

# Bridge Design Speed Study

Bridge # 000085 over Meadow Creek on SR 2158 (Swepsonville Rd)  
Alamance County  
WBS Element # 17BP.7.R.34



Document Prepared By:

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April 18, 2012

**Principal Investigator**

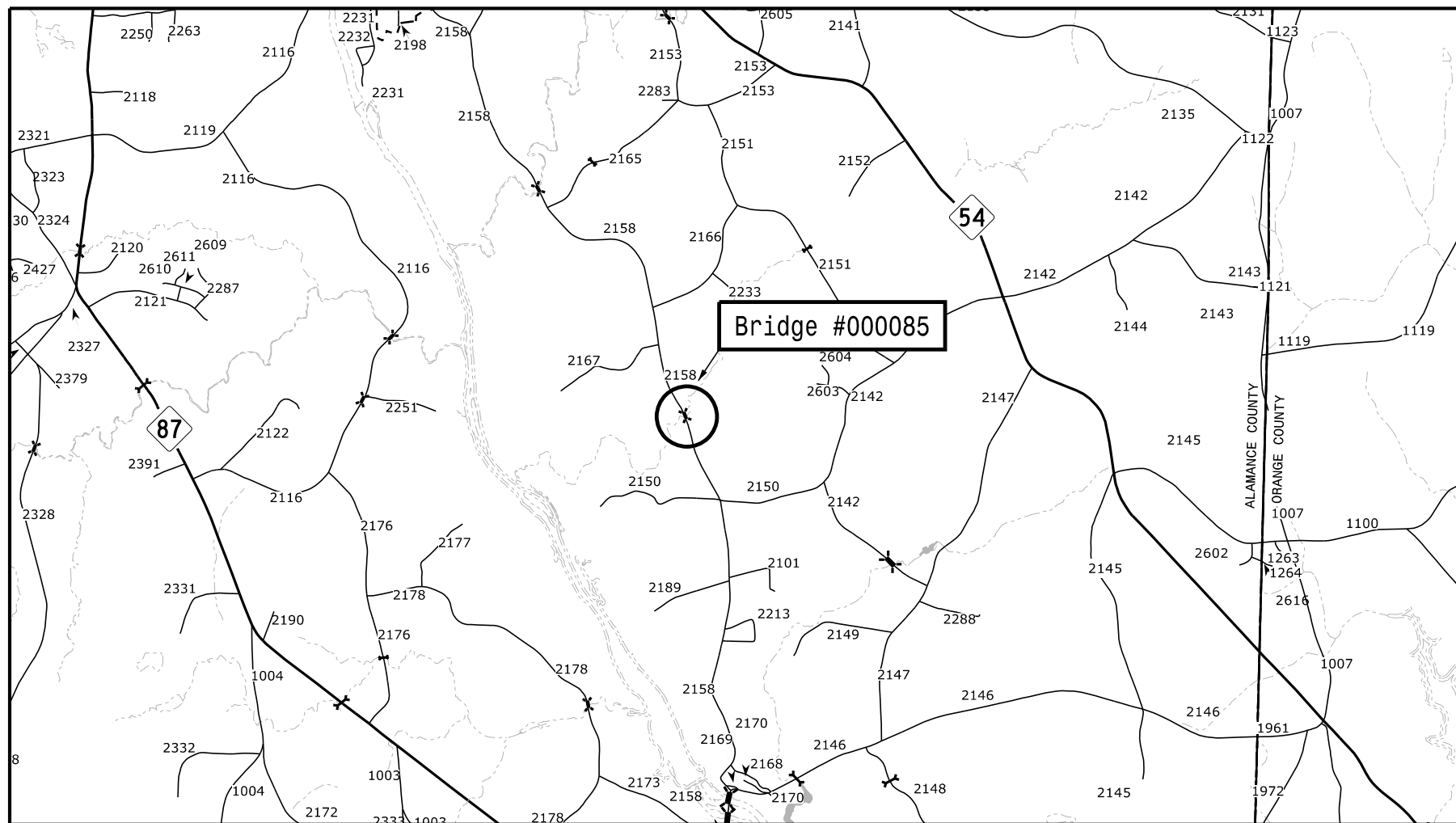
  
\_\_\_\_\_  
Andrew D. Klinksiek, EI

**Project Manager**

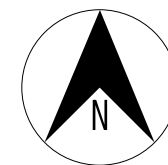
  
\_\_\_\_\_  
Bradley A. Reynolds, PE  
Project Manager



Bridge locations plotted based on coordinates provided by Bridge Management



| Division | County   | Structure Number | Structure Description                   | Latitude    | Longitude    |
|----------|----------|------------------|-----------------------------------------|-------------|--------------|
| 7        | Alamance | 000085           | Bridge #85 over Meadow Creek on SR 2158 | 35.98022061 | -79.32673109 |



1" = 5000'  
SCALE

Bridge and Approach Investigation Checklist

|             |                                         |
|-------------|-----------------------------------------|
| Project     | 17BP.7.R.34                             |
| Description | Bridge #85 over Meadow Creek on SR 2158 |
| Route       | SR 2158 (Swepsonville Road)             |
| Division    | 7                                       |
| County      | Alamance                                |

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|                                                                             |                                                                                                                                                                                                                                                                           |                                            |                                    |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------|
| Existing Speed Limit                                                        | 50                                                                                                                                                                                                                                                                        | <input checked="" type="checkbox"/> Posted | <input type="checkbox"/> Statutory |
| Reasonable & Comfortable Passenger Car Speed                                | 50-55 mph SB, 45 NB                                                                                                                                                                                                                                                       |                                            |                                    |
| Speed Data                                                                  | Only 10 speed data points collected due to sparseness of traffic.<br>53 mph, 52 mph, 44 mph, 50 mph, 50 mph, 55 mph, 51 mph, 43 mph<br>53 mph, 57 mph                                                                                                                     |                                            |                                    |
| Ball Bank Speed Study                                                       | Slight curve on north side of bridge ball banks at 4 degrees at 45 mph,<br>7 degrees at 50mph and 9 degrees at 55 mph.                                                                                                                                                    |                                            |                                    |
| Warning Signs at Bridge                                                     | W23-10 object markers, one located at each corner of the bridge.<br>Regulatory 26 ton/39 ton weight limit sign on each approach.                                                                                                                                          |                                            |                                    |
| Roadside Development                                                        | Rural/Residential                                                                                                                                                                                                                                                         |                                            |                                    |
| ADT History                                                                 | 2200 vpd from 2010 NCDOT Traffic Survey Map<br>1900 vpd from 2002 NCDOT Traffic Survey Map                                                                                                                                                                                |                                            |                                    |
| Pedestrian/Bicycle Traffic                                                  | No bike or ped traffic observed during investigation. Little bike or ped traffic is expected on SR 2158.                                                                                                                                                                  |                                            |                                    |
| Bridge and Approach Digital Photos                                          | See attached photos.                                                                                                                                                                                                                                                      |                                            |                                    |
| Approach Lane Width                                                         | 20' over all pavement width with 10' lanes                                                                                                                                                                                                                                |                                            |                                    |
| Approach Shoulder Width: Shoulder Type                                      | Varies from 5' to 11'±<br>Grass                                                                                                                                                                                                                                           |                                            |                                    |
| Lane Width (existing bridge)                                                | 24' overall pavement width with 10' lanes                                                                                                                                                                                                                                 |                                            |                                    |
| Shoulder width (existing bridge)                                            | 2' /2'                                                                                                                                                                                                                                                                    |                                            |                                    |
| Strategic Corridor / Thoroughfare Designation and Recommended Cross Section | SR 2158 is classified as a major collector, therefore it is recommended that the minimum cross section follow the NCDOT "R-R-R Guide" with a minimum of 11 foot lane widths and 6 foot shoulder widths (9 foot graded shoulder width where guardrail is to be installed). |                                            |                                    |
| Crash History and Safety Considerations                                     | Ten crashes have been reported in the vicinity of the bridge from 1/1/2002 to 12/31/2011 (10 years). One third of the crashes involved the bridge structure itself or the enbankment of the bridge. Only Type C or PDO crashes reported.                                  |                                            |                                    |
| Comments                                                                    | If the bridge lane widths are widened the approach speeds may be greater than the posted 50 mph speed limit.                                                                                                                                                              |                                            |                                    |

Reasonable Bridge Speed 55mph



**County:** Alamance      **Description:** Bridge #85 over Meadow Creek      **Route:** SR 2158  
SR 2158 (Swepsonville-Saxapahaw Rd) NB ±50' from Bridge #85      SR 2158 (Swepsonville-Saxapahaw Rd) NB ±100' from Bridge #85



SR 2158 (Swepsonville-Saxapahaw Rd) NB ±150' from Bridge #85



SR 2158 (Swepsonville-Saxapahaw Rd) NB ±200' from Bridge #85





**County:** Alamance

**Description:** Bridge #85 over MeadowCreek

**Route:** SR 2158

SR 2158 (Swepsonville-Saxapahaw Rd) NB ±250' from Bridge #85



SR 2158 (Swepsonville-Saxapahaw Rd) SB ±50' from Bridge #85



SR 2158 (Swepsonville-Saxapahaw Rd) SB ±100' from Bridge #85



SR 2158 (Swepsonville-Saxapahaw Rd) SB ±150' from Bridge #85





**County:** Alamance

**Description:** Bridge #85 over MeadowCreek

**Route:** SR 2158

SR 2158 (Swepsonville-Saxapahaw Rd) SB ±200' from Bridge #85



SR 2158 (Swepsonville-Saxapahaw Rd) SB ±250' from Bridge #85



# Bridge Approach Speed Crash Analysis Request

Order # 41000018171

500 feet on Both Sides of Bridge Number 85 on Secondary Route 2158 (Swepsonville Road)  
over Meadow Creek in Alamance County

Document Prepared By:

Safety Planning Group  
Traffic Safety Systems Management Unit  
Transportation Mobility and Safety Division  
North Carolina Department of Transportation

**Note:** The crash statistics have been generated and are available through North Carolina's Crash Database. This database provides an inventory of **reported** crashes on record that have occurred at this location. Please note that many traffic crashes go unreported for a variety of reasons, and this report simply provides a listing of all crashes on record that occurred within 0 feet of the section described above.

**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Strip Analysis Report**

**Study Criteria Summary**

**County:** ALAMANCE      **City:** All and Rural  
**Date:** 01/01/2002 to 12/31/2011      **Study:** 41000018171  
**Location:** 500 feet on Both Sides of Bridge Number 85 on Secondary Route 2158 (Swepsonville Road) over Meadow Creek

**Report Details**

| Acc No | Crash ID  | Milepost    | Date                | Accident Type          | Total Damage | Injuries           |   |   |   | Condition |   |   | Road      |    | Trfc Ctl |    |
|--------|-----------|-------------|---------------------|------------------------|--------------|--------------------|---|---|---|-----------|---|---|-----------|----|----------|----|
|        |           |             |                     |                        |              | F                  | A | B | C | R         | L | W | Ch        | Ci | Dv       | Op |
| 1      | 103181585 | 2.395       | 06/19/2011<br>13:05 | FIXED OBJECT           | \$ 4250      | 0                  | 0 | 0 | 0 | 1         | 1 | 1 | 3         | 0  | 0        |    |
| Unit   | 1 : 1     | Alchl/Drgs: | 0                   | Speed: 65 MPH Dir: N   |              | Veh Mnvr/Ped Actn: |   |   |   | 4         |   |   | Obj Strk: |    | 33       |    |
| 2      | 101430297 | 2.400       | 03/11/2005<br>15:45 | REAR END, SLOW OR STOP | \$ 1500      | 0                  | 0 | 0 | 0 | 2         | 1 | 3 | 3         | 0  | 1        |    |
| Unit   | 1 : 1     | Alchl/Drgs: | 0                   | Speed: 0 MPH Dir: N    |              | Veh Mnvr/Ped Actn: |   |   |   | 1         |   |   | Obj Strk: |    |          |    |
| Unit   | 2 : 1     | Alchl/Drgs: | 0                   | Speed: 40 MPH Dir: N   |              | Veh Mnvr/Ped Actn: |   |   |   | 11        |   |   | Obj Strk: |    |          |    |
| 3      | 100556094 | 2.410       | 02/10/2002<br>04:53 | FIXED OBJECT           | \$ 3500      | 0                  | 0 | 0 | 0 | 1         | 5 | 1 | 3         | 0  |          |    |
| Unit   | 1 : 1     | Alchl/Drgs: | 7                   | Speed: 50 MPH Dir: N   |              | Veh Mnvr/Ped Actn: |   |   |   | 2         |   |   | Obj Strk: |    | 61       |    |
| 4      | 102447431 | 2.434       | 10/31/2008<br>13:58 | FIXED OBJECT           | \$ 3000      | 0                  | 0 | 0 | 0 | 1         | 1 | 1 | 1         | 0  | 13       | 1  |
| Unit   | 1 : 1     | Alchl/Drgs: | 0                   | Speed: 45 MPH Dir: N   |              | Veh Mnvr/Ped Actn: |   |   |   | 4         |   |   | Obj Strk: |    | 50       |    |
| 5      | 102854879 | 2.434       | 05/03/2010<br>16:21 | RAN OFF ROAD - RIGHT   | \$ 4500      | 0                  | 0 | 0 | 0 | 1         | 1 | 1 | 8         | 0  | 13       | 1  |
| Unit   | 1 : 1     | Alchl/Drgs: | 0                   | Speed: 70 MPH Dir: N   |              | Veh Mnvr/Ped Actn: |   |   |   | 4         |   |   | Obj Strk: |    | 50       |    |
| 6      | 100860417 | 2.475       | 03/29/2003<br>08:30 | ANIMAL                 | \$ 2000      | 0                  | 0 | 0 | 0 | 1         | 1 | 2 |           | 0  |          |    |
| Unit   | 1 : 1     | Alchl/Drgs: | 0                   | Speed: 0 MPH Dir: S    |              | Veh Mnvr/Ped Actn: |   |   |   | 4         |   |   | Obj Strk: |    | 17       |    |
| 7      | 102605578 | 2.495       | 06/04/2009<br>14:19 | RAN OFF ROAD - RIGHT   | \$ 2500      | 0                  | 0 | 0 | 1 | 2         | 1 | 3 | 1         | 0  | 0        |    |
| Unit   | 1 : 1     | Alchl/Drgs: | 0                   | Speed: 45 MPH Dir: S   |              | Veh Mnvr/Ped Actn: |   |   |   | 4         |   |   | Obj Strk: |    | 59       |    |
| 8      | 103265601 | 2.495       | 10/03/2011<br>21:21 | ANIMAL                 | \$ 1100      | 0                  | 0 | 0 | 0 | 1         | 5 | 1 |           | 0  |          |    |
| Unit   | 1 : 1     | Alchl/Drgs: | 0                   | Speed: 0 MPH Dir: S    |              | Veh Mnvr/Ped Actn: |   |   |   | 4         |   |   | Obj Strk: |    | 17       |    |
| 9      | 101200329 | 2.525       | 05/31/2004<br>08:30 | ANIMAL                 | \$ 2000      | 0                  | 0 | 0 | 0 | 1         | 1 | 1 |           | 0  |          |    |
| Unit   | 1 : 1     | Alchl/Drgs: | 0                   | Speed: 0 MPH Dir: S    |              | Veh Mnvr/Ped Actn: |   |   |   | 4         |   |   | Obj Strk: |    | 17       |    |



**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Strip Analysis Report**

| Acc<br>No | Crash ID | Milepost | Date | Accident Type | Total<br>Damage | Injuries |   |   |   | Condition |   |   | Road |    | Trfc Ctl |    |
|-----------|----------|----------|------|---------------|-----------------|----------|---|---|---|-----------|---|---|------|----|----------|----|
|           |          |          |      |               |                 | F        | A | B | C | R         | L | W | Ch   | Ci | Dv       | Op |

**Legend for  
Report Details:**

Acc No - Accident Number  
 Injuries: F - Fatal, A - Class A, B - Class B, C - Class C  
 Condition: R - Road Surface, L - Ambient Light, W - Weather  
 Rd Ch - Road Character  
 Rd Ci - Roadway Contributing Circumstances  
 Trfc Ctl - Traffic Control: Dv - Device, Op - Operating  
 Alchl/Drugs - Alcohol Drugs Suspected  
 Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action  
 Obj Strk - Object Struck

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Traffic Engineering Accident Analysis System  
Strip Analysis Report

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**Summary Statistics**

**High Level Crash Summary**

| Crash Type                        | Number of<br>Crashes | Percent<br>of Total |
|-----------------------------------|----------------------|---------------------|
| Total Crashes                     | 9                    | 100.00              |
| Fatal Crashes                     | 0                    | 0.00                |
| Non-Fatal Injury Crashes          | 1                    | 11.11               |
| Total Injury Crashes              | 1                    | 11.11               |
| Property Damage Only Crashes      | 8                    | 88.89               |
| Night Crashes                     | 2                    | 22.22               |
| Wet Crashes                       | 2                    | 22.22               |
| Alcohol/Drugs Involvement Crashes | 0                    | 0.00                |

**Crash Severity Summary**

| Crash Type                   | Number of<br>Crashes | Percent<br>of Total |
|------------------------------|----------------------|---------------------|
| Total Crashes                | 9                    | 100.00              |
| Fatal Crashes                | 0                    | 0.00                |
| Class A Crashes              | 0                    | 0.00                |
| Class B Crashes              | 0                    | 0.00                |
| Class C Crashes              | 1                    | 11.11               |
| Property Damage Only Crashes | 8                    | 88.89               |

**Vehicle Exposure Statistics**

Annual ADT = 2000

Total Length = 0.196 (Miles)                      0.315 (Kilometers)

Total Vehicle Exposure = 1.43 (MVMT)                      2.3 (MVKMT)

| Crash Rate           | Crashes Per 100 Million<br>Vehicle Miles | Crashes Per 100 Million<br>Vehicle Kilometers |
|----------------------|------------------------------------------|-----------------------------------------------|
| Total Crash Rate     | 628.67                                   | 390.64                                        |
| Fatal Crash Rate     | 0.00                                     | 0.00                                          |
| Non Fatal Crash Rate | 69.85                                    | 43.40                                         |
| Night Crash Rate     | 139.71                                   | 86.81                                         |
| Wet Crash Rate       | 139.71                                   | 86.81                                         |
| EPDO Rate            | 1145.58                                  | 711.83                                        |

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Strip Analysis Report**

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**Miscellaneous Statistics**

|                                      |          |
|--------------------------------------|----------|
| Severity Index =                     | 1.82     |
| EPDO Crash Index =                   | 16.40    |
| Estimated Property Damage Total = \$ | 24350.00 |

**Accident Type Summary**

| <b>Accident Type</b>   | <b>Number of<br/>Crashes</b> | <b>Percent<br/>of Total</b> |
|------------------------|------------------------------|-----------------------------|
| ANIMAL                 | 3                            | 33.33                       |
| FIXED OBJECT           | 3                            | 33.33                       |
| RAN OFF ROAD - RIGHT   | 2                            | 22.22                       |
| REAR END, SLOW OR STOP | 1                            | 11.11                       |

**Injury Summary**

| <b>Injury Type</b>       | <b>Number of<br/>Injuries</b> | <b>Percent<br/>of Total</b> |
|--------------------------|-------------------------------|-----------------------------|
| Fatal Injuries           | 0                             | 0.00                        |
| Class A Injuries         | 0                             | 0.00                        |
| Class B Injuries         | 0                             | 0.00                        |
| Class C Injuries         | 1                             | 100.00                      |
| Total Non-Fatal Injuries | 1                             | 100.00                      |
| Total Injuries           | 1                             | 100.00                      |



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Strip Analysis Report

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**Monthly Summary**

| <b>Month</b> | <b>Number of<br/>Crashes</b> | <b>Percent<br/>of Total</b> |
|--------------|------------------------------|-----------------------------|
| Jan          | 0                            | 0.00                        |
| Feb          | 1                            | 11.11                       |
| Mar          | 2                            | 22.22                       |
| Apr          | 0                            | 0.00                        |
| May          | 2                            | 22.22                       |
| Jun          | 2                            | 22.22                       |
| Jul          | 0                            | 0.00                        |
| Aug          | 0                            | 0.00                        |
| Sep          | 0                            | 0.00                        |
| Oct          | 2                            | 22.22                       |
| Nov          | 0                            | 0.00                        |
| Dec          | 0                            | 0.00                        |

**Daily Summary**

| <b>Day</b> | <b>Number of<br/>Crashes</b> | <b>Percent<br/>of Total</b> |
|------------|------------------------------|-----------------------------|
| Mon        | 3                            | 33.33                       |
| Tue        | 0                            | 0.00                        |
| Wed        | 0                            | 0.00                        |
| Thu        | 1                            | 11.11                       |
| Fri        | 2                            | 22.22                       |
| Sat        | 1                            | 11.11                       |
| Sun        | 2                            | 22.22                       |

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Traffic Engineering Accident Analysis System  
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Hourly Summary

| Hour      | Number of<br>Crashes | Percent<br>of Total |
|-----------|----------------------|---------------------|
| 0000-0059 | 0                    | 0.00                |
| 0100-0159 | 0                    | 0.00                |
| 0200-0259 | 0                    | 0.00                |
| 0300-0359 | 0                    | 0.00                |
| 0400-0459 | 1                    | 11.11               |
| 0500-0559 | 0                    | 0.00                |
| 0600-0659 | 0                    | 0.00                |
| 0700-0759 | 0                    | 0.00                |
| 0800-0859 | 2                    | 22.22               |
| 0900-0959 | 0                    | 0.00                |
| 1000-1059 | 0                    | 0.00                |
| 1100-1159 | 0                    | 0.00                |
| 1200-1259 | 0                    | 0.00                |
| 1300-1359 | 2                    | 22.22               |
| 1400-1459 | 1                    | 11.11               |
| 1500-1559 | 1                    | 11.11               |
| 1600-1659 | 1                    | 11.11               |
| 1700-1759 | 0                    | 0.00                |
| 1800-1859 | 0                    | 0.00                |
| 1900-1959 | 0                    | 0.00                |
| 2000-2059 | 0                    | 0.00                |
| 2100-2159 | 1                    | 11.11               |
| 2200-2259 | 0                    | 0.00                |
| 2300-2359 | 0                    | 0.00                |

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**Light and Road Conditions Summary**

| Condition | Dry | Wet | Other | Total |
|-----------|-----|-----|-------|-------|
| Day       | 5   | 2   | 0     | 7     |
| Dark      | 2   | 0   | 0     | 2     |
| Other     | 0   | 0   | 0     | 0     |
| Total     | 7   | 2   | 0     | 9     |

**Object Struck Summary**

| Object Type         | Times Struck | Percent of Total |
|---------------------|--------------|------------------|
| ANIMAL              | 3            | 37.50            |
| BRIDGE RAIL FACE    | 2            | 25.00            |
| EMBANKMENT          | 1            | 12.50            |
| FENCE OR FENCE POST | 1            | 12.50            |
| TREE                | 1            | 12.50            |

**Vehicle Type Summary**

| Vehicle Type  | Number Involved | Percent of Total |
|---------------|-----------------|------------------|
| PASSENGER CAR | 10              | 100.00           |

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Traffic Engineering Accident Analysis System  
Strip Analysis Report

**Yearly Totals Summary**

**Accident Totals**

| <b>Year</b> | <b>Total<br/>Accidents</b> | <b>Fatal<br/>Accidents</b> | <b>Injury<br/>Accidents</b> | <b>Property Damage<br/>Only Accidents</b> |
|-------------|----------------------------|----------------------------|-----------------------------|-------------------------------------------|
| 2002        | 1                          | 0                          | 0                           | 1                                         |
| 2003        | 1                          | 0                          | 0                           | 1                                         |
| 2004        | 1                          | 0                          | 0                           | 1                                         |
| 2005        | 1                          | 0                          | 0                           | 1                                         |
| 2006        | 0                          | 0                          | 0                           | 0                                         |
| 2007        | 0                          | 0                          | 0                           | 0                                         |
| 2008        | 1                          | 0                          | 0                           | 1                                         |
| 2009        | 1                          | 0                          | 1                           | 0                                         |
| 2010        | 1                          | 0                          | 0                           | 1                                         |
| 2011        | 2                          | 0                          | 0                           | 2                                         |
| Total       | 9                          | 0                          | 1                           | 8                                         |

**Injury Totals**

| <b>Year</b> | <b>Fatal Injuries</b> | <b>Class A, B,<br/>or C Injuries</b> |
|-------------|-----------------------|--------------------------------------|
| 2002        | 0                     | 0                                    |
| 2003        | 0                     | 0                                    |
| 2004        | 0                     | 0                                    |
| 2005        | 0                     | 0                                    |
| 2006        | 0                     | 0                                    |
| 2007        | 0                     | 0                                    |
| 2008        | 0                     | 0                                    |
| 2009        | 0                     | 1                                    |
| 2010        | 0                     | 0                                    |
| 2011        | 0                     | 0                                    |
| Total       | 0                     | 1                                    |

**Miscellaneous Totals**

| <b>Year</b> | <b>Property Damage</b> | <b>EPDO Index</b> |
|-------------|------------------------|-------------------|
| 2002        | \$ 3500                | 1.00              |
| 2003        | \$ 2000                | 1.00              |
| 2004        | \$ 2000                | 1.00              |
| 2005        | \$ 1500                | 1.00              |
| 2006        | \$ 0                   | 0.00              |



**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Strip Analysis Report**

| <b>Year</b> | <b>Property Damage</b> | <b>EPDO Index</b> |
|-------------|------------------------|-------------------|
| 2007        | \$ 0                   | 0.00              |
| 2008        | \$ 3000                | 1.00              |
| 2009        | \$ 2500                | 8.40              |
| 2010        | \$ 4500                | 1.00              |
| 2011        | \$ 5350                | 2.00              |
| Total       | \$ 24350               | 16.40             |

**Type of Accident Totals**

| <b>Year</b> | <b>Left Turn</b> | <b>Right Turn</b> | <b>Rear End</b> | <b>Run Off Road &amp;<br/>Fixed Object</b> | <b>Angle</b> | <b>Side Swipe</b> | <b>Other</b> |
|-------------|------------------|-------------------|-----------------|--------------------------------------------|--------------|-------------------|--------------|
| 2002        | 0                | 0                 | 0               | 1                                          | 0            | 0                 | 0            |
| 2003        | 0                | 0                 | 0               | 0                                          | 0            | 0                 | 1            |
| 2004        | 0                | 0                 | 0               | 0                                          | 0            | 0                 | 1            |
| 2005        | 0                | 0                 | 1               | 0                                          | 0            | 0                 | 0            |
| 2006        | 0                | 0                 | 0               | 0                                          | 0            | 0                 | 0            |
| 2007        | 0                | 0                 | 0               | 0                                          | 0            | 0                 | 0            |
| 2008        | 0                | 0                 | 0               | 1                                          | 0            | 0                 | 0            |
| 2009        | 0                | 0                 | 0               | 1                                          | 0            | 0                 | 0            |
| 2010        | 0                | 0                 | 0               | 1                                          | 0            | 0                 | 0            |
| 2011        | 0                | 0                 | 0               | 1                                          | 0            | 0                 | 1            |
| Total       | 0                | 0                 | 1               | 5                                          | 0            | 0                 | 3            |

North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Strip Analysis Report

**Strip Diagram**

| Features               | Milepost | Crash IDs             |
|------------------------|----------|-----------------------|
|                        | 2.340    |                       |
|                        | 2.350    |                       |
|                        | 2.360    |                       |
|                        | 2.370    |                       |
|                        | 2.380    |                       |
|                        | 2.390    | 103181585             |
|                        | 2.400    | 101430297             |
|                        | 2.410    | 100556094             |
| BEGIN BRIDGE STRUCTURE | 2.420    |                       |
| Structure:000085       | 2.430    | 102447431   102854879 |
| END BRIDGE STRUCTURE   | 2.440    |                       |
|                        | 2.450    |                       |
|                        | 2.460    |                       |
|                        | 2.470    | 100860417             |
|                        | 2.480    |                       |
|                        | 2.490    | 102605578   103265601 |
|                        | 2.500    |                       |
|                        | 2.510    |                       |
|                        | 2.520    |                       |
|                        | 2.530    | 101200329             |

**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Strip Analysis Report**

**Study Criteria**

| Study Name  | Log No.     | PH No. | TIP No. | K/A Cf. | B/C Cf. | ADT  | ADT Route |
|-------------|-------------|--------|---------|---------|---------|------|-----------|
| 41000018171 | 41000018171 |        |         | 76.8    | 8.4     | 2000 | 40002158  |

| Request Date | Courier Service | Phone No.     | Ext. | Fax No. |
|--------------|-----------------|---------------|------|---------|
| 02/28/2012   |                 | (336)896-7037 |      |         |

| County   |      |      | Municipality  |      |            |            |            |       |
|----------|------|------|---------------|------|------------|------------|------------|-------|
| Name     | Code | Div. | Name          | Code | Y-Line Ft. | Begin Date | End Date   | Years |
| ALAMANCE | 0    | 7    | All and Rural |      | 0          | 01/01/2002 | 12/31/2011 | 10.00 |

| Location Text                                                                                            | Requestor                                               |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 500 feet on Both Sides of Bridge Number 85 on Secondary Route 2158 (Swepsonville Road) over Meadow Creek | Vickie L. Embry, PE<br>Triad Region<br>Winston Salem NC |

| Included Accidents | Old MP | New MP | Type |
|--------------------|--------|--------|------|
| 102854879          |        | 2.434  | I    |
| 102447431          |        | 2.434  | I    |
| 100556094          |        | 2.41   | I    |
| 101430297          | 2.43   | 2.4    | R    |

**Fiche Roads**

| Name        | Code     |
|-------------|----------|
| SR 2158     | 40002158 |
| SWEPSNVILLE | 50029811 |

**Strip Road**

| Name    | Code     | Begin MP | End MP | Miles | Kilometers |
|---------|----------|----------|--------|-------|------------|
| SR 2158 | 40002158 | 2.336    | 2.532  | 0.196 | 0.315      |

**North Carolina Department of Transportation  
Traffic Engineering Accident Analysis System  
Fiche, Intersection, and Strip Reports Code Index**

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**T - Type of Accident Codes**

0 = UNKNOWN  
1 = RAN OFF ROAD - RIGHT  
2 = RAN OFF ROAD - LEFT  
3 = RAN OFF ROAD - STRAIGHT  
4 = JACKKNIFE  
5 = OVERTURN/ROLLOVER  
13 = OTHER NON-COLLISION  
14 = PEDESTRIAN  
15 = PEDALCYCLIST  
16 = RR TRAIN, ENGINE  
17 = ANIMAL  
18 = MOVABLE OBJECT  
19 = FIXED OBJECT  
20 = PARKED MOTOR VEHICLE  
21 = REAR END, SLOW OR STOP  
22 = REAR END, TURN  
23 = LEFT TURN, SAME ROADWAY  
24 = LEFT TURN, DIFFERENT ROADWAYS  
25 = RIGHT TURN, SAME ROADWAY  
26 = RIGHT TURN, DIFFERENT ROADWAYS  
27 = HEAD ON  
28 = SIDESWIPE, SAME DIRECTION  
29 = SIDESWIPE, OPPOSITE DIRECTION  
30 = ANGLE  
31 = BACKING UP  
32 = OTHER COLLISION WITH VEHICLE

**F - Road Feature Codes**

0 = NO SPECIAL FEATURE  
1 = BRIDGE  
2 = BRIDGE APPROACH  
3 = UNDERPASS  
4 = DRIVEWAY, PUBLIC  
5 = DRIVEWAY, PRIVATE  
6 = ALLEY INTERSECTION  
7 = FOUR-WAY INTERSECTION  
8 = T-INTERSECTION  
9 = Y-INTERSECTION  
10 = TRAFFIC CIRCLE/ROUNDBOUT  
11 = FIVE-POINT, OR MORE  
12 = RELATED TO INTERSECTION  
13 = NON-INTERSECTION MEDIAN CROSSING  
14 = END OR BEGINNING - DIVIDED HIGHWAY  
15 = OFF RAMP ENTRY  
16 = OFF RAMP PROPER  
17 = OFF RAMP TERMINAL ON CROSSROAD  
18 = MERGE LANE BETWEEN ON AND OFF RAMP  
19 = ON RAMP ENTRY  
20 = ON RAMP PROPER  
21 = ON RAMP TERMINAL ON CROSSROAD  
22 = RAILROAD CROSSING  
23 = TUNNEL  
24 = SHARED-USE PATHS OR TRAILS  
25 = OTHER

**R - Road Condition Codes**

1 = DRY  
2 = WET  
3 = WATER (STANDING, MOVING)  
4 = ICE  
5 = SNOW  
6 = SLUSH  
7 = SAND, MUD, DIRT, GRAVEL  
8 = FUEL, OIL  
9 = OTHER  
10 = UNKNOWN

**L - Light Condition Codes**

1 = DAYLIGHT  
2 = DUSK  
3 = DAWN  
4 = DARK - LIGHTED ROADWAY  
5 = DARK - ROADWAY NOT LIGHTED  
6 = DARK - UNKNOWN LIGHTING  
7 = OTHER  
8 = UNKNOWN

**W - Weather Condition Codes**

1 = CLEAR  
2 = CLOUDY  
3 = RAIN  
4 = SNOW  
5 = FOG, SMOG, SMOKE  
6 = SLEET, HAIL, FREEZING RAIN/DRIZZLE  
7 = SEVERE CROSSWINDS  
8 = BLOWING SAND, DIRT, SNOW  
9 = OTHER

**S - Accident Severity Codes**

K = FATAL  
A = A-LEVEL INJURY  
B = B-LEVEL INJURY  
C = C-LEVEL INJURY  
O = PROPERTY DAMAGE ONLY

**Ch - Road Character**

1 = STRAIGHT, LEVEL  
2 = STRAIGHT, HILLCREST  
3 = STRAIGHT, GRADE  
4 = STRAIGHT, BOTTOM (SAG)  
5 = CURVE, LEVEL  
6 = CURVE, HILLCREST  
7 = CURVE, GRADE  
8 = CURVE, BOTTOM (SAG)  
9 = OTHER

**Op - Traffic Control Operating**

1 = YES  
2 = NO  
3 = UNKNOWN

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**Veh Mnvr - Vehicle Maneuver Codes**

1 = STOPPED IN TRAVEL LANE  
2 = PARKED OUT OF TRAVEL LANES  
3 = PARKED IN TRAVEL LANES  
4 = GOING STRAIGHT AHEAD  
5 = CHANGING LANES OR MERGING  
6 = PASSING  
7 = MAKING RIGHT TURN  
8 = MAKING LEFT TURN  
9 = MAKING U-TURN  
10 = BACKING  
11 = SLOWING OR STOPPING  
12 = STARTING IN ROADWAY  
13 = PARKING  
14 = LEAVING PARKED POSITION  
15 = AVOIDING OBJECT IN ROAD

**Dv - Traffic Control Device**

0 = NO CONTROL PRESENT  
1 = STOP SIGN  
2 = YIELD SIGN  
3 = STOP AND GO SIGNAL  
4 = FLASHING SIGNAL WITH STOP SIGN  
5 = FLASHING SIGNAL WITHOUT STOP SIGN  
6 = RR GATE AND FLASHER  
7 = RR FLASHER  
8 = RR CROSSBUCKS ONLY  
9 = HUMAN CONTROL  
10 = WARNING SIGN  
11 = SCHOOL ZONE SIGNS  
12 = FLASHING STOP AND GO SIGNAL  
13 = DOUBLE YELLOW LINE, NO PASSING ZONE  
14 = OTHER

**Alchl/Drugs - Driver Alcohol/Drugs Suspected Status Codes**

0 = NO  
1 = YES - ALCOHOL, IMPAIRMENT SUSPECTED  
2 = YES - ALCOHOL, NO IMPAIRMENT DETECTED  
3 = YES - OTHER DRUGS, IMPAIRMENT SUSPECTED  
4 = YES - OTHER DRUGS, NO IMPAIRMENT DETECTED  
5 = YES - ALCOHOL AND OTHER DRUGS, IMPAIRMENT SUSPECTED  
6 = YES - ALCOHOL AND OTHER DRUGS, NO IMPAIRMENT DETECTED  
7 = UNKNOWN

**Ped Actn - Pedestrian Action Codes**

1 = ENTERING OR CROSSING SPECIFIED LOCATION  
2 = WALKING, RIDING, RUNNING/JOGGING WITH TRAFFIC  
3 = WALKING, RIDING, RUNNING/JOGGING AGAINST TRAFFIC  
4 = WORKING  
5 = PUSHING VEHICLE  
6 = APPROACHING OR LEAVING VEHICLE  
7 = PLAYING  
8 = STANDING  
9 = OTHER

**Ci - Roadway Contributing Circumstances**

0 = NONE (NO UNUSUAL CONDITIONS)  
1 = ROAD SURFACE CONDITION  
2 = DEBRIS  
3 = RUT, HOLES, BUMPS  
4 = WORK ZONE (CONSTRUCTION, MAINTENANCE, UTILITY)  
5 = WORN TRAVEL-POLISHED SURFACE  
6 = OBSTRUCTION IN ROADWAY  
7 = TRAFFIC CONTROL DEVICE INOPERATIVE, NOT VISIBLE OR MISSING  
8 = SHOULDERS LOW, SOFT OR HIGH  
9 = NO SHOULDERS  
10 = NON-HIGHWAY WORK  
11 = OTHER  
12 = UNKNOWN

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**Obj Strk - Object Struck Codes**

14 = PEDESTRIAN  
15 = PEDALCYCLIST  
17 = ANIMAL  
18 = MOVABLE OBJECT  
20 = PARKED MOTOR VEHICLE  
33 = TREE  
34 = UTILITY POLE  
35 = LUMINAIRE POLE NON-BREAKAWAY  
36 = LUMINAIRE POLE BREAKAWAY  
37 = OFFICIAL HIGHWAY SIGN NON-BREAKAWAY  
38 = OFFICIAL HIGHWAY SIGN BREAKAWAY  
39 = OVERHEAD SIGN SUPPORT  
40 = COMMERCIAL SIGN  
41 = GUARDRAIL END ON SHOULDER  
42 = GUARDRAIL FACE ON SHOULDER  
43 = GUARDRAIL END IN MEDIAN  
44 = GUARDRAIL FACE IN MEDIAN  
45 = SHOULDER BARRIER END  
46 = SHOULDER BARRIER FACE  
47 = MEDIAN BARRIER END  
48 = MEDIAN BARRIER FACE  
49 = BRIDGE RAIL END  
50 = BRIDGE RAIL FACE  
51 = OVERHEAD PART UNDERPASS  
52 = PIER ON SHOULDER OF UNDERPASS  
53 = PIER IN MEDIAN OF UNDERPASS  
54 = ABUTMENT OF UNDERPASS  
55 = TRAFFIC ISLAND CURB OR MEDIAN  
56 = CATCH BASIN OR CULVERT ON SHOULDER  
57 = CATCH BASIN OR CULVERT ON MEDIAN  
58 = DITCH  
59 = EMBANKMENT  
60 = MAILBOX  
61 = FENCE OR FENCE POST  
62 = CONTRUCTION BARRIER  
63 = CRASH CUSHION  
64 = OTHER FIXED OBJECT

**Unit # - Vehicle Style Codes**

1 = PASSENGER CAR  
2 = PICKUP  
3 = LIGHT TRUCK (MINI-VAN, PANEL)  
4 = SPORT UTILITY  
5 = VAN  
6 = COMMERCIAL BUS  
7 = SCHOOL BUS  
8 = ACTIVITY BUS  
9 = OTHER BUS  
10 = SINGLE UNIT TRUCK (2-AXLE, 6-TIRE)  
11 = SINGLE UNIT TRUCK (3 OR MORE AXLES)  
12 = TRUCK/TRAILER  
13 = TRUCK/TRACTOR  
14 = TRACTOR/SEMI-TRAILER  
15 = TRACTOR/DOULBES  
16 = UNKNOWN HEAVY TRUCK  
17 = TAXICAB  
18 = FARM EQUIPMENT  
19 = FARM TRACTOR  
20 = MOTORCYCLE  
21 = MOPED  
22 = MOTOR SCOOTER OR MOTOR BIKE  
23 = PEDALCYCLE  
24 = PEDESTRIAN  
25 = MOTOR HOME/RECREATIONAL VEHICLE  
26 = OTHER  
27 = ALL TERRAIN VEHICLE (ATV)  
28 = FIRETRUCK  
29 = EMS VEHICLE, AMBULANCE, RESCUE SQUAD  
30 = MILITARY  
31 = POLICE  
32 = UNKNOWN