



# Wildwood Drive Study

St. Johns County, Florida



St. Johns County Public Works Department  
Engineering Division



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Connelly & Wicker Inc.

Planning

Engineering

Landscape Architecture

August 30, 2013

Mr. Greg Caldwell, MPA  
 Project Manager  
 St. Johns County Engineering Division  
 2740 Industry Center Road  
 St. Augustine, FL 32084

Re: Wildwood Drive Roadway Study  
 Task Order #11 to Contract 08-06

Dear Mr. Caldwell,

As delineated in the scope of services in our St. Johns County Task Order #11, dated August 31, 2012, Connelly and Wicker, Inc. has completed a roadway study along the Wildwood Drive corridor. The items that were evaluated as part of this study are presented below:

- Safety Evaluation
- Utility Evaluation
- Drainage Evaluation
- Traffic Evaluation
- Right-of-Way Evaluation

Utilizing these evaluations and the supporting data collection, Connelly and Wicker, Inc. developed improvement recommendations for the Wildwood Drive corridor. Based on these recommendations and input from the St. Johns County Engineering Department, corridor concept plans were created. Included in this study are a summary of the items collected to put together the recommendations and corridor concept plans, as well as an opinion of probable construction costs based on the corridor concept plans.

Connelly and Wicker, Inc. appreciates the opportunity to work with the St. Johns County Engineering Department on this study and we look forward to working with your Department again in the near future.

Sincerely,

William Hartland, P.E.  
 Project Manager





# SAFETY & TRAFFIC ANALYSIS

## INTRODUCTION

St. John's County has commissioned Connelly and Wicker Inc. to perform a Study of Wildwood Drive in St. John's County, Florida. The length of Wildwood Drive is 3.7 miles from Dixie Highway (US 1) at the south terminus to State Road 207 (SR 207) at the north terminus.

The purpose of this project is to provide a study that consists of safety improvements recommendations and corridor concept plans to establish a vision for future planning and design efforts for Wildwood Drive. The study will provide recommendations for safety improvements to enhance the operational characteristics of Wildwood Drive. The safety improvements that will be evaluated consists of adding turn lanes, signage and markings, superelevation correction, cross slope correction, adding paved shoulders/ bicycle lanes, identification of clear zone violations, ADA deficiencies and connectivity of shoulders and sidewalks. The corridor concept plans will evaluate a roadway typical section for Wildwood Drive that is comprised of two 12 foot lanes, two 5 foot paved shoulders, conveyance ditches, a sidewalk on both sides of the road and the safety improvement recommendations. The typical section will be modified based on existing right-of-way widths. The desire of St. Johns County is to minimize right-of-way acquisition.

This study includes three sets of plans. The first set of plans are the Existing Conditions / Crash Summary Plans which show Wildwood Drive as it exists today and the locations and types of crashed along Wildwood Drive from 2008 to 2011. The second set of plans are the Roadway Improvement Plans which are the engineer plans that show the detailed design of the proposed roadway improvements. The third and final set of plans are the Corridor Concept Plans. These plans show what Wildwood Drive will look like after all the recommendations from this study are put into place.

## STUDY METHODOLOGY

### ➤ Data Collection -

1. Survey - The Consultant shall obtain the County's County-wide topographic survey (LIDAR) in digital format that contains topographic data of the county at one-foot contours. The CONSULTANT will utilize and be able to rely upon this survey information provided by the County as a part of this study. Additional Right-of-Way and Design Survey will be required prior to the preparation of Final Design Plans. These additional

surveying services will be negotiated upon completion of this study phase.

2. Field Review - The CONSULTANT will perform a field review of the study corridor. This field review will be performed to observe the following geometric features:
  - a. Cross slopes – The CONSULTANT will utilize a “Smart Level” to document the existing pavement cross slopes at approximately 1,000 foot intervals along the study corridor.
  - b. Superelevation – Based upon the CONSULTANT's initial review of the study corridor, there appears to be up to five horizontal curves within the study limits that may include superelevation. The CONSULTANT will utilize a “Smart Level” to document the existing superelevation at these existing horizontal curve locations.
  - c. Existing lane widths
  - d. Existing traffic control markings and signs
  - e. Side slopes
  - f. Clear zones
  - g. Shoulder type and width
  - h. Intersection elements
  - i. Sight distances at side street intersections
  - j. Drainage facilities, i.e. - side drains, cross drains,
  - k. Sidewalk locations and width
  - l. Utility features above ground
  - m. Posted regulatory and advisory speed limits
  - n. Driveway features
  - o. Investigate potential stormwater pond locations due to possible increased impervious area

As a part of the CONSULTANT's field review of the study corridor, the following operating conditions will be observed:

- a. Areas of known and/or reported problems based on data provided by St. Johns County
- b. Areas of known crash locations based on data provided by St. Johns County
- c. Areas that may indicate unsafe operating conditions
- d. General operating conditions during peak and off peak times

- Field Review - Multiple field reviews were conducted to determine existing conditions along Wildwood Drive.
- Crash Evaluation
- Future Improvements – Research was done to determine if there were any existing approved single family lots that were not yet constructed.
- Capacity Analysis – The year 2013 conditions and the year 2023 total traffic peak hour intersection capacity analysis was conducted.
- Recommendations

## DATA COLLECTION AND FIELD OBSERVATIONS

Connelly and Wicker Inc. performed a field review of Wildwood Drive on November 12, 2012, December 5, 2012 and January 9, 2013. These field reviews were performed to observe cross slopes, superelevation, existing lane widths, existing traffic control markings and signs, side slopes, clear zones, shoulder type and width, intersection elements, sight distance at side street intersections, drainage facilities, sidewalk locations and widths, utility features above ground, posted speed limits and driveway features.

The turning movement counts at the following intersections, except the Wildwood Drive at St. Johns Academy Entrance/ Exit Drive, were conducted during the PM peak period (4:00 – 6:00 PM) on Wednesday January 30, 2013.

- Wildwood Drive at St. Johns Academy Entrance/ Exit Drive
- Wildwood Drive at Fort Peyton Drive
- Wildwood Drive at Old Plantation Drive
- Wildwood Drive at Osceola Trail
- Wildwood Drive at Cheyenne Drive
- Wildwood Drive at S. Winterhawk Drive
- Wildwood Drive at Carter Road
- Wildwood Drive at Wicks Drive
- Wildwood Drive at Oak Lane
- Wildwood Drive at Moultrie Oaks Subdivision

The St. Johns Academy School is open between 8:00 AM and 4:00 PM. The school experiences heavy traffic between 7:30 AM and 8:30 AM. As such, the traffic counts at the St. Johns Academy Entrance/ Exit Drive were conducted during the AM peak period (7:00 – 9:00 AM) on Thursday January 24, 2013. The peak period turning movement counts were applied by a factor of 1.0 for seasonal adjustment.



# SAFETY & TRAFFIC ANALYSIS



The field visit verifying the existing cross street sign control, intersection lane configuration (left turns, right turns etc) and posted speed limit was performed on Thursday January 24, 2013. The AM peak period traffic observations on Wildwood Drive at St. Johns Academy Entrance Drive revealed a northbound queue of 6 cars (about 150 feet) between 8:15 and 8:30 AM. The following turn lane information was also obtained.

Currently, no turn lanes (left turns or right turns) exist on Wildwood Drive at the following intersections:

- Wildwood Drive at St. Johns Academy Entrance/ Exit Drive
- Wildwood Drive at Fort Peyton Drive
- Wildwood Drive at Old Plantation Drive
- Wildwood Drive at Cheyenne Drive
- Wildwood Drive at Carter Road
- Wildwood Drive at Wicks Drive
- Wildwood Drive at Oak Lane
- Wildwood Drive at Moultrie Oaks Subdivision

A 190 foot (50 foot taper and 140 foot deceleration distance) southbound right lane is provided on Wildwood Drive at Heartwood Drive/ Old Plantation Drive.

A 200 foot (150 feet deceleration distance and 50 feet taper) northbound left turn lane, a 300 foot (250 feet deceleration distance and 50 feet taper) northbound right turn lane and a 400 foot (350 feet deceleration distance and 50 feet taper) southbound left turn lane is provided on Wildwood Drive at S. Winterhawk Drive/ Marisa Drive.

The Wildwood Drive/ Oak Lane intersection is approximately located 240 feet east of the existing railroad crossing.

**EXISTING CONDITIONS**

The existing typical section of Wildwood Drive is a two lane rural roadway with swales, sidewalk and paved shoulders along portions of the road in a primarily residential area of St. John’s County with both subdivisions and single family lots. Besides the homes multiple cross streets, numerous churches, Treaty Park, St. John’s Academy School and a commercial shopping center are located along the project corridor. The length of the project is approximately 3.7 miles. The project limits are from Dixie Highway (US 1), at the south terminus, to State Road 207 (SR 207) at the north terminus. Wildwood Drive

within the study corridor is a major collector. The majority of the corridor has approximately 66 feet of right-of-way. The posted speed limit along the roadway is 40 mph.

Multiple side streets exist along the roadway with the major ones listed below:

- Fort Peyton Drive
- Old Plantation Drive
- Osceola Trail
- Cheyenne Drive
- S. Winterhawk Drive
- Deerchase Drive
- Carter Road
- Wicks Drive
- Oak Lane

The only traffic signals on Wildwood Drive are at the intersections of US 1 South and State Road 207. There are dedicated right turn lanes at Old Plantation Drive, Marisa Drive, and Deerchase Drive. There are dedicated left turn lanes at S. Winterhawk Drive, Marisa Drive and Deerchase Drive. There are also dedicated right and left turn lanes into Treaty Park and Good News Church.

Pedestrian facilities are lacking along the roadway. Only limited areas near the newer developments possess pedestrian facilities. These areas include the improved intersection of SR 207 and Wildwood Dr, Heartwood Dr, Coronado Subdivision, a small commercial plaza and a shopping plaza. There currently are no dedicated bike lanes only paved shoulders along Wildwood Drive.

There is a lack of bicycle lanes on the turn lanes which is a danger to bicyclist and the traveling public attempting to share the road.

**Safety Evaluation**

We reviewed the crash data on Wildwood Drive from 2008 to 2011. We received data from two sources – St Johns County and FDOT. In this period of time there have been 94 total crashes with 2 fatalities and 28 injuries. The crashes occurred as follows: 26 crashes, 0 fatalities and 6 injuries in 2008; 38 crashes, 0 fatalities and 14 injuries in 2009; 13 crashes, 2 fatalities and 3 injuries in 2010; 17 crashes, 0 fatalities and 5 injuries in 2011. The two fatalities were in 2010. The first fatality was due to a motorcycle attempting to

make a left turn onto S. Winterhawk Drive and then for some unknown reason traveled into the path of an oncoming car heading south on Wildwood Drive. The second fatality was due to careless driving when the driving hit a tree 475 feet north of Old Plantation Drive on Wildwood Drive.

Table 1 depicts number of crashes per year, number of injuries per year, number of dark crashes per year and number of wet crashes per year.

Year	Total Number of Crashes	Number of Injury Crashes	Number of Dark Crashed	Number of Wet Crashed
2008	26	6	4	6
2009	38	14	8	4
2010	13	3	2	3
2011	17	5	3	1
<b>4-Year Total</b>	94	28	17	14
Annual Average	23.5	7.0	4.3	3.5
Percent of Total		29.8%	18.1%	14.9%

Table 2, shows a summary of crashes by crash type.

Type	2008	2009	2010	2011
Rear end	8	14	4	6
Right turn	1	0	0	0
Left turn	6	6	1	3
Angle	7	9	2	4
Hit bicycle	1	1	0	0
Hit sign	0	1	1	0
Hit deer	0	1	0	2
Hit guardrail	0	2	0	1
Hit tree	1	1	1	0
Sideswipe	1	1	0	1
Backed into	1	1	0	0
Head on	0	0	2	0
Other	0	1	1	0





# SAFETY & TRAFFIC ANALYSIS

The crashes consist of: 32 rear ends, 1 right turn, 16 left turns, 22 angle, 2 hit bicycle, 2 hit sign, 3 hit deer, 3 hit guardrail, 3 hit tree, 3 sideswipe, 2 backed into, 2 head on and 2 other.

Table 3, illustrates the detailed crash data on Wildwood Drive from 2008 to 2011.

Table 3																		
Detailed Crash Data on Wildwood Drive from 2008 to 2011																		
No	Crash	Form	STA	MP	Date	Year	Day	Time	Hour	Type	Cause	D1 Age	D2 Age	D3 Age	Light	Road	Weather	Injury
1	10344653	Short	204+80	3.9	9/19/2008	2008	Friday	8:40 AM	8	Left Turn	FAILURE TO YIELD	35	35		Daylight	Dry	Clear	0
2	8969868	Short	206+50	3.9	9/17/2008	2008	Wednesday	12:58 PM	12	Angle	FAILURE TO YIELD	73	65		Daylight	Wet	Rain	0
3	3956757	Short	204+80	3.9	6/6/2008	2008	Friday	5:25 PM	17	Left Turn	IMPROPER TURN	22	72		Daylight	Dry	Clear	0
4	80173667	Long	206+60	3.9	6/1/2008	2008	Sunday	4:53 PM	16	Rear End	CARELESS DRIVING	56	35		Daylight	Wet	Cloudy	0
5	76997761	Long	206+80	3.9	7/24/2008	2008	Thursday	8:36 PM	20	Angle	DISREGARDING TRAFFIC SIGNAL	28	36	75	Dusk	Dry	Clear	2
6	76995894	Long	204+80	3.9	7/21/2008	2008	Monday	3:15 PM	15	Rear End	CARELESS DRIVING	26	44		Daylight	Dry	Clear	1
7	9068377	Short	204+80	3.9	10/13/2008	2008	Monday	7:40 AM	7	Left Turn	FAILURE TO YIELD	24	34		Daylight	Dry	Clear	0
8	80172528	Long	206+60	3.9	12/2/2008	2008	Tuesday	8:00 AM	8	Rear End	FOLLOWING TOO CLOSE	55	40		Daylight	Wet	Clear	0
9	6265446	Short	206+00	3.9	10/19/2008	2008	Sunday	1:00 AM	1	Sideswipe	CARELESS DRIVING	51	32		Dark (street lights)	Dry	Clear	0
10	77251052	Long	206+80	3.9	12/24/2002	2008	Wednesday	8:49 AM	8	Angle	OTHER	30	42		Daylight	Wet	Rain	0
11	8988791	Short	206+80	3.9	1/23/2008	2008	Wednesday	12:32 PM	12	Angle	IMPROPER LANE CHANGE	92	48		Daylight	Dry	Clear	0
12	6246506	Short	204+80	3.9	3/24/2008	2008	Monday	3:57 PM	15	Right turn	FAILURE TO YIELD	21			Daylight	Dry	Clear	0
13	1147876	Short	48+00	0.9	5/5/2008	2008	Monday	2:25 PM	14	Rear End	CARELESS DRIVING	23	25		Daylight	Dry	Clear	0
14	8969089	Short	205+70	3.9	5/20/2008	2008	Tuesday	5:06 PM	17	Hit Bicycle	FAILURE TO YIELD	22	60		Daylight	Dry	Clear	0
15	6265553	Short	100+00	1.9	9/9/2008	2008	Tuesday	4:29 PM	16	Backed into	CARELESS DRIVING	56	36		Daylight	Dry	Clear	0
16	7665270	Short	204+80	3.9	8/4/2008	2008	Monday	2:27 PM	14	Rear End	CARELESS DRIVING	33	26		Daylight	Dry	Clear	0
17	80109360	Long	115+60	2.2	4/19/2008	2008	Saturday	5:48 AM	5	Angle	FAILURE TO YIELD	24	42		Dark (no street lights)	Dry	Clear	1
18	5025419	Short	165+20	3.1	10/24/2008	2008	Friday	8:30 AM	8	Rear End	CARELESS DRIVING	22	24		Daylight	Wet	Rain	1
19	6246504	Short	162+60	3.1	2/1/2008	2008	Friday	4:52 PM	16	Rear End	CARELESS DRIVING	49	83		Dusk	Dry	Clear	0
20	77250236	Long	192+00	3.6	9/8/2008	2008	Monday	3:20 PM	15	Rear End	CARELESS DRIVING	26	71	61	Daylight	Dry	Cloudy	1P
21	80173905	Long	172+30	3.3	6/30/2008	2008	Monday	3:03 PM	15	Hit Tree	STORM DEBRIS IN ROAD	34			Daylight	Wet	Rain	1P
22	6269115	Short	10+00	0.2	12/6/2008	2008	Saturday	12:15 PM	12	Left Turn	FAILURE TO YIELD	54	61		Daylight	Dry	Clear	0
23	76997915	Long	10+00	0.2	11/29/2008	2008	Saturday	6:25 PM	18	Angle	FAILURE TO YIELD & SPEEDING	24	31	23	Dark (no street lights)	Dry	Cloudy	0
24	80110048	Long	10+00	0.2	3/1/2008	2008	Saturday	10:59 PM	22	Left Turn	CARELESS DRIVING	25	27		Dark (no street lights)	Dry	Clear	1
25	75248000	Unk.	187+50	3.6	12/17/2008	2008	Wednesday	12:45 PM	12	Left Turn	FAILURE TO YIELD	Unk.			Unknown	Unk.	Unk.	Unk.
26	76992882	Unk.	115+60	2.2	6/6/2008	2008	Friday	12:30 PM	12	Angle	IMPROPER TURN	Unk.			Unknown	Unk.	Unk.	Unk.
27	77251090	Long	206+60	3.9	3/15/2009	2009	Sunday	6:56 PM	18	Rear End	CARELESS DRIVING	65	34		Daylight	Dry	Clear	1P
28	77253309	Long	206+20	3.9	3/21/2009	2009	Saturday	11:40 PM	23	Angle	DISREGARING TRAFFIC SIGNAL	50	35		Dark (no street lights)	Dry	Clear	2-1P
29	77253018	Long	204+80	3.9	3/22/2009	2009	Sunday	3:30 PM	15	Rear End	CARELESS DRIVING	43	54		Daylight	Dry	Clear	1P
30	6270610	Short	206+60	3.9	10/1/2009	2009	Thursday	3:36 PM	15	Rear End	CARELESS DRIVING	69	27		Daylight	Dry	Clear	0

# SAFETY & TRAFFIC ANALYSIS



Table 3

Detailed Crash Data on Wildwood Drive from 2008 to 2011

No	Crash	Form	STA	MP	Date	Year	Day	Time	Hour	Type	Cause	D1 Age	D2 Age	D3 Age	Light	Road	Weather	Injury
31	77252246	Long	206+50	3.9	5/16/2009	2009	Saturday	3:05 PM	15	Left Turn	IMPROPER TURN	49	32		Daylight	Dry	Clear	1
32	77255582	Long	204+80	3.9	9/22/2009	2009	Tuesday	8:27 AM	8	Angle	FAILURE TO YIELD	20	35		Daylight	Dry	Clear	1P
33	77256226	Long	204+80	3.9	11/12/2009	2009	Thursday	4:15 PM	16	Angle	FAILURE TO YIELD	20	66	58	Daylight	Dry	Cloudy	1
34	77255217	Long	206+40	3.9	11/25/2009	2009	Wednesday	2:25 PM	14	Angle	OTHER	29	85		Daylight	Wet	Cloudy	2
35	7669095	Short	204+80	3.9	11/24/2009	2009	Tuesday	12:12 AM	24	Left Turn	FAILURE TO YIELD	46	22		Daylight	Dry	Clear	0
36	7670778	Short	206+50	3.9	4/13/2009	2009	Monday	8:40 AM	8	Angle	DISREGARING TRAFFIC SIGNAL	39	29	39	Daylight	Dry	Clear	0
37	10331070	Short	205+40	3.9	11/13/2009	2009	Friday	3:33 PM	15	Rear End	CARELESS DRIVING	49	70		Daylight	Dry	Clear	0
38	8969991	Short	205+40	3.9	10/9/2009	2009	Friday	4:09 PM	16	Rear End	FOLLOWED TOO CLOSELY	25	22		Daylight	Dry	Clear	0
39	77253055	Long	204+80	3.9	7/6/2009	2009	Monday	1:10 PM	13	Angle	FAILURE TO YIELD	20	52		Daylight	Wet	Rain	1P
40	77255194	Long	44+00	0.8	9/27/2009	2009	Sunday	11:20 PM	23	Hit guardrail	DROVE LEFT OF CENTER	36	43		Dark (no street lights)	Dry	Clear	1P
41	5025489	Short	84+40	1.6	1/11/2009	2009	Sunday	3:45 AM	3	Hit deer	CARELESS DRIVING	56			Dark (no street lights)	Dry	Clear	0
42	76996283	Long	78+20	1.5	10/9/2009	2009	Friday	2:03 AM	2	Hit Tree	CARELESS DRIVING	Unk.			Dark (no street lights)	Dry	Clear	0
43	80174423	Long	135+60	2.6	1/13/2009	2009	Tuesday	11:18 AM	11	Rear End	CARELESS DRIVING	49	43		Daylight	Wet	Rain	0
44	77254435	Long	162+90	3.1	6/3/2009	2009	Wednesday	5:45 PM	17	Angle	IMPROPER TURN	84	52		Daylight	Dry	Cloudy	1P
45	5057166	Short	162+80	3.1	7/23/2009	2009	Thursday	6:26 PM	18	Rear End	CARELESS DRIVING	26	50		Daylight	Dry	Clear	0
46	10348410	Short	181+20	3.4	11/6/2009	2009	Friday	7:55 AM	7	Rear End	CARELESS DRIVING	44	48	43	Daylight	Dry	Clear	0
47	80172529	Long	172+50	3.3	9/22/2009	2009	Tuesday	8:02 PM	20	Rear End	FOLLOWED TOO CLOSELY	21			Dark (no street lights)	Dry	Clear	2
48	7725444	Long	187+50	3.6	6/13/2009	2009	Saturday	10:30 AM	10	Rear End	CARELESS DRIVING/DUI	55	71		Daylight	Dry	Clear	0
49	90530280	Long	187+50	3.6	6/19/2009	2009	Friday	5:00 PM	17	Rear End	CARELESS DRIVING	52	52		Daylight	Dry	Clear	1
50	80173608	Long	193+00	3.7	1/28/2009	2009	Wednesday	7:01 PM	19	Hit sign	ALCOHOL-UNDER INFLUENCE	83			Dark (no street lights)	Dry	Clear	0
51	10341837	Short	195+20	3.7	5/8/2009	2009	Friday	3:55 PM	15	Sideswipe	IMPROPER PASSING	21	33		Daylight	Dry	Clear	0
52	76997937	Long	10+20	0.2	5/26/2009	2009	Tuesday	7:35 AM	7	Left Turn	OTHER	63	33		Daylight	Dry	Clear	1
53	77254751	Long	10+20	0.2	8/18/2009	2009	Tuesday	10:42 AM	10	Angle	DISREGARING TRAFFIC SIGNAL	92	52		Daylight	Dry	Clear	0
54	80266015	Long	10+20	0.2	8/8/2009	2009	Saturday	11:53 AM	11	Rear End	CARELESS DRIVING	42	57		Daylight	Dry	Cloudy	1
55	80266481	Long	10+00	0.2	12/22/2009	2009	Tuesday	8:19 AM	8	Rear End	CARELESS DRIVING	25	32		Daylight	Dry	Clear	0
56	80266144	Long	44+80	0.8	12/15/2009	2009	Tuesday	12:50 AM	24	Hit guardrail	CARELESS DRIVING	24			Dark (no street lights)	Dry	Clear	1
57	77255215	Long	10+60	0.2	11/15/2009	2009	Sunday	1:35 PM	13	Hit Bicycle	DRIVING WRONG SIDE/WAY	59	25		Daylight	Dry	Clear	1
58	76985009	Long	10+00	0.2	12/10/2009	2009	Thursday	9:00 PM	21	Left Turn	FAILURE TO YIELD	55	30		Dark (street light)	Dry	Clear	1P
59	80174025	Long	10+00	0.2	4/14/2009	2009	Tuesday	9:35 AM	9	Left Turn	FAILURE TO YIELD	31	31		Daylight	Wet	Rain	1
60	77250799	Unk.	10+00	0.2	3/15/2009	2009	Sunday	10:05 AM	10	Rear End	CARELESS DRIVING	Unk.			Unknown	Unk.	Unk.	Unk.
61	77251118	Unk.	206+20	3.9	6/14/2009	2009	Sunday	11:30 PM	23	Angle	FAILURE TO YIELD RIGHT OF WAY	Unk.			Unknown	Unk.	Unk.	Unk.
62	80109541	Unk.	10+20	0.2	12/8/2009	2009	Tuesday	5:57 AM	5	Other	OTHER	Unk.			Unknown	Unk.	Unk.	Unk.
63	76984998	Unk.	11+60	0.2	2/18/2009	2009	Wednesday	6:00 PM	18	Left Turn	FAILURE TO YIELD RIGHT OF WAY	Unk.			Unknown	Unk.	Unk.	2
64	80169635	Unk.	10+00	0.2	12/23/2009	2009	Wednesday	12:00 AM	24	Backed into	IMPROPER BACKING	Unk.			Unknown	Unk.	Unk.	0
65	77258174	Long	65+20	1.2	3/14/2010	2010	Sunday	10:25 AM	10	Hit sign	OTHER	52			Daylight	Dry	Clear	1
66	10348028	Short	115+00	2.2	10/2/2010	2010	Saturday	1:08 PM	13	Rear End	CARELESS DRIVING	61	57		Daylight	Wet	Cloudy	0





# SAFETY & TRAFFIC ANALYSIS

Table 3

Detailed Crash Data on Wildwood Drive from 2008 to 2011

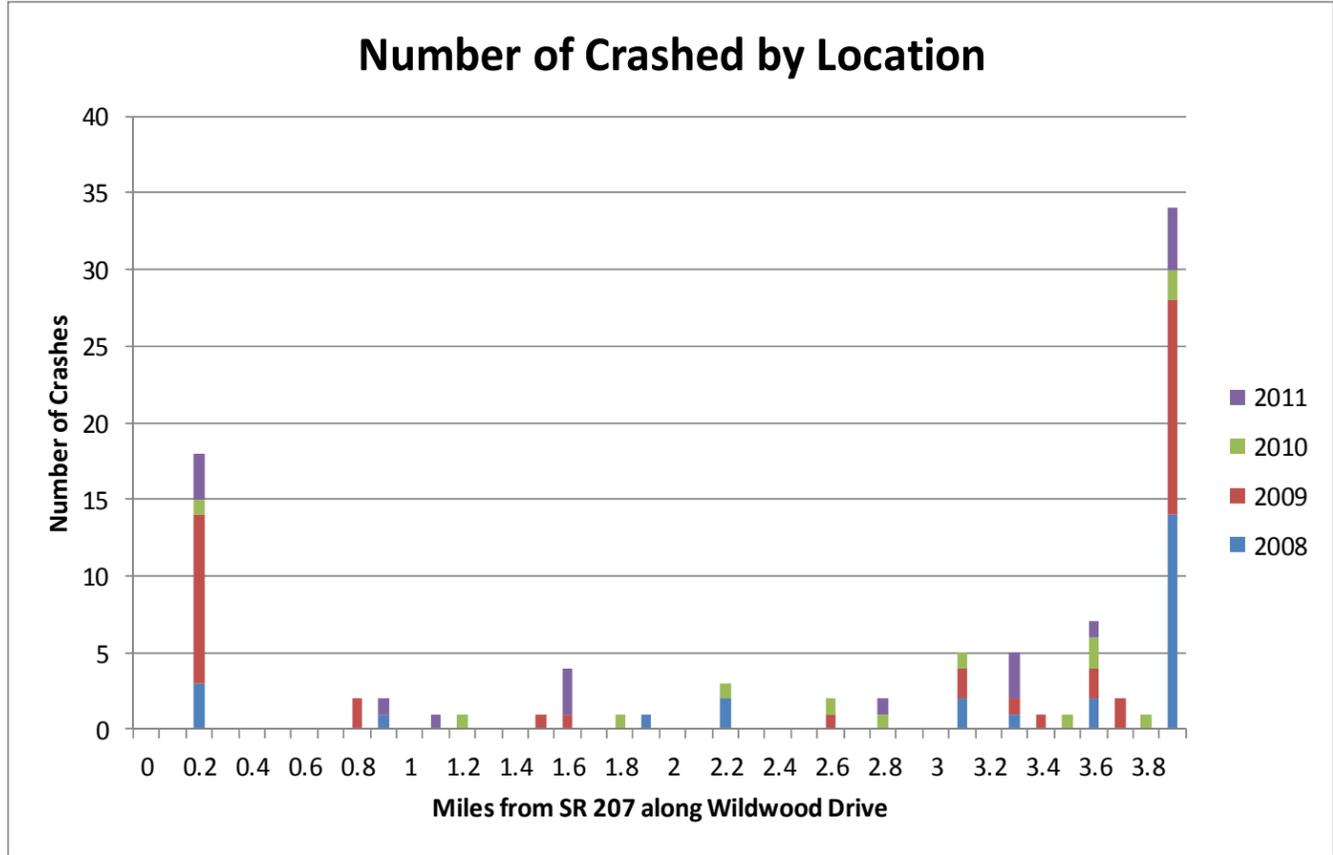
No	Crash	Form	STA	MP	Date	Year	Day	Time	Hour	Type	Cause	D1 Age	D2 Age	D3 Age	Light	Road	Weather	Injury
67	77260605	Long	136+30	2.6	7/8/2010	2010	Thursday	2:38 PM	14	Head on	UNKNOWN	22	53		Daylight	Dry	Clear	0
68	77261961	Long	1147+40	2.8	9/22/2010	2010	Wednesday	8:45 AM	8	Hit parked car	CARELESS DRIVING	45	45	44	Daylight	Dry	Clear	0
69	6270638	Short	163+40	3.1	1/21/2010	2010	Thursday	5:13 PM	17	Rear End	CARELESS DRIVING	39	38		Daylight	Wet	Cloudy	0
70	6248307	Short	184+20	3.5	2/1/2010	2010	Monday	4:40 PM	16	Rear End	CARELESS DRIVING	21	29		Daylight	Dry	Cloudy	0
71	77258902	Long	191+40	3.6	5/4/2010	2010	Tuesday	9:00 PM	21	Left Turn	CARELESS DRIVING	77	25		Dark (no street lights)	Wet	Rain	2
72	77260011	Long	198+40	3.8	6/23/2010	2010	Wednesday	5:33 AM	5	Head on	DROVE LEFT OF CENTER/ IMPROPER TURN	33	44		Dark (no street lights)	Dry	Clear	0
73	75248607	Long	204+80	3.9	9/21/2010	2010	Tuesday	2:40 PM	14	Angle	FAILURE TO YIELD RIGHT OF WAY	36	62		Daylight	Dry	Clear	1P
74	80266491	Long	205+40	3.9	1/27/2010	2010	Wednesday	1:21 PM	13	Rear End	CARELESS DRIVING	59	61		Daylight	Dry	Clear	0
75	8988873	Short	190+00	3.6	5/23/2010	2010	Sunday	7:57 PM	19	Hit tree	CARELESS DRIVING	53			Daylight	Dry	Clear	0
76	77257008	Long	10+20	0.2	8/18/2010	2010	Wednesday	6:25 AM	6	Angle	DISREGARD OF TRAFFIC SIGNAL	47	35		Dawn	Dry	Clear	0
77	80267901	Unk.	95+20	1.8	11/16/2010	2010	Tuesday	5:46 AM	5	Hit Tree	CARELESS DRIVING	Unk.			Unknown	Unk.	Unk.	Unk.
78	Unknown	Unk.	50+00	0.9	1/13/2011	2011	Thursday	3:30 AM	3	Hit guardrail	CARELESS DRIVING	Unk.			Unknown	Unk.	Cloudy	0
79	82203971	Long	1146+30	2.8	12/1/2011	2011	Thursday	4:03 PM	16	Angle	CARELESS DRIVING	19	57		Daylight	Dry	Clear	2
80	82384862	Short	83+20	1.6	5/7/2011	2011	Saturday	10:40 AM	10	Left Turn	FAIL YEILD ROW	89	38		Daylight	Dry	Clear	0
81	82026062	Long	82+80	1.6	9/5/2011	2011	Monday	4:00 AM	4	Hit deer	NO IMPROPER ACTION	30			Dark (no street lights)	Dry	Cloudy	0
82	82001746	Long	187+50	3.6	2/18/2011	2011	Friday	11:15 PM	23	Rear End	CARELESS DRIVING	22	26		Dark (no street lights)	Dry	Clear	0
83	82038534	Long	11+00	0.2	2/17/2011	2011	Thursday	7:42 AM	7	Rear End	CARELESS DRIVING	30	53		Dawn	Wet	Fog, Smoke	0
84	Unknown	Unk.	10+20	0.2	10/18/2011	2011	Tuesday	8:25 AM	8	Angle	FAIL YEILD ROW	Unk.			Unknown	Unk.	Unk.	1
85	Unknown	Unk.	11+60	0.2	12/4/2011	2011	Sunday	10:40 AM	10	Rear End	CARELESS DRIVING	Unk.			Unknown	Unk.	Unk.	0
86	Unknown	Unk.	206+00	3.9	6/27/2011	2011	Monday	11:30 AM	11	Left Turn	FAIL YEILD ROW	Unk.			Unknown	Dry	Clear	2
87	Unknown	Unk.	206+20	3.9	11/7/2011	2011	Monday	1:50 PM	13	Angle	NO IMPROPER ACTION	Unk.			Unknown	Unk.	Unk.	0
88	Unknown	Unk.	205+40	3.9	12/18/2011	2011	Sunday	11:40 AM	11	Rear End	CARELESS DRIVING	Unk.			Unknown	Unk.	Unk.	0
89	Unknown	Unk.	205+60	3.9	12/22/2011	2011	Thursday	11:50 AM	11	Left Turn	FAIL YEILD ROW	Unk.			Unknown	Unk.	Unk.	0
90	82384861	Short	171+70	3.3	5/6/2011	2011	Friday	4:43 PM	16	Sideswipe	CARELESS DRIVING	65	21		Daylight	Dry	Cloudy	0
91	82384866	Short	172+50	3.3	5/8/2011	2011	Sunday	12:17 PM	12	Rear End	CARELESS DRIVING	19	72		Daylight	Dry	Clear	0
92	82038549	Long	59+10	1.1	3/16/2011	2011	Wednesday	6:00 PM	18	Angle	CARELESS DRIVING	49	18		Daylight	Dry	Clear	1P
93	82384920	Short	82+00	1.6	6/14/2011	2011	Tuesday	9:47 PM	21	Hit deer	NO IMPROPER ACTION	51			Dark (no street lights)	Dry	Clear	0
94	82383557	Short	172+50	3.3	6/23/2011	2011	Thursday	2:25 PM	14	Rear End	CARELESS DRIVING	43	60		Daylight	Dry	Clear	0

# SAFETY & TRAFFIC ANALYSIS

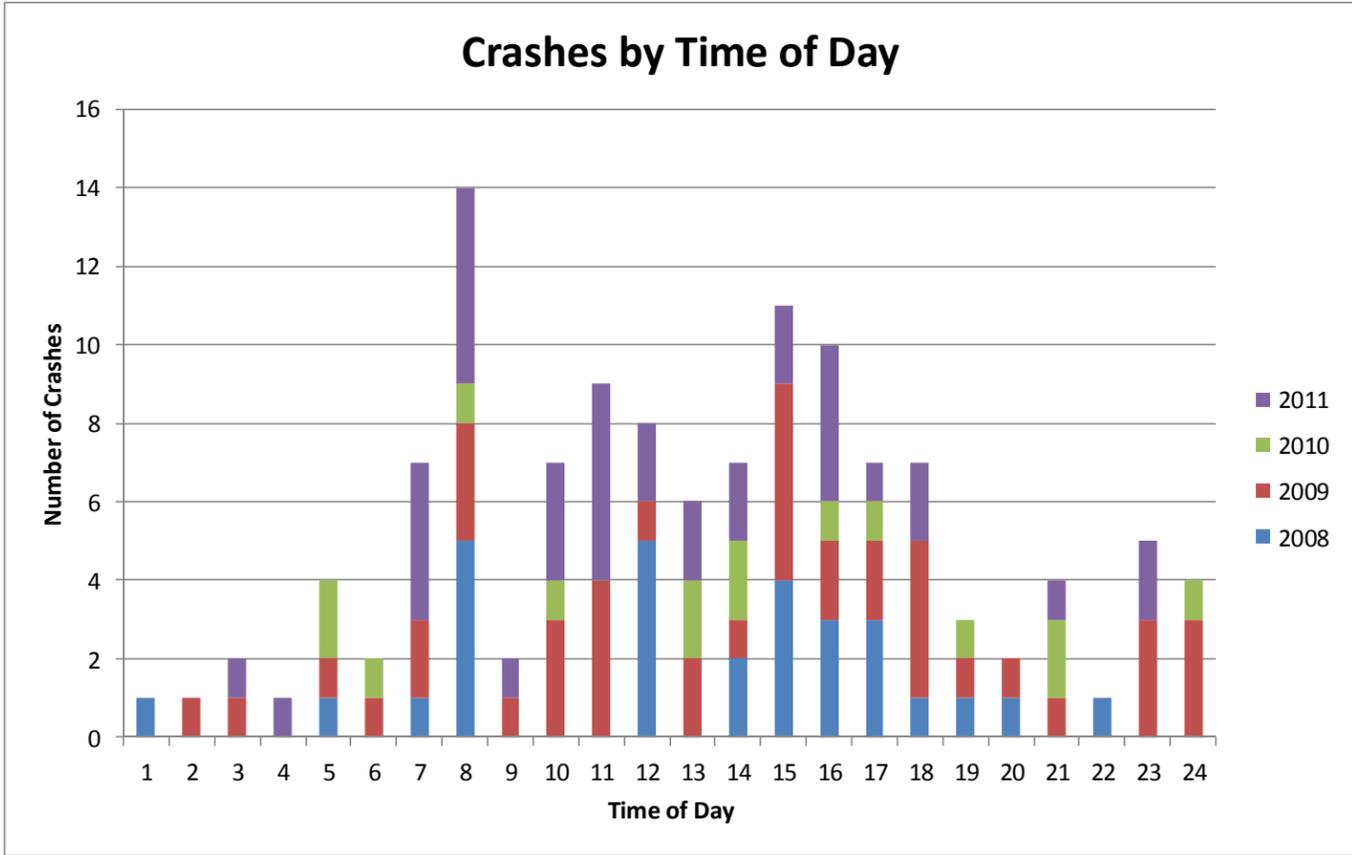


Figures 1 through 3 graphically illustrate the number of crashes by location, crashes by time of day and crashes by age of at-fault drivers. As Figure 1 shows the majority of the crashes along Wildwood are either at the intersection of Wildwood Drive and SR 207 or at the intersection of Wildwood Drive and US-1. In 2011, improvements were made to the Wildwood Drive and SR207 intersection which dramatically decreased accidents within the improvement area. The intersection of Wildwood Drive and US-1 is the most critical location on Wildwood Drive as far as accidents are concerned.

**Figure 1**



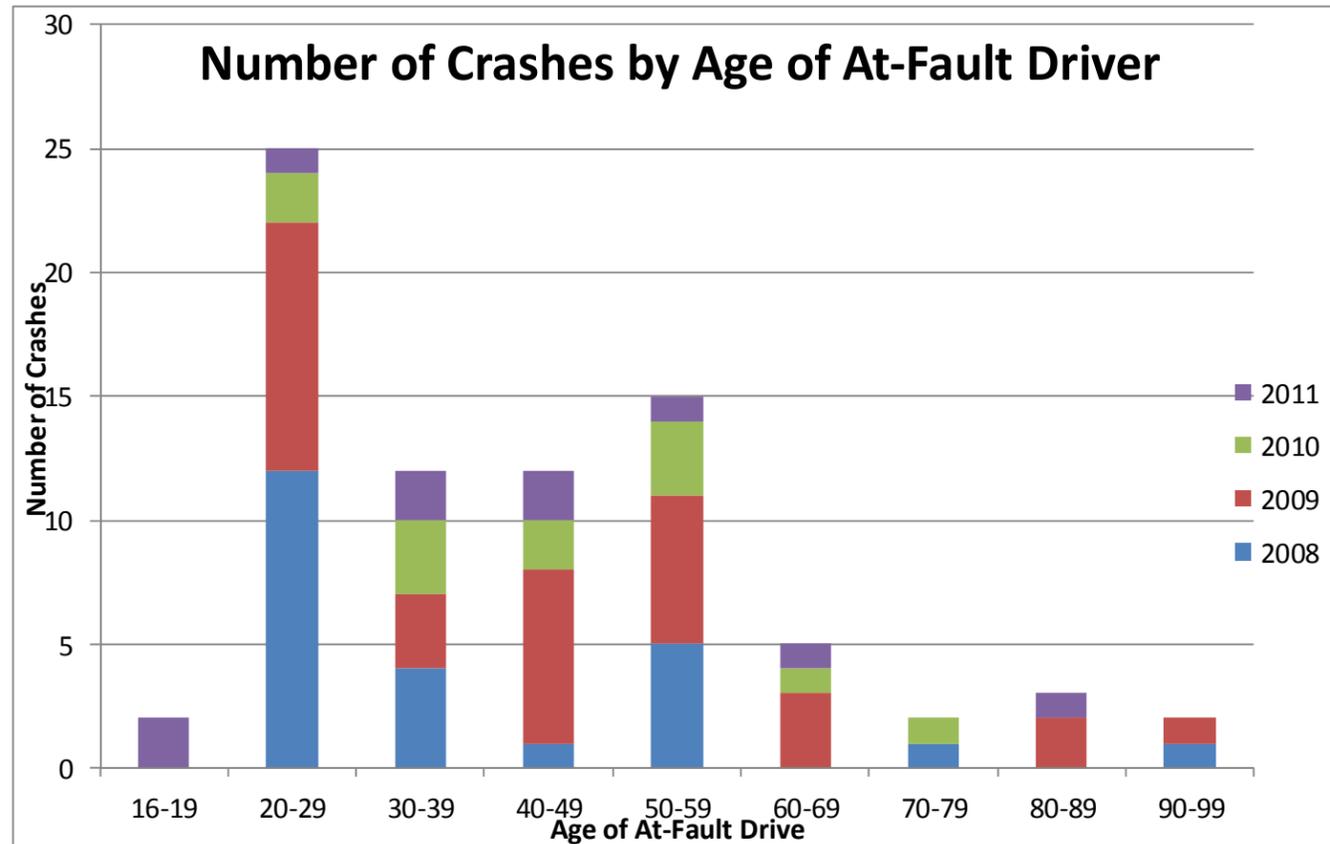
**Figure 2**





# SAFETY & TRAFFIC ANALYSIS

**Figure 3**



**Utility Evaluation**

Utilities are abundant along Wildwood Drive between US 1 and SR 207. Known existing utility providers include the following:

- St. John's County Utility Department
- AT&T
- Comcast Cable
- Florida Power and Light
- Level 3 Communications
- MCI
- TECO Peoples Gas
- Qwest Communications
- Sprint Nextel

Regardless of the efforts made, utility conflicts, relocations, and adjustments are ultimately inevitable with any roadway project.

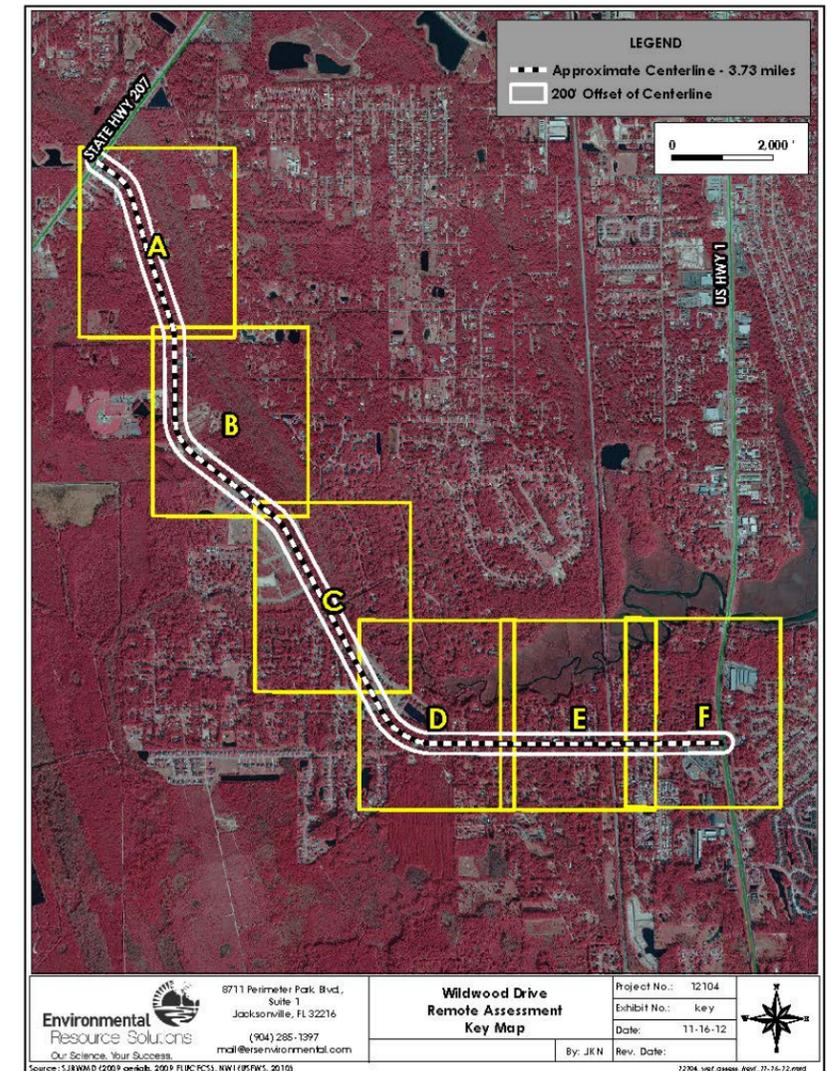
**Drainage Evaluation**

The existing drainage system on Wildwood Drive consists of cross drains, side drains and swales. There are 7 cross drains along Wildwood Drive that discharge into Moultrie Creek. Roadside swales along Wildwood Drive serve as its stormwater conveyance.

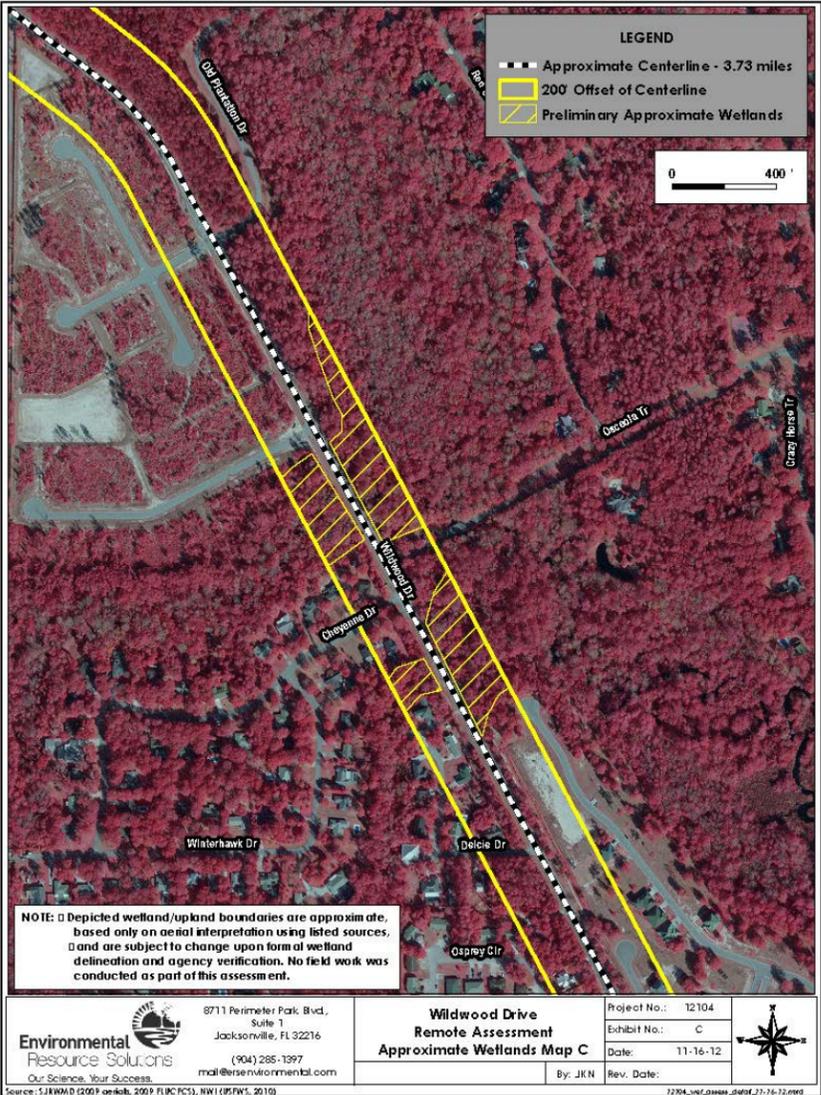
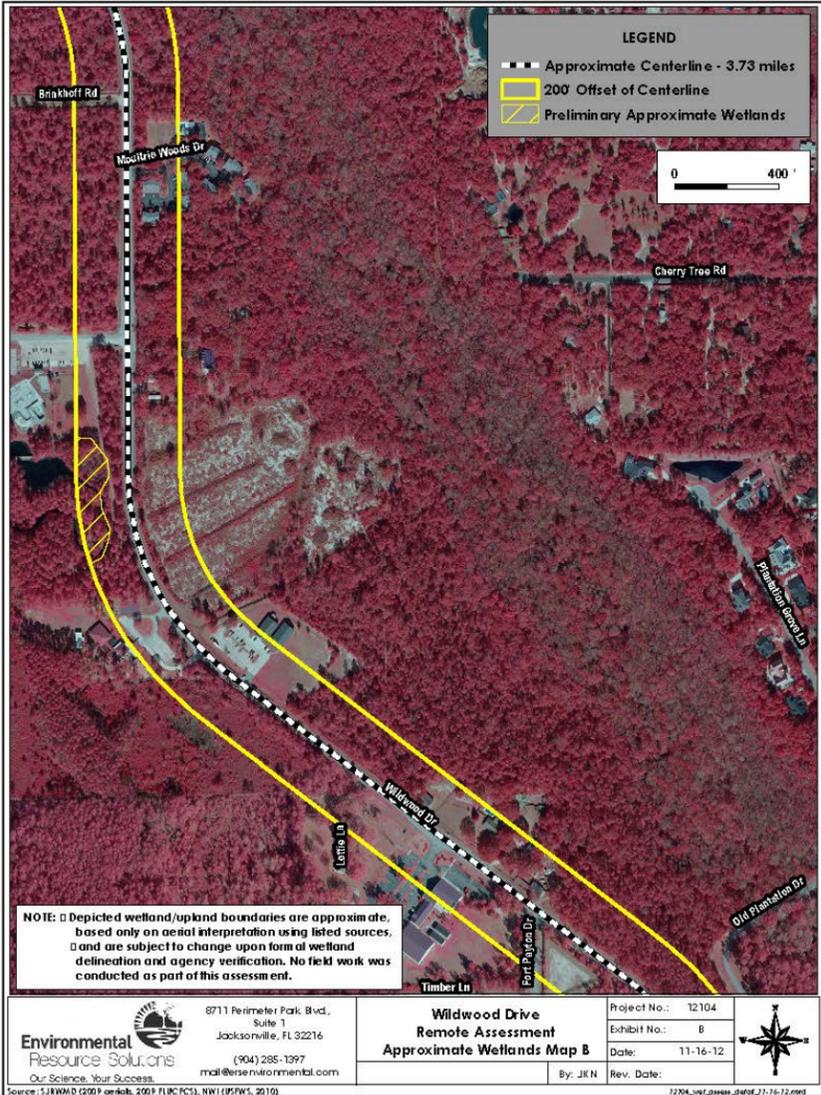
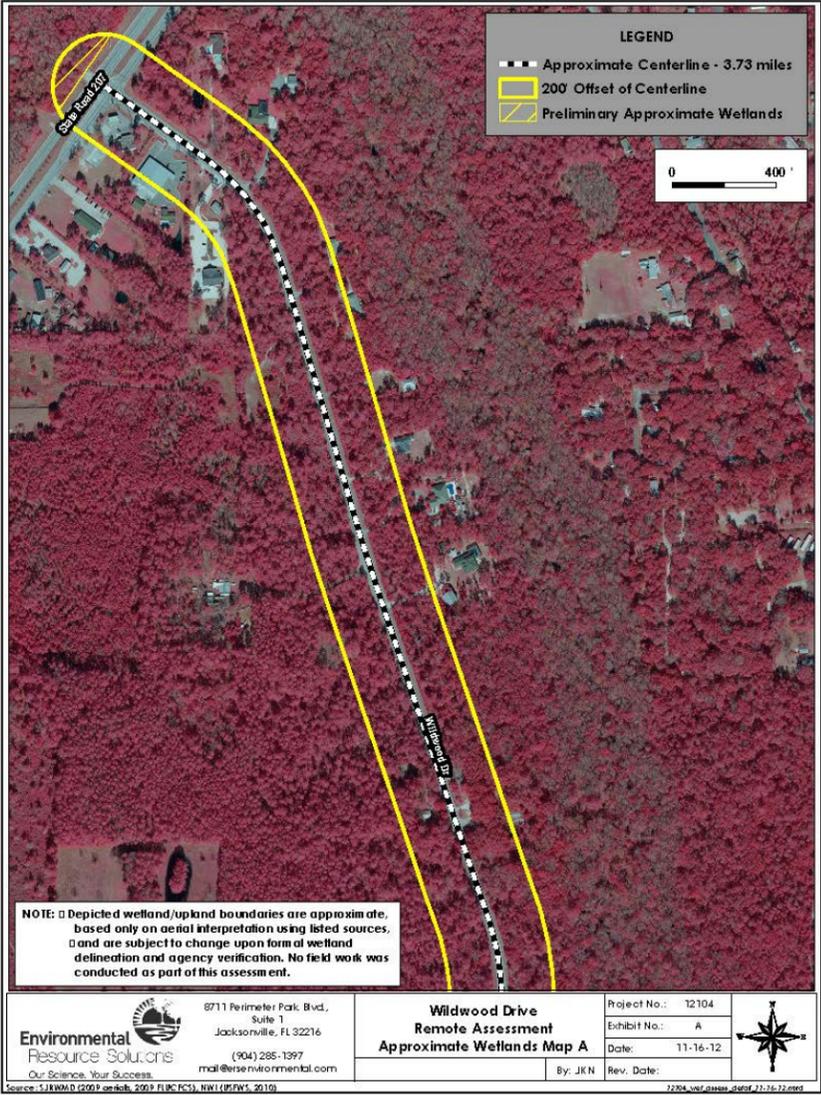
Seven existing cross drains convey surface water under Wildwood Drive and discharge into Moultrie Creek. The first cross drain is a 36" x 54" ERCP located at Sta. 43+50. The second cross drain is a 24"x36"ERCP located at Sta. 74+70. The third cross drain is two 60" CMP's located at Sta. 111+80. The

forth cross drain is a 48" RCP located at Sta. 117+70. The fifth cross drain is a 5.5'(H) x 9'(W) CMP located at 1152+80. The sixth cross drain is a 60" CMP located at Sta. 168+80. This cross drain was recently replaced with a 60" RCP but will need to be extended to match the concept design plans. The seventh and final cross drain is a 48" CMP located at Sta. 196+90.

Environmental Resource Solutions performed a preliminary wetland study along Wildwood Drive. The boundary of the study had a 200 foot offset from the centerline. The wetland boundaries were estimated using infrared aerial photograph interpretation.

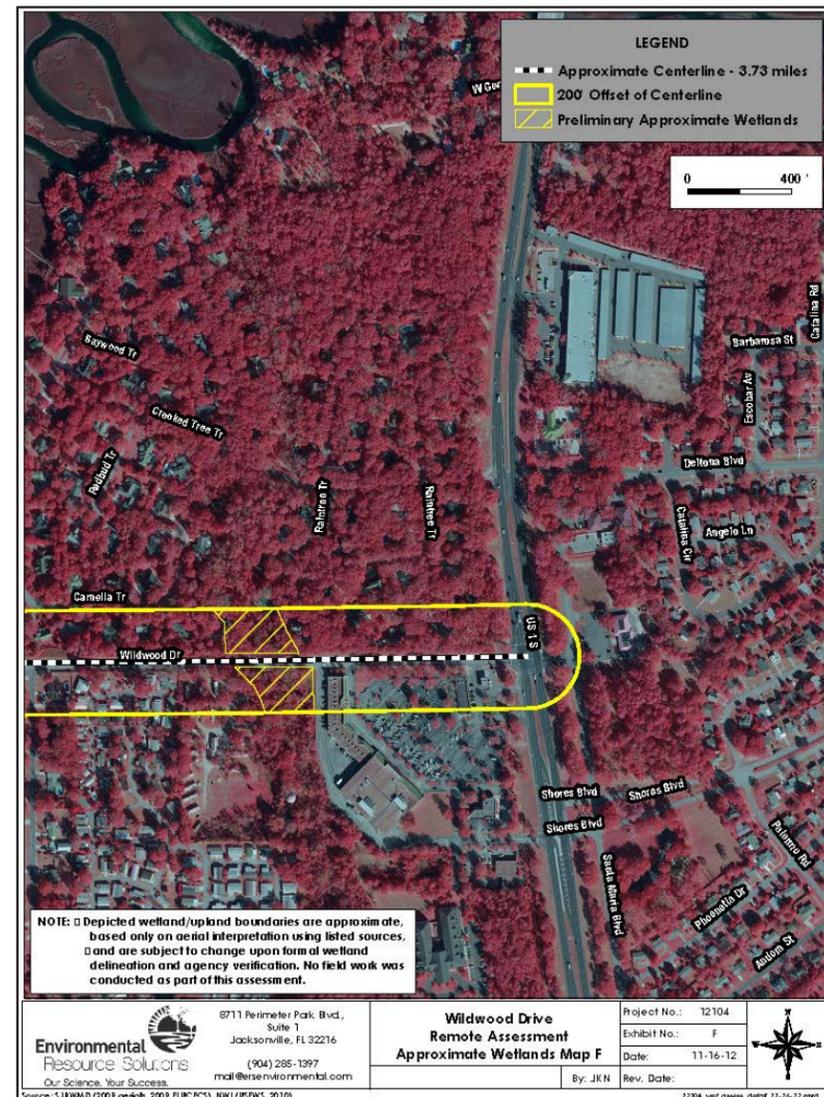
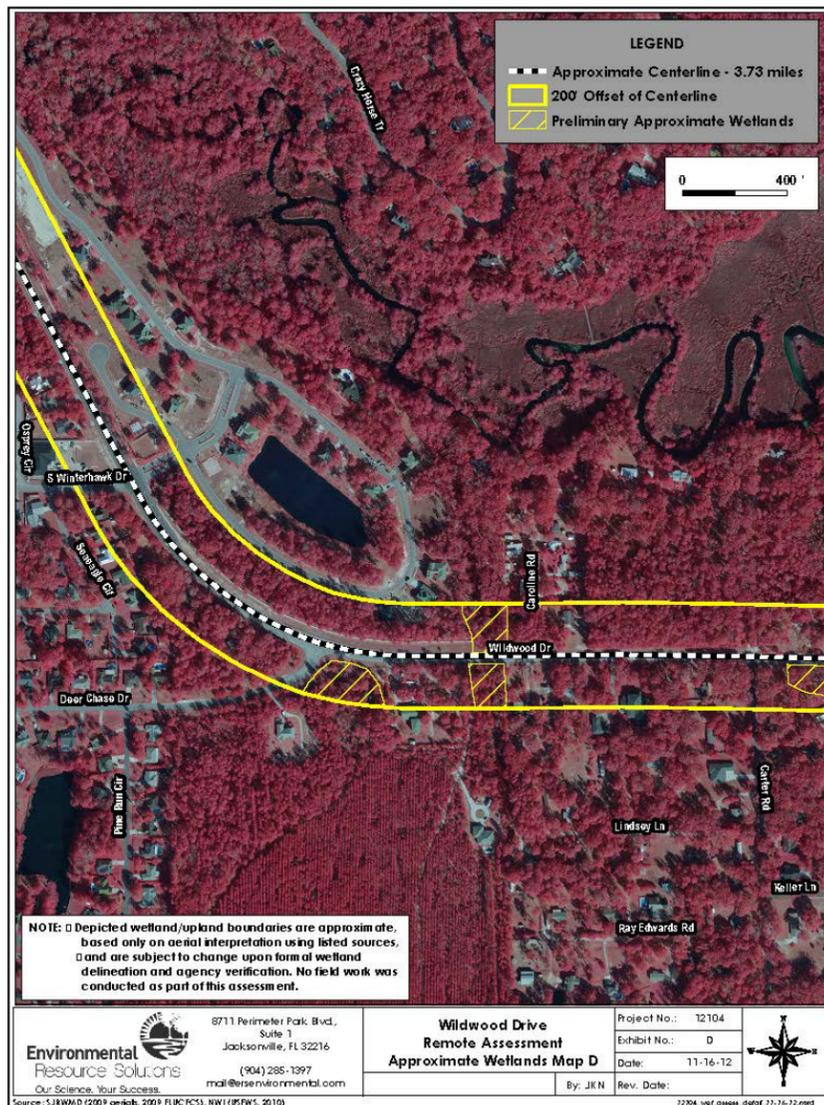


# SAFETY & TRAFFIC ANALYSIS





# SAFETY & TRAFFIC ANALYSIS



# SAFETY & TRAFFIC ANALYSIS



**Traffic Evaluation**

The traffic report was performed by Swathi Konda, P.E., at King Engineering Associates, Inc.

**Year 2023 Traffic Projections**

The St. Johns County "Transportation Analysis Spreadsheet" reserves traffic concurrency for proposed development for a minimum of 10 years. As such, year 2023 (year 2013 + 10 years) has been considered for future conditions analysis and evaluation in this traffic study.

The year 2023 total traffic projection includes, the year 2023 traffic projections that were developed by applying a growth factor to the existing peak hour traffic volumes and the traffic assigned from the pending undeveloped lots in existing and approved residential developments along Wildwood Drive.

A growth rate of 1.0% per year was applied to the existing traffic at the Wildwood Drive study intersection between SR 207 and Deerchase Drive and a growth rate of 3.59% per year was applied to the existing traffic at the Wildwood Drive study intersections between Deerchase Drive and US 1 to develop year 2023 traffic projections. These growth rates were obtained from the St. Johns County "Transportation Analysis Spreadsheet" dated 07/01/2012.

Table 4 includes a list of pending undeveloped lots in existing and approved residential development along Wildwood Drive. This table also estimates the PM peak trip generation for the pending undeveloped lots. The PM peak trip generation for the pending undeveloped lots was calculated based on rates and equations documented in Trip Generation, 8<sup>th</sup> Edition by ITE. These PM peak hour trips from pending undeveloped lots were distributed and assigned at the study area intersection based on existing traffic patterns on Wildwood Drive.

A new permit submittal for a 37 lot single family residential development named Wildwood was not included in this Table as it was submitted after the Traffic Report was finalized.

**Right Turn Lane Analysis**

The evaluation of need for right turn lanes at the study intersections is based on the FDOT recommended criteria contained in NCHRP 420 entitled Impacts of Access Management Techniques. For a two-lane roadway with a posted

speed limit of 45 mph or less, 80 turns per hour are required to warrant an exclusive right turn lane. The results of the right turn lane analysis are summarized in Table 5.

Table 4							
Wildwood Drive Permitted Subdivision List							
Name of Development or Subdivision	Cross Street	Total Number of Permitted Lots	Number of Homes Built	Number of Units Pending	PM Peak Trip Generation		
					Total	In	Out
Heartwood	Old Plantation Drive	50	0	50	56	38	18
Coronado	Marisa Drive	93	25	68	74	50	24
Deerchase	Deerchase Drive	26	0	26	31	21	10
Governors Plantation	Old Plantation Drive	52	32	20	25	17	8
Homestead Estates	Tall Trees Lane	12	11	1	2	1	1
Stonebridge Oaks *	Road not yet built	44	0	44	50	34	16
Stonegate	Deerchase Drive	81	73	8	11	7	4
Meadowland *	New Permit Submittal	54	0	54	60	40	20

Peak Trip Gen Equation:  $\ln(T) = 0.90 \ln(X) + 0.51$   
 \* Trips included in the growth rate applied to the year 2013 traffic volumes.

Table 5			
Right Turn Lane Warrant Analysis			
Intersection	Approach	PM Peak Right Turns	Right Turn Lane Warrented
		(a)	Yes if a > 80
Wildwood Drive at St. Johns Academy Entrance (AM Peak)	SB	41	No
Wildwood Drive at Fort Peyton Drive	EB	28	No
Wildwood Drive at Old Plantation Drive	NB	14	No
Wildwood Drive at Osceola Trail	NB	38	No
Wildwood Drive at Cheyenne Drive	SB	32	No
Wildwood Drive at Carter Road	EB	23	No
Wildwood Drive at Wicks Drive	EB	3	No
Wildwood Drive at Wicks Drive	WB	14	No
Wildwood Drive at Oak Lane	EB	13	No
Wildwood Drive at Moutrie Oaks Subdivision	EB	3	No

Criteria: FDOT Guidelines, NCHRP Report 420, Impacts of Access Management Techniques





# SAFETY & TRAFFIC ANALYSIS

## Left Turn Lane Analysis

The evaluation of need for left turn lanes at the study intersection is performed using Harmelink's Volume Warrant for Left Turn Storage Lanes at Unsignalized Intersection. Table 6 summarizes the input values, left turn lane analysis results and the required left turn storage lengths at all the study intersections along Wildwood Drive under year 2023 total traffic conditions.

Table 6									
Left Turn Lane Warrant Analysis									
Intersection	Approach	PM Peak Left Turns	PM Peak Advancing Volume	Left Turns % of Advancing Volume *	PM Peak Opposing Volume	Left Turn Lane Warranted	Storage Length Required **	Total Turn Lane Length	Remarks
		(a)	(b)	(a/b)*100			(feet)	(feet)	
Wildwood Drive at St. Johns Academy Entrance (AM Peak)	NB	30	249	12.05%	529	No	0	0	For safety reasons, provide a 340 foot left turn lane
Wildwood Drive at Fort Peyton Drive	WB	21	337	6.23%	524	Yes	75	340	
Wildwood Drive at Old Plantation Drive	NB	14	335	4.18%	507	No	0	0	
Wildwood Drive at Old Plantation Drive	SB	24	507	4.73%	335	No	0	0	
Wildwood Drive at Osceola Trail	SB	19	458	4.15%	360	No	0	0	
Wildwood Drive at Cheyenne Drive	NB	7	351	1.99%	462	No	0	0	
Wildwood Drive at S. Winterhawk Drive / Marisa Drive	NB	59	406	14.53%	439	Yes	75	340	
Wildwood Drive at S. Winterhawk Drive / Marisa Drive	SB	30	439	6.83%	406	Yes	75	340	Existing 400 foot southbound left turn lane is adequate
Wildwood Drive at Carter Road	WB	50	624	8.01%	557	Yes	100	340	
Wildwood Drive at Wicks Drive	EB	3	563	0.53%	650	Yes	75	340	
Wildwood Drive at Wicks Drive	WB	17	650	2.62%	563	Yes	75	340	
Wildwood Drive at Oak Lane	WB	23	674	3.41%	594	Yes	100	340	
Wildwood Drive at Moultrie Oaks Subdivision	WB	27	697	3.87%	597	Yes	100	340	

Criteria: Harmelink Curves for Left Turn Lane Warrant Analysis and Left Turn Storage Calculations

\* Harmelink's 5% plot used for left turns with less than 5% of advancing volume

\*\* When a storage length of less than 100 feet is warranted, provide a minimum of 100 foot storage length

# SAFETY & TRAFFIC ANALYSIS



Table 7					
Year 2013 Existing Conditions - Intersection Capacity Analysis					
Intersection	Approach	Year 2013 Existing Conditions PM Peak		Year 2023 Improved Conditions PM Peak	
		Delay (Secs)	LOS	Delay (Secs)	LOS
Wildwood Drive at St. Johns Academy Entrance (AM Peak)	EB	14.9	B	19.5	C
	NBL	1.5	A	1.1	A
Wildwood Drive at Fort Peyton Drive	WBL	0.8	A	8.7	A
	NB	13.4	B	15.9	C
Wildwood Drive at Old Plantation Drive	EB	0	A	19	C
	WB	12.4	B	14.7	B
	NBL	0	A	0.5	A
	SBL	0.4	A	0.7	A
Wildwood Drive at Osceola Trail	WB	13.6	B	16	C
	SBL	0.5	A	0.6	A
Wildwood Drive at Cheyenne Drive	EB	14	B	16.3	C
	NBL	0.2	A	0.2	A
Wildwood Drive at S. Winterhawk Drive / Marisa Drive	EB	13.3	B	16.5	C
	WB	14.6	B	13.3	B
	NBL	8.2	A	8.4	A
	SBL	8	A	8.3	A
Wildwood Drive at Carter Drive	WBL	1	A	8.8	A
	NB	13.2	B	20.3	C
Wildwood Drive at Wicks Drive	EBL	0.1	A	8.9	A
	WBL	0.1	A	8.7	A
	NB	12.4	B	16.9	C
	SB	18.2	B	36.2	E
Wildwood Drive at Oak Lane	WBL	0.5	A	8.9	A
	NB	13.6	B	20	C
Wildwood Drive at Moutrie Oaks Subdivision	WBL	0.5	A	8.9	A
	NB	12.2	A	16.8	C

### Intersection Capacity Analysis

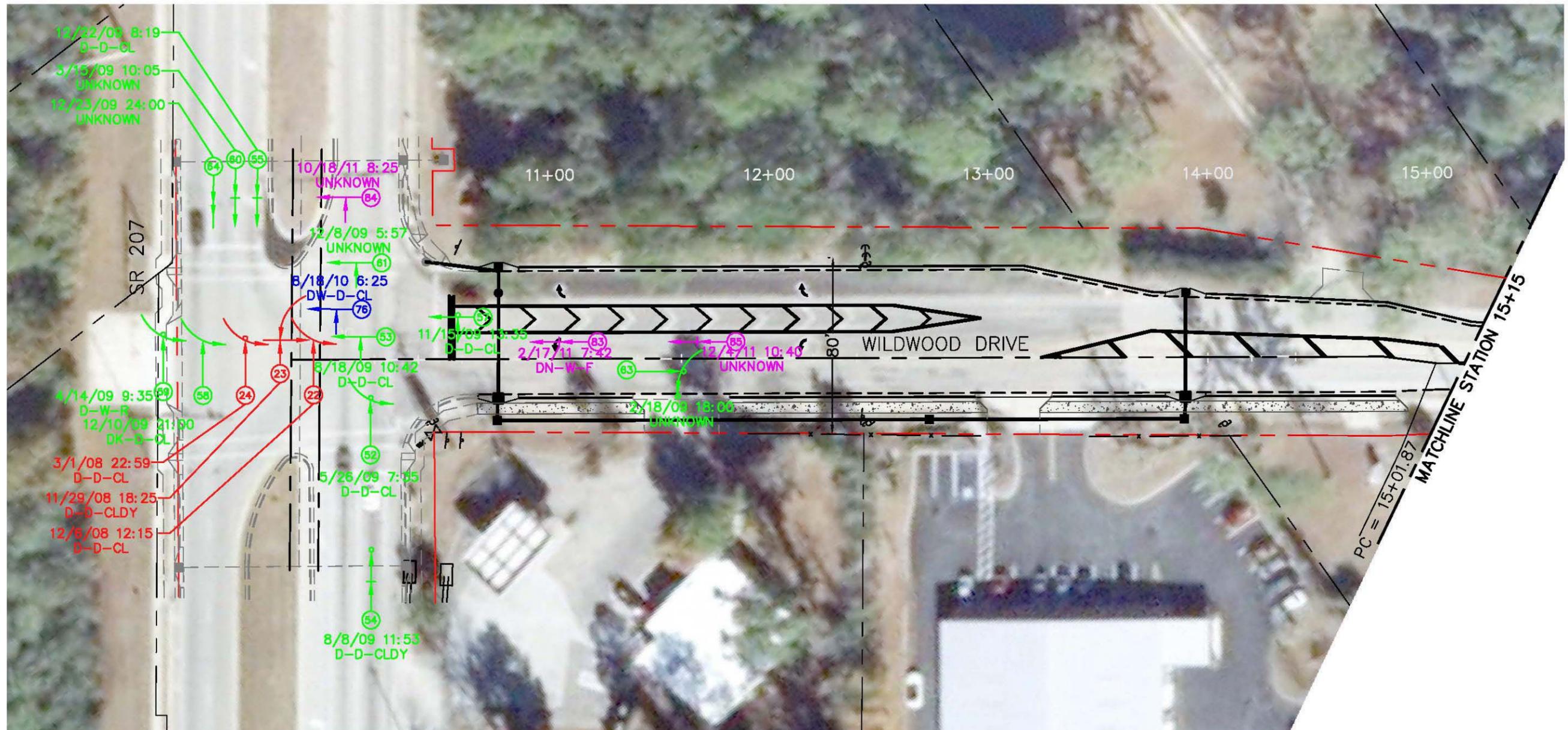
Table 7 summarizes the year 2013 existing conditions and year 2023 total traffic conditions delay and LOS at the study intersections.

The existing conditions and collision diagrams are graphically shown on Sheets 14 through 44. A legend is provided to describe the collision diagrams.





# EXISTING CONDITIONS / CRASH SUMMARY



## LEGEND

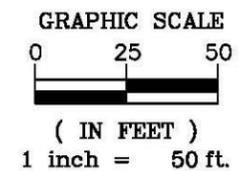
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- 2010 CRASHES:
- 2011 CRASHES:

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- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

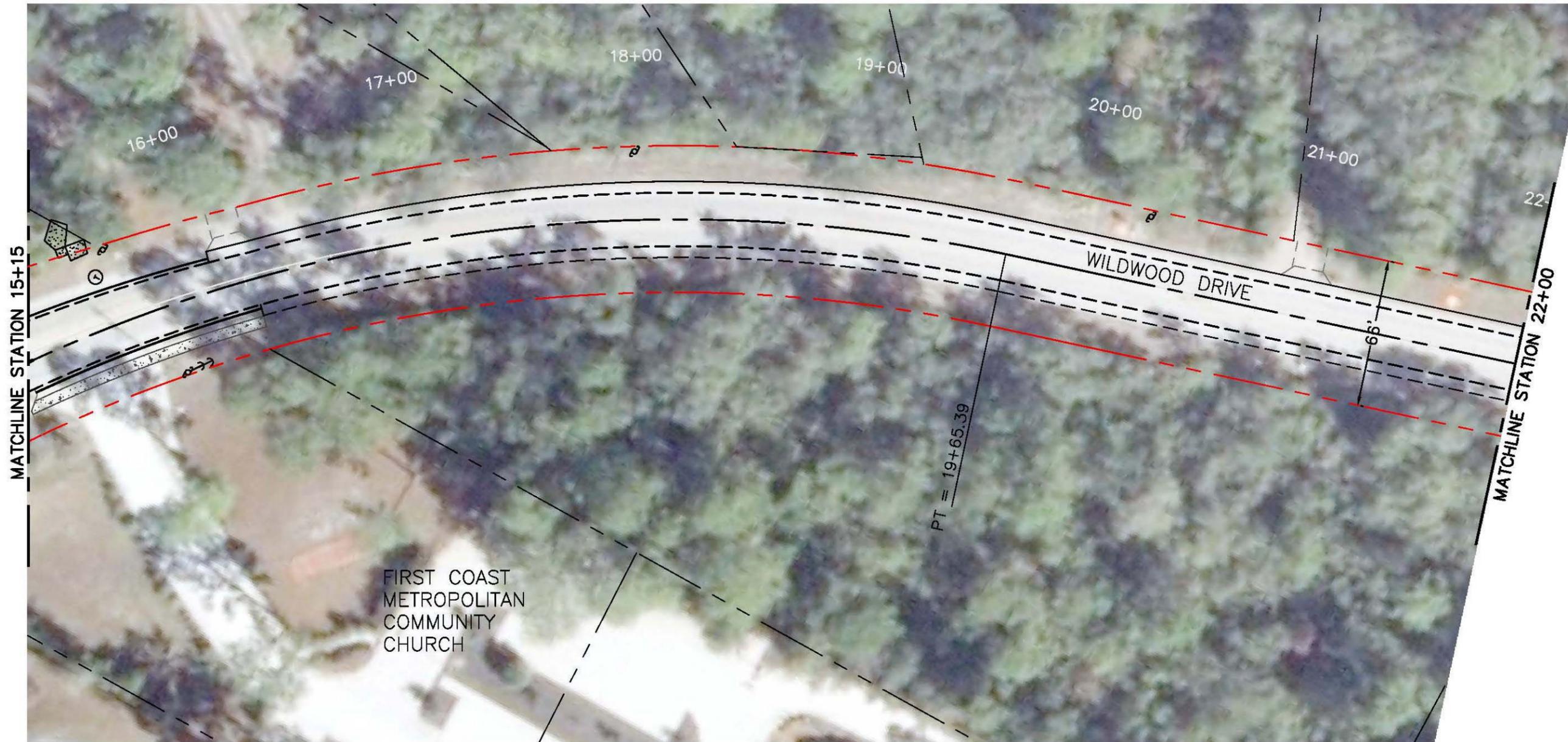
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- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

- ANGLE COLLISION:

- CONDITION CODES
- LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN
  - ROAD SURFACE: D=DRY, W=WET
  - WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY

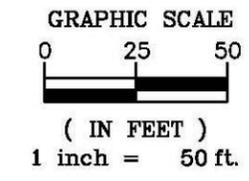
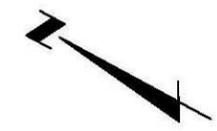
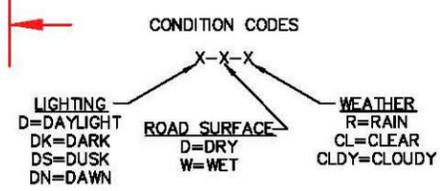
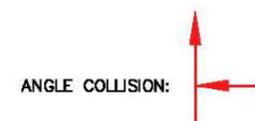


## LEGEND

- 2008 CRASHES:
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# EXISTING CONDITIONS / CRASH SUMMARY



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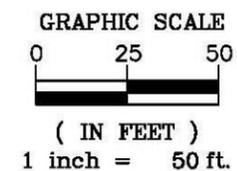
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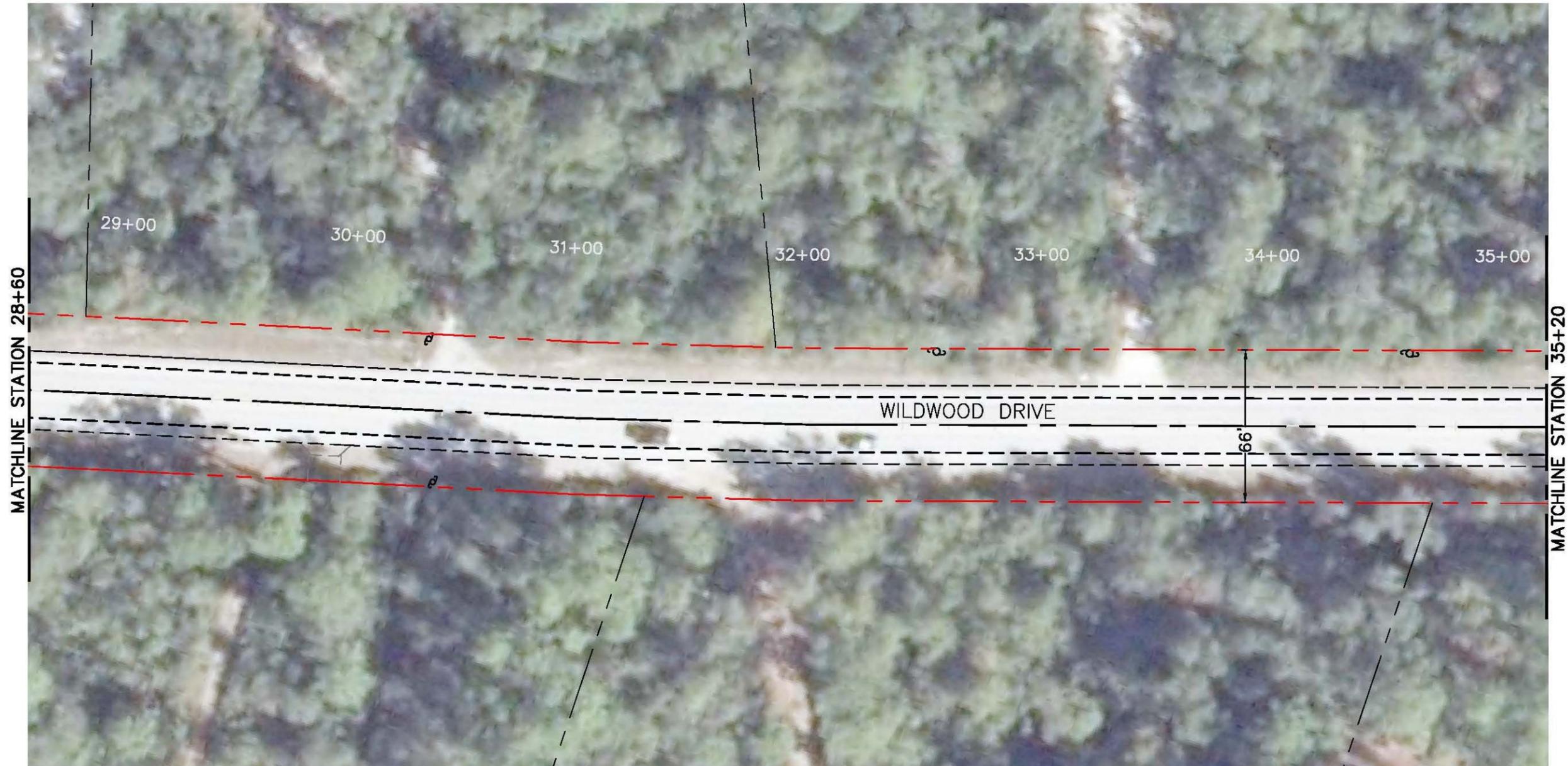
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DK=DARK  
DS=DUSK  
DN=DAWN
- ROAD SURFACE**  
D=DRY  
W=WET
- WEATHER**  
R=RAIN  
CL=CLEAR  
CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY

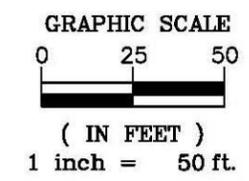
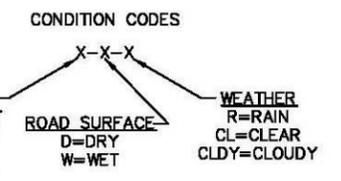


**LEGEND**

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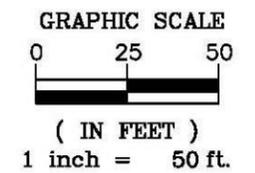
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- ANGLE COLLISION:

**CONDITION CODES**

X-X-X

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# EXISTING CONDITIONS / CRASH SUMMARY



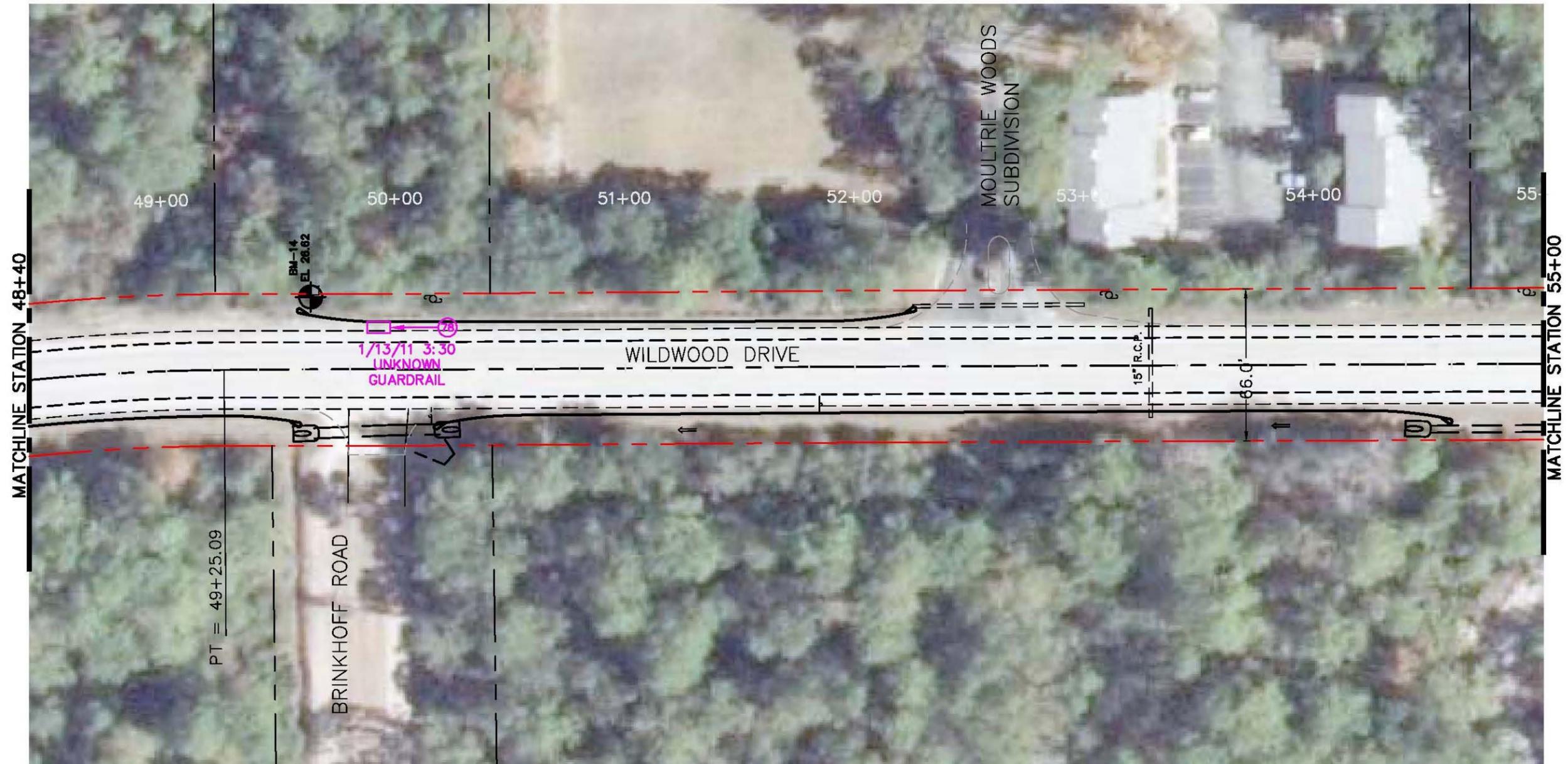
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2009 CRASHES:	OUT OF CONTROL:	HEAD ON COLLISION:	PERSONAL INJURY:				
2010 CRASHES:	REAR END COLLISION:	BACKED INTO:	FATALITY:				
2011 CRASHES:	FIXED OBJECT:						





# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

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- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

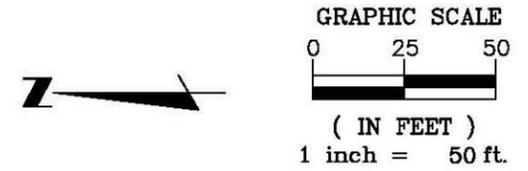
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- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:
- SIDE SWIPE:
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ANGLE COLLISION:

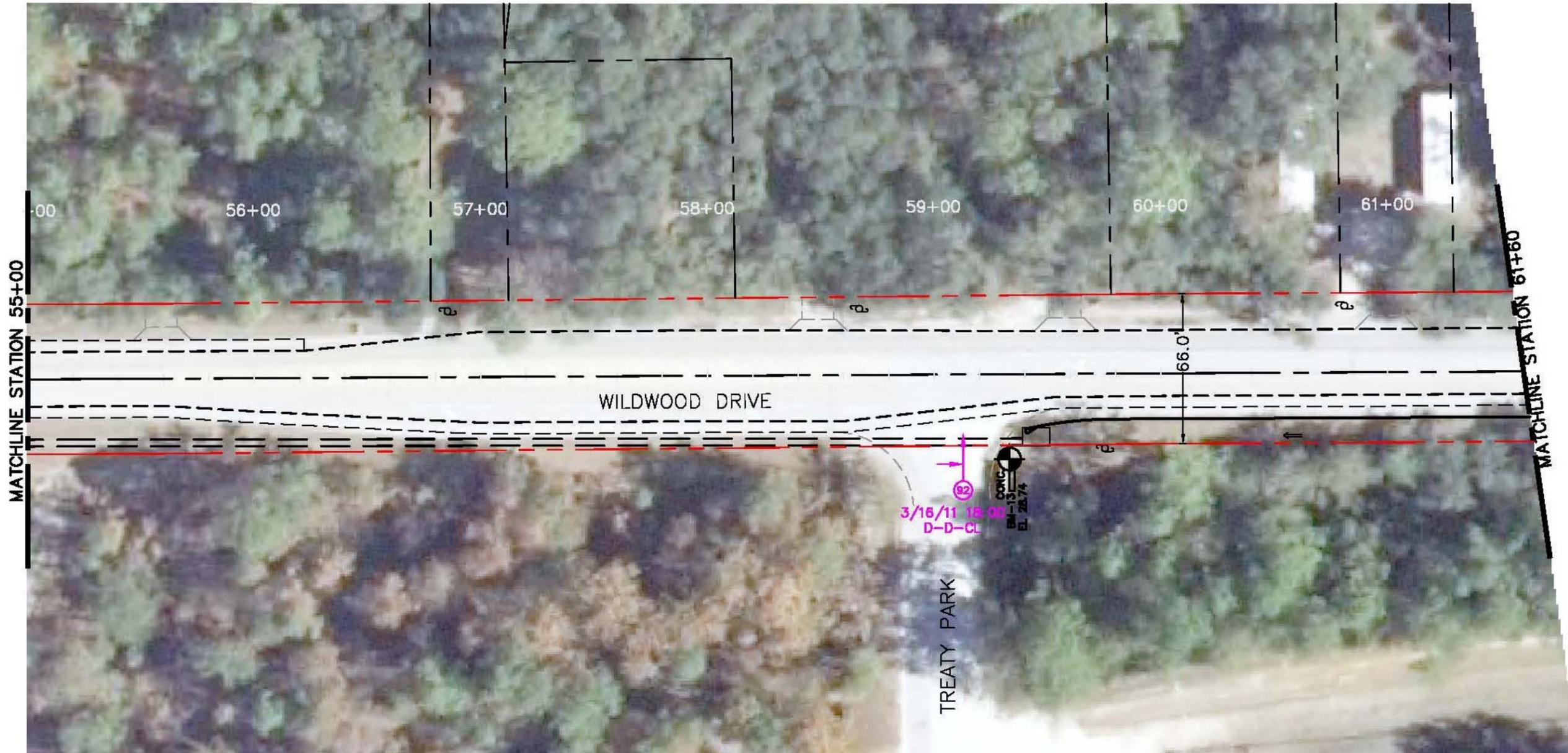
CONDITION CODES

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- ROAD SURFACE: D=DRY, W=WET
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# EXISTING CONDITIONS / CRASH SUMMARY



## LEGEND

2008 CRASHES:	MOVING VEHICLE:	SIDE SWIPE:	ANGLE COLLISION:	CONDITION CODES X-X-X LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN ROAD SURFACE: D=DRY, W=WET WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY	GRAPHIC SCALE 0 25 50 ( IN FEET ) 1 inch = 50 ft.
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2010 CRASHES:	REAR END COLLISION:	BACKED INTO:	FATALITY:		
2011 CRASHES:	FIXED OBJECT:				





# EXISTING CONDITIONS / CRASH SUMMARY

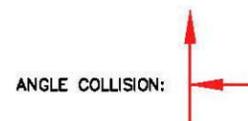


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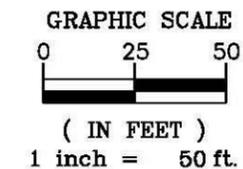
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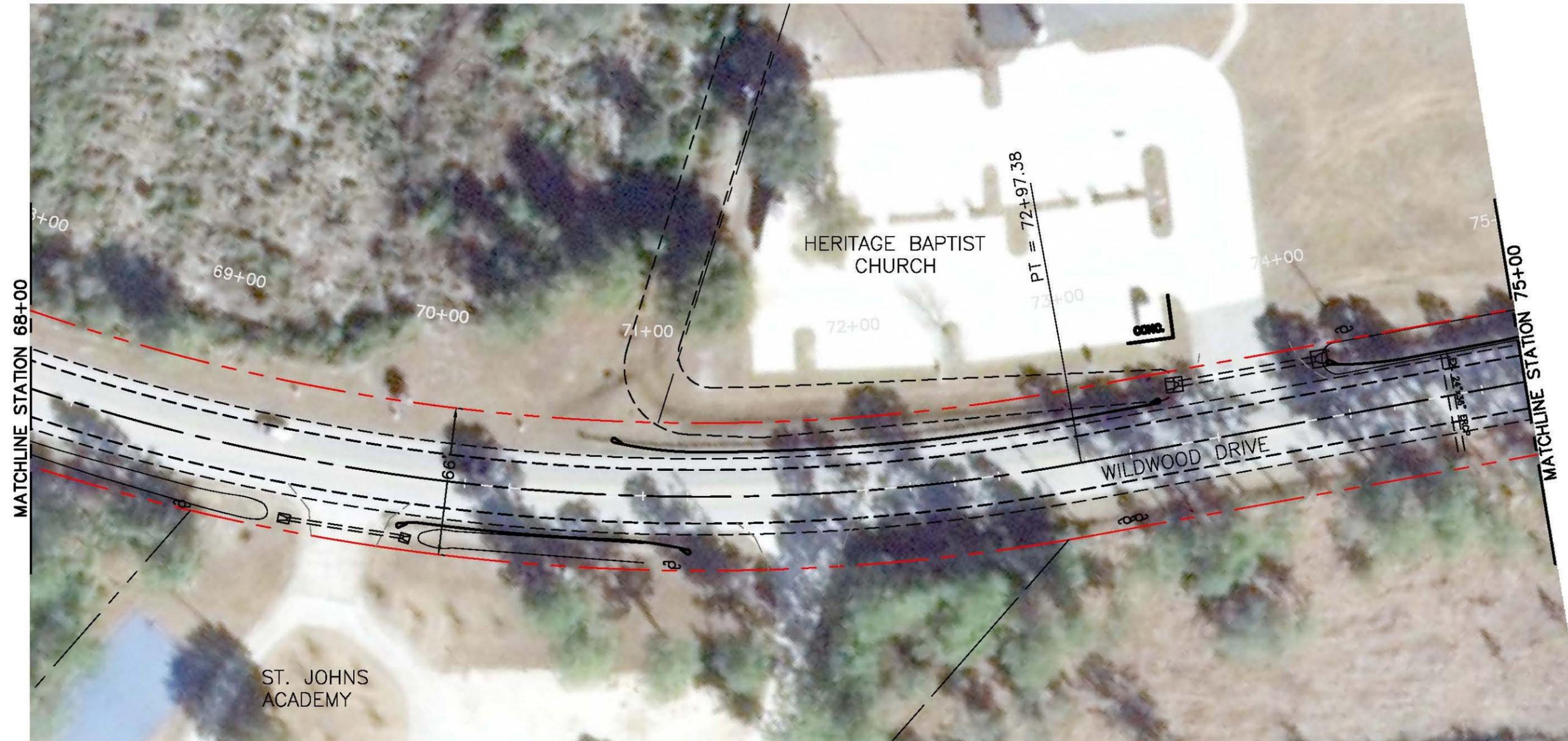
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    - DS=DUSK
    - DN=DAWN
  - ROAD SURFACE: X-X-X
    - D=DRY
    - W=WET
  - WEATHER: X-X-X
    - R=RAIN
    - CL=CLEAR
    - CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY

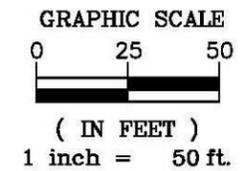
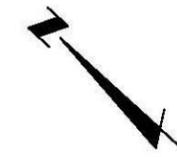
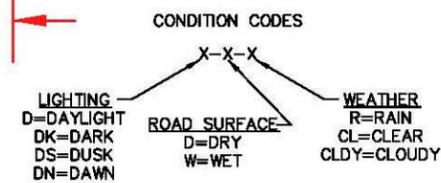


## LEGEND

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:





# EXISTING CONDITIONS / CRASH SUMMARY

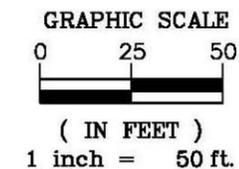
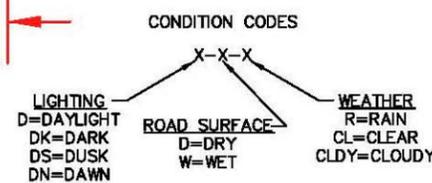


**LEGEND**

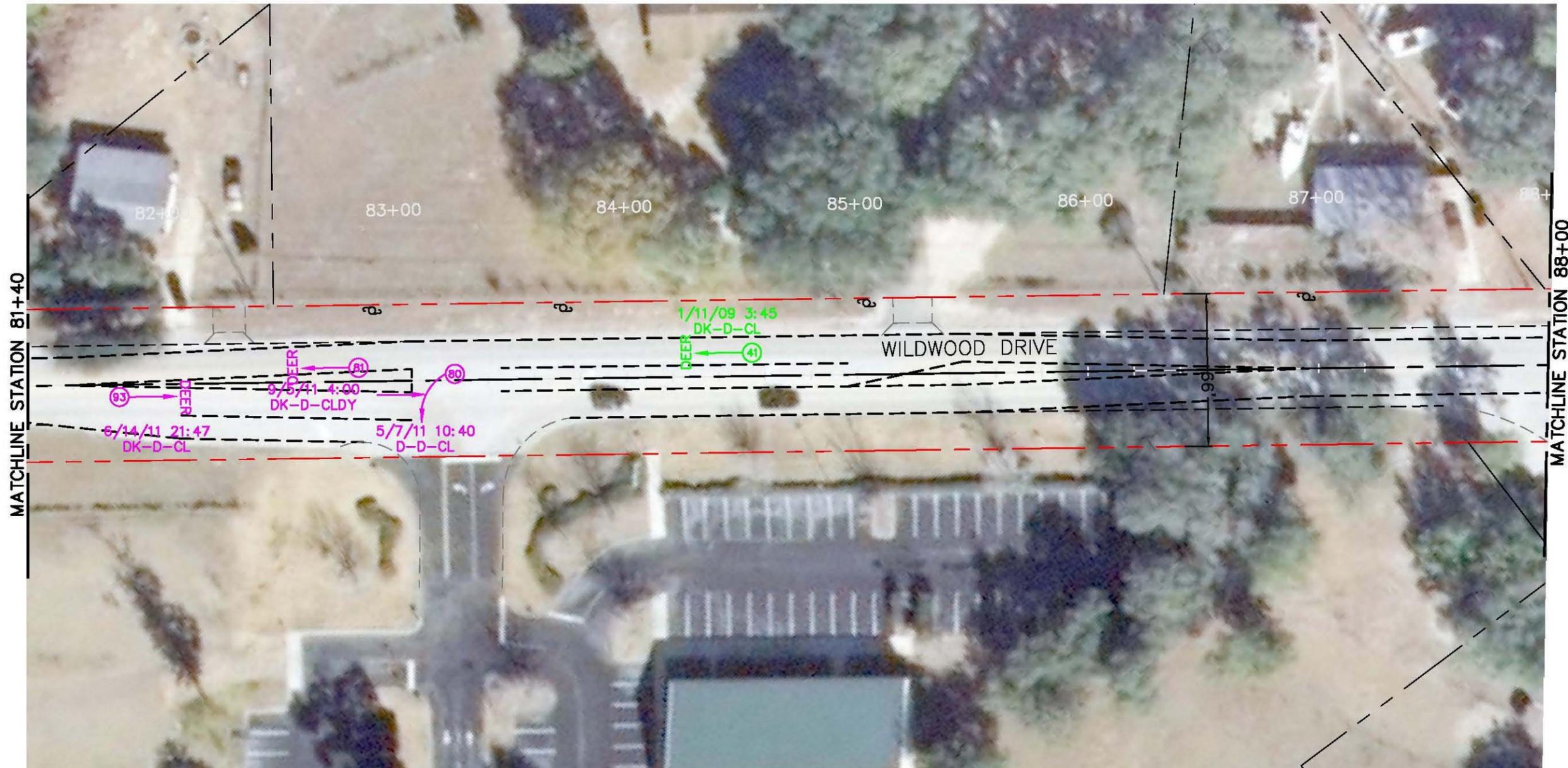
- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:



# EXISTING CONDITIONS / CRASH SUMMARY



## LEGEND

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

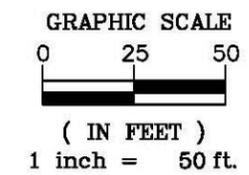
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

- ANGLE COLLISION:

CONDITION CODES

X-X-X

- LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN
- ROAD SURFACE: D=DRY, W=WET
- WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY





# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

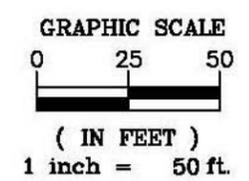
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

ANGLE COLLISION:

**CONDITION CODES**

X-X-X

- LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN
- ROAD SURFACE: D=DRY, W=WET
- WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

2008 CRASHES:	MOVING VEHICLE:	SIDE SWIPE:	ANGLE COLLISION:	<p>CONDITION CODES</p> <p>X-X-X</p> <p>LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN</p> <p>ROAD SURFACE: D=DRY, W=WET</p> <p>WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY</p>	<p>GRAPHIC SCALE</p> <p>0 25 50</p> <p>( IN FEET )</p> <p>1 inch = 50 ft.</p>
2009 CRASHES:	OUT OF CONTROL:	HEAD ON COLLISION:	PERSONAL INJURY:		
2010 CRASHES:	REAR END COLLISION:	BACKED INTO:	FATALITY:		
2011 CRASHES:	FIXED OBJECT:				





# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

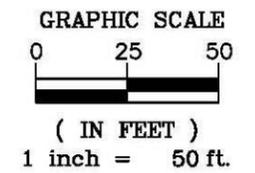
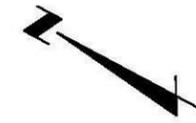
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

- ANGLE COLLISION:

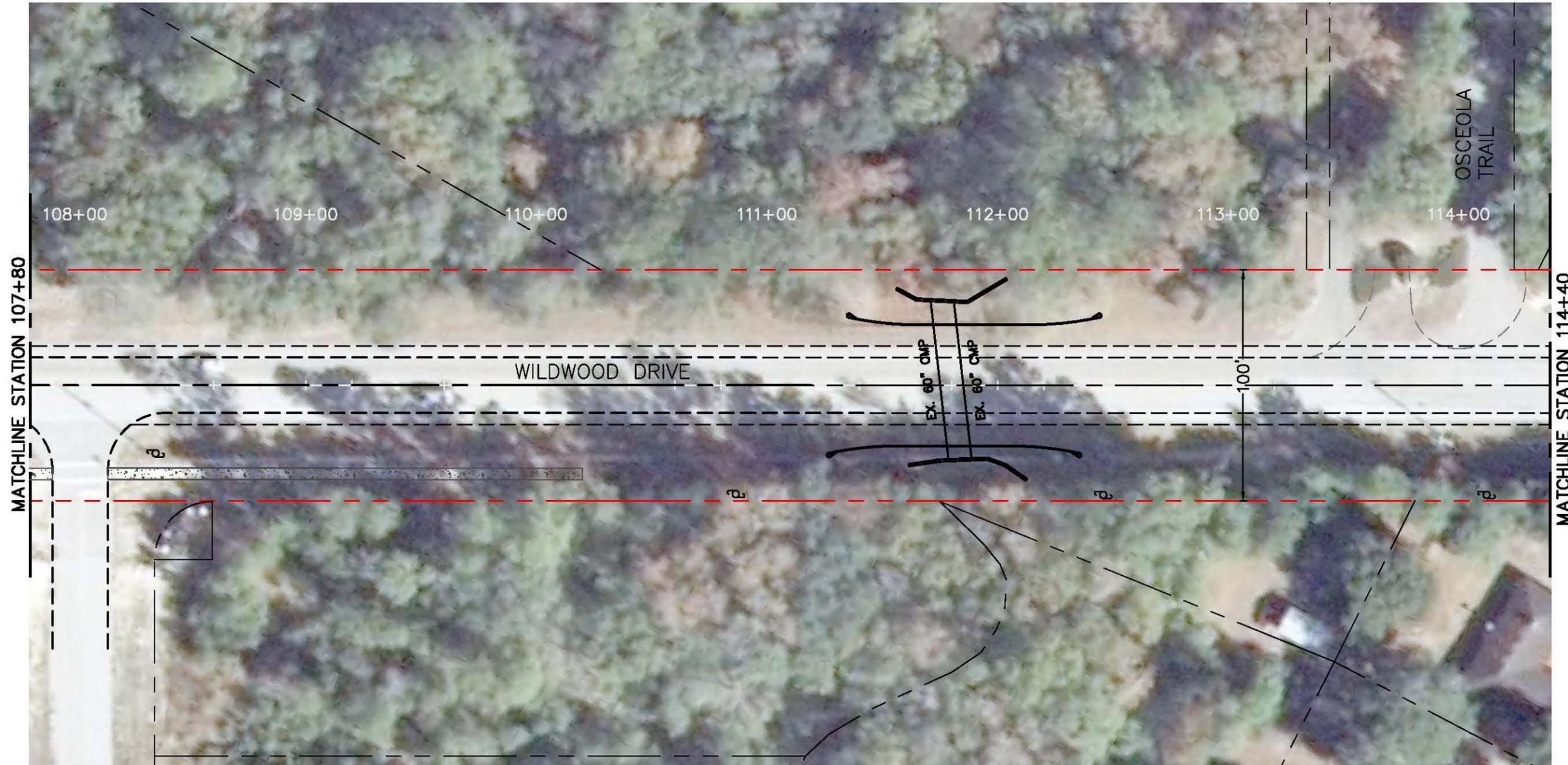
**CONDITION CODES**

X-X-X

- LIGHTING**  
D=DAYLIGHT  
DK=DARK  
DS=DUSK  
DN=DAWN
- ROAD SURFACE**  
D=DRY  
W=WET
- WEATHER**  
R=RAIN  
CL=CLEAR  
CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY



## LEGEND

2008 CRASHES:	MOVING VEHICLE:	SIDE SWIPE:	ANGLE COLLISION:	CONDITION CODES X-X-X	WEATHER R=RAIN CL=CLEAR CLDY=CLOUDY	GRAPHIC SCALE 0 25 50 ( IN FEET ) 1 inch = 50 ft.
2009 CRASHES:	OUT OF CONTROL:	HEAD ON COLLISION:	PERSONAL INJURY:			
2010 CRASHES:	REAR END COLLISION:	BACKED INTO:	FATALITY:			
2011 CRASHES:	FIXED OBJECT:					





# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

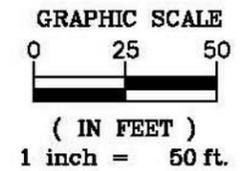
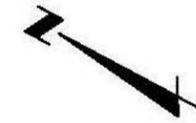
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

- ANGLE COLLISION:

**CONDITION CODES**

X-X-X

- LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN
- ROAD SURFACE: D=DRY, W=WET
- WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

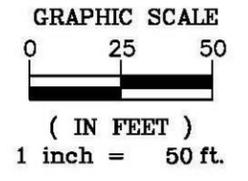
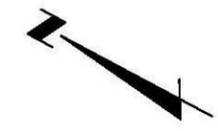
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:



**CONDITION CODES**

X-X-X

- LIGHTING**  
D=DAYLIGHT  
DK=DARK  
DS=DUSK  
DN=DAWN
- ROAD SURFACE**  
D=DRY  
W=WET
- WEATHER**  
R=RAIN  
CL=CLEAR  
CLDY=CLOUDY





# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

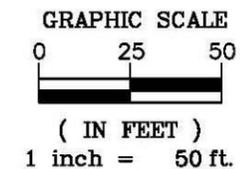
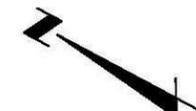
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

- ANGLE COLLISION:

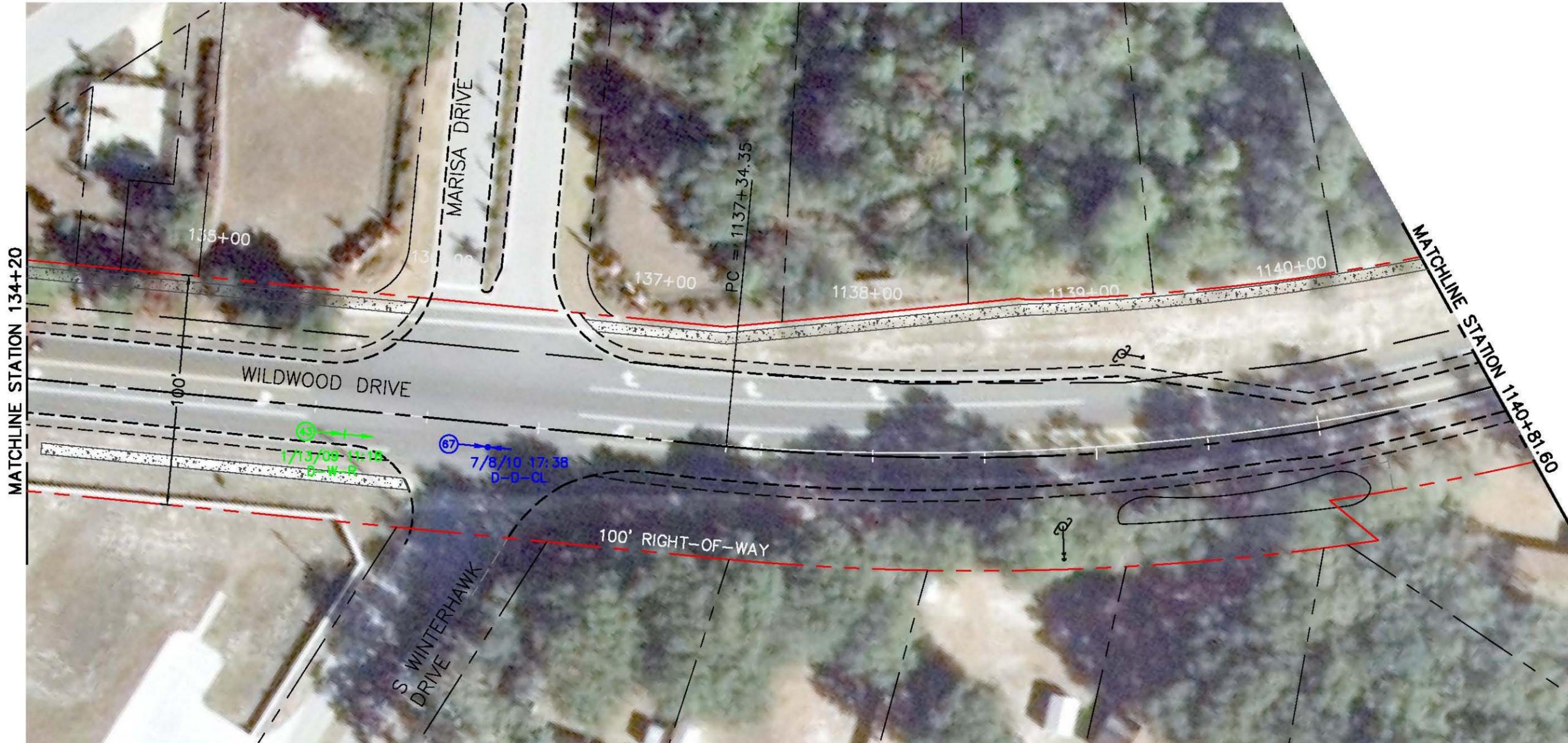
**CONDITION CODES**

X-X-X

- LIGHTING**  
D=DAYLIGHT  
DK=DARK  
DS=DUSK  
DN=DAWN
- ROAD SURFACE**  
D=DRY  
W=WET
- WEATHER**  
R=RAIN  
CL=CLEAR  
CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY



## LEGEND

2008 CRASHES:	MOVING VEHICLE:	SIDE SWIPE:	ANGLE COLLISION:	CONDITION CODES X-X-X LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN ROAD SURFACE: D=DRY, W=WET WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY	GRAPHIC SCALE 0 25 50 ( IN FEET ) 1 inch = 50 ft.
2009 CRASHES:	OUT OF CONTROL:	HEAD ON COLLISION:	PERSONAL INJURY:		
2010 CRASHES:	REAR END COLLISION:	BACKED INTO:	FATALITY:		
2011 CRASHES:	FIXED OBJECT:				





# EXISTING CONDITIONS / CRASH SUMMARY



## LEGEND

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

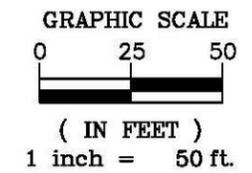
- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

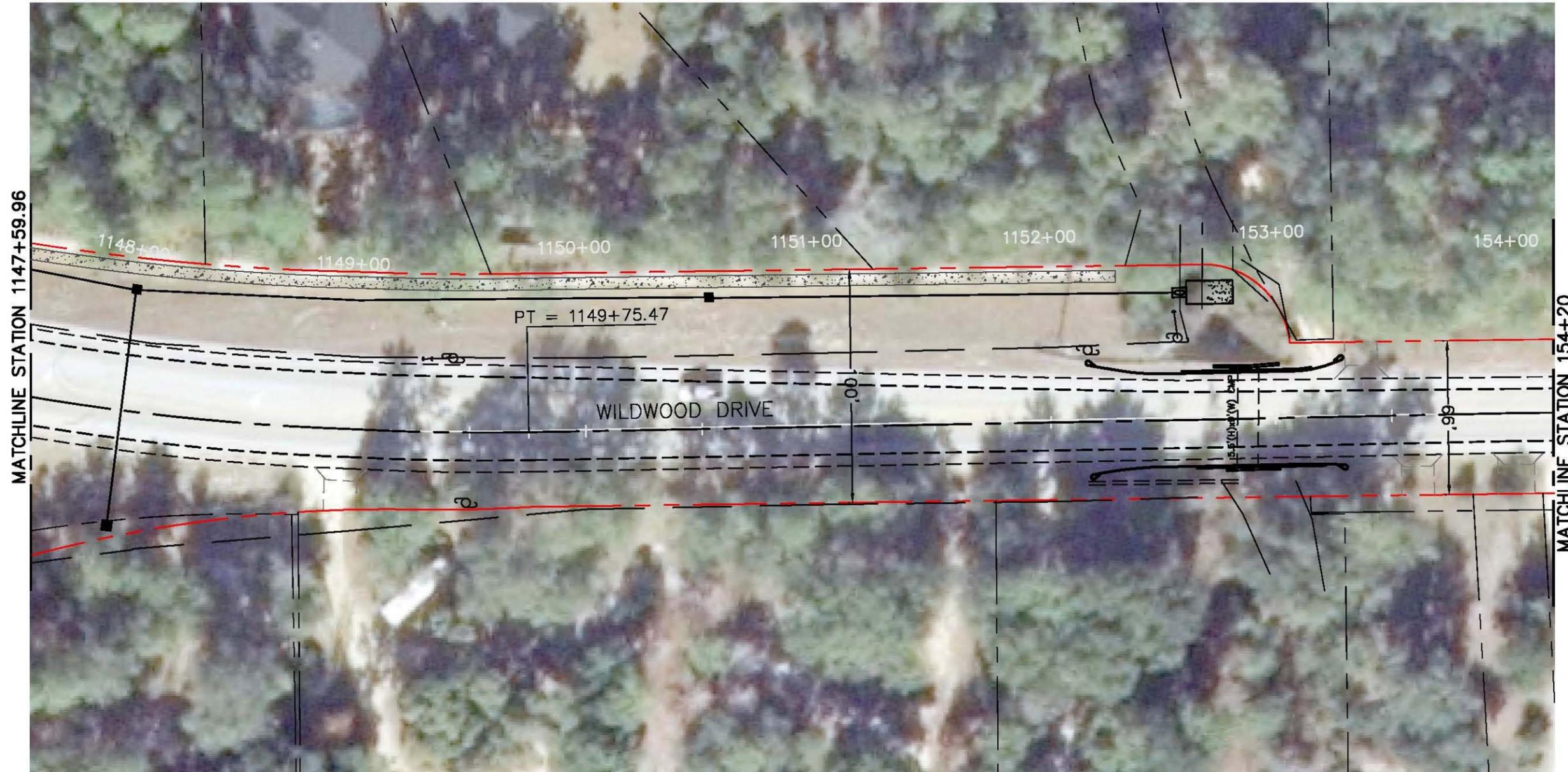
ANGLE COLLISION:

CONDITION CODES

LIGHTING	ROAD SURFACE	WEATHER
D=DAYLIGHT	D=DRY	R=RAIN
DK=DARK	W=WET	CL=CLEAR
DS=DUSK		CLDY=CLOUDY
DN=DAWN		



# EXISTING CONDITIONS / CRASH SUMMARY



## LEGEND

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

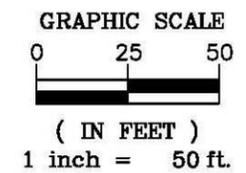
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

- ANGLE COLLISION:

CONDITION CODES

X-X-X

- LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN
- ROAD SURFACE: D=DRY, W=WET
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# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

- 2008 CRASHES:
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- MOVING VEHICLE:
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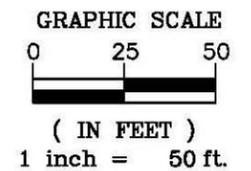
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

- ANGLE COLLISION:

**CONDITION CODES**

X-X-X

- LIGHTING**  
D=DAYLIGHT  
DK=DARK  
DS=DUSK  
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- ROAD SURFACE**  
D=DRY  
W=WET
- WEATHER**  
R=RAIN  
CL=CLEAR  
CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY



## LEGEND

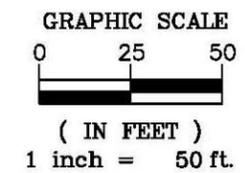
- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

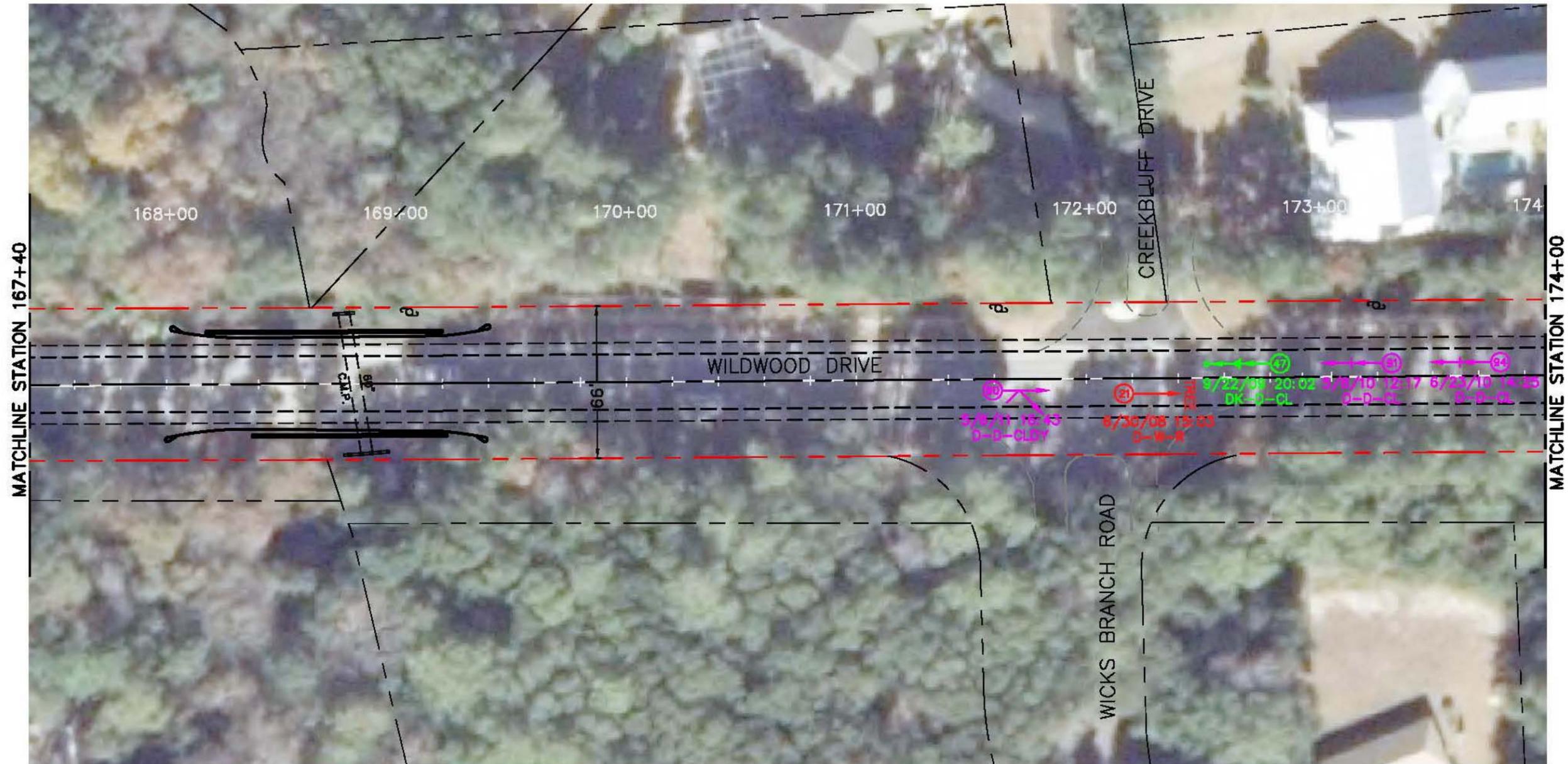
- ANGLE COLLISION:

- CONDITION CODES
- LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN
  - ROAD SURFACE: D=DRY, W=WET
  - WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY





# EXISTING CONDITIONS / CRASH SUMMARY

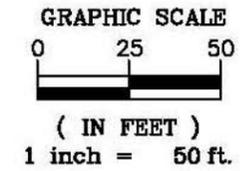
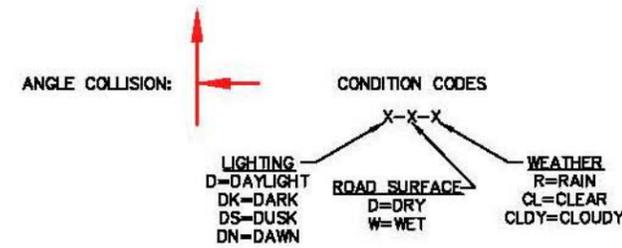


**LEGEND**

- 2008 CRASHES:
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- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
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- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
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# EXISTING CONDITIONS / CRASH SUMMARY

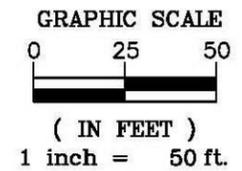
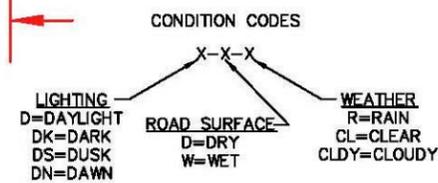
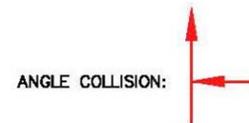


**LEGEND**

- 2008 CRASHES:
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- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:





# EXISTING CONDITIONS / CRASH SUMMARY

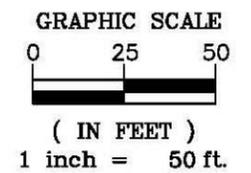
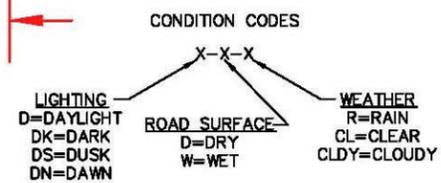


**LEGEND**

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:



# EXISTING CONDITIONS / CRASH SUMMARY



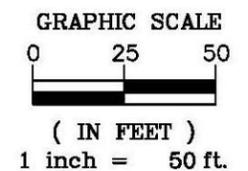
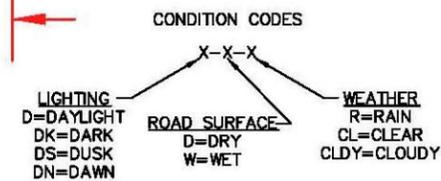
## LEGEND

- 2008 CRASHES:
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- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

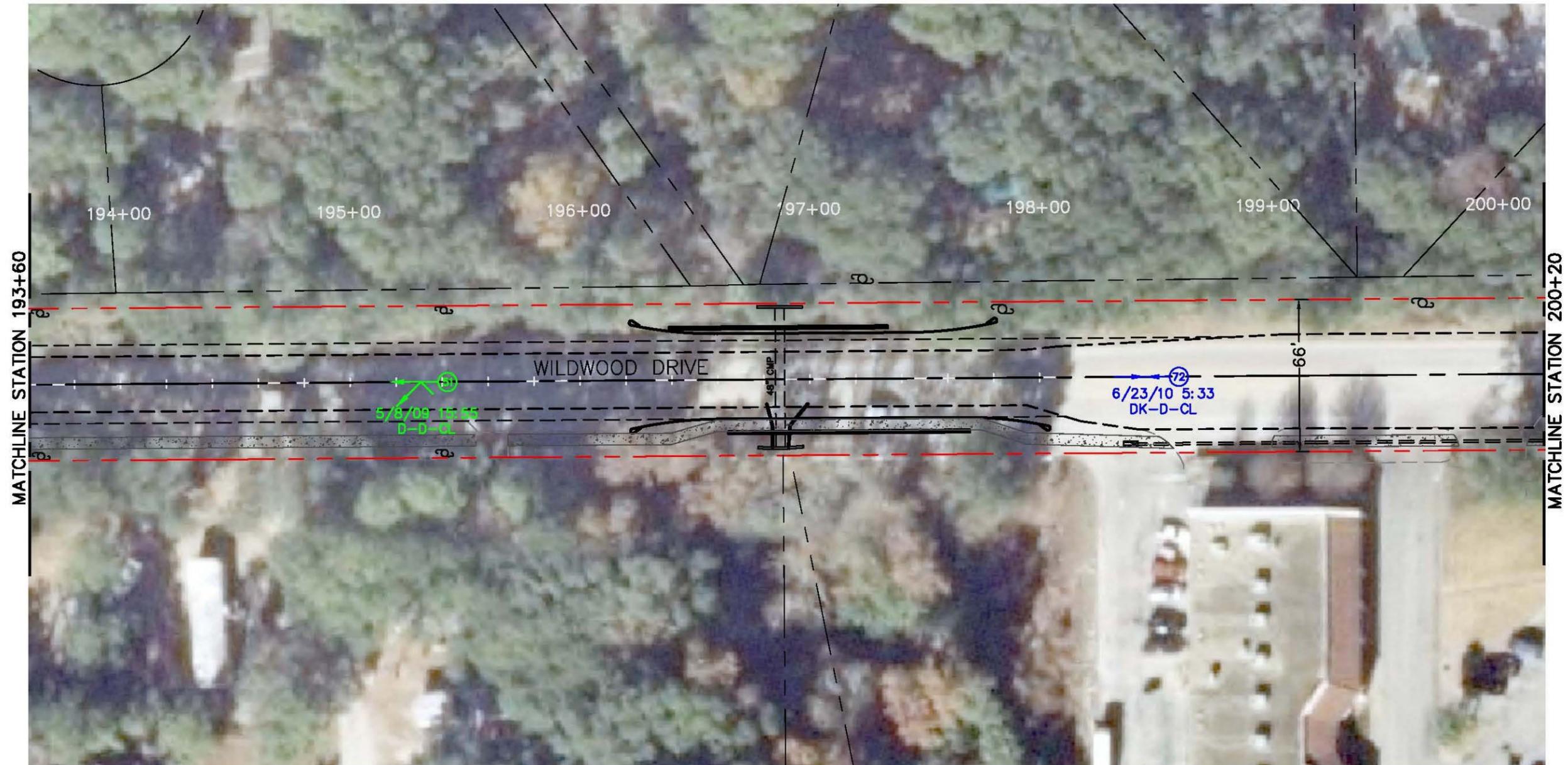
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

ANGLE COLLISION:





# EXISTING CONDITIONS / CRASH SUMMARY



**LEGEND**

- 2008 CRASHES:
- 2009 CRASHES:
- 2010 CRASHES:
- 2011 CRASHES:

- MOVING VEHICLE:
- OUT OF CONTROL:
- REAR END COLLISION:
- FIXED OBJECT:

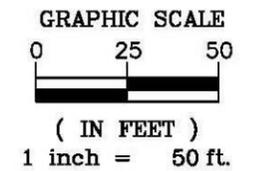
- SIDE SWIPE:
- HEAD ON COLLISION:
- BACKED INTO:
- PERSONAL INJURY:
- FATALITY:

- ANGLE COLLISION:

**CONDITION CODES**

X-X-X

- LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN
- ROAD SURFACE: D=DRY, W=WET
- WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY



# EXISTING CONDITIONS / CRASH SUMMARY



MATCHLINE STATION 200+20

**LEGEND**

2008 CRASHES:	MOVING VEHICLE:	SIDE SWIPE:	ANGLE COLLISION:
2009 CRASHES:	OUT OF CONTROL:	HEAD ON COLLISION:	CONDITION CODES:
2010 CRASHES:	REAR END COLLISION:	BACKED INTO:	LIGHTING: D=DAYLIGHT, DK=DARK, DS=DUSK, DN=DAWN
2011 CRASHES:	FIXED OBJECT:	PERSONAL INJURY:	ROAD SURFACE: D=DRY, W=WET
		FATALITY:	WEATHER: R=RAIN, CL=CLEAR, CLDY=CLOUDY

**GRAPHIC SCALE**

( IN FEET )  
1 inch = 50 ft.

