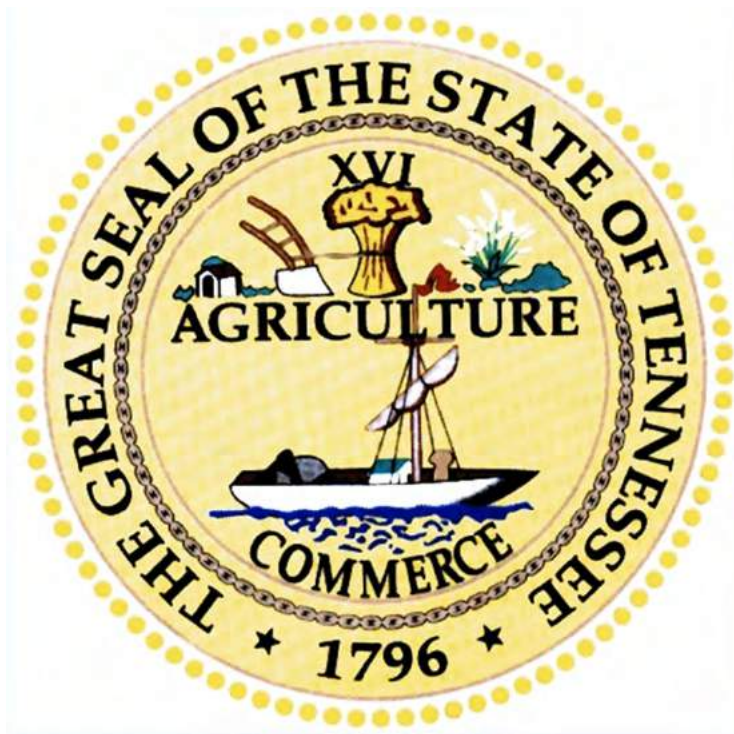


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TENNESSEE
DEPARTMENT OF TRANSPORTATION



DRAFT

ORIGINAL SUBMITTAL
DATE:

07-31-14

REVISION DATES:

ROAD SAFETY AUDIT REPORT

L.R. 1384 (Bloomingdale Pike)
From S.R. 1 to Bancroft Chapel Road,
(Log Mile 0.00 to Log Mile 5.35),
Sullivan County
PIN# 120115.00

PREPARED BY GRESHAM, SMITH AND PARTNERS
for the
Strategic Transportation Investments Division

Recommended by:	Signature	DATE
TRANSPORTATION DIRECTOR STRATEGIC TRANSPORTATION INVESTMENTS DIVISION		

This document is covered by 23 USC § 409 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 409.

Sullivan County
L.R. 1384
L.M. 0.00-L.M. 5.35
PIN: 120115.00

PROJECT DESCRIPTION AND BACKGROUND

This project was identified through the Tennessee Department of Transportation (TDOT) safety needs identification process. The section of Local Route (L.R.) 1384 (Bloomingdale Pike) from log mile (L.M.) 0.00 to L.M. 5.35 is a two (2) lane urban minor arterial, with ten (10) to eleven (11) foot travel lanes and two (2) foot earth shoulders. At L.M. 2.96, L.R. 1384 widens out for left and right turn lanes along both approaches to the S.R. 93 intersection. L.R. 1384 was added to the Hazard Elimination Safety Program (HESP) list because L.R. 1384 has a severe crash rate of 0.122, which exceeds the statewide average severe crash rate of 0.083 for an urban two lane functional section.

There were a total of two hundred forty-eight (248) crashes that occurred along L.R. 1384 between 2010 to 2012, with one hundred sixty-six (166) property damage crashes, seventy-seven (77) non-incapacitating injury crashes, four (4) incapacitating injury crashes involving four (4) incapacitating injuries, and one (1) fatal crash involving one (1) fatalities.

ROAD SAFETY AUDIT (RSA) TEAM MEMBERS

NAME	ORG.	PHONE #	EMAIL
Jeremy Bowlan	TDOT - STI	615-532-7123	jeremy.bowlan@tn.gov
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Shap Stiles	GS&P	865-521-6777	shap_stiles@gspnet.com

INFORMATION USED IN REVIEW

- Crash Reports
- Field Review Comments
- TRIMS Crash Data (2010-2012)
- TRIMS Geometric Report
- Aerial Photographs
- Crash Summary
- County Highway Maps
- TRIMS Route Feature Report
- TRIMS Road Segment Report

Sullivan County
L.R. 1384
L.M. 0.00-L.M. 5.35
PIN: 120115.00

PRE-BRIEF MEETING SUMMARY

A Pre-brief meeting was held at TDOT Headquarters at 1:00 P.M. on June 16, 2014. A summary of the topics and information discussed at the meeting is provided below:

1. Discussed Crash history and types of crashes.
 - Majority are rear-ends (47%).
 - Crashes were clustered around intersections.
2. AADT is 7,000 vehicles per day.
3. L.M. 0.00 to L.M. 1.25 are within City limits and the rest of the corridor is County.
4. Several horizontal and vertical curves that did not meet 45 mph design speed.
5. A lot of access points along corridor with limited sight distance due to geometry of road.

OBSERVATIONS

An onsite field review was held at 3:00 P.M. on June 19, 2014. The following discussions/observations were noted:

- Roadway pavement was in good condition.
- Pavement markings and signs were generally in poor condition.
- A field review of the horizontal alignment along the corridor was performed. A traditional ball-bank indicator was used to analyze each curve. The posted speed at eight (8) locations along the corridor exceeded the degrees of banking for the advised speed. Each curve was driven at 5 mph increments until an acceptable degree of banking was achieved.
- Due to the geometry of the road and the amount of access points along the road, the project team recommends reducing the posted speed limit from 45 mph to 35 mph. approval for this recommendation was requested through both the City and County office. Both jurisdictions were in agreement.
- The signal poles at L.R. 1384 and S.R. 93 are in need of replacement. Project team recommended replacing the wood poles with steel strain poles and upgrading the signals.
- The signal poles at L.R. 1384 and S.R. 1 are in need of replacement. Project team recommend replacing steel strain poles with mast arm poles and upgrading the signals.
- Convert the right westbound thru lane into a right turn only lane on Bloomingdale Pike at the intersection of S.R. 1. When L.R. 1384 crosses S.R. 1 it becomes Clinchfield Street which tapers back down to one lane immediately. Left turns are prohibited on L.R. 1384 at the intersection so there is no reason for two thru lanes.
- Add guardrail on the south side of L.R. 1384 near the intersection of Dahlia Street.
- Sullivan County recently constructed a new elementary school along Bloomingdale Pike and closed three elementary schools (Kingsley, Brookside, and Cedar Grove). Coordinated with Sullivan County School District to remove school related signs at the old school locations.
- At the intersection of L.R. 1384 and Hickam Street there was a Stop Line across L.R. 1384 on both approaches (No stop signs) and Yield signs on the minor side road Hickam Street (Stop line was used in conjunction with Yield sign). Stop lines on L.R. 1384 will be removed with this project and Stop Signs will be added to the minor side road Hickam Street.

Sullivan County
L.R. 1384
L.M. 0.00-L.M. 5.35
PIN: 120115.00

- Request was made to add centerline and edgeline rumble stripe along L.R. 1384 by the City and County.

The RSAR recommended safety improvements are depicted on the aerial layout sheets included with this report.

The total estimated cost of the improvements listed in the report is \$425,600.00. No right-of-way acquisition is required. A general maintenance agreement is required with City of Kingsport and Sullivan County. A local match is not required. These improvements will be let to contract.

RSAR NO PLANS COST ESTIMATE				
Route:	Local Route 1384 (Bloomingtondale Pike)			
Description:	From S.R. 1 to Bancroft Chapel Road			
County:	Sullivan			
Length:	5.35 miles			
Date:	July 31, 2014			
DESCRIPTION	LOCAL	STATE	FEDERAL	TOTAL
Right-of-Way	\$ -	\$ -	\$ -	\$ -
Clearing and Grubbing	\$ -	\$ -	\$ -	\$ -
Earthwork	\$ -	\$ -	\$ -	\$ -
Railroad Crossing or Separation	\$ -	\$ -	\$ -	\$ -
Drainage	\$ -	\$ -	\$ -	\$ -
Utilities	\$ -	\$ -	\$ -	\$ -
Structures	\$ -	\$ -	\$ -	\$ -
Pavement Removal	\$ -	\$ -	\$ -	\$ -
Paving	\$ -	\$ -	\$ -	\$ -
Roadway and Pavement Appurtenances	\$ -	\$ -	\$ -	\$ -
Retaining Walls	\$ -	\$ -	\$ -	\$ -
Topsoil	\$ -	\$ -	\$ -	\$ -
Seeding	\$ -	\$ -	\$ -	\$ -
Sodding	\$ -	\$ -	\$ -	\$ -
Rip-Rap or Slope Protection	\$ -	\$ -	\$ -	\$ -
Fencing	\$ -	\$ -	\$ -	\$ -
Signing ¹			\$ 39,800	\$ 39,800
Pavement Markings ¹			\$ 156,500	\$ 156,500
Lighting ¹			\$ -	\$ -
Signalization ¹			\$ 187,400	\$ 187,400
Guardrail ¹			\$ 11,600	\$ 11,600
Pay Item Quantity Adjustment (15%) ²	\$ -		\$ -	\$ -
Maintenance of Traffic		\$ -	\$ 10,000	\$ 10,000
Mobilization (5%)		\$ -	\$ 20,300	\$ 20,300
CONSTRUCTION COST (rounded)		\$ -	\$ 425,600	\$ 425,600
Engineering and Contingency (10%)			\$ -	\$ -
TOTAL CONSTRUCTION COST (rounded)		\$ -	\$ 425,600	\$ 425,600
Preliminary Engineering (5%)		\$ -	\$ -	\$ -
PROJECT COST ³(rounded)	\$ -	\$ -	\$ 425,600	\$ 425,600

¹ This safety item is 100% eligible and does not require a 10% funding match by the local agency.
² For estimating purposes pay items are adjusted for fluxuation of cost based on quantity.
³ For estimating future project costs, a compounded inflation rate of 7% should be applied from the date of this estimate.

TYPE	YEAR	COUNTY	FIGURE NO.
RSAR	2014	SULLIVAN	1

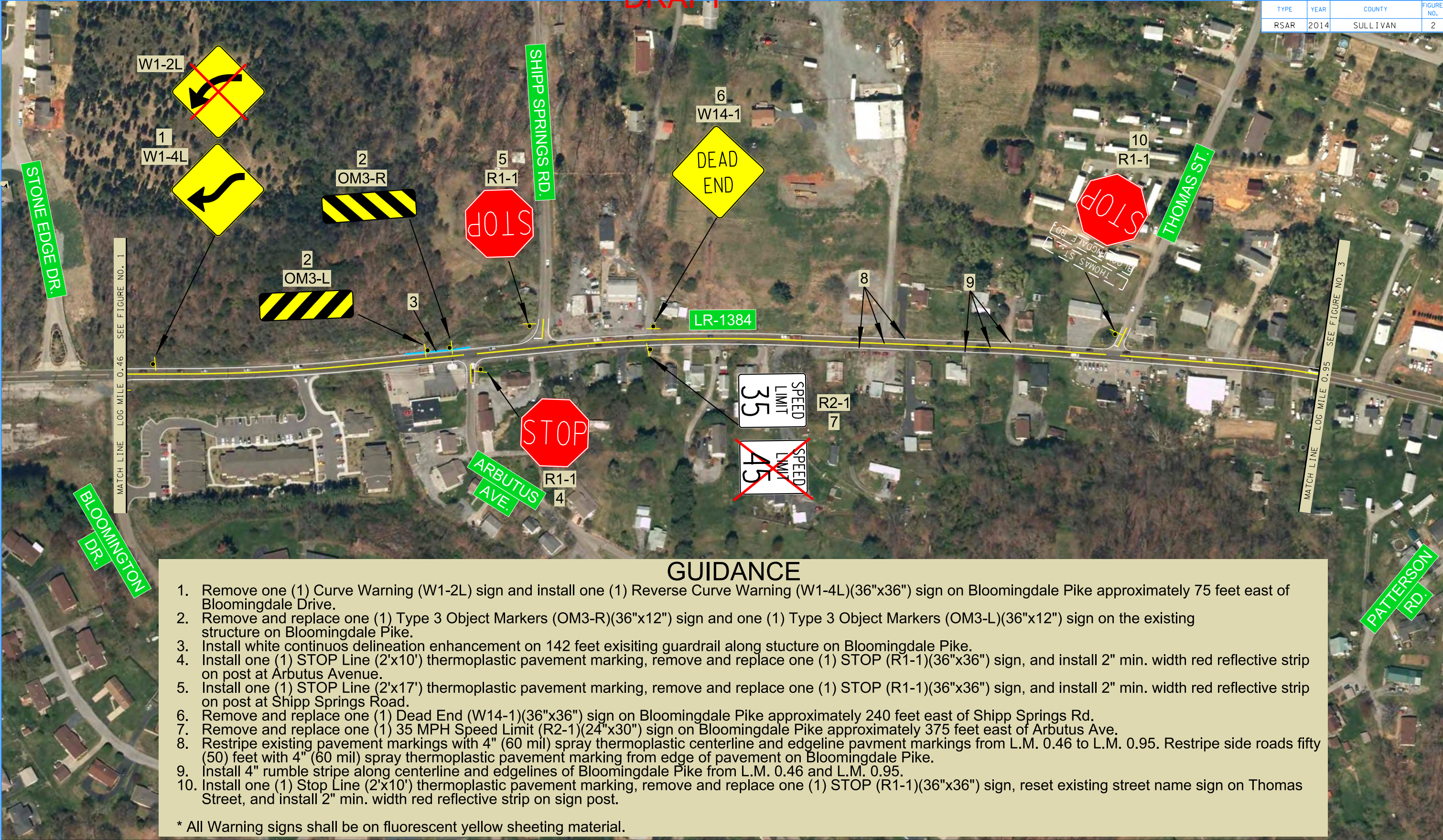
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION
INVESTMENTS DIVISION

FIGURE 1
L.R. 1384
L.M. 0.00 to
L.M. 0.46

GUIDANCE

1. Remove four (4) signal poles and fourteen (14) signal heads and install four (4) signal poles and fourteen (14) signal heads (12 3-section heads and 2 5-section heads). Install 2" min. width yellow reflective strip along the perimeter of the face of all traffic signals backplates.
2. Install one (1) Yield Line (2'x16') thermoplastic pavement marking, remove and replace one (1) Yeild (R1-2)(36"x36"x36") sign on ramp from S.R. 1 to Bloomingdale Pike, and install 2" min. width red reflective strip on sign post.
3. Remove one (1) Through Right Turn Arrow and restripe two (2) Right Turn Arrow (60 mil) spray thermoplastic pavement marking on Bloomingdale Pike.
4. Remove one (1) LANE ENDS MERGE LEFT (W9-2L) sign on Bloomingdale Pike.
5. Remove and replace one (1) Combination Thru only and Right Only (R3-8C)(24"x30") on Bloomingdale Pike approximately 100 feet west of Woodmont Avenue.
6. Remove and replace one (1) Lane Ends Warning (W4-2R)(36"x36") sign on Bloomingdale Pike approximately 50 feet west of Woodmont Avenue.
7. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on post at Woodmont Avenue.
8. Remove and replace one (1) Narrow Keep Right (R4-7C)(18"x30") sign and reset existing street name sign on Woodmont Avenue.
9. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavment markings from L.M. 0.00 to L.M. 0.46. Restripe side roads fifty (50) feet with 4" (60 mil) spray thermoplastic from the edge of pavement on Bloomingdale Pike.
10. Remove one (1) Reverse Turn (W1-3L) and install one (1) Reverse Curve Warning (W1-4L)(36"x36") sign on Bloomingdale Pike approximately 50 feet west of Larry Neil Way.
11. Install one (1) STOP Line (2'x24') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Larry Neil Way, and install 2" min. width red reflective strip on post.
12. Install white continuos delineation enhancement on 40 feet of exisiting guardrail along both sides of stucture on Gibson Mill Road.
13. Remove and replace two (2) Type 3 Object Markers (OM3-R)(36"x12") signs and two (2) Type 3 Object Markers (OM3-L)(36"x12") signs on both sides of the existing structure on Gibson Mill Road.
14. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on post at Gibson Mill Road.
15. Remove and replace one (1) 35 MPH Speed Limit (R2-1)(24"x30") sign on Bloomingdale Pike approximately 40 feet west of Dahlia Street.
16. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on sign post at Orbin Drive.
17. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Dahlia Street, and install 2" min. width red reflective strip on sign post.
18. Remove one (1) Curve Warning (W1-2R) sign and install one (1) Reverse Curve Warning (W1-4R)(36"x36") sign on Bloomingdale Pike approximately 135 feet east of Orbin Drive.
19. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 0.00 to L.M. 0.46.
20. Install one (1) STOP Line (2'x20') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Stone Edge Drive, and install 2" min. width red reflective strip on post.
21. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on post at Bloomington Drive.

* All Warning signs shall be on fluorescent yellow sheeting material.



- GUIDANCE
1.

Remove one (1) Curve Warning (W1-2L) sign and install one (1) Reverse Curve Warning (W1-4L)(36"x36") sign on Bloomingdale Pike approximately 75 feet east of Bloomingdale Drive.
2.

Remove and replace one (1) Type 3 Object Markers (OM3-R)(36"x12") sign and one (1) Type 3 Object Markers (OM3-L)(36"x12") sign on the existing structure on Bloomingdale Pike.
3.

Install white continuous delineation enhancement on 142 feet existing guardrail along structure on Bloomingdale Pike.
4.

Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on post at Arbutus Avenue.
5.

Install one (1) STOP Line (2'x17') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on post at Shipp Springs Road.
6.

Remove and replace one (1) Dead End (W14-1)(36"x36") sign on Bloomingdale Pike approximately 240 feet east of Shipp Springs Rd.
7.

Remove and replace one (1) 35 MPH Speed Limit (R2-1)(24"x30") sign on Bloomingdale Pike approximately 375 feet east of Arbutus Ave.
8.

Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavement markings from L.M. 0.46 to L.M. 0.95. Restripe side roads fifty (50) feet with 4" (60 mil) spray thermoplastic pavement marking from edge of pavement on Bloomingdale Pike.
9.

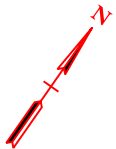
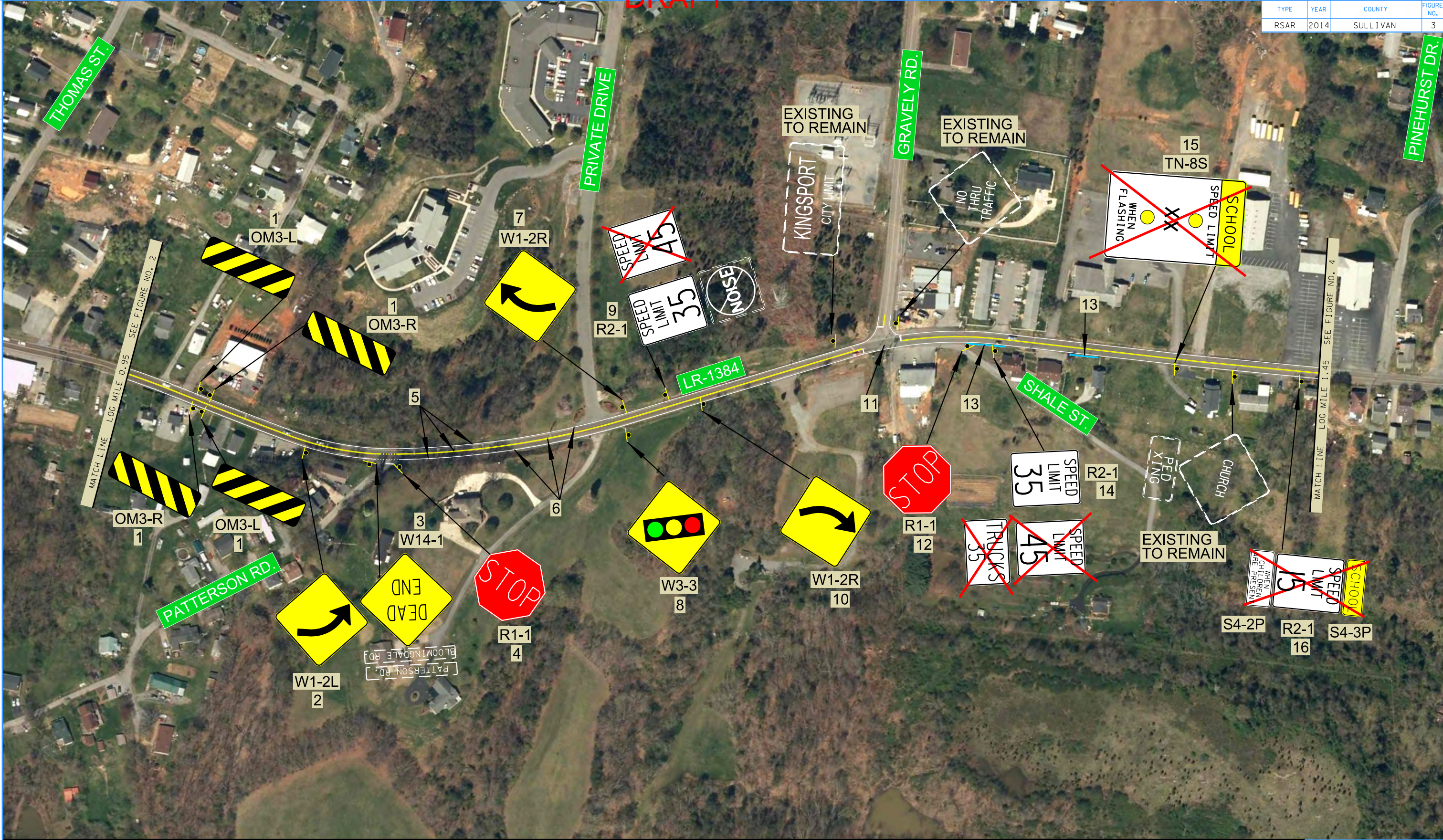
Install 4" rumble stripe along centerline and edgelines of Bloomingdale Pike from L.M. 0.46 and L.M. 0.95.
10.

Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Thomas Street, and install 2" min. width red reflective strip on sign post.

* All Warning signs shall be on fluorescent yellow sheeting material.

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TYPE	YEAR	COUNTY	FIGURE NO.
RSAR	2014	SULLIVAN	3



ROAD SAFETY AUDIT REVIEW

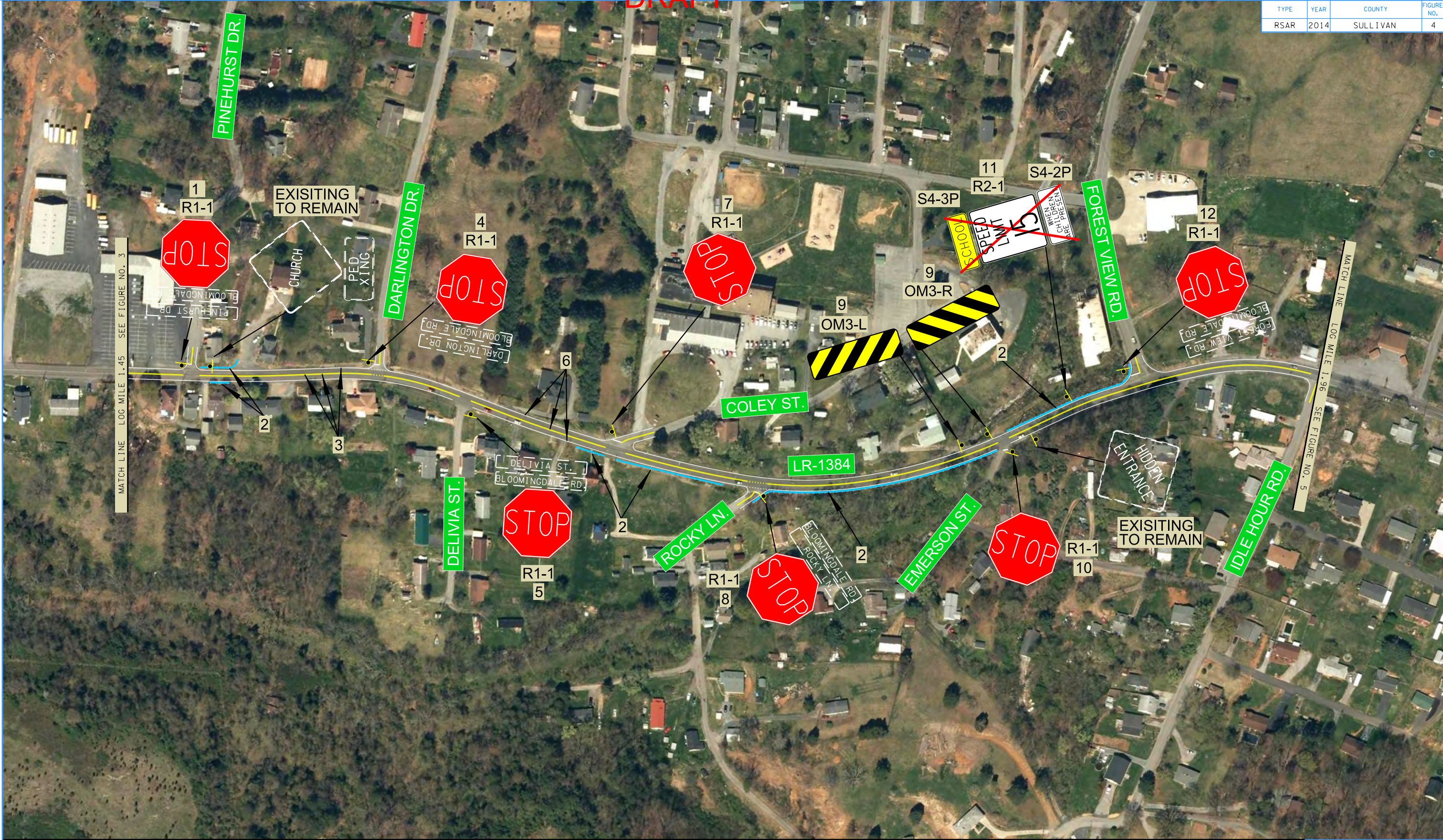
LOCAL ROUTE 1384
(BLOOMINGDALE PIKE)
L.M. 0.00 TO L.M. 5.35
SULLIVAN COUNTY

GUIDANCE

1. Remove and replace two (2) Type 3 Object Markers (OM3-R)(36"x12") signs and two (2) Type 3 Object Markers (OM3-L)(36"x12") signs on both sides of the existing structure on Bloomingdale Road.
2. Remove and replace one (1) Curve Warning (W1-2L)(36"x36") sign on Bloomingdale Pike approximately 200 feet west of Patterson Road.
3. Remove and replace one (1) Dead End (W14-1)(36"x36") sign and reset existing street name sign on Patterson Road.
4. Install one (1) Stop Line (2'x15') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36"), and install 2" min. width red reflective strip on post at Patterson Road .
5. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavment markings from L.M. 0.95 to L.M. 1.45. Restripe side roads fifty (50) feet with 4" (60 mil) spray thermoplastic pavement markings from edge of pavement on Bloomingdale Pike.
6. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 0.95 to L.M. 1.45.
7. Remove and replace one (1) Curve Warning (W1-2R)(36"x36") sign on Bloomingdale Pike approximately 415 feet west of Gravely road.
8. Remove and replace one (1) Signal Ahead (W1-3L)(36"x36") sign on Bloomingdale Pike approximately 515 feet east of Patterson road.
9. Remove and replace one (1) 35 MPH Speed Limit (R2-1)(24"x30") sign and reset existing Noise sign on Bloomingdale Pike approximately 485 feet west of Gravely Road.
10. Remove and replace one (1) Curve Warning (W1-2R)(36"x36") sign on Bloomingdale Pike approximately 580 feet west of Gravely Road.
11. Install three (3) Stop Lines (2'x12') thermoplastic pavement markings at the signalized intersection of Gravely Road and Boolingdale Pike.
12. Remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on sign post at Shale Street.
13. Install white continuos delineation enhancement on 150 feet of exisiting guardrail along south side of Bloomingdale Pike.
14. Remove and replace one (1) 35 MPH Speed Limit (R2-1)(24"x30") sign on Bloomingdale Pike approximately 65 feet east of Shale Street.
15. Remove one (1) School warning (TN-8S) sign on Bloomingdale Pike approximately 485 feet east of Shale Street.
16. Remove one (1) 15 MPH Speed Limit (R2-1) sign, one (1) School (S4-3P) plaque, and one (1) When Childern are Present (S4-2P) plaque on Bloomingdale Pike approxiamtely 755 feet east of Shale Street.

* All Warning signs shall be on fluorescent yellow sheeting material.

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ROAD SAFETY AUDIT REVIEW
LOCAL ROUTE 1384
(BLOOMINGDALE PIKE)
L.M. 0.00 TO L.M. 5.35
SULLIVAN COUNTY

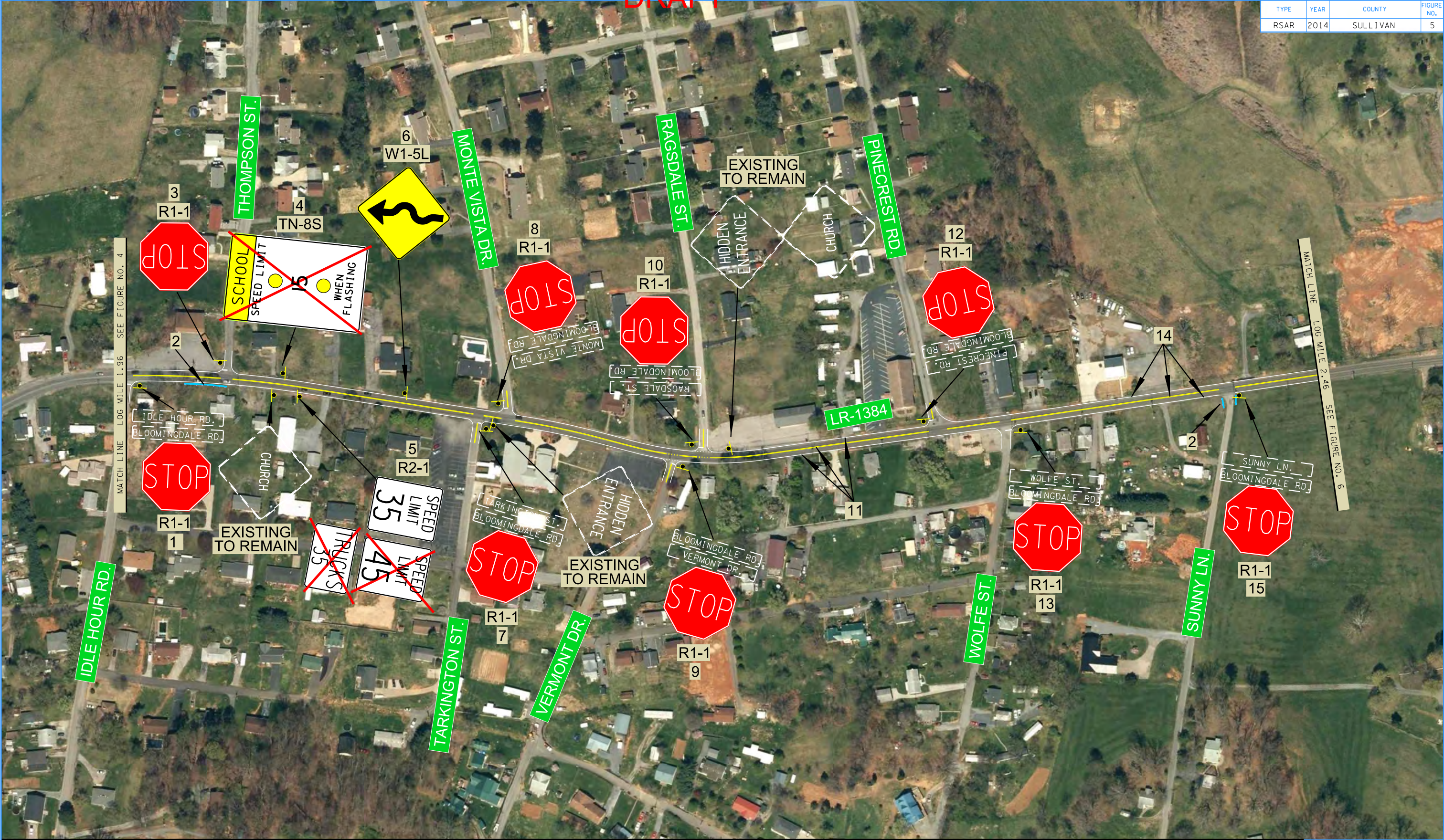
GUIDANCE

1. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Pinehurst Drive, and install 2" min. width red reflective strip on sign post.2. Install white continuos delineation enhancement on ### feet of exisiting guardrail along both sides of Bloomingdale Pike.
3. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavment markings from L.M. 1.45 to L.M. 1.96. Restripe side roads fifty (50) feet with 4" (60 mil) spray thermoplastic pavement markings from edge of pavement on Bloomingdale Pike.
4. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Darlington Drive, and install 2" min. width red reflective strip on sign post.
5. Install one (1) Stop Line (2'x15') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Delivia Street, and install 2" min. width red reflective strip on sign post.
6. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 1.45 to L.M. 1.96.
7. Install one (1) Stop Line (2'x15') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on sign post at Coley Street.
8. Install one (1) Stop Line (2'x15') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Rocky Lane, and install 2" min. width red reflective strip on sign post.
9. Remove and replace one (1) Type 3 Object Markers (OM3-R)(36"x12") signs and one (1) Type 3 Object Markers (OM3-L)(36"x12") approximately approximately 85 feet west of Emerson Road.
10. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on sign post at Emerson Street.
11. Remove one (1) 15 MPH Speed Limit (R2-1) sign, one (1) School (S4-3P) plaque, and one (1) When Childern are Present (S4-2P) plaque on Bloomingdale Pike approxiamtely 175 feet west of Forest View Road.
12. Install one (1) Stop Line (2'x15') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Forest View Road, and install 2" min. width red reflective strip on sign post.

* All Warning signs shall be on fluorescent yellow sheeting material.

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TYPE	YEAR	COUNTY	FIGURE NO.
RSAR	2014	SULLIVAN	5



ROAD SAFETY AUDIT REVIEW

LOCAL ROUTE 1384
(BLOOMINGDALE PIKE)
L.M. 0.00 TO L.M. 5.35
SULLIVAN COUNTY

GUIDANCE

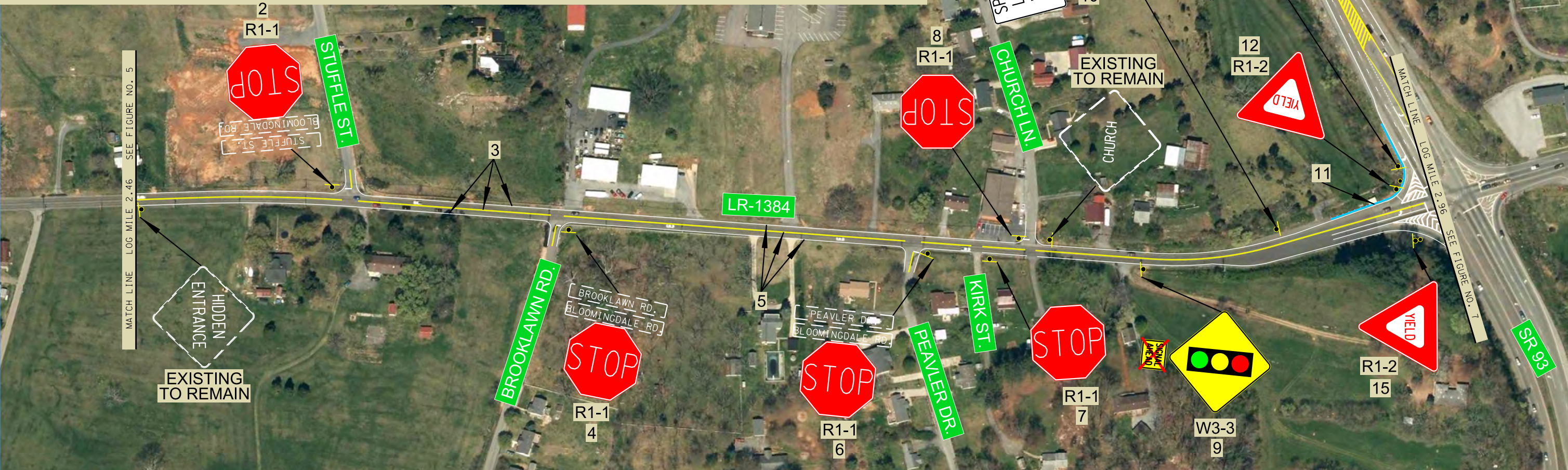
1. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name on Idle Hour Road, and install 2" min. width red reflective strip on post.
2. Install white continuos delineation enhancement on 140 feet of exisiting guardrail along south side of Bloomingdale Pike.
3. Install one (1) Stop Line (2'x11') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on sign post at Thompson Street.
4. Remove one (1) School warning flashing beacon sign on Bloomingdale Pike approximately 125 feet east of Thompson Street.
5. Remove and replace one (1) 35 MPH Speed Limit (R2-1)(24"x30") sign on Bloomingdale Pike approximately 160 feet east of Idle Hour Road.
6. Remove and Replace one (1) Winding Road (W1-5L)(36"x36") sign on Bloomingdale Pike approximately 215 feet west of Monte Vista Drive.
7. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name on Tarkington Street, and install 2" min. width red reflective strip on post.
8. Instal one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name on Monte Vista Drive, and install 2" min. width red reflective strip on post.
9. Install one (1) STOP Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name on Vermont Drive, and install 2" min. width red reflective strip on post.
10. Install one (1) STOP Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name on Ragsdale Street, and install 2" min. width red reflective strip on post.
11. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavment markings from L.M. 1.96 to L.M. 2.46. Restri[pe side roads fifty (50) feet with 4" (60 mil) spray thermoplastic pavement markings from the edge of pavement on Bloomingdale Pike.
12. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name on Pinecrest Road, and install 2" min. width red reflective strip on post.
13. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name Wolfe Street, and install 2" min. width red reflective strip on post.
14. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 1.96 to L.M. 2.46.
15. Remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name Sunny Lane, and install 2" min. width red reflective strip on post at Sunny Lane.

* All Warning signs shall be on fluorescent yellow sheeting material.

GUIDANCE

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1. Remove one (1) Hidden Entrance sign on Bloomingdale Pike approximately 410 feet west of Stuffle Street.
2. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Stuffle Street, and install 2" min. width red reflective strip on sign post.
3. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavement markings from L.M. 2.46 to L.M. 2.96. Restripe side roads fifty (50) feet with 4" (60 mil) spray thermoplastic pavement marking from edge of pavement on Bloomingdale Pike.
4. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Brooklawn Road, and install 2" min. width red reflective strip on sign post.
5. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 2.46 to L.M. 2.96.
6. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Peavler Drive, and install 2" min. width red reflective strip on sign post.
7. Remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on post at Kirk Street.



GUIDANCE

8. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on post at Church Lane.
9. Remove and replace one (1) Signal Ahead (W1-3L)(36"x36") sign on Bloomingdale Pike approximately 320 feet east of Kirk Street.
10. Remove and replace one (1) 35 MPH Speed Limit (R2-1)(24"x30") sign on Bloomingdale Pike approximately 300 feet west of S.R. 93.
11. Install white continuous delineation enhancement on ### feet of existing guardrail along turn lane from south bound S.R. 93 to west bound Bloomingdale Pike.
12. Install one (1) Yield Line (2'x16') thermoplastic pavement marking, remove and replace one (1) Yield (R1-2)(36"x36"x36") sign and install 2" min. width red reflective strip on sign post at S.R. 93 turn lane to Bloomingdale Pike.
13. Remove and replace one (1) Do Not Enter (R5-1)(36"x36") sign and install 2" min. width red reflective strip on sign post on S.R. 93 approximately 60 feet north of Bloomingdale Pike.
14. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavement markings on S.R. 93 from limits of turn lanes.
15. Install one (1) Yield Line (2'x16') thermoplastic pavement marking, remove and replace one (1) Yield (R1-2)(36"x36"x36") sign and install 2" min. width red reflective strip on sign post from Bloomingdale Pike to south bound S.R. 93.

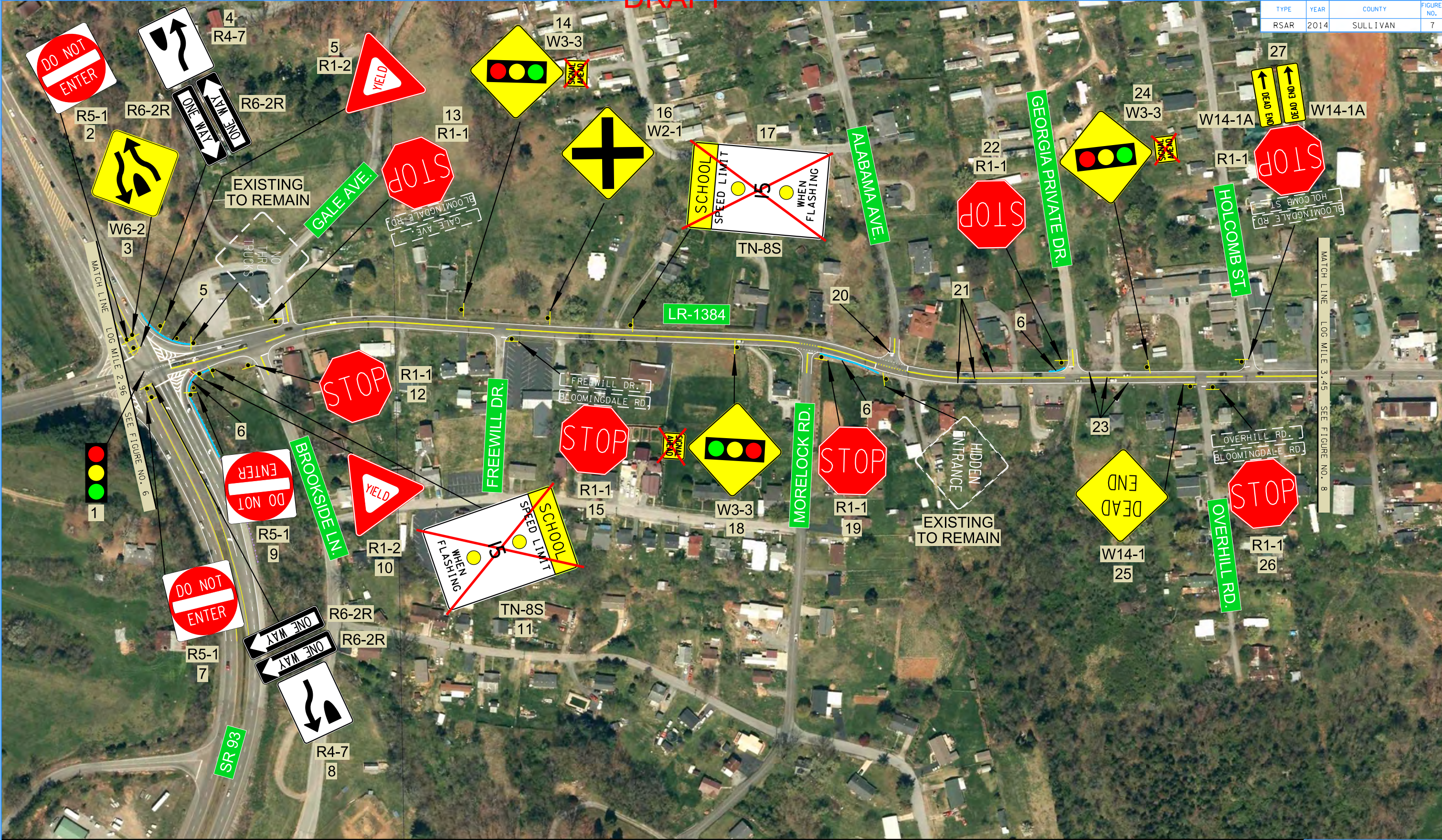
* All Warning signs shall be on fluorescent yellow sheeting material.



ROAD SAFETY AUDIT REVIEW
LOCAL ROUTE 1384
(BLOOMINGDALE PIKE)
L.M. 0.00 TO L.M. 5.35
SULLIVAN COUNTY

DRAFT

TYPE	YEAR	COUNTY	FIGURE NO.
RSAR	2014	SULLIVAN	7



ROAD SAFETY AUDIT REVIEW

LOCAL ROUTE 1384
(BLOOMINGDALE PIKE)
L.M. 0.00 TO L.M. 5.35
SULLIVAN COUNTY

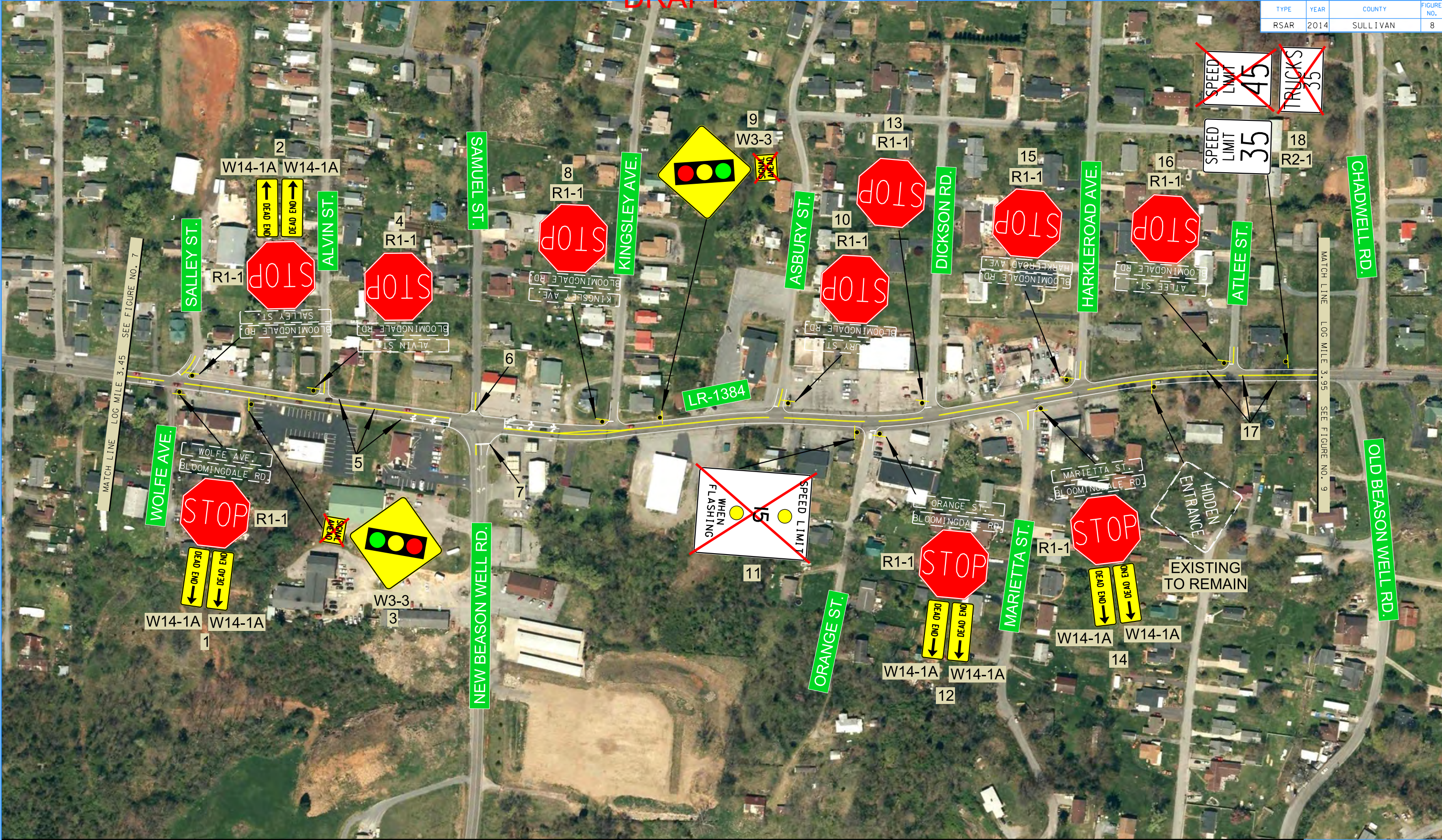
GUIDANCE

1. Remove four (4) signal poles and eight (8) signal heads and install four (4) signal poles and eight (8) signal heads (4 3-section heads and 4 5-section heads). Install 2" min. width yellow reflective strip along the perimeter of the face of all traffic signals backplates.
2. Remove and replace one (1) Do Not Enter (R5-1)(36"x36") sign and install 2" min. width red reflective strip on sign post on S.R. 93 approximately 70 feet north of Bloomingdale Pike.
3. Remove and replace one (1) Divided Highway Ends (W6-2)(36"x36") sign on S.R. 93 approximately 70 feet north of Bloomingdale Pike.
4. Remove and replace one (1) Keep Right (R4-7)(24"x30") sign and two (2) One Way (R6-1R)(12"x36") signs on S.R. 93 approximately 50 feet north of Bloomingdale Pike.
5. Install one (1) Yield Line (2'x16') thermoplastic pavement marking, remove and replace one (1) Yeild (R1-2)(36"x36"x36") sign from west bound Bloomingdale Pike to north bound S.R. 93, and install 2" min. width red reflective strip on sign post.
6. Install white continuos delineation enhancement on #### feet of exisiting guardrail along Bloomingdale Pike and S.R. 93.
7. Remove and replace one (1) Do Not Enter (R5-1)(36"x36") sign and install 2" min. width red reflective strip on sign post on S.R. 93 approximately 70 feet south of Bloomingdale Pike.
8. Remove and replace one (1) Keep Right (R4-7)(24"x30") sign and two (2) One Way (R6-1R)(12"x36") signs on S.R. 93 approximately 50 feet south of Bloomingdale Pike.
9. Remove and replace one (1) Do Not Enter (R5-1)(36"x36") sign and install 2" min. width red reflective strip on sign post on turnlane from north bound S.R. 93 to east bound Bloomingdale Pike.
10. Install one (1) Yield Line (2'x16') thermoplastic pavement marking, remove and replace one (1) Yeild (R1-2)(36"x36"x36") sign on turnlane from north bound S.R. 93 to east bound Bloomingdale Pike, and install 2" min. width red reflective strip on sign post.
11. Remove one (1) School warning flashing beacon sign on Bloomingdale Pike approximately 110 feet west of Brookside Lane.
12. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on post at Brookside Lane.
13. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Gale Avenue, and install 2" min. width red reflective strip on sign post.
14. Remove and replace one (1) Signal Ahead (W1-3L)(36"x36") sign on Bloomingdale Pike approximately 375 feet east of Gale Avenue.
15. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Freewill Drive, and install 2" min. width red reflective strip on sign post.
16. Remove and replace one (1) Intersection Ahead (W2-1)(36"x36") sign on Bloomingdale Pike approximately 550 feet east of Gale Avenue.
17. Remove one (1) School warning flashing beacon sign on Bloomingdale Pike approximately 275 feet east of Freewill Drive.
18. Remove and replace one (1) Signal Ahead (W1-3L)(36"x36") sign on Bloomingdale Pike approximately 210 feet west of Holcomb Street.
19. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on post at Morelock Road.
20. Install three (3) Stop Line (2'x12') thermoplastic pavement marking at signalized intersection of Bloomingdale Pike and Alabama Avenue.
21. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavment markings from L.M. 2.96 to L.M. 3.45. Restripe side road fifty (50) feet with 4" (60 mil) spray thermoplastic pavement marking from the edge of pavement on Bloomingdale Pike.
22. Install one (1) STOP Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on post at Georgia Private Drive.
23. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 2.95 to L.M. 3.45.
24. Remove and replace one (1) Signal Ahead (W1-3L)(36"x36") sign on Bloomingdale Pike approximately 150 feet west of Morelock Road.
25. Remove and replace one (1) Dead End (W14-1)(36"x36") sign at intersection of Bloomingdale pike and Overhill Road.
26. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Overhill Road, and install 2" min. width red reflective strip on sign post.
27. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign and two (2) Dead End (W14-1A)(36"x8") signs, reset existing street name sign on Holcomb Street, and install 2" min. width red reflective strip on sign post.

* All Warning signs shall be on fluorescent yellow sheeting material.

DRAFT

TYPE	YEAR	COUNTY	FIGURE NO.
RSAR	2014	SULLIVAN	8



ROAD SAFETY AUDIT REVIEW
LOCAL ROUTE 1384
(BLOOMINGDALE PIKE)
L.M. 0.00 TO L.M. 5.35
SULLIVAN COUNTY

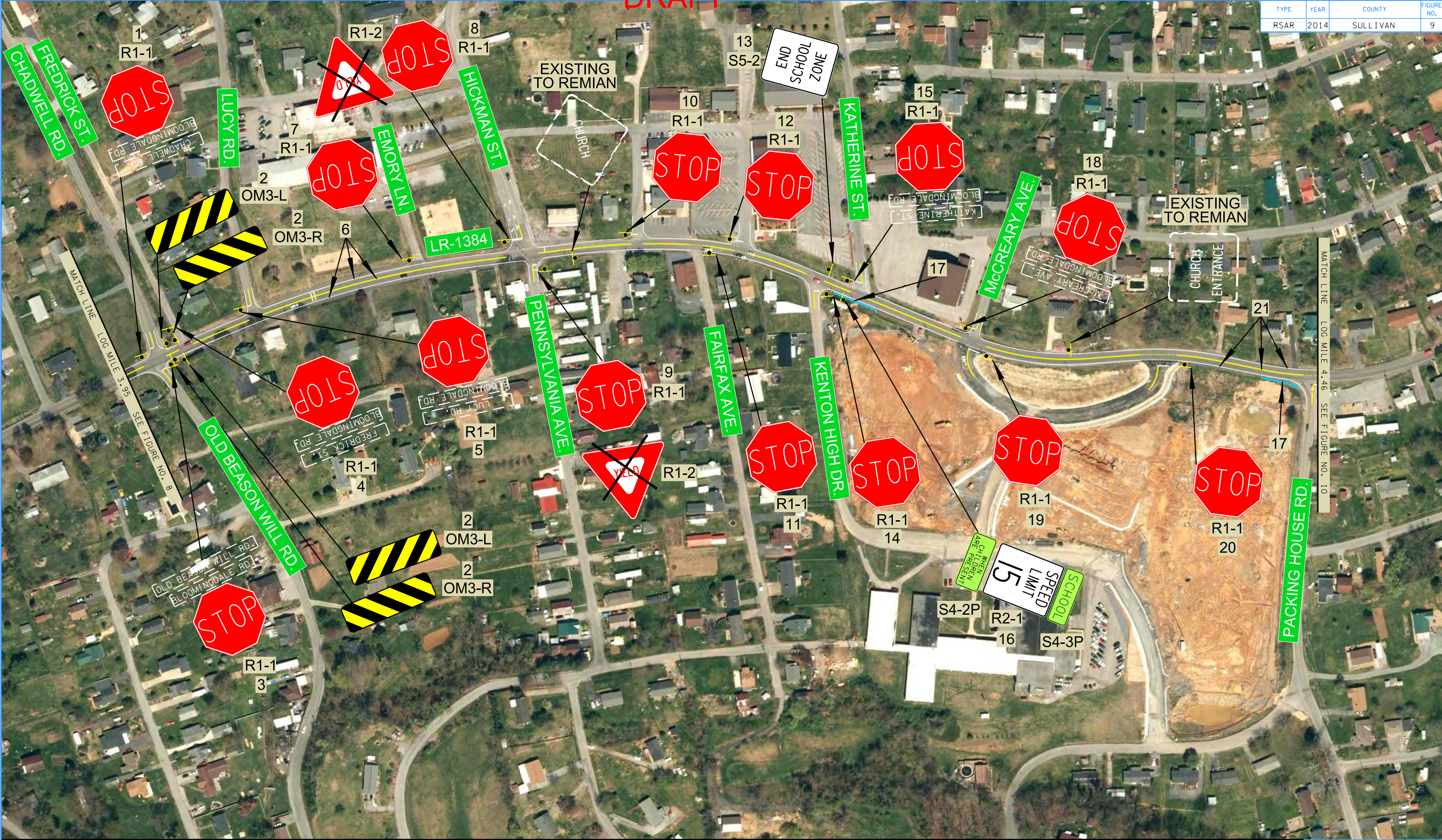
GUIDANCE

1. Remove and replace one (1) STOP (R1-1)(36"x36") sign, two (2) Dead End (W14-1A)(36"x8") signs, reset existing street name sign on Wolfe Avenue, and install 2" min. width red reflective strip on sign post.
2. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign and two (2) Dead End (W14-1A)(36"x8") signs, reset existing street name sign Salley Street, and install 2" min. width red reflective strip on sign post.
3. Remove and replace one (1) Signal Ahead (W1-3L)(36"x36") sign on Bloomingdale Pike approximately 480 feet west of New Beason Well Road.
4. Install one (1) Stop Line (2'x11') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Alvin Street, and install 2" min. width red reflective strip on sign post.
5. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline, edgeline and turn lane pavement markings from L.M. 3.45 to L.M. 3.95. Restripe side road fifty (50) feet with 4" (60 mil) spray thermoplastic pavement marking from the edge of pavement on Bloomingdale Pike.
6. Install one (1) Stop Line (2'x12') thermoplastic pavement marking on Samuel Street.
7. Install one (1) Stop Line (2'x28') thermoplastic pavement marking on New Beason Well Road.
8. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Kingsley Avenue, and install 2" min. width red reflective strip on sign post.
9. Remove and replace one (1) Signal Ahead (W1-3L)(36"x36") sign on Bloomingdale Pike approximately 98 feet east of Kingsley Ave.
10. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Asbury Street, and install 2" min. width red reflective strip on sign post.
11. Remove one (1) School warning flashing beacon sign on Bloomingdale Pike approximately 20 feet west of Orange Street.
12. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, one (1) STOP (R1-1)(36"x36") sign, remove and replace two (2) Dead End (W14-1A)(36"x8") signs, reset existing street name signs on Orange Street, and install 2" min. width red reflective strip on sign post.
13. Remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on sign post on Dickson Road.
14. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, one (1) STOP (R1-1)(36"x36") sign, remove and replace two (2) Dead End (W14-1A)(36"x8") signs, reset existing street name signs on Marietta Street, and install 2" min. width red reflective strip on sign post.
15. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Harkleroad Avenue, and install 2" min. width red reflective strip on sign post.
16. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Atlee Street, and install 2" min. width red reflective strip on sign post.
17. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 3.45 to L.M. 3.95.
18. Remove and replace one (1) 35 MPH Speed Limit (R2-1)(24"x30") sign on Bloomingdale Pike approximately 120 feet east of Atlee Street.

* All Warning signs shall be on fluorescent yellow sheeting material.

DRAFT

TYPE	YEAR	COUNTY	FIGURE NO.
RSAR	2014	SULLIVAN	9



ROAD SAFETY AUDIT REVIEW
LOCAL ROUTE 1384
(BLOOMINGDALE PIKE)
L.M. 0.00 TO L.M. 5.35
SULLIVAN COUNTY

GUIDANCE

1. Install one (1) Stop Line (2'x10') thermoplastic pavement marking install, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Chadwell Road, and install 2" min. width red reflective strip on sign post.
2. Remove and replace two (2) Type 3 Object Markers (OM3-R)(36"x12") signs and two (2) Type 3 Object Markers (OM3-L)(36"x12") signs on both sides of the existing structure on Bloomingdale Pike.
3. Install one (1) Stop Line (2'x11') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Old Beason Will Road, and install 2" min. width red reflective strip on sign post.
4. Remove and replace (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Fredrick Street, and install 2" min. width red reflective strip on sign post.
5. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Lucy Road, and install 2" min. width red reflective strip on sign post.
6. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavment markings from L.M. 3.95 to L.M. 4.46. Restripe side roads fifty (50) feet with 4" (60 mil) spray thermoplastic pavement markings from edge of pavement on Bloomingdale Pike
7. Remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on sign post on Emory Lane.
8. Install one (1) STOP Line (2'x24') thermoplastic pavement marking, one (1) STOP (R1-1)(36"x36") sign, install 2" min. width red reflective strip on post, and remove existing Stop Bar on Bloomingdale Pike at Hickman Street.
9. Install one (1) STOP Line (2'x24') thermoplastic pavement marking, one (1) STOP (R1-1)(36"x36") sign, install 2" min. width red reflective strip on post, and remove existing Stop Bar on Bloomingdale Pike at Pennsylvania Ave.
10. Remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on sign post at Entrance approximately 215 feet east of Hickman Street.
11. Remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on sign post at Entrance approximately 430 feet east of Hickman Street.
12. Remove and replace one (1) STOP (R1-1)(36"x36") sign and install 2" min. width red reflective strip on sign post at Fairfax Avenue.
13. Remove and replace one (1) End School Zone (S5-2)(24"x30") sign on Bloomingdale Pike approximately 70 feet west of Katherine Street.
14. Install one (1) Stop Line (2'x11') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Kenton High Drive, and install 2" min. width red reflective strip on sign post.
15. Install one (1) Stop Line (2'x11') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Katherine Street, and install 2" min. width red reflective strip on sign post.
16. Remove and replace one (1) 15 MPH Speed Limit (R2-1)(24"x30") sign, one (1) When Children Are Present (S4-2P)(24"x10") plaque, and one (1) School (S4-3P)(24"x8") plaque on Bloomingdale Pike approximately 50 feet west of Kenton High Drive.
17. Install white continuos delineation enhancement on 198 feet of exisiting guardrail along sout side of Bloomingdale Pike.
18. Install one (1) Stop Line (2'x11') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on McCreary Avenue, and install 2" min. width red reflective strip on sign post.
19. Install one (1) Stop Line (2'x24') thermoplastic pavement marking, install one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on sign post.
20. Install one (1) Stop Line (2'x24') thermoplastic pavement marking, install one (1) STOP (R1-1)(36"x36") sign, and install 2" min. width red reflective strip on sign post.
21. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 3.95 to L.M. 4.46.

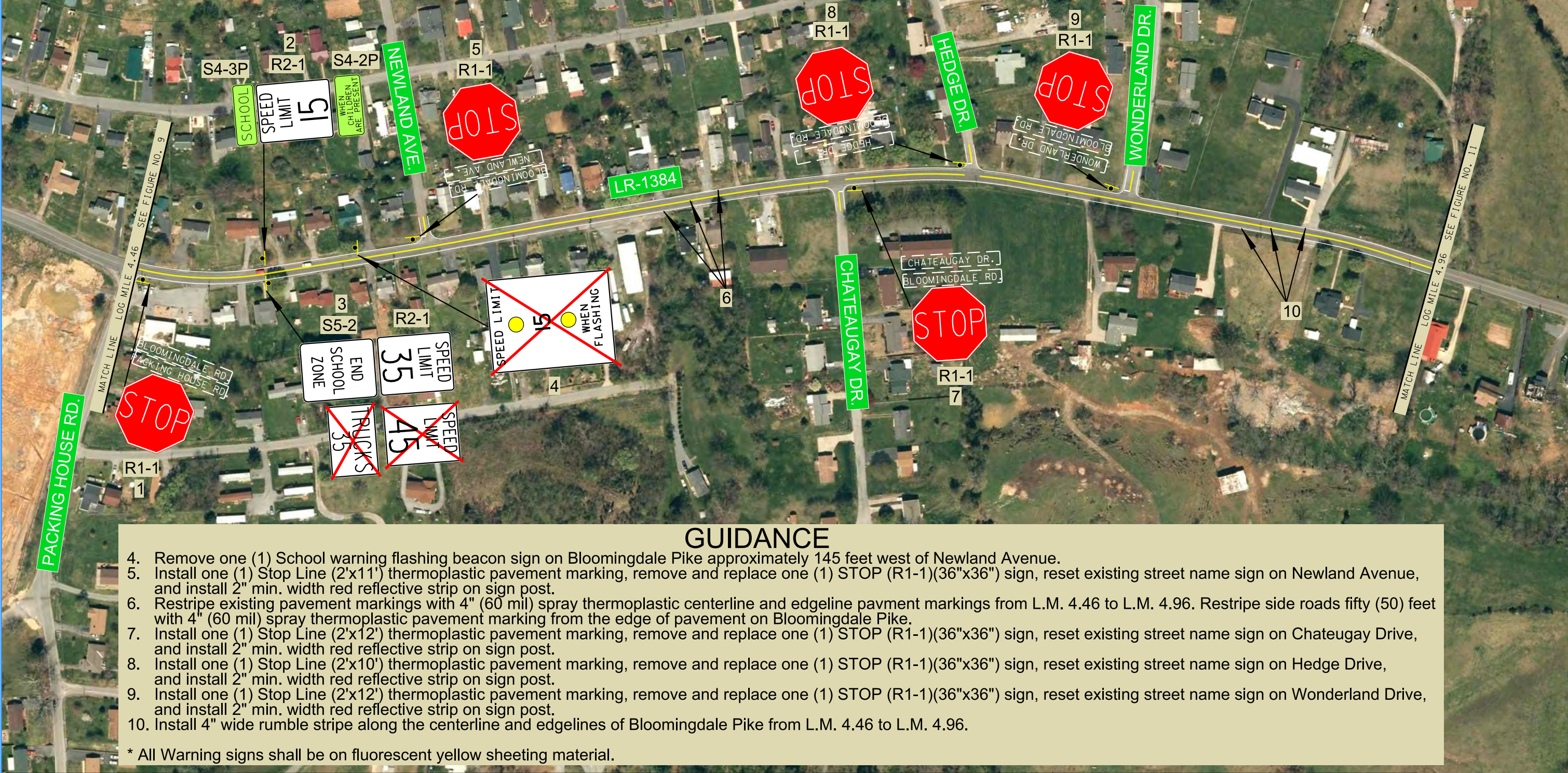
* All Warning signs shall be on fluorescent yellow sheeting material.

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GUIDANCE

TYPE	YEAR	COUNTY	FIGURE NO.
RSAR	2014	SULLIVAN	10

1. Install one (1) Stop Line (2'x12') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Packing House Road, and install 2" min. width red reflective strip on sign post.
2. Remove and replace one (1) 15 MPH Speed Limit (R2-1)(24"x30") sign, When Children Are Present (S4-2P)(24"x10") plaque and School (S4-3P)(24"x8") plaque on Bloomingdale Pike approximately 330 feet west of Newland Ave.
3. Remove and replace one (1) 35 MPH Speed Limit (R2-1)(24"x30") sign and one (1) End School Zone (S5-2)(24"x30") sign on Bloomingdale Pike approximately 255 feet east of Packing House Road.



- GUIDANCE
1. Install 4" wide rumble stripe along the centerline and edgelines of Bloomingdale Pike from L.M. 4.96 to L.M. 5.35.

2. Remove and replace two (2) Type 3 Object Markers (OM3-R)(36"x12") signs and two (2) Type 3 Object Markers (OM3-L)(36"x12") signs on both sides of the existing structure on Bloomingdale Road.

3. Restripe existing pavement markings with 4" (60 mil) spray thermoplastic centerline and edgeline pavement markings from L.M. 4.96 to L.M. 5.35. Restripe side roads fifty (50) feet with 4" (60 mil) spray thermoplastic pavement marking from the edge of pavement on Bloomingdale Pike.

4. Install white continuous delineation enhancement on 53 feet of existing guardrail along the south side of Bloomingdale Pike.

5. Install one (1) Stop Line (2'x10') thermoplastic pavement marking, remove and replace one (1) STOP (R1-1)(36"x36") sign, reset existing street name sign on Brancroft Chapel Road, and install 2" min. width red reflective strip on sign post.
- * All Warning signs shall be on fluorescent yellow sheeting material.

