	Rural state-state intersection
Average Crash Costs ($)	
Fatal and Incapacitating Injury Crashes	445900
Non-Incapacitating and Possible Injury Crashes	38600
Property Damage Only Crashes	6800
Crash Cost Year (yyyy)	2009
OUTPUT	
Expected Crash Frequency (crash/year)	
Fatal and Incapacitating Injury Crashes	0.045
Non-Incapacitating and Possible Injury Crashes	0.28
Property Damage Only Crashes	0.92
All Crashes	1.25
Index of Crash Frequency	**1.71**
Index of Crash Cost	**1.35**

Index of Crash Frequency and Cost - Form F1

Page 2/2

Location	US 231 and SR 62-Washinton St	
Dale, Spencer Co		
GIS		
Post		

Index of Crash Frequency and Cost - Form F1

Page 1/2

Location	US 231 and SR 68/SR 62	
Dale, Spencer County		
GIS		
Post		
Analyst	Damon Brown	
Date	1/8/2015	

INPUT	
Road Facility Type	Unsignalized rural state-state intersection
Major Road Annual Average Daily Traffic (veh/year)	4905
Minor Road Annual Average Daily Traffic (veh/year)	2096
T-intersection indicator (1 if present, 0 otherwise)	0
First Year with Crash Data (yyyy)	2010
Last Year with Crash Data (yyyy)	2014
Number of Crashes (crash/period)	
Fatal and Incapacitating Injury Crashes	1
Non-Incapacitating and Possible Injury Crashes	12
Property Damage Only Crashes	12
Route or Road Type	Rural state-state intersection
Average Crash Costs ($)	
Fatal and Incapacitating Injury Crashes	445900
Non-Incapacitating and Possible Injury Crashes	38600
Property Damage Only Crashes	6800
Crash Cost Year (yyyy)	2009
OUTPUT	
Expected Crash Frequency (crash/year)	
Fatal and Incapacitating Injury Crashes	0.048
Non-Incapacitating and Possible Injury Crashes	0.31
Property Damage Only Crashes	0.98
All Crashes	1.33
Index of Crash Frequency	**2.68**
Index of Crash Cost	**1.65**

Index of Crash Frequency and Cost - Form F1

Page 2/2

Location	US 231 and SR 68/SR 62	
Dale, Spencer County		
GIS		
Post		

SUMMARY SHEET

INTERSECTION:	US 231 and SR 62 (Washington St)	DISTRICT:	Vincennes
CITY:	Dale	COUNTY:	Spencer
DATE OF COUNT:	01/14/15	BY:	Mark Brown
ANALYSIS DATE:	01/15/15	BY:	Damon Brown

TRAVEL DIRECTION OF MAJOR ROAD	N - S

WARRANT 1 - 8 HOUR VEHICULAR VOLUMES

Condition A - Minimum Vehicular Volumes

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

Condition B - Interruption of Continuous Traffic

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

Criteria C - Combination of Conditions A & B

With RTOR Adjustments: The minimal requirements are NOT met.

Without RTOR Adjustments: The minimal requirements are NOT met.

WARRANT 2 - Four Hour Volumes

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

WARRANT 3 - Peak Hour

Condition A: Peak Hour Delay

This Warrant is Apparently Non-Applicable

Condition B: 4 Hour Vehicle Volumed

This Warrant is Apparently Non-Applicable

WARRANT 4- Minimum Pedestrian Volume

THIS CRITERIA WAS NOT CONSIDERED BECAUSE

The minimal requirements are NOT met.THERE WERE NO, OR MINIMAL PEDESTRIANS

WARRANT 5 - School Crossing

THIS CRITERIA WAS NOT CONSIDERED BECAUSE

THERE WERE NO, OR MINIMAL, CHILDREN CROSSING

WARRANT 6 - Progressive Movement

The minimal requirements are NOT met.

WARRANT 7 - Accident Experience

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

WARRANT 8 - Systems Warrant

The minimal requirements are NOT met.

WARRANT 9 - Intersection Near a RailRoad Crossing

This Warrant is Apparently Non-Applicable

US 231 and SR 62 (Washington St)

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

With RTOR Adjustments:

Without RTOR Adjustments:

Condition A - Minimum Vehicular Volume

				Choose With X
WITH RIGHT TURN ADJUSTMENTS		Using Max # lanes on Major Rd and # lanes on East App	0 Hours Mtg	
		Using Max # lanes on Major Rd and # lanes on West App	0 Hours Mtg	
	XX	Using Max # lanes on Major Rd and Max# lanes on Minr Rd	0 Hours Mtg	x
		With RTOR Adjustments The minimal requirements are NOT met.		
WITHOUT RIGHT TURN ADJUSTMENTS		Using Max # lanes on Major Rd and # lanes on East App	0 Hours Mtg	0
		Using Max # lanes on Major Rd and # lanes on West App	0 Hours Mtg	0
	XX	Using Max # lanes on Major Rd and Max# lanes on Minr Rd	0 Hours Mtg	x
		Without RTOR Adjustments The minimal requirements are NOT met.		

Condition A Requirements

	LANES	WARRANT (FULL)	VALUE 70%	VALUE USED	Number of Compliant Hours: no rt adjust, INDIV ROAD	no rt adjust, BOTH ROADS	less rt. turns, INDIV ROAD	less rt. turns, BOTH ROADS
MAJOR ROAD	1	500	350					
TOTAL BOTH APP.	2	600	420	420	7		6	
Minr Rd/Max Lanes				140	0	0	0	0
MINOR ROAD| E.APP.	1	150	105	140	0	0	0	0
APPROACH | W.APP.	2	200	140	140	0	0	0	0

Condition B - Interuption of Continuous Traffic

				Choose With X
WITH RIGHT TURN ADJUSTMENTS		Using Max # lanes on Major Rd and # lanes on East App	1 Hours Mtg	
		Using Max # lanes on Major Rd and # lanes on West App	0 Hours Mtg	
	XX	Using Max # lanes on Major Rd and Max# lanes on Minr Rd	1 Hours Mtg	x
		With RTOR Adjustments The minimal requirements are NOT met.		
WITHOUT RIGHT TURN ADJUSTMENTS		Using Max # lanes on Major Rd and # lanes on East App	2 Hours Mtg	0
		Using Max # lanes on Major Rd and # lanes on West App	0 Hours Mtg	0
	XX	Using Max # lanes on Major Rd and Max# lanes on Minr Rd	2 Hours Mtg	x
		Without RTOR Adjustments The minimal requirements are NOT met.		

Condition B Requirements

	LANES	WARRANT (FULL)	VALUE 70%	VALUE USED	Number of Compliant Hours: no rt adjust, INDIV ROAD	no rt adjust, BOTH ROADS	less rt. turns, INDIV ROAD	less rt. turns, BOTH ROADS
MAJOR ROAD	1	750	525					
TOTAL BOTH APP.	2	900	630	630	2		1	
Minr Rd/Max Lanes				70	5	2	4	1
MINOR ROAD| E.APP.	1	75	53	70	5	2	4	1
APPROACH | W.APP.	2	100	70	70	0	0	0	0

Condition C Requirements (Combination of Condition A & B)

Are Condition A and Condition B fulfilled to 80 % of the volume requirements?				Hrs Satisfied w/RTOR	Hrs Satisfied-NoRTOR
Condition A Maj Rd Vol	336	Minr Rd Vol	112	1	2
Condition B Maj Rd Vol	504	Minr Rd Vol	56	3	3

With RTOR Adjustments: The minimal requirements are NOT met.

Without RTOR Adjustments: The minimal requirements are NOT met.

US 231 and SR 62 (Washington St)

WARRANT 2 - FOUR HOUR VEHICULAR VOLUME

With RTOR Adjustments **The minimal requirements are NOT met.**

Without RTOR Adjustments **The minimal requirements are NOT met.**

NO RTOR RED'CT'N						WITH RTOR RED'CT'N				
N & S App. MAJOR STREET VOLUME BOTH DIR	MINOR STREET EAST APPR'CH	MINOR STREET WEST APPR'CH	HOUR MEETS REQM'NTS	G'METRY USED FOR POSITIVE WARRANT		N & S App. MAJOR STREET VOLUME BOTH DIR	MINOR STREET EAST APPR'CH	MINOR STREET WEST APPR'CH	HOUR MEETS REQM'NTS	G'METRY USED FOR POSITIVE WARRANT
477	28	59	0	none	6.00	460	24	59	0	none
429	89	50	0	none	7.00	413	84	46	0	none
372	34	42	0	none	8.00	360	29	40	0	none
385	48	36	0	none	9.00	374	45	35	0	none
397	59	53	0	none	10.00	385	49	53	0	none
388	57	44	0	none	11.00	376	51	43	0	none
404	52	41	0	none	12.00	393	49	40	0	none
443	41	49	0	none	13.00	429	39	48	0	none
556	71	57	0	none	14.00	534	65	55	0	none
677	115	65	0	none	15.00	652	110	62	0	none
649	131	60	0	none	16.00	624	122	58	0	none
451	79	42	0	none	17.00	435	76	42	0	none
0	0	0	0	none	18.00	0	0	0	0	none
0	0	0	0	none	19.00	0	0	0	0	none
0	0	0	0	none	20.00	0	0	0	0	none
0	0	0	0	none	21.00	0	0	0	0	none
			0						0	

WARRANT 3 - PEAK HOUR

Condition A - Peak Hour Delay This Warrant is Apparently Non-Applicable

	East App.	West App.		Tot.Vol	E App.Vol	W App.Vol	
Actual Peak Hr - Side Street Delay	0.508	0.279	Estimated	857	115	65	Act. Count
N - S Peak Hr - Side Street Delay	0.508	0.279	Estimated	857	115	65	Act. Count
E - W Peak Hr - Side Street Delay	0.480	0.329	Estimated	829	115	78	Act. Count

1. THE TOTAL PEAK HOUR STOPPED DELAY FROM THE SIDE STREET IS ----- 0.508 HOURS
   THE REQUIRED STOPPED DELAY FROM THE SIDE STREET IS---------- 5 HOURS
   DOES THE STOPPED DELAY EQUAL OR EXCEED THE MIN REQUIREMENT? NO
2. THE HIGH VOLUME ON THE SIDE ST APP'S DURING THE PEAK HOUR IS ? 115
   THE REQUIRED VOLUME ON THE SIDE STREET DURING THE PEAK HR IS: 150
   DOES THE VOLUME ON THE SIDE STREET EXCEED THE MINIMUM REQUIREMENT? NO
3. THE TOTAL INTERSECTIONAL VOLUME DURING THE PEAK HOUR IS: 857
   THE REQUIRED INTERSECTIONAL VOLUME IS---------- 800
   DOES THE INTERSECTIONAL VOLUME EQUAL OR EXCEED THE MIN REQUIREMENT? YES

Condition B - Peak Hour Volume

This Warrant is Apparently Non-Applicable

MAJOR STREET VOLUME BOTH DIR PEAK HR	MINOR ST EAST APPR'CH VOLUME PEAK HR	MINOR ST WEST APPR'CH VOLUME PEAK HR	REQUIRED MINOR STREET HIGH VOL APPROACH	HOUR MEETS REQM'NTS
677	115	65	268	NO
GEOMETRICS USED			none	

US 231 and SR 62 (Washington St)

WARRANT 4 - PEDESTRIAN VOLUME

THIS CRITERIA WAS NOT CONSIDERED BECAUSE THERE WERE NO, OR MINIMAL PEDESTRIANS

The minimal requirements are NOT met.

HIGH VOLUME CROSSWALK ACROSS THE MAJ. STREET IS ACROSS THE **NA** Approach

THE MAJ. STREET HAS A RAISED MEDIAN OF ADEQUATE SIZE --------- NO

Y= The number of Pedestrians Crossing the Major Street

X= The Major Street Volume - Total of Both Directions

Equation Used for 4 Hour Warrant X=>780 and Y=> 75 or Y=491.334-0.86656X+0.0004214X2

Number of Hours that 4 Hr. Warrant is Satisfied **0**

Equation Used for Pedestrian Peak Hour X=>1044 and Y=>93 or Y=669.187-0.9162X+0.0003915X2

Number of Hours that Ped Peak Hour is Satisfied **0**

WARRANT 5 - SCHOOL CROSSING

THIS CRITERIA WAS NOT CONSIDERED BECAUSE THERE WERE NO, OR MINIMAL, CHILDREN CROSSING

Crosswalk Volumes Used were across the No Approach Used

IS THERE AN ESTABLISHED SCHOOL CROSSING ACROSS ANY OF THE DENOTED APPROACHES?

	N.APP.	S. APP.	E.APP.	W. APP.
*****ANSWER (Y/N)	N	N	N	N
WIDTH OF ST. (FT)	0	0	0	0

NEITHER THE N. OR S. APPROACH IS THE SCHOOL CROSSING

PERIOD	TIME OF DAY START	*********	END	NUM OF CHILDR	REQ'D VEH VOLUME	Actual or Estmatd VEH VOLUME	PERIOD SATISF'D
MORNING	0.00	-----TO----	0.00	NA	NA	NA	NA
NOON	0.00	-----TO----	0.00	NA	NA	NA	NA
EVENING	0.00	-----TO----	0.00	NA	NA	NA	NA

NEITHER THE E. OR W. APPROACH IS THE SCHOOL CROSSING

PERIOD	TIME OF DAY START	*********	END	NUM OF CHILDR	REQ'D VEH VOLUME	ACT OR ESTIMATD VEH VOLUME	PERIOD SATISF'D
MORNING	0.00	-----TO----	0.00	NA	NA	NA	NA
NOON	0.00	-----TO----	0.00	NA	NA	NA	NA
EVENING	0.00	-----TO----	0.00	NA	NA	NA	NA

US 231 and SR 62 (Washington St)

WARRANT 6 - COORDINATED SIGNAL SYSTEM **The minimal requirements are NOT met.**

1) ARE ADJACENT TRAFFIC SIGNALS GREATER THAN 1000 FT AWAY? (Y/N)----------	Y
2) DO ADJACENT SIGNALS PROVIDE THE NECESSARY DEGREE OF VEHICLE PLATOONING AND SPEED GROUPING ? (Y/N)----------	N
3) COULD THE PROPOSED TRAFFIC SIGNAL AND ADJACENT TRAFFIC SIGNALS CONSTITUTE A PROGRESSIVE TRAFFIC SIGNAL SYSTEM?----------	N

WARRANT 8 - ROADWAY NETWORK

With RTOR Adjustments: **The minimal requirements are NOT met.**
Without RTOR Adjustments: **The minimal requirements are NOT met.**

1) Are the intersecting Roads or Streets considered MAJOR ROUTES ?

MAJOR STREET CHARACTERISTIC	2
MINOR STREET CHARACTERISTIC	0

IS THIS THE INTERSECTION OF 2 OR MORE MAJOR ROUTES? NO

2) NUM. OF HOURS EXCEEDING 1000 VPH	0
PEAK HOUR TOTAL VOLUME----------	857
DOES THIS YEARS PROJECT'D PEAK HOUR TOTAL VOLUME EXCEED 1000 VEH.	0

3) 5 Year Projection: With RTOR	One or more of the following are satisfied for 8 hrs.	N
Criteria 1 Condition A--- Num of Hours Satisfied	0	
Criteria 1 Condition B--- Num of Hours Satisfied	2	
Criteria 1 Condition C-A- Num of Hours Satisfied	2	
Criteria 1 Condition C-B- Num of Hours Satisfied	3	
Criteria 2---------- Num of Hours Satisfied	0	
Criteria 3---------- Peak Hour Criteria Satisfied	N	

3) 5 Year Projection: Without RTOR	One or more of the following are satisfied for 8 hrs.	N
Criteria 1 Condition A--- Num of Hours Satisfied	0	
Criteria 1 Condition B--- Num of Hours Satisfied	2	
Criteria 1 Condition C-A- Num of Hours Satisfied	2	
Criteria 1 Condition C-B- Num of Hours Satisfied	3	
Criteria 2---------- Num of Hours Satisfied	0	
Criteria 3---------- Peak Hour Criteria Satisfied	N	

WARRANT 9 - INTERSECTION NEAR A GRADE CROSSING

This Warrant is Apparently Non-Applicable

1) Clear Storage distance from the center of the tracks to the STOP LINE or YIELD LINE				-15
2) Hour of Train Usage (or Peak Hour)----------				0
3) Traffic Volumes Used----------	Main Line	NA	RR Side Approach	NA
4) Adjustment Factor Used ----------		0	Side App Adjusted Volume	NA
5) Required Side Road Volume----------				NA
6) Does the (adjusted) side road volume meet the requirements?----------				NA

US 231 and SR 62 (Washington St)

WARRANT 7 - CRASH EXPERIENCE

With RTOR Adjustments **The minimal requirements are NOT met.**

Without RTOR Adjustments **The minimal requirements are NOT met.**

1) HAVE LESS RESTRICTIVE MEASURES BEEN IMPLEMENTED AND TESTED ?--(Y/N) Y

HAVE THE MEASURES PROVEN UNSATISFACTORY ?----------(Y/N) N

LIST MEASURES:

-

-

2) Accident Data For The Intersection of: US 231 and SR 62 (Washington St)

Date From: 01/01/11

Date To: 12/31/14

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1	0	0	0	0
HEAD ON	2	0	0	0	0
SAME DIR SIDESWIPE	3	0	0	0	0
OPP DIR SIDESWIPE	4	0	0	0	0
OFF ROAD COLLISION	5	0	0	0	0
RIGHT ANGLE	6	2	9	3	14
OPP LT.TRN & RT. TRN	7	0	0	0	0
OPP THRU &LEFT TRN	8	0	0	0	0
FR LTSd THRU &LT TRN	9	0	0	0	0
FR RTSd THRU &LT TRN	10	0	0	0	0
SAME DIR LT&LT TRN	11	0	0	0	0
SAME DIR TH&LT TRN	12	0	0	0	0
OPP DIR LT TURNS	13	0	0	0	0
FR LTSd THRU &RT TRN	14	0	0	0	0
SAME DIR RT&RT TRN	15	0	0	0	0
SAME DIR TH&RT TRN	16	0	0	0	0
FR RT THRU & RT TRN	17	0	0	0	0
OPP THRU & RT TURN	18	0	0	0	0

Comment Reconstructed the US 231 left-turn lanes
Eliminated the left-turn lanes on SR 62

WITHIN A 12 MONTH PERIOD, WERE THERE 5 OR MORE REPORTED ACCIDENTS OF THE TYPE NORMALLY CONSIDERED CORRECTIBLE BY THE INSTALLATION OF A TRAFFIC SIGNAL. (ie #6)----------(Y/N) Y

3) WILL A SIGNAL AT THIS LOCATION SERIOUSLY DISRUPT TRAFFIC FLOW?-----(Y/N) 0

4) THERE EXISTS A VEHICULAR AND/OR PEDESTRIAN VOLUME GREATER THAN 80% OF FULL CONDITIONS A OR B OF CRITERIA 1 OR CONDITIONS LISTED IN CRITERIA 4

	Part 4 Satisfied
With RTOR	N
Without RTOR	N

	RTOR Reduction WARRANT REQR'MT		80 % Minimum Criteria		MAJOR & MINOR COMPL'NT
	MAJOR	MINR/PD	MAJOR	MINR/PD	
Cond A	420	140	336	112	1
Cond B	630	70	504	56	3
Criteria 4-4Hr	Variable	100	Variable	80	0
Criteria 4-1 Hr	Variable	190	Variable	162	0

	NO RTOR Reduction WARRANT REQR'MT		80 % WARRANT REQR'MT		MAJOR & MINOR COMPL'NT
	MAJOR	MINR/PD	MAJOR	MINR/PD	
Cond A	420	140	336	112	2
Cond B	630	70	504	56	3
Criteria 4-4Hr	Variable	100	Variable	80	0
Criteria 4-1 Hr	Variable	190	Variable	162	0

INTERSECTION PARAMETERS

INTERSECTION:	US 231 and SR 62 (Washington St)	DISTRICT:	Vincennes
CITY:	Dale	COUNTY:	Spencer
DATE OF COUNT:	01/14/15	BY:	Mark Brown
ANALYSIS DATE:	01/15/15	BY:	Damon Brown

DO THE MOTORISTS, AT THIS LOCATION, TEND TO ACCELERATE AT A SLOWER RATE? N XXXXX

(OPTION) If permissable, is the 70% reduction to be used in the analysis? Y

****** Is This Traffic Count A Weekend Count?** N

TRAVEL DIRECTION OF MAJOR ROAD **N - S**

INTERSECTION CONDITIONS: CYCLE LENGTH (Estimated) 80 SECONDS

NORTH - SOUTH ROAD ROAD NAME: US 231

Estimated Percent Annual Growth Rate	From N 0.5	From S	0.5
Type of Road Surface:	Concrete	Left Turn Phase (s)	None
Med'n Type(Raised,Not Raised)	Not Raised	Median Width (Ft):	0
North App. # of Approach Lanes	4	N. App.-Approach Width Only (Ft):	48
N. App # of Rt Turn Lanes	1	N. App. Rt Turn Ln. Length (Ft):	600
N. App # of Lt Turn Lanes	1	N. App. Lt Turn Ln. Length (Ft):	1100
South App. # of Approach Lanes	4	S. App.-Approach Width Only(Ft):	48
S. App # of Rt Turn Lanes	1	S. App. Rt Turn Ln. Length (Ft):	600
S. App # of Lt Turn Lanes	1	S. App. Lt Turn Ln. Length (Ft):	1100
N. App. Pstd Spd Lim/(85%) (MPH):	60	S. App. Pstd Spd Limit/(85%) (MPH):	60
School Crossing (Y or N):	N	Pedestrian Crossing (Y or N):	N
Consider N. App. Right Turn Lane	Calc	Consider S. App. Right Turn Lane	Calc
Consider N. App. Left Turn Lane	Calc	Consider S. App. Left Turn Lane	Calc
Sight Distance (Ft) from the N. App.:		Ft. Visible to the W. and	Ft Visible to the E.
Sight Distance (Ft) from the S. App.:		Ft. Visible to the E. and	Ft. Visible to the W.
Other Conditions:			

EAST - WEST ROAD ROAD NAME: SR 62 (Washington St)

Estimated Percent Annual Growth Rate	From E 0.5	From W.	0.5
Type of Road Surface:	Concrete	Left Turn Phase(s)	None
Med'n Type(Raised,Not Raised)	None	Median Width (Ft):	0
East App. # of Approach Lanes:	2	E. App.-Approach Width Only (Ft)	36
E. App # of Rt Turn Lanes:	1	E. App. Rt Turn Ln. Length (Ft)	100
E. App # of Lt Turn Lanes:	0	E. App. Lt Turn Ln. Length (Ft)	
West App. # of Approach Lane:	2	W. App.-Approach Width Only (Ft)	36
W. App # of Rt Turn Lanes:	1	W. App. Rt Turn Ln. Length (Ft)	100
W. App # of Lt Turn Lanes:	0	W. App. Lt Turn Ln. Length (Ft)	
E. App. Pstd Spd Lim/(85%) (MPH):	45	W. App. Pstd Spd Lim?(85%) (MPH):	50
School Crossing (Y or N):	N	Pedestrian Crossing (Y or N):	N
Consider E. App. Right Turn Lane	Calc	Consider W. App. Right Turn Lane	Calc
Consider E. App. Left Turn Lane	Calc	Consider W. App. Left Turn Lane	Calc
Sight Distance (Ft) from the E. App.:		Ft. Visible to the N. and	Ft Visible to the S.
Sight Distance (Ft) from the W. App.:		Ft. Visible to the S. and	Ft. Visible to the N.
Other Conditions:			

RTOR Permitted	North App.	Y	**Actual Right Turn**	North App.	N
From Approach	South App	Y	**Lane(s)**	South App	N
Mark (Y) or (N)	East App.	Y	**Mark (Y) or (N)**	East App.	N
	West App.	Y		West App.	N

Accident Data For The Intersection of: US 231 and SR 62 (Washington St)

Date From: 01/01/11
Date To: 12/31/11

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1				0
HEAD ON	2				0
SAME DIR SIDESWIPE	3				0
OPP DIR SIDESWIPE	4				0
OFF ROAD COLLISION	5				0
RIGHT ANGLE	6	1	2	2	5
OPP LT.TRN & RT. TRN	7				0
OPP THRU &LEFT TRN	8				0
FR LT THRU &LT TRN	9				0
FR RT THRU &LT TRN	10				0
SAME DIR LT&LT TRN	11				0
SAME DIR TH&LT TRN	12				0
OPP DIR LT TURNS	13				0
FR LT THRU &RT TRN	14				0
SAME DIR RT&RT TRN	15				0
SAME DIR TH&RT TRN	16				0
FR RT THRU & RT TRN	17				0
OPP THRU & RT TURN	18				0

Accident Data For The Intersection of: US 231 and SR 62 (Washington St)

Date From: 01/01/12
Date To: 12/31/12

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1				0
HEAD ON	2				0
SAME DIR SIDESWIPE	3				0
OPP DIR SIDESWIPE	4				0
OFF ROAD COLLISION	5				0
RIGHT ANGLE	6	1	3		4
OPP LT.TRN & RT. TRN	7				0
OPP THRU &LEFT TRN	8				0
FR LT THRU &LT TRN	9				0
FR RT THRU &LT TRN	10				0
SAME DIR LT&LT TRN	11				0
SAME DIR TH&LT TRN	12				0
OPP DIR LT TURNS	13				0
FR LT THRU &RT TRN	14				0
SAME DIR RT&RT TRN	15				0
SAME DIR TH&RT TRN	16				0
FR RT THRU & RT TRN	17				0
OPP THRU & RT TURN	18				0

Accident Data For The Intersection of: US 231 and SR 62 (Washington St)

Date From: 01/01/13
Date To: 12/31/13

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1				0
HEAD ON	2				0
SAME DIR SIDESWIPE	3				0
OPP DIR SIDESWIPE	4				0
OFF ROAD COLLISION	5				0
RIGHT ANGLE	6		1		1
OPP LT.TRN & RT. TRN	7				0
OPP THRU &LEFT TRN	8				0
FR LT THRU &LT TRN	9				0
FR RT THRU &LT TRN	10				0
SAME DIR LT&LT TRN	11				0
SAME DIR TH&LT TRN	12				0
OPP DIR LT TURNS	13				0
FR LT THRU &RT TRN	14				0
SAME DIR RT&RT TRN	15				0
SAME DIR TH&RT TRN	16				0
FR RT THRU & RT TRN	17				0
OPP THRU & RT TURN	18				0

Accident Data For The Intersection of: US 231 and SR 62 (Washington St)

Date From: 01/01/14
Date To: 12/31/14

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1				0
HEAD ON	2				0
SAME DIR SIDESWIPE	3				0
OPP DIR SIDESWIPE	4				0
OFF ROAD COLLISION	5				0
RIGHT ANGLE	6		3	1	4
OPP LT.TRN & RT. TRN	7				0
OPP THRU &LEFT TRN	8				0
FR LT THRU &LT TRN	9				0
FR RT THRU &LT TRN	10				0
SAME DIR LT&LT TRN	11				0
SAME DIR TH&LT TRN	12				0
OPP DIR LT TURNS	13				0
FR LT THRU &RT TRN	14				0
SAME DIR RT&RT TRN	15				0
SAME DIR TH&RT TRN	16				0
FR RT THRU & RT TRN	17				0
OPP THRU & RT TURN	18				0

Respond to the following Questions	Use the Pull-Down Response Block if Available

Are You Manually Entering The Traffic and Pedestrian Count Data? (Y or N) N

Is The Traffic Count a 15 Min Count (Y or N)? Y

15 Minute Cnt Chosen 1
(If Applicable)

Does this intersection Lie within a built up area of an Isolated Community with a population of less than 10,000 (Y or N) ? N

Warrant 3 - Name of Major Traffic Generator

If this location is a School Crossing, What are the hours of Crossing Usage ?
(USE PULL-DOWN RESPONSE BLOCK)

Morning		To	
Noon		To	
Afternoon		To	

Leave above blank if not applicable

Indicate, with a "Y or N", if the cross-walk,crossing the DENOTED approach, is a "SCHOOL CROSS-WALK". ENTIRE WIDTH OF STREET (FT): List the closest value.

N. APP.	E. APP.	S. APP.	W. APP

IF ANALYZING FOR PED CRITERIA, YOU MUST FILL IN FOR WIDTH OF STREET ABOVE

Are adjacent signals greater than 1000' away (Y/N) Y

Do the adjacent signals provide the necessary degree of platooning and speed grouping (Y/N)? N

Can the adjacent signals, with this location, constitute a progressive signal system (Y/N)? N

Have less restrictive(than traffic signals) Traffic controls been tried? (Y/N) Y

What Restrictions have been tried?

1 Reconstructed the US 231 left-turn lanes
2 Eliminated the left-turn lanes on SR 62

Have the restrictions failed to reduce the accident frequency? (Y/N) N

It Appears that 5 or more accidents,susceptible to correction by a traffic signal ,HAVE occurred

Have there been 5 or more of the types of accidents that are susceptible to correction by traffic signal control? (Y/N) Y

Will traffic signal installation seriously disrupt progressive traffic flow? (Y/N)

What type of MAJOR ROUTE are the individual roads constituting this intersection? Use def. Number.

Main Road	2
Side Road	

Definitions of Major Routes are as defined below:

1 It is part of a street or highway system that serves as the principal network for through traffic flow.
2 It includes rural or suburban highways which are adjacent to, entering, or traversing a city
3 It has surface street freeway or expressway ramp terminals.

If this intersection is not open to traffic , does the current projected PEAK ENTERING volume exceed 800

If this is a location at a New Facility, What are the currently assigned ADT volumes ?

Main St.	
Side St.	

Leave Blank if not a new facility.

Field Measured Stop Delay for the EAST APPROACH 0 HOURS
Field Measured Stop Delay for the WEST APPROACH 0 HOURS

Rail Crossing Information (Leave Blank if not applicable)

Distance from Stop Line to Center of Tracks (Ft)

Railroad tracks cross Approach

{Shortest distance on Approach Lane(s)}

Daily Frequency of Rail Traffic Default

Percentage of Tractor Trailer Trucks Default

Percentage of High-Occupancy Buses Default

Beginning of the hour of Major Arrival of Rail Traffic Default

SUMMARY SHEET

INTERSECTION:	US 231 and SR 68/Medcalf St	DISTRICT:	Vincennes
CITY:	Dale	COUNTY:	Spencer
DATE OF COUNT:	06/21/13	BY:	CP
ANALYSIS DATE:	01/12/15	BY:	Damon Brown

TRAVEL DIRECTION OF MAJOR ROAD	N - S

WARRANT 1 - 8 HOUR VEHICULAR VOLUMES

Condition A - Minimum Vehicular Volumes

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

Condition B - Interruption of Continuous Traffic

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

Criteria C - Combination of Conditions A & B

With RTOR Adjustments: The minimal requirements are NOT met.

Without RTOR Adjustments: The minimal requirements are NOT met.

WARRANT 2 - Four Hour Volumes

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

WARRANT 3 - Peak Hour

Condition A: Peak Hour Delay

This Warrant is Apparently Non-Applicable

Condition B: 4 Hour Vehicle Volumed

This Warrant is Apparently Non-Applicable

WARRANT 4- Minimum Pedestrian Volume

THIS CRITERIA WAS NOT CONSIDERED BECAUSE

The minimal requirements are NOT met.THERE WERE NO, OR MINIMAL PEDESTRIANS

WARRANT 5 - School Crossing

THIS CRITERIA WAS NOT CONSIDERED BECAUSE

THERE WERE NO, OR MINIMAL, CHILDREN CROSSING

WARRANT 6 - Progressive Movement

The minimal requirements are NOT met.

WARRANT 7 - Accident Experience

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

WARRANT 8 - Systems Warrant

The minimal requirements are NOT met.

WARRANT 9 - Intersection Near a RailRoad Crossing

This Warrant is Apparently Non-Applicable

US 231 and SR 68/Medcalf St

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

With RTOR Adjustments:

Without RTOR Adjustments:

Condition A - Minimum Vehicular Volume

				Choose With X
WITH RIGHT TURN ADJUSTMENTS		Using Max # lanes on Major Rd and # lanes on East App	3 Hours Mtg	
		Using Max # lanes on Major Rd and # lanes on West App	0 Hours Mtg	
	XX	Using Max # lanes on Major Rd and Max# lanes on Minr Rd	3 Hours Mtg	x
		With RTOR Adjustments The minimal requirements are NOT met.		
WITHOUT RIGHT TURN ADJUSTMENTS		Using Max # lanes on Major Rd and # lanes on East App	3 Hours Mtg	0
		Using Max # lanes on Major Rd and # lanes on West App	0 Hours Mtg	0
	XX	Using Max # lanes on Major Rd and Max# lanes on Minr Rd	3 Hours Mtg	x
		Without RTOR Adjustments The minimal requirements are NOT met.		

Condition A Requirements

					Number of Compliant Hours			
					no rt adjust		less rt. turns	
	LANES	WARRANT (FULL)	VALUE 70%	VALUE USED	INDIV ROAD	BOTH ROADS	INDIV ROAD	BOTH ROADS
MAJOR ROAD	1	500	350					
TOTAL BOTH APP.	2	600	420	420	10		10	
Minr Rd/Max Lanes				105	3	3	3	3
MINOR ROAD| E.APP.	1	150	105	105	3	3	3	3
APPROACH | W.APP.	2	200	140	105	0	0	0	0

Condition B - Interuption of Continuous Traffic

				Choose With X
WITH RIGHT TURN ADJUSTMENTS		Using Max # lanes on Major Rd and # lanes on East App	2 Hours Mtg	
		Using Max # lanes on Major Rd and # lanes on West App	2 Hours Mtg	
	XX	Using Max # lanes on Major Rd and Max# lanes on Minr Rd	2 Hours Mtg	x
		With RTOR Adjustments The minimal requirements are NOT met.		
WITHOUT RIGHT TURN ADJUSTMENTS		Using Max # lanes on Major Rd and # lanes on East App	2 Hours Mtg	0
		Using Max # lanes on Major Rd and # lanes on West App	2 Hours Mtg	0
	XX	Using Max # lanes on Major Rd and Max# lanes on Minr Rd	2 Hours Mtg	x
		Without RTOR Adjustments The minimal requirements are NOT met.		

Condition B Requirements

					Number of Compliant Hours			
					no rt adjust		less rt. turns	
	LANES	WARRANT (FULL)	VALUE 70%	VALUE USED	INDIV ROAD	BOTH ROADS	INDIV ROAD	BOTH ROADS
MAJOR ROAD	1	750	525					
TOTAL BOTH APP.	2	900	630	630	2		2	
Minr Rd/Max Lanes				53	12	2	12	2
MINOR ROAD| E.APP.	1	75	53	53	12	2	12	2
APPROACH | W.APP.	2	100	70	53	9	2	9	2

Condition C Requirements (Combination of Condition A & B)

Are Condition A and Condition B fulfilled to 80 % of the volume requirements?				Hrs Satisfied w/RTOR	Hrs Satisfied-NoRTOR
Condition A Maj Rd Vol	336	Minr Rd Vol	84	7	7
Condition B Maj Rd Vol	504	Minr Rd Vol	42.4	6	6

With RTOR Adjustments: The minimal requirements are NOT met.

Without RTOR Adjustments: The minimal requirements are NOT met.

US 231 and SR 68/Medcalf St

WARRANT 2 - FOUR HOUR VEHICULAR VOLUME

With RTOR Adjustments **The minimal requirements are NOT met.**

Without RTOR Adjustments **The minimal requirements are NOT met.**

NO RTOR RED'CT'N						WITH RTOR RED'CT'N				
N & S App. MAJOR STREET VOLUME BOTH DIR	MINOR STREET EAST APPR'CH	MINOR STREET WEST APPR'CH	HOUR MEETS REQM'NTS	G'METRY USED FOR POSITIVE WARRANT		N & S App. MAJOR STREET VOLUME BOTH DIR	MINOR STREET EAST APPR'CH	MINOR STREET WEST APPR'CH	HOUR MEETS REQM'NTS	G'METRY USED FOR POSITIVE WARRANT
386	81	41	0	none	0.00	386	81	41	0	none
368	72	65	0	none	1.00	368	72	65	0	none
437	78	66	0	none	2.00	437	78	66	0	none
522	78	70	0	none	3.00	522	78	70	0	none
573	79	53	0	none	4.00	573	79	53	0	none
503	92	63	0	none	5.00	503	92	63	0	none
481	84	41	0	none	6.00	481	84	41	0	none
452	92	52	0	none	7.00	452	92	52	0	none
513	84	56	0	none	8.00	513	84	56	0	none
651	118	68	1	N-E	9.00	651	118	68	1	N-E
677	140	60	1	N-E	10.00	677	140	60	1	N-E
592	109	56	0	none	11.00	592	109	56	0	none
0	0	0	0	none	12.00	0	0	0	0	none
0	0	0	0	none	13.00	0	0	0	0	none
0	0	0	0	none	14.00	0	0	0	0	none
0	0	0	0	none	15.00	0	0	0	0	none
			2						2	

WARRANT 3 - PEAK HOUR

Condition A - Peak Hour Delay This Warrant is Apparently Non-Applicable

	East App.	West App.		Tot.Vol	E App.Vol	W App.Vol	
Actual Peak Hr - Side Street Delay	0.572	0.240	Estimated	901	142	66	Act. Count
N - S Peak Hr - Side Street Delay	0.512	0.218	Estimated	892	130	60	Act. Count
E - W Peak Hr - Side Street Delay	0.572	0.240	Estimated	901	142	66	Act. Count

1. THE TOTAL PEAK HOUR STOPPED DELAY FROM THE SIDE STREET IS ----- 0.572 HOURS
   THE REQUIRED STOPPED DELAY FROM THE SIDE STREET IS---------- 4 HOURS
   DOES THE STOPPED DELAY EQUAL OR EXCEED THE MIN REQUIREMENT? NO
2. THE HIGH VOLUME ON THE SIDE ST APP'S DURING THE PEAK HOUR IS ? 142
   THE REQUIRED VOLUME ON THE SIDE STREET DURING THE PEAK HR IS: 100
   DOES THE VOLUME ON THE SIDE STREET EXCEED THE MINIMUM REQUIREMENT? YES
3. THE TOTAL INTERSECTIONAL VOLUME DURING THE PEAK HOUR IS: 901
   THE REQUIRED INTERSECTIONAL VOLUME IS---------- 800
   DOES THE INTERSECTIONAL VOLUME EQUAL OR EXCEED THE MIN REQUIREMENT? YES

Condition B - Peak Hour Volume

This Warrant is Apparently Non-Applicable

MAJOR STREET VOLUME BOTH DIR PEAK HR	MINOR ST EAST APPR'CH VOLUME PEAK HR	MINOR ST WEST APPR'CH VOLUME PEAK HR	REQUIRED MINOR STREET HIGH VOL APPROACH	HOUR MEETS REQM'NTS
677	140	60	208	NO
GEOMETRICS USED			none	

US 231 and SR 68/Medcalf St

WARRANT 4 - PEDESTRIAN VOLUME

THIS CRITERIA WAS NOT CONSIDERED BECAUSE THERE WERE NO, OR MINIMAL PEDESTRIANS

The minimal requirements are NOT met.

HIGH VOLUME CROSSWALK ACROSS THE MAJ. STREET IS ACROSS THE **NA** Approach

THE MAJ. STREET HAS A RAISED MEDIAN OF ADEQUATE SIZE --------- NO

Y= The number of Pedestrians Crossing the Major Street

X= The Major Street Volume - Total of Both Directions

Equation Used for 4 Hour Warrant X=>780 and Y=> 75 or Y=491.334-0.86656X+0.0004214X2

Number of Hours that 4 Hr. Warrant is Satisfied **0**

Equation Used for Pedestrian Peak Hour X=>1044 and Y=>93 or Y=669.187-0.9162X+0.0003915X2

Number of Hours that Ped Peak Hour is Satisfied **0**

WARRANT 5 - SCHOOL CROSSING

THIS CRITERIA WAS NOT CONSIDERED BECAUSE THERE WERE NO, OR MINIMAL, CHILDREN CROSSING

Crosswalk Volumes Used were across the No Approach Used

IS THERE AN ESTABLISHED SCHOOL CROSSING ACROSS ANY OF THE DENOTED APPROACHES?

	N.APP.	S. APP.	E.APP.	W. APP.
*****ANSWER (Y/N)	N	N	N	N
WIDTH OF ST. (FT)	0	0	0	0

NEITHER THE N. OR S. APPROACH IS THE SCHOOL CROSSING

	TIME OF DAY			NUM OF CHILDR	REQ'D VEH VOLUME	Actual or Estmatd VEH VOLUME	PERIOD SATISF'D
PERIOD	START	*********	END				
MORNING	0.00	-----TO----	0.00	NA	NA	NA	NA
NOON	0.00	-----TO----	0.00	NA	NA	NA	NA
EVENING	0.00	-----TO----	0.00	NA	NA	NA	NA

NEITHER THE E. OR W. APPROACH IS THE SCHOOL CROSSING

	TIME OF DAY			NUM OF CHILDR	REQ'D VEH VOLUME	ACT OR ESTIMATD VEH VOLUME	PERIOD SATISF'D
PERIOD	START	*********	END				
MORNING	0.00	-----TO----	0.00	NA	NA	NA	NA
NOON	0.00	-----TO----	0.00	NA	NA	NA	NA
EVENING	0.00	-----TO----	0.00	NA	NA	NA	NA

US 231 and SR 68/Medcalf St

WARRANT 6 - COORDINATED SIGNAL SYSTEM **The minimal requirements are NOT met.**

1) ARE ADJACENT TRAFFIC SIGNALS GREATER THAN 1000 FT AWAY? (Y/N)----------	Y
2) DO ADJACENT SIGNALS PROVIDE THE NECESSARY DEGREE OF VEHICLE PLATOONING AND SPEED GROUPING ? (Y/N)----------	N
3) COULD THE PROPOSED TRAFFIC SIGNAL AND ADJACENT TRAFFIC SIGNALS CONSTITUTE A PROGRESSIVE TRAFFIC SIGNAL SYSTEM?----------	N

WARRANT 8 - ROADWAY NETWORK

With RTOR Adjustments: **The minimal requirements are NOT met.**
Without RTOR Adjustments: **The minimal requirements are NOT met.**

1) Are the intersecting Roads or Streets considered MAJOR ROUTES ?

MAJOR STREET CHARACTERISTIC	2
MINOR STREET CHARACTERISTIC	1

IS THIS THE INTERSECTION OF 2 OR MORE MAJOR ROUTES? YES

2) NUM. OF HOURS EXCEEDING 1000 VPH	0
PEAK HOUR TOTAL VOLUME----------	877
DOES THIS YEARS PROJECT'D PEAK HOUR TOTAL VOLUME EXCEED 1000 VEH.	0

3) 5 Year Projection: With RTOR	One or more of the following are satisfied for 8 hrs.	Y
Criteria 1 Condition A--- Num of Hours Satisfied	3	
Criteria 1 Condition B--- Num of Hours Satisfied	2	
Criteria 1 Condition C-A- Num of Hours Satisfied	8	
Criteria 1 Condition C-B- Num of Hours Satisfied	8	
Criteria 2---------- Num of Hours Satisfied	2	
Criteria 3---------- Peak Hour Criteria Satisfied	#DIV/0!	

3) 5 Year Projection: Without RTOR	One or more of the following are satisfied for 8 hrs.	Y
Criteria 1 Condition A--- Num of Hours Satisfied	3	
Criteria 1 Condition B--- Num of Hours Satisfied	2	
Criteria 1 Condition C-A- Num of Hours Satisfied	8	
Criteria 1 Condition C-B- Num of Hours Satisfied	8	
Criteria 2---------- Num of Hours Satisfied	2	
Criteria 3---------- Peak Hour Criteria Satisfied	#DIV/0!	

WARRANT 9 - INTERSECTION NEAR A GRADE CROSSING

This Warrant is Apparently Non-Applicable

1) Clear Storage distance from the center of the tracks to the STOP LINE or YIELD LINE				-15
2) Hour of Train Usage (or Peak Hour)----------				0
3) Traffic Volumes Used----------	Main Line	NA	RR Side Approach	NA
4) Adjustment Factor Used ----------		0	Side App Adjusted Volume	NA
5) Required Side Road Volume----------				NA
6) Does the (adjusted) side road volume meet the requirements?----------				NA

US 231 and SR 68/Medcalf St

WARRANT 7 - CRASH EXPERIENCE

With RTOR Adjustments The minimal requirements are NOT met.

Without RTOR Adjustments The minimal requirements are NOT met.

1) HAVE LESS RESTRICTIVE MEASURES BEEN IMPLEMENTED AND TESTED ?--(Y/N) Y

HAVE THE MEASURES PROVEN UNSATISFACTORY ?----------(Y/N) Y

LIST MEASURES:

-

-

2) Accident Data For The Intersection of: US 231 and SR 68/Medcalf St

Date From: 01/01/14

Date To: 12/31/14

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1	1	0	0	1
HEAD ON	2	0	0	0	0
SAME DIR SIDESWIPE	3	0	2	0	2
OPP DIR SIDESWIPE	4	0	0	0	0
OFF ROAD COLLISION	5	0	1	0	1
RIGHT ANGLE	6	8	7	1	16
OPP LT.TRN & RT. TRN	7	0	0	0	0
OPP THRU &LEFT TRN	8	0	0	0	0
FR LTSd THRU &LT TRN	9	0	0	0	0
FR RTSd THRU &LT TRN	10	1	2	0	3
SAME DIR LT&LT TRN	11	0	0	0	0
SAME DIR TH&LT TRN	12	0	0	0	0
OPP DIR LT TURNS	13	0	0	0	0
FR LTSd THRU &RT TRN	14	1	0	0	1
SAME DIR RT&RT TRN	15	0	0	0	0
SAME DIR TH&RT TRN	16	0	0	0	0
FR RT THRU & RT TRN	17	0	0	0	0
OPP THRU & RT TURN	18	0	0	0	0

Comment SR 68 left-turn lane removed
SR 62 left-turn lane removed

WITHIN A 12 MONTH PERIOD, WERE THERE 5 OR MORE REPORTED ACCIDENTS OF THE TYPE NORMALLY CONSIDERED CORRECTIBLE BY THE INSTALLATION OF A TRAFFIC SIGNAL. (ie #6)----------(Y/N) Y

3) WILL A SIGNAL AT THIS LOCATION SERIOUSLY DISRUPT TRAFFIC FLOW?-----(Y/N) N

4) THERE EXISTS A VEHICULAR AND/OR PEDESTRIAN VOLUME GREATER THAN 80% OF FULL CONDITIONS A OR B OF CRITERIA 1 OR CONDITIONS LISTED IN CRITERIA 4

	Part 4 Satisfied
With RTOR	N
Without RTOR	N

	RTOR Reduction WARRANT REQR'MT		80 % Minimum Criteria		MAJOR & MINOR COMPL'NT
	MAJOR	MINR/PD	MAJOR	MINR/PD	
Cond A	420	105	336	84	7
Cond B	630	53	504	42	6
Criteria 4-4Hr	Variable	100	Variable	80	0
Criteria 4-1 Hr	Variable	190	Variable	162	0

	NO RTOR Reduction WARRANT REQR'MT		80 % WARRANT REQR'MT		MAJOR & MINOR COMPL'NT
	MAJOR	MINR/PD	MAJOR	MINR/PD	
Cond A	420	105	336	84	7
Cond B	630	53	504	42	6
Criteria 4-4Hr	Variable	100	Variable	80	0
Criteria 4-1 Hr	Variable	190	Variable	162	0

INTERSECTION PARAMETERS

INTERSECTION:	US 231 and SR 68/Medcalf St	DISTRICT:	Vincennes
CITY:	Dale	COUNTY:	Spencer
DATE OF COUNT:	06/21/13	BY:	CP
ANALYSIS DATE:	01/12/15	BY:	Damon Brown

DO THE MOTORISTS, AT THIS LOCATION, TEND TO ACCELERATE AT A SLOWER RATE? N XXXXX

(OPTION) If permissable, is the 70% reduction to be used in the analysis? Y

****** Is This Traffic Count A Weekend Count?** N

TRAVEL DIRECTION OF MAJOR ROAD **N - S**

INTERSECTION CONDITIONS: CYCLE LENGTH (Estimated) 70 SECONDS

NORTH - SOUTH ROAD ROAD NAME: US 231

Estimated Percent Annual Growth Rate	From N 1	From S	1
Type of Road Surface:	Asphalt	Left Turn Phase (s)	None
Med'n Type(Raised,Not Raised)	Not Raised	Median Width (Ft):	50
North App. # of Approach Lanes	4	N. App.-Approach Width Only (Ft):	48
N. App # of Rt Turn Lanes	1	N. App. Rt Turn Ln. Length (Ft):	1080
N. App # of Lt Turn Lanes	1	N. App. Lt Turn Ln. Length (Ft):	1090
South App. # of Approach Lanes	4	S. App.-Approach Width Only(Ft):	48
S. App # of Rt Turn Lanes	1	S. App. Rt Turn Ln. Length (Ft):	1200
S. App # of Lt Turn Lanes	1	S. App. Lt Turn Ln. Length (Ft):	1100
N. App. Pstd Spd Lim/(85%) (MPH):	60	S. App. Pstd Spd Limit/(85%) (MPH):	60
School Crossing (Y or N):	N	Pedestrian Crossing (Y or N):	N
Consider N. App. Right Turn Lane	Calc	Consider S. App. Right Turn Lane	Calc
Consider N. App. Left Turn Lane	Calc	Consider S. App. Left Turn Lane	Calc
Sight Distance (Ft) from the N. App.:		Ft. Visible to the W. and	Ft Visible to the E.
Sight Distance (Ft) from the S. App.:		Ft. Visible to the E. and	Ft. Visible to the W.
Other Conditions:			

EAST - WEST ROAD ROAD NAME: SR 68/SR 62/Medcalf St

Estimated Percent Annual Growth Rate	From E 1	From W.	1
Type of Road Surface:	Asphalt	Left Turn Phase(s)	None
Med'n Type(Raised,Not Raised)	None	Median Width (Ft):	0
East App. # of Approach Lanes:	2	E. App.-Approach Width Only (Ft)	36
E. App # of Rt Turn Lanes:	1	E. App. Rt Turn Ln. Length (Ft)	45
E. App # of Lt Turn Lanes:	0	E. App. Lt Turn Ln. Length (Ft)	
West App. # of Approach Lane:	2	W. App.-Approach Width Only (Ft)	36
W. App # of Rt Turn Lanes:	1	W. App. Rt Turn Ln. Length (Ft)	43
W. App # of Lt Turn Lanes:	0	W. App. Lt Turn Ln. Length (Ft)	
E. App. Pstd Spd Lim/(85%) (MPH):	45	W. App. Pstd Spd Lim?(85%) (MPH):	55
School Crossing (Y or N):	N	Pedestrian Crossing (Y or N):	N
Consider E. App. Right Turn Lane	Calc	Consider W. App. Right Turn Lane	Calc
Consider E. App. Left Turn Lane	Calc	Consider W. App. Left Turn Lane	Calc
Sight Distance (Ft) from the E. App.:		Ft. Visible to the N. and	Ft Visible to the S.
Sight Distance (Ft) from the W. App.:		Ft. Visible to the S. and	Ft. Visible to the N.
Other Conditions:			

RTOR Permitted	North App.	Y	**Actual Right Turn**	North App.	Y
From Approach	South App	Y	**Lane(s)**	South App	Y
Mark (Y) or (N)	East App.	Y	**Mark (Y) or (N)**	East App.	Y
	West App.	Y		West App.	Y

Accident Data For The Intersection of: US 231 and SR 68/Medcalf St

Date From: 01/01/11
Date To: 12/31/11

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1				0
HEAD ON	2				0
SAME DIR SIDESWIPE	3		1		1
OPP DIR SIDESWIPE	4				0
OFF ROAD COLLISION	5		1		1
RIGHT ANGLE	6	2	1	1	4
OPP LT.TRN & RT. TRN	7				0
OPP THRU &LEFT TRN	8				0
FR LT THRU &LT TRN	9				0
FR RT THRU &LT TRN	10		1		1
SAME DIR LT&LT TRN	11				0
SAME DIR TH&LT TRN	12				0
OPP DIR LT TURNS	13				0
FR LT THRU &RT TRN	14				0
SAME DIR RT&RT TRN	15				0
SAME DIR TH&RT TRN	16				0
FR RT THRU & RT TRN	17				0
OPP THRU & RT TURN	18				0

Accident Data For The Intersection of: US 231 and SR 68/Medcalf St

Date From: 01/01/12
Date To: 12/31/12

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1	1			1
HEAD ON	2				0
SAME DIR SIDESWIPE	3		1		1
OPP DIR SIDESWIPE	4				0
OFF ROAD COLLISION	5				0
RIGHT ANGLE	6	1	2		3
OPP LT.TRN & RT. TRN	7				0
OPP THRU &LEFT TRN	8				0
FR LT THRU &LT TRN	9				0
FR RT THRU &LT TRN	10	1			1
SAME DIR LT&LT TRN	11				0
SAME DIR TH&LT TRN	12				0
OPP DIR LT TURNS	13				0
FR LT THRU &RT TRN	14				0
SAME DIR RT&RT TRN	15				0
SAME DIR TH&RT TRN	16				0
FR RT THRU & RT TRN	17				0
OPP THRU & RT TURN	18				0

Accident Data For The Intersection of: US 231 and SR 68/Medcalf St

Date From: 01/01/13
Date To: 12/31/13

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1				0
HEAD ON	2				0
SAME DIR SIDESWIPE	3				0
OPP DIR SIDESWIPE	4				0
OFF ROAD COLLISION	5				0
RIGHT ANGLE	6	3	1		4
OPP LT.TRN & RT. TRN	7				0
OPP THRU &LEFT TRN	8				0
FR LT THRU &LT TRN	9				0
FR RT THRU &LT TRN	10		1		1
SAME DIR LT&LT TRN	11				0
SAME DIR TH&LT TRN	12				0
OPP DIR LT TURNS	13				0
FR LT THRU &RT TRN	14				0
SAME DIR RT&RT TRN	15				0
SAME DIR TH&RT TRN	16				0
FR RT THRU & RT TRN	17				0
OPP THRU & RT TURN	18				0

Accident Data For The Intersection of: US 231 and SR 68/Medcalf St

Date From: 01/01/14
Date To: 12/31/14

Accident Type	NUMBER	PD	PI	FATALITY	TOTAL
REAR END	1				0
HEAD ON	2				0
SAME DIR SIDESWIPE	3				0
OPP DIR SIDESWIPE	4				0
OFF ROAD COLLISION	5				0
RIGHT ANGLE	6	2	3		5
OPP LT.TRN & RT. TRN	7				0
OPP THRU &LEFT TRN	8				0
FR LT THRU &LT TRN	9				0
FR RT THRU &LT TRN	10				0
SAME DIR LT&LT TRN	11				0
SAME DIR TH&LT TRN	12				0
OPP DIR LT TURNS	13				0
FR LT THRU &RT TRN	14	1			1
SAME DIR RT&RT TRN	15				0
SAME DIR TH&RT TRN	16				0
FR RT THRU & RT TRN	17				0
OPP THRU & RT TURN	18				0

Respond to the following Questions	Use the Pull-Down Response Block if Available

Are You Manually Entering The Traffic and Pedestrian Count Data? (Y or N) Y

Is The Traffic Count a 15 Min Count (Y or N)? Y

15 Minute Cnt Chosen 1
(If Applicable)

Does this intersection Lie within a built up area of an Isolated Community with a population of less than 10,000 (Y or N) ? N

Warrant 3 - Name of Major Traffic Generator

If this location is a School Crossing, What are the hours of Crossing Usage ?
(USE PULL-DOWN RESPONSE BLOCK)

Morning		To	
Noon		To	
Afternoon		To	

Leave above blank if not applicable

Indicate, with a "Y or N", if the cross-walk,crossing the DENOTED approach, is a "SCHOOL CROSS-WALK".
ENTIRE WIDTH OF STREET (FT): List the closest value.

N. APP.	E. APP.	S. APP.	W. APP

IF ANALYZING FOR PED CRITERIA, YOU MUST FILL IN FOR WIDTH OF STREET ABOVE

Are adjacent signals greater than 1000' away (Y/N) Y

Do the adjacent signals provide the necessary degree of platooning and speed grouping (Y/N)? N

Can the adjacent signals, with this location, constitute a progressive signal system (Y/N)? N

Have less restrictive(than traffic signals) Traffic controls been tried? (Y/N) Y

What Restrictions have been tried?

1 SR 68 left-turn lane removed
2 SR 62 left-turn lane removed

Have the restrictions failed to reduce the accident frequency? (Y/N) Y

It Appears that 5 or more accidents,susceptible to correction by a traffic signal ,HAVE occurred

Have there been 5 or more of the types of accidents that are susceptible to correction by traffic signal control? (Y/N) Y

Will traffic signal installation seriously disrupt progressive traffic flow? (Y/N) N

What type of MAJOR ROUTE are the individual roads constituting this intersection? Use def. Number.

Main Road	2
Side Road	1

Definitions of Major Routes are as defined below:

1 It is part of a street or highway system that serves as the principal network for through traffic flow.
2 It includes rural or suburban highways which are adjacent to, entering, or traversing a city
3 It has surface street freeway or expressway ramp terminals.

If this intersection is not open to traffic , does the current projected PEAK ENTERING volume exceed 800

If this is a location at a New Facility,
What are the currently assigned ADT volumes ?

Main St.		Leave Blank if not a new facility.
Side St.		

Field Measured Stop Delay for the	EAST APPROACH	0	HOURS
Field Measured Stop Delay for the	WEST APPROACH	0	HOURS

Rail Crossing Information (Leave Blank if not applicable)

Distance from Stop Line to Center of Tracks (Ft)

Railroad tracks cross Approach

{Shortest distance on Approach Lane(s)}

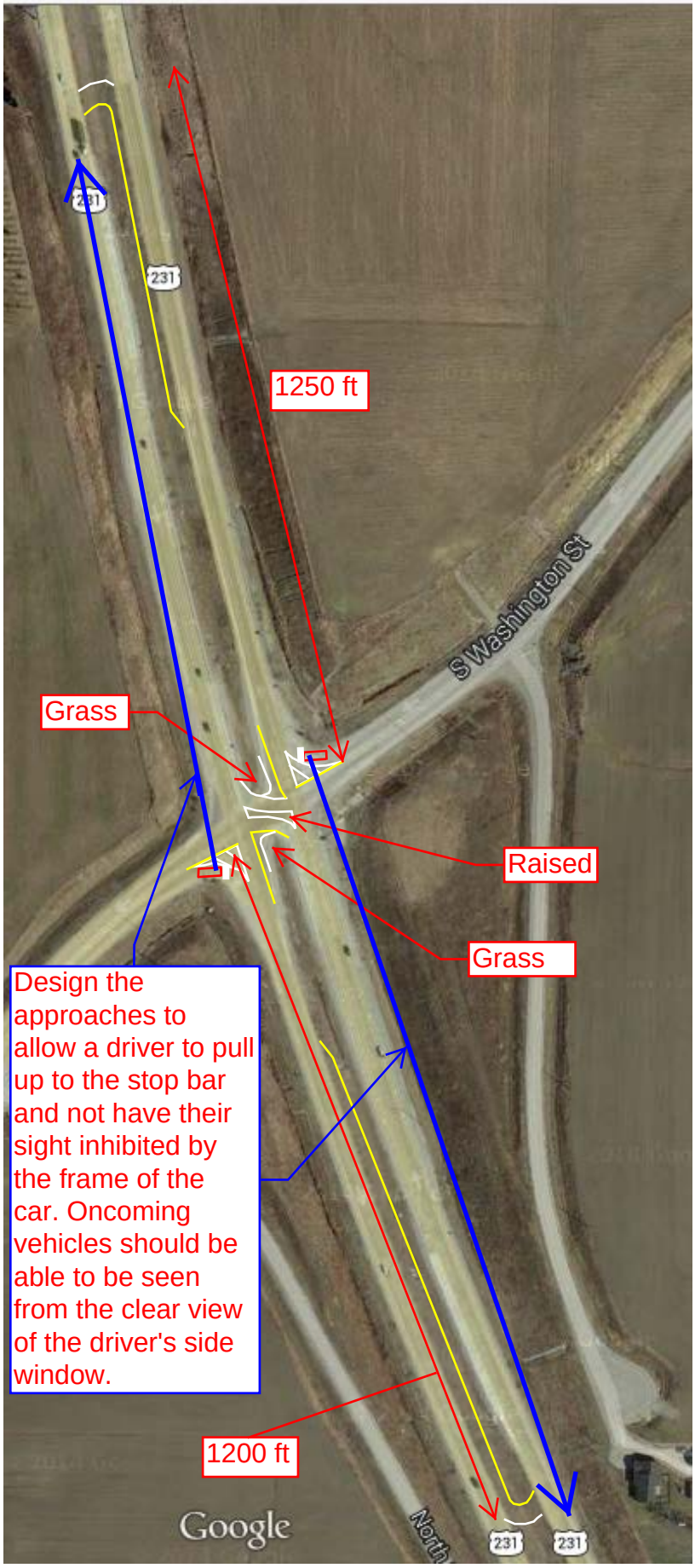
Daily Frequency of Rail Traffic Default

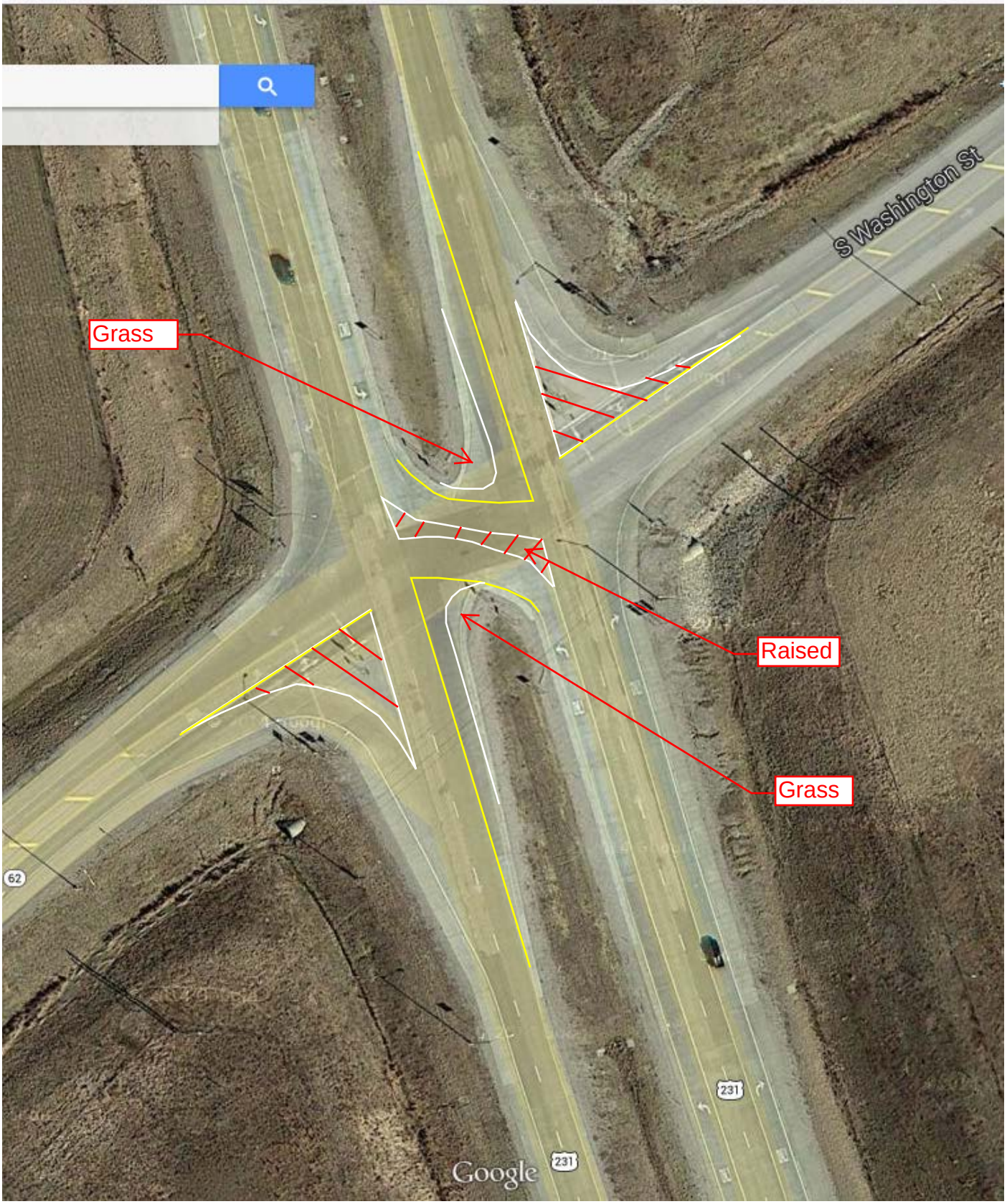
Percentage of Tractor Trailer Trucks Default

Percentage of High-Occupancy Buses Default

Beginning of the hour of Major Arrival of Rail Traffic Default

J-turn Design at US 231 and SR 62 near Dale

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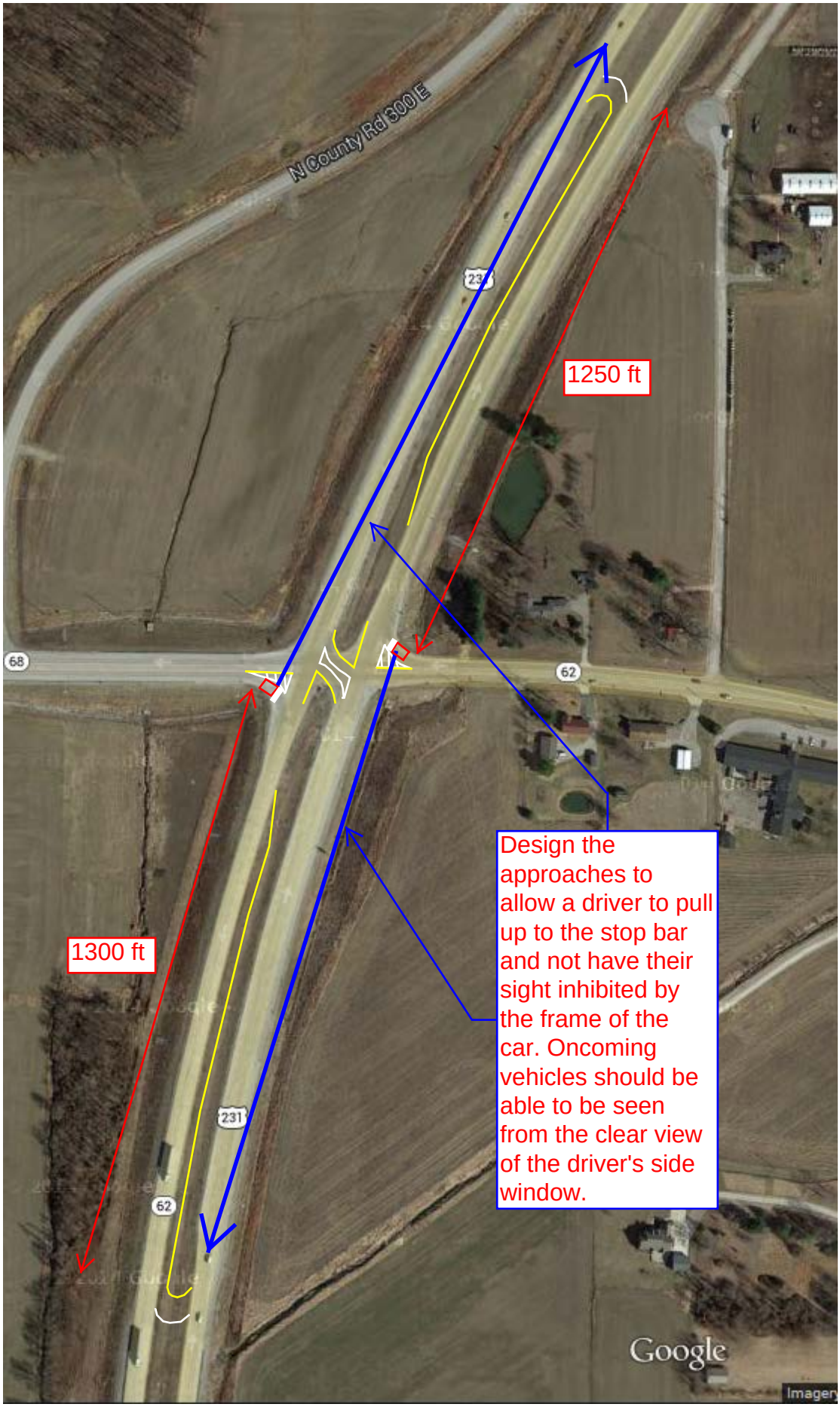
North County Rd 300 E

WB-65 Truck Turning Template at U-turn Location

J-turn Design at US 231 and SR 62/68 near Dale



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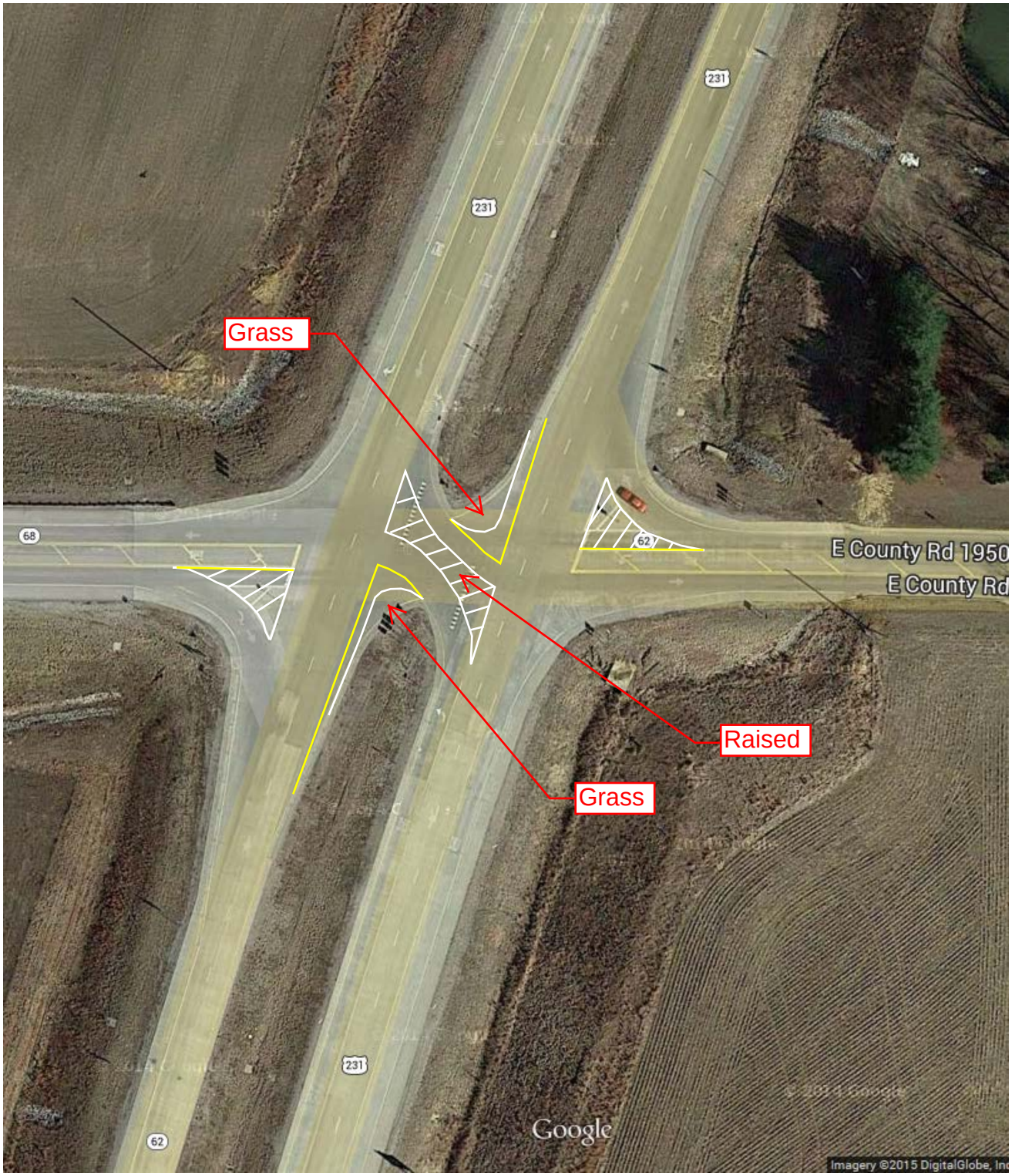
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Transportation Cost Estimator (TRACER)

Program Detail Report

Program Name:	US 231 and SR 62
Location:	EVANSVILLE, INDIANA
Description:	J-turn
Comments:	
Estimate Date:	01/29/2015
Estimate By:	dabrown
Agency:	INDOT
Report Date:	1/29/2015 11:06AM
Construction Start Date:	04/01/2015
Construction Midpoint:	10/01/2015
Construction End Date:	04/01/2016
Escalation Rate:	3.14% Based on Program Construction Midpoint
Database Version:	RSMeans 2014 Cost Data
TRACER Version:	3.4.0

Program Detail Report

1/29/2015
11:06AM

Program Name: US 231 and SR 62

Facility: J-turn

Project: J-turn **Type:** Primary

Model: Roadway - Construct - 1

Assembly	Description	Qty	UOM	Unit Cost	Total
321123230200	Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4 stone base, to 9 deep	9,220.44	S.Y.	$9.58	$88,332
32131323TC09	Plain cement concrete pavement 10	9,220.44	S.Y.	$45.64	$420,791
32131323TC14	For continuous welded steel reinforcement over 10' wide, add	9,220.44	S.Y.	$4.76	$43,922
321723130710	Painted pavement markings, thermoplastic, white or yellow, 4 wide, less than 6000 L.F.	7,544.00	L.F.	$0.50	$3,772
33411360TC13	Sewage/drainage collection, concrete pipe-small 24 RCP	120.02	L.F.	$35.79	$4,295

Model:	Roadway - Construct - 1	**$561,113**
Project:	J-turn	**$561,113**
Facility:	J-turn	**$561,113**

A-71

* Indicates User Modified Value

Program Detail Report

1/29/2015
11:06AM

Program Name: US 231 and SR 62

	Program Total (Direct Cost):		**$561,113**
Direct Cost Lump Sums	Concrete Center Curb, Type D		$35,000
	Sodding		$400
	Common Excavation		$5,000
	Program Direct Cost:		**$601,513**
	Markups	14.98 %	$90,135
	Program Marked Up Cost:		**691,648**
	Contingency	5.00 %	$34,582
	SIOH	6.50 %	$47,205
	Program Cost:		**$773,435**
	Total Program Cost:		**$773,435**

Construction Start Date: 04/01/2015
Construction Midpoint: 10/01/2015
Construction End Date: 04/01/2016

Escalation Rate: 3.14% Based on Program Construction Midpoint
Database Version: RSMeans 2014 Cost Data
TRACER Version: 3.4.0

A-72

* Indicates User Modified Value

Transportation Cost Estimator (TRACER)

Program Detail Report

Program Name:	US 231 and SR 62/68
Location:	EVANSVILLE, INDIANA
Description:	J-turn
Comments:	
Estimate Date:	01/29/2015
Estimate By:	dabrown
Agency:	INDOT
Report Date:	1/29/2015 11:50AM
Construction Start Date:	04/01/2015
Construction Midpoint:	10/01/2015
Construction End Date:	04/01/2016
Escalation Rate:	3.14% Based on Program Construction Midpoint
Database Version:	RSMeans 2014 Cost Data
TRACER Version:	3.4.0

Program Detail Report

1/29/2015
11:50AM

Program Name: US 231 and SR 62/68

Facility: J-turn

Project: J-turn **Type:** Primary

Model: Roadway - Construct - 1

Assembly	Description	Qty	UOM	Unit Cost	Total
321123230200	Base course drainage layers, aggregate base course for roadways and large paved areas, stone base, compacted, 3/4 stone base, to 9 deep	9,093.34	S.Y.	$9.58	$87,114
32131323TC09	Plain cement concrete pavement 10	9,093.34	S.Y.	$45.64	$414,991
32131323TC14	For continuous welded steel reinforcement over 10' wide, add	9,093.34	S.Y.	$4.76	$43,317
321723130710	Painted pavement markings, thermoplastic, white or yellow, 4 wide, less than 6000 L.F.	7,440.00	L.F.	$0.50	$3,720
33411360TC13	Sewage/drainage collection, concrete pipe-small 24 RCP	118.36	L.F.	$35.79	$4,236

Model:	Roadway - Construct - 1	**$553,378**
Project:	J-turn	**$553,378**
Facility:	J-turn	**$553,378**

A-74

* Indicates User Modified Value

Program Detail Report

1/29/2015
11:50AM

Program Name: US 231 and SR 62/68

	Program Total (Direct Cost):		**$553,378**
Direct Cost Lump Sums	Concrete Center Curb, Type D		$35,000
	Sodding		$400
	Common Excavation		$5,000
	Program Direct Cost:		**$593,778**
	Markups	14.98 %	$88,976
	Program Marked Up Cost:		**682,754**
	Contingency	5.00 %	$34,138
	SIOH	6.50 %	$46,598
	Program Cost:		**$763,490**
	Total Program Cost:		**$763,490**

Construction Start Date: 04/01/2015
Construction Midpoint: 10/01/2015
Construction End Date: 04/01/2016

Escalation Rate: 3.14% Based on Program Construction Midpoint
Database Version: RSMeans 2014 Cost Data
TRACER Version: 3.4.0

A-75

* Indicates User Modified Value

Preliminary Cost Estimate for J-turns

US 231 and SR 62 (S Jct)

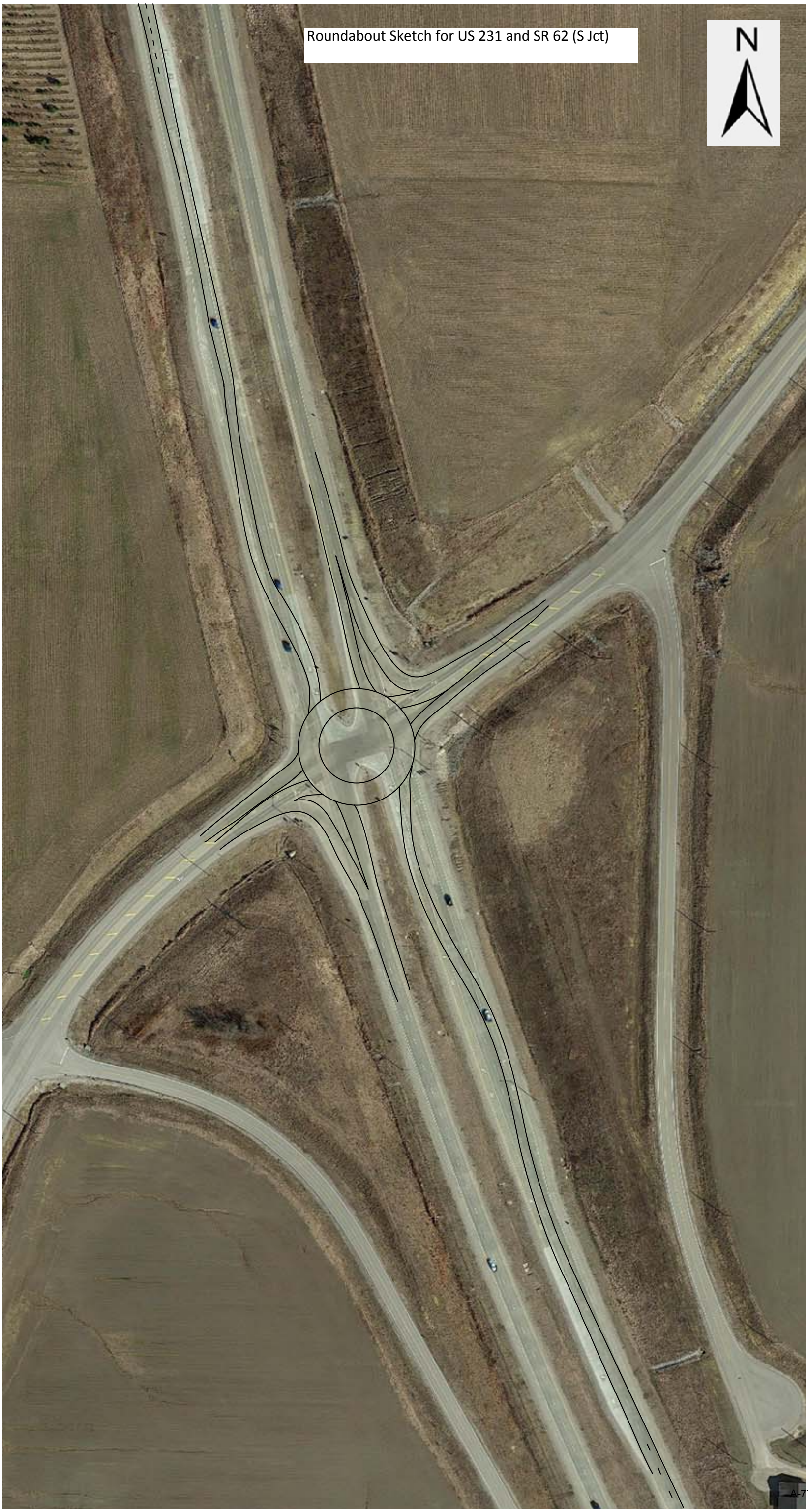
Item No.	Description	Amount
1	Construction of J-turn	$773,435
2	R/W	$0
3	PE (15% of Construction $)	$116,015
4	MOT (5% of Construction $)	$38,672
5	Railroad	$0
6	Environmental	$0
7	Utilities	$0
	TOTAL	$928,122
	USE	$930,000

US 231 and SR 62/68 (N Jct)

Item No.	Description	Amount
1	Construction of J-turn	$763,490
2	R/W	$0
3	PE (15% of Construction $)	$114,524
4	MOT (5% of Construction $)	$38,175
5	Railroad	$0
6	Environmental	$0
7	Utilities	$0
	TOTAL	$916,189
	USE	$920,000

Both junctions of US 231 and SR 62

Item No.	Description	Amount
1	Both J-turn Projects Constructed Simultaneously	$1,850,000


Roundabout Sketch for US 231 and SR 62 (S Jct)
N

Roundabout Sketch for US 231 and SR 62/68 (N Jct)
N